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Find the *Megger / Biddle Instruments 247000* at our website: *Click HERE*

247000 Series
Digital Low Resistance Ohmmeters



- **Resolution to 0.1 µΩ on 599.9 µΩ range**
- **Standard accuracy of ±0.25%**
- **Digital readout**

DESCRIPTION

Digital Low Resistance Ohmmeters (DLRO®) are a family of highly accurate instruments that provide a simple, practical and reliable means of making low-resistance tests in the field. They also are ideal for production quality control.

They operate on the four-wire measurement principle, thus eliminating lead and contact resistances. With basic accuracies of ±0.25% and resolution down to 0.1 µΩ, they are nonetheless designed to be rugged and portable for use at the job site. A variety of optional test leads and calibration resistance standards are offered for use with DLROs.

APPLICATIONS

Operation is simple: just connect the leads, turn the instrument on and read the measurement directly from the digital LED display. No warm-up is required.

Typical applications include measuring the resistance of:

- Switch and circuit breaker contacts
- Transformers and generators
- Motor windings
- Busbar and other joints
- Aircraft, rail and pipe bonds
- Cable splices, welds and fuses
- Metal alloys
- Graphite electrodes and other composites
- Wire and cable

General-Purpose DLROs

Two models specially designed for general-purpose testing applications are available.

Each provides up to 10 amperes of test current for measuring resistances to 60 ohms with 1 µΩ resolution and ±0.25% accuracy.

Dual-Pak General-Purpose Model, Cat No. 247000
This battery-powered unit features separate measuring and charger modules for maximum portability. The charger can be left in the shop, and the measuring module taken to the job site.

It weighs less than 8 pounds (3.6 kg) and provides hours of testing.

Single-Pak General-Purpose Model, Cat. No. 247001
This compact instrument packages measuring circuits, rechargeable batteries and charger in one self-contained unit.

Ruggedly built to handle the most demanding field applications, the Single-Pak is housed in a tough Noryl® case with hinged, removable lid and carrying handle. This model also includes captive wing nuts.

Single-Pak/Low-Range Model

Cat. No. 247002
This model provides an extra range, 0 to 599.9 µΩ, for applications requiring 0.1 µΩ resolution. It also features a current-reversing switch to average out any voltage offset in the test sample. Captive wing nuts are also standard.

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FEATURES AND BENEFITS

- Resolution as fine as 0.1 μΩ
- Standard accuracy of ±0.25%
- Kelvin-type, four-wire measurement eliminates errors caused by lead and contact resistances.
- Digital readout with automatic zero circuit eliminates field test inaccuracies.
- Broad line of test leads is available to simplify and enhance data collection.

OPTIONAL ACCESSORIES

Input Voltage Protection

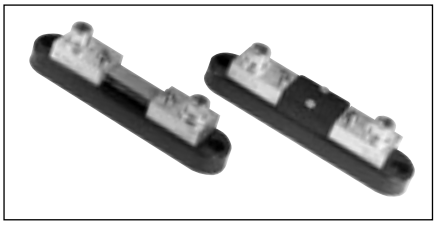
To protect the instrument when testing battery straps, this option provides input protection against accidental over-voltage up to 30 volts.

The option should not be specified when the instrument will be used to test transformers and other inductive components. This option is available on Cat. No. 247000, 247001 and 247002 only. To order, add **–11** to instrument Cat. No.

Calibration Shunts

These four-terminal calibrating resistance standards feature a conservative current rating to ensure against overheating.

Each shunt provides two current terminals with knurled Allen-head cap screws and two potential terminals with slotted screw heads. Accuracy is ±0.25%.



SPECIFICATIONS

Cat. No.	Model	Resistance Range	Resolution	Current	Accuracy	Power Source	Dimensions	Weight
247000	Dual-Pak	0-5.999mΩ 0-59.99mΩ 0-599.9mΩ 0-5.999Ω 0-59.99Ω	1μΩ 10μΩ 0.1mΩ 1mΩ 10mΩ	10A 1A 100mA 10mA 1mA	(0.25%rdgd + 1 lsd)	Rechargeable batteries with separate charger	8Hx9Wx8D in. 20 x 23 x 20 cm	12.25lb (5.6kg)
247001	Single-Pak	0-5999μΩ 0-59.99mΩ 0-599.9mΩ 0-5.999Ω 0-59.99Ω	1μΩ 10μΩ 0.1mΩ 1mΩ 10mΩ	10A 1A 100mA 10mA 1mA	(0.25%rdgd + 1 lsd)	Rechargeable batteries with internal charger	12Hx6Wx10D in. 30 x 16 x 25 cm	12lb (5.5kg)
247002	Single-Pak Low Range	0-599.9μΩ 0-5.999mΩ 0-59.99mΩ 0-599.9mΩ 0-5.999Ω 0-59.99Ω	0.1μΩ 1μΩ 10μΩ 0.1μΩ 1mΩ 10mΩ	10A 10A 1A 100mA 10mA 1mA	(0.3%rdgd + 1 lsd)	Rechargeable batteries with internal charger	12Hx6Wx10D in. 30 x 16 x 25 cm	12lb (5.5kg)

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Test Leads

Megger DLROs require test leads, two potential and two current, to make low-resistance measurements. In addition to individual current and potential lead sets, duplex leads that combine current and potential connections in one set are offered. A variety of C-clamps, Kelvin clips, fixed-point and helical spring-point leads are available in various lengths.

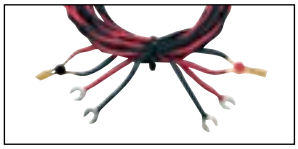
Individual Test Leads

Type	Termination	Maximum Test Current	Length	CAT. NO.
Potential	Hand Spikes	N/A	7 ft (2 m)	242021-7
			18 ft (5.5 m)	242021-18
			30 ft (9 m)	242021-30
Current	Terminal Clips	10 A	7 ft (1.5 m)	242041-7
			18 ft (5.5 m)	242041-18
			30 ft (9 m)	242041-30
	Heavy-Duty Clamps	100 A	16 ft (5 m)	242144-16

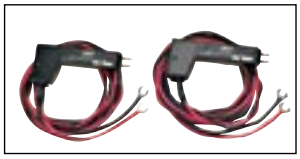
Duplex Test Leads

Termination	Maximum Test Current	Length	CAT. NO.
Helical Hand Spikes with Spring Points	10 A	7 ft (2 m)	242011-7
		18 ft (5.5 m)	242011-18
		30 ft (9 m)	242011-30
Helical Hand Spikes with Spring Points and Current Pushbutton Switch	10 A	18 ft (5.5 m)	242009-18
Heavy-Duty Fixed-Point Hand Spikes	10 A	7 ft (2 m)	242002-7
		18 ft (5.5 m)	242002-18
		30 ft (9 m)	242002-30
Replaceable Needle Points	10 A	7 ft (2 m)	242003-7
2 in. (5 cm) Heavy-Duty C-Clamps	10 A	7 ft (2 m)	242004-7
		18 ft (5.5 m)	242004-18
		30 ft (9 m)	242004-30
4 in. (10 cm) Heavy-Duty C-Clamps	100 A	16 ft (5 m)	242104-2-16
		26 ft (8 m)	242104-2-26
0.5 in. (1.3 cm) Kelvin Clips	10 A	7 ft (2 m)	241005-7*
		7 ft (2 m)	242005-7**
1.5 in. (4 cm) Kelvin Clips	10 A	7 ft (2 m)	242006-7
		18 ft (5.5 m)	242006-18
		30 ft (9 m)	242006-30

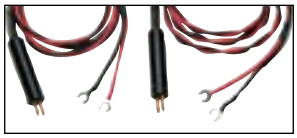
* Gold-plated
** Silver-plated



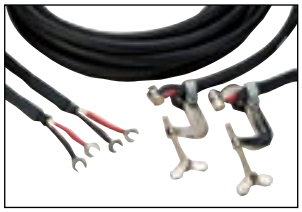
Duplex Test Lead Styles
Kelvin Clips — Feature spade lugs on outboard end and alligator clips with insulated, silver- or gold-plated jaws
Cat. No. 241005-7, 242005-7, 242006-7, 242006-18, 242006-30



Helical Spring Points — Tips rotate and compress into the body of the probe to ensure accurate measurement.
Cat. No. 242011-7, 242011-18, 242011-30, 242009-18



Heavy-Duty Fixed Points — Economical, lightweight and built for durability
Cat. No. 242002-7, 242002-18, 242002-30



Heavy-Duty C-Clamps — Current passes through the C-clamp and screw thread; the potential passes through a four-point anvil insulated from the clamp metal. This set of leads is available in two widths and a variety of lengths.
Cat. No. 242004-7, 242004-18, 242004-30, 242104-2-16, 242104-2-26

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ORDERING INFORMATION

Item (Qty)	Cat. No.
DLRO® Digital Low Resistance Ohmmeters Dual-Pak, battery-operated (10A)	247000
Single-Pak, battery-operated (10A)	247001
Single-Pak/Low-Range, battery-operated (10A)	247002

Included Accessories

Line cord, where applicable	17032
Instruction manual	AVTM24-1J

Item (Qty)	Cat. No.
Optional Accessories	
Test leads	See chart
Input voltage protection for Cat. No. 247000, 247001 and 247002 only	Add –11
230 V (nominal), 50/60-Hz operation	Add –47
Canvas carrying case for Cat. No. 247000	35788
Carrying case for leads	18313
Field test shunt, 10 Ω, current rating 0.001 A	249000*
Field test shunt, 1 Ω, current rating 0.01 A	249001*
Field test shunt, 0.1 Ω, current rating 1 A	249002*
Field test shunt, 0.01 Ω, current rating 10 A	249003
Field test shunt, 0.001 Ω, current rating 100 A	249004
Field test shunt, 0.0001 Ω, current rating 500 A	249005
Certificate of Calibration, NIST	CERT-NIST

*Furnished with protective shield

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ISO STATEMENT
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DLRO247000_DS_en_V17

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