Installation and operation instructions

CHARGHING PORT HEATER LIDAID



Qeino

Instructions for Installation and Use of the Device

General
LidAid is a microcontroller-driven heater designed for electric vehicle charging ports that prevents the port from freezing in winter. With the instructions in this document, installation can be easily performed by yourself. You will need a soldering iron, solder, and a heat gun for the installation. Alternatively, you can contact a qualified service center for assistance. Each unit is tested at the factory. The 6-month warranty does not cover damage caused by improper installation. Qeino Oy is also not responsible for any damage that results directly or indirectly from the use of the device. The device has been tested in practice and found to be effective even in severe frost.

Usage of the Device
The device is designed to operate independently. The heater consumes approximately 20 watts of power, depending on the external temperature. If the device is left on for an extended period and the vehicle is not driven daily, we recommend using a 12-volt battery charger. The controller draws power from the vehicle's own 12-volt battery. The controller features a temperature regulator. The heating element's efficiency can be adjusted between 45 to 65 °C. The minimum setting is usually sufficient to keep the port clear of ice.

Installation and Maintenance
If you have sufficient expertise, you can install the device yourself. Install the device so that the wires are oriented downward to prevent dirt and rainwater from entering the device through the wires. If necessary, contact a qualified vehicle electrical service company to perform the installation according to the instructions in this document. If the device becomes dirty, clean it by wiping the surface with a damp cloth. There are no user-serviceable parts inside the device.

Disposal of the Device
LidAid meets European Union environmental requirements. The device should be delivered to an electronics recycling company or another electronic waste collection point when it is no longer in use. The device must not be disposed of with regular household waste.

Recycling of Packaging
The plastic in the packaging is LD polyethylene. The best way to recycle the plastic is to take it to a plastic recycling point. The packaging box is made of recyclable cardboard.





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Important information before installation

- The device is designed for electric vehicles to keep the charging port mechanism from freezing in winter. ·
- The device operates automatically after installation.
- The heating power is adjustable continuously within the range of +45 to +65 degrees Celsius.
- The device stops heating when the outside temperature is above 4 degrees Celsius.
- The heater utilizes the car's own 12-volt battery, which requires the battery to be in sufficiently good condition for heating. The power consumption is equivalent to approximately continuous consumption of one 21W bulb.
- We recommend using a 12-volt battery charger with the device, although its use is not essential.

Parts list

- Controller
- Mounting straps 2 pcs
- Small cable ties 8 pcs
- Temperature sensors 2 pcs
- Heating element 50W
- Installation and operating instructions

Technical information

- Operating voltage: 12–16 VDC
- Standby current: 40 mA
- Operating temperature: -30 . . . + 85 C
- Dimensions of the housing: 125 x 80 x 32 mm

Operating principle

The LidAid1 charging port heater is designed to keep the electric vehicle's charging port from freezing in winter. The device features two NTC sensors, one of which monitors the outdoor temperature, while the other controls the heating element, keeping it at the desired temperature. For detailed instructions, refer to the "device usage" section.

Mounting the device

1. **Install the device:** Mount the controller in a suitable location within the engine compartment of the car and secure it in place using the provided cable ties. Install the controller in a location where you can easily turn the device on and off.
2. **Install the wires:** Refer to the "wire installation" section for detailed instructions.
3. **Route the wires:** Route the wires through suitable areas of the car's engine compartment, ensuring they do not meet moving parts such as the fan. Shorten the wires if necessary to the appropriate length, or coil up any excess wire and secure it in place to prevent the wires from contacting moving parts of the engine.

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Connecting wires and sensors

Connect the wires from the device using the included Abiko connectors and soldering iron. The controller's wires are connected to the car's electrical system as follows:

- Red: Battery +12V
- Black: Ground (Battery negative terminal or chassis)
- Blue: Heating element
- Route the two blue wires controlling the heating element through the water drain located at the bottom of the charging port. Use the same hole for the sensor that goes to the heating element. The sensor wire is marked with red insulation tape. Use a soldering iron to solder the blue wires to the ends of the heating resistor, one wire to each soldering lug. Attach the sensor marked with red to the heating resistor and enclose the wire coming from the element and resistor with shrink tubing, heating the shrink tubing with a heat gun, for example. Position the heating element so that the charging port closes effortlessly. Use cable ties to secure the wires from the controller to suitable locations where they won't come into contact with moving parts of the car.
- Install the outdoor temperature sensor on the front bumper or another location where the engine heat has minimal impact on it. Use small cable ties for securing.

Using the device

The controller cover features a toggle switch for turning the device on and off. There are two indicator lights on the controller. The green light indicates that the device is on. The red light indicates that the heating element is active. The red light turns off when the controller temporarily switches off the heating. The heating starts and stops periodically depending on the set temperature. You can adjust the heating power from the knob on the controller and select a temperature between +45 to +65 degrees Celsius. In temperatures below -10 degrees Celsius, a setting of +45 degrees Celsius has been found to be sufficient according to the test. In colder weather, you may need to increase the temperature setting.

Note that higher temperatures consume more of the car's battery. The battery recharges while driving, but prolonged use of the heater (several days) will deplete the battery's charge. If the car is parked for several days, it's advisable to turn off the heater because in extreme cold weather, the battery's ability to provide power diminishes. A discharged battery may prevent the car from starting. LidAid's power consumption is approximately 20 Watts at 10 degrees below zero Celsius, but power consumption also depends significantly on the outdoor temperature. In a fully charged and well-maintained 75 Ah battery, there's enough power for 900 Watt-hours, so at a power of 20 Watts, the heating element can be used for a maximum of two days. We recommend using a battery charger if the car needs to be parked for an extended period while LidAid is simultaneously in use. The device operates best when the car is used daily because the battery has time to recharge. However, note that short drives may not sufficiently charge the battery. The distance driven should be at least 20 km, or preferably half an hour, to allow the battery to fully charge during driving.

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