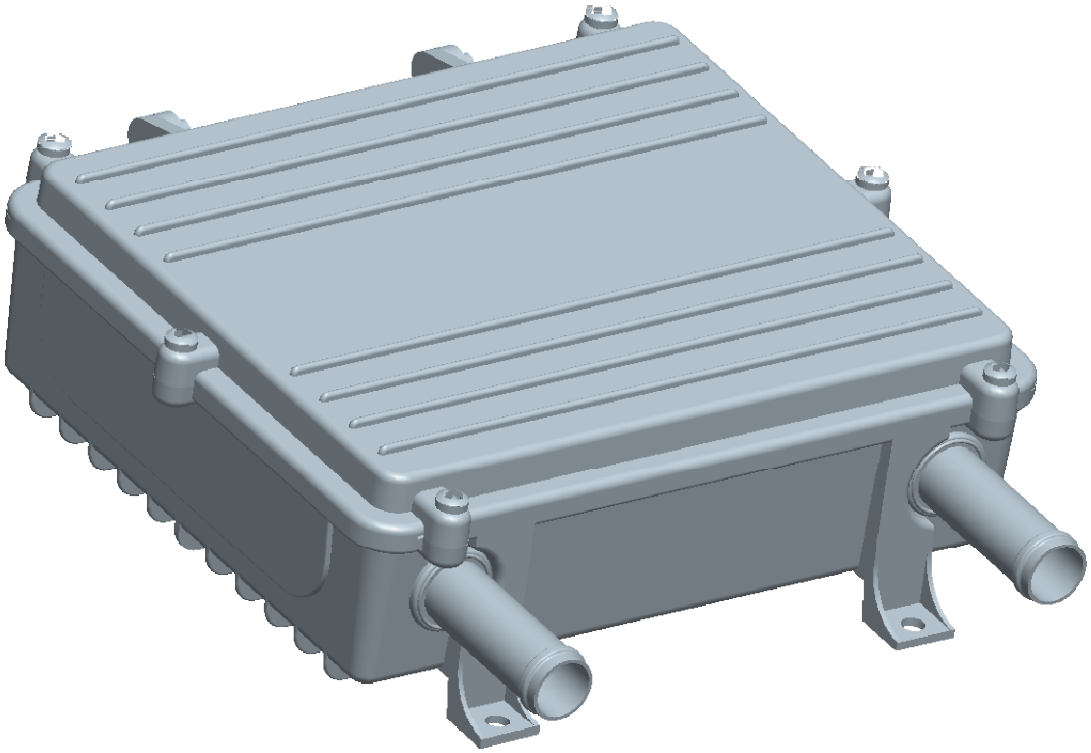


Product introduction of pure electric water heating heater

Instructions

Pure electric water heating heater 20kw-600v DC

Instructions

1. Repair and maintenance

Due to the high integration of products, unpacking inspection is not allowed without the permission of the manufacturer. The manufacturer must send electrical personnel with corresponding qualifications to operate and repair

Before any maintenance work, especially maintenance work, the equipment must be disconnected from the power supply.

The heater must be overhauled at least once a year to ensure that there are no electrical defects in the control system. Local mandatory regulations must be observed.

Water first, then electricity. In any case, the heater is not allowed to dry burn in the air, because it may damage the internal components!

In any case, do not open the box. Even for the purpose of inspection, it may damage the internal precision electronic components.

Only original genuine accessories are allowed for maintenance and replacement to ensure the normal and safe use of the heater.

Measure the current of the electric heater to ensure that all heaters operate normally. The current should be within 33a ± 10%.

1.1 before the vehicle is started, the heater button shall always be off.

1.2 after the vehicle is started, wait for the current to be stable before starting the heater to avoid multiple functions in the vehicle ringing the vehicle with a movie.

1.3 the radiator needs to be opened to operate the heater. The heat of the heater heating coolant cannot be discharged, which may affect the service life of the heater.

2. Fault analysis

If the electric heater fails, a qualified engineer shall cooperate with the manufacturer to determine the cause of the failure. The heater can be restarted only after the error is eliminated.

Any troubleshooting and maintenance work must be carried out by a qualified electrician and ensure that the heating equipment has been disconnected in all cases.

Note: damaged or faulty accessories must be replaced with original accessories.

In case of abnormal conditions, such as abnormal overheating, the heater will trigger the overheating protection switch and interrupt the heating after reaching 90 ℃. To reset, you must restart the pure electric water heater. In re

Before starting the heater, you must check the cause of any possible damage or fault and eliminate the fault.

3. Operation

The control mode of pure electric water heating heater is mainly divided into ship type switch control and digital display temperature control panel control. The ship type switch control mode is convenient and easy to install, and the heater will work according to the established procedure. The digital display temperature control panel can accurately control the temperature in the carriage through the supporting control panel.

Selection of supporting harness. The shorter the control line, the better, so as to ensure that the voltage will not drop too much. The maximum length is 10m and the cross section is at least 1.5mm ². If longer wires must be used, relays need to be added to the line to disperse the circuit power and limit the length.

At the beginning of design, considering the different needs of users, customers can decide the matching high and low voltage connectors. But must meet

High voltage plug: over current higher than 45A,

The cross section of matched high-voltage cable shall be at least 6mm ².

Low voltage plug: 6pin connector

The cross section of the matched low-voltage cable shall be at least 1.5mm ².

Figure 1: example of ship type control switch

3.1. Selection of ship type switch control mode

A ship type switch with indicator light can be configured to feed back the signal that the heater has worked normally to the driver. The switch carrying current must reach 1.5A.

If the operation display is integrated into the external circuit control, it must require a maximum current of 250mA and a voltage range of 18 to 30V.

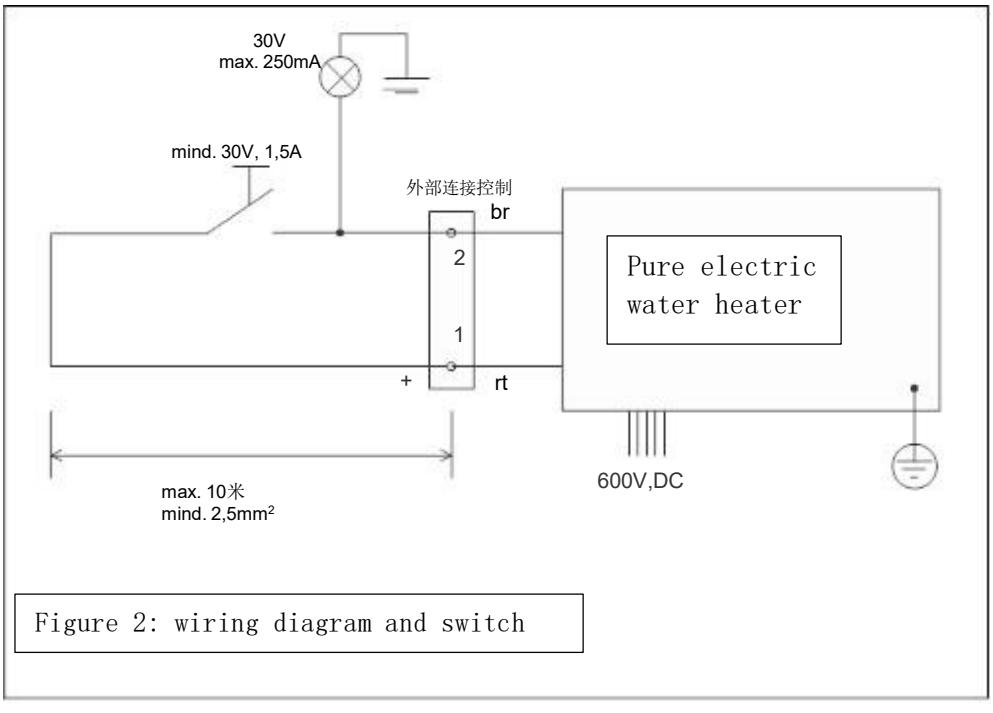


Figure 2: wiring diagram and switch

3.2 main circuit voltage start

警告!	高压危险！谨慎操作！

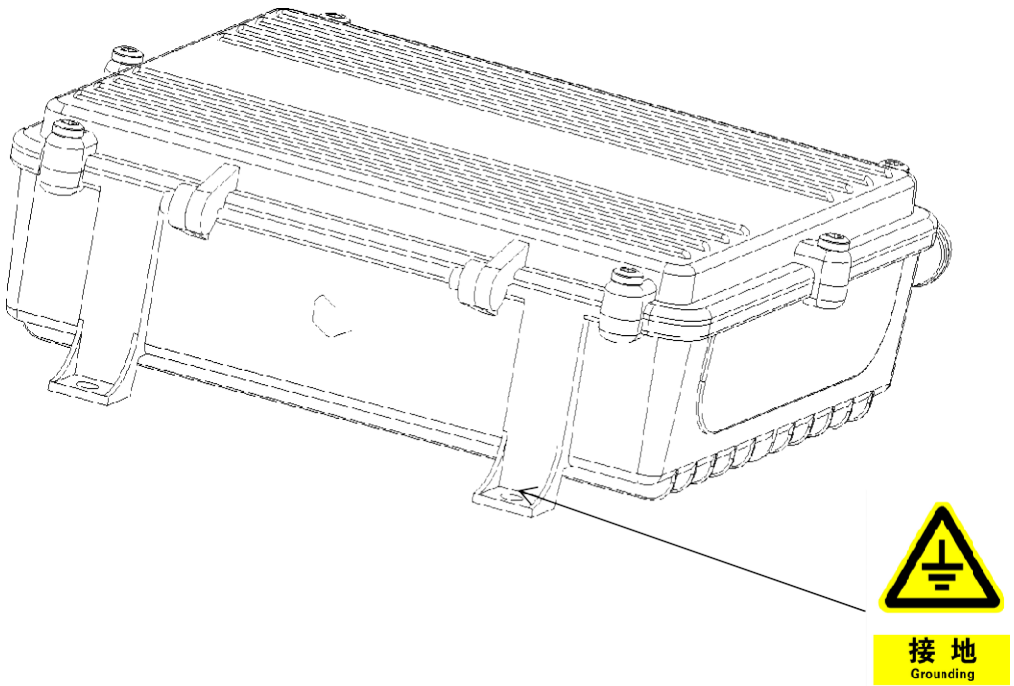
Pure electric water heating heater is controlled by low pressure. If the low pressure is not powered on, the heater will not work. If the control line is bridged, the heating system will be started after receiving the signal under the working voltage of 600V.

When bridging the high-voltage plug-in, please pay attention to safety and operate carefully. Be sure to operate in the power-off state. Before the high-voltage connector is connected, the dust cover shall be used for insulation treatment.

When selecting the wiring harness, we need to pay attention to the calculation of overload current. The current of the three products we mainly promote is about 30A. Considering that the electric heater has at least 1.5 times the impulse current, 6mm is recommended for the selection of cables ² Special high voltage EV wire for electric vehicle. If electromagnetic shielding is required, shielded connectors and shielded cables can be configured.

3.3 grounding

The grounding cable shall be 2.5mm ² For the above copper wires, one end of the grounding wire shall be equipped with an M8 ot terminal, which shall be locked on the designated mounting foot with fixing screws.



4. Circulating water pump

In order to start correctly, the antifreeze must be fully circulated before the heating equipment is operated.

The flow of water through the pure electric water heater must exceed 1500L per hour,

The whole system must be in cycle state.

The circulating water pump is not directly controlled by the heater, but separately controlled by the whole vehicle.

5. Switching critical temperature

Upper temperature limit: 85 ° C lower temperature limit: 68 ° C

6. Installation of heater and important parts

6.1. install

1. Local laws and regulations must be observed.
2. The installation scheme of heater shall be guided by the manufacturer
3. Do not pull high-voltage or low-voltage cables (the following operations are strictly prohibited, such as pulling the conductor to lift the whole heater)
4. When selecting the installation position of heater and circulating pump, it is necessary to fundamentally avoid the damage from any pollutants such as oil stain, tail gas and water stain
5. It is strictly prohibited to disassemble any parts without permission. In case of violation, the manufacturer will not bear any after-sales responsibility of this batch.

The antifreeze and its circuit system will reach a high temperature after using the heater. Therefore, pay attention to the risk of scald:

1. For the assembly of water parts and their fasteners, attention should be paid to the scalding of people or animals caused by hot water sputtering or high temperature

2. When repairing or treating the components in the water circulation loop, pay attention to turn off the heater first, ensure that the high temperature has subsided, and wear high temperature resistant gloves if necessary.

◦

Installation position

The installation position should be determined according to the specific vehicle model.

The water pump shall be integrated with the heater and installed at the water inlet of the heater.

The installation position of the heater should be lower than that of the water pump, which can not only make the water circulation more smooth, but also ensure the fluidity of the loop as much as possible when the water pump stops due to fault.

The heater shall be installed in the ventilated space of the vehicle as far as possible, and the temperature shall not be lower than + 85 ℃ if installed in the engine compartment

6.1. Connection to vehicle cooling system

The heater shall be installed in the vehicle cooling cycle circuit according to the reference. The antifreeze remaining in the whole circulating system shall be kept at least 25L. In the circulation circuit where the heater is located, antifreeze of regular brand shall be used. Poor antifreeze will accelerate the corrosion of the inner cavity of the heater due to high temperature and shorten the service life of the heater.

Heater damage caused by scaling, blockage and cavity corrosion caused by poor antifreeze will be excluded from the warranty.

Hoses that at least comply with din73411 must be used. The hose shall be laid without kinks to prevent air from entering the connection position of the heater. The heater must be installed below the lowest water level of the circulating water circuit, and it should be repeatedly confirmed whether the clamp is locked firmly to prevent slipping.

be careful! The clamps must be tightened to the specified tightening torque!

Whether in the vehicle cooling system or in a separate heating circuit, a safety relief valve with a maximum opening pressure of 2bar must be used.

The installation of heater and pipeline must consider the exhaust of air.

When there is residual air in the loop, turn on the heater, there will be noise in the loop, and the air may also lead to overtemperature protection of the heater and stop heating.

be careful! Before commissioning the heater, confirm that the water pipe, water pump and heater must be completely filled with antifreeze. Only use regular brand antifreeze!

6.2. Installation of water pump

When connecting the water pump, it is necessary to ensure that the connecting hose is free of stress.

The heater and digital display temperature control panel do not directly control the water pump. When in actual use, users should first turn on the water pump for 2-3 minutes, and then turn on the heater for heating. Prevent the heating speed from being too fast, resulting in excessive pressure in the inner cavity of the heater and affecting the service life. When the heater is turned off, the water pump can continue to work for 2-3 minutes to take away all the heat in the inner cavity of the heater.

Good usage habits can effectively prolong the service life of the heater.

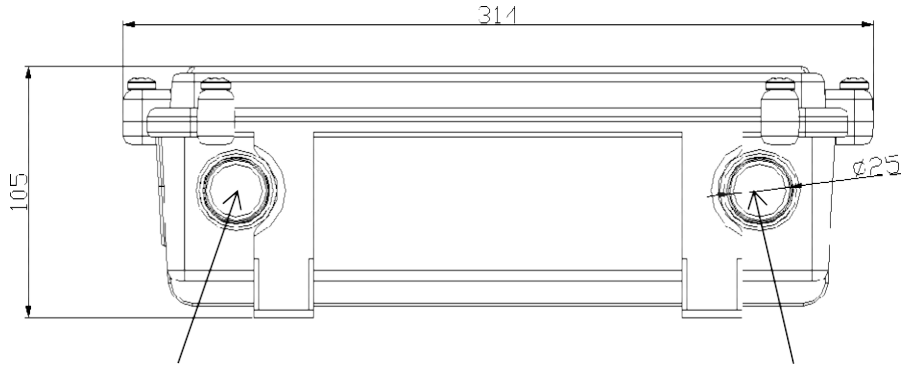


Figure: heater installation dimensions

1. Coolant inlet
2. Coolant outlet