

Voltage Guard 70

12/24V battery protector.



The Voltage Guard is an important part in a mobile installation. It increases the battery life. It provides a low voltage, high voltage and overload protection. A VoltageGuard can also be used as a battery main switch.

The low voltage protection level can easily be adjusted. This way any type of 12V or 24V (lead acid) battery can be protected against deep discharge. The overvoltage protection protects your devices against high battery voltage.

The status of the VoltageGuard is indicated by a buzzer and a three colour LED.

Installation

Install the Voltage Guard on a solid surface and in a dry and well ventilated place. Never use the Voltage Guard at locations where there is danger of explosive gas. Make the connections and protections always according to local regulations. Use reliable terminals to avoid bad connections. Fasten the bolts tightly but not over tighten them. Use wiring with the appropriate size. Make sure the battery is fused with the right value. This fuse can be 70A maximum, limited by the Voltage Guard.

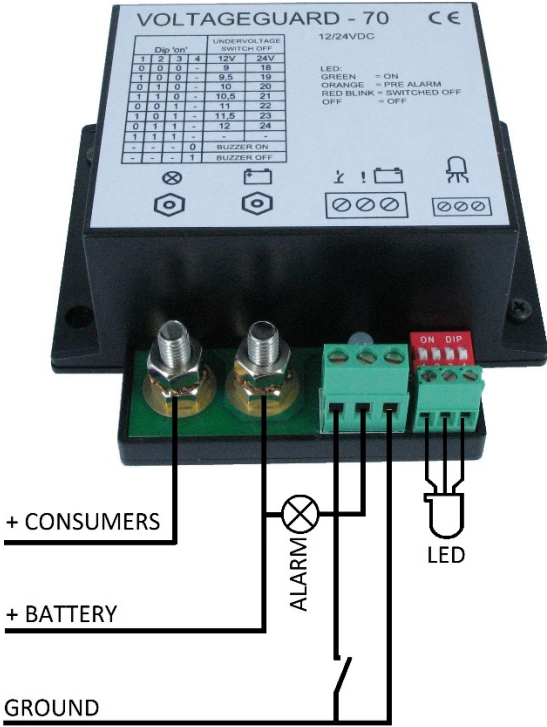
Connect the Voltage Guard according the wiring diagram as shown below.

Standard:

- Connect the □ terminal to the ground of the installation.
- Connect the □ terminal to the positive pole of the battery.
- Connect the ⊗ terminal to the consumers + terminal.

Optional:

- Connect the ⚡ terminal to a switch to ground to use main switch function.
- Connect the ! terminal to an external alarm. This signal switches to ground in case of a low battery. (maximum alarm load 1A)
- Connect the 1 1 terminals to an external three colour LED if desired.



Low voltage cut-off setting

The low voltage setting can be adjusted by the switches according to the table below or on the front of the housing. The Voltage Guard is permanently switched on when switches 1, 2 and 3 are in on position. In this case the low voltage protection is disabled. But please note, the Voltage Guard only works between 8VDC and 31VDC.

Use switch 4 to enable or disable the internal buzzer. The buzzer is enabled with the switch in on position.

VoltageGuard DIP switch settings											
DIP on				Lowvoltage switch off		prealarm		Lowvoltage switch on			
1	2	3	4	12V	24V	12V	24V	12V	24V		
0	0	0	-	9	18	9,5	19	10,5	21		
1	0	0	-	9,5	19	10	20	11	22		
0	1	0	-	10	20	10,5	21	11,5	23		
1	1	0	-	10,5	21	11	22	12	24		
0	0	1	-	11	22	11,5	23	12,5	25		
1	0	1	-	11,5	23	12	24	13	26		
0	1	1	-	12	24	12,5	25	13,5	27		
1	1	1	-	-	-	-	-	-	-		
-	-	-	0	internal buzzer on							
-	-	-	1	internal buzzer off							

Power up

When the power is supplied to the Voltage Guard an internal self test is done. At this moment the Voltage Guard determines the nominal system voltage. In this situation the status LED will flash once red-green and a beep can be heard.

At a power up voltage below 16V, the Voltage Guard sets to 12V system voltage. If the power up voltage is higher than 16V, the Voltage Guard sets to 24V system voltage.

Using the Voltage Guard as a main switch

If a panel switch is connected according to the drawing, the main switch function can be used. The output is turned off when the switch is closed. The status LED is off and flashes four times a minute. The normal Voltage Guard function is activated when the switch is opened. Normally in this case the status led is green and the output is switched on. Depending on the battery voltage the led status can be different.

Without using the switch input, the Voltage Guard will function as a low voltage protection for your batteries.

Explanation status LED

Green:	The battery voltage is ok. Output is switched on.
Green blinking:	Flashing four times per minute, optional panel switch is closed and the consumers are switched off.
Orange:	The battery voltage is lower than the set pre-alarm
Red blinking:	Output is switched off because of high or low voltage, or an overload was detected.

Buzzer

The internal buzzer sounds by variable intervals before reaching the shut off point. The interval between the sounds will be shorter with every repetition. Pauses between alarm pulses: 600s - 300 s - 150s - 75s - 38s - 19s - 9s

Technical specifications

Current (continuous / peak)	:	70 / 140 ADC
System voltage	:	12 or 24 VDC
Input voltage range	:	8 - 31 VDC
Dimensions (l x b x h)	:	100mm x 89.2mm x 43mm
Weight	:	210 grams
Low voltage setting 12V	:	9 - 12 VDC
High voltage setting 12 V	:	15,5 VDC
Low voltage setting 24V	:	18 - 24 VDC
High voltage setting 24 V	:	31 VDC