

Easy & Reliable

Easy & Reliable Battery Measurements

Maximum
voltage
measurement

1000V

(BIM1100)



Battery Impedance Meter BIM1000 Series

●Lineup

BIM1030

BIM1100

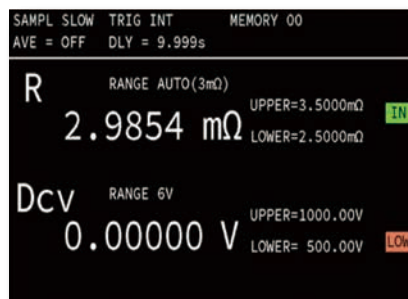


The best equipment for power battery production and inspection.

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.

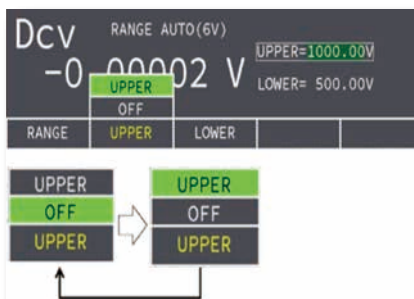
- Maximum voltage measurement: 1000 V max. (BIM1100), 300 V max. (BIM1030)
- Voltage measurement accuracy: $\pm(0.01\% \text{ of reading} + 3 \text{ digit})$
- Resistance measurement accuracy: $\pm(0.5\% \text{ of reading} + 5 \text{ digit})$
- Resistance measurement ranges: 3 m Ω /30 m Ω /300 m Ω /3 Ω
- High resolution: Voltage 10 μ V(6 V range), Resistance 0.1 $\mu\Omega$ (3 m Ω 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 (If zero adjustment has been performed, "0 ADJ" is displayed)
- Measurement logging(500 pairs) and collective transfer function
- SIGNAL I/O, RS232C and USB as standard interface
- New high visibility color display

Color liquid crystal display (LCD)



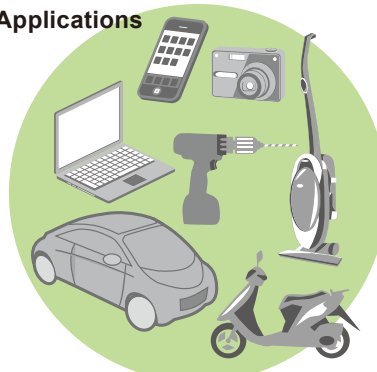
High visibility color monitor.
The resistance, voltage, upper and lower limits values are displayed at a glance.

Comparator Functions



The comparator functions allows setting HIGH/LOW, and resistance and voltage can be simultaneously judged by independent comparators. Judgment results are provided on the display. External I/O is available for signal output.

Applications



For production line testing etc.

Specifications

Voltmeter (The range can be AUTO setting available)

Item	BIM1030 / BIM1100				
Rated input	BIM1030: ± 300 V / BIM1100: ± 1000 V				
Range	6 V	60 V	300 V (BIM1030)	600 V (BIM1100)	1000 V (BIM1100)
Maximum display value *1	± 6.30000 V	± 63.0000 V	± 315.000 V	± 630.000 V	± 1050.00 V
Resolution	10 μ V	100 μ V	1 mV		10 mV
Accuracy *2	$\pm (0.01\% \text{ of reading} + 3 \text{ digit})$				
Temperature coefficient	$\pm (0.001\% \text{ of reading} + 0.3 \text{ digit})/^{\circ}\text{C}$				
Response time *3	Approx. 1 ms				

*1. Displays OVER when the measurement range is exceeded.

*2. Add ± 2 digit when the sampling speed is set to FAST or MID.

*3. The time for the product's measurement circuit to stabilize when a probe in an open state is connected to the DUT.

Resistance meter (The range can be AUTO setting available)

Item	BIM1030 / BIM1100			
Measurement method	Four-terminal measurement method			
Range	3 mΩ	30 mΩ	300 mΩ	3 Ω
Maximum display value *1	3.1000 mΩ	31.000 mΩ	310.00 mΩ	3.1000 Ω
Resolution	0.1 μΩ	1 μΩ	10 μΩ	100 μΩ
Measured current *2	100 mA		10 mA	1 mA
Measurement frequency	1 kHz ±0.2 Hz			
Accuracy *3	±(0.5 % of reading +5 digit)			
Temperature coefficient	±(0.05 % of reading + 1 digit)/°C		±(0.05 % of reading +0.5 digit)/°C	
Response time *4	Approx. 2 ms			

*1. Displays OVER when the measurement range is exceeded.

*2. Within error $\pm 10 \%$.

*3. Add ± 3 digit when the sampling speed is set to FAST and ± 2 digit when the sampling speed is set to MID.

*4. The time for the product's measurement circuit to stabilize when a probe in an open state is connected to the DUT.

Sampling time

Item	BIM1030 / BIM1100			
Sampling speed	FAST MEDIUM SLOW			
Power supply frequency	50 Hz	20 ms	50 ms	160 ms
	60 Hz		42 ms	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 $\mu\Omega$
Voltage	Setting range	0.000 V to 315.000 V
	Resolution	1 mV

Interface

Item	BIM1030 / BIM1100
RS232C	D-SUB 9-pin connector, EIA-232-D compliant
USB	Complies with USB Specification 2.0. Data rate: 12 Mbps max. (Full Speed)
	Complies with USBTMC Specification 1.0 and USBTMC-USB488 Specification 1.0
SIGNAL I/O	D-SUB 25-pin connector.

Options

Clip-type four-wire test lead

TL01-BIM

Pin-type four-wire test lead

TL02-BIM

Zero adjustment tool

OP01-BIM

Unless specified otherwise, the specifications are for the following settings and conditions.

- The product is warmed up for at least 30 minutes.
- TYP: These are typical values that are representative of situations where the product operates in an environment with an ambient temperature of 23 $^{\circ}\text{C}$ (73.4 $^{\circ}\text{F}$). These values do not guarantee the performance of this product.
- setting: Indicates a setting.
- range: Indicates the rated value of each range.
- reading: Indicates a readout value.

Other functions

Item	BIM1030 / BIM1100
Trigger Function	Select external trigger (EXTERNAL) or internal trigger (INTERNAL).
Trigger delay	0 to 9.999 s, OFF
	± 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 range	1000 digit
Measurement logging and collective transfer function	Records up to 500 sets of measurement logs. Logs can be read collectively.
EOM function	Outputs an EOM signal from the SIGNAL I/O connector when a measurement is completed.
HOLD	When the trigger source is set to INTERNAL, the signal is turned on after a measurement is completed until the next measurement starts. When the trigger source is set to EXTERNAL, the signal is turned on after a measurement is completed until the next trigger is detected.
	Outputs a pulse when a measurement is completed. Pulse width: 1 ms to 99 ms
Accuracy	± 0.2 ms

General specifications

Item	BIM1030	BIM1100
Environment	Installation location	Indoors, 2000 m or less
	Spec guaranteed range	Temperature 18 $^{\circ}\text{C}$ to 28 $^{\circ}\text{C}$ (-4 $^{\circ}\text{F}$ to 158 $^{\circ}\text{F}$) Humidity 20 %rh to 80 %rh (no condensation)
	Operating range	Temperature 0 $^{\circ}\text{C}$ to 40 $^{\circ}\text{C}$ (32 $^{\circ}\text{F}$ to +122 $^{\circ}\text{F}$) Humidity 20 %rh to 80 %rh (no condensation)
	Storage range	Temperature -10 $^{\circ}\text{C}$ to 60 $^{\circ}\text{C}$ (-4 $^{\circ}\text{F}$ to 158 $^{\circ}\text{F}$) Humidity 90 %rh or less (no condensation)
	Power supply	Input voltage range/ Input frequency range 85 Vac to 264 Vac (100 Vac to 240 Vac)/47 Hz to 63 Hz
	Rated power	30 VA
Isolation voltage	± 300 V max	
Insulation resistance	30 M Ω or more (500 Vdc)(between AC LINE and chassis)	
With-standing 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
External dimensions/ Weight	214(8.43)W×80(3.15)H×300(11.81)D mm(inches) (Does not include protrusions)/ Approx. 3 kg (6.6 lbs)	
Electromagnetic compatibility (EMC) *1 *2	Complies with the requirements of the following directive and standards. EMC Directive 2014/30/EU EN 61326-1 (Class A *3), EN 55011 (Class A *3, Group 1 *4), EN 61000-3-2, EN 61000-3-3	
Safety *1	Complies with the requirements of the following directive and standards. Low Voltage Directive 2014/35/EU *2 EN 61010-1 (Class I *5, Pollution Degree 2 *6), EN 61010-2-030, EN 61010-031	

*1. Does not apply to specially ordered or modified products.

*2. Only on models that have CE/UKCA marking on the panel.

*3. This is a Class A instrument. This product is intended for use in an industrial environment. This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.

*4. This is a Group 1 instrument. This product does not generate and/or use intentionally radio-frequency energy, in the form of electromagnetic radiation, inductive and/or capacitive coupling, for the treatment of material or inspection/analysis purpose.

*5. This is a Class I instrument. Be sure to ground this product's protective conductor terminal. The safety of this product is guaranteed only when the product is properly grounded.

*6. Pollution is addition of foreign matter (solid, liquid or gaseous) that may produce a reduction of dielectric strength or surface resistivity. Pollution Degree 2 assumes that only non-conductive pollution will occur except for an occasional temporary conductivity caused by condensation.

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