

Autocompute LCR-Q Meter Sorter



Features

- ★ Microprocessor based Fully Automatic L, C, R, Q and D measurement
- ★ Autoranging with Direct Digital Readout
- ★ 4 Terminal Measurement Technique
- ★ No Tuning or Balancing
- ★ Series or Parallel Equivalent Measurement
- ★ Absolute Value and Nominal Value with Percentage Tolerance
- ★ Single / Multiple Parameters Check During Component Sorting
- ★ Self Test Facility
- ★ Feather Touch Keys with Audio Feedback
- ★ Special Mechanism for Fast and Easy Insertion and Removal of Test Component
- ★ Low Cost and Portable
- ★ Component Sorting on Absolute or Nominal Value Basis with a Percentage Tolerance
- ★ **Aplab Model 4912PR** is Remote Programmable Auto Compute LCR-Q Meter Sorter, Which can be Programmed through GPIB, RS232 or SPIB Interface

Description

APLAB Model 4912 is a microprocessor based LCR-Q Meter Sorter that meets today's requirements of measurement, selection and sorting of components in the laboratory, on the production line and in the quality assurance area. Model 4912 features fully autoranging and automatic operation over a wide range of measurements.

Model 4912 measures inductance, capacitance, resistance and quality factor to a basic accuracy of $\pm 0.25\%$ of the reading for values upto 2000H, 2000 μ F, 2M ohm and 04 respectively and upto 0.25 for dissipation factor. Measurements can be made at a frequency of 100Hz or 1KHz as required and either the series equivalent or parallel equivalent component values can be displayed. Range selection is fully automatic and the LCR-Sorter automatically discriminates between inductors and capacitors. The operating system of the LCR-Sorter provides assistance to the user in selecting the measurement mode and frequency to give best accuracy. If a wrong selection is done, then the corresponding LED flashes prompting the user to change to the proper setting. Loss of basic accuracy due to poor quality of component and operation beyond the operating range of the instrument is also indicated by flashing the range LED.

Model 4912 incorporates 4 terminal measuring technique which reduces errors due to electro-magnetic coupling of leads as well as reducing residual inductance and stray capacitance.

It provides 13 relay drive outputs at the back panel on 25 pin 'D' type connector. Out of these 3 are provided for Pass/Fail indication & the remaining for bin indication.

In sort test mode user can sort out components within 1, 2, 5 and 10 percent from the nominal value entered. High and low percent tolerance limits are entered for sorting components on go/no-go basis. Percentage deviation and PASS/FAIL indication is indicated on the 4 digit display in multiplex manner. Setting of nominal value is also possible by measurement of standard component. In absolute mode, upper and lower limit can be entered directly.

In multiple test mode multiple parameters of capacitor & inductor are compared and PASS/FAIL indication is given accordingly. Self test is also incorporated to check the internal circuitry of the instrument.

Specifications

Variable Measured	: L, C, R, Q & D.
Measurement Modes	: Series or parallel equivalent.
Sort Modes	: Absolute value or nominal value with % tolerance.
Measurement Freq.	: Userselectable 100Hz or 1KHz.
Accuracy of Measurement Frequency	: $\pm 0.25\%$ of nominal.
Maximum Voltage Across	: 0.285V rms (0.8V p-p) approx.
Measuring Update Rate	: 2 per second.
Maximum Time for Valid Reading after User Connecting Component	: 1 second.
Display	: 4 digit 7 segment 12.5mm high, bright LED with automatic decimal point.
Connecting to Component Under Test	: 4 terminal integral test jig.
Measurement Ranges	
Inductance	: 0.1 μ H to 9999H.
Capacitance	: 0.3pF to 9999 μ F.
Resistance	: 0.001 ohm to 100M ohm.
Basic Accuracy Valid for L, C & R Measurements	: $\pm 0.25\%$ of reading ± 1 digit.

Ultimate Resolution

Inductance	: 0.1 μ H.
Capacitance	: 0.1pF.
Resistance	: 0.001 ohm.
Quality Factor	: 0.01.

Conditions for Basic Accuracy Measurement Freq.

	100Hz	1KHz
Range of Inductance (Q>10)	1H - 2000H (series mode)	200 μ H - 1H (series mode)
Range of Capacitance (Q>10)	1 μ F - 2000 μ F (series mode)	200pF - 1 μ F (parallel mode)
Range of Resistance (Q<0.1)	1ohm - 2Mohm (upto 10K series mode & >10K parallel mode).	

Range of Quality : 0.25 to 4.

Limits Setting Precision : 4 digits for value, 2 digits for % tolerance.

Input Protection : The input is protected against connection of capacitor of upto 10mF charged to not more than 50V.

Operating Temp. : 0° to 40°C.

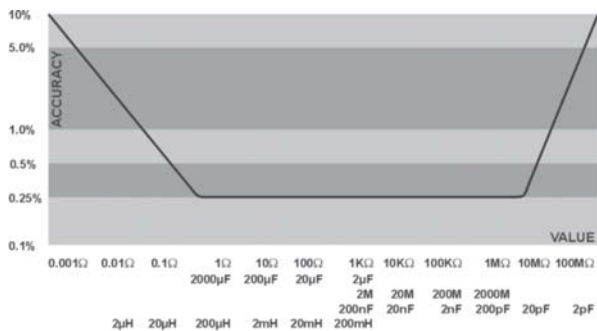
Power Supply : 230V AC $\pm 10\%$, 50Hz.

Dimensions : 430 (W) x 150 (H) x 330 (D) mm approx.

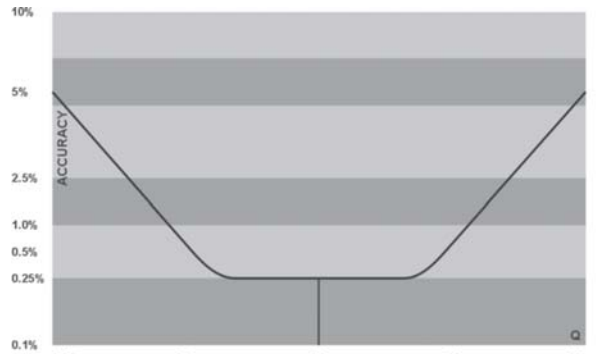
Weight : 4.5 Kg. approx.

Standard Accessories : 4 terminal remote test adapter, Mains cord & Operation manual.

Options : 4912PR with RS232 Interface.



GRAPH SHOWING VALUATION OF ACCURACY WITH READING FOR 100Hz AND 1KHz Q>10 FOR L & C Q<0.1 FOR R



GRAPH SHOWING THE VARIATION OF Q ACCURACY WITH VALUE OF Q

WE PURSUE A POLICY OF CONTINUOUS DEVELOPMENT AND PRODUCT IMPROVEMENT. THUS THE SPECIFICATIONS IN THIS DOCUMENT AND THE LOCATION OF CONTROLS ON THE FRONT PANEL MAY BE CHANGED WITHOUT NOTICE.

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