

Auto-Ohm 10

low resistance micro-ohmmeter



Vanguard Instruments Company, Inc.
www.vanguard-instruments.com



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low resistance micro-ohmmeter

ordering information

Part No.	Description
9131-UC	Auto-Ohm 10 unit and test cables
9131-SC	Auto-Ohm 10 shipping case
8000-0231	Test cable with alligator clamps (10A rated)
8000-0233	10A pistol grip probe (optional)
8000-0225	10A rated hand probe (optional)
8000-0226	5A rated hand probe (optional)

outstanding features

- High capacity Li-Ion batteries (perform up to 2,900 tests per charge (@ 10A/2 sec)
- Built-in charger and line-power for continuous operation
- Transformer winding resistance test mode
- Contact resistance test mode
- Protected to 600V
- Lightweight (7.8 lbs. / 3.54 Kg)

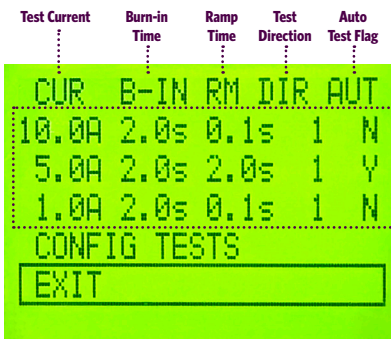
Product Overview

The Vanguard Auto-Ohm 10 is a 10-ampere battery powered micro-ohmmeter designed for low-resistance-measuring applications such as the measurement of resistance in circuit breaker contacts, bushing contact joints, and welding joints. The unit is powered by four 3400mAh, 3.7Vdc Li-Ion rechargeable batteries. With these high capacity batteries, up to 2,900 tests per charge (10A/2 second duration) can be performed in the field. The Auto-Ohm 10 features a built-in charger that can charge the batteries when the unit is not in use.

The Auto-Ohm 10 features a rotary knob that is used to select either the "Contact Resistance" or "Transformer Resistance" test mode. The unit's back-lit LCD screen (128 x 64 pixels) is viewable in both direct sunlight and low light level. Resistance readings are displayed on the LCD screen in micro-ohms, milliohms, or ohms.

Contact Resistance Mode

The "Contact Resistance" mode can measure resistance values from 1 micro-ohm to 5,000 Ohms. The user can select from 6 different test currents: 1mA, 10mA, 100mA, 1A, 5A, 10A. The user can also choose from 6 test times: 1 sec, 2 sec, 3 sec, 5 sec, 10 sec, 60 sec. Up to three tests can be pre-configured with any combination of these parameters and executed with a single push of the control switch.



Pre-configured tests



Results from three previous tests

The Auto-Ohm 10 also offers a "Bi-directional" test mode. In this mode, the test current is applied in both directions to the device under test and the readings are recorded. The final test result is the average reading of the bi-directional resistance values. An "Auto" test mode is also available that will start a test once a user applies the test leads to the device under test. The last three readings are displayed on the LCD screen.

Transformer Resistance Mode

In "Transformer Resistance" test mode, the Auto-Ohm 10 can measure the winding resistance of transformers, electric motors, and generators. The Auto-Ohm 10 can measure the winding resistance of a 3-phase 500KVA/12,000V transformer within 1 minute. At the end of a winding resistance test, the Auto-Ohm 10 automatically dissipates the stored energy in the transformer.

In "Transformer Resistance" test mode, the Auto-Ohm 10 is limited to 100mA – 10A test currents.

Cables and Accessories

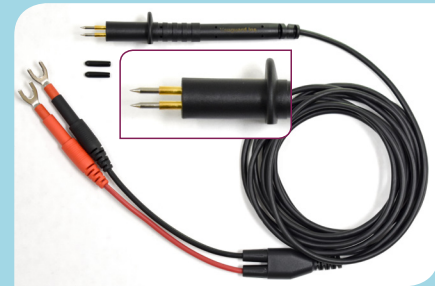
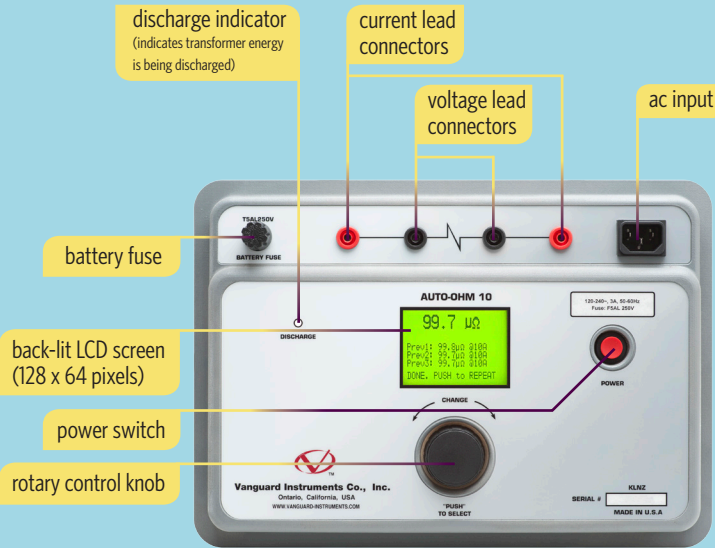
The Auto-Ohm 10 is furnished with a 15 ft (4.57m) cable set with alligator clamps. The test current and voltage sense cables are isolated on the alligator clamps. With this feature, only a single connection is needed to the device under test. Optional Kelvin probe type cables and C-Clamp cables are also available.



8000-0231
[15'/4.6m]
(included)

8000-0233
[15'/4.6m]
(optional)

Auto-Ohm 10 Features



Optional 5A Rated Hand Probe [10'/3.0m] (P/N 8000-0226)



Optional 10A Rated Hand Probe [10'/3.0m] (P/N 8000-0225)

Auto-Ohm 10 technical specifications



physical specifications

Dimensions: 14"W x 8"H x 12" D (36 cm x 19.4 cm x 30.4 cm)
Weight: 7.8 lbs. (3.54 Kg)



input power

100 – 240 Vac, 50/60 Hz



resistance reading range and accuracy

	Test Current	Display Min	Display Max	Display Unit	Resolution	Accuracy
10A	000.0	999.9	$\mu\Omega$	0.1 $\mu\Omega$	$\pm 0.2\% \pm 0.2\mu\Omega$	
	1.0000	9.9999	m Ω	0.1 $\mu\Omega$	$\pm 0.2\% \pm 0.2\mu\Omega$	
	10.000	99.999	m Ω	1 $\mu\Omega$	$\pm 0.2\% \pm 2\mu\Omega$	
	100.00	250.00	m Ω	10 $\mu\Omega$	$\pm 0.2\% \pm 20\mu\Omega$	
5A	000.0	999.9	$\mu\Omega$	0.1 $\mu\Omega$	$\pm 0.2\% \pm 0.4\mu\Omega$	
	1.0000	9.9999	m Ω	0.1 $\mu\Omega$	$\pm 0.2\% \pm 0.4\mu\Omega$	
	10.000	99.999	m Ω	1 $\mu\Omega$	$\pm 0.2\% \pm 4\mu\Omega$	
	100.00	999.99	m Ω	10 $\mu\Omega$	$\pm 0.2\% \pm 40\mu\Omega$	
1A	00.0000	99.999	m Ω	1 $\mu\Omega$	$\pm 0.2\% \pm 2\mu\Omega$	
	100.00	999.99	m Ω	10 $\mu\Omega$	$\pm 0.2\% \pm 20\mu\Omega$	
	1,000.0	5,000.0	m Ω	100 $\mu\Omega$	$\pm 0.2\% \pm 200\mu\Omega$	

	Test Current	Display Min	Display Max	Display Unit	Resolution	Accuracy
100mA	000.0	999.9	m Ω	10 $\mu\Omega$	$\pm 0.2\% \pm 20\mu\Omega$	
	1,000.0	9,999.9	m Ω	100 $\mu\Omega$	$\pm 0.2\% \pm 200\mu\Omega$	
	10,000	50,000	m Ω	1m Ω	$\pm 0.2\% \pm 2m\Omega$	
	000.0	9.9999	Ω	100 $\mu\Omega$	$\pm 0.2\% \pm 200\mu\Omega$	
10mA	10.000	99.999	Ω	1m Ω	$\pm 0.2\% \pm 2m\Omega$	
	100.00	500.00	Ω	10m Ω	$\pm 0.2\% \pm 20m\Omega$	
	00.0000	99.999	Ω	1m Ω	$\pm 0.2\% \pm 2m\Omega$	
1mA	100.00	999.99	Ω	10m Ω	$\pm 0.2\% \pm 20m\Omega$	
	1,000.0	5,000.0	Ω	100m Ω	$\pm 0.2\% \pm 200m\Omega$	

NOTES

- the "transformer resistance" mode is limited to 100ma – 10A test currents
- stated accuracy for bi-directional current mode



batteries

Rechargeable Li-Ion, 3.7Vdc, 3400 mAh, protected (Qty=4)
Charge time: 4 hours



temperature

Operating: -10°C to +50°C (+15°F to +122°F)
Storage: -30°C to +70°C (-22°F to +158°F)



cables

15 ft (4.57 m) cable set with alligator clamps, power cable



options

30 ft (9.14 m) cable set, 10 ft (3m) hand probe (5A), 10 ft (3m) hand probe (10A), pistol grip probe (10A), shipping case



safety

Designed to meet IEC 61010 (1995), UL 61010-a, and CSA-C22.2 standards



auto power down

Programmable: 30 sec, 1 min, 3 min



display

back-lit LCD screen (128 x 64 pixels)
viewable in bright sunlight and low-light



humidity

90% RH @ 40°C (104°F)
non-condensing



altitude

2,000 m (6,562 ft)
to full safety specifications



warranty

one year on parts and labor

NOTE: the above specifications are valid at nominal voltage and ambient temperature of +25°C (+77°F). Specifications are subject to change without notice.



Instruments designed and developed by the hearts and minds of utility electricians around the world.

Vanguard Instruments Company (VIC), was founded in 1991. Currently, our 28,000 square-foot facility houses Administration, Design & Engineering, and Manufacturing operations. From its inception, VIC's vision was, and is to develop and manufacture innovative test equipment for use in testing substation EHV circuit breakers and other electrical apparatus.

The first VIC product was a computerized circuit breaker analyzer, which was a resounding success. It became the forerunner of an entire series of circuit breaker test equipment. Since its beginning, VIC's product line has expanded to include microcomputer-based, precision micro-ohmmeters, single and three phase transformer winding turns-ratio testers, transformer winding-resistance meters, mega-ohm resistance meters, and a variety of other electrical utility maintenance support products.

VIC's performance-oriented products are well suited for the utility industry. They are rugged, reliable, accurate, user friendly, and most are computer controlled. Computer control, with innovative programming, provides many automated testing functions. VIC's instruments eliminate tedious and time-consuming operations, while providing fast, complex, test-result calculations. Errors are reduced and the need to memorize long sequences of procedural steps is eliminated. Every VIC instrument is competitively priced and is covered by a liberal warranty.



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