

LOM-510A Series

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Features and accessories to assure that very low resistance measurements are accomplished accurately, easily, and economically.

- 1 $\mu\Omega$ resolution
- 0.02% basic accuracy
- Digital output
- Four measurement modes
- Auto-zero switched dc mode
- Probes for chips and traces

HIGH PERFORMANCE LOW RESISTANCE MEASUREMENT

The LOM-510A has 4½ digits, 0.02% basic accuracy and 1 $\mu\Omega$ resolution. Its 4-terminal measurement technique eliminates lead resistance errors and 80 dB of ac noise rejection provides rock-steady readings even in noisy locations. The unit comes with rugged 4-terminal test clips and a large selection of optional probes, clips and fixtures allowing attachment to any low-resistance unknown.

Switched dc Mode:

Allows measurement of switch contacts, welds, shunts, PC board tracks and other primarily resistive elements. Thermal emf effects are eliminated.

Constant dc Mode:

Suitable for measuring the resistance of inductive components such as coils or transformers.

Pulsed Mode:

Provides low drive current to allow measurements of fuses, thermistors, and other thermally sensitive devices.

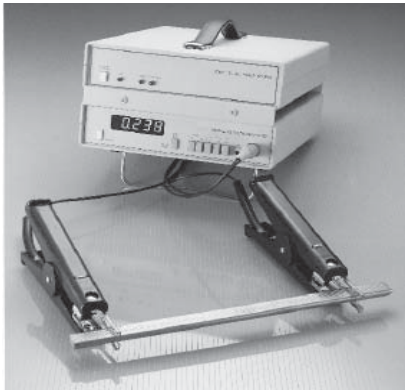
Dry Circuit:

Assures that oxides and film contacts are not punctured. The Dry Circuit Mode limits the open circuit voltage to 50 mV. The Model LOM-510A/20 limits the open circuit voltage to 20 mV.



Model LOM-510A Micro-ohmmeter shown with LOM-501 Standard 4-Terminal Kelvin clips

PORTABLE POWER, RUGGED, AND MORE



Model LOM-510A shown with LOM-504 heavy duty Kelvin clips

Portability permits many field applications such as the measurement of very low resistances of rail or pipe bonds, welds, airframes, motors, transformers, and power distribution apparatus.

The optional Model BP-511 Battery Driven ac Power Source will operate the micro-ohmmeter from its internal battery for more than an hour continuously, worst case, and for an indeterminately large number of hours when used in normal operation. In addition, the 40 watt, 120 Vac, 60 Hz output can be used to make almost any other small instrument or tool portable.

The BP-511 AC Power Source can be mechanically attached to the micro-ohmmeter with the optional Model LOM-513 coupler kit, and both units come in heavy-duty metal cases. A built-in battery charger is provided as are LED's to indicate low-battery conditions and charger operation. See the BP-511 Battery Driven ac Power Source data sheet.

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SPECIFICATIONS

LOM-510A MICRO-OHMMETER

Accuracy:

Model LOM-	SW (Switched dc)	DC (Continuous dc)	Pulsed Mode
510A	0.02% + 2 counts + 2 $\mu\Omega$	0.04% + 2 counts + 2 $\mu\Omega$	0.02% + 4 counts + 2 $\mu\Omega$
510A/20	0.03% + 3 counts + 2 $\mu\Omega$	0.05% + 3 counts + 2 $\mu\Omega$	0.03% + 4 counts + 2 $\mu\Omega$

Range (Full Scale)	Drive	Max Dissipation		Resolution
		DC	SW	
19,999 m Ω	1 A	20 mW	5.0 mW	1 $\mu\Omega$
199.99 m Ω	.1 A	2.0 mW	.50 mW	10 $\mu\Omega$
1.9999 Ω	10 mA	.2 mW	.05 mW	100 $\mu\Omega$
19.999 Ω	1 mA	.02 mW	.005 mW	1 m Ω
1.99.99 Ω	.1 mA	.002 mW	.0005 mW	10 m Ω

Zero Adjust: Active only in DC (Continuous dc) mode.

Noise Rejection: 80 dB for SW (Switched dc) and Pulsed Mode; 60 dB for DC (Continuous dc) mode.

SW (Switched dc) Mode: Current switched on for 166 ms, then off for 500 ms (duty cycle = 0.25).

ACCESSORIES

LOM-501 4-Terminal-Kelvin Clips: The Model 501 test clips are fully insulated and their 1/4 inch jaw openings will accommodate almost any electronic component. They have miniature tips for grasping very fine wires and other small items. Lead length is 1 m (39").



LOM 501A: Same as LOM-501; leads are 2 m (79") long.

LOM-502 4-Terminal Kelvin Clips: Pair of clips, same as Model LOM-501, but unwired.

LOM-504 4-Terminal Heavy-Duty Kelvin Clips: (Shown with Model LOM-510A Micro-ohmmeter, previous page, center). The Model LOM-

Pulsed Mode: One cycle of SW (Switched dc) mode; enabled by shorting two contacts on rear panel connector.

Display: 4½ digit, 0.5 inch, red LED display.

Display Overrange Indication: Flashes for DC (Continuous dc) and SW (Switched dc); blanks in Pulsed mode.

Measurement Rate: 1.5 readings/second.

Connections to Unknown: 4-terminal Kelvin leads with shield.

Outputs: 5 BCD digits for value and polarity; Pulsed Mode Control lines; power supply lines; 25 pin "D" connector.

Warm up time: 1 minute to rated accuracy.

Accuracy vs. Temperature: Stated accuracy applies over an ambient temperature range of 18 to 27 °C. Error doubles over the range of 10 to 40 °C.

Accessories Supplied: LOM-501 test clips.

Power Requirements: 105-125 V or 210-250 V, 50-60 Hz, 30 W max.

Dimensions: 22.9 cm W x 5.1 cm H x 27.9 cm D (9" x 2" x 11")

Weight: 2.7 kg (6 lb).

504 probe set has 1.9 cm (1.75") jaw openings and 3.7 m (12') lead lengths that permit measurements on large bushings, welded and bolted joints, rails and pipes, transformers and motors, fuses, power distribution busses or nearly any other large electrical components.

LOM-506 4-Terminal Kelvin Microprobes: The Model LOM-506 microprobes permit measurement of chips, circuit board components, and fine conductor traces. They also make measurements possible in areas which are inaccessible to other probes, such as inside a connector. The finely-pointed, spring-loaded tips are on 1.27 mm (.05") centers. They are made from hardened beryllium copper, gold plated over nickel plate. They are replaceable



LOM-512 COMPUTER INTERFACE AND LIMITS COMPARATOR

Serial Output: Allows connection to RS-232C interface of a computer or a printer. Can be converted to true RS-232C with simple external circuit for applications requiring cable lengths in excess of twelve feet.

Additional TTL-compatible output signals on rear panel connector: Low Limit Exceeded, High Limit Exceeded, Data Ready.

Input: Trigger measurement - initiates a single measurement cycle, TTL-compatible, available at rear panel connector.

Pulse Mode Enable & Trigger Switches: Allow manual operation of the single measurement mode of operation of Model LOM-510A. Useful for measurements on thermally sensitive components.

Power Requirements: Powered by LOM-510A Micro-Ohmmeter.

Accessories Supplied: Model LOM-512-1 adapter cable.

Dimensions: 22.9 cm W x 5.1 cm H x 27.9 cm D (9" x 2" x 11").

Weight: 2.3 kg (5 lb).

ORDERING INFORMATION

LOM-510A-110 Digital Micro-ohmmeter w/LOM-501 test clips; 110 Vac oprtn.
LOM-510A-220 Digital Micro-ohmmeter w/LOM-501 test clips; 220 Vac oprtn.
LOM-510/20 Digital Micro-ohmmeter, w/20 mV dry circuit option, and w/LOM-501 test clips

LOM-530 Calibration Kit for LOM 510-A
BP-511 Battery Pack, AC Source, 115 V, 60 Hz, 40 W (see p. 45)

LOM-512 Computer Interface-Digital Comparator for Model LOM-510A.

LOM-501 Kelvin Test Clips (pair, length 1 meter)

LOM-501A Kelvin Test Clips (pair, length 2 meters)
LOM-502 Kelvin Test Clips, without cable (pair)
LOM-503 Kelvin Test Clips, E-Z Hooks (length 1 meter)
LOM-504 Kelvin Test Clips, Heavy Duty, 2 inch jaws pair, length 1 meter)

LOM-506 Kelvin Microprobes (pair, length 1 meter)
LOM-506-1 Replacement Microprobes, set of 4
BP-511-1 Adapter Cable, power, connects LOM-510A to BP-511, (supplied with model BP-511)

LOM-512-1 Adapter cable, data, connects LOM-510A to LOM-512, (supplied with model LOM-512)

LOM-513 Coupler Kit (attaches BP-511 or LOM-512 to LOM-



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