# HIOKI

## BATTERY TESTER BT3554-50

**NEW**



Next battery: No. 2

Pass!

Next battery: No. 3

# Streamline UPS and lead-acid battery diagnostics with measurement and recording guidance.

| Measurement navigator **Audio guidance** | Streamlined data management **Profiles** | From measurement to recording **As fast as 2 sec.** |
|---|---|---|



Audio guidance

Recording and judgment

## Accurately assess lead-acid battery deterioration using proprietary technology.

The new Battery Tester BT3554-50 sets a new standard for UPS and lead-acid battery diagnostics. Since the battery's internal resistance and voltage are measured using the impedance method, diagnostics can be performed while the battery is connected to its host device, without taking it offline. Proprietary noise reduction technology allows more accurate measurement, even in noisy environments.

## Enjoy measurement guidance and easy data management functionality with the latest software.

When the BT3554-50 is paired with a dedicated mobile app (GENNECT Cross), the mobile device will provide audio guidance announcing the next battery number to be measured. This feature helps prevent erroneous measurements. You can also set up measurement locations informations and battery numbers in advance to create *profiles* to which measurement data and diagnostic results will be linked. This capability simplifies data management, even when performing diagnostic work on large numbers of batteries.

CE

**3 year Warranty**

**Bluetooth®**
When Z3210 is installed.

**Wireless Adapter Compatible**

Measurement parameters

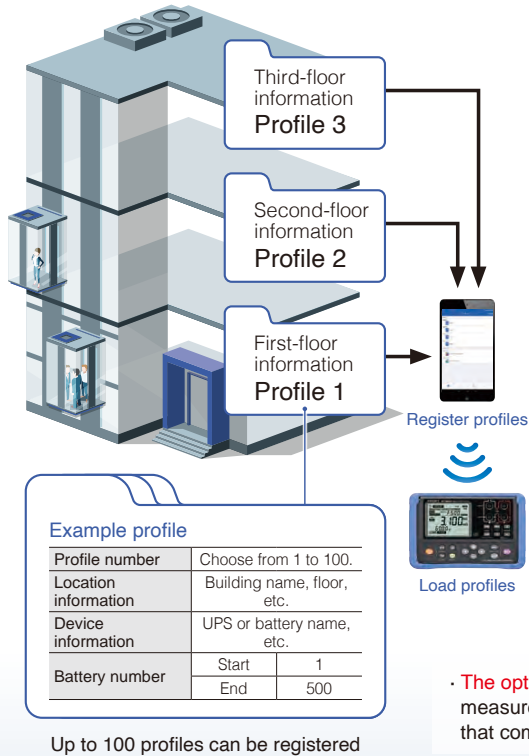| ⎓V **Voltage** | Ω **Resistance** | ℃ **Temperature** |
|---|---|---|

Measurement navigator that keeps you from going back.

# Simply follow the audio guidance to measure, record, and organize data.

**1** Register site informations in advance.

Register *profile* information for each measurement site using GENNECT Cross or GENNECT One and load it on the instrument.

**2** Receive audio guidance about the measurement sequence.

The app provides audio guidance about the battery measurement sequence based on *profile* information. This approach prevents mistakes in sequencing and provides audio announcements of judgment results.

Third-floor information
**Profile 3**

Second-floor information
**Profile 2**

First-floor information
**Profile 1**

Register profiles

Load profiles

**Measurement instruction**

Next: No. 1

Measured values and judgment results are transferred to the app when the battery is probed.

No.1: PASS

The app notifies the operator the judgment results and the next battery number to be measured.

Next: No. 2

No. 2: WARNING

Next: No. 3

No. 3: FAIL

End of guidance

### Example profile

| Profile number | Choose from 1 to 100. | |
|---|---|---|
| Location information | Building name, floor, etc. | |
| Device information | UPS or battery name, etc. | |
| Battery number | Start | 1 |
| | End | 500 |

Up to 100 profiles can be registered

**Measurement Record Guide**

BT3554-50#201200001

AUTO HOLD · COMP · 0ADJ · AUTO MEMORY
HOLD · PASS · GUIDE · VOICE

| Profile No. | 1 |
| Location | Hioki 1F UPS ROOM |
| Device | UPS 1-1 |

Next Measurement Record Battery
Battery No. 2
Memory No. A. 102

Recorded Battery
Battery No. 1 ~ 1 /50
Memory No. A. 001 ~ 001 /50

Guide Stop

Battery · Record Data · Maintenance · Other

· The optional Wireless Adapter Z3210 is required in order to use the measurement and recording guidance function as well as other functions that communicate with smartphones or tablets.
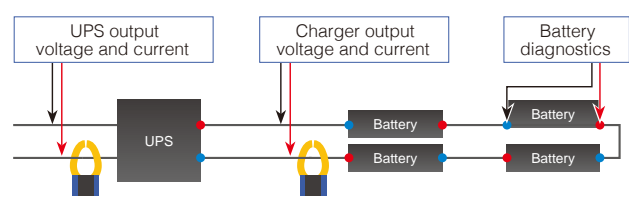
HIOKI Z3210

## Applications other than diagnostics

**▌ Manage battery connection resistance values too**

If you set up *profile* information for each measurement application, you can easily group readings with other measurement data for management purposes.

Managing battery information

Profile 1 + Profile 2

Battery measurement (Profile 1)

Battery connection resistance (Profile 2)
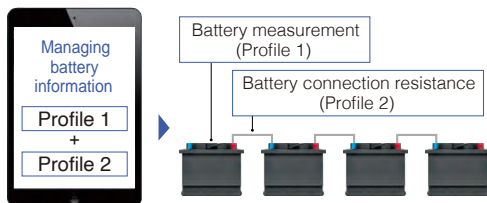
**▌ Manage other UPS inspection data together**

GENNECT can serve as a central repository for managing data from Hioki clamp meters and other instruments. Access the QR code for sample data. >>

UPS output voltage and current

Charger output voltage and current

Battery diagnostics

UPS

Battery | Battery

Battery | Battery

**▌ Product bundles**

| Model No. (Order code) | BT3554-92 | BT3554-91 | BT3554-52 | BT3554-51 | BT3554-50 | |
|---|---|---|---|---|---|---|
| Special Accessories | Pin Type Lead L2020 | Pin Type Lead 9465-10 | Pin Type Lead L2020 | Pin Type Lead 9465-10 | - | Wireless Adapter Z3210 |
| | Wireless Adapter Z3210 | Wireless Adapter Z3210 | - | - | - | |
| Standard accessories | Carrying | Protector | Fuse Set | 0 Adj Board | Neck strap | USB cable | GENNECT One | AA alkaline battery (LR6) × 8 User Manual | For Bluetooth® wireless communications technology; required in order to communicate |

## 3 Record data automatically while probing.

Judgment results (PASS, WARNING, or FAIL) relative to comparator threshold values are recorded by the instrument along with measured values and transferred to your mobile device.
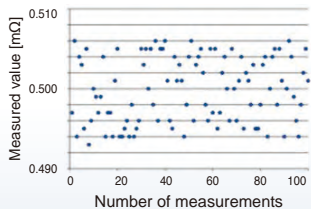
## 4 Manage data easily.

Measurement data is linked to *profile* information and saved. This approach lets you reduce the number of man-hours spent managing measured batteries.

| Profile Information | Profile number | 1 |
|---|---|---|
| | Location information | Hioki first-floor UPS room |
| | Device information | UPS 1-1 |
| | Battery number | 1 |
| Measurement data | Memory number | A.001 |
| | Date and time | 2020/4/20 13:00:00 |
| | Resistance value | ●.●●● mΩ |
| | Voltage value | ●●.●● V |
| | Temperature | ●●.●●°C |
| | Comparator Threshold value | ● mΩ / ● mΩ / ● V |
| | Judgment result | PASS / WARNING / FAIL |

Third-floor measurement data

Second-floor measurement data

First-floor measurement data

Up to 6,000 data sets can be saved

⁓⋏⋀⋁⁓ **NOISE REDUCTION TECHNOLOGY**

### Noise resistance that lets you measure even when the UPS is in operation

| Normal instrument | Noise reduction technology |
|---|---|
| Measured values fail to stabilize while the UPS is operating due to the effects of noise from nearby inverters. | The effects of inverter noise are reduced to facilitate stable measurement. |

Measured value [mΩ] — Number of measurements

### Management and analysis software

Free — Mobile app

Free — PC Software

**GENNECT Cross**

**GENNECT One**

Bluetooth — USB

Transfer measurement data to a smartphone

Transfer internal memory data to a computer

## Optional functionality

### ▍Excel® Direct Input

Excel® Direct Input function allows you to input measurement values directly and automatically into an Excel file once the measurement Auto-hold function is activated. You can easily input the data into an existing Excel form.
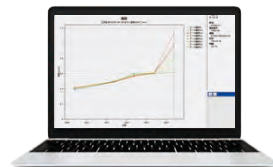
Bluetooth

## App and software functionality

### ▍Easily create reports

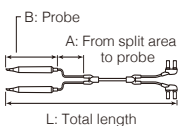Create easy-to-read graphical reports with measurement results and photographs instantly.
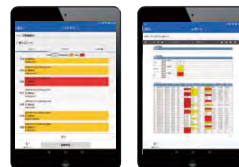
### ▍Display trends for accumulated data

Display data for selected batteries and generate trend graphs by cubicle (up to 500 units).

## ▍Options

Regarding probe length

B: Probe
A: From split area to probe
L: Total length

**Pin Type Lead L2020**
A: 70 mm (2.76") (red),
   150 mm (5.91") (black, max. 630 mm [24.80"])
B: 164 mm (6.46")
L: 1941 mm (76.42") (red)

**Pin Type Lead 9465-10**
A: 45 mm (1.77") (red),
   400 mm (15.75") (black max.)
B: 177 mm (6.97")
L: 1925 mm (75.79") (red)

**Pin Type Lead 9772**
A: 45 mm (1.77") (red),
   400 mm (15.75") (black max.)
B: 173 mm (6.81")
L: 1921 mm (75.63") (red)

**Clip Type Lead with Temperature Sensor 9460**
A: 300 mm (11.81")
B: 106 mm (4.17")
L: 2268 mm (89.29")

**Large Clip Type Lead 9467**
A: 300 mm (11.81")
B: 131 mm (5.16")
L: 1350 mm (53.15")
tip φ 28 mm (1.10")

**Remote Control Switch 9466**
Hold and save measured values by pressing the button. Cable length: approx. 2 m (78.74")

**Tip Pin 9465-90**

**Tip Pin 9772-90**

**Temperature Probe 9451S**
Order code 9451-01

**Temperature Probe 9451**

**Fuse Set Z5050**
Set of 5

**0 Adj Board Z5038**
Separate surface fastener required if affixing to carrying case

**Protector Z5041**

**Carrying Case C1014**

# Specifications

## General Specifications

| | |
|---|---|
| Measurement parameters | Battery internal resistance measurement<br>Battery terminal voltage measurement (DC voltage only)<br>Temperature measurement (when using 9460, 9451, or 9451S) |
| Measurement time | 100 ms |
| Response time | Approx. 1.6 sec. |
| Location of use | Indoors, Level 2 pollution, maximum elevation of 2000 m (6562 ft.) |
| Operating temperature and humidity range | Temperature: 0°C to 40°C (32°F to 104°F)<br>Humidity: 80% RH or less (non-condensing) |
| Storage temperature and humidity range | Temperature: -10°C to 50°C (14°F to 122°F)<br>Humidity: 80% RH or less (non-condensing) |
| Power supply | Size AA alkaline battery (LR6) × 8<br>Rated supply voltage: 1.5 V DC × 8<br>(Nickel metal hydride batteries may be used. However, the battery life display is not supported in this configuration.) |
| Continuous operating time | About 8.3 hr. (without Z3210 installed)<br>About 8.2 hr. (with Z3210 installed and wireless communications active) |
| Standard compliance | Safety: EN 61010-2-030<br>EMC: EN 61326-1 |
| Dimensions | 199W × 132H × 60.6D mm (7.83"W × 5.20"H × 2.39"D)<br>(with Protector Z5041 installed) |
| Mass | 960 g (33.9 oz.) (including batteries and Protector Z5041) |
| Communications interface | USB<br>Wireless communications (when Z3210 installed) |
| Product warranty | 3 years |
| Fuse | 250 V, F 630 mAH (Littelfuse model 216.630)<br>(1 fuse is built into each BT3554-50.) |

## Accuracy Specifications

| | |
|---|---|
| Accuracy guaranteed conditions | Accuracy guarantee duration: 1 year<br>Accuracy guarantee temperature and humidity range: 23°C ±5°C (73°F ±9°F), 80% RH or less<br>Warm-up time: none |
| Temperature Characteristics | For measurement within the operating temperature range but outside of the accuracy guaranteed temperature range:<br>(n°×0.1)(measurement accuracy)+(measurement accuracy)<br>n° = number of °C away from accuracy guarantee conditions |

### Resistance measurement accuracy

Measurement current accuracy: ±10%
Measurement current frequency: 1 kHz ±30 Hz
With noise frequency avoidance function enabled, 1 kHz ±80 Hz.

| Range | Maximum display | Resolution | Measurement accuracy | Measurement current |
|---|---|---|---|---|
| 3 mΩ | 3.100 mΩ | 1 μΩ | ±1.0% rdg ±8 dgt* | 160 mA |
| 30 mΩ | 31.00 mΩ | 10 μΩ | ±0.8% rdg ±6 dgt | 160 mA |
| 300 mΩ | 310.0 mΩ | 100 μΩ | ±0.8% rdg ±6 dgt | 16 mA |
| 3 Ω | 3.100 Ω | 1 mΩ | | 1.6 mA |

When using test leads other than recommended accessories or optional models, or when using extended test leads, accuracy is only guaranteed after performing zero adjustment.
When a test lead other than those made by Hioki is used, the accuracy and proper operation cannot be guaranteed.

*Add the following values to the measurement accuracy as influence values if zero adjustment has not been performed in the 3 mΩ range (reference values).

| | | | |
|---|---|---|---|
| When using 9465-10 ±5 dgt | | When using 9460 ±16 dgt | |
| When using L2020 ±6 dgt | | When using 9467 ±5 dgt | |
| When using 9772 ±1 dgt | | | |

*Use the included zero-adjustment board or the Z5038 0 Adj. Board to perform zero adjustment with the 9465-10, L2020, or 9772.

### Voltage measurement accuracy

| Range | Maximum display | Resolution | Measurement accuracy |
|---|---|---|---|
| 6 V | ±6.000 V | 1 mV | ±0.08% rdg ±6 dgt |
| 60 V | ±60.00 V | 10 mV | ±0.08% rdg ±6 dgt |

### Temperature measurement accuracy

| Measurement range | Maximum display | Resolution | Measurement accuracy*² |
|---|---|---|---|
| -10°C to 60°C | 60.0°C | 0.1°C | ±1.0°C |
| 14°F to 140°F | 140.0°F | 0.1°F | ±1.8°F |

*² When using the Clip Type Lead with Temperature Sensor 9460.
*² When using the Temperature Probe 9451, add ±0.5°C (±0.9°F) (cable length: 1.5 m [59.1"]).
*² When using the Temperature Probe 9451S, add ±0.5°C (±0.9°F) (cable length: 0.1 m [3.94"]).

BT3554-50 standalone accuracy with simulated input: ±0.5°C (±0.9°F)

## Functional Specifications

| | |
|---|---|
| Memory functionality | **Operation**<br>Save, load, and delete measurement data<br>Save and delete *profile* information<br>Number of data sets: 6000<br>Memory architecture: 500 data sets per unit (12 units)<br><br>**Saved data**<br>Saved measurement data is linked to *profile* information.<br><br>(1) Measurement data<br>(Data can be saved, loaded, and deleted by operating the instrument.)<br>1. Date and time<br>2. Resistance value, voltage value, and temperature<br>3. Comparator threshold value and judgment result<br><br>(2) *Profile* information<br>*Profile* information can be saved, loaded, and deleted using a supported application (GENNECT Cross or GENNECT One).<br>(*Profile* information cannot be saved, loaded, or deleted by operating the instrument.)<br>1. *Profile* numbers: 1 to 100<br>The same number cannot be used twice<br>Data (2), (3), and (4) below are saved for each *profile* number<br>2. Location: 72-byte string (example: 72 single-byte alphanumeric characters)<br>User-defined comment such as location of UPS<br>3. Device information: 72-byte string (example: 72 single-byte alphanumeric characters)<br>User-defined comment such as UPS management number<br>4. Battery number: 1 to 500 (start number, end number)<br>Number assigned to measurement target; number used for audio measurement and recording guidance |
| Auto memory function | Automatically saves measured values once they are held. |
| Auto-hold function | Automatically holds measured values once resistance measured values stabilize. |
| Measurement Navigator | **Operation**<br>Announces the next battery number to be measured via a screen display and audio guidance.<br>Audio output is generated by a connected mobile device when using the Z3210 and a supported application (GENNECT Cross).<br>**Preparations**<br>*Profile* information that's been registered with a supported application (GENNECT Cross or GENNECT One) must be transferred to the instrument. |
| Auto power-off | The instrument turns off automatically when a no-operation state or measurement current anomaly detection state continues for at least 10 min.<br>(except when sending or receiving data or when using measurement and recording guidance). |
| PC Software (GENNECT One) | Load/delete memory data (USB)<br>Edits and transfers comparator tables (USB)<br>Edits and transfers *profile* information (USB)<br>Creates reports |
| Smartphone / tablet app (GENNECT Cross) | Loads/deletes memory data (Z3210)<br>Edits and transfers comparator tables (Z3210)<br>Edits and transfers *profile* information (Z3210)<br>Measurement and recording guidance (Z3210)<br>Creates reports |

## Comparator Function

| | |
|---|---|
| Comparator | Compares measured values with set threshold values to make judgments and reports them to the user.<br>Judgment notification method: Results are displayed as shown below (segment) and beeping tones sound |

| | Resistance value (low) | Resistance value (medium) | Resistance value (high) |
|---|---|---|---|
| Voltage value (high) | PASS | WARNING | FAIL |
| Voltage value (low) | WARNING | WARNING | FAIL |

If the judgment result is WARNING or FAIL, the audio tone is accompanied by a red backlight.

User-selectable voltage judgment method
·ABS (absolute value judgment)
·POL (polarity judgment )
Savable settings: 200 tables

### Operating precautions

Pass/fail judgment threshold values vary with factors including the battery's manufacturer, type, and capacity. The internal resistance and terminal voltage of a new or known-good battery must be measured first. It may be difficult to determine the deterioration state of traditional open type (liquid) lead-acid or alkaline batteries which demonstrate smaller changes in internal resistance than sealed lead acid batteries.

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