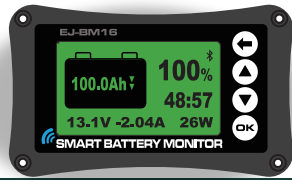


SMART BATTERY MONITOR

BM16 USER GUIDE

Thank You
FOR CHOOSING



Please read through the manual in detail before installing and using your new battery monitor. Should you have any questions concerning safety precautions, installation, or use, please contact us using the contact details below.



Product Introduction:

The BM16 Smart Battery Monitor is a high-precision meter that allows you to check the status of your battery via the monitor display or your smartphone with Smart Battery Monitor app. Through the use of the current shunt, the battery monitor measures the discharge or recharge currents and calculates the Ampere-hours (Ah) going in and out of the battery. High-precision voltage measurements are taken and displayed in real-time through the use of a field-installed sense wire. The BM16 monitor is compatible with all types of batteries including Lithium-ion, lead-acid and nickel-metal hydride batteries.

Applications:

Suitable for traction/mobile and stationary applications.

- Golf Carts & Utility Vehicles
- Marine RVs
- Solar Energy Storage
- Aerial Work Platforms
- Robots

Data Displayed:

Battery Capacity
Battery Voltage
Battery Current
Battery State of Charge (SOC)
Charge-Discharge indicator
Remaining Time

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Parameter	Min	Max	Unit
Voltage	10.0	80.0	V
	0.0	75.0	A
Current	0.0	150.0	A
	0.0	500.0	A
Capacity	0.1	9999.0	Ah
Temperature	-10.0	60.0	°C
Backlight on current	200	400.0	mA
Voltage Accuracy	±1		%
Current Accuracy	±1		%
Capacity Accuracy	±1		%

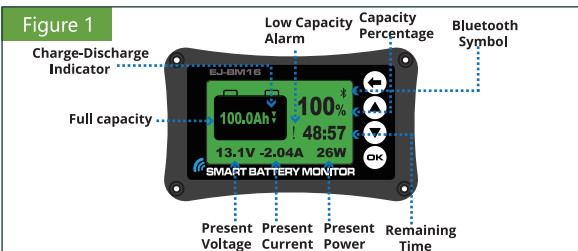
Included Components:

- Current shunt
- Shielded wire (1M)
- Display
- B+ Sense wire 22AWG (1M)
- 4 screws

Additional Components Needed For Installation:

- Additional battery cable
- Knock out tool
- 1 A fuse

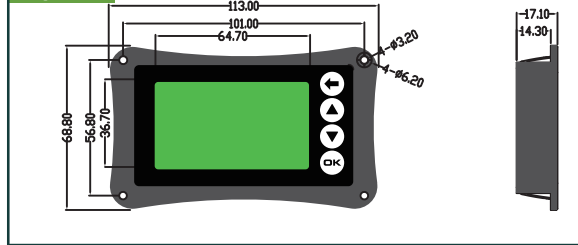
Battery Display:



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Dimensions:

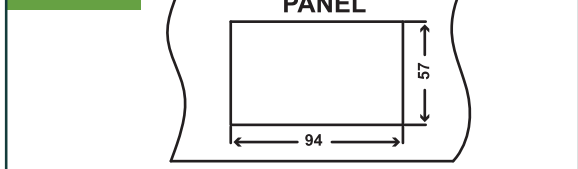
Figure 2



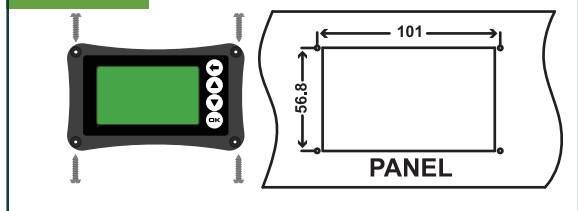
Monitor Display Installation:

1. Use a Jigsaw to cut a hole in the surface on which the battery monitor is to be mounted. Then put the BM16 battery monitor into the rectangular orifice, and make sure the tabs are locked.
2. If the tabs can not be locked, then use the 4 screw holes to attach the monitor from the front of the hole.

Rear Mount



Front Mount



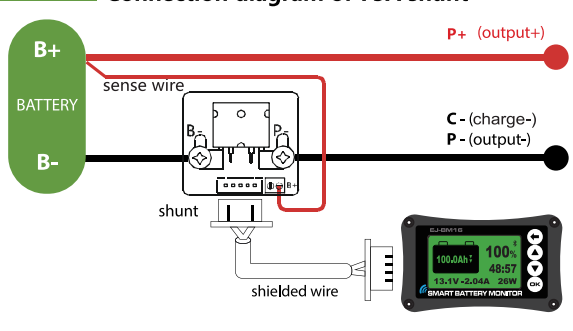
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Electrical Connections:

1. Before doing anything, disconnect all wires from the negative side of the battery
 2. Cut the negative cable for the battery and crimp on new ring terminals. Alternatively, use a new wire of appropriate gauge to carry the full current demand of the system
 3. Connect the shunt as show in the wiring diagram(Figure 3)
- Note: The negative terminal of the battery must connect directly to the B- side of the shunt and there should be no connections to the negative terminal of the battery
4. Using the sense wire, connect the ring terminal end of the wire to positive of battery. The other end connects to B+ of shunt.

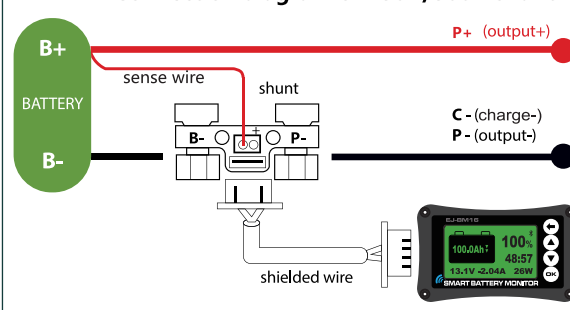
- Note: Do not stack smaller terminals under large ones.
5. Connect the shunt to the BM16 using the shielded wire to test. If done correctly the display will turn on. Disconnect again so remote display can be mounted.

Figure 3 Connection diagram of 75A shunt



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Figure 3 Connection diagram of 150A/500A shunt



Preparation Steps:

Fully charge the battery bank such that it reaches 100% SOC. Failure to take this step will lead to erroneous SOC readings.

Setting Up The Battery Monitor:

1. Ensure the battery display indicates the discharge current and the charge current correctly. Use the charge and discharge indicators to ensure it is capturing the appropriate current direction (in/out).
2. Ensure that the battery voltage is displayed correctly.
3. Fully charge the battery bank such that it reaches 100% SOC.
4. To initialize the capacity, press the Ⓢ button for three seconds to set the capacity to 100%
5. To enter the setting menu, press the OK button for 3s.
6. Click ⏪ or ⏩ button to select the setting items.



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For example, select CAP and click the OK button to enter the pre-set capacity setting. The set value will flicker, click ⏪ or ⏩ button to increase or decrease the capacity, clicking the OK button can select other values. After this click the Ⓢ button to quit pre-set capacity setting.

Connecting To The Smart Battery Monitor App:

1. Install the Smart Battery Monitor app via Google Play™ or the Apple App Store.

You can search for "Smart Battery Monitor", or use the respective QR codes below.



2. Open the app and Select the Battery Monitor by its serial number.
3. At the "Basic Setting" screen, enter the battery parameter information required followed by tapping "Save Setting" on the bottom.
4. Tapping the setting button on the top right, into the "Calibration" screen, enter the battery parameter information required followed by tapping "Save Setting" on the bottom.
5. You will now be in the Dashboard where you can monitor the battery's state of charge, voltage, current, time remaining and the cycle life.
6. Your Smart Battery Monitor is now ready to use.

TIPS

1. Peukert exponent: Lithium Always 100 - DO NOT CHANGE!
2. Please install the latest version App.
3. Ensure the Bluetooth and Location of the Phone is turn on!
4. The APP is only available for EJ brand Smart Battery Monitor

Technical Support: If you have technical questions about your Battery Monitor, please contact the original place of purchase or EJ directly.

Warranty: One-year limited warranty.