THURLBY THANDAR INSTRUMENTS

LCR400



Precision LCR bridge with limits comparator

- *0.1% measurement accuracy*
- *Test frequencies up to 10kHz*
- *Automatic component recognition*
- *Built-in 4 terminal component fixture*
- *Dual 5 digit high brightness displays*
- *Limits comparator, multiple pass and fail bins*
- *RS-232 interface for PC connectivity*

LCR400 low-cost precision LCR bridge

Bridging the price-performance gap

Anyone who has tried to purchase a high accuracy meter for LCR measurement at a reasonable cost will have discovered the problem.

There are plenty of low cost hand-held LCR meters available, but the accuracy is poor and the facilities very limited.

There are plenty of high performance LCR bridges available, but the costs are typically an order of magnitude greater than the simple hand-held units.

The LCR400 bridges the gap. It provides the performance and facilities required for precision component measurement at a price not far above that of a hand-held unit.

The LCR400 is a low-cost precision LCR bridge intended for use within component inspection, laboratories and production facilities. The basic measurement accuracy is 0.1% and the maximum measurement frequency is 10kHz.

Designed for serious use

The LCR400 is housed in a rugged casing of sufficient weight to stay where it is put.

It incorporates a high quality four terminal test fixture with adaptors for axial or radial components. The fixture is unobstructed for ease of use with bandoliers.

Lower cost through innovative design

The LCR400 sets a new price standard for a high performance LCR bridge. Advanced design techniques utilising the latest component technologies have made this possible.

Now a precision component measurement system is within the budget of every area of a company from the laboratory through to goods-inward inspection.

Full Component Sorting

The LCR400 provides comprehensive facilities for sorting components into 'Bins' according to value. The binning parameters can be defined from the keyboard of from a PC via the RS-232 interface.

Up to eight pass bins and two fail bins can be defined. Bin limits can be sequential or overlapping from a single nominal or can be based around different nominals.

Automated Control

The LCR400 incorporates non-volatile memory for up to nine complete instrument set-ups.

An RS-232 interface allows control to be exercised from a PC enabling the remote storage of set-ups and remote logging of results.

MEASUREMENT FUNCTIONS

Parameters Measured:	R, L, C, D, & Q.
Parameter Selection:	Manual or automatic selection of R, L or C.
Measurement Modes:	Series or parallel equivalent circuit.
Range Hold:	Prevents autoranging when changing components.
Zero Function:	Nulls out up to 100pF at test fixture.
Measurement Freq.:	Selectable as 100Hz/120Hz, 1kHz, 10kHz.
Displayed Functions:	R+Q, L+Q, C+D, C+R.

MEASURING RANGES

Resistance:	0.1mΩ to 990MΩ
Inductance:	0.001H to 9900H
Capacitance:	0.001pF to 99000µF
D:	0.001 to 999
Q:	0.001 to 999

Accuracy Limits:		100Hz	1kHz	10kHz
R	0.1% ± 1 digit	2Ω-1MΩ	2Ω-500kΩ	2Ω-50kΩ
	0.5% ± 1 digit	0.4Ω-5MΩ	0.4Ω-2MΩ	0.4Ω-200kΩ
	2% ± 1 digit	0.1Ω-20MΩ	0.1Ω-10MΩ	0.1Ω-500kΩ
L	0.1% ± 1 digit	4mH-500H	0.4mH-50H	40µH-5H
	0.5% ± 1 digit	0.8mH-2500H	80µH-250H	8µH-25H
	2% ± 1 digit	0.2mH-9900H	20µH-1000H	2µH-100H
C	0.1% ± 1 digit	10nF-1000µF	1nF-100µF	100pF-10µF
	0.5% ± 1 digit	2nF-5000µF	200pF-500µF	20pF-50µF
	2% ± 1 digit	500pF-20000µF	50pF-2000µF	5pF-200µF

(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

Limits Set-up:	Multiple Upper and Lower limits can be set from keyboard or from RS-232 interface
Binning:	Up to 8 Pass bins can be defined plus Fail on minor parameter and general Fail.

COMPONENT CONNECTION

Component Connection:	4-terminal connection via internal fixture for both radial and axial components. External 4-terminal connection via adaptor.
Internal Fixture:	Sprung jaws for vertical lead insertion. Plug-in sliding pillars for horizontal lead insertion.
Bias Voltage:	Switchable 2V polarising voltage. External bias up to 50V.

DISPLAY

Display Type:	Dual 5-digit 0.56" LEDs.
Annunciators:	LED annunciators for all functions and measurement units.
Displayed Functions:	R+Q, L+Q, C+D, C+R, PASS/FAIL, Bin No.

DIGITAL INTERFACE

Interface Type:	RS-232 via 9 pin D connector, 9600 baud.
Interface Function:	Full command and readback.

GENERAL

Keyboard:	Full numeric keyboard.
Non-volatile memory:	Up to 9 complete set-ups.
Input Voltage:	230V or 115V ±14%, 50/60Hz, internally adjustable, 25VA max. Installation Category II.
Temperature Range:	+5°C to 40°C operating 20 - 80% RH, -40°C to 70°C storage.
Safety:	Complies with EN61010-1.
EMC:	Complies with EN61326.
Size:	360 x 240 x 95 mm including feet.
Weight:	2.9kg approx.

Thurlby Thandar Instruments Ltd. operates a policy of continuous development and reserves the right to alter specifications without prior notice.

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