

## LCR-500

The LCR-500 is an economical powerful hand-held LCR meter with features rivaling expensive benchtop systems.

- 1 mΩ to 10 MΩ;  
0.1 pF to 10 mF;  
0.1 μH to 10,000 H
- Autoranging and manual ranging
- Two frequency operation: 120 Hz and 1 kHz
- Sorting capability with selectable tolerances
- True bridge complex impedance capacity, L/C/R values as well as simultaneous D/Q (Dissipation/Quality)
- Auto power off; uses standard 9 V battery
- Operating guide attached to unit
- Automatic statistics



LCR-500 Handheld Impedance Meter

### SPECIFICATIONS

#### CAPACITANCE (C)

Full scale ranges: 1,000 pF to 10 mF, in 8 ranges.  
Resolution: 0.1 pF, 0.001 mF  
Accuracy<sup>1</sup>:

| Range           | 120 Hz          | 1 kHz           |
|-----------------|-----------------|-----------------|
| 10 mF           | ±(5.0% + 5 LSD) | NA              |
| 1,000 μF        | ±(1.0% + 5 LSD) | ±(5.0% + 5 LSD) |
| 100 μF          | ±(0.7% + 3 LSD) | ±(1.0% + 5 LSD) |
| 1,000 nF, 10 μF | ±(0.7% + 3 LSD) | ±(0.7% + 3 LSD) |
| 100 nF          | ±(0.7% + 5 LSD) | ±(0.7% + 3 LSD) |
| 10 nF           | ±(1.0% + 5 LSD) | ±(0.7% + 5 LSD) |
| 1,000 pF        | NA              | ±(1.0% + 5 LSD) |

D (Dissipation): ±(0.7% + 100/C rdg + 5 LSD), basic accuracy.

Impedance Model:

#### INDUCTANCE (L)

Full scale ranges: 1 mH to 10,000 H in 8 ranges.  
Resolution: 0.1 μH - 1 H  
Accuracy<sup>1,2</sup>:

| Range     | 120 Hz          | 1 kHz           |
|-----------|-----------------|-----------------|
| 10,000 H  | 5% typical      | NA              |
| 1,000 H   | ±(1.0% + 5 LSD) | 5% typical      |
| 100 H     | ±(0.7% + 5 LSD) | ±(1.0% + 5 LSD) |
| 1 H, 10 H | ±(0.7% + 5 LSD) | ±(0.7% + 5 LSD) |
| 100 mH    | ±(1.0% + 5 LSD) | ±(0.7% + 5 LSD) |
| 10 mH     | ±(2.0% + 5 LSD) | ±(1.2% + 5 LSD) |
| 1 mH      | NA              | ±(2.0% + 5 LSD) |

D (1/Q): ±(1.2% + 100/L rdg + 5 LSD), basic accuracy.

Impedance Model:

1) LSD: Least significant digit      2) + (L counts x 10<sup>-4</sup>)%.

#### RESISTANCE (R)

Full scale ranges: 10 Ω to 10 MΩ, in 7 ranges.  
Resolution: 1 mΩ - 0.001 MΩ  
Accuracy<sup>1</sup>:

| Range         | Accuracy        |
|---------------|-----------------|
| 10 MΩ         | ±(2.0% + 8 LSD) |
| 1 MΩ          | ±(0.5% + 5 LSD) |
| 1 kΩ - 100 kΩ | ±(0.5% + 3 LSD) |
| 100 Ω         | ±(0.8% + 5 LSD) |
| 10 Ω          | ±(1.2% + 8 LSD) |

#### GENERAL SPECIFICATIONS

Displays:

L/C/R: Maximum display of 9999 except at 10 mF (120 Hz) and 1 mF (1 kHz) measurement ranges which have a maximum display of 1999.

D/Q: 3 digits, maximum display 999 (autorange).

Status: Annunciators for units, low battery, frequency, open fuse; audio tone for tolerance testing, and other test conditions.

Ranging mode: Auto and manual.

Test frequency: 1 kHz and 120 Hz.

Test signal level: 0.9 Vrms approximately.

Measurement rate: 1 measurement/second, nominal.

Measurement terminals: 2 banana jacks and 2 easy-insert component sockets.

Operating modes: Relative, calibration, tolerance sorting, and max/min/avg recording.

Input protection: 70 mA fast-blow 250 V fuse.

Auto power-off time: Approximately 5 minutes; may be disabled.

Power Requirements:

1) Battery, 9V;

2) External adapter, 12-15 Vdc, 50 mA.

Dimensions: 19.2 cm L x 9.0 cm W x 3.7 cm H (7.56" x 3.54" x 1.46").

Weight: 390 g (3 oz).

#### ORDERING INFORMATION

LCR-500      Autoranging LCR meter  
LCR-5001      AC adapter, 110 V  
LCR-5001-220      AC adapter, 220 V  
LCR-5002      Carrying case  
CC-25      Component clip



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