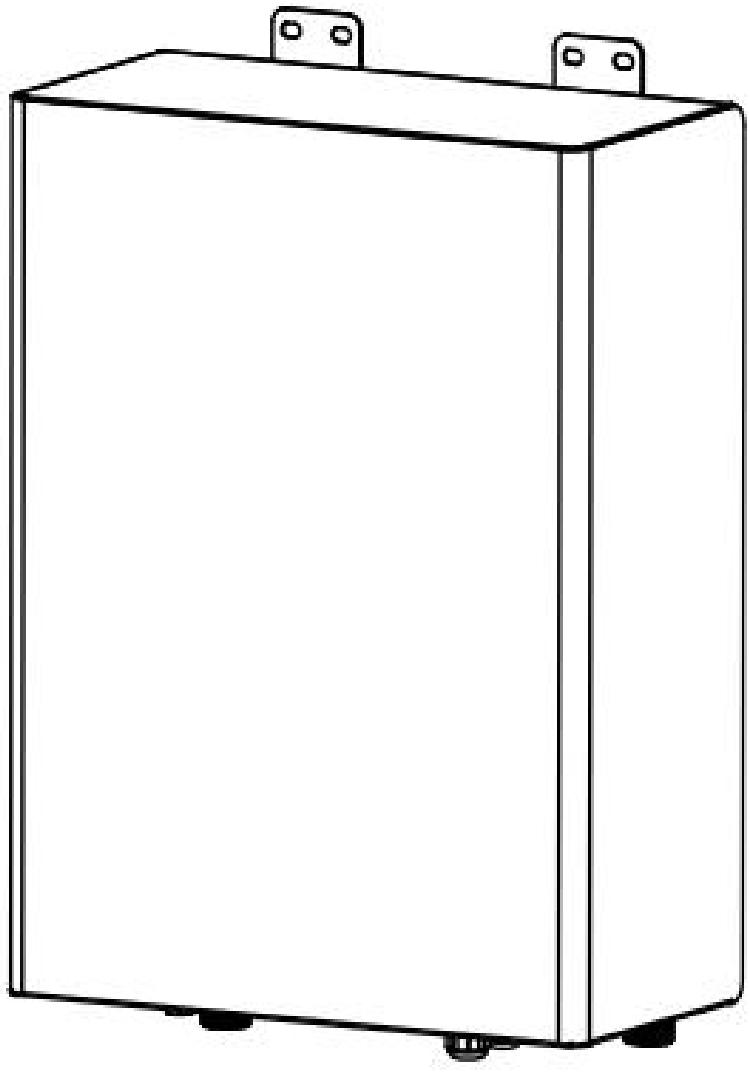
INVERBOOST ®
HYDRO BOX
USER MANUAL



CONTENT

SAFETY INSTRUCTIONS

– READ CAREFULLY AND KEEP THEM FOR FUTURE REFERENCE.

1. To avoid electric shock, fire, or injury, please read the user manual carefully before using the appliance and keep it for future reference.
2. Keep the appliance away from children.
3. With any indication of malfunction, please stop using the appliance immediately to avoid hazards. Contact the authorized service center for repair. Do not attempt to repair or change any parts by yourself.
4. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid hazards.
5. Please turn off and unplug the appliance before cleaning or maintenance.
6. Clean the surface of the appliance with a dry cloth. Do not use corrosive detergent or solvent to clean. Do not wash the appliance with water.
7. Please put the power cord in the right place in order to avoid tripping the appliance over.
8. Ensure no water or raindrop leak into the appliance in order to avoid electric shock.
9. Do not use any bug sprays or other flammable cleaners on the appliance.
10. Do not use the appliance in any spillage area. When any water is spilled/dropped into the appliance, it may weaken the electrical insulation and may cause a fire or electric shock hazard.

Note: To avoid any malfunction or damage, do not tilt or crossing place the appliance under any operation.

INSTRUCTIONS TO USERS

- Before carrying out any maintenance or repair of the water heater, please always disconnect the power supply and have the water heater adjusted and repaired by professional technicians.

- Please make sure that the power socket complies with the national standard and it is securely earthed. Never use the hydro box which is not securely earthed.

- Before energizing, please ensure that the water heater is filled with water; otherwise it will cause malfunction.

- The hydro box must be installed indoors with ambient temperature from 4° C~35° C. If you put the unit out of use for a long period, please make sure to drain the water thoroughly out of the hydro box and floor heating pipe, in order to prevent the system from freezing.

- Hot water over 50° C will cause scald. Therefore, please make sure to mix the hot water with cold water before shower or washing. When the ambient temperature is lower than 0° C, please make sure to drain the water tank thoroughly if you are to travel out for a long period and the water heater is under de-energized state.

- After the water system is thoroughly drained, please make sure to disconnect the hydro box from the power supply.

- The hot water in the hydro box is not drinkable. After a long time of use, scale may deposit in the water tank and cause change to the water quality. After you have washed the edible substances with the water in the container, please make sure to flush with clean tap water again.

Please install the hydro box in a place strong enough to bear its weight. Otherwise, it will cause falling down of the unit, which may lead to injury.

PRODUCT CHARACTERISTICS

Safe and Reliable

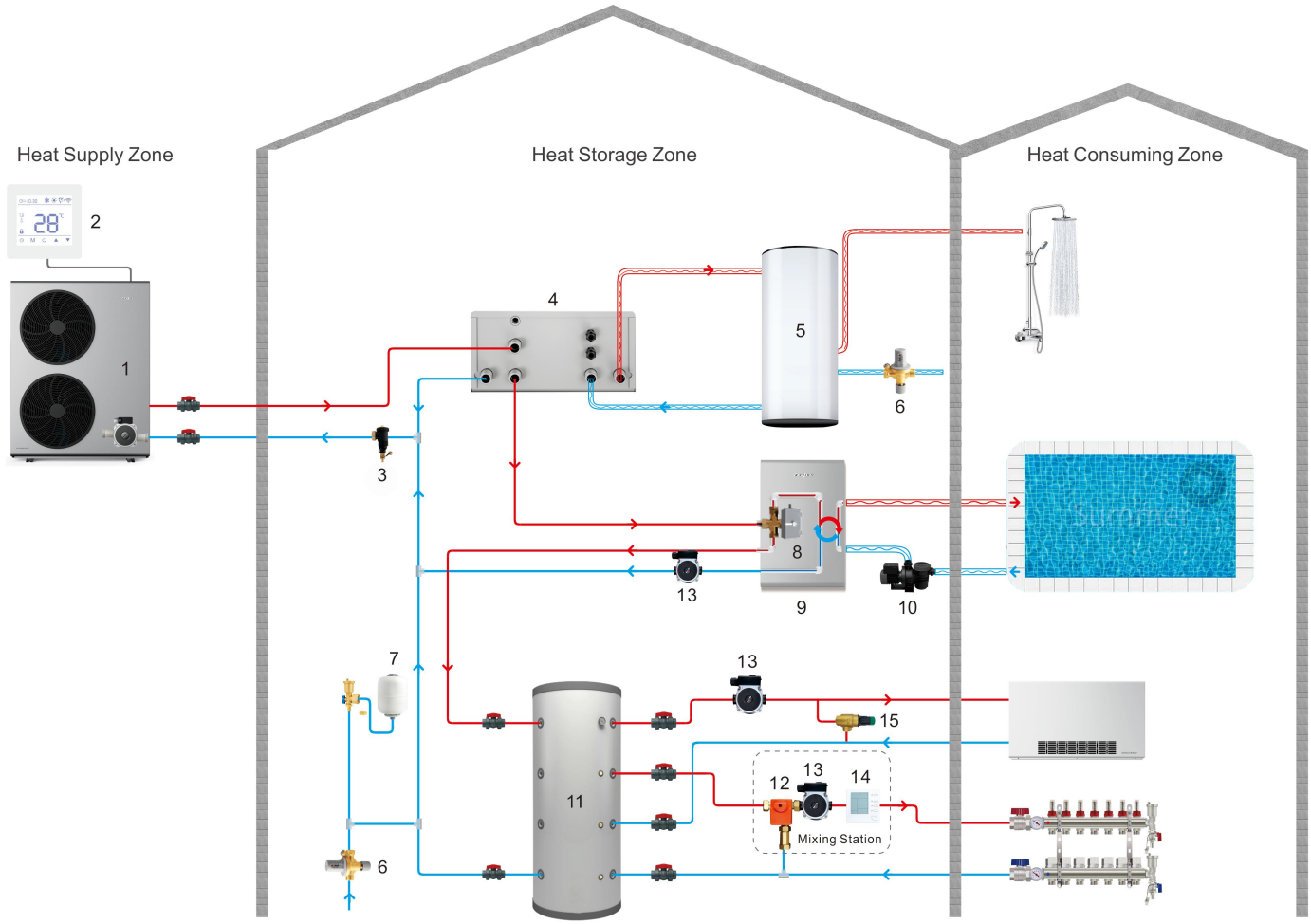
This series of hydro box for transferring the heat from the outdoor unit to the pressure water tank. The pressure water tank is only used for storing hot water.
The hydro box is connected to the water tank via insulation pipes so that the water is visibly separated from the electricity. This has radically eliminated the risk of electric leakage. To ensure safe use, this unit is also provided with multiple protections, e.g. freeze prevention protection. Furthermore, there is no risk of carbon monoxide poisoning or other hazards.

Easy Installation

The unit transfers the hot water by using the internal water pump. Therefore, it is not needed to add a water pump or other associated accessories.
This has simplified the installation procedures and saved the cost.

INSTALLATION INSTRUCTION

Application Diagram

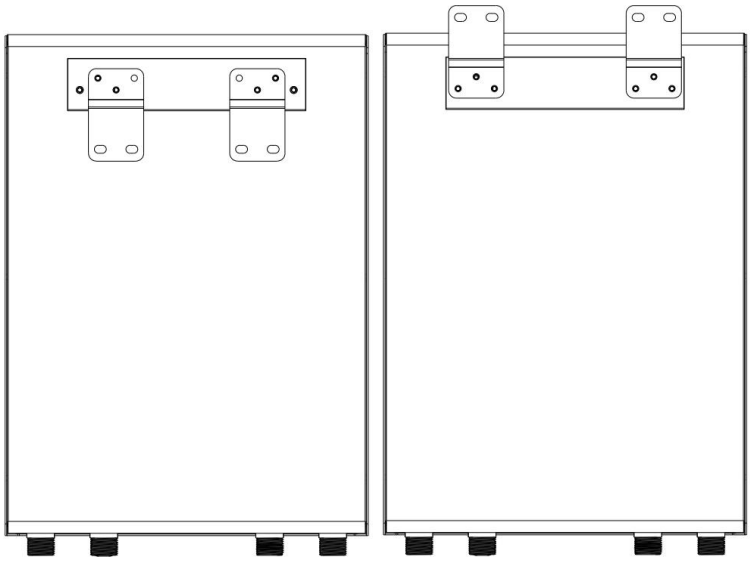


1. Monobloc Unit
2. Controller (Monobloc Unit)
3. Magnetic Particle Filter
4. Hydro Box
5. DHW Cylinder
6. Automatic Water Refill Valve
7. Expansion Vessel
8. 3 Way Electomagnetic Valve
9. Heat Exchanger for Pool
10. Circulation Water Pump
11. Buffer Tank
12. Mixer Valve
13. Circulation Pump
14. Controller (Mixing station)
15. Differential Pressure Bypass Valve

Installation:

1. To the wall:

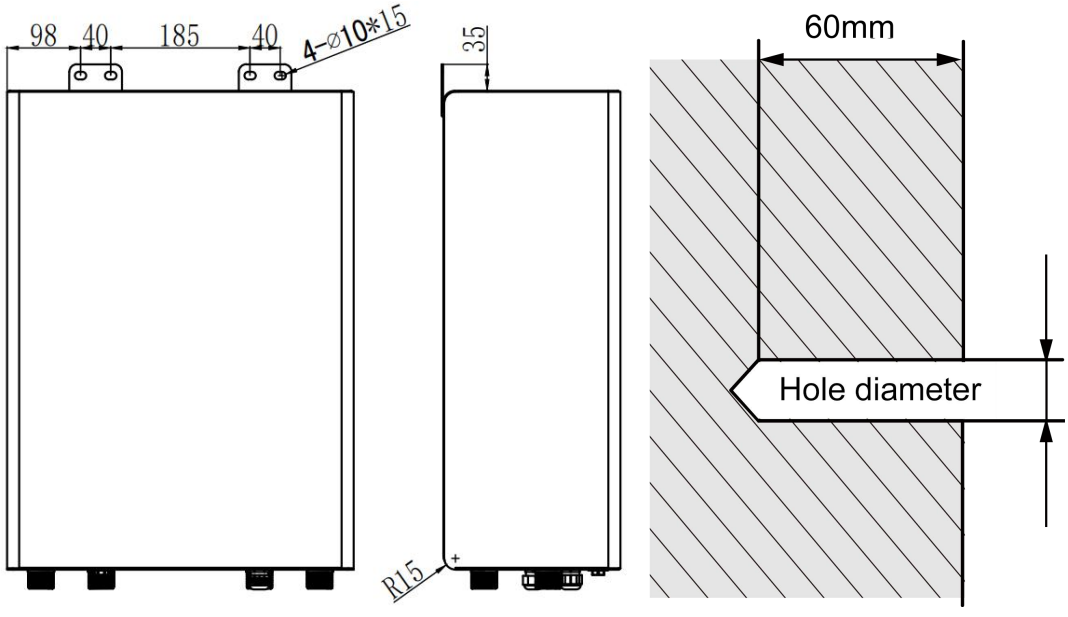
Using a screwdriver, remove the back fixing plate and install it reversely so that it is higher than the unit body, as shown in the picture below.



Screw hole drilling and bolt installation

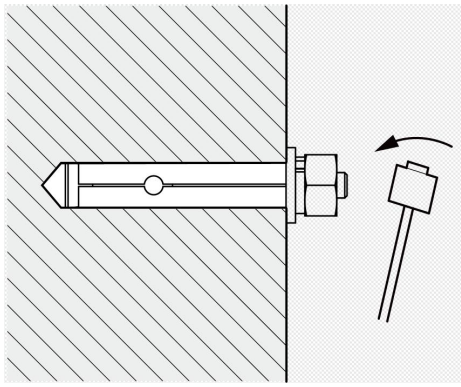
(1) First select a suitable installation location that meets the installation space requirements

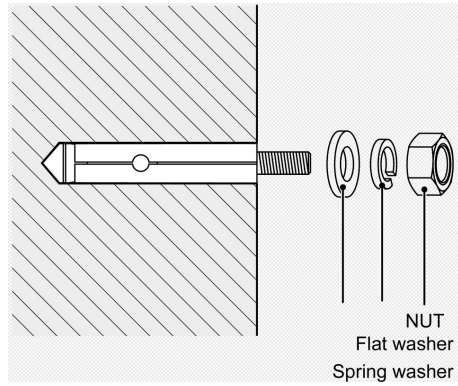
(2) Then drill 4 holes on the wall according to the size of the water box installation back plate, as shown below; please refer to the expansion bolt size for the hole size. (The expansion bolts provided with the machine are M8 bolts, so the hole size is Φ10mm.) The hole depth is 60mm.



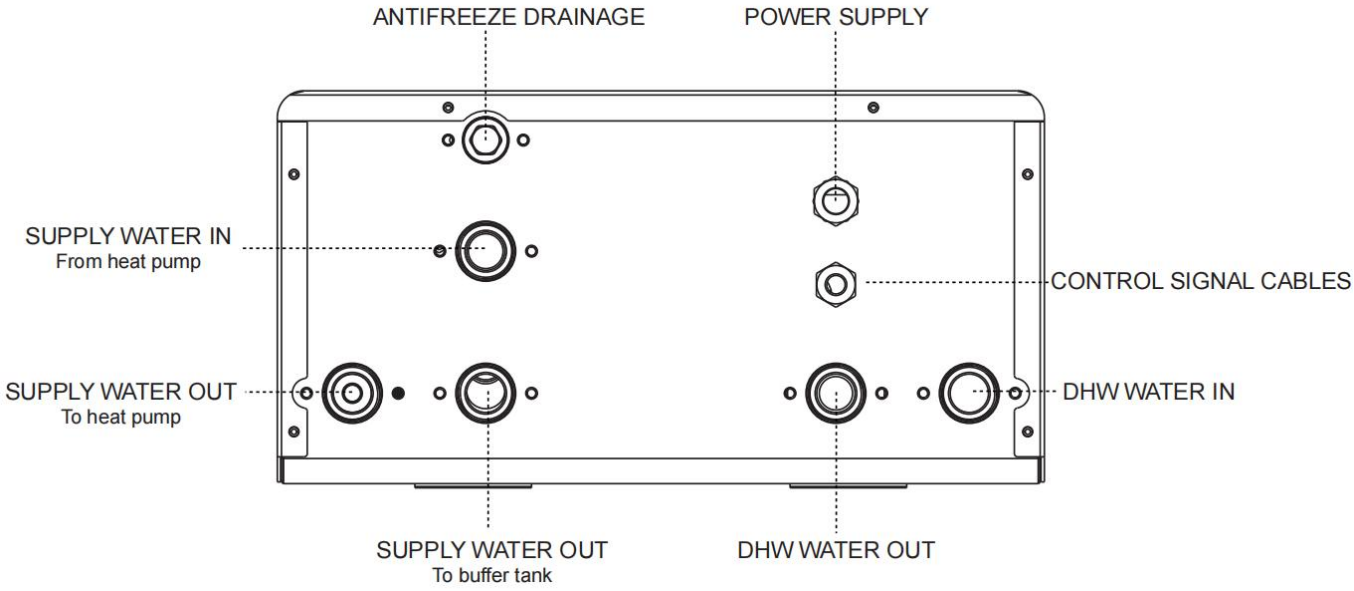
(3) Fix the 4 expansion bolts (provided with the unit) into the holes, and unscrew the nuts and washers of the bolts.

(4) Install by aligning the top fixing plate of the hydro box with the bolts. Then tighten the nuts to complete the installation.

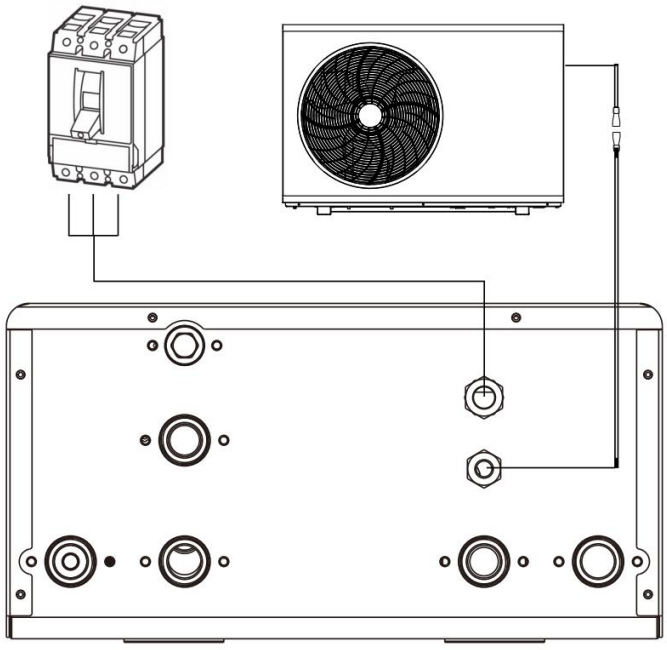


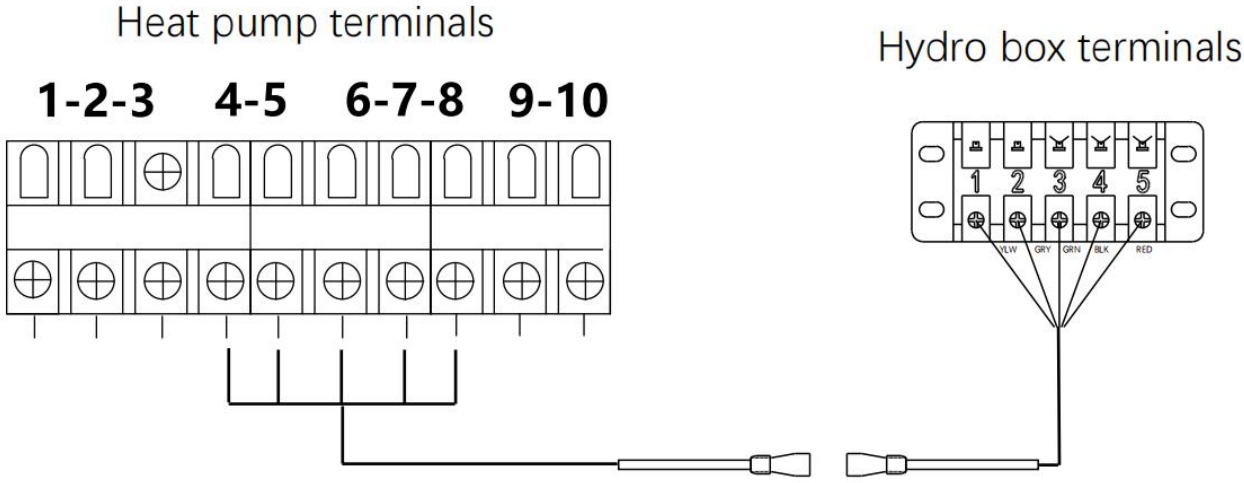


2. Pipe connection:



3. Electric connection:





Signal terminal correspondence

Hydro box terminal no.	Heat pump terminal no.	Remarks	Control wire color
1	5	Electric heater（Signal）	Yellow
2	4	Electric heater（Signal）	Grey
3	8	3 way valve 220V（N）	Green
4	7	3 way valve 220V（RY）	Black
5	6	3 way valve 220V（L）	Red

4. Test run

Preparation for trial operation

(1) Check whether the unit is installed correctly.
(2) Check whether the water system pipelines and electrical system wiring are reasonable.
(3) Check whether the circulating water pipe is insulated.
(4) Check whether the ground wire is connected.
(5) Check whether the power supply voltage matches the rated voltage of the unit.
(6) Check whether the water inlet check valve and overflow valve are installed correctly.
(7) Check whether the air in the water system pipes is completely exhausted, and whether the vent valve and drain valve are closed.
(8) The inlet water pressure is not less than 0.2MPa.

Leak detection

After all water pipes are connected, please check for leaks first, and then insulate the water system after confirming that there is no leakage. Please pay special attention to the insulation of valves, pipe joints and other joints. It is recommended to use insulation cotton with a thickness of not less than 15mm.

USE & OPERATION

IMPORTANT: The hydro box is designed to operate between -15°C and 43°C.

Control Logic

1. Three-way valve reversing logic: controlled by signals from domestic hot water mode and heating mode from the heat pump
1) Domestic hot water mode, the three-way valve control signal is disconnected, the coil is powered off, and the heated water flows toward the DHW cylinder.
2) Heating mode, the three-way valve controls the signal output, the coil is energized, and the heated water flows to the buffer tank.

2. Start and stop logic of hydro box water pump
The water pump and three-way valve of the hydro box are connected using an intermediate relay for reciprocal control:
1) When the three-way valve is powered off, the water pump gets power and starts running, and the heated water flows towards the DHW cylinder.
2) When the three-way valve is powered on, the water pump is powered off and stops running, and the heated water flows toward the buffer tank.
Note: The water pump control has nothing to do with the host water pump in the heat pump. It only has a reciprocal control relationship with the three-way valve.

3. Backup heater (electric heating) control logic
The backup heat heater (electric heating) is connected to the host using an AC contactor
1) The host signal is output, the AC contactor is closed, the backup heater (electric heating) is energized, and heating begins.
2) The host signal is disconnected, the AC contactor is disconnected, the backup heater (electric heating) is powered off, and heating stops;
3) During the heating process, when the electric heating thermostat detects the water temperature T≧ 85° C, the thermostat disconnects and stops heating;
When T≦80℃ is detected, the thermostat closes and heating resumes;

Backup heater (electric heating) control: (heat pump side setting)
When the compressor runs for 5 minutes and any of the following conditions are met, the backup heater is turned on:
a. The backup heater, parameter P7 is open, that is, the parameter P7 selection = (0: off; 1: no temperature rise control; 2: temperature control)
b. Meet the outdoor temperature ≤ parameter P8 (setting temperature);
c. The water temperature does not continue to rise until the time set by parameter P9;

In conclusion, when P7 selects 1 or 2, when the outdoor ambient temperature ≤ P8 setting is met or the water temperature does not rise within P9 time, the backup heater will be turned on.

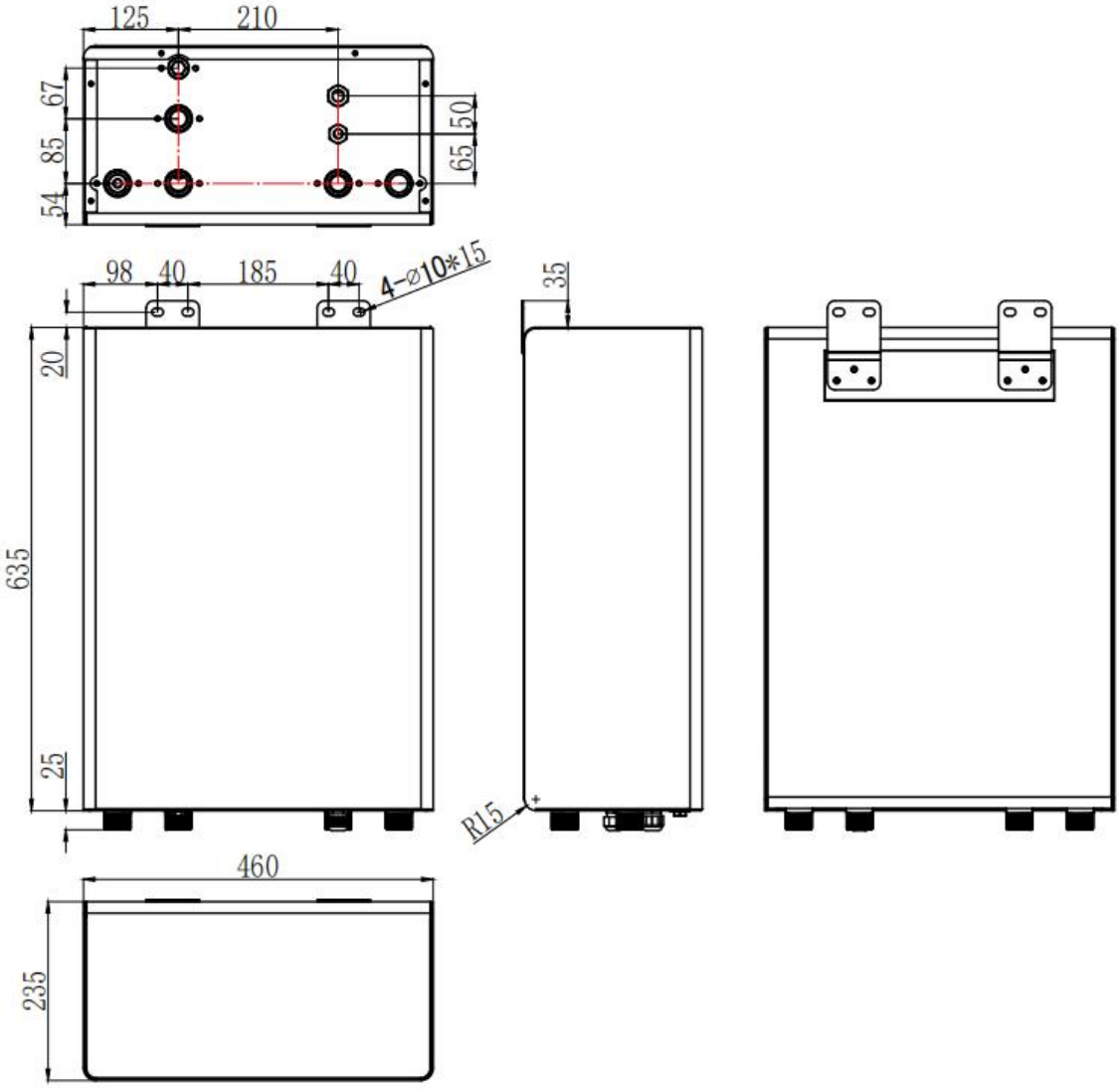
SPECIFICATION

Model		WD-17	WD-25	WD-25S	WD-25ST
Heating capacity	kW	9.71	11.62	15.20	15.49
Advised water flux (House heat pump side)	m3/h	1.54	2.20	2.41	2.30
Electric heating capacity	kW	3	3	6	6
Advised water flux (DHW cylinder side)	m3/h	2.05	2.05	2.05	2.05
Power supply		220-240V/50Hz/1Ph			380-415V/50Hz/3PH
Rated current	A	15	15	30	10
Minimum fuse	A	18	18	35	12
Water connection		G1''			
Unit dimension	mm	460*235*660			
Net weight	kg	32	35	36	38
Gross weight	kg	35	38	39	40

* Above data may be modified without notice.

DIMENSION

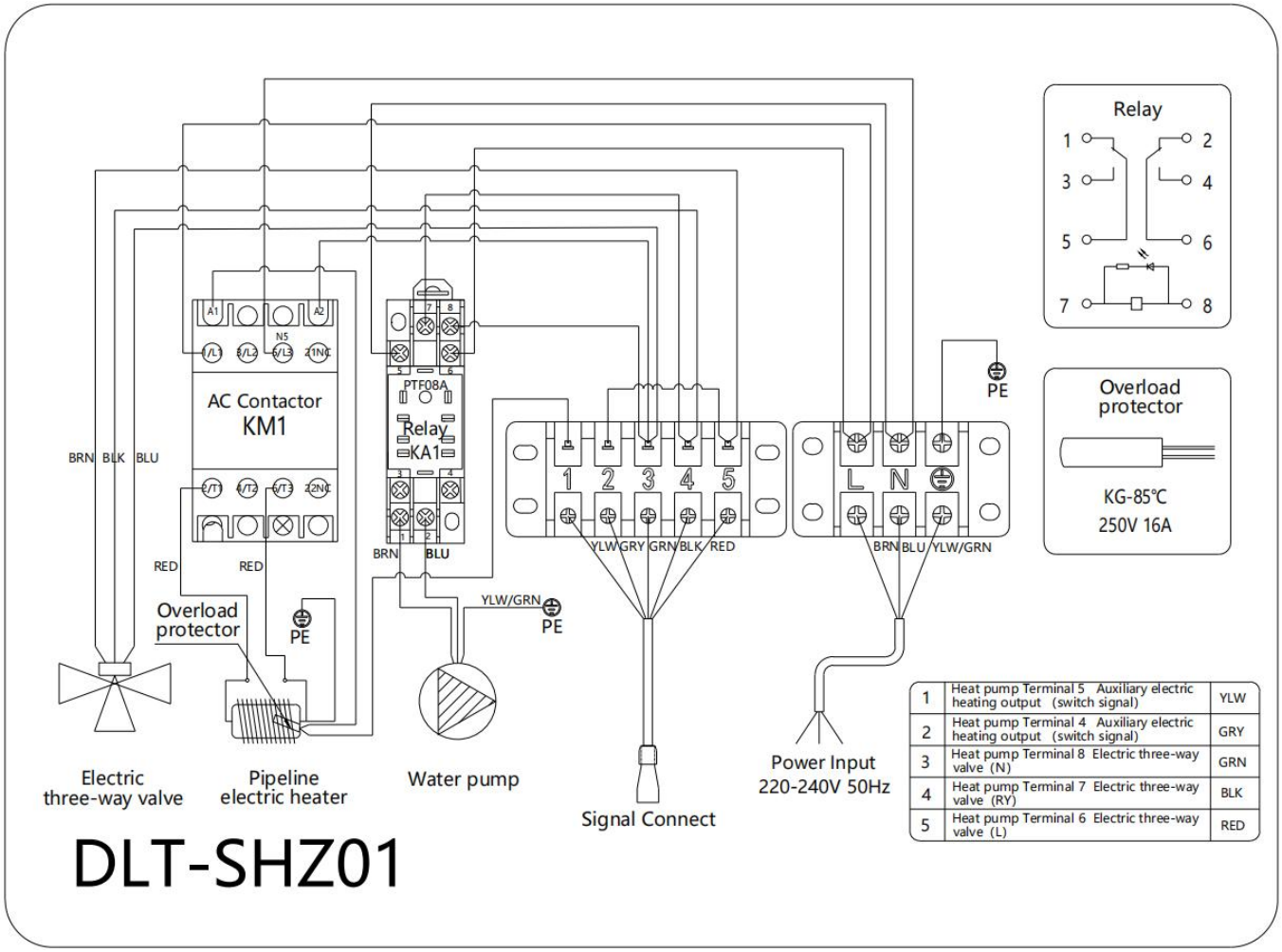
Model: WD-17/WD-25/WD-25S/WD-25ST



Unit: mm

ELECTRICAL DIAGRAM

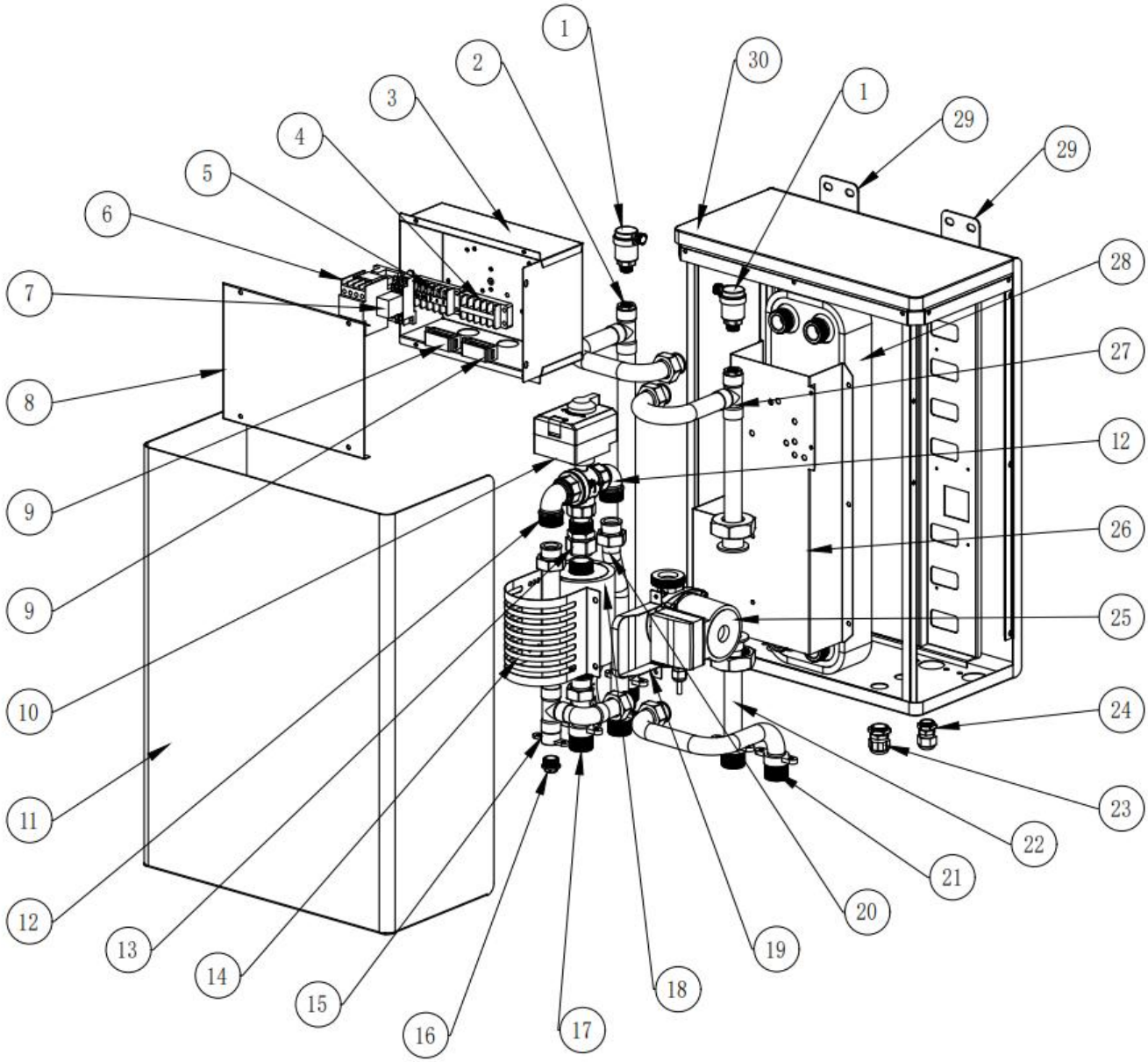
Model: WD-17/WD-25/WD-25S/WD-25ST



1	Heat pump Terminal 5 Auxiliary electric heating output (switch signal)	YLW
2	Heat pump Terminal 4 Auxiliary electric heating output (switch signal)	GRY
3	Heat pump Terminal 8 Electric three-way valve (N)	GRN
4	Heat pump Terminal 7 Electric three-way valve (RY)	BLK
5	Heat pump Terminal 6 Electric three-way valve (L)	RED

EXPLORED VIEW

Model: WD-17/WD-25/WD-25S/WD-25ST



WD-17					
NO.	ERP	PART NAME	NO.	ERP	PART NAME
1	120000126	Exhaust valve	16	102050475	Plug
2	113560038	Pipe	17	113300008	Pipe
3	180230006	Electric control box	18	142000191	Electric heater
4	115000075	Power terminal	19	180230004	Water pump fixing strip
5	115000076	Power terminal	20	113180036	Pipe
6	104000002	AC contactor	21	113560037	Pipe
7	142000060	Relay	22	113580001	Pipe
8	180230007	Electric control box cover	23	110000012	Cable Connector
9	136010004	Clamps	24	110000009	Cable Connector
10	120000130	Electric three-way valve	25	107000044	Water pump
11	180230008	Front panel	26	180230003	Plate replacement fixed plate
12	136020214	Pipe	27	113280007	Pipe
13	102050474	Pipe connection	28	102030036	Plate heat exchanger
14	180230005	Electric heating fixed plate	29	180230002	Hanging board
15	113180037	Pipe	30	180230001	Back panel

WD-25					
NO.	ERP	PART NAME	NO.	ERP	PART NAME
1	120000126	Exhaust valve	16	102050475	Plug
2	113560038	Pipe	17	113300008	Pipe
3	180230006	Electric control box	18	142000191	Electric heater
4	115000006	Power terminal	19	180230004	Water pump fixing strip
5	115000076	Power terminal	20	113180036	Pipe
6	104000002	AC contactor	21	113560037	Pipe
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8	180230007	Electric control box cover	23	110000012	Cable Connector
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11	180230008	Front panel	26	180230003	Plate replacement fixed plate
12	136020214	Pipe	27	113280007	Pipe
13	102050474	Pipe connection	28	102030037	Plate heat exchanger
14	180230005	Electric heating fixed plate	29	180230002	Hanging board
15	113180037	Pipe	30	180230001	Back panel

WD-25S					
NO.	ERP	PART NAME	NO.	ERP	PART NAME
1	120000126	Exhaust valve	16	102050475	Plug
2	113560038	Pipe	17	113300008	Pipe
3	180230006	Electric control box	18	142000192	Electric heater
4	115000006	Power terminal	19	180230004	Water pump fixing strip
5	115000076	Power terminal	20	113180036	Pipe
6	104000002	AC contactor	21	113560037	Pipe
7	142000060	Relay	22	113580001	Pipe
8	180230007	Electric control box cover	23	110000012	Cable Connector
9	136010004	Clamps	24	110000009	Cable Connector
10	120000130	Electric three-way valve	25	107000044	Water pump
11	180230008	Front panel	26	180230003	Plate replacement fixed plate
12	136020214	Pipe	27	113280007	Pipe
13	102050474	Pipe connection	28	102030037	Plate heat exchanger
14	180230005	Electric heating fixed plate	29	180230002	Hanging board
15	113180037	Pipe	30	180230001	Back panel

WD-25ST					
NO.	ERP	PART NAME	NO.	ERP	PART NAME
1	120000126	Exhaust valve	16	102050475	Plug
2	113560038	Pipe	17	113300008	Pipe
3	180230006	Electric control box	18	142000192	Electric heater
4	115000006	Power terminal	19	180230004	Water pump fixing strip
5	115000076	Power terminal	20	113180036	Pipe
6	104000002	AC contactor	21	113560037	Pipe
7	142000060	Relay	22	113580001	Pipe
8	180230007	Electric control box cover	23	110000012	Cable Connector
9	136010004	Clamps	24	110000009	Cable Connector
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13	102050474	Pipe connection	28	102030037	Plate heat exchanger
14	180230005	Electric heating fixed plate	29	180230002	Hanging board
15	113180037	Pipe	30	180230001	Back panel

MAINTENANCE

If there are quality problems or other problems with the product you purchased, please contact your local after-sales service center.

The warranty must meet the following conditions:

The first start-up of the unit must be carried out by professionals from our company’s after-sales service center or designated company.

The unit operation and maintenance matters specified in the instruction manual should be strictly followed.

If any of the above conditions are breached, the warranty will automatically become void.

Electrical products should be properly disposed of. Please recycle where facilities exist. Check with your local authority or retailer for recycling.

ZEALUX Romania

Turnu Magurele 270D Bucharest

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