

# 1730T LCR Meter

## with Turns Ratio for Transformer Testing

### USES:

- Transformer/Coil Testing
- Production Testing
- Component Screening
- Material Testing
- Quality Assurance Testing
- Component Design and Evaluation

### FEATURES:

- 14 Measurement Parameters
- 0.1% Basic Measurement Accuracy
- 10 Test Frequencies: 50Hz-100kHz
- Test Voltage: 10mV-1V
- Measurement Speeds up to 62/second
- Monitor DUT Voltage and Current
- Large High Res. Graphic Display
- IEEE and Handler Interfaces, Std.
- Automatic Open/Short Zeroing
- Pass/Fail Binning (8)
- Storage/Recall of 50 Setups
- Measurement Averaging (1-256)
- Measurement Delay (0-10 seconds)
- Programmable Source Impedance
- DC Bias Voltage (0-5V)
- Keypad Lockout
- Easy Operation
- Cable Correction 0-4M
- Turns Ratio & DCR Measurements

### Introduction

The QuadTech 1730T LCR Meter is an easily programmable, microprocessor-based high performance passive component tester with excellent low impedance measurement and fast measurement speeds even at 100/120Hz. It measures 16 different parameters with a basic accuracy of 0.1%. Programmable test frequency, speed, mode and voltage permits great versatility in component and materials testing. Standard IEEE-488 and Handler interfaces provide data transfer and component automation applications for faster production line testing.

### Description

**14 Measurement Parameters:** Measure and display two of 16 impedance parameters simultaneously with a basic accuracy of 0.1%. Test results can also be shown as Deviation or %Deviation from nominal value.

**10 Test Frequencies:** User selectable: 50Hz, 60Hz, 100Hz, 120Hz, 1kHz, 10kHz, 20kHz, 40kHz, 50kHz and 100kHz.

**Transformer Testing:** Use the Turns Ratio function to measure the DCR of the primary coil, N and 1/N for both coils, and M the mutual inductance between the coils.

**LCD Display:** Large, high resolution graphic display for clear, concise results and user friendly menu interface for easy programming.

**Setup Store/Recall:** Store/Recall up to 50 test setups from instrument memory. Lock out front panel to ensure procedures are run the same way every time.

**Programmable Source Impedance:** Program tester impedance to 100Ω, 100/25Ω, 25Ω or 10Ω constant current when comparing results with measurements made on other testers. Measurement results can vary significantly based solely on the source impedance of the tester being used.

**Voltage/Current Monitoring:** Use the test signal monitoring function to display the actual voltage level across and current through the DUT.

**DC Bias:** External DC Bias voltage from 0-5V, permits capacitors to be tested under real DC bias conditions. Measurement of External DC Bias Current to 20A is possible using the 1730T and the 1320 Bias Current Source.

**Open/Short Zeroing:** Reduce the effects of error sources (stray admittance/residual impedance) between the DUT and the calibrated connection to the measuring instrument.

**Fast Testing:** Select from one of three measurement speeds: slow, medium or fast for varying degrees of accuracy and speed up to 62 measurements/second.

**Interfaces Standard:** The 1730T unit includes IEEE-488 and Handler interfaces for adaption into production environments or remote control applications.



*For more detailed information on specifications, pricing and special purchase, rent and lease options, contact us at:*

[www.quadtech.com](http://www.quadtech.com)

800-253-1230



## 1730T LCR Meter Features

<b>Parameter</b>	<b>Measurement Range</b>		<b>Measurement Delay:</b>	Programmable from 0-10s in 1ms steps
Ls, Lp	0.001uH - 99.999kH		<b>Averaging:</b>	Programmable from 1-256
Cs, Cp	0.001pF - 9.9999F		<b>Binning:</b>	Eight pass bins for LCR One fail bin, LCR and DQ
Rs, Rp	0.01mΩ - 99.99MΩ		<b>Interfaces:</b>	IEEE-488 and Handler Standard
L2A, L2B	0.001uH - 99.999kH		<b>Equivalent Circuit:</b>	Series or Parallel
D	0.0001 - 9999		<b>Zeroing:</b>	Open and short circuit compensation.
Q	0.0001 - 9999		<b>Buzzer:</b>	Programmable: HI LO or OFF for Pass or Fail Result
ESR	0.01mΩ - 99.99MΩ		<b>Comparator:</b>	Set Upper/ Lower Limit as absolute value or % value for primary and secondary parameters
IZI	0.01mΩ - 99.99MΩ		<b>Test Signal:</b>	Monitor voltage across and current through device under test.
Xs	0.01mΩ - 99.99MΩ		<b>Test Terminals:</b>	Front: 4 BNC & 1 GND Rear: EXT BIAS: 1 BNC, 2-terminal strip
Phase	-180.00° - +180.00°		<b>Setup Storage:</b>	Store/Recall 50 test setups
M	0.001uH - 99.999kH		<b>Lock:</b>	Keypad Lockout
N	0.001T - 9999.9		<b>Dimensions:</b>	(w x h x d): 12.5 x 4.0 x 13.5in (312.5 x 100.0 x 337.5mm)
1/N	0.001T - 9999.9		<b>Weight:</b>	12.4 lbs. (5.7kg) net, 17 lbs. (7.8 kg) ship
DCR	0.01mΩ - 99.99MΩ		<b>Environmental:</b>	Specifications: +15°C to +35°C, 75% RH Operating: 0°C to +50°C Storage: -40°C to +75°C Humidity: <85%
<b>Accuracy:</b>	Basic LCR ±0.1% Basic DQ ±0.001		<b>Power:</b>	• 90 - 125V AC • 190 - 250V AC • 50 or 60 Hz • 65W max
<b>Test Frequencies:</b>	100Hz, 120Hz, 1kHz, 10kHz, 20kHz, 50kHz and 100kHz Accuracy ±(0.01% ± 0.01Hz)			
<b>Measurement Speed:</b>	Fast: 62 measurements/second Medium: 19 measurements/second Slow: 3 measurements/second			
<b>Ranging:</b>	Automatic or User Selectable			
<b>Trigger:</b>	Internal External (IEEE or Handler) Manual			
<b>Source Impedance:</b>	100/25Ω, 100Ω, 25Ω or 10Ωc.c. (constant current)			
<b>AC Test Signal:</b>	Voltage: 10mV - 1V, 10mV steps			
<b>DC Bias Voltage:</b>	External: 0-5V Internal: 0-5V with R <sub>BIAS</sub> external resistor			
<b>DC Bias Current:</b>	Internal: 0-200mA with R <sub>BIAS</sub> ext resistor External: 0-20A with 1320 BC Source; External: 0-100A with 1320 BC Source and four 1320S Slave Units			
<b>Display:</b>	240 by 64 LCD display			
<b>Results Format:</b>	Value Deviation % Deviation Bin Number GO/NO GO			

## Ordering Information

### 1730T LCR Meter

#### Includes:

<u>QuadTech P/N</u>	<u>Item</u>
4200-0300	AC Power Cord
150821	Instruction Manual
520026/520138	Power Line Fuses (1.0A 250V/0.5A 250V)
1700-03	Kelvin Test Leads: 4 BNC to 2 Kelvin Clips
630166	Transformer Test Fixture: 4 BNC to 4 Alligator Clips Calibration Certificate Traceable to NIST

#### Optional Accessories:

<u>QuadTech P/N</u>	<u>Item</u>
	B/A Calibration Data
1700-01	Axial/Radial Component Test Fixture
1700-02	Axial/Radial Remote Test Fixture
1700-03	Kelvin Lead Set: 4 BNC Connectors to 2 Kelvin Clips
1700-04	4 BNC Connectors to 4 Banana Plugs
7000-01	BNC to BNC Cable Lead Set (1m)
7000-02	BNC to BNC Cable Lead Set (2m)
7000-05	Lead Set: 4 BNC Connectors to Chip Component Tweezers
7000-07	Low Voltage Chip Component Test Fixture
630166	Transformer Test Fixture: 4 BNC to 4 Alligator Clips

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