BATTERY GUARD

SAMLEX EUROPE® B.V.

Intelligent Battery Guard

Model No.

BG – 40
BG – 60
BG – 100
BG – 200

Owners Manual

Please read this manual before operating your Battery Guard

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Read the owners manual carefully before installing the BG!

DESCRIPTION

The Battery Guard BG40/60/100/200 (hereafter BG) is an intelligent, fully waterproof, battery guard with expansion capabilities for an on/off switch, alarm buzzer or relay and our Battery Watch (not supplied). To ensure low losses, the BG is provided with two screw terminals, one Input+ and one Output+. The rest, like the minus and the accessories are connected via four 6.3 mm faston connectors. The LED indicates the output status (on/off) of the BG and in the programming mode the LED indicates the program position. The BG is provided with an 'Automatic board system detection' with which the BG automatically detects what the battery voltage (12V or 24V) of the system is, so that it does not need to be set manually. Both under and reset voltage thresholds can be easily programmed.

INSTALLATION

Mount the BG on a cooling (metal) surface so that it can release the developed heat. Connect the BG as close as possible to the battery (maximum distance: 50cm). Only in this way can the voltage be monitored exactly. Any programming of the BG must take place before the equipment (users) can be connected. For the minus connection use a cable of 1.5 mm2 which goes directly from the battery to the BG and do **not** use this connection for anything else.

Warnings:

- The product should only be connected by skilled fitters / mechanics, who are aware of the regulations for working with high battery voltages.
- Live parts must not come into contact with the housing of the BG.
- Use of bad material and / or too thin wires can damage the BG.
- A short circuit between the positive and negative terminals of the battery may cause severe damage to your system.
- Always use fuses (of the correct value).

OPERATION

In the standard programming (position 11 in the "Configuration Table") a buzzer may be connected to the alarm output. This will sound an alarm after 15 seconds when there is undervoltage. If the situation does not change, the BG will turn off attached devices after 75 seconds and the alarm will be switched off. Since with overvoltage there is a risk of damage to the connected equipment this will be switched off immediately when there is overvoltage (16/32V) and the alarm output will pulsate. This is done to distinguish between an undervoltage alarm and an

overvoltage alarm. A second application is to connect a relay to the alarm output. The BG must then be programmed in position 12 (see “Programming”). The relay will switch on during an alarm and only switch off when reaching the reset value of the undervoltage. The relay can thus be used to activate a charger or generator.

Remote ON / OFF

You can connect a switch to the OFF terminal of the BG. If the OFF terminal is connected to the Minus the BG will immediately switch off the attached devices. If the switch is opened again, the BG will switch on again after about 1 seconds. Since the current through the switch is zero (<10mA) a small switch can be used.

Battery Watch (optional)

As can be seen in the connection diagram, there may be an optional Battery Watch connected. This is a simple battery status monitor which, by means of 3 LEDs, indicates the status of the battery. Please contact your dealer.

PROGRAMMING

To start the programming mode a connection must be made between the ProgramInput and Input+. The LED will flash. The number of flashes indicates the program position (see table) that the BG is in. As soon as the desired program position is reached the connection (between the ProgramInput and the Input+) must be broken. As confirmation the BG will repeat the number of flashes. If it does not match your selection, you can repeat the steps.
There are two types of settings that can be applied. Positions 1 to 10 adjust the threshold and reset values for an under voltage alarm and the operation of the alarm can be set with positions 11 and 12. These settings must be made separately (one after another).
When removing the battery voltage the programmed positions remain retained.
Once the programming is complete, the equipment can be connected. First disconnect the battery connection, connect the equipment to the Output+ and then reconnect the battery.

Note:

- Before programming first disconnect the equipment from the BG.

CONFIGURATION TABLE

12 Volt mode			24 Volt mode		
	undervoltage	reset		undervoltage	reset
Position 1*	10.5V	12V	Position 1*	21V	24V
Position 2	10V	11.5V	Position 2	20V	23V
Position 3	9.5V	11.5V	Position 3	19V	23V
Position 4	11.25V	13.25V	Position 4	22.5V	26.5V
Position 5	11.5V	13.8V	Position 5	23V	27.6V
Position 6	10.5V	12.8V	Position 6	21V	25.6V
Position 7	11.5V	12.8V	Position 7	23V	25.6V
Position 8	11.8V	12.8V	Position 8	23.6V	25.6V
Position 9	12V	13V	Position 9	24V	26V
Position 10	10V	13.2V	Position 10	20V	26.4V

alarm function		alarm function	
Position 11*	Normal alarm	Position 11*	Normal alarm
Position 12	Relais function	Position 12	Relais function

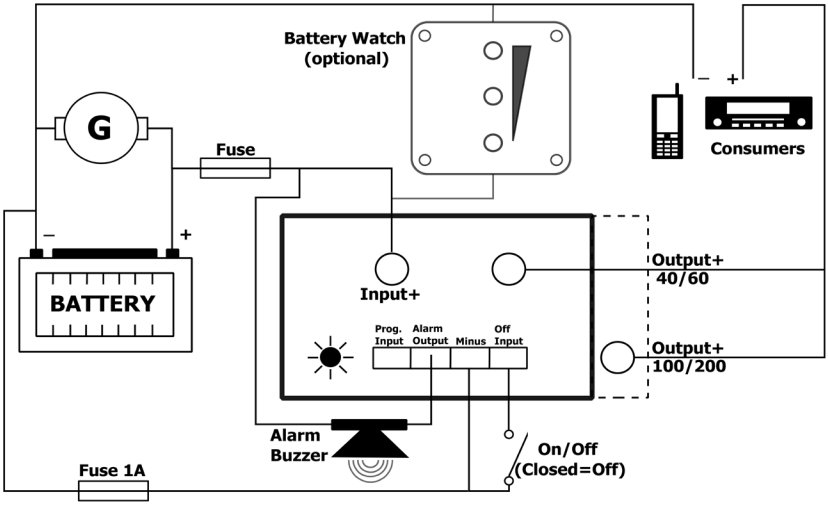
* → *Default settings.*
Normal alarm → *Alarm output is activated in case of emergency: deactivation after 1 minute.*
Relaisfunction → *Alarm is activated in case of emergency: Deactivation upon reaching the reset voltage.*

TECHNICAL DETAILS

	BG40	BG60	BG100	BG200
Cable diameter	10mm²	15mm²	30mm²	50mm²
Automatic detection of 12V or 24V system	8-20V → 12V mode 20-35V → 24V mode			
Asjustable undervoltage programs	10			
Overvoltage disconnect voltage	12V mode → 16V 24V mode → 32V			
Maximum load / shutdown	approx. 40A – 45A	approx. 60A – 65A	approx. 100A – 105A	approx. 200A – 210A
Surge	120A		240A	480A

	BG40	BG60	BG100	BG200
Voltage drop	0.1V @ 40A	0.15V @ 60A	0.125V @ 100A	0.125V @ 200A
Current consumption	Output active: 4mA Output inactive: 2mA			
Shutdown at overload / short circuit	After 5 seconds (switch on again after 1 minute).			
Voltage accuracy	2%			
Current accuracy	20%			
IP-code	IP66			
Dimensions (H*W*D)	82*41*65mm		61*112*120mm	
Weight	185g		730g	

WIRING DIAGRAM



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