Maximum input voltage 1000V

High Voltage Battery Tester for EV and PHEV

- DC voltage measurement up to 1000 V
- 0.1μΩ to 3kΩ internal resistance range
  (Pack total resistance, bus bar resistance)
- Built-in spark discharge reduction function
- Analog output function
- Probe supports 1000 V and high voltage battery packs
  (option)
Measurement lead with long tip

Measure deep-set terminals with the long tip
(Figure: terminal cross-section)

Easily measure terminals that are far apart thanks to the long lead

Maximum input voltage **1000V**

For shipping and receiving inspections of battery packs with increasingly higher voltages

The BT3564 simultaneously measures both internal resistance and battery voltage with an input voltage of up to 1000 V. This battery tester is perfect for shipping and receiving inspections of battery packs ranging from increasingly higher voltage EV and PHEV batteries to home storage batteries.

**High Precision**
- Resistance: ±0.5%rdg. ±5dgt.
- Voltage: ±0.01%rdg. ±3dgt.

**High Resolution**
- Resistance: 0.1 μΩ (3 mΩ range)
- Voltage: 10 μV (10 V range)

For shipping and receiving inspections of battery packs with increasingly higher voltages

EV/PHEV high voltage battery pack

**Safely and smoothly measure high voltage battery packs with the 1000 V probe**

*Exclusive option

PIN TYPE LEAD L2110 (option)

Measurement lead with long tip

Tip length: 50 mm (1.97 in), Diameter: 7 mm (0.28 in)

Safely measure the resistance of high voltage bus bars

Measure deep-set terminals with the long tip
(Figure: terminal cross-section)

Easily measure terminals that are far apart thanks to the long lead
### Functions for Reliable, Easy Measurement

#### Built-in spark discharge reduction function
Spark discharges become more likely with measurements of higher voltages. The BT3564 limits the current that flows when contacting battery packs, thus reducing spark discharges.
Furthermore, the contact check function automatically switches to measurement mode as soon as it confirms contact between the probe and the battery pack terminal.

#### Analog output function
Complete with a built-in resistance value analog output function. Combine it with a recorder or logger for total resistance value monitoring such as extended vibration testing or battery evaluation, and monitoring resistance changes due to temperature, humidity, or other environmental changes.

#### Four-terminal AC method
Resistance measurement uses the 1 kHz AC 4 terminal method for measurement unaffected by wiring resistance, etc.

#### Averaging function
Stable readings can be consistently obtained by averaging two to 16 measurements.

#### Comparator function
Simultaneous, comprehensive output of resistance and voltage results.

#### Measurement error detection
Detect poor contact or probe disconnections for highly-reliable measurements.

#### Save measurement setting configurations
Up to 126 measurement configurations such as comparator setting criteria can be saved and reloaded. Saved configurations can be selected by external control.

#### Self-calibration
Minor drift and gain fluctuations within the internal measurement circuitry are automatically corrected to maintain high accuracy.

#### Resistance measurement range and accuracy

<table>
<thead>
<tr>
<th>Range</th>
<th>3 mΩ</th>
<th>30 mΩ</th>
<th>300 mΩ</th>
<th>3 Ω</th>
<th>30 Ω</th>
<th>300 Ω</th>
<th>3000 Ω</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum display value</td>
<td>3.1000 mΩ</td>
<td>31.000 mΩ</td>
<td>310.00 mΩ</td>
<td>3.1000 Ω</td>
<td>31.000 Ω</td>
<td>310.00 Ω</td>
<td>3100.0 Ω</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1 µΩ</td>
<td>1 µΩ</td>
<td>10 µΩ</td>
<td>100 µΩ</td>
<td>1 mΩ</td>
<td>10 mΩ</td>
<td>100 mΩ</td>
</tr>
<tr>
<td>Measurement Current*1</td>
<td>100 mA</td>
<td>100 mA</td>
<td>10 mA</td>
<td>1 mA</td>
<td>100 µA</td>
<td>10 µA</td>
<td>10 µA</td>
</tr>
<tr>
<td>Measurement Current Frequency</td>
<td>1 kHz ±0.2 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy<strong>3,</strong>*</td>
<td>±0.5% rdg. ±10 dgt.</td>
<td>±0.5% rdg. ±5 dgt.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature coefficient</td>
<td>±0.05% rdg. ±1 dgt. / °C</td>
<td>±0.05% rdg. ±0.5 dgt. / °C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 Measurement current accuracy is ±10%
**2 Other 30 mΩ Range : Add ±3 dgt. for FAST, or ±2 dgt. for MEDIUM
*** Average function OFF Other 30 mΩ Range : Add ±8 dgt. for FAST, or ±4 dgt. for MEDIUM, or ±2 dgt. for SLOW

#### Voltage measurement range and accuracy

<table>
<thead>
<tr>
<th>Range</th>
<th>10 V</th>
<th>100 V</th>
<th>1000 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum display value</td>
<td>±9.99999 V</td>
<td>±99.999 V</td>
<td>±1100.0 V</td>
</tr>
<tr>
<td>Resolution</td>
<td>10 µV</td>
<td>100 µV</td>
<td></td>
</tr>
<tr>
<td>Accuracy<strong>4,</strong>*</td>
<td>±0.01% rdg. ±0.03 mV</td>
<td>±0.01% rdg. ±0.3 mV</td>
<td></td>
</tr>
<tr>
<td>Temperature coefficient</td>
<td>±(0.001% rdg. ±0.3 dgt.) / °C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*4 Add ±4 dgt. for FAST, or ±2 dgt. for MEDIUM
*5 Average function OFF Add ±8 dgt. for FAST, or ±4 dgt. for MEDIUM, or ±2 dgt. for SLOW

#### Error and temperature coefficient

- **Guaranteed accuracy**
  - Temperature & humidity : 23 °C ±5 °C, 80% rh or less (non-condensating)
  - Warm-up time : At least 30 min.
  - After executing zero-adjustment
  - Average of 4 measurements

#### Temperature & humidity
- 0.000 V~±999.999 V

**Guaranteed accuracy temperature:**
- ±0.01% rdg.
- ±0.03 mV
- ±0.01% rdg. ±3 mV
- Guaranteed accuracy temperature: 0.800 V~±999.999 V

**Temperature coefficient**
- ±0.001% rdg. ±0.3 dgt. / °C

#### Sampling times

<table>
<thead>
<tr>
<th>Function</th>
<th>FAST ms</th>
<th>MEDIUM ms</th>
<th>SLOW ms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ω V (50 Hz), (60 Hz)</td>
<td>28 ms</td>
<td>88 ms</td>
<td>384 ms</td>
</tr>
<tr>
<td>Ω (50 Hz), (60 Hz)</td>
<td>12 ms</td>
<td>42 ms</td>
<td>276 ms</td>
</tr>
<tr>
<td>V (50 Hz), (60 Hz)</td>
<td>16 ms</td>
<td>46 ms</td>
<td>281 ms</td>
</tr>
</tbody>
</table>

* Items in the parentheses () indicate supply frequency settings. Tolerance: ±5 ms for SLOW, ±1 ms otherwise
* For an external trigger source, if the measurement current mode is set to Pulse, or if continuous measurement is OFF: Add 1 ms for the Ω and V function, or 4 ms for the Ω and V function respectively.
BT3564 specifications

Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year. Product Warranty for 3 year.

<table>
<thead>
<tr>
<th>Measurement signals</th>
<th>Resistance, Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement method</td>
<td>Four-terminal AC method (1 kHz ±0.2 Hz)</td>
</tr>
<tr>
<td>Measurement range</td>
<td>Resistance measurement range: 0 Ω to 3.1 Ω (Minimum resolution 0.1 μΩ) Voltage measurement range: DC 0 V to ±999.999 V (Minimum resolution10 μV) Voltage display range: ±100.00 V</td>
</tr>
<tr>
<td>Resistance measurement range</td>
<td>3 mΩ / 30 mΩ / 300 mΩ / 3 Ω / 30 Ω / 300 Ω / 3000 Ω</td>
</tr>
<tr>
<td>Voltage measurement range</td>
<td>10 V / 100 V / 1000 V</td>
</tr>
<tr>
<td>DC Input resistance</td>
<td>5 MΩ</td>
</tr>
<tr>
<td>Opamp circuit voltage</td>
<td>25 Vpeak</td>
</tr>
<tr>
<td>Function</td>
<td>Ω / V / Ω / V</td>
</tr>
<tr>
<td>Maximum input voltage</td>
<td>±1000 V DC rated input voltage ±1000 V DC maximum rated voltage to ground</td>
</tr>
<tr>
<td>Sampling rate</td>
<td>Three steps – FAST/MEDIUM/SLOW</td>
</tr>
<tr>
<td>Response time</td>
<td>700 ms for measurements</td>
</tr>
<tr>
<td>Zero-adjustment</td>
<td>1000 count range (both resistance and voltage)</td>
</tr>
<tr>
<td>Triggering</td>
<td>Internal or external</td>
</tr>
<tr>
<td>Delay time</td>
<td>On/off, 0 to 9.999 seconds</td>
</tr>
<tr>
<td>Averaging samples</td>
<td>On/off, 2 to 16 samples</td>
</tr>
<tr>
<td>Comparator function</td>
<td></td>
</tr>
<tr>
<td>Options</td>
<td></td>
</tr>
</tbody>
</table>

Model : BATTERY HiTESTER BT3564

Model No. (Order Code) (Note)

BT3564

Note:
Measurement lead is not included. Please purchase an optional lead that matches your measurement application.

Options

1000V-compliant measurement leads (for measuring high voltage batteries)

PIN TYPE LEAD L2110
A: 750 mm, B: 215 mm, L: 1880 mm, for high voltage battery measurements, DC 1000 V

PIN TYPE LEAD L2100
A: 300 mm, B: 172 mm, L: 1400 mm, for high voltage battery measurements, DC 1000 V

For tip replacement (Common to L2110, L2100)

Tip pin 9772-90
Tip pin 9772-90

Zero adjustment board

Measurement leads (for measuring batteries up to 60 V)

1.8 mm dia. single axis type for measuring small electrodes
0.2 mm parallel pyramid type pins for measuring flat holes and sub-millimeter objects

PIN TYPE LEAD L9770 A: 260 mm, B: 140 mm, L: 850 mm, DC 70 V

PIN TYPE LEAD L9771 A: 260 mm, B: 138 mm, L: 850 mm, DC 70 V

CLIP TYPE LEAD L2107 A: 130 mm, B: 83 mm, L: 1100 mm, DC 70 V

FOUR TERMINAL LEAD 9463 A: 240 mm, B: 118 mm, L: 1360 mm, DC 60 V

LARGE CLIP TYPE LEAD 9467 A: 300 mm, B: 116 mm, L: 1360 mm, DC 50 V

About probe length

A: betweento between probe and probe tip
B: between connector and probe tip
L: between

Interface Connection cables

RS-232C CABLE 9637 9 to 9-pin crossover, 1.8 m
GP-I8 CONNECTOR CABLE 9151-02 2 m

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