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Voltage Guard – 70

The best solution to protect your battery against :

Deep discharge
Overvoltage
Overload

Presentation

The voltage guard protects your battery in order to increase its duration life.
It provides a constant low voltage, overvoltage and overload protection.

When you battery reaches the pre-set low voltage the voltage guard will disconnect automatically the DC consumers.
DC consumers will be switched on again automatically when battery voltage increases and when defined threshold is reached.
The system will operate the same say way for over-voltage.

Low voltage threshold can be selected from external DIP switches. The over-voltage value is fixed.

The system can be used as manual main switch. The output is turned off when the switch is closed.
In this mode the voltage guard will only operate as battery low voltage protector.

The voltage guard has an integrated buzzer and LED to monitor its operating state.

It is compliant with all Lead battery types : wet, sealed, gel, AGM, Calcium, etc.

Installation

The voltage guard has to be installed on a solid surface and in a dry and well ventilated place.

Never use the voltage guard where there is any danger of explosive gas.

Connection and possible additional protections shall be made in compliance with local and concerned application regulations.

Appropriate terminal shall be used to avoid bad connection.

Fasten the bolts tightly but not over tighten them.

Use wiring with the appropriate diameter.

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.

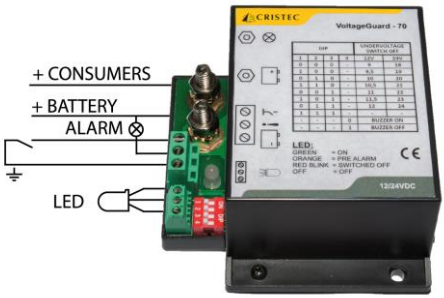
Standard :

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 terminals to an external three colour LED if desired.



Low voltage cut-off setting

The low voltage setting can be adjusted by the dip switches according to the table below. The voltage guard is permanently switched on when DIP switches 1, 2 and 3 are on. In this case the low voltage protection is disabled. The voltage guard works only between 8VDC and 31VDC. Use DIP switch 4 to enable or disable the internal buzzer.

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 itself to 12V system voltage. If the power up voltage is higher than 16V, the voltage guard sets itself 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 lid 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 just function as a low voltage protection for your battery.

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 prealarm.
Red blinking : Output is switched off because of high or low voltage or overload.

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

Rated current (constant) : 70 A
Max current (10s @ 20C°) : 140 A
Voltage : 12 and 24 VDC
Input voltage range : 8 - 31 VDC
Consumption : > 2mA (LED Off)
Presentation : Plastic housing with external fixings – IP51
Connection : on threaded roads
Dimensions (l x h x e) : 100 x 89.2 x 43 mm
Weight : 0.21 Kg
Operating temperature : from -10°C to +60°C
Storage temperature : from -20°C to +85°C
12V low voltage adjustment : 9 - 12 VDC
12V overvoltage threshold : 15.5 VDC
24V Low voltage adjustment : 18 - 24 VDC
24V overvoltage threshold : 31 VDC