



## LCR METER MODEL 11022/11025

The Chroma 11022 and 11025 LCR Meters are passive component testers that can give you the most cost effective alternative equivalent to the high priced meters. They are designed for the demanding applications in production test, incoming inspection, component design and evaluation. Programmable test signal level settings are from 10mV to 1V in a step of 10mV, and the VM/IM signal level monitor functions allow you to evaluate your devices at the level you specify. Ten test frequencies of 50Hz, 60Hz, 100Hz, 120Hz, 1kHz, 10kHz, 20kHz, 40kHz, 50kHz, and 100kHz, can be used to evaluate passive components and transformers/ LF coils.

The low cost LCR meters on the market have shortcomings when used for low impedance components evaluation such as large capacitance of electrolytic capacitors and low inductance of coils. As the 11022/11025 equipped with high resolution (0.01mΩ) in low impedance and high accuracy (0.3%) till 100mΩ range, it can be used to evaluate low impedance components to meet the measurement requirements.

The 11025 LCR Meter can also measure DC resistance, turn ratio and mutual inductance of transformer. It is suitable for pulse transformer or LF coil evaluation. Chroma A110207 Transformer Test Fixture used with the 11025, can measure

both the primary and the secondary parameters automatically by changing the internal relays of 11025. So there is no need to change the connections required for measuring transformer parameters. Adjustable internal DC bias current source can be up to 200mA (constant 25Ω) which is a standard function, as the right tool for inductance inspection of telecom transformers and small power chokes under DC bias current.

The 11022/11025 LCR Meter provides a powerful combination of features designed to maximize the productivity in all testing environments. The measurement speed in the SHORT integration time mode is 21mS (≥100Hz). Handler interface and pin-out are compatible with 4263B. GPIB Interface and IEEE 488 commands are compatible with 4263B.

In addition, the 11022/11025 have built in a comparator, 8 bin sorting, trigger delay functions and handler interface trigger function, which make them easy for system integration, and improve the measurement throughput as well as reliability.



## LCR Meter

### MODEL 11022/11025

#### Key Features:

- Transformer test parameters (11025), Turns Ratio, DCR, Mutual Inductance
- 0.1% basic accuracy
- 21ms measurement time in all test frequency range (≥100Hz)
- HP 4263B LCR Meter compatible IEEE-488 commands
- 4 different output resistance modes selectable for non-linear inductor and capacitor measuring
- High resolution in low impedance (0.01mΩ) and high accuracy 0.3% till 100mΩ range are the right tool for low inductance, large capacitance, and low impedance component measuring
- Adjustable DC Bias Current up to 200mA (Constant 25Ω), 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
- 0.01mΩ ~ 99.99MΩ wide measurement range with 4 1/2 digits resolution
- BIAS comparator function
- Comparator function and 8/99 Bin-sorting function
- Alarm for PASS/ FAIL judge result
- Handler interface trigger edge (rising/falling) programmable
- Test signal level monitor function
- Standard GPIB (IEEE-488) and handler interface
- Open/ short zeroing, load correction



## SPECIFICATIONS

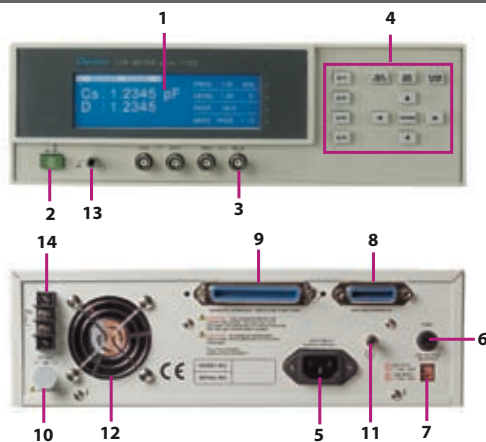
Model	11022	11025
Test Parameter	L, C, R,  Z , Q, D, ESR, X, $\theta$	L, C, R,  Z , Q, D, ESR, X, $\theta$ DCR4, M, Turns Ratio, L2, DCR2
<b>Test Signals</b>		
Level	10 mV ~ 1V, step 10 mV; $\pm$ (10% + 3 mV)	
Source Impedance	100/25 $\Omega$ , 100 $\Omega$ , 25 $\Omega$ , 10 $\Omega$ / C.C. (constant current)	
Frequency	50Hz, 60Hz, 100Hz, 120Hz, 1kHz, 10kHz, 20kHz, 40kHz, 50kHz, 100kHz; $\pm$ (0.01%)	
DC Bias Current (Freq. 1kHz)	--	50mA max. for Constant 100 $\Omega$ 200mA max for Constant 25 $\Omega$ (AC level $\leq$ 100 mV)
<b>Measurement Display Range</b>		
C (Capacitance)	0.001pF ~ 1.9999F	
L, M, L2 (Inductance)	0.001 $\mu$ H ~ 99.99kH	
Z (Impedance), ESR	0.01m $\Omega$ ~ 99.99M $\Omega$	
Q (Quality Factor), D (Distortion Factor)	0.0001 ~ 9999	
$\theta$ (Phase Angle)	-180.00 $^{\circ}$ ~ +180.00 $^{\circ}$	
Turns Ratio (Np:Ns)	--	0.9 ~ 999.99
DCR	--	0.01m $\Omega$ ~ 99.99M $\Omega$
Basic Measurement Accuracy (Note1)	$\pm$ 0.1%	
Measurement Time (Fast)(Note2)	21ms	
<b>Interface &amp; I/O</b>		
Interface	GPIB (IEEE 488.2), Handler (50pin)	
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 ~ 9999 mS	
Display	240 X 64 graphics LCD display	
<b>Function</b>		
Correction	Open/ Short zeroing, load correction	
Averaging	1 ~ 256 programmable	
Cable Length	0m, 1m, 2m, 4m	
Test Signal Level Monitor	Voltage, Current	
Equivalent Circuit mode	Series, Parallel	
Memory (Store/ Recall)	50 instrument setups	
Trigger	Internal, Manual, External, Bus	
<b>General</b>		
Operation Environment	Temperature : 10 $^{\circ}$ C ~ 40 $^{\circ}$ ; CHumidity : < 90% R.H.	
Power Consumption	65 W max.	
Power Requirements	90 ~125V AC or 190 ~ 250V AC, 48 ~ 62Hz	
Weight	Approx. 5.4 kg	
Dimension (W X H X D)	320 x 115 x 350 mm	

All specifications are subject to change without notice.

\*Note 1: 23  $\pm$  5 $^{\circ}$ 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.

## PANEL DESCRIPTION



1. LCD Display
2. LINE Switch
3. Measurement Terminals
4. Function Keys
5. Power Code Receptacle
6. LINE Fuse Holder
7. LINE Voltage Selector
8. GPIB Interface
9. Handler Interface
10. External DC Bias Terminal
11. Ground Terminal
12. Fan
13. Ground Terminal
14. DC Bias Trimmer Terminal

## ORDERING INFORMATION

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

Developed and Manufactured by :

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