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- › [OBDMONSTER](#) /
- › [OBDMONSTER BM210 Multi-Voltage Battery Meter User Manual](#)

OBDMONSTER BM210

OBDMONSTER BM210 Multi-Voltage Battery Meter User Manual

Brand: OBDMONSTER | Model: BM210

1. INTRODUCTION

This manual provides instructions for the installation, operation, and maintenance of your OBDMONSTER BM210 Multi-Voltage Battery Meter. This device is designed to display the remaining battery capacity for 12V, 24V, 36V, 48V, 60V, and 72V battery systems, compatible with various vehicles including cars, SUVs, pickups, boats, golf carts, RVs, and motorcycles.

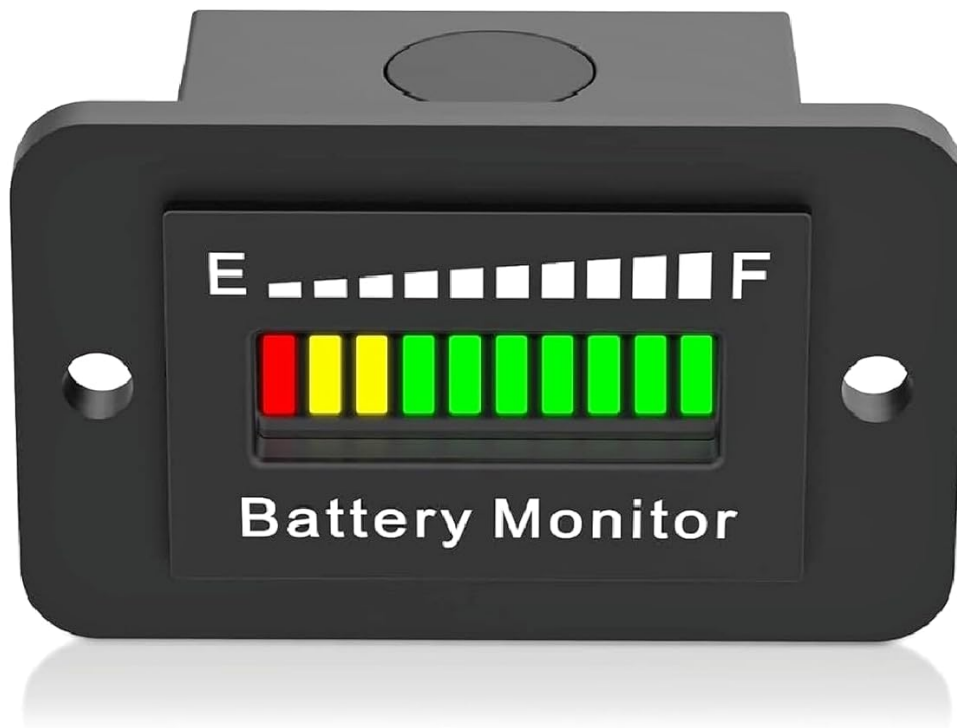


Figure 1: OBDMONSTER BM210 Battery Meter and included accessories.

The BM210 features a 10-segment LED bar graph display, providing clear visual indication of battery charge level. It is designed with a PVC waterproof screen protector and bright backlight for readability in various conditions, and includes reverse protection for safe installation.

2. SETUP AND INSTALLATION

2.1. Voltage Configuration (DIP Switches)

The BM210 battery meter is compatible with multiple voltage systems (12V, 24V, 36V, 48V, 60V, 72V). Before installation, you must configure the device to match your battery system's voltage using the DIP switches located on the back of the unit. Incorrect voltage settings can lead to inaccurate readings.

Wire Connection Methods

Direct Connection

(No switch. LED lights will be always on when connected to the battery.)



Key Switch Connection

(Switch available. LED lights can be turned off)

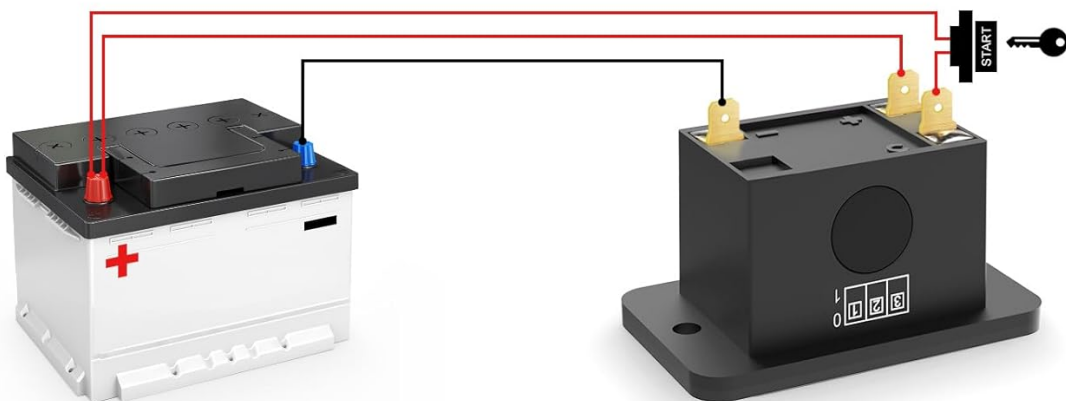


Figure 2: DIP Switch settings for various battery voltages.

Refer to the diagram above to set the DIP switches (labeled 0, 1, 2, 3) to the correct 'ON' or 'OFF' positions corresponding to your battery's voltage. For example, for a 12V system, set the switches to '1-1-1'. For a 48V system, set them to '0-0-1'.

2.2. Wire Connection Methods

The BM210 offers two primary wiring methods:

- **Direct Connection:** Connects directly to the battery. The LED lights will remain on as long as the device is connected to the battery.
- **Key Switch Connection:** Connects via a key switch. This allows the LED lights to be turned off when the vehicle is not in use, conserving battery power.

Align the slot and connect the lines



**No Slot,
You can use the
packaging cardboard
as a ruler to dig the slot**



NOTE: When wiring, keep the device stable to avoid short circuit caused by the intersection of wires

Figure 3: Direct and Key Switch Wiring Diagrams.

Ensure correct polarity when connecting the wires (positive to positive, negative to negative) to prevent damage to the unit. The device features reverse protection, but proper connection is always recommended.

2.3. Mounting the Unit

The BM210 is designed for panel mounting. You will need to create a cut-out in your dashboard or desired mounting surface. The recommended panel cut-out dimensions are provided below.

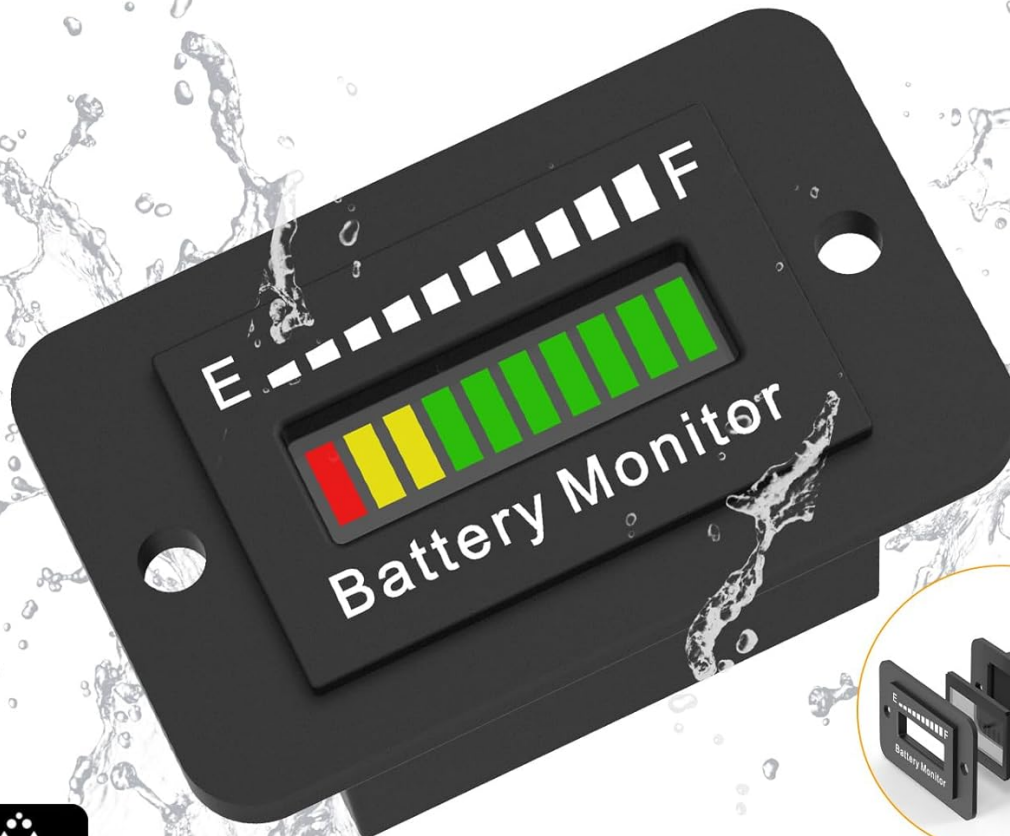
Wide Application



Figure 4: BM210 Dimensions and Panel Cut-out.

If a slot is not available, you can use the packaging cardboard as a template to mark and cut the required opening. The recommended cut-out size is approximately 1.34 inches x 0.87 inches. Align the slot and connect the wires securely. When wiring, keep the device stable to avoid short circuits.

Waterproof level: Living waterproof



Split Design Protects
Internal Circuits

Figure 5: Example of BM210 installation and template use.

3. OPERATING INSTRUCTIONS

3.1. Reading the Battery Capacity Display

The BM210 features a 10-segment LED bar graph display to indicate the remaining battery capacity. Each segment represents approximately 10% of the battery's charge. The display uses three colors for easy interpretation:

- **Red:** Indicates low battery (typically the first segment, around 10% charge).
- **Yellow:** Indicates a low to medium charge (typically the next two segments, around 20-30% charge).
- **Green:** Indicates sufficient to full charge (the remaining seven segments, 40-100% charge).

BATTERY CAPACITY DISPLAY

3 colors LED for 10 bars, each bar display 10% battery capacity and increase from E to F

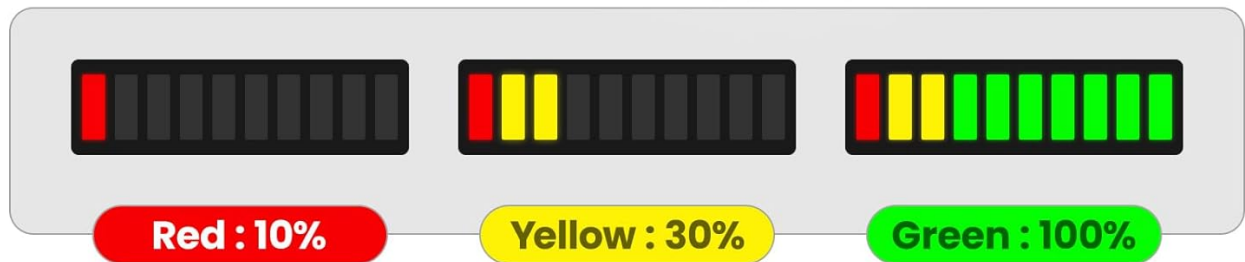


Figure 6: LED Battery Capacity Display Interpretation.

3.2. Operating Voltage Reference Table

The following table provides detailed voltage thresholds for each segment of the LED display across different battery system voltages. The display updates approximately every 10 seconds.



Operating Voltage

| Voltage | ≤1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|------------------------------|-------------------------|----------------|----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| 12V | 10.38 | 10.59 | 10.8 | 11.01 | 11.22 | 11.43 | 11.64 | 11.85 | 12.3 | ≥ 12.3 |
| 24V | 20.76 | 21.18 | 21.6 | 22.02 | 22.44 | 22.86 | 23.28 | 23.7 | 24.6 | ≥ 24.6 |
| 36V | 31.14 | 31.77 | 32.4 | 33.03 | 33.66 | 34.29 | 34.92 | 35.55 | 36.9 | ≥ 36.9 |
| 48V | 41.52 | 42.36 | 43.2 | 44.04 | 44.88 | 45.72 | 46.56 | 47.4 | 49.2 | ≥ 49.2 |
| 60V | 51.9 | 52.95 | 54 | 55.05 | 56.1 | 57.15 | 58.2 | 59.25 | 61.5 | ≥ 61.5 |
| 72V | 62.28 | 63.54 | 64.8 | 66.06 | 67.32 | 68.58 | 69.84 | 71.1 | 73.8 | ≥ 73.8 |
| Display Mode | Only 1# lit | Only 1#-2# lit | Only 1#-3# lit | Only 1#-4# lit | Only 1#-5# lit | Only 1#-6# lit | Only 1#-7# lit | Only 1#-8# lit | Only 1#-9# lit | All lights on |
| Display Colors Of LED | Red | Red Yellow | Red Yellow | Red Yellow Green | Red Yellow Green | Red Yellow Green | Red Yellow Green | Red Yellow Green | Red Yellow Green | Red Yellow Green |
| Delay | Update after 10 seconds | | | | | | | | | |

Figure 7: Operating Voltage Reference Table.

To interpret the display accurately, cross-reference the number of lit segments and their color with your battery's nominal voltage in this table. For example, for a 48V system, if only the first red light is lit, the voltage is approximately 41.52V or lower, indicating a very low charge.

4. MAINTENANCE

The OBDMONSTER BM210 battery meter is designed for durability with an IP65 waterproof rating, meaning it is protected against dust and low-pressure water jets. This makes it suitable for outdoor use and harsh weather conditions.

- **Cleaning:** Wipe the display and casing with a soft, damp cloth. Avoid using abrasive cleaners or solvents.
- **Environmental Protection:** While waterproof, avoid prolonged submersion or exposure to extreme temperatures outside of its operating range.
- **Connections:** Periodically check the wiring connections to ensure they remain secure and free from corrosion.

5. TROUBLESHOOTING

5.1. Inaccurate Readings / Always Shows Full Power

If the device consistently shows full power or provides inaccurate readings after use, it is likely due to improper voltage settings. Ensure that the DIP switches on the back of the unit are correctly configured for your battery's nominal voltage (refer to Section 2.1 and Figure 2).

5.2. No Display / Unit Not Powering On

- **Check Connections:** Verify that all wires are securely connected to the battery terminals and the meter. Ensure correct polarity.
- **Battery Voltage:** Confirm that the battery itself has sufficient charge to power the meter.
- **Key Switch (if applicable):** If using a key switch connection, ensure the switch is in the 'ON' position.

5.3. Display Flickering

Flickering may indicate an unstable power supply or loose connections. Check all wiring for secure contact and ensure the battery voltage is stable.

6. SPECIFICATIONS

- **Model Number:** BM210
- **Brand:** OBDMONSTER
- **Compatible Voltages:** 12V, 24V, 36V, 48V, 60V, 72V
- **Display Type:** 10-segment LED Bar Graph (1 Red, 2 Yellow, 7 Green)
- **Waterproof Level:** IP65
- **Power Source:** Battery Powered
- **Low Working Power Consumption:** 5mA (max)
- **Features:** Reverse protection design, PVC waterproof screen protector, bright backlight
- **Package Dimensions:** 2.52 x 2.05 x 1.73 inches
- **Item Weight:** 1.13 ounces

7. WARRANTY AND SUPPORT

7.1. Warranty Information

The OBDMONSTER BM210 Battery Meter comes with a **24-month warranty** from the date of purchase. This warranty covers manufacturing defects and ensures the product functions as described under normal use.

7.2. Customer Support

For any questions, technical assistance, or warranty claims regarding your BM210 battery meter, please contact OBDMONSTER customer support. You can send a message via the Amazon platform where the product was purchased. Our professional technical team is committed to helping you resolve any issues within 24 hours.

