# INSTRUCTION MANUAL
Battery Sense   BVM48

XPARKLE

Product Overview

The Xparkle BVM48 Battery Sense is an advanced battery monitoring device that stands out for its exceptional versatility, supporting 12V, 24V, 36V, and 48V configurations. This flexibility makes it ideal for a wide range of applications, including automotive, renewable energy systems, recreational vehicles (RVs), and solar energy solutions. With the BVM48, you can effortlessly manage your battery's health and performance, ensuring a smarter and safer driving experience no matter your power needs.
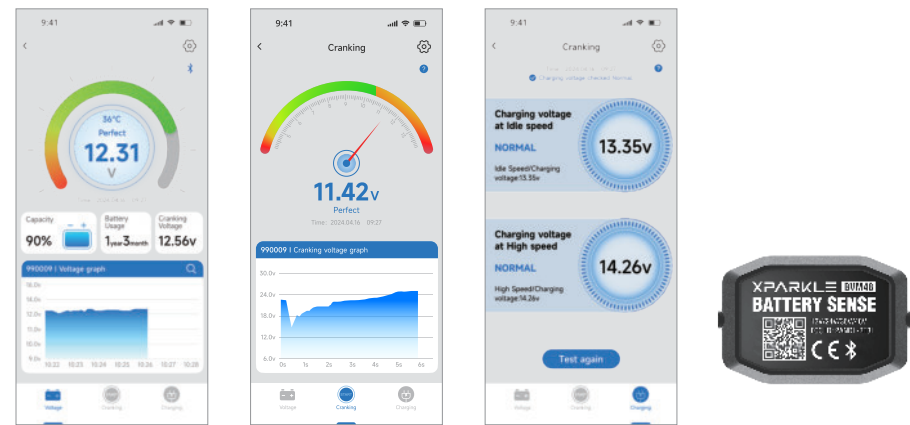
Features

· **Multi-Voltage Support:** Compatible with 12V, 24V, 36V, and 48V battery systems, making it suitable for various applications.
· **Real-Time Monitoring:** Provides continuous voltage and temperature readings, ensuring you're always aware of your battery's condition.
· **User-Friendly App:** The free mobile app for iOS, Android, and Apple Watch allows easy access to battery data and custom alerts.
· **Bluetooth 5.0 Connectivity:** Ensures a reliable and extended range for seamless communication with your devices.
· **Durable and Reliable:** Designed to withstand harsh environments, making it perfect for automotive and outdoor use.
· **Compact Design:** Its sleek and lightweight design allows for easy installation in tight spaces without compromising functionality.
· **Data Logging:** Records historical battery data, enabling you to track performance trends over time for better management.
· **Easy Installation:** Simple connection process makes it accessible for users of all skill levels.

Specifications

Item	Option	Specification
Support Voltage		12V, 24V, 36V, 48V
Supported Vehicles		Motorcycles / Private Cars / Yachts / Off-Road Vehicles / Trucks / RVs / Golf Carts / Electric Bicycles / Electric Motorcycles / Electric Scooters
Voltage Accuracy	<30V	±0.15V
	≥30V	0.5%
Supported Battery Capacity		5–500Ah
Wireless Communication	Bluetooth	5.0
Bluetooth Range		10 meters
Power Consumption	12V	Standby: 0.6mA
		Working: 2.0mA
	24V	Standby: 0.5mA
		Working: 1.2mA
	48V	Standby: 0.5mA
		Working: 1.2mA
App Compatibility	iOS	12.0 or higher
	Android	6.0 or higher
	watchOS	8.5 or higher
Temperature		Support
Working Environment	Temperature	-10°C~60°C
	Humidity	-10%~75%
Storage Environment	Temperature	-20°C~70°C
	Humidity	-20%~75%
Dimensions	L*W*H	56*36*10mm
Weight	Net	40g

Installation

Install the BVM48 Battery Sense

1. Connect the terminals to your batteries, ensuring the red terminal is attached to the positive pole and the black terminal to the negative pole.
2. Place the BVM48 unit in a suitable location where it is not obstructed, allowing for optimal Bluetooth transmission signals.
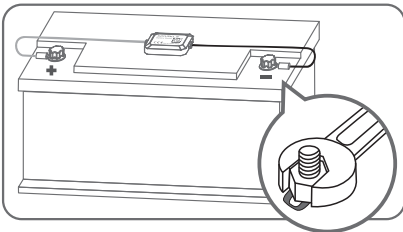
Notice:

· Before applying, clean the surface thoroughly and secure the product body using double-sided adhesive tape.
· Ensure the positive and negative terminals of the battery are free from oil and dust.
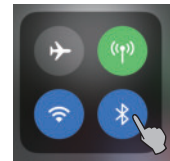· For 24V batteries or higher, extension cables may be required to use this device.

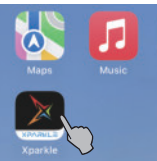## Connecting the Free App

Download the App

Search for the **Xparkle** app on the **App Store** or **Google Play Store** and download it.
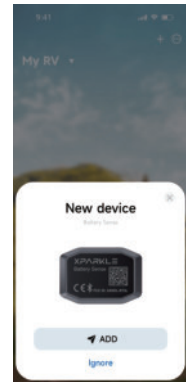

Pairing

1. Enable Bluetooth and location on your mobile device.

2. Open the App. Please grant the necessary permissions for the app to function properly, including access to Bluetooth, location, and other required settings.
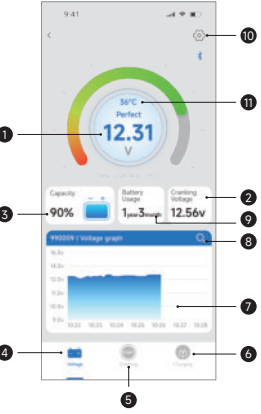
3. Connect to the BVM48. Once the necessary permissions are granted, the device will appear in the app for connection. Click to Add.

4. If the device doesn't show up in the app for connection, tap the "+" icon in the top right corner to manually add the device.
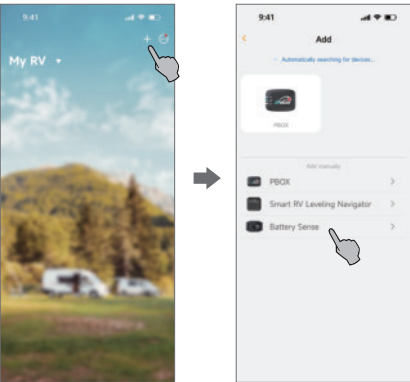
1. Battery real-time voltage
2. Cranking voltage
3. Battery level
4. Battery voltage
5. Cranking test
6. Charging test
7. Voltage curve
8. Find more voltage data
9. Battery connection time
10. System setting
11. Compartment temperature

Cranking/Charging Test

Cranking Test

Each time you start the engine, the device records the voltage data for 3 seconds and generates a voltage curve.

For a 12V system, a cranking voltage below 7.5V is considered abnormal; for a 24V system, a voltage under 15V is abnormal. This may indicate it's time for a replacement. Visit your trusted service center for a check-up or replacement!

Vehicle owners with 24V batteries or higher will need to use extension cables to connect the meter.

Notice:

The cranking test feature is not designed for electric vehicles (EVs), as they do not have traditional combustion engines. Please disregard this feature if using the device with an EV.
Ensure the starter battery is lead-acid. Using other types may cause issues like inaccurate voltage display.

Charging Test

An alternator is responsible for recharging your car battery and powering the vehicle's electrical components. The alternator works in conjunction with the battery to ensure the proper functioning of the lighting system and all other electrical systems. To avoid any unpleasant situations, it's important to test your alternator to ensure it is in good condition. The easiest way to test the alternator is by using this device; simply follow the instructions provided in the app to perform the test.
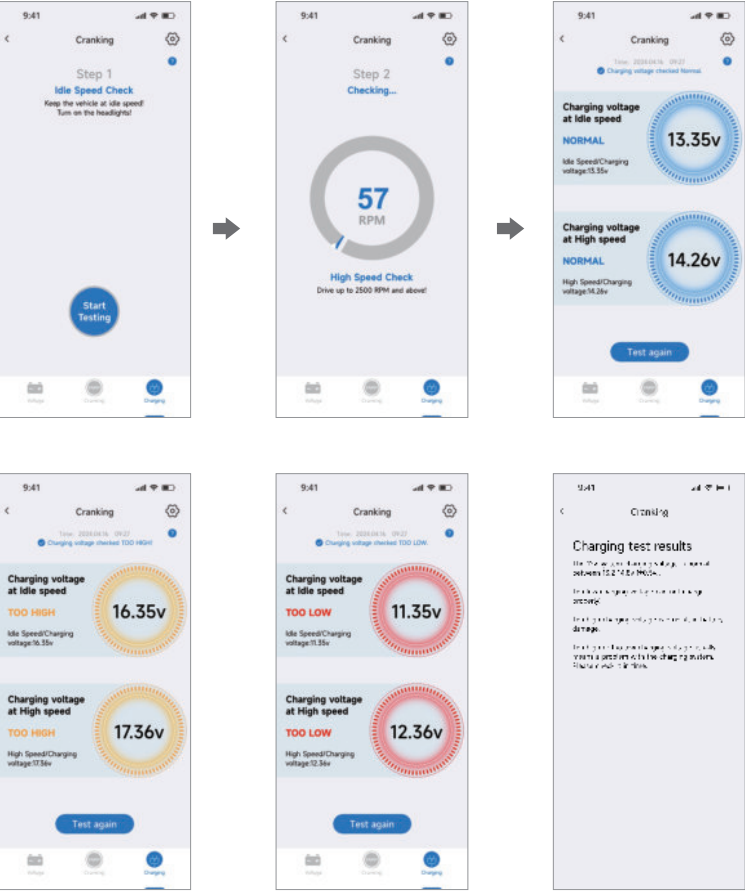
Notice:

Due to the varying charging systems of different alternators, this testing method is for reference only!

Troubleshooting

Connection Issues
· Ensure Bluetooth is enabled on your device.
· Ensure that the positive and negative terminals are connected correctly.
· Restart the app and try reconnecting.

Inaccurate Readings
· Check the wiring connections to ensure they are secure.
· Verify the battery voltage is within the specified range.

Why is the Bluetooth connection unstable or not working?
· Make sure there are no physical obstructions blocking the Bluetooth signal.
· Ensure that Bluetooth is enabled on your device and that you've granted location permissions.

How far can I be from the BVM48 and still maintain a Bluetooth connection?
· The effective Bluetooth range is typically up to 10 meters (33 feet) in an open area, but walls or interference from other devices may reduce the range.

Can the BVM48 monitor multiple batteries at the same time?
· You can add multiple devices, but you can only access and view details for one device at a time.

Can I use the BVM48 with lithium batteries (LiFePO4, Li-ion, etc.)?
· Yes, the BVM48 supports a variety of battery types, including lithium-based batteries. However, always ensure the voltage range is compatible. Keep in mind that some features, such as the cranking test, may not be available for lithium-based batteries.

How often should I check my battery's condition using the BVM48?
· Regular monitoring is recommended, especially in extreme temperatures or before using high-drain devices, to ensure your battery stays in optimal condition.

How long can I store historical data on the app?
· The app can store historical battery voltage data for up to 30 days.

Does the BVM48 drain the battery when the vehicle is not in use?
· The BVM48 uses minimal power and has a very low current draw, so it will not significantly drain your battery when the vehicle is off. However, it's a good practice to monitor your battery if the vehicle will be unused for long periods.

Can the BVM48 be used with solar charging systems?
· Yes, the BVM48 is compatible with solar charging systems, provided the voltage is within the supported range (12V, 24V, 36V, or 48V).

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FCC ID: 2ANDL-BT3L