

### Renewal of HIOKI's world-leading battery tester



**BT3563A**

The de facto standard for accurate measurement of large battery packs up to 300V



**BT3562A**

The de facto standard for accurate measurement of large xEV and ESS battery cells, as well as 72V and 96V packs







**BT3561A**

For high-performance battery cell applications in electric bikes and power tools. Ideal for battery packs of up to 60V

## Designing automatic battery testing systems is easier and faster than ever before

- Double the total line resistance, so measurement errors are less likely to occur when using long measurement cables
- Stable operation regardless of increased total line resistance due to probe and relay degradation
- LAN is equipped as a standard for easy system design and layout, and excellent noise resistance for stable operation
- Improved electrostatic resistance as a countermeasure against electrostatic charges during battery transport on a production line

# Lineup

Application		Acceptance inspection of general-purpose, small cells installed in a high-speed sorters	Fully automated production line testing of small cells for power motors or small packs of up to 60 V	Fully automated production line testing of large cells for xEVs or mid-size packsup of to 100 V	Fully automated production line testing of large packs for xEVs or large packs up of to 300 V		
Model		3561, 3561-01	BT3561A	BT3562A	BT3563A		
Appearance							
Measurement method		AC four-terminal method	AC four-terminal method	AC four-terminal method	AC four-terminal method		
Measurement frequency		1 kHz ±0.2 Hz	1 kHz ±0.2 Hz	1 kHz ±0.2 Hz	1 kHz ±0.2 Hz		
Measurement parameters	Resistance measurement ranges	3 mΩ	N/A	N/A	3.1000 mΩ, 0.1 μΩ, 100 mA	3.1000 mΩ, 0.1 μΩ, 100 mA	
		30 mΩ	N/A	31.000 mΩ, 1 μΩ, 100 mA	31.000 mΩ, 1 μΩ, 100 mA	31.000 mΩ, 1 μΩ, 100 mA	
		300 mΩ	310.00 mΩ, 10 μΩ, 10 mA	310.00 mΩ, 10 μΩ, 10 mA	310.00 mΩ, 10 μΩ, 10 mA	310.00 mΩ, 10 μΩ, 10 mA	
		3 Ω	3.1000 Ω, 100 μΩ, 1 mA	3.1000 Ω, 100 μΩ, 1 mA	3.1000 Ω, 100 μΩ, 1 mA	3.1000 Ω, 100 μΩ, 1 mA	
		30 Ω	N/A	31.000 Ω, 1 mΩ, 100 μA	31.000 Ω, 1 mΩ, 100 μA	31.000 Ω, 1 mΩ, 100 μA	
		300 Ω	N/A	310.00 Ω, 10 mΩ, 10 μA	310.00 Ω, 10 mΩ, 10 μA	310.00 Ω, 10 mΩ, 10 μA	
	Max. display, resolution, measurement current		3 kΩ	3.1000 kΩ, 100 mΩ, 10 μA	3.1000 kΩ, 100 mΩ, 10 μA	3.1000 kΩ, 100 mΩ, 10 μA	
		Basic accuracy	3 mΩ range 30 mΩ range or more	N/A ±0.5% rdg. ±5 dgt.	N/A ±0.5% rdg. ±5 dgt.	±0.5% rdg. ±10 dgt. ±0.5% rdg. ±5 dgt.	±0.5% rdg. ±10 dgt. ±0.5% rdg. ±5 dgt.
	Voltage measurement ranges	Max. display, resolution	6 V	N/A	6.00000 V, 10 μV	6.00000 V, 10 μV	6.00000 V, 10 μV
			20 V	19.9999 V, 100 μV	N/A	N/A	N/A
			60 V	N/A	60.0000 V, 100 μV	60.0000 V, 100 μV	60.0000 V, 100 μV
			100 V	N/A	N/A	100.000 V, 1 mV	N/A
		300 V	N/A	N/A	N/A	300.000 V, 1 mV	
		1000 V	N/A	N/A	N/A	N/A	
Basic accuracy		±0.01% rdg. ±3 dgt. *1	±0.01% rdg. ±3 dgt.	±0.01% rdg. ±3 dgt.	±0.01% rdg. ±3 dgt.		
Response time *2		3 ms	10 ms	10 ms	10 ms		
Sampling period *3	Ω or V	4 ms, 12 ms, 35 ms, 150 ms	4 ms, 12 ms, 35 ms, 150 ms	4 ms, 12 ms, 35 ms, 150 ms	4 ms, 12 ms, 35 ms, 150 ms		
EX.FAST, FAST, MEDIUM, SLOW	ΩV	7 ms, 23 ms, 69 ms, 252 ms	8 ms, 24 ms, 70 ms, 253 ms	8 ms, 24 ms, 70 ms, 253 ms	8 ms, 24 ms, 70 ms, 253 ms		
Allowable total line resistance *2,4 (within accuracy)	SENSE line	N/A, N/A, 20 Ω, 20 Ω	N/A, 4 Ω, 30 Ω, 30 Ω	4 Ω, 4 Ω, 30 Ω, 30 Ω	4 Ω, 4 Ω, 30 Ω, 30 Ω		
	SOURCE line	N/A, N/A, 20 Ω, 20 Ω	N/A, 4 Ω, 20 Ω, 40 Ω	4 Ω, 4 Ω, 20 Ω, 40 Ω	4 Ω, 4 Ω, 20 Ω, 40 Ω		
Allowable total line resistance *2,4 (error detection)	SENSE line	N/A, N/A, 20 Ω, 20 Ω	N/A, 6 Ω, 30 Ω, 30 Ω	6 Ω, 6 Ω, 30 Ω, 30 Ω	6 Ω, 6 Ω, 30 Ω, 30 Ω		
	SOURCE line	N/A, N/A, 20 Ω, 20 Ω	N/A, 6 Ω, 20 Ω, 200 Ω	6 Ω, 6 Ω, 20 Ω, 200 Ω	6 Ω, 6 Ω, 20 Ω, 200 Ω		
Open terminal voltage		N/A, 7 V, 7 V peak	25 V, 7 V, 4 V peak	25 V, 7 V, 4 V peak	25 V, 7 V, 4 V peak		
Ranges: 30 mΩ or less, 300 mΩ, 3 Ω or more							
Interface	LAN (TCP/IP, 10BASE-T/100BASE-TX)	N/A	✓	✓	✓		
	RS-232C *5 (Max. 38.4 kbps)	✓ (9.6 kbps fixed)	✓	✓	✓		
	USB	N/A	N/A	N/A	N/A		
	GP-IB	✓ (3561-01 Only)	N/A	N/A	N/A		
	EXT. I/O (37-pin Handler interface)	✓	✓	✓	✓		
	Analog output (DC 0 V to 3.1 V)	N/A	✓	✓	✓		
Function	Contact check	✓	✓	✓	✓		
	Zero adjustment (±1000 counts)	✓	✓	✓	✓		
	Pulse measurement	✓	✓	✓	✓		
	Comparator	Hi/ IN/ Lo	Hi/ IN/ Lo	Hi/ IN/ Lo	Hi/ IN/ Lo		
	Statistical calculations	Max. 30,000	Max. 30,000	Max. 30,000	Max. 30,000		
	Delay	✓	✓	✓	✓		
	Average	2 to 16 times	2 to 16 times	2 to 16 times	2 to 16 times		
	Panel saving/loading	126	126	126	126		
	Memory storage	400	400	400	400		
	LabVIEW® driver *6	N/A	✓	✓	✓		
Applicable standards		Safety: EN61010 EMC: EN61326 Class A	Safety: EN61010 EMC: EN61326 Class A	Safety: EN61010 EMC: EN61326 Class A	Safety: EN61010 EMC: EN61326 Class A		
Effect of radiated radio-frequency electromagnetic field (10 V/m) *7		Resistant	Resistant	Resistant	Resistant		
Effect of conducted radio-frequency electromagnetic field	10 V	N/A	Resistant	Resistant	Resistant		
	0.15 MHz to 80 MHz, 80% AM	3 V	Resistant	Resistant	Resistant		
CE		✓	✓	✓	✓		
CSA *8		N/A	Certification in progress	Certification in progress	Certification in progress		

\*1: rdg. stands for reading, dgt. stands for digits \*2: Typical value \*3: When the power supply frequency is 60 Hz

\*4: Total line resistance = wiring resistance + contact resistance + DUT resistance \*5: Available as printer I/F

\*6: LabVIEW® Driver is a registered trademark of National Instruments Corporation \*7: Test conditions were 80 MHz to 1 GHz at 10 V/m and 1 GHz to 6 GHz at 3 V/m, all at 80% AM

\*8: Canadian Standards Association

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