Battery Impedance Meter

BIM1000 Series

USB   RS232C   CE

NEW

Easy & Reliable Battery Measurements

Ever-changing battery technology requires batteries powering electric vehicles to have high voltage, high power and low impedance. The Battery Impedance Meter, or BIM1000 Series, is capable of measuring up to 1000 V of test voltage for simultaneous measurements of both battery voltage and resistance at high speeds. The BIM is the ideal equipment for power battery development research and production tests.

Lineup

BIM1030 (300 V max.)
BIM1100 (1000 V max.)

Dimensions / Weight

214(8.43″)W × 80(3.15″)H × 300(11.81″)D mm(inch) /
3 kg(6.61 lbs)

Accessories

Power cable, For Safety documents, Packing list, CD-ROM

Options

■ Clip-type four-wire test lead TL01-BIM
■ Pin-type four-wire test lead TL02-BIM
■ Zero adjustment tool OP01-BIM

Features

■ Maximum voltage measurement: 1000 V max. (BIM1100), 300 V max. (BIM1030)
■ Voltage measurement accuracy: ±(0.01 % of reading +3 digit)
■ Resistance measurement accuracy: ±(0.5 % of reading +5 digit)
■ Resistance measurement ranges: 3 mΩ/30 mΩ/300 mΩ/3 Ω
■ High resolution: Voltage 10 µV(6 V range), Resistance 0.1 µΩ(3 mΩ range)
■ Measurement frequency: 1 kHz ±0.2 Hz
■ Sampling speed(Resistance & voltage simultaneous measurements): 20 ms(FAST)
■ Zero adjustment function: Effective for decreasing measurement error.
■ Measurement logging(500 pairs) and collective transfer function
■ SIGNAL I/O, RS232C and USB as standard interface
■ New high visibility color display.

Specifications

Voltmeter

Item		BIM1030	BIM1100
Rated input		±300 V	±1000 V
Range		6 V, 60 V, 300 V, AUTO	6 V, 60 V, 600 V, 1000 V, AUTO
Maximum display value *1	6 V range	±6.30000 V	±6.30000 V
	60 V range	±63.0000 V	±63.0000 V
	300 V range	±315.000 V	–
	600 V range	–	±630.000 V
	1000 V range	–	±1050.00 V
Resolution	6 V range	10 µV	10 µV
	60 V range	100 µV	100 µV
	300 V range	1 mV	–
	600 V range	–	1 mV
	1000 V range	–	10 mV
Accuracy *2		±(0.01 % of reading + 3 digit)	
Temperature coefficient		±(0.001 % of reading + 0.3 digit) /°C	

Resistance Meter

Item		BIM1030	BIM1100
Measurement method		Four-terminal measurement method	
Range		3 mΩ, 30 mΩ, 300 mΩ, 3 Ω, AUTO	
Maximum display value *1	3 mΩ range	3.1000 mΩ	
	30 mΩ range	31.000 mΩ	
	300 mΩ range	310.00 mΩ	
	3 Ω range	3.1000 Ω	
Resolution	3 mΩ range	0.1 µΩ	
	30 mΩ range	1 µΩ	
	300 mΩ range	10 µΩ	
	3 Ω range	100 µΩ	
Measured current *3	3 mΩ range	100 mA	
	30 mΩ range	100 mA	
	300 mΩ range	10 mA	
	3 Ω range	1 mA	
Measurement frequency		1 kHz ±0.2 Hz	
Accuracy *4		±(0.5 % of reading + 5 digit)	
Temperature coefficient	3 mΩ range	±(0.05 % of reading + 1 digit) /°C	
	30 mΩ range	±(0.05 % of reading + 0.5 digit) /°C	
	300 mΩ range	±(0.05 % of reading + 0.5 digit) /°C	
	3 Ω range	±(0.05 % of reading + 0.5 digit) /°C	

Sampling Time

Item		BIM1030	BIM1100
Sampling speed	Power supply frequency 50 Hz	FAST: 20 ms, MID: 50 ms, SLOW: 160 ms	
	Power supply frequency 60 Hz	FAST: 20 ms, MID: 42 ms, SLOW: 150 ms	

Judgment Function

Item		BIM1030	BIM1100
Judgment method		Window comparator method. Judgment made with software.	
Resistance	Setting range	0.0000 Ω to 3.1000 Ω	
	Resolution	100 µΩ	
Voltage	Setting range	0.000 V to 315.000 V	0.00 V to 1050.00 V
	Resolution	1 mV	10 mV

Other Functions

Item		BIM1030	BIM1100
Trigger Function		Select external trigger (EXTERNAL) or internal trigger (INTERNAL).	
	INTERNAL	Measures at the sampling speed (FAST, MID, SLOW) interval.	
	EXTERNAL	Starts measurement with a SIGNAL I/O connector signal, *TRG, or the SNGL TRG key on the front panel	
	Trigger delay	0 to 9.999 s, OFF	
	Accuracy	±0.2 ms	
Average function		The average count can be set between 2 and 99. OFF setting available.	
Memory function		Saves up to 100 sets of measurement conditions.	
key lock		Locks the key operation.	
Zero adjustment		Zero adjustment of the voltmeter and resistance meter. OFF setting available. Zero point clear function available.	
	Adjustment rang	1000 digit	

Interface

Item	BIM1030	BIM1100
RS232C	D-SUB 9-pin connector, EIA-232-D compliant	
USB	Complies with USB Specification 2.0. 12 Mbps max. (Full Speed)	
SIGNAL I/O	D-SUB 25-pin connector.	

General Specifications

Item		BIM1030	BIM1100
Environment	Installation location	Indoors, 2000 m or less	
	Spec guaranteed range	Temperature: 18 °C to 28 °C (-4 °F to 158 °F) Humidity: 20 %rh to 80 %rh (no condensation)	
	Operating range	Temperature: 0 °C to 40 °C (32 °F to +122 °F) Humidity: 20 %rh to 80 %rh (no condensation)	
	Storage range	Temperature: -10 °C to 60 °C (-4 °F to 158 °F) Humidity: 90 %rh or less (no condensation)	
Power supply	Input voltage range	85 Vac to 264 Vac (100 Vac to 240 Vac)	
	Input frequency range	47 Hz to 63 Hz	
	Rated power	30 VA	
Isolation voltage		±300 V max	±1000 V max
Insulation resistance (between AC LINE and chassis)		30 MΩ or more (500 Vdc)	
Withstanding voltage	Between the AC LINE and the chassis	1500 Vac for 1 minute, 10 mA or less	
	Between all the measurement terminals and the chassis	2000 Vdc for 1 minute, 1 mA or less	
	Between all the measurement terminals and SIGNAL I/O	2000 Vdc for 1 minute, 1 mA or less	
Electromagnetic compatibility (EMC)		Complies with the requirements of the following directive and standards. EMC Directive 2014/30/EU EN 61326-1 (Class A), EN 55011 (Class A, Group 1), EN 61000-3-2, EN 61000-3-3	
Safety		Complies with the requirements of the following directive and standards. Low Voltage Directive 2014/35/EU EN 61010-1 (Class I, Pollution Degree 2), EN 61010-2-030, EN 61010-031	

*1. Displays OVER when the measurement range is exceeded.
*2. Add ±2 digit when the sampling speed is set to FAST or MID.
*3. Within error ± 10 %.
*4. Add ±3 digit when the sampling speed is set to FAST and ±2 digit when the sampling speed is set to MID.