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Intelligent Battery Protection For Life PO4 Batteries

LV1053

Please read this manual before operating your Battery Protection

Read the owners manual carefully before installing the LV1053!

Characteristics

- Auto 12V/24V detection
- Handling of high currents
- Latching relay
- Very low stand-by current

Purpose

The Securing of a LiFePO4 (lithium iron phosphate or LFP) battery against under- and overvoltage with the lowest possible stand-by current.

Installation

1. Connect the consumer equipment to T2.
2 (optional). Connect a switch to the remote input (see wiring diagram for details).
3 (optional). Connect a light-source to the status output.
4. Connect the positive terminal of the battery to T1.
5. Connect the positive terminal of the battery to A1.
6. Connect the minus connector of the BDB-250 via a fuse to the negative terminal of the battery.

Warning:

- The product should only be fitted by qualified personal who are aware of the requirements for working with high battery voltages.
- The use of faulty connection material or wires with insufficient diameter can result in damaged equipment.
- A short between the positive and negative terminal of the battery can do serious damage to your system.

Operation

All the mentioned voltages, are applicable to a 12V system. For a complete list of all voltages for both the 12V and the 24V system, the table below can be consulted.

Boot

Before the BDB-250 becomes operational, it has to determine if a 12V or a 24V system is connected. This means that after connecting the BDB-250, the first thing it does is wait a second before doing anything else. After this, if the input voltage is above 10.0V below and 15.4V, the relay will close. If these conditions are not met, the relay will open.

High voltage

If the input voltage rises above 15.0V, the LED will start blinking to indicate a detected overvoltage. This will continue for 90 seconds after which the relay will be opened and the LED will turn off.
When the voltage rises above 15.4V, the entire "warning" process will be skipped and the relay will switch off immediately.

Low voltage

If the input voltage drops below 10.0V, the LED will blink to indicate an under-voltage situation. This will continue for 90 seconds after which the relay will be opened and the LED will turn off.

Reset

When the BDB-250 is switched off and the voltage returns between 11.0V and 14.0V, there are two ways to re-activated it.
If the user has chosen the automatic reset function, the relay of the BDB-250 will be activated directly after a "correct" voltage has been measured. However, when the manual reset function has been programmed, the user has to reset the BDB-250 by hand. This is done by pressing the build-in switch. If an external switch is connected to the remote input, this can also be used to reset it manually. The manner in which the BDB-250 will be reset is programmable by the user. The manner in which this is done can be found under "Programming"

		system	
		12V	24V
Under voltage	direct	8.0V	16.0V
	alarm	10.0V	20.0V
	reset	11.0V	22.0V
Over voltage	direct	15.4V	30.8V
	alarm	15.0V	30.0V
	reset	14.0V	28.0V

Programming

The user can choose if the BDB-250 is reset manually of automatically. This is done by pressing the programming button and holding it down until the LED flashes. This indicates that the BDB-250 is in programming mode. At this point the button must be released. When the button is pressed once now, the automatic reset function is selected. If the user presses the button twice, the manual reset is selected.
Approximately 4 seconds after the last time the button is pressed, the LED will blink to show the programmed reset function. (e.g.: If position 2 – manual reset – is selected, the LED will blink twice.)

prog nr.	reset type
1	automatic
2	manual

Technical specifications

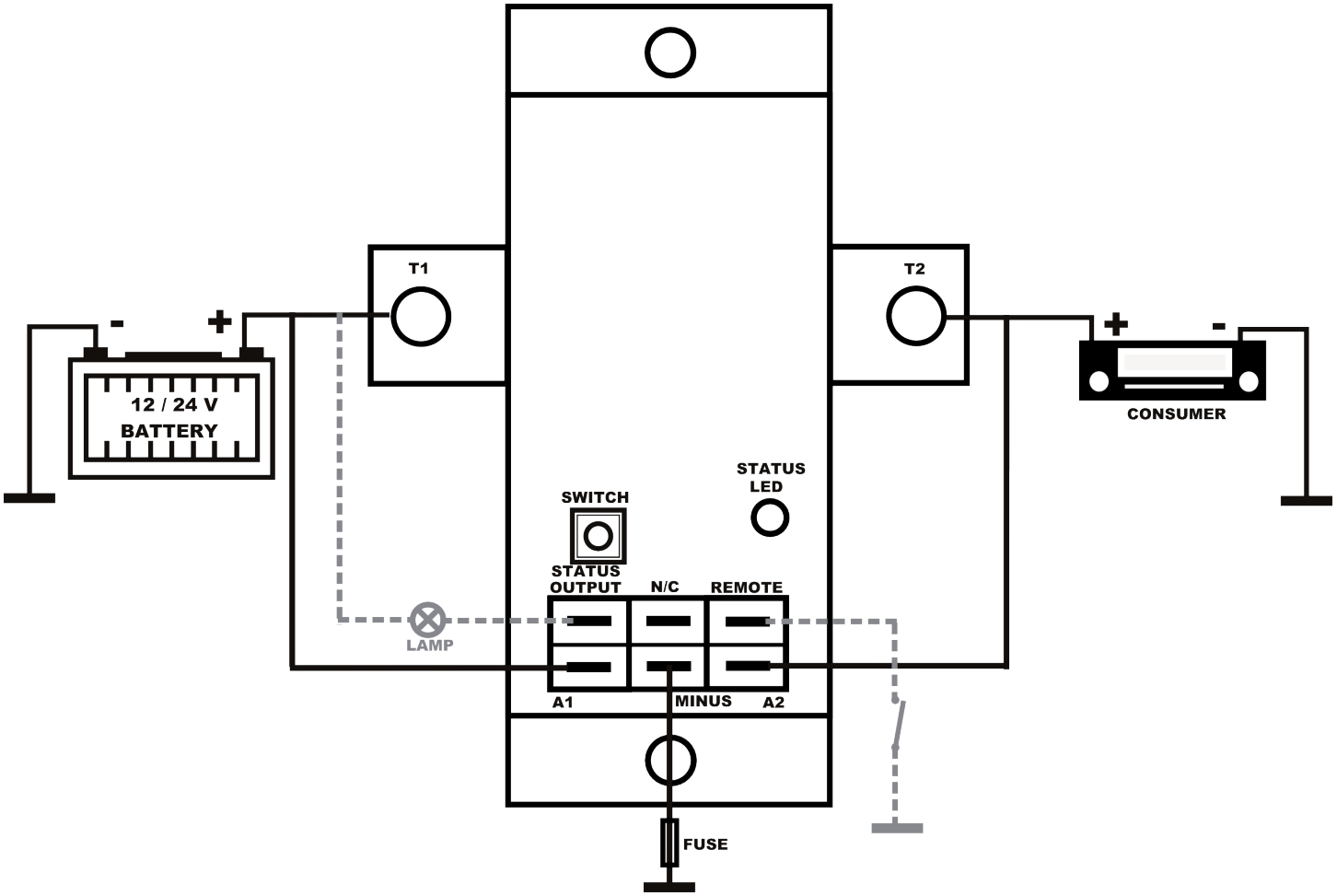
Dimensions

Weight		370 g
Dimensions	WxHxD	82x57x120 mm
Mounting holes	Ø	5 mm
Terminal strips	WxHxD Ø	19x2x18 mm 8 mm

Electrical data

Autodetect 12V or 24V system	12V mode 24V mode	8V to 20V 20V to 35V
Current consumption	Active Passive	3mA 2mA
Input surge current (100ms)	12V mode 24V mode	2.6A 5.0A
Switch current	Continues Peak	250A 1500A

Connection diagram



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