

# High Accuracy Micro-Ohmmeter

## LOM-510A p. 1 of 2

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-501C** Standard 4-Terminal Kelvin clips

### SPECIFICATIONS LOM-510A MICRO-OHMMETER

#### Accuracy:

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

Range (Full Scale)	Drive	Max Dissipation DC	SW	Resolution
19.999 m $\Omega$	1 A	20 mW	5.0 mW	1 $\mu\Omega$
199.99 m $\Omega$	.1 A	2.0 mW	.50 mW	10 $\mu\Omega$
1.9999 $\Omega$	10 mA	.2 mW	.05 mW	100 $\mu\Omega$
19.999 $\Omega$	1 mA	.02 mW	5 $\mu$ W	1 m $\Omega$
199.99 $\Omega$	.1 mA	.002 mW	0.5 $\mu$ W	10 m $\Omega$

**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 (25% duty cycle).

**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).

### LOM-530 (CALIBRATION KIT FOR LOM-510A)

	Stability	Max Power	TempCo	Power Coefficient
0.01 $\Omega$	50 ppm/year	2 W	20 ppm/°C	0.1 ppm/mW
0.1 $\Omega$	50 ppm/year	1 W	20 ppm/°C	0.1 ppm/mW
1 $\Omega$	20 ppm/year	0.25 W	10 ppm/°C	0.5 ppm/mW
15 $\Omega$	10 ppm/year	0.1 W	3 ppm/°C	0.5 ppm/mW
150 $\Omega$	10 ppm/year	0.1 W	1 ppm/°C	0.5 ppm/mW

Temperature Range: 15° to 30°C

Storage Range: 0°C to 40°C



A convenient single unit containing a complete set of (5) working standard grade resistors for complete calibration of the micro-ohmmeter.



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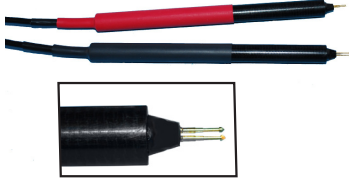

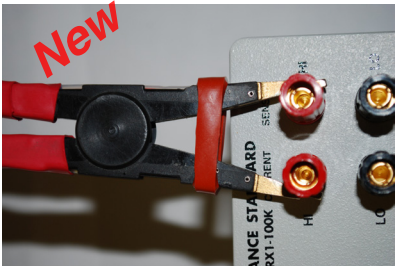


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LOM Catalog Pages/01-06-11

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**LOM-510A Series** p. 2 of 2

## ACCESSORIES

<p><b>4-Terminal General Purpose Kelvin Clips Cable Assembly: LOM-501C</b></p>  <p><b>Suitable for connection in most applications</b></p> <p><b>Versions</b></p> <ul style="list-style-type: none"> <li>LOM-501C - 1m (39")</li> <li>LOM-501C-2m - 2m (79")</li> <li>LOM-502C - clips only</li> <li>LOM-501 U - unterminated cable</li> </ul> <ul style="list-style-type: none"> <li>Jaw-Opening - 3/8"</li> <li>Miniature Tips</li> <li>Rugged</li> </ul>	<p><b>4-Terminal Kelvin Microprobes Cable Assembly: LOM-506</b></p>  <p><b>Suitable for:</b></p> <ul style="list-style-type: none"> <li>- chips</li> <li>- circuit board components</li> <li>- conductor traces</li> <li>- inside of connectors</li> <li>- Fine-point, spring-loaded tips (1.27 mm)</li> </ul>	<p><b>4-Terminal Heavy Duty Kelvin Clips Cable Assembly: LOM-504</b></p>  <p><b>Suitable for:</b></p> <ul style="list-style-type: none"> <li>- large bushings</li> <li>- welded and bolted joints</li> <li>- rails and pipes</li> <li>- transformers and motors</li> <li>- fuses</li> <li>- power distribution buses</li> <li>- Jaw opening - 1.75"</li> <li>- Lead Length - 3.7 m (12')</li> </ul>
<p><b>Wide Opening Kelvin Clips Cable Assembly: LOM-501W</b></p>  <p><b>Suitable for</b></p> <ul style="list-style-type: none"> <li>• Connecting to dual binding posts (0.75" apart)</li> <li>• Connecting to individual binding posts</li> </ul>	<p><b>Test Fixture for Discrete Components: LOM-501TF</b></p>  <p><b>Suitable for:</b></p> <ul style="list-style-type: none"> <li>• Radial or axial leads</li> <li>• Selection and binning</li> <li>• Reeled components</li> </ul>	
<p><b>LOM-501-XL</b></p>  <p><b>Cable Options: Extra-Long cables for remote testing -- up to 50 m</b> For applications where the device under test may be in an outdoors or distant location, and the LOM-510 must be kept in an indoors environment</p>		

## ORDERING INFORMATION

<p><b>LOM-510A-110</b> Digital Micro-ohmmeter LOM-501C test clips 110 Vac operation</p> <p><b>LOM-510A-220</b> Digital Micro-ohmmeter LOM-501C test clips 220 Vac operation</p> <p><b>LOM-530</b> Calibration Kit for LOM 510-A</p> <p><b>LOM-501C</b> Kelvin Test Clips Cable Assembly (pair, length 1 meter)</p> <p><b>LOM-501C-2m</b> Kelvin Test Clips Cable Assembly (pair, length 2 meters)</p>	<p><b>LOM-501W</b> Kelvin Test Clips Cable Assembly (wide)</p> <p><b>LOM-502C</b> Kelvin Test Clips, without cable (pair)</p> <p><b>LOM-503</b> Kelvin Test Clips Cable Assembly, E-Z Hooks (length 1 meter)</p> <p><b>LOM-504</b> Kelvin Test Clips Cable Assembly, Heavy Duty, 2 inch jaws pair, (length 1 meter)</p> <p><b>LOM-506</b> Kelvin Microprobes Cable Assembly (pair, length 1 meter)</p> <p><b>LOM-506-1</b> Replacement Microprobes, set of 4</p> <p><b>LOM-501TF</b> Test Fixture</p> <p><b>LOM-501-XL</b> Extra-Long cable for remote testing (up to 50 m)</p>	<p><b>LOM-501W</b> Kelvin Test Clips Cable Assembly (wide)</p> <p><b>LOM-502C</b> Kelvin Test Clips, without cable (pair)</p> <p><b>LOM-503</b> Kelvin Test Clips Cable Assembly, E-Z Hooks (length 1 meter)</p> <p><b>LOM-504</b> Kelvin Test Clips Cable Assembly, Heavy Duty, 2 inch jaws pair, (length 1 meter)</p> <p><b>LOM-506</b> Kelvin Microprobes Cable Assembly (pair, length 1 meter)</p> <p><b>LOM-506-1</b> Replacement Microprobes, set of 4</p> <p><b>LOM-501TF</b> Test Fixture</p> <p><b>LOM-501-XL</b> Extra-Long cable for remote testing (up to 50 m)</p>
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