

Fully automated production line testing of small cells for power motors or small packs of up to 60 V

BATTERY HiTESTER BT3561A



LAN

RS-232C

CE

SP

3 Year Warranty

- Simultaneous measurement of internal resistance and open circuit voltage
- Fully automated production line testing of small cells for power motors or small packs of up to 60 V
- Resistance measurement ranges: 30 mΩ/300 mΩ/3 Ω/30 Ω/300 Ω/3 kΩ
- Voltage measurement ranges: 6 V/60 V
- Equipped with LAN

Model No. (Order Code) **BT3561A**

Note: Measurement leads are not included. Purchase the appropriate lead option for your application separately. The male (system side) of the EXT I/O connector is also available. Please contact your authorized Hioki distributor or reseller.

Basic specifications (Accuracy guaranteed for 1 year)

Resistance measurement ranges	30 mΩ (Max. display: 31.000 mΩ, resolution: 1 μΩ, measurement current: 100 mA)
	300 mΩ (Max. display: 310.00 mΩ, resolution: 10 μΩ, measurement current: 10 mA)
Voltage measurement ranges	3 Ω (Max. display: 3.1000 Ω, resolution: 100 μΩ, measurement current: 1 mA)
	30 Ω (Max. display: 31.000 Ω, resolution: 1 mΩ, measurement current: 100 μA)
Response time	300 Ω (Max. display: 310.00 Ω, resolution: 10 mΩ, measurement current: 10 μA)
	3 kΩ (Max. display: 3.1000 kΩ, resolution: 100 mΩ, measurement current: 10 μA)
Sampling period	Basic accuracy: ±0.5% rdg ±5 dgt (±3 dgt. (EX.FAST), ±2 dgt. (FAST, MEDIUM) add.)
	Measurement frequency: 1 kHz ±0.2 Hz
Functions	Measurement method: AC four-terminal method
	6 V (Max. display: 6.00000 V, resolution: 10 μV)
Interfaces	60 V (Max. display: 60.0000 V, resolution: 100 μV)
	Basic accuracy: ±0.01% rdg. ±3 dgt. (±3 dgt. (EX.FAST), ±2 dgt. (FAST, MEDIUM) add.)
Power supply	10 ms
	Ω or V (60 Hz): 4 ms (EX.FAST), 12 ms (FAST), 35 ms (MEDIUM), 150 ms (SLOW)
Dimensions and mass	ΩV (60 Hz): 8 ms (EX.FAST), 24 ms (FAST), 70 ms (MEDIUM), 253 ms (SLOW)
	Ω or V (50 Hz): 4 ms (EX.FAST), 12 ms (FAST), 42 ms (MEDIUM), 157 ms (SLOW)
Included accessories	ΩV (50 Hz): 8 ms (EX.FAST), 24 ms (FAST), 84 ms (MEDIUM), 259 ms (SLOW)
	Contact check, Zero adjustment (±1000 counts), Pulse measurement, Comparator (Hi/In/Low), Statistical calculations (Max. 30,000), Delay, Average, Panel saving/loading, Memory storage, LabVIEW® driver
LAN (TCP/IP, 10BASE-T/100BASE-TX)	RS-232C (Max. 38.4 kbps, Available as printer I/F)
	EXT I/O (37-pin Handler interface)
Power supply	Analog output (DC 0 V to 3.1 V)
	100 to 240 V AC, 50 Hz/60 Hz, 35 VA max.
Dimensions and mass	215 mm (8.46 in) W × 80 mm (3.15 in) H × 295 mm (11.61 in) D, 2.4 kg (84.7 oz)
	Instruction manual ×1, Power cord ×1, Operating Precautions ×1

Fully Automated Production Line Testing of Large Cells for xEVs or Mid-sized Packs of up to 100 V

BATTERY HiTESTER BT3562A



LAN

RS-232C

CE

SP

3 Year Warranty

- Simultaneous measurement of internal resistance and open circuit voltage
- Fully automated production line testing of large cells for xEVs or mid-sized packs of up to 100 V
- Resistance measurement ranges: 3 mΩ/30 mΩ/300 mΩ/3 Ω/30 Ω/300 Ω/3 kΩ
- Voltage measurement ranges: 6 V/60 V/100 V
- Equipped with LAN

Model No. (Order Code) **BT3562A**

Note: Measurement leads are not included. Purchase the appropriate lead option for your application separately. The male (system side) of the EXT I/O connector is also available. Please contact your authorized Hioki distributor or reseller.

Basic specifications (Accuracy guaranteed for 1 year)

Resistance measurement ranges	3 mΩ (Max. display: 3.1000 mΩ, resolution: 0.1 μΩ, measurement current: 100 mA)
	30 mΩ (Max. display: 31.000 mΩ, resolution: 1 μΩ, measurement current: 100 mA)
Voltage measurement ranges	300 mΩ (Max. display: 310.00 mΩ, resolution: 10 μΩ, measurement current: 10 mA)
	3 Ω (Max. display: 3.1000 Ω, resolution: 100 μΩ, measurement current: 1 mA)
Response time	30 Ω (Max. display: 31.000 Ω, resolution: 1 mΩ, measurement current: 100 μA)
	300 Ω (Max. display: 310.00 Ω, resolution: 10 mΩ, measurement current: 10 μA)
Sampling period	3 kΩ (Max. display: 3.1000 kΩ, resolution: 100 mΩ, measurement current: 10 μA)
	Basic accuracy: ±0.5% rdg ±10 dgt (3 mΩ range: ±30 dgt. (EX.FAST), ±10 dgt. (FAST), ±5 dgt. (MEDIUM) add.)
Functions	±0.5% rdg ±5 dgt (30 mΩ range or more: ±3 dgt. (EX.FAST), ±2 dgt. (FAST, MEDIUM) add.)
	Measurement frequency: 1 kHz ±0.2 Hz
Interfaces	Measurement method: AC four-terminal method
	6 V (Max. display: 6.00000 V, resolution: 10 μV)
Power supply	60 V (Max. display: 60.0000 V, resolution: 100 μV)
	100 V (Max. display: 100.000 V, resolution: 1 mV)
Dimensions and mass	Basic accuracy: ±0.01% rdg. ±3 dgt. (±3 dgt. (EX.FAST), ±2 dgt. (FAST, MEDIUM) add.)
	10 ms
Included accessories	Ω or V (60 Hz): 4 ms (EX.FAST), 12 ms (FAST), 35 ms (MEDIUM), 150 ms (SLOW)
	ΩV (60 Hz): 8 ms (EX.FAST), 24 ms (FAST), 70 ms (MEDIUM), 253 ms (SLOW)
LAN (TCP/IP, 10BASE-T/100BASE-TX)	Ω or V (50 Hz): 4 ms (EX.FAST), 12 ms (FAST), 42 ms (MEDIUM), 157 ms (SLOW)
	ΩV (50 Hz): 8 ms (EX.FAST), 24 ms (FAST), 84 ms (MEDIUM), 259 ms (SLOW)
Power supply	Contact check, Zero adjustment (±1000 counts), Pulse measurement, Comparator (Hi/In/Low), Statistical calculations (Max. 30,000), Delay, Average, Panel saving/loading, Memory storage, LabVIEW® driver
	LAN (TCP/IP, 10BASE-T/100BASE-TX)
Dimensions and mass	RS-232C (Max. 38.4 kbps, Available as printer I/F)
	EXT I/O (37-pin Handler interface)
Included accessories	Analog output (DC 0 V to 3.1 V)
	100 to 240 V AC, 50 Hz/60 Hz, 35 VA max.
LAN (TCP/IP, 10BASE-T/100BASE-TX)	215 mm (8.46 in) W × 80 mm (3.15 in) H × 295 mm (11.61 in) D, 2.4 kg (84.7 oz)
	RS-232C (Max. 38.4 kbps, Available as printer I/F)
Power supply	Instruction manual ×1, Power cord ×1, Operating Precautions ×1
	EXT I/O (37-pin Handler interface)

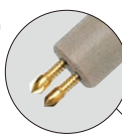
BT3561A/BT3562A/BT3563A/BT3564/BT3563/BT3562 Series Shared Options

Measurement Leads A (for measuring high voltage batteries)



PIN TYPE LEAD L2100

A: 300 mm (11.81 in),
B: 172 mm (6.77 in),
L: 1400 mm (4.59 ft),
for high voltage battery measurements, 1000 V DC max.



PIN TYPE LEAD L2110

A: 750 mm (29.53 in),
B: 215 mm (8.46 in),
L: 1880 mm (9.17 ft),
for high voltage battery measurements, 1000 V DC max.



TIP PIN 9772-90

To replace the tip on the Pin type lead 9772, L2100/L2110, (one piece)

Battery Testers

Fully Automated Production Line Testing of Large Packs for xEVs or Large Packs of up to 300 V

BATTERY HiTESTER BT3563A



LAN

RS-232C



Basic specifications (Accuracy guaranteed for 1 year)

Resistance measurement ranges	3 mΩ (Max. display: 3.1000 mΩ, resolution: 0.1 μΩ, measurement current: 100 mA) 30 mΩ (Max. display: 31.000 mΩ, resolution: 1 μΩ, measurement current: 100 mA) 300 mΩ (Max. display: 310.00 mΩ, resolution: 10 μΩ, measurement current: 10 mA) 3 Ω (Max. display: 3.1000 Ω, resolution: 100 μΩ, measurement current: 1 mA) 30 Ω (Max. display: 31.000 Ω, resolution: 1 mΩ, measurement current: 100 μA) 300 Ω (Max. display: 310.00 Ω, resolution: 10 mΩ, measurement current: 10 μA) 3 kΩ (Max. display: 3.1000 kΩ, resolution: 100 mΩ, measurement current: 10 μA)
Voltage measurement ranges	6 V (Max. display: 6.00000 V, resolution: 10 μV) 60 V (Max. display: 60.0000 V, resolution: 100 μV) 300 V (Max. display: 300.000 V, resolution: 1 mV)
Response time	10 ms
Sampling period	Ω or V (60 Hz): 4 ms (EX.FAST), 12 ms (FAST), 35 ms (MEDIUM), 150 ms (SLOW) ΩV (60 Hz): 8 ms (EX.FAST), 24 ms (FAST), 70 ms (MEDIUM), 253 ms (SLOW) Ω or V (50 Hz): 4 ms (EX.FAST), 12 ms (FAST), 42 ms (MEDIUM), 157 ms (SLOW) ΩV (50 Hz): 8 ms (EX.FAST), 24 ms (FAST), 84 ms (MEDIUM), 259 ms (SLOW)
Functions	Contact check, Zero adjustment (±1000 counts), Pulse measurement, Comparator (Hi/IN/Lo), Statistical calculations (Max. 30,000), Delay, Average, Panel saving/loading, Memory storage, LabVIEW® driver
Interfaces	LAN (TCP/IP, 10BASE-T/100BASE-TX) RS-232C (Max. 38.4 kbps, Available as printer I/F) EXT I/O (37-pin Handler interface) Analog output (DC 0 V to 3.1 V)
Power supply	100 to 240 V AC, 50 Hz/60 Hz, 35 VA max.
Dimensions and mass	215 mm (8.46 in) W × 80 mm (3.15 in) H × 295 mm (11.61 in) D, 2.4 kg (84.7 oz)
Included accessories	Instruction manual ×1, Power cord ×1, Operating Precautions ×1

- Simultaneous measurement of internal resistance and open circuit voltage
- Fully automated production line testing of large packs for xEVs or large packs of up to 300 V
- Resistance measurement ranges: 3 mΩ/30 mΩ/300 mΩ/3 Ω/30 Ω/300 Ω/3 kΩ
- Voltage measurement ranges: 6 V/60 V/300 V
- Equipped with LAN

Model No. (Order Code) **BT3563A**

Note: Measurement leads are not included. Purchase the appropriate lead option for your application separately. The male (system side) of the EXT I/O connector is also available. Please contact your authorized Hioki distributor or reseller.

1000V Maximum Input Voltage, High-Voltage Battery Tester for Measuring EV and PHEV Battery Packs

BATTERY HiTESTER BT3564



GP-IB

RS-232C



Basic specifications (Accuracy guaranteed for 1 year)

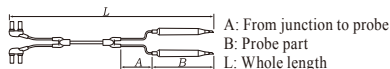
Max. applied measurement voltage	±1000 VDC rated input voltage ±1000 VDC max. rated voltage to earth
Resistance measurement ranges	3 mΩ (max. display 3.1000 mΩ, resolution 0.1 μΩ) to 3000 Ω (max. display 3100.0 Ω, resolution 0.1 Ω), 7 ranges Accuracy: ±0.5% rdg ±5 dgt (30 mΩ to 3000 Ω range), ±0.5% rdg ±10 dgt (3 mΩ range) to 10 μA (3000 Ω range) Testing source frequency: 1 kHz ±0.2 Hz, testing current: 100 mA (3 mΩ range) to 10 μA (3000 Ω range) Open terminal Voltage: 25 V peak (3/30 mΩ ranges), 7 V peak (300 mΩ range), 4 V peak (3 Ω to 3000 Ω range)
Voltage measurement ranges	10 V DC (resolution: 10 μV) to 1000V DC (resolution: 1 mV), 3 ranges Accuracy: ±0.01% rdg ±3 dgt
Display	31000 full digits (resistance), 999999 full digits (voltage, 1000 V range: 999999 or 110000), LED
Sampling time	FAST: 12 ms, MEDIUM: 35 ms, SLOW: 253 ms (Typ., sampling time depends on supply frequency settings and function.)
Total measurement time	Response time + sampling time (Response time for both resistance and voltage are reference value of about 700 ms, depends on measurement object.)
Comparator functions	Judgment result: Hi/IN/Lo (resistance and voltage judged independently) Setting: Upper and lower limit, Deviation (%) from reference value Logical ANDed result: PASS/FAIL, calculates the logical AND of resistance and voltage judgment results. Result display, beeper, or external I/O output (open-collector, 35 V, 50 mA DC max.)
Analog output	Measured resistance (displayed value, from 0 to 3.1 V DC)
Interfaces	External I/O, RS-232C, Printer (RS-232C), GP-IB
Power supply	100 to 240 V AC, 50/60 Hz, 30 VA max.
Dimensions and mass	215 mm (8.46 in) W × 80 mm (3.29 in) H × 295 mm (12.95 in) D, 2.4 kg (84.7 oz)
Included accessories	Instruction manual ×1, Power cord ×1, Operating Precautions ×1

- Measure high-voltage battery packs up to 1000V
- Production line testing of high-voltage battery packs for EV, PHEV
- 0.1 μΩ to 3000 Ω internal resistance range (pack total resistance, bus bar resistance)
- Spark discharge reduction function
- Analog output function
- Optional measurement probe available for 1000 V and high-voltage battery packs

Model No. (Order Code) **BT3564**

Note: Measurement leads are not included. Purchase the appropriate lead option for your application separately. The male (system side) of the EXT I/O connector is also available. Please inquire with your Hioki distributor.

About probe length

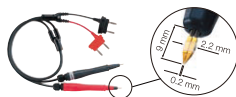
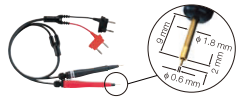


BT3561A/BT3562A/BT3563A/BT3564/BT3563/BT3562 Series Shared Options

Measurement Leads B (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 at thru holes and sub-millimeter objects



PIN TYPE LEAD 9770
A: 260 mm (10.24 in),
B: 140 mm (5.51 in),
L: 850 mm (2.79 ft), 60V DC

TIP PIN 9770-90
Replacement tip for pin type lead 9770, L2102

PIN TYPE LEAD 9771
A: 260 mm (10.24 in),
B: 138 mm (5.43 in),
L: 850 mm (2.79 ft), 60V DC

TIP PIN 9771-90
Replacement tip for pin type lead 9771, L2103

Measurement Leads C (for measuring batteries up to 60 V)



CLIP TYPE LEAD L2107
A: 130 mm (5.12 in),
B: 83 mm (3.27 in),
L: 1100 mm (3.61 ft), 60 VDC

FOUR TERMINAL LEAD 9453
A: 280 mm (11.02 in),
B: 118 mm (4.65 in),
L: 1360 mm (4.46 ft), 60V DC

LARGE CLIP TYPE LEAD 9467
A: 300 mm (11.81 in),
B: 131 mm (5.16 in),
L: 1350 mm (4.43 ft), tip φ 28 mm (1.10 in), 50 V DC

Can not be used for PIN TYPE LEAD 9770, 9771

Option
O ADJ BOARD Z5038
For L2100, L2110, L2020, 9465-10, 9772

PC communication
RS-232C CABLE 9637
For the PC, 9pin - 9pin, cross, 1.8 m (5.91 ft) length
GP-IB CONNECTOR CABLE 9151-02
2 m (6.56 ft) length

High-speed Measurement from Large-cell to High-voltage Battery Testing

BATTERY HiTESTER BT3563-01, BT3562-01



GP-IB
BT3563-01, BT3562-01
RS-232C



3 Year
Warranty

- Measure high-voltage battery packs up to 300V (BT3563-01)
- Measure the voltage of battery packs up to 60 V (BT3562-01)
- Production line testing of high-voltage battery packs and battery modules
- Large (low-resistance) cell testing
- Choice of PC interfaces for full remote operation

Note: The comparison threshold values depend on the battery manufacturer, type, and capacity, and these must be established by the user.

Model No. (Order Code) **BT3563-01** (Built-in GP-IB and analog output)
BT3562-01 (Built-in GP-IB and analog output)

Note: Measurement leads are not included. Purchase the appropriate lead option for your application separately. The male (system side) of the EXT I/O connector is also available. Please inquire with your Hioki distributor.

Basic specifications (Accuracy guaranteed for 1 year)

	BT3563-01	BT3562-01
Max. applied measurement voltage	± 300 VDC rated input voltage ± 300 VDC max. rated voltage to earth	± 60 VDC rated input voltage ± 70 VDC max. rated voltage to earth
Resistance measurement ranges	3 mΩ (max. display 3.1000 mΩ, resolution 0.1 μΩ) to 3000 Ω (max. display 3100.0 Ω, resolution 100 mΩ), 7 ranges Accuracy: 30 mΩ to 3000 Ω ranges, ± 0.5% rdg ± 5 dgt (Add ± 3 dgt for EX.FAST, or ± 2 dgt for FAST and MEDIUM) 3 mΩ range, ± 0.5% rdg ± 10 dgt (Add ± 30 dgt for EX.FAST, or ± 5 dgt for FAST, or ± 5 dgt for MEDIUM) Testing source frequency: 1 kHz ± 0.2 Hz, testing current: 100 mA (3 mΩ range) to 10 μA (3000 Ω range) Open terminal Voltage: 25 V peak (3/30 mΩ ranges), 7 V peak (300 mΩ range), 4 V peak (3 Ω to 3000 Ω ranges)	
Voltage measurement ranges	6 VDC (resolution 10 μV) to 300 VDC (resolution 1 mV), 3 ranges	6 VDC (resolution 10 μV) to 60 VDC (resolution 100 μV), 2 ranges
Accuracy	± 0.01% rdg ± 3 dgt (Add ± 3 dgt for EX.FAST, or ± 2 dgt for FAST and MEDIUM)	
Display	31000 full digits (resistance), 600000 full digits (voltage), LED	
Sampling rate	Four steps, 4 ms (Extra-FAST), 12 ms (FAST), 35 ms (Medium), 150 ms (Slow) (Typ., sampling time depends on supply frequency settings and function.)	
Measurement time	Response time + sampling rate, approx. 10 ms for measurements (Response time depends on reference values and the measurement object.)	
Comparator functions	Judgment result: Hi/IN/Lo (resistance and voltage judged independently) Setting: Upper and lower limit, Deviation (%) from reference value Logical ANDed result: PASS/FAIL, calculates the logical AND of resistance and voltage judgment results. Result display, beeper, or external I/O output, Open-collector (35 V, 50 mA DC max.)	
Analog output	Measured resistance (displayed value, from 0 to 3.1 V DC)	
Interfaces	External I/O, RS-232C, Printer (RS-232C), GP-IB (-01 suffix models only)	
Power supply	100 to 240 VAC, 50/60 Hz, 30 VA max.	
Dimensions and mass	215 mm (8.46 in) W × 80 mm (3.15 in) H × 295 mm (11.61 in) D, 2.4 kg (84.7 oz)	
Included accessories	Instruction manual ×1, Power cord ×1	

For High-speed Production Line Testing of Small Battery Packs

BATTERY HiTESTER 3561



GP-IB
3561-01
RS-232C



3 Year
Warranty

- High-speed testing for production lines of small battery packs for mobile and portable communications devices
- Measure internal resistance and battery voltage
- For process control such as in high-speed automated assembly lines

Note: The comparison threshold values depend on the battery manufacturer, type, and capacity, and these must be established by the user.

Model No. (Order Code) **3561**
3561-01 (Built-in GP-IB interface)

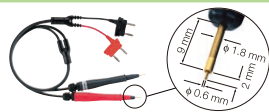
Note: Measurement leads are not included. Purchase the appropriate lead option for your application separately. The male (system side) of the EXT I/O connector is also available. Please inquire with your Hioki distributor.

Basic specifications (Accuracy guaranteed for 1 year)

Max. applied measurement voltage	±22 V DC ±60 V DC maximum rated voltage above ground
Resistance measurement ranges	300 mΩ (max. display 310.00 mΩ, resolution 10 μΩ) to 3 Ω (max. display 3.1000 Ω, resolution 100 μΩ), 2 ranges Accuracy: ±0.5 % rdg ±5 dgt (Add ±3 dgt for EX.FAST, or ±2 dgt for FAST and MEDIUM) Testing source frequency: 1 kHz ±0.2 Hz, testing current: 10 mA (300 mΩ range), 1 mA (3 Ω range) Open terminal Voltage: 7 V peak
Voltage measurement ranges	DC 20 V, resolution 0.1 mV, Accuracy: ±0.01 % rdg ±3 dgt (Add ±3 dgt for EX.FAST, or ±2 dgt for FAST and MEDIUM)
Display	31000 full digits (resistance), 199999 full digits (voltage), LED
Sampling rate	Four steps, 4 ms (Extra-FAST), 12 ms (FAST), 35 ms (Medium), 150 ms (Slow) (Typ., sampling time depends on supply frequency settings and function.)
Measurement time	Response time + sampling rate, approx. 3 ms for measurements (Response time depends on reference values and the measurement object.)
Comparator functions	Judgment result: Hi/IN/Lo (resistance and voltage judged independently) Setting: Upper and lower limit, Deviation (%) from reference value Logical ANDed result: PASS/FAIL, calculates the logical AND of resistance and voltage judgment results. Result display, beeper, or external I/O output, Open-collector (35 V, 50 mA DC max.)
Interfaces	External I/O, RS-232C, Printer (RS-232C), GP-IB (-01 suffix models only)
Power supply	100 to 240 V AC, 50/60 Hz, 30 VA max.
Dimensions and mass	215 mm (8.46 in) W × 80 mm (3.15 in) H × 295 mm (11.61 in) D, 2.4 kg (84.7 oz)
Included accessories	Instruction manual ×1, Power cord ×1

Measurement Leads B (for measuring batteries up to 60 V)

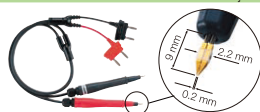
1.8 mm dia. single-axis type for measuring small electrodes



PIN TYPE LEAD 9770
A: 260 mm (10.24 in),
B: 140 mm (5.51 in),
L: 850 mm (2.79 ft), 60V DC

TIP PIN 9770-90
Replacement tip for pin type lead 9770, L2102

0.2 mm parallel pyramid-type pins for measuring at thru holes and sub-millimeter objects



PIN TYPE LEAD 9771
A: 260 mm (10.24 in),
B: 138 mm (5.43 in),
L: 850 mm (2.79 ft), 60V DC

TIP PIN 9771-90
Replacement tip for pin type lead 9771, L2103

Measurement Leads C (for measuring batteries up to 60 V)



CLIP TYPE LEAD L2107

A: 130 mm (5.12 in), B: 83 mm (3.27 in), L: 1100 mm (3.61 ft), 60 VDC

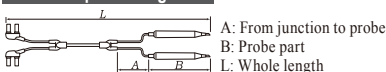
FOUR TERMINAL LEAD 9453

A: 280 mm (11.02 in), B: 118 mm (4.65 in), L: 1360 mm (4.46 ft), 60V DC

LARGE CLIP TYPE LEAD 9467

A: 300 mm (11.81 in), B: 131 mm (5.16 in), L: 1350 mm (4.43 ft), tip φ 28 mm (1.10 in), 50 V DC

About probe length



A: From junction to probe
B: Probe part
L: Whole length

PC communication



RS-232C CABLE 9637
For the PC, 9pin - 9pin, cross, 1.8m (5.91 ft) length

GP-IB CONNECTOR CABLE 9151-02
2 m (6.56 ft) length

Achieve Long Service Life Battery Modules by Measuring Reaction Resistance

BATTERY IMPEDANCE METER BT4560



USB 2.0

RS-232C

CE

SP US

3 Year Warranty

- Low-frequency AC-IR measurement* : Measure the reaction resistance of a battery
*The BT4560 ensures battery cell quality by measuring internal impedance at a low frequency of 1 Hz or below
- Extremely reliable measurements for low-impedance batteries
*The BT4560 uses a testing current of 1.5 A at the 3mΩ range, which improves the S/N ratio
- Circuit configuration highly tolerant of contact and wire resistance to provide stable measurements
- Voltage measurement function equivalent to 6-digit DMM ($\pm 0.0035\%$ rdg)

Model No. (Order Code) **BT4560**

Note: This product is not supplied with measurement probes. Please select and purchase the measurement probe options appropriate for your application separately.

Basic specifications (Accuracy guaranteed for 1 year)

Allowable input voltage	Up to 5 V
Measured information	Impedance, voltage, temperature
Impedance measurement	Parameters: R, X, Z, θ , Frequency: 0.1 Hz to 1050 Hz, Measurement ranges: 3.0000 mΩ, 10.0000 mΩ, 100.000 mΩ Testing current: 3 mΩ range: 1.5 Arms, 10 mΩ range: 500 mArms, 100 mΩ range: 50 mArms
Voltage measurement	Measurement range: 5.00000 V (single range), Measurement time: 0.1 s (Fast) to 1.0 s (Slow)
Temperature measurement	Range: -10.0 °C to 60.0 °C, Measurement time: 2.3 s
Basic accuracy	Z: $\pm 0.4\%$ rdg θ : $\pm 0.1^\circ$, V: $\pm 0.0035\%$ rdg ± 5 dgt, Temperature: $\pm 0.5^\circ\text{C}$ (at 10.0 to 40.0 °C)
Functions	Comparator, self-calibration, sample delay, average, contact check, measurement current error, and other
Interfaces	RS-232C/USB (virtual COM port) * Cannot be used simultaneously EXT. I/O (NPN/PNP can be switched)
Power supply	100 to 240 V AC, 50/60 Hz, 80 VA max
Dimensions and mass	330 mm (12.99 in) W \times 80 mm (3.15 in) H \times 293 mm (11.54 in) D, 3.7 kg (130.5 oz)
Included accessories	Power cord $\times 1$, Instruction manual $\times 1$, Zero-adjustment board $\times 1$, USB cable (A-B type) $\times 1$, CD-R (communication instruction manual, PC application software, USB driver) $\times 1$

Measurement Probes, Sensors



CLIP TYPE PROBE L2002
Cable length 1.5 m (4.92 ft) length



PIN TYPE PROBE L2003
Cable length 1.5 m (4.92 ft) length

TIP PIN 9772-90
To replace the tip on the Pin type lead L2003 (one piece)

TEMPERATURE SENSOR Z2005
Cable length 1 m (3.28 ft) length

PC communication



RS-232C CABLE 9637
For the PC, 9pin - 9pin, cross, 1.8m (5.91 ft) length

Even Speedier Diagnosis of the Deterioration of Lead-acid Batteries Including UPS

BATTERY TESTER BT3554-50



USB 2.0

CE

3 Year Warranty

Bluetooth

When Z3210 is installed

- Battery measurement can be performed while the battery is connected to its host device, without taking it offline
- Measure and save data in as fast as 2 seconds, a 60% improvement from the legacy 3554
- Instantaneously diagnose battery degradation (PASS, WARNING, FAIL) by measuring internal resistance and voltage*1
- Noise reduction technology improves noise resistance
- Screen and audio*2 guidance simplifies measurement
- Measurement data is linked to site information and saved, reducing management man-hours
- A variety of measurement data can be centrally managed using Hioki's GENNECT Cross app*3
- Easily transfer measurement data to your smartphone or tablet by using our free app GENNECT Cross or to an Excel® file. (Wireless Adapter Z3210 is necessary)
- New protector delivers better ergonomic hold and durability in the field.

Model No. (Order Code)	BT3554-50 (Pin Type Lead not included)
	BT3554-51 (Bundled with Pin Type Lead 9465-10)
	BT3554-52 (Bundled with Pin Type Lead L2020)
	BT3554-91 (BT3554-51 + Wireless Adapter Z3210)
	BT3554-92 (BT3554-52 + Wireless Adapter Z3210)

*1: The thresholds for determining the pass/fail condition of a battery depends on the specifications and standards of the battery manufacturer, battery type, capacity, etc. It is important and necessary to always conduct battery testing against the internal resistance and terminal voltage of a new or reference battery. In some cases, 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. *2: Audio generated by Bluetooth®-connected device. *3: Data can be downloaded to tablets and smartphones using Hioki's dedicated apps available from the Google Play or App Store. (When using the Z3210)

■ Data can be downloaded to tablets and smartphones using Hioki's dedicated apps available from the Google Play or App Store. Search for "HIOKI" and download the "GENNECT Cross" app.



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 *For the latest information about countries and regions where wireless operation is currently supported, please visit the Hioki website.

■ Basic specifications (Accuracy guaranteed for 1 year)

	BT3554-50	BT3554-51	BT3554-52
Resistance measurement range	3 mΩ (max. display 3.100 mΩ, resolution 1 μΩ) to 3 Ω (max. display 3.100 Ω, resolution 1 mΩ), 4 ranges Accuracy: ±0.8% rdg ±6 dgt (3 mΩ range: ±1.0% rdg ±8 dgt) Testing source frequency: 1 kHz ±30 Hz With function for avoiding noise frequency enabled: 1 kHz ±80 Hz Testing current: 160 mA (3m/30 mΩ range), 16 mA (300 mΩ range), 1.6 mA (3 Ω range) Open terminal Voltage: 5 V peak		
Voltage measurement range	±6 V (max. display ±6.000 V, resolution: 1 mV) to ±60 V (max. display ±60.00 V, resolution: 10 mV), 2 ranges, Accuracy: ±0.08% rdg ±6 dgt		
Temperature measurement accuracy	Measurement range: -10°C to 60°C (14°F to 140°F), Maximum display: 60.0°C (140.0°F), Resolution 0.1°C (0.1°F), Measurement accuracy*: ±1.0°C (±1.8°F) * When using the Clip Type Lead with Temperature Sensor 9460. * When using the Temperature Probe 9451, add ±0.5°C (±0.9°F) (cable length: 1.5 m [59.1"]) * 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)		
Absolute max. input voltage	60 V DC max. (No AC input)		
Measurement time	100 ms		
Response time	Approx. 1.6 sec.		
Comparator	Compares measured values with set threshold values to make judgments and reports them to the user. Judgment notification method: Results are displayed as shown below (segment) and beeping tones sound when the Voltage value (high): Resistance value (low)= PASS, Resistance value (medium)= WARNING, Resistance value (high)= FAIL When the Voltage value (low): Resistance value (low)= WARNING, Resistance value (medium)= WARNING, Resistance value (high)= 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		
Memory functionality	Operation: Save, load, and delete measurement data, Save and delete profile information, Number of data sets: 6000, Memory architecture: 500 data sets per unit (12 units) Saved data: Saved measurement data is linked to profile information. 1. Measurement data: Data can be saved, loaded, and deleted by operating the instrument. -1. Date and time -2. Resistance value, voltage value, and temperature -3. Comparator threshold value and judgment result 2. Profile information: Profile information can be saved, loaded, and deleted using a supported application (GENNECT Cross or GENNECT One). -1. Profile numbers: 1 to 100 (Data (2), (3), and (4) below are saved for each profile number) -2. Location: User-defined comment such as location of UPS -3. Device information: User-defined comment such as UPS management number -4. Battery number: 1 to 500 (start number, end number)		
Measurement Navigator	Operation: Announces the next battery number to be measured via a screen display and audio guidance. Audio output is generated by a connected mobile device when using the Z3210 and a supported application (GENNECT Cross). Preparations: Profile information that's been registered with a supported application (GENNECT Cross or GENNECT One) must be transferred to the instrument.		
Communication interface	USB Bluetooth® wireless communications (when Z3210 installed)		
Other functions	Temperature measurement (-10.0 to 60.0 °C), Zero-adjustment, Hold, Auto-hold, Auto-memory, Auto-power-save, Clock		
Power supply	LR6 (size AA) alkaline battery × 8 Rated supply voltage: 1.5 V DC × 8 (Nickel metal hydride batteries may be used. However, the battery life display is not supported in this configuration.) Continuous operating time: Approx. 8.3 hr. (without Z3210 installed), Approx. 8.2 hr. (with Z3210 installed and wireless communications active)		
Dimensions and mass	199 mm (7.83 in)W × 132 mm (5.20 in)H × 60.6 mm (2.39 in)D (with protector), 960 g (33.9 oz) (including batteries and protector)		
Included accessories	Carrying Case C1014 ×1, Protector Z5041 ×1, Fuse Set Z5050 ×1, 0 Adj Board ×1, Neck strap ×1, USB cable ×1, Application software CD (GENNECT One) ×1, AA alkaline battery (LR6) ×8, User Manual ×1		
	Instrument only	With Pin Type Lead 9465-10	With Pin Type Lead L2020

Easy 4-terminal measurement, 2.7 mm dia. single-axis type

PIN TYPE LEAD L2020
A: 70 mm (2.76 in), (Red), 150 mm (5.91 in) (Black, up to 630 mm (24.8 in)), B: 164 mm (6.46 in), L: 1941 mm (76.42 in) (Red)

TIP PIN 9465-90
To replace the tip on the 9465-10, L2020, (one piece)

PIN TYPE LEAD 9465-10
A: (red) 45 mm (1.77 in.), (black) Max. 400 mm (15.75 in.), B: 177 mm (6.97 in.), L: 1925 mm (6.32 ft)(red)

Large angle of probe application, 2.5 mm pitch 2-axis pin type

PIN TYPE LEAD 9772
A: (red) 45 mm (1.77 in.), (black) Max. 400 mm (15.75 in.), B: 173 mm (6.81 in.), L: 1921 mm (6.3 ft)(red)

TIP PIN 9772-90
To replace the tip on the Pin type lead 9772, L2100/L2110, (one piece)

LARGE CLIP TYPE LEAD 9467
A: 300 mm (11.81 in), B: 131 mm (5.16 in), L: 1350 mm (4.43 ft), tip φ 28 mm (1.10 in), 50 V DC

CLIP TYPE LEAD WITH TEMPERATURE SENSOR 9460
For the 3554, 3540, A:300 mm (11.81 in), B:106 mm (4.17 in), L:2268 mm (7.44 ft)

REMOTE CONTROL SWITCH 9466
Can hold the values while measuring them, for the BT3554 (use with the L2020, 9772, 9465-10)

About probe length

A: From junction to probe
B: Probe part
L: Whole length

Temperature Probe

Temperature Probe 9451S
L: 100 mm (3.94")
Order code **9451-01**

Temperature Probe 9451
L: 1500 mm (59.06")

Option

0 ADJ BOARD Z5038
For L2020, 9465-10, and 9772

FUSE SET Z5050
Replacement fuse set (5 pieces), for the BT3554

Protector Z5041
For BT3554 and BT3554-50

Carrying Case C1014
Hard case

PC peripherals

GENNECT One SF4000
Application for Windows

GENNECT Cross SF4071, SF4072
Mobile app for iOS, Android