

1910 Inductance Analyzer

USES:

- Production Testing of Inductive Components & Wire Wound Devices
- AC Impedance & DC Resistance Measurements on a Wide Variety of Components
- Inductance Measurements Under DC Bias Current Conditions
- Component Design & Evaluation

FEATURES:

- 20 Measurement Parameters
- Frequency Range 20 Hz to 1MHz
- 0.1% Basic Measurement Accuracy
- Measurement Speeds Up to 40/sec
- DC Resistance Measurements
- Monitoring of DUT Voltage and Current
- 5 Digit Measurement Resolution
- Constant Voltage (Voltage Leveling)
- IEEE-488, RS-232 & Handler Interfaces, all Standard
- Open/Short Zeroing & Cable Compensation
- Load Correction
- 14 Pass/Fail Bins
- Keypad Lockout

A High Performance Tester

Introduction

The 1910 is a production oriented, Inductance Analyzer, with a programmable frequency range of 20Hz to 1MHz, designed to perform inductance and other impedance measurements on coils and wire wound devices. The unit is also capable of measuring DC resistance between 0.1m Ω and 100k Ω and provides voltage or current monitoring to the test device. The 1910 also provides a sequence testing mode, allowing up to 6 unique tests with one single start command. With its user friendly menu programming, automatic lead zeroing, and 5 digit measurement resolution the instrument provides fast and accurate test results.

Description

20 Measurement Parameters Measure and display any two of 15 impedance parameters simultaneously, with a basic accuracy of 0.1%. Additionally the 1910 can measure the DC resistance, or display the current through or voltage across a test device ensuring the operator of the real test conditions.

Wide Frequency Over 27,000 user programmable test frequencies to fully characterize devices over the range of 20 Hz to 1 MHz.

Automatic Test Sequencing For increased productivity and throughput the 1910 can perform up to six different tests in sequence with a single push of the start button. Each test can have different measurement parameters, test conditions and limits.

DC Current Bias The instruments programmable internal DC bias current source from 1 mA to 1 Amp allows components to be tested under real operating conditions. This can be expanded to 100 Amps when the 1910 is used in conjunction with QuadTech's Model 1320 Bias Current Source and slave units

Setup Storage/Recall The test operator has the ability to store and recall, from internal memory, up to 30 single test setups and 10 sequential setups (six tests in sequence). The front panel can be locked out, with password protection, to ensure that procedures are run the same way every time.

Load Correction Substantially improves instrument accuracy by allowing the operator to specify the value of a known standard, measure it, and apply a correction to ongoing measurements.

Programmable Source Impedance The operator is able to set instrument source impedance at 5, 25, 50 or 100 ohms, an important feature when comparing measurements to those made on other another testers. Measurement results can vary substantially based solely on the source impedance of the tester being used.



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Parameter	Measurement Range	Basic Measurement Accuracy*		
		Low	Medium	High
Ls,Lp	0.001nH to 99.999H	+/-0.5%	+/-0.25%	+/-0.1%
Cs,Cp	0.01pF to 9.9999F	+/-0.5%	+/-0.25%	+/-0.1%
DF	0.00001 to 99.999	+/-0.005	+/-0.0025	+/-0.001
Q	0.00000 to 9999.9	+/-0.005	+/-0.0025	+/-0.001
Y,Gp,Bp	10 nS to 9999.9 S	+/-0.5	+/-0.25	+/-0.1
Z ,Rs,Rp,Xs,ESR	0.00001 mΩ to 99.999MΩ	+/-0.5%	+/-0.25%	+/-0.1%
Phase Angle	-180.00 to +179.99 degrees	+/-1.8°	+/-0.9°	+/-0.18°
DCR	0.1mΩ to 100KΩ	+/-0.5%	+/-0.25%	+/-0.1%
DUT AC Voltage	20mV to 1.0V	← +/- (2% + 5mV)@1kHz →		
DUT AC Current	1μA to 150mA	← +/- (2% + 5μA)@1kHz →		
DUT DC Voltage	20mV to 1.0V	← +/- (2% + 5mV) →		
DUT DC Current	1μA to 150mA	← +/- (2% + 5μA) →		

*At optimum test signal levels, frequencies, DUT values and without calibration uncertainty.

Test Frequency:	Range: 20Hz to 1MHz, Continuous Resolution: 1Hz from 20Hz to 1KHz, 4 digits >1KHz Accuracy: +/- (0.02% +0.02 Hz)	Measurement Delay:	Programmable from 0 to 1000 ms in 1ms steps
Measurement Speed:	<u>Speed</u> <u>Accuracy Setting</u> 40 meas/sec Low, No Display 25 meas/sec Low 10 meas/sec Medium 1 meas/sec High	Averaging:	Programmable from 1 to 1000
Ranging:	Automatic, Range Hold or user selectable	Median Value:	Averaged over last three measurements
Trigger:	Internal (automatic) External (via RS-232,IEEE-488.2 or Handler interfaces) Manual	Setup Storage:	30 Single Tests 10 Sequential (6 tests in each)
Source Impedance:	5Ω, 25Ω, 50Ω, 100Ω	Other:	Constant Voltage Mode (voltage leveling) Cable Compensation (1M, 2M, no cable) Open/Short Zeroing Distortion Check
AC Test Signal:	Voltage: 20mV to 1.0V (open circuit) in 5 mV steps	Calibration:	Recommended interval 1 year NIST traceable calibration Built-in automatic calibration procedure
DC Test Signal:	Voltage: 20mV to 1.0V (open circuit) in 5 mV steps, 5 Ω source impedance	Usage & Cal Data:	Displays last calibration date, standard values used in calibration
DC Bias Current:	Internal: 0.0 to 1.0A in 1mA steps External: 0.0 to 20.0A in 5mA steps using QuadTech 1320	Self Test:	Verifies critical instrument operation at power-up or when selected from menu
Display:	LCD Display with backlight Pass/Fail and status indicators	Test Terminals:	Front panel, four terminal (BNC) Optional Test Fixtures Available
Results Formats:	Engineering or scientific format %Deviation from nominal of primary parameter Deviation from nominal of primary parameter Pass/Fail No Display Mode for maximum throughput Sequencing: Displays up to 6 sequential test results, primary and/or secondary	Mechanical:	Bench mount with tilt bail Rack mount kit optional
Standard Interfaces:	IEEE-488.2, RS-232, Handler	Dimensions:	(w x h x d): 17 x 5.25 x 16in (432 x 133 x 406 mm)
		Weight:	15lbs (8kg) net, 21lbs (9.9kg) shipping
		Environmental:	Meets MIL-28800E, Type 3, Class 5, Style E & F Operating: 0° to +50°C Humidity: < 75% for 11° to 30°C operating Storage: -40° to +71° C
		Power:	100-240 VAC 50/60 Hz 100 W Max

Ordering Information

1910 Inductance Analyzer	1700-02	Axial/Radial Remote Test Fixture
Includes:	1700-03	4 BNC Connectors to 2 Kelvin Clips Lead Set
4200-0300 AC Power Cord	1700-04	4 BNC Connectors to 4 Banana Plugs
150491 Instruction Manual	1700-05	4 BNC Connectors to Chip Component Tweezers
Calibration Certificate	2000-16	Rack Mount Flanges
Traceable to NIST	7000-01	BNC to BNC Cable Set (1M)
Optional Accessories	7000-02	BNC to BNC Cable Set (2M)
1700-01 Axial/Radial Component Test Fixture	7000-07	Low Voltage Chip Component Test Fixture

