DROK 517a0187-4aa5-418b-8754-c28afea22ac0

DROK Waterproof Battery Monitor (8-100V) User Manual

Model: 517a0187-4aa5-418b-8754-c28afea22ac0

1. Introduction

This manual provides instructions for the DROK Waterproof Battery Monitor, a versatile device designed to measure and display battery voltage, capacity, and remaining percentage. It is suitable for various battery types including lithium and lead-acid batteries, operating within an 8-100V range. This monitor is ideal for applications in motorcycles, golf carts, cars, marine vessels, RVs, boats, and solar generators.

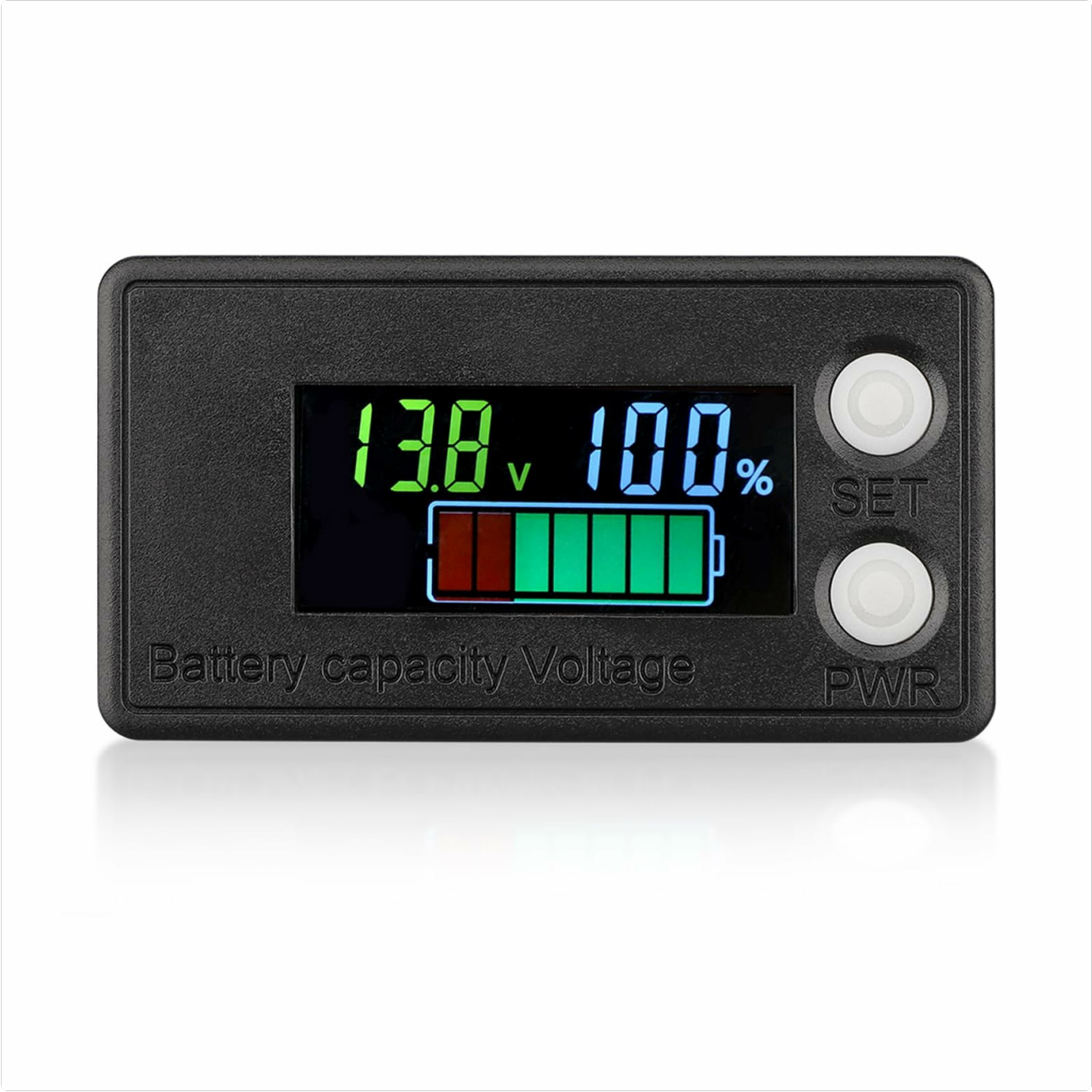

Figure 1: DROK Waterproof Battery Monitor displaying 13.8V and 100% capacity.

2. Product Features

- **All-in-One Display:** Simultaneously displays battery voltage, capacity, and remaining percentage on an upgraded LCD screen, eliminating the need to switch interfaces.
- **Wide Voltage Compatibility:** Supports 8-100V systems, compatible with 12V, 24V, 36V, 48V, 72V, and 84V battery configurations.
- **Broad Battery Type Support:** Suitable for lithium batteries (ternary lithium, polymer lithium-ion), and lead-acid batteries.
- **Waterproof Design:** The panel is designed to protect internal components from moisture and corrosion, enhancing durability.
- **Reverse Polarity Protection:** Safeguards the device and battery from damage due to incorrect wiring.
- **Automatic Save on Power Outage:** Retains settings and data even after power loss.
- **Low Power Consumption:** Efficient operation minimizes drain on the battery.
- **Low Voltage Alarm:** Provides an alert when battery voltage drops below a set threshold.

- **Voltage Calibration:** Features a potentiometer on the back for precise voltage adjustment.

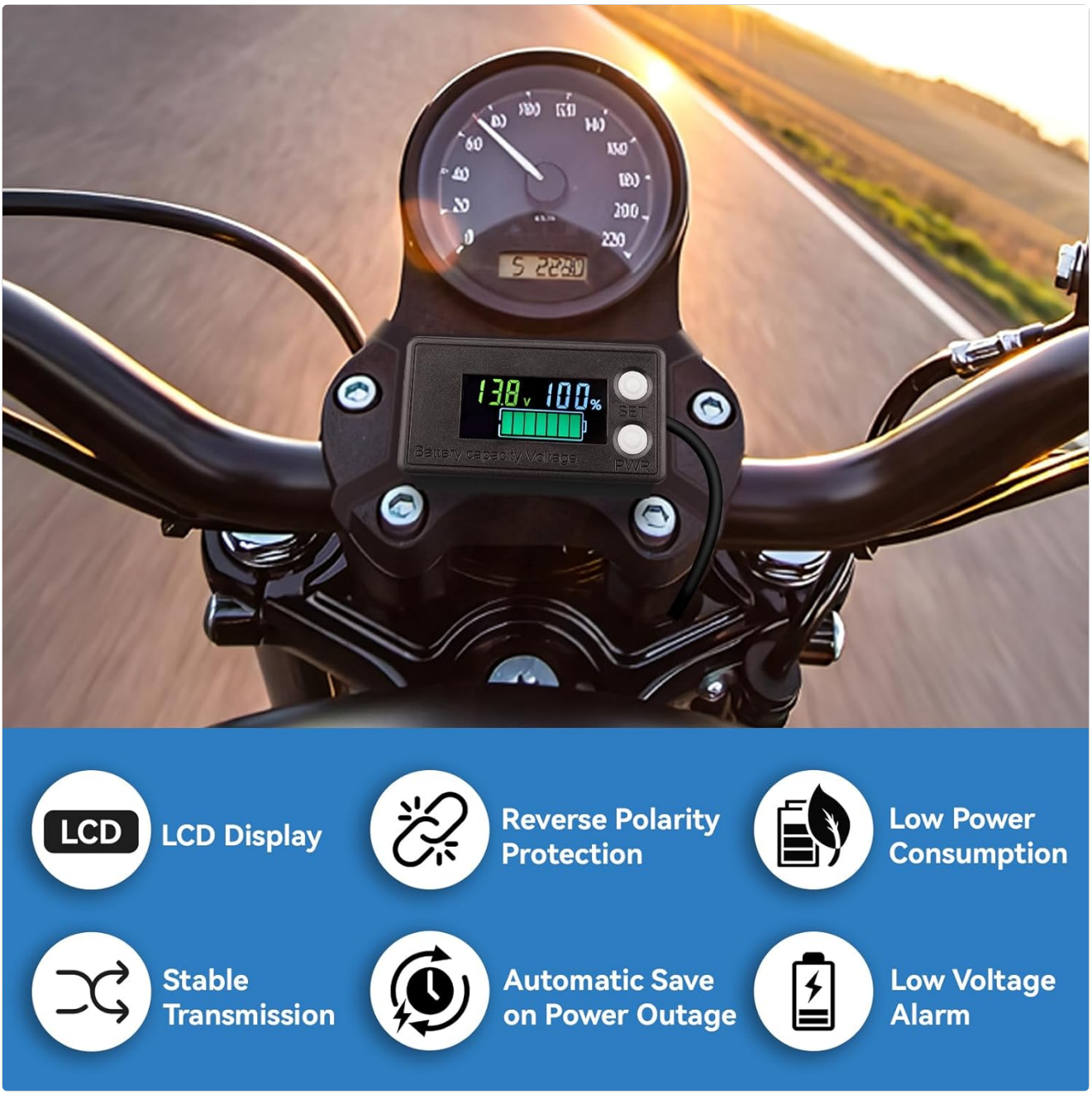

Figure 2: Key features of the DROK Battery Monitor, including LCD display and various protections.

3. Setup Instructions

3.1. Installation

1. **Prepare Mounting Location:** Choose a suitable location for the monitor. The installation dimension is 58.5x28.5mm. Ensure adequate space behind the panel for wiring.
2. **Cut Opening:** Carefully cut an opening of 58.5mm x 28.5mm in the chosen panel using appropriate tools.
3. **Insert Monitor:** Insert the DROK Battery Monitor into the cut opening.
4. **Secure Monitor:** Secure the monitor in place using the provided mounting mechanism or clips (if applicable).

3.2. Wiring

The monitor typically uses a two-wire connection for power and voltage sensing.

- **Red Wire:** Connect the red wire to the positive (+) terminal of the battery or power source.
- **Black Wire:** Connect the black wire to the negative (-) terminal of the battery or power source.

Ensure connections are secure and observe reverse polarity protection. Incorrect wiring can damage the device, although the monitor has built-in protection.

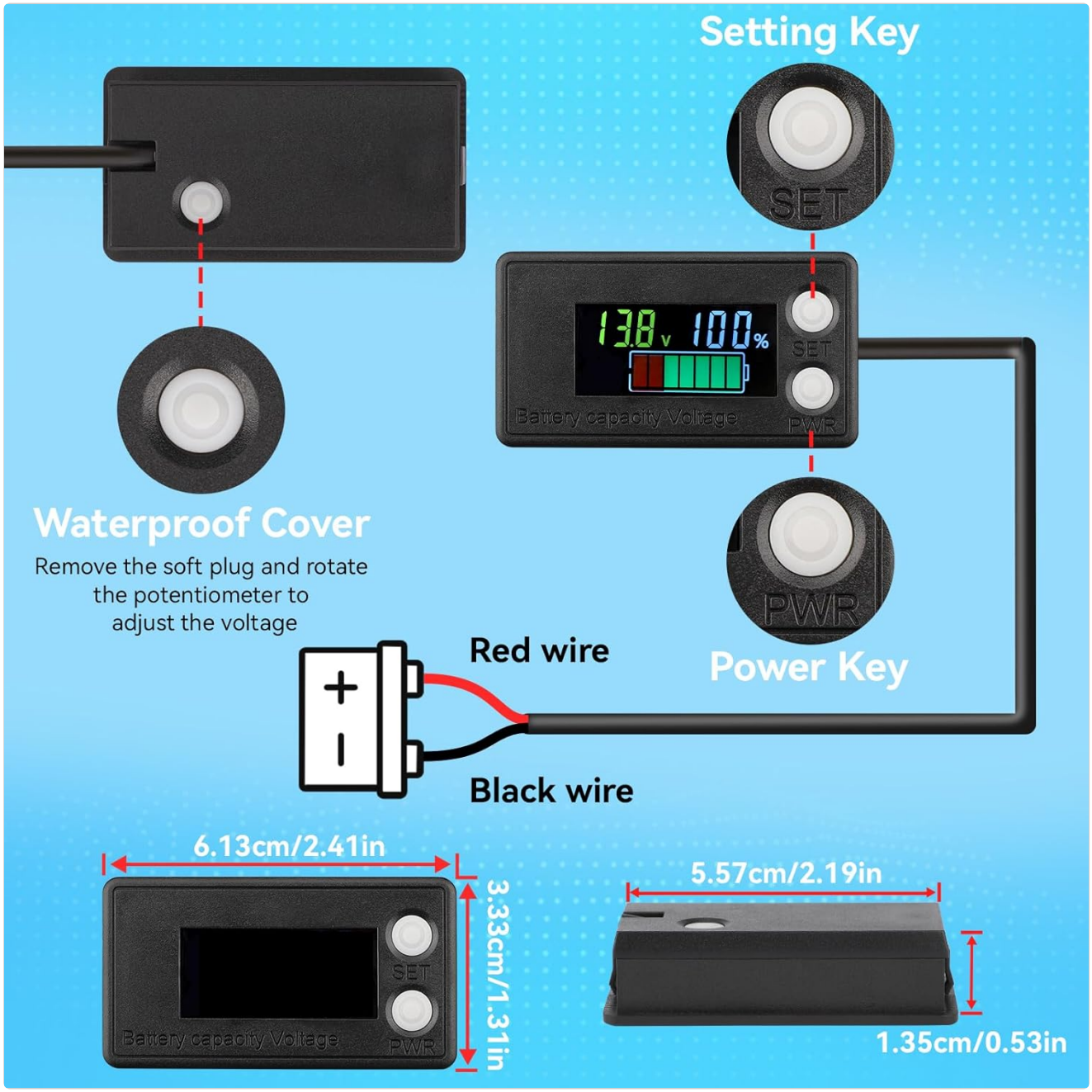

Figure 3: Wiring diagram and physical dimensions of the DROK Battery Monitor.

3.3. Voltage Calibration

For optimal accuracy, the monitor features a voltage calibration potentiometer.

1. **Locate Potentiometer:** Remove the soft plug from the back of the monitor to access the voltage calibration potentiometer.
2. **Adjust Voltage:** Using a small screwdriver, gently rotate the potentiometer to adjust the displayed voltage to match a known accurate voltage reading from a multimeter.
3. **Replace Plug:** Once calibrated, replace the soft plug to maintain the waterproof seal.

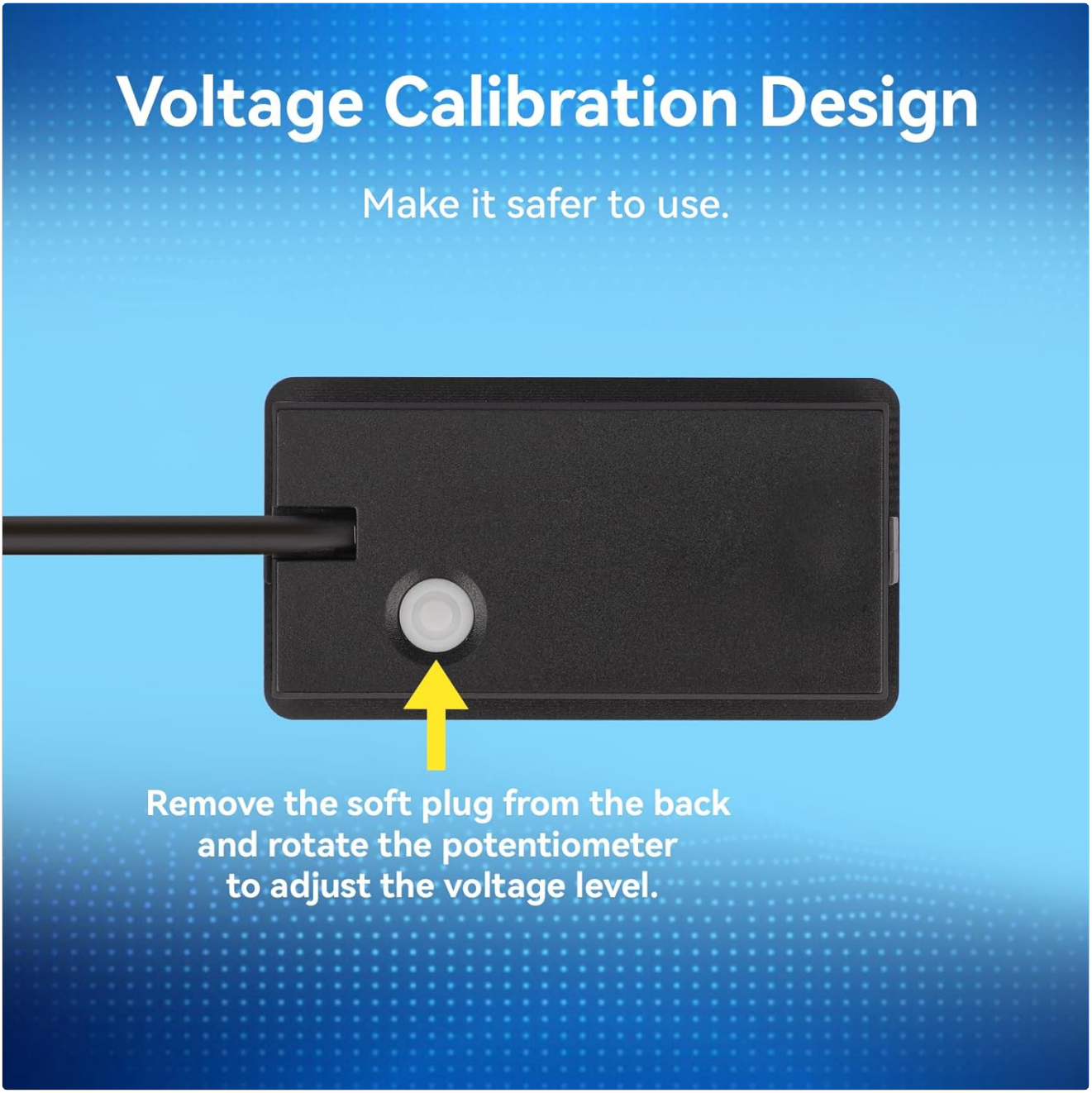

Figure 4: Location of the voltage calibration potentiometer on the back of the monitor.

4. Operating Instructions

4.1. Powering On/Off

- **Power On:** Once correctly wired, the monitor will power on automatically and display the battery status.
- **Power Off:** Disconnect the power supply to turn off the monitor. The device has low power consumption when idle.

4.2. Display Interpretation

The LCD screen simultaneously displays three key parameters:

- **Voltage (V):** Shows the current battery voltage.
- **Capacity Bar:** A graphical representation of the remaining battery capacity.
- **Percentage (%):** Displays the remaining battery capacity as a percentage.

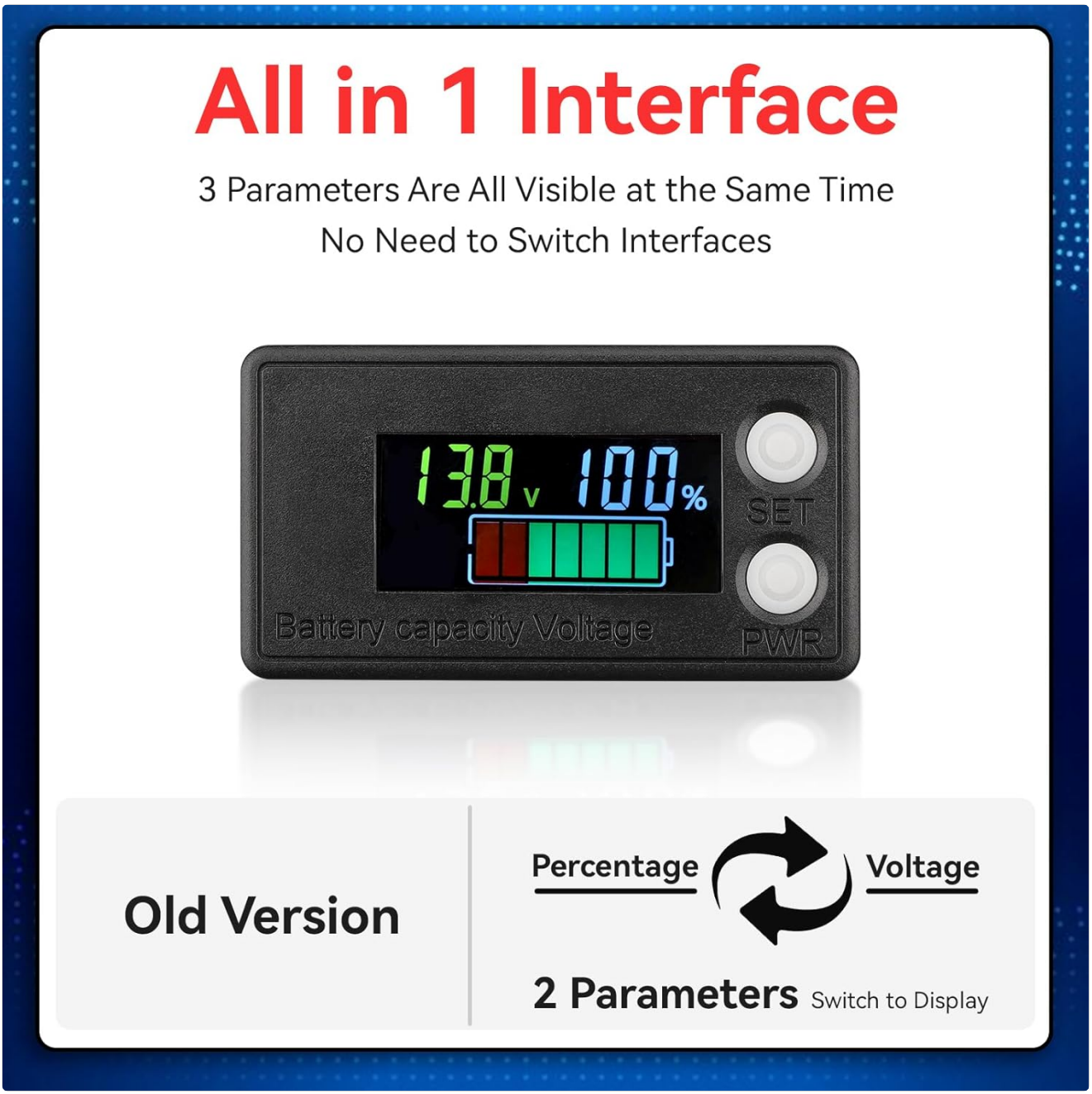

Figure 5: The monitor's "All in 1 Interface" displaying voltage, capacity bar, and percentage.

4.3. Setting Key (SET)

The "SET" button is used for configuration. Specific functions may vary based on firmware version. Refer to the detailed programming instructions for advanced settings, such as battery type selection or low voltage alarm thresholds. (Note: Detailed programming instructions are not provided in the product description and may require consulting the manufacturer's website or a separate guide.)

5. Maintenance

- **Cleaning:** Wipe the display and casing with a soft, damp cloth. Avoid abrasive cleaners or solvents.
- **Waterproof Protection:** The monitor is waterproof. However, ensure the back soft plug for calibration is securely in place to maintain its waterproof integrity, especially in marine or outdoor environments.
- **Connection Check:** Periodically inspect wiring connections for corrosion or looseness to ensure stable transmission and accurate readings.
- **Storage:** If storing the device for an extended period, disconnect it from the battery.

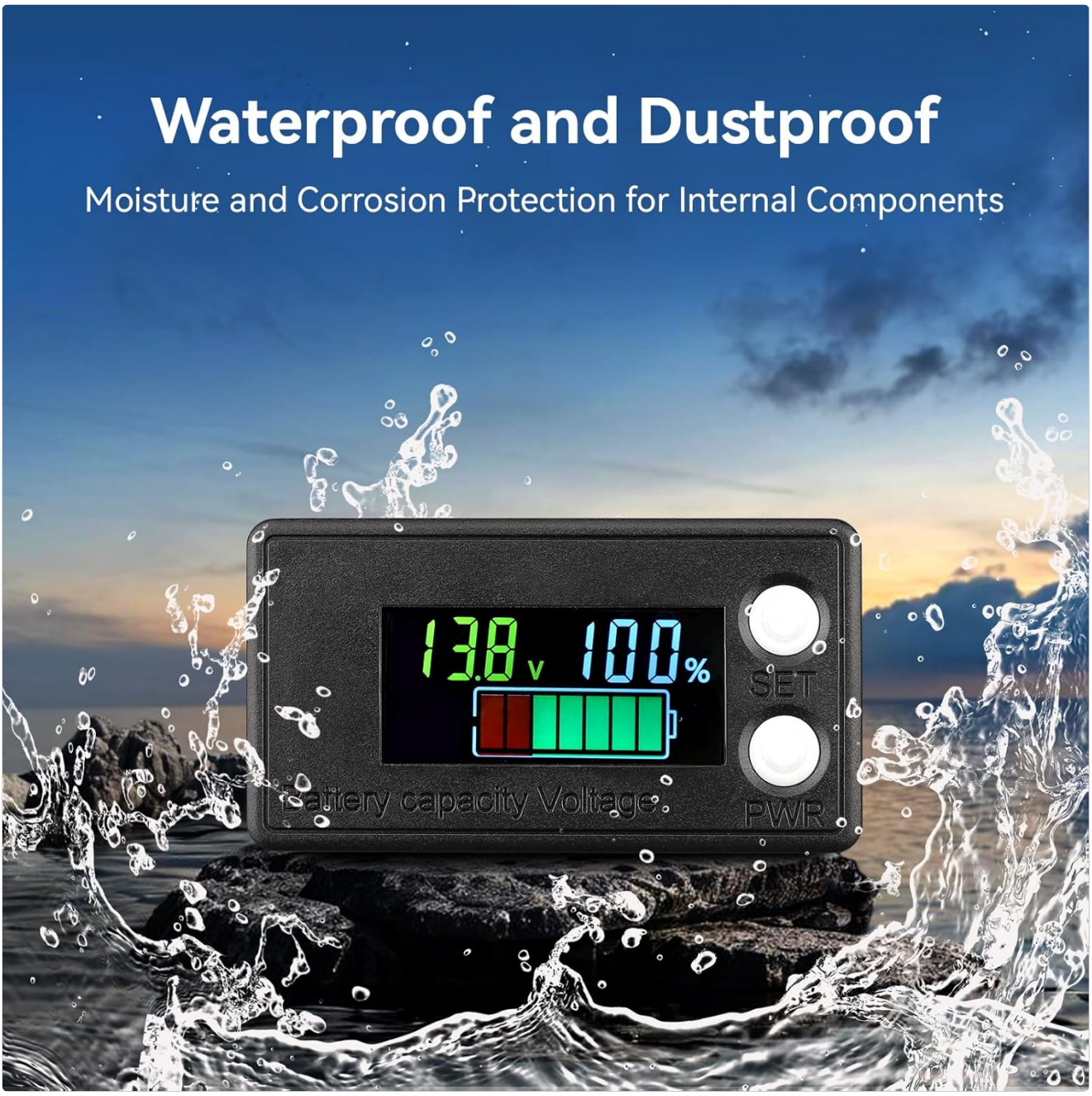

Figure 6: The waterproof design protects internal components from moisture and corrosion.

6. Troubleshooting

Problem	Possible Cause	Solution
No Display / Monitor Not Powering On	• Incorrect wiring (reversed polarity). • Loose connection. • Battery voltage outside 8-100V operating range. • Faulty power source.	• Check red and black wire connections for correct polarity. • Ensure all connections are secure. • Verify battery voltage is within the specified range (8-100V). • Test the power source with a multimeter.

Problem	Possible Cause	Solution
Inaccurate Voltage/Capacity Reading	• Monitor requires calibration. • Incorrect battery type setting (if configurable). • Poor connection causing voltage drop.	• Perform voltage calibration using the potentiometer on the back (refer to Section 3.3). • If applicable, check and adjust battery type settings via the SET button (consult manufacturer for specific programming steps). • Inspect wiring for secure and clean connections.
Display Flickers or is Unstable	• Unstable power supply. • Loose wiring connections. • Interference.	• Ensure the power supply to the monitor is stable. • Check and tighten all wiring connections. • Relocate the monitor away from strong electromagnetic interference sources.
Low Voltage Alarm Constantly Active	• Battery is genuinely low. • Low voltage alarm threshold set too high.	• Charge the battery. • Adjust the low voltage alarm threshold (consult manufacturer for specific programming steps).

7. Specifications

Model Number	517a0187-4aa5-418b-8754-c28afea22ac0
Working Voltage	8-100V (12V, 24V, 36V, 48V, 72V, 84V compatible)
Operating Current	≤15mA
Display Type	LCD Color Screen with Backlight (Multicolored/White/Blue/Green options)
Measurement Type	Voltmeter, Battery Capacity Meter
Protections	Waterproof, Reverse Polarity Protection, Automatic Save on Power Outage, Low Power Consumption, Low Voltage Alarm
Product Size	61.3mm x 33.3mm x 13.5mm (2.41in x 1.31in x 0.53in)
Installation Dimension	58.5mm x 28.5mm
Item Weight	36 g
Included Components	1x Battery Meter

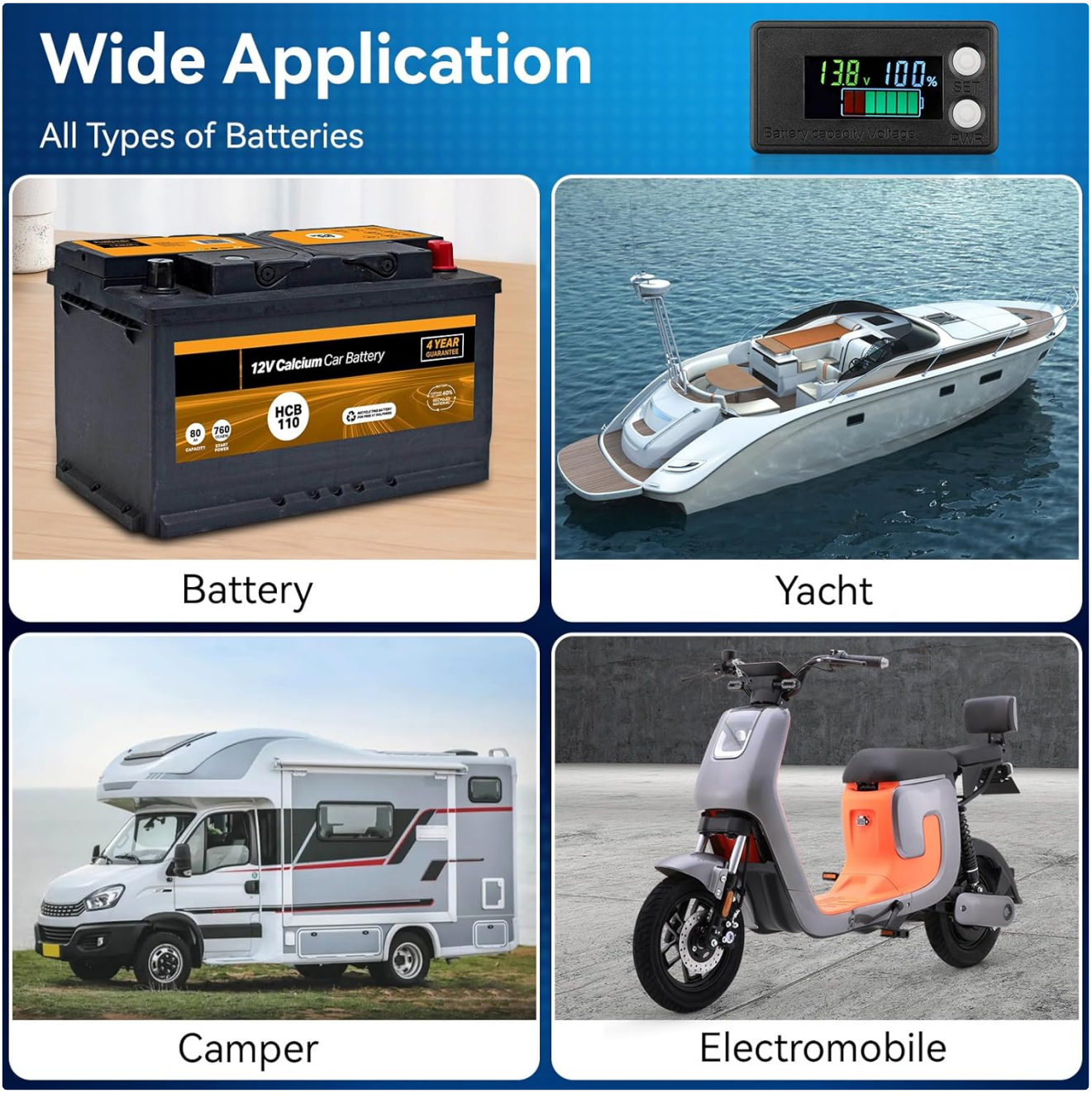

Figure 7: Wide application of the DROK Battery Monitor across different battery types and vehicles.

8. Warranty & Support

8.1. Warranty Information

Specific warranty details for the DROK Waterproof Battery Monitor are typically provided at the point of purchase or on the manufacturer's official website. Please retain your proof of purchase for warranty claims. The warranty generally covers manufacturing defects under normal use conditions.

8.2. Customer Support

For technical assistance, troubleshooting not covered in this manual, or warranty inquiries, please contact DROK customer support. Refer to the packaging or the official DROK website for the most current contact information.
Online Resources: Visit the official DROK website for product updates, FAQs, and additional support documentation.