



## LCR Meter Model 11022 / 11025

### KEY FEATURES

- Transformer test parameters (11025), Turns Ratio, DCR, Mutual Inductance
- 50Hz, 60Hz, 100Hz, 120Hz, 1kHz, 10kHz, 20kHz, 40kHz, 50kHz, 100kHz test frequencies
- 0.1% basic accuracy
- 21ms measurement time in all test frequency range ( $\geq 100\text{Hz}$ )
- Agilent 4263B LCR Meter compatible IEEE-488 commands
- 4 different output resistance modes selectable for non-linear inductor and capacitor measuring. Measured results are compatible with Chroma (Zentech) and other well-known LCR meters
- High resolution in low impedance ( $0.01\text{m}\Omega$ ) and high accuracy 0.3% till  $100\text{m}\Omega$  range are the right tool for low inductance, large capacitance, and low impedance component measuring
- Adjustable DC bias current up to 200mA (constant  $25\Omega$ ), are the right tool for inductance inspection of telecom transformers and small power chokes under DC bias current (11025)
- 1320 Bias Current Source directly control capability
- 240 x 64 dot matrix LCD display, easy operation
- $0.01\text{m}\Omega \sim 99.99\text{M}\Omega$  wide measurement range with 4 1/2 digits resolution
- Dual frequency function (option)
- BIAS comparator function
- Comparator function and 8/99 bin-sorting function
- Alarm for pass/fail judge result
- 50 internal instrument setups memory
- Handler interface trigger edge (rising/falling) programmable
- Test signal level monitor function
- Standard GPIB (IEEE-488) and handler interface
- Open/ short zeroing, load correction

The Chroma 11022 and 11025 LCR Meters are the measurement instruments for passive components. They are applicable to the automatic manufacturers for passive components in material inspection. With the features of 21ms high-speed measurement and 0.1% accuracy, 11022 LCR Meter fulfills the requirements for fast production. Its functions of 8-level counting, 8/99 Bin-sorting, pass/fail judgment, and 50 sets of internal save and recall settings totally meet the production line requirements for easy operation.

The four impedance output modes can measure the results with the LCR Meters of other brands to get a common measurement standard. Chroma 11025 LCR Meter is compatible with HP 4263B LCR Meter IEEE-488.2 control interface and has three impedance output modes for selection. The measurement results can also be compared with other brand of LCR Meters. Chroma11022/11025 is the ideal selection for passive components quality assurance and automatic production.

### ORDERING INFORMATION

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|---|--|
| <b>11022</b> : LCR Meter  | <b>A110242</b> : Battery ESR Test Kit                    |
| <b>11025</b> : LCR Meter  | <b>A110244</b> : High Capacitance Capacitor Test Fixture |
| <b>A110104</b> : SMD Test Cable #17                                     | <b>A110245</b> : Ring Core Test Fixture                  |
| <b>A110211</b> : Component Test Fixture                                 | <b>A133004</b> : SMD Test Box                            |
| <b>A110212</b> : Component Remote Test Fixture                          | <b>A165009</b> : 4 BNC Test Cable with Probe             |
| <b>A110232</b> : 4 BNC Test Cable with Clip#18                          |  |
| <b>A110234</b> : High Frequency Test Cable                              |  |
| <b>A110236</b> : Rack Mountain Kit                                      |  |
| <b>A110239</b> : 4 Terminals SMD Electrical Capacitor Test Box (Patent) |  |

### SPECIFICATIONS

Model	11022	11025
<b>Test Parameter</b>	L, C, R, IZI, Q, D, ESR, X, $\theta$	L, C, R, IZI, Q, D, ESR, X, $\theta$ DCR4, M, Turns Ratio, L2, DCR2
<b>Test Signals</b>		
Level	10 mV-1V, step 10 mV; $\pm (10\% + 3 \text{ mV})$	
Frequency	50Hz, 60Hz, 100Hz, 120Hz, 1kHz, 10kHz, 20kHz, 40kHz, 50kHz, 100kHz; $\pm 0.01\%$	
Output Impedance (Nominal Value)	Constant OFF: Varies as range resistors Constant 107 x : $25\Omega$ Constant 320 x : $100\Omega$ Constant 106x: $2\Omega$ , for $Z \geq 10\Omega$ , 100mA (1V setting) for reactive load $\leq 10\Omega$ Constant 102x: $25\Omega$ , for $Z < 1\Omega$ , $100\Omega$ for else	
DC Bias Current (Freq. $\geq 1\text{kHz}$ )	--	50mA max. for Constant $100\Omega$ 200mA max for Constant $25\Omega$ (AC level $\leq 100\text{mV}$ )
<b>Measurement Display Range</b>		
C (Capacitance)	0.001pF ~ 1.9999F	
L, M, L2 (Inductance)	0.001 $\mu\text{H}$ ~ 99.99kH	
Z (Impedance), ESR	0.01m $\Omega$ ~ 99.99M $\Omega$	
Q (Quality Factor)	0.0001 ~ 9999	
D (Distortion Factor)	0.0001 ~ 9999	
$\theta$ (Phase Angle)	$-180.00^\circ \sim +180.00^\circ$	
Turns Ratio (Np:Ns)	--	0.9-999.99
DCR	--	0.01m $\Omega$ ~ 99.99M $\Omega$
<b>Basic Measurement Accuracy (Note1)</b>	$\pm 0.1\%$	
<b>Measurement Time (Fast) (Note2)</b>	21ms	
<b>Interface &amp; I/O</b>		
Interface	handler (50pin) GPIB (IEEE-488.2)	
Output Signal	Bin-sorting & HI/GO/LOW judge	
Comparator	Upper/Lower limits in value	
Bin Sorting	8/99 bin limits in %, ABS	
Trigger Delay	0-9999ms	
<b>Display</b>	240 x 64 dot-matrix LCD display	
<b>Function</b>		
Correction	Open/ Short zeroing, load correction	
Averaging	1-256 programmable	
Cable Length	0m, 1m, 2m, 4m	
Test Sig. Level Monitor	Voltage, Current	
Equivalent Circuit mode	Series, Parallel	
<b>Memory (Store/ Recall)</b>	50 instrument setups	
<b>Trigger</b>	Internal, Manual, External, Bus	
<b>General</b>		
Operation Environment	Temperature : $10^\circ\text{C} \sim 40^\circ\text{C}$ Humidity : $< 90\%$ R.H.	
Power Consumption	65VA max	
Power Requirements	90-125Vac or 190-250Vac 48 Hz-62 Hz	
Weight	Approx. 5.4 kg	
Dimension (W x H x D)	320 x 115 x 350 mm	

**Note 1:**  $23 \pm 5^\circ\text{C}$  after OPEN and SHORT correction. Slow measurement speed. Refer to Operation Manual for detail measurement accuracy descriptions.

**Note 2:** Measurement time includes sampling, calculation and judge of primary and secondary test parameter measurement