

User manual

The Voltage Guard is a vital part for a mobile installation. It increases the battery life. It has low voltage, high voltage and overload protection. Low voltage detection can easily be adjusted by a rotation switch. This way any type of (lead acid) battery can be protected against deep charge. The over voltage protection protects your costly devices against to high voltages.

The Voltage Guard can easily be used as a main switch. This can be achieved by connecting a panel switch between the ground (-) and the switch connection. The main switch function cannot be used when this switch is not connected. In this case the Voltage Guard operates as a Voltage Guard only.

The status of the Voltage Guard is displayed by the three color status led. A self test is done and the voltage of the installation is detected when the battery is connected. In this case the status led will flash in the following pattern: red -> orange -> green. During this detection one beep will be produced.

Explanation status led

- Green:** The battery voltage is ok. The output is switched on.
Green flash: Four times a minute, optional panel switch closed and the consumers are switched off.
Orange: The battery voltage is lower than the set point. After 30 seconds the output will be switched off.
Red: The output is switched off. The cause can be: low voltage, high voltage or overload.

Explanation alarm situations

Low voltage

The status led is lit orange if the battery voltage is lower than the set point. Does the voltage stay lower than the set point for over 30 seconds, the output will switch off. The status led is lit red. Once in 10 seconds a three tone acoustic signal with a long interval is generated. The output will be switched on when the battery is charged and reaches *undervolagesetting*+1,5V at 12V and *undervolagesetting*+3V at 24V. This can also be done by switching the optional panel switch off an on.

High voltage

The output will switch off when the battery voltage is higher than 15,5V / 31V, the led is lit red. Once in 10 seconds a three tone acoustic signal with a medium interval is generated.

Overload

The output will switch off when the Voltage Guard is overloaded for a long time. The status led is lit red and once in 10 seconds a three tone acoustic signal with a short interval is generated. The housing can be warm.
The output will switch on when the housing is cooled down.

Low voltage setting

The low voltage setting can be adjusted by the rotate switch. The numbers are corresponding with the table on the front of the Voltage Guard. Adjusting can be done with a small screwdriver. The low voltage protection can be switched off by selecting the '0', '8' or '9' position. In this way the battery can be discharged further.

Voltage Guard as main switch

If a panel switch is connected the main switch function can be used. The output is turned off when the switch is closed. The status led is off and flashes green four times a minute.

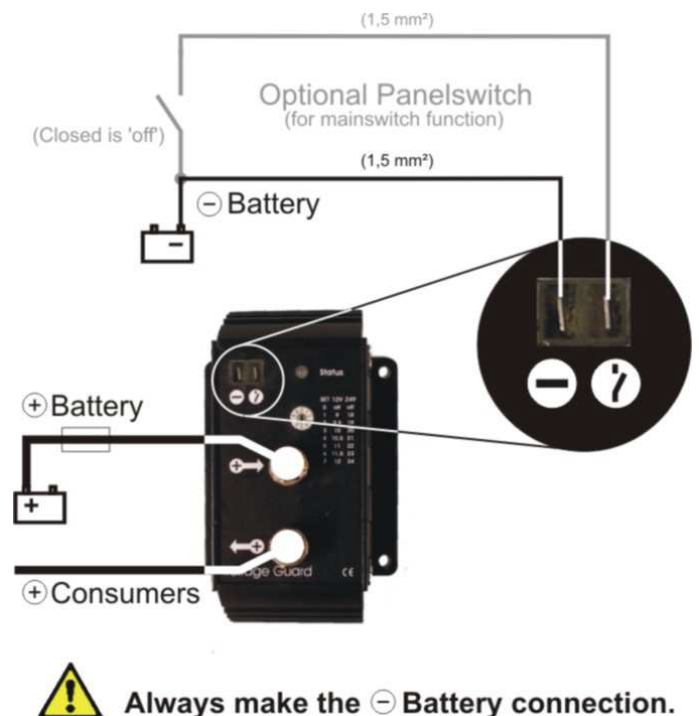
The normal Voltage Guard function is activated when the switch is opened. Normally in this case the status led is lit green and the output is switched on but this is depending on the status of the battery and Voltage Guard self.

Installation

Install the Voltage Guard on a solid surface. Use reliable terminals to avoid bad connections. Fasten the bolts tightly but not overtighten them. Connect the Voltage Guard according to the wiring diagram as shown below. Connect the ground terminal via a 'faston' connector with the ground of the installation. Make the connection between the  terminal and the + of the system. Connect the consumers to the  terminal.

Make sure the wiring has the appropriate size and the  is fused with the right value!!!

Make the next connections when the main switch function will be used. Connect one side of the switch contact to the switch connection on the Voltage Guard. And connect the other side to the ground (-) of the installation.



Safety measures

- Use wiring with the appropriate size. Use the right fuse in wiring.
- Mount the Voltage Guard in a dry and ventilated place.
- Never use the Voltage Guard at locations where there is danger of gas or (dust)explosion.
- Make the connections and protections according to the locally applicable regulations.
- Check once a year the wiring and connections and repair the faults.
- The manufacturer can not be held responsible for damage resulting from the use of the Voltage Guard.

The guaranty period is one year.