



# EK-H754 Battery Internal Resistance Tester



## Product Function

Instrument for measuring the internal resistance, voltage, and temperature of lead-acid, nickel-cadmium, nickel-metal hydride, and lithium batteries to assess battery health status.

## Product Features

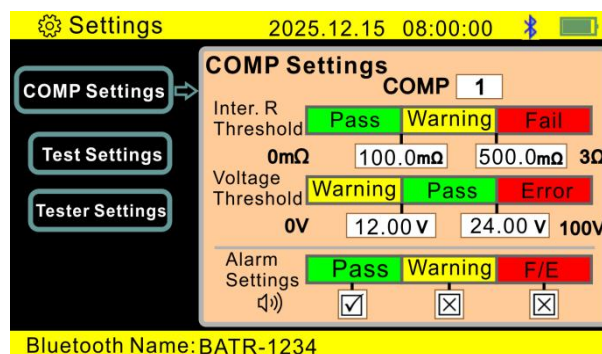
1. Employs Kelvin AC 4-wire measurement method, eliminating the influence of lead resistance or contact resistance to obtain accurate internal resistance values.
2. Simultaneously displays resistance, voltage, and temperature for clear, at-a-glance test results.
3. Utilizes 1kHz AC testing method, requiring no interruption of power supply from the battery to other equipment.
4. Comparator function allows setting of internal resistance and voltage thresholds for simplified battery aging assessment.
5. Filter function stabilizes and refines test readings when activated.
6. Bluetooth communication enables viewing and recording of test results on mobile devices.
7. PC upload function via USB interface facilitates transfer of test data to a computer for storage and analysis.

## Comparator Function

As a battery ages with use, its internal resistance gradually increases. When the internal resistance reaches 1.5 to 2 times that of a new battery, the battery can be deemed aged. By setting internal resistance and voltage thresholds in the comparator, the aging status of the battery can be determined based on test values.

Example: For a given battery model with a new internal resistance of 0.5 mΩ and a voltage of 12 V:

| Parameter           | New Battery | In Use                     | Aged Battery            |
|---------------------|-------------|----------------------------|-------------------------|
| Internal Resistance | 0.5 mΩ      | 0.75 mΩ<br>(1.5 times new) | 1.0 mΩ<br>(2 times new) |
| Voltage             | 12 V        | 10.8 V<br>(90% of new)     | 9.6 V<br>(80% of new)   |
| Judgment            | PASS        | WARNING                    | FAIL                    |





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## Measurement Accuracy

### 1. Resistance Measurement Accuracy

| Range  | Maximum Display | Resolution | Accuracy          | Measuring Current |
|--------|-----------------|------------|-------------------|-------------------|
| 3 mΩ   | 3.100 mΩ        | 1 μΩ       | ±(1.5%rdg + 8dgt) | 200 mA            |
| 30 mΩ  | 31.00 mΩ        | 10 μΩ      |                   | 20 mA             |
| 300 mΩ | 310.0 mΩ        | 100 μΩ     |                   | 2 mA              |
| 3 Ω    | 3.100 Ω         | 1 mΩ       |                   | 2 mA              |

### 2. Voltage Measurement Accuracy

| Range | Maximum Display | Resolution | Accuracy          |
|-------|-----------------|------------|-------------------|
| 7 V   | ±7.100 V        | 1 mV       | ±(0.3%rdg + 6dgt) |
| 100 V | ±100.00 V       | 10 mV      |                   |

### 3. Temperature Measurement Accuracy

| Range           | Maximum Display | Resolution | Accuracy |
|-----------------|-----------------|------------|----------|
| -10.0℃ to 60.0℃ | 60.0℃           | 0.1℃       | ±1.0℃    |

## Technical Specification

|                                  |                                                                                                                                                                                                                                                                                                     |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Supply                     | DC 3.7V, 2600mAh Lithium battery                                                                                                                                                                                                                                                                    |
| Display Screen                   | 4.3-inch color screen; 480×272 resolution                                                                                                                                                                                                                                                           |
| Measurement Range                | Internal Resistance: 0.000 mΩ to 3.100 Ω                                                                                                                                                                                                                                                            |
|                                  | Voltage: 0.000 V to 100.00 V                                                                                                                                                                                                                                                                        |
|                                  | Temperature: -10.0℃ to 60.0℃                                                                                                                                                                                                                                                                        |
| Maximum Input Voltage            | DC 100 V (between + and - measurement terminals); AC input not permitted                                                                                                                                                                                                                            |
| Measurement Method               | Internal Resistance: 1 kHz AC 4-terminal test method; open-circuit terminal voltage 3 V max<br>Measuring Current: 2.0 mA to 200 mA (varies by range)<br>Temperature: NTC temperature sensor (100 kΩ at 26℃)<br>A/D Conversion: Successive approximation type<br>Display Update Rate: 5 times/second |
| Response Time                    | 200 ms                                                                                                                                                                                                                                                                                              |
| Power Consumption                | 400 mA MIN / 1000 mA MAX                                                                                                                                                                                                                                                                            |
| Dielectric Withstand Voltage     | AC 3700 V/RMS (Between circuit and enclosure)                                                                                                                                                                                                                                                       |
| Alarm Function                   | Yes, internal resistance and voltage alarm thresholds can be set                                                                                                                                                                                                                                    |
| Noise Avoidance Frequency        | 920 Hz to 1080 Hz (Auto frequency conversion)                                                                                                                                                                                                                                                       |
| Lead Resistance Zero Adjustment  | Yes                                                                                                                                                                                                                                                                                                 |
| Hold and Storage Function        | Manual hold/storage and automatic hold/storage available                                                                                                                                                                                                                                            |
| Storage Capacity                 | 26 groups (A to Z), 1000 records per group; Total 26,000 records                                                                                                                                                                                                                                    |
| Measurement Judgment Function    | PASS, WARNING, FAIL thresholds can be preset                                                                                                                                                                                                                                                        |
| Battery Voltage Indicator        | 5-bar battery level display; low battery warning prompt                                                                                                                                                                                                                                             |
| Auto Power Off                   | Automatically powers off after approx. 15 minutes of inactivity                                                                                                                                                                                                                                     |
| USB Communication                | USB interface; with PC software, stored data can be uploaded to computer for storage, analysis and printing.                                                                                                                                                                                        |
| Bluetooth Communication          | Bluetooth interface; with mobile APP, stored data can be uploaded for storage, analysis.                                                                                                                                                                                                            |
| Meter Dimensions                 | 226 mm × 142 mm × 65 mm                                                                                                                                                                                                                                                                             |
| Meter Weight                     | Approx. 2.1 kg (including accessories)                                                                                                                                                                                                                                                              |
| Operating Temperature & Humidity | -10℃ to 40℃; below 80% RH                                                                                                                                                                                                                                                                           |
| Accessories                      | Meter: 1 pc; Clamp-type test lead: 1 set; USB communication cable: 1 pc; Temperature test lead: 1 pc; Power adapter: 1 pc; Zero adjustment board: 1 pc; Tool kit: 1 pc                                                                                                                              |

