

# BM21 BATTERY MONITOR 500AMP SHUNT

## All you need to know:

- ✓ Introduction
- ✓ Components
- ✓ Connecting
- ✓ Setting Up
- ✓ Operating
- ✓ Bluetooth

**ARDENT**

## INTRODUCTION

The BM21 is a sophisticated high precision battery monitor that captures integrated values in real-time. The BM21 utilises 500A current shunt and measures the discharge/recharge currents and calculate the Ampere-hours (Ah) going in and out of the battery.

High-precision voltage measurements are taken and displayed in real-time for lithium, lithium ion, lead-acid and nickel-metal hydride batteries.

### DATA DISPLAYED:

- Battery Voltage
- Battery Current
- Battery State of Charge (SOC)
- Total Ampere-hours

## ELECTRICAL PARAMETERS

Parameter	Min	Max	Unit
Voltage	8.0	80.0	V
Current	0.0	500.0	A
Capacity	0.1	999.0	Ah
Temperature	0.0	35.0	°C
Active Parasitic Current		12.0	mA
Standby Parasitic Current		60.0	uA
Sleep Parasitic Current		60.0	uA
Voltage Accuracy	±1		%
Current Accuracy	±1		%
Capacity Accuracy	±1		%

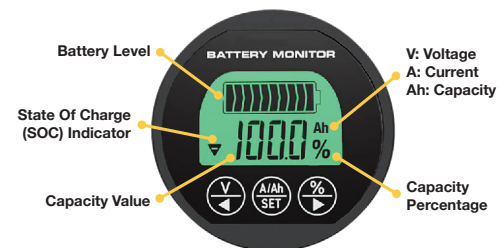
## COMPONENTS

### INCLUDED COMPONENTS:

- Smart Battery Monitor
- Shielded wire (1m)
- 500 Amp Shunt
- Plastic bracket
- Butterfly nut
- Mounting bracket
- B+ Sense wire 22AWG (1m)
- Instructions

### ADDITIONAL COMPONENTS NEEDED FOR INSTALLATION:

- Additional battery cable (for the negative terminal)
- 54mm hole saw or knock out tool (for panel mount application)
- Voltage multi-meter
- 1A fuse (recommended)

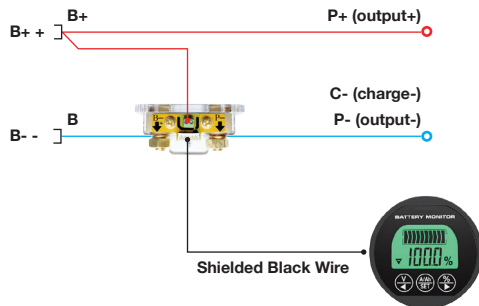


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## CONNECTING

As shown in the image follow the steps below:

1. Connect the B- terminal of the shunt to the negative terminal of the battery.
2. Connect the p. terminal of the shunt to the load or the charger.
3. Connect the sense wire to the positive terminal of the battery. It is recommended that a 1A fuse be installed in series with the sense wire.
4. Finally, connect one end of the shielded cable to the display monitor cable (already installed on the display) and the other end of the shielded cable to the current shunt.



## SETTING UP

1. Use the charge and discharge monitor to ensure the BM21 Display Monitor is capturing the appropriate currents.
2. Ensure that the battery voltage is displayed correctly. Cross reference with voltage multi meter.
3. To reset the capacity, press the ► button for three seconds to set the capacity to 100%.
4. To enter the capacity, press the SET button for three seconds. Use the ◀ button to decrease capacity and the ► to increase capacity. Press the SET button when done.
5. For parallel connections, enter the total usable capacity of the system by adding the usable capacities in Ahs of each battery.
6. **For 24v series connections:**
  - a. The system capacity will equal the capacity of single battery.
  - b. For single charging systems, the voltage sense wire should be connected to the system terminals.
  - c. For multi-bank charging systems, connect the shunt and voltage sense wire to the battery that has the positive terminal of the system. This will allow the BM21 to monitor one battery to represent all the batteries in the system.

## OPERATING

The BM21 is simple and easy to use. A full array of information is available via the monitor's display.

- **Battery SOC:** The default screen shows the battery capacity as a %. If there is a load or charge going into the battery; a small triangle on the bottom left-hand side of the screen will appear. The triangle will have either a + or - symbol to indicate if you are putting in + or taking power out -. If you are charging and discharging the battery at the same time the monitor will aggregate everything and let you know if you are putting in more power than you are using or less power than you are using by showing a + or -.
- **Battery Voltage:** On the default screen press the left < button once to see the battery voltage.
- **Current:** Pressing the SET button once displays the amps in and out Please note that if you are charging and discharging at the same time, the display will show you the net amps.
- **Battery Capacity:** To see the battery's capacity, press the set button twice.

## BLUETOOTH

To connect the Bluetooth simply go to your apps tab on your phone and search Smart Battery Monitor (smart shunt) and download.

Your phone via Bluetooth connectivity will monitor the following information from the battery: Battery Capacity, Battery Voltage, Battery Current (Amps), Battery State of Charge (SOC), Battery State of Health (SOH), Battery Status, Individual Cell Voltage, Battery Temperature and Battery Cycles.



Smart Battery Monitor  
smart shunt

