



victron energy

B L U E P O W E R

BMV 501 Battery Monitor

BMV 501 Battery Monitor

No more guessing

Identifying exactly how much energy is left in a battery is not easy. A voltmeter is useful but will only indicate that the battery is flat when it's too late. In order to keep an accurate record of what is stored in a battery it is necessary to keep account of all the factors that affect it and this is a complex matter.

Once a reliable reading of the state of charge of the battery is available, however, life starts to get an awful lot less complicated. No more nasty surprises with batteries going flat unexpectedly and it becomes possible to manage batteries on fact rather than guess work. It is amazing how much power you can have with a little extra knowledge!

Intuitive user interface

The information available from the BMV 501 is displayed in a simple, easy to read format. The liquid crystal display is illuminated with an effective backlight that switches on or off as a button is pressed or after a period of inactivity. Data is displayed in bold letters, with additional indication that identifies the reading being shown and relays other messages. It is easy to scroll through the various items of information using forward and back keys.

Accurate and reliable

The data used by the BMV 501 is monitored with an accuracy better than 0,5 % and, employing Peukert's formula, account is taken of the reduction of effective capacity of the battery when the discharge current increases. An optional temperature sensor helps to further improve accuracy where wide temperature variation is expected.

Standard information

- Battery voltage
- Battery charge/discharge current
- State of charge of the battery: in Ampere-hour (Ah) or in %
- Time to go: the time to go until the battery is flat at the current rate of discharge
- Battery temperature (optional)

Adjustable over- and under-voltage alarm

Next to display readout a potential free normally open contact is available for remote monitoring.

Advanced information

The BMV 501 records the following data regarding performance and use of the battery:

- Average depth of discharge
- The deepest discharge that occurred
- Number of charge/discharge cycles
- Number of times that the battery has been fully recharged
- Number of complete discharges
- Number of times that the under-voltage alarm has been triggered
- Number of times that the over-voltage alarm has been triggered

Data readout and storing charge/discharge curves on a computer

This can be achieved with the optional Data Link (see: Accessories)

Learn more about batteries and battery charging

To learn more about batteries and charging batteries, please refer to our book 'Electricity on Board' (available free of charge from Victron Energy and downloadable from www.victronenergy.com).



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Specifications

Battery Monitor BMV 501	BMV 501
Power supply voltage range	9 - 35 V DC
Current draw	6 mA
Input voltage range (V DC)	9 -35 V DC
Current range	- 500 A +500 A
Battery capacity (Ah)	20 - 2000 Ah
Operating temp. range	-20 - +50°C (0 - 120°F)
RESOLUTION	
Voltage	± 0,01 V
Current (0 - 200 A)	± 0,1 A
Current (200 - 500 A)	± 1 A
Amp hours (0 - 200 Ah)	± 0,1 Ah
Amp hours (200 - 2000 Ah)	± 1 Ah
State of charge (0 - 100 %)	± 0,1 %
Time to go (0 - 100 h)	± 1 min
Time to go (100 - 240 h)	± 1 hr
Temperature (0 - 50°C or 30 - 120°F)	± 1 °C (± 1 °F)
Accuracy of voltage measurement	± 0,3 %
Accuracy of current measurement	± 0,4 %
Potential free contacts	60V/1A (N/O)
ENCLOSURE	
Front panel	65 x 65 mm (2.6 x 2.6 inch)
Body diameter	52 mm (2.0 inch)
Body depth	72 mm (2.9 inch)
SHUNT	
Shunt	500 A / 50 mV



Accessories



BMV Data-Link

Every BMV 501 is ready for data connection with an isolated RS-232 interface port. All you need to link to your PC is the Data-Link kit that consists of a communications cable, converter and the Data-Link software. With this facility you can download and process just about any aspect of battery and system performance, including charge/discharge curves.



Standard connection kit

To ensure that the BMV 501 functions at its optimum, it is essential that installation is carried out with the best materials. The connection kit consists of a multicore cable, in-line fuse cartridges and holders and a pack of cable end terminals. Everything you need for a professional installation.



Temperature sensor

Both the available capacity and the optimal charge voltage depend on temperature. With the temperature sensor battery temperature can be monitored and temperature will be taken into account by the BMV 501 to calculate the available battery capacity.