

1. Overview

The KINGBOLEN BM550 PLUS is a digital battery analyzer designed to test the condition of 6V, 12V, and 24V lead-acid batteries. It measures key parameters to assess battery health without the need for a separate power source.



Primary Function: To provide a quick, accurate assessment of a vehicle battery's State of Health (SOH), State of Charge (SOC), internal resistance, and cranking capability.

2. Features & Specifications

2.1 Key Features

- **Wide Compatibility:** Tests 6V, 12V, and 24V batteries with a CCA (Cold Cranking Amps) range of 100-2000.
- **Battery Technology Support:** Compatible with Regular Flooded, AGM Flat Plate, AGM Spiral, GEL, and EFB batteries. **Note:** Deep cycle batteries are not supported.

- **Multifunctional Analysis:** Displays Voltage, Internal Resistance, State of Health (SOH), and State of Charge (SOC).
- **Real-time Voltage Waveform Monitor:** Graphs voltage fluctuations to help identify faulty batteries or charging system issues.
- **Self-Powered:** Draws operating power directly from the battery being tested; no internal batteries required.
- **Reverse Connection Protection:** Safety feature prevents damage if test clips are connected incorrectly.
- **High-Definition Color Screen:** 1.8-inch display for clear visibility in low-light conditions.

2.2 Technical Specifications

- **Power Source:** Battery Powered (from tested battery)
- **Minimum Operating Voltage:** 6 Volts
- **Measurement Types:** Voltmeter, Ohmmeter
- **Item Weight:** 0.55 Pounds (approx. 249 grams)
- **Item Dimensions:** 4.88 x 2.74 x 0.89 inches
- **Specifications Met:** CCA, BCI, CA, MCA, JIS, DIN, IEC, EN, SAE, GB

KINGBOLEN BM550 PLUS
6V 12V 24V Car Battery Tester

► Based on CCA standards(100-2000CCA)

1.8 1.8 inch HD Color Screen	SOC State of Charge Test
6V 12V 24V Battery Tester	Voltage Waveform
Voltage Test	Reverse Polarity Protection
Resistance Test	Battery Status "Good-Normal-Poor"
SOH State of Health Test	

3. Package Contents

- 1 x KINGBOLEN BM550 PLUS Battery Tester unit with integrated test clips.

4. Use Guide

4.1 Safety Precautions

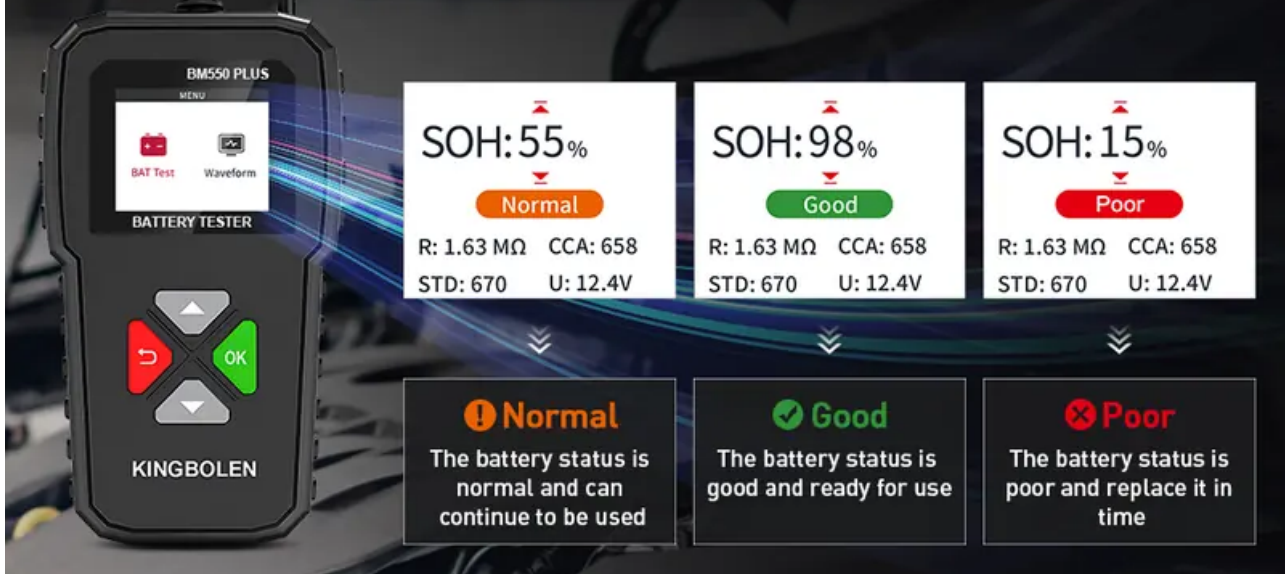
WARNING: Always observe standard automotive safety practices. Work in a well-ventilated area, wear safety glasses, and remove rings or metal jewelry. Ensure the vehicle is in Park (or Neutral for manual) with the parking brake engaged and the ignition OFF.

- The tester features reverse polarity protection. If the clips are connected backwards, the device will not activate, protecting the internal circuitry.
- If the test clips are not properly clamped to the battery terminals, the screen may flicker. Ensure a solid metal-to-metal connection.

4.2 Testing Procedure (In-Vehicle)

1. **Identify Battery Specifications:** Locate the battery's rated voltage (6V, 12V, or 24V) and its CCA (Cold Cranking Amps) rating on the battery label.
2. **Connect the Tester:**
 - Connect the RED test clip to the POSITIVE (+) battery terminal.
 - Connect the BLACK test clip to the NEGATIVE (-) battery terminal.
 - Ensure clips grip the terminal metal securely, not just the plastic cover.
3. **Power On & Input Data:** The device will power on automatically.
 - Use the buttons on the device to input the battery's rated voltage and CCA value as found in Step 1.
 - You may also need to input the battery's Amp-hour (Ah) capacity if prompted, and select the correct battery type (e.g., AGM, GEL, Standard).
4. **Initiate Test:** Follow the on-screen prompts to start the analysis. The test will take a few seconds to complete.
5. **Interpret Results:** The screen will display the results. Refer to Section 4.4 for understanding the readings.
6. **Disconnect:** Disconnect the BLACK clip first, then the RED clip.

SOH Testing To Accurately Grasp Battery Status & Avoid Accidents



4.3 Using the Voltage Waveform Monitor

1. With the tester connected to the battery (and optionally, with the vehicle running to test the charging system), navigate to the waveform function.
2. The screen will display a real-time graph of the system voltage.
3. Observe the waveform for stability. A healthy charging system will show a relatively stable voltage with minimal ripple. Excessive fluctuation or "noise" may indicate alternator or regulator issues.
4. The display will typically show the current, minimum, and maximum voltage values recorded during monitoring.

Real Time Voltage Waveform Monitoring

Displaying the maximum, minimum & current voltage values



4.4 Understanding Test Results

- **State of Health (SOH):** Indicates the overall condition and remaining capacity of the battery compared to its original specification.
 - **Good:** The battery condition is good and ready for use.
 - **Normal:** The battery condition is acceptable and can continue to be used.
 - **Poor:** The battery condition is poor and should be replaced soon.
- **State of Charge (SOC):** Shows the current charge level of the battery as a percentage (e.g., 75%).
- **Voltage:** The present voltage at the battery terminals.
- **Internal Resistance:** Measured in milliohms (mΩ). A higher than normal resistance often indicates a failing battery.
- **CCA Test Result:** The measured cranking amps compared to the battery's rated CCA.

KINGBOLEN BM550 PLUS Use Guide



5. Troubleshooting

- **Device does not turn on when connected:**
 - Check that the test clips are making firm contact with clean battery terminal metal.
 - Verify the battery voltage is at least 6V.
 - Ensure clips are not reversed (Red to Positive, Black to Negative).
- **Screen flickers:** This usually indicates a poor connection. Re-clamp the test clips securely onto the battery terminals.
- **Test results seem inaccurate:**
 - Confirm you entered the correct battery voltage, CCA, and type.
 - For the most accurate SOH reading, the battery should have a State of Charge (SOC) above 50%. Consider charging the battery and retesting.

6. Care & Maintenance

- Store the tester in a dry, cool place.
- Keep the test clips clean and free of corrosion. Wipe with a dry cloth if necessary.
- Avoid dropping the device or subjecting it to extreme temperatures.
- Do not disassemble the unit.

Warning

This content is compiled from multiple sources and is provided for reference purposes only. It may not be complete or fully applicable to all situations. If you are unable to resolve your issue, please contact the product manufacturer or an authorized service provider for official support.

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