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LCR400

Automatic 0.1% LCR Bridge with Limits Comparator

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- 0.1% basic accuracy for L, C & R measurements
- Measurement frequency of 100Hz, 1kHz or 10kHz
- Dual 5 digit displays show secondary parameter (D or Q) simultaneously with L, C or R
- Fully Autoranging with range hold function
- Auto function, series or parallel equivalent circuits
- Switchable internal bias for electrolytic capacitors
- Built-in high quality 4-terminal test fixture
- Null for up to 100pf of stray capacitance
- Limits comparator with binning. Multiple limits set via keyboard or RS232. Up to 8 pass and 2 fail bins
- Up to 9 complete set-ups can be stored
- RS232 interface gives link to PC for range/function control, limits setting and results logging
- PC software included

The LCR400 is a precision LCR measurement bridge with a basic accuracy of 0.1% and measurement frequency of up to 10kHz.

Dual displays show D or Q values along with the main measurement parameter. Function and ranging are automatic (with range hold), the equivalent circuit can be series or parallel.

The unit can be set to sort a range of components into bins according to value. Multiple bins can be set to sort different tolerances of the same value or different values. Up to nine set-ups can be stored in non-volatile memory and quickly recalled.

Component connection is made via a built-in four terminal test fixture or plug-in axial adaptor providing measurement without contact resistance. The capacitance of any external test fixture can be nulled out.

An RS232 interface allows connection to a PC and can be used to set up all measurement and sorting functions as well as store readings.

Measurement

Parameters: R, L, C, D & Q.
Modes: Series or parallel equivalent circuit.
Selection: Fully autoranging including selection between L, C and R.

Measurement Freq.: 100Hz, 1kHz or 10kHz; frequency accuracy $\pm 0.01\%$.

Ranges: R 0.1m Ω - 990M Ω
L 0.001 μ H - 9900H
C 0.001pF - 99mF
D 0.001 - 999
Q 0.001 - 999

Accuracy:	100Hz	1kHz	10kHz
R	0.1% ± 1 digit 2% ± 1 digit	2 Ω -1M Ω 2 Ω -1M Ω	2 Ω -100K Ω 0.2 Ω -500K Ω
L	0.1% ± 1 digit 2% ± 1 digit	1mH-500H 0.1mH-25H	10 μ H-2.5H 1 μ H-25H
C	0.1% ± 1 digit 2% ± 1 digit	4nF-1mF 400pF-10mF	1nF-100 μ F 100pF-10 μ F

(R accuracies apply for Q<0.1. L accuracies apply for Q>10.
C accuracies apply for D<0.1 and after Null).

Limits Comparator

Type: Comparison with multiple limits set up from the keyboard or PC via RS232 interface.

Binning: 8 Pass bins for the major parameter, plus minor parameter Fail and general Fail bins.

Display

Display Type: Dual 5-digit 0.56" LEDs with range and function indication.

Display Functions: Simultaneous display of R + Q, L + Q, C + D, or C + R. Prompts for accuracy optimisation. Simultaneous display of Pass/Fail status with Bin No. in Sort mode.

Inputs

Connection: 4-terminal connection for both radial and axial devices.
Maximum Voltage: 0-3Vrms.

Bias Voltage: Switchable 2V polarising voltage for measuring electrolytic capacitors.

Input Protection: Fuse protected against high energy discharges from large capacitors up to 50V.

Interfaces

RS232: Serial link to PC permitting range/function control, limits setting and results logging.

General

Keyboard: Numeric keyboard for entry of limits data.

Non-Volatile Memory: Up to 9 complete set ups can be stored.

Power: 230V or 115V $\pm 14\%$, 50/60Hz;
25VA max. Installation Category II.

Safety: Complies with EN61010-1.

EMC: Complies with EN55081-1 and EN55082-1.