

## LCR Meter

### MODEL 11022/11025

#### Key Features

- 0.1% basic accuracy
- Transformer test parameters (11025), Turns Ratio, DCR, Mutual Inductance
- 50Hz, 60Hz, 100Hz, 120Hz, 1kHz, 10kHz, 20kHz, 40kHz, 50kHz, 100kHz test frequencies
- 21ms measurement time ( $\geq 100\text{Hz}$ )
- Agilent 4263B LCR Meter commands compatible
- 4 different output resistance modes selectable for non-linear inductor and capacitor measuring
- High resolution in low impedance ( $0.01\text{m}\Omega$ ) and high accuracy 0.3% till  $100\text{m}\Omega$  range
- Adjustable DC bias current up to 200mA (constant  $25\Omega$ ) (11025)
- 1320 Bias Current Source directly control capability
- $0.01\text{m}\Omega \sim 99.99\text{M}\Omega$  wide measurement range (4 1/2 digits)
- Dual frequency function for automatic production
- BIAS comparator function
- Comparator function and 8/99 bin-sorting function
- Pass/fail judge result for automatic production
- Handler interface trigger edge (rising/falling) programmable
- Test signal level monitor function
- Standard GPIB, RS-232, and handler interface
- Open/short zeroing, load correction
- LabView® Driver



## LCR METER MODEL 11022/11025

The Chroma 11022 and 11025 LCR Meters are passive component testers that give you the most cost effective alternative equivalent to other high priced meters. They are designed for the demanding applications of production test, incoming inspection, component design and evaluation. Programmable test signal level settings are from 10mV to 1V in steps 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.

Other low cost LCR meters on the market have shortcomings when used for low impedance component evaluations, such as the large capacitance of electrolytic capacitors and low inductance of coils. As the 11022/11025 are equipped with high resolution ( $0.01\text{m}\Omega$ ) in low impedance, and high accuracy (0.3%) until  $100\text{m}\Omega$  range, they can be used to evaluate low impedance components to meet measurement requirements.

The 11025 LCR Meter can also measure DC resistance, turn ratio and mutual inductance of transformers. It is suitable for pulse transformer

or LF coil evaluation. Chroma's Transformer Test Fixture used with the 11025, can measure both the primary and the secondary parameters automatically by changing the internal relays in the 11025. With this, there is no need to change the connections required for measuring transformer parameters. With an adjustable internal DC bias current source up to 200mA as a standard function, the 11025 is the right tool for inductance inspection of telecom transformers and small power chokes under DC bias current.

The 11022/11025 LCR Meters provide a powerful combination of features designed to maximize productivity in all testing environments. Measurement speed in the SHORT integration time mode is  $15\text{ms}(\geq 100\text{Hz})$ . Handler interface, Pin-out, GPIB Interface, and IEEE 488 commands are compatible with 4263B.

Finally, the 11022/11025 have a built in comparator, 8 bin sorting, trigger delay functions, and handler interface trigger functions, making system integration easy, and improving measurement throughput as well as reliability.



# Chroma



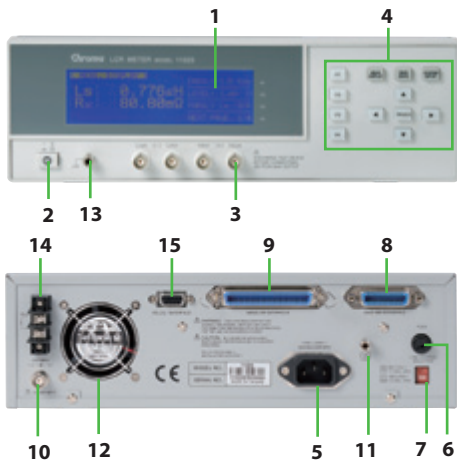
## SPECIFICATIONS

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; $\pm(10\% + 3 \text{ mV})$	
Frequency	50Hz, 60Hz, 100Hz, 120Hz, 1kHz, 10kHz, 20kHz, 40kHz, 50kHz, 100kHz; $\pm 0.01\%$	
Output Impedance (Nominal Value)	Constant 107X : 25 $\Omega$ ; Constant 320X : 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 $\mu\text{H}$ ~ 99.99k	
Z (Impedance), ESR	0.01m $\Omega$ ~99.99M $\Omega$	
Q (Quality Factor) ; D (Dissipation Factor)	0.0001 ~ 9999	
$\theta$ (Phase Angle)	-180.00° ~ +180.00°	
Turns Ratio (Np:Ns)	--	0.9~999.99
DCR	--	0.01m $\Omega$ ~99.99M $\Omega$
<b>Basic Measurement Accuracy *1</b>	$\pm 0.1\%$	
<b>Measurement Time (Fast) *2</b>	21ms	
<b>Interface &amp; I/O</b>		
Interface	handler (50pin), GPIB, RS-232	
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°C~40°C Humidity : < 90 % R.H.	
Power Consumption	65VA max	
Power Requirements	90 ~ 132Vac or 180 ~ 264Vac, 47 ~ 63Hz	
Dimension (H x W x D)	100 x 320 x 347.25 mm / 3.94 x 12.6 x 13.67 inch	
Weight	5.5 kg / 12.11 lbs	

**Note\*1** : 23  $\pm$  5°C after OPEN and SHORT correction. Slow measurement speed. Refer to Operation Manual for detailed measurement accuracy descriptions.

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

## PANEL DESCRIPTION



1. LCD Display
2. LINE Switch
3. Measurement Terminals
4. Function Keys
5. Power Cord 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
15. RS-232 interface

## 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** : 19" Rack Mounting 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  
**A113012** : Vacuum Generator for A132574  
**A113014** : Vacuum Pump for A132574  
**A132574** : Test Fixture for SMD power choke  
**A133004** : SMD Test Box  
**A133019** : BNC Test Lead, 2M (single side open)  
**A165009** : 4 BNC Test Cable with Probe

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