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

Read the owners manual carefully before mounting the BG!

Owners manual BG40 / BG60 / BG100 / BG200

The new Battery Guard BG40/60/100/200 (hereafter called BG) is an intelligent, watertight, Battery Guard with accessory connections for a ON/OFF switch, Alarm buzzer or relay. The unit has two bolts as connection for the Input+ and the Output+ to guarantee low losses. Other connections, like the minus and the accessories, are made by a 4-pole 6.3mm faston connector. A blue LED shows the status (ON/OFF). In program- mode it shows the program position. The BG has an 'Automatic Boardsystem Detection'; the BG detects which battery voltage (12 or 24V) is used. This does not need to be programmed manualy. There is a choice out of 10 on/off threshold voltage programs, for both 12V and 24V, which can be programmed in a simple way. The BG uses very little current. In the OFF mode or when in undervoltage the BG uses just 2mA or less.

Installation

The installation of the BG has to be done by qualified personnel. Working on a battery voltage is not without danger. Use wires of sufficient diameter and connectors of good quality. All connections have to be done via a fuse of the right value. See for a guiding principle for the wire diameter the separate chapter. Attention! Live wires should never make contact with the case of the BG or the vehicle. Wrong connection could damage the electronic circuit. Mount the BG on a cooling (metal) surface, so it can dissipate the generated heat. Do not mount it near a combustible or heat sensitive materials. Mount it as close as possible to the battery (max. 50cm). This is the only way to exactly guard the voltage of the battery. Wait with connecting the equipment until the BG is fully programmed. Use a 1.5mm^2 wire for the minus connection which is connected to the battery via a fuse of 1A. No other equipment should use this wire. Working with batteries is dangerous. Fitting and use of the Battery Guard (BG) takes place at the user's risk.

Programming

To start the program mode a connection should be made between the Input+ and the ProgramInput. The LED will start flashing. The number of flashes represents the program-position (see table) it is in. As soon as the desired program-position is reached the connection, between the Input+ and the ProgramInput, should be removed. To confirm the programmed position the LED will repeat the number of flashes. If it is not the right position, the previous steps have to be repeated. A change in position 11 or 12 has to be programmed separately. The programmed positions will be remembered, even if the battery connection has been removed. After completing the programming the equipment can be connected.

ATTENTION! First remove the battery-connection, connect the equipment to the Output+ and then reconnect the battery.Default program-position is position 1 and 11. See program table.

Remote ON/OFF

There is a possibility to connect a switch to the BG's OFF connection. If the OFF connection is connected to the Minus, the BG will shut down the connected equipment after about 1 second. If the connection is removed, the equipment will be started up again after about 1 second. The current through the switch is almost nothing, so a small switch can be used.

Alarm-output

A buzzer can be connected to the alarm-output. The buzzer/alarm will be activated at undervoltage after about 12 seconds. When there is no change in this situation the BG will shut down the equipment about 90 seconds later. The buzzer/alarm will also be stopped. Because at overvoltage (16V/32V) the equipment can be damaged, the BG will shut down the equipment immediately and the alarm-output will pulsate. This way you can hear the difference between an undervoltage and an overvoltage alarm. A second application of this output is with the use of a relay. In this application the BG should be programmed in program-position 12 (default is position 11) . This way the relay will be activated at alarm and when it reaches the upper voltage threshold it will be deactivated again. This way the relay can be used to activate a charger or generator.

Wire diameter

Use at least the following wire diameters for the bolt connection:

BG40 minimal 10mm^2
BG60 minimal 16mm^2
BG100 minimal 35mm^2
BG200 minimal 50mm^2
In difficult environments it is advised to use larger diameters.

Specificaties:

- Autodetect 12 of 24V Battery voltage
  - 8-20V -> 12V mode
  - 20-35V -> 24V mode

10 programmable voltage thresholds

- Overvoltage shut down
  - > 16V (12V mode)
  - > 32V (24V mode)

Current in use ~ 4mA
Current in OFF position or under- or over-voltage position ~ 2mA

- Maximum Load (shut down current)
  - BG40 : ~ 40A / 45A
  - BG60 : ~ 60A / 65A
  - BG100 : ~ 100A / 105A
  - BG200 : ~ 200A / 210A
- Peak current
  - BG40 & BG60 : 120A
  - BG100 : 240A
  - BG200 : 480A

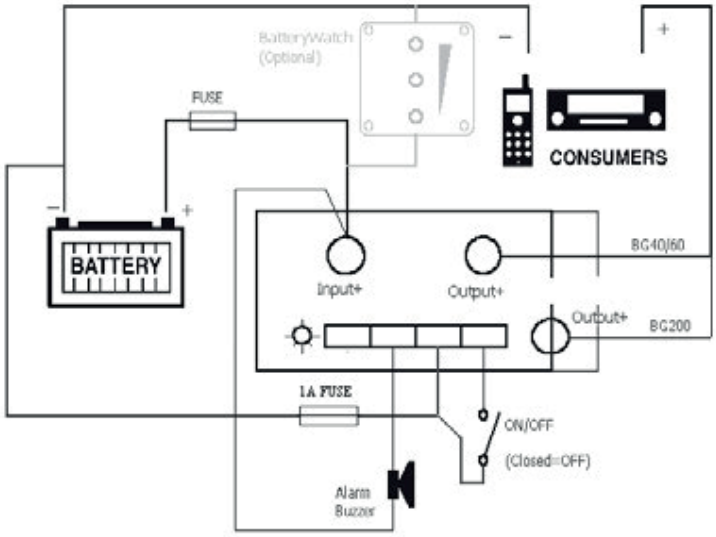
Shut down at overload after 5 sec. (after 1 minute start up)

- Connections
  - ON/OFF switch
  - Alarm buzzer or relay

- Voltage drop
  - BG40 : ~ 0,0875 @35A
  - BG60 : ~ 0,125 @ 50A
  - BG100 : ~ 0,125 @ 90A
  - BG200 : ~ 0,1125 @ 180A

Voltage tolerance ~2%
Current output tolerance +/- 20%
Watertight IP66
The BG will shut down after about 5 seconds when overloaded.
After about 60 seconds the BG will start up again.

Position 1 & 11 Default positions
Normal alarm: Alarm output activated at alarm; deactivated after 1 minute.
Relay function: Alarm output activated at alarm; deactivated at overvoltage treshold.



Programming tabel

12 Volt mode		
Untervoltage Treshold		Uppervoltage Treshold
Position 1	10,5V	12V
Position 2	10,0V	11,5V
Position 3	9,5V	11,5V
Position 4	11,25V	13,25V
Position 5	11,5V	13,8V
Position 6	10,5V	12,8V
Position 7	11,5V	12,8V
Position 8	11,8V	12,8V
Position 9	12,0V	13V
Position 10	10,0V	13,2V
Position 11		
Position 12		

24 Volt mode		
Untervoltage Treshold		Uppervoltage Treshold
Position 1	21,0V	24V
Position 2	20,0V	23,0V
Position 3	19,0V	23,0V
Position 4	22,5V	26,5V
Position 5	23,0V	27,6V
Position 6	21,0V	25,6V
Position 7	23,5V	25,6V
Position 8	23,6V	25,6V
Position 9	24,0V	26V
Position 10	20,0V	26,4V
Position 11	Normal Alarm	
Position 12	Relayfunctie	

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