

# LCR-1100/1010

## Handheld LCR Meter



### FEATURES

- \* 2.8" TFT Touch LCD
- \* 50,000 Counts Resolution on Primary and Secondary Display
- \* 0.2% Basic Accuracy
- \* Six or Eight Selectable Test Frequencies Depends on Model
- \* 15 Kinds Measurement Combinations Available
- \* Test Level Selectable : AC 0.3V/0.7V/1Vrms and DC +/- 1V
- \* Selectable Measurement Speed : Fast 10 Times/s, Slow 2.5 Times/s
- \* Auto LCZ Mode for Automatic Component Type Identification and Measurement
- \* Data Hold
- \* USB-HID/USB-VCOM Interfaces for Remote Communication
- \* Software for Datalogging is Available

### APPLICATIONS

- \* Field Service
- \* Passive Component Trouble Shooting
- \* Electronic Assembly
- \* Incoming Inspection

GW Instek launches the new LCR-1000 Series, which is a handheld LCR meter with the automatic real-time test function. The series adopts TFT-LCD and provides a basic accuracy of 0.2%. Users can choose to use buttons or touch screen operations. The series, with high measurement accuracy and usability, is suitable for precision tests, including maintenance test, component production, schools/research institutes, and even quality test.

The LCR-1000 Series comprises 2 models. The LCR-1100 provides a test frequency up to 100 kHz, and the LCR-1010 provides a test frequency up to 10 kHz. The series provides selectable test voltages (0.3/0.7/1.0Vrms) and equivalent circuits (series/parallel) to automatically measure capacitance, inductance, resistance, reactance, impedance, quality factor, loss factor, phase and DC resistance.

The LCR-1000 Series, with 50,000 display counts for both main and auxiliary parameters and a basic accuracy of 0.2%, supports 2-wire or 5-wire measurement. Furthermore, the series also provides the comparison function and data retention function to meet various test and measurement requirements for different types of components.

The entire series is equipped with USB-HID and USB-VCOM interfaces. A simple and practical free PC software is provided and remote control commands (compatible with SCPI) are available for users to write their own personal software to meet the needs of data acquisition.

MODEL	LCR-1100	LCR-1010
Test Frequency	50/100/120Hz/1k/2k/10k/50k/100kHz	50/100/120Hz/1k/2k/10kHz
Display	Primary/Secondary : 50,000 counts	Primary/Secondary : 50,000 counts
Output Impedance	100Ω	100Ω
Basic Accuracy	0.2%	0.2%
Test Speed	Slow: 2.5 times/s, Fast: 10 times/s	Slow: 2.5 times/s, Fast: 10 times/s
Test Signal Level	0.3V/0.7V/1.0Vrms selectable	0.3V/0.7V/1.0Vrms selectable
Test Parameters	C-D, C-Q, C-R, L-D, L-Q, L-R, L-Rdc, R-Q, R-X, R-Rdc, Rdc, Z-D, Z-Q, Z-θr, Z-θd	C-D, C-Q, C-R, L-D, L-Q, L-R, L-Rdc, R-Q, R-X, R-Rdc, Rdc, Z-D, Z-Q, Z-θr, Z-θd
Equivalent Circuit	Series / Parallel selectable	Series / Parallel selectable

SPECIFICATIONS		
	LCR-1100	LCR-1010
<b>TEST FREQUENCY</b>		
	50Hz/100Hz/120Hz/1k/2k/10k/50k/100kHz selectable	50Hz/100Hz/120Hz/1k/2k/10kHz Selectable
<b>FULL SCALE</b>		
Main Display	50,000 counts	
Sub Display	50,000 counts	
<b>CAPACITANCE ( C ) and DISSIPATION ( D )</b>		
C Display Range	1pF ~ 50mF depends on the selected test frequency	
C Best Accuracy	$\pm(0.2\% \text{ rdg} + 2 \text{ counts}) \sim \pm(3.0\% \text{ rdg} + 10 \text{ counts})$	
C Resolution	0.001pF ~ 0.001mF depends on selected range	
D Accuracy (De)	0.002 ~ 0.03 depends on the selected test frequency & range	
<b>INDUCTANCE ( L ) and QUALITY FACTOR ( Q )</b>		
L Display Range	0.5 $\mu$ H ~ 1000H depends on the selected test frequency	
L Best Accuracy	$\pm(0.2\% \text{ rdg} + 2 \text{ counts}) \sim \pm(2.5\% \text{ rdg} + 10 \text{ counts})$	
L Resolution	0.001 $\mu$ H ~ 0.1H depends on selected range	
Q Accuracy (Qe)	0.002 ~ 0.08 depends on the selected test frequency & range	
<b>IMPEDANCE ( Z ) and PHASE ANGLE ( <math>\theta</math> )</b>		
Z Display Range	0.05 $\Omega$ ~ 10M $\Omega$ depends on the selected test frequency	
Z Best Accuracy	$\pm(0.2\% \text{ rdg} + 2 \text{ counts}) \sim \pm(3.0\% \text{ rdg} + 20 \text{ counts})$	
Z Resolution	0.0001 $\Omega$ ~ 0.001M $\Omega$ depends on selected range	
$\theta$ Accuracy ( $\theta_e$ )	0.2° ~ 2° depends on the selected test frequency & range	
<b>ESR and <math>\varnothing</math></b>		
	ESR is equal to the series equivalent resistance (Rs)	
Accuracy Formula	$R_{s_e} = \pm X_x * \varnothing_e$ ; $X_x = 2\pi f L_x$ or $1/2\pi f C_x$ ; $\varnothing_e = \theta_e * \pi/180$	
	Parallel equivalent resistance	
Accuracy Formula	$R_{p_e} = \pm R_p * \varnothing_e / D_e \mp \varnothing_e$	
<b>DC RESISTANCE</b>		
Display Range	0.05 $\Omega$ ~ 10M $\Omega$	
Best Accuracy	$\pm(0.2\% \text{ rdg} + 2 \text{ counts}) \sim \pm(3.0\% \text{ rdg} + 5 \text{ counts})$	
Resolution	0.0001 $\Omega$ ~ 0.001M $\Omega$ depends on selected range	
<b>MEASUREMENT CIRCUIT</b>		
	Parallel or Series selectable	
<b>AUTO LCZ MODE</b>		
	Automatically identifies and measures the DUT when the meter is switch on	
<b>SORTING MODE</b>		
	$\pm 1\%, \pm 5\%, \pm 10\%, \pm 20\%$ , Input%	
<b>OTHER FUNCTIONS</b>		
	Auto range, Backlight, Data hold, Zero, Auto power off	
<b>DISPLAY</b>		
	2.8 Color LCD display (touch operation available)	
<b>INTERFACE</b>		
	USB (type C)	
<b>POWER SOURCE</b>		
	Rechargeable lithium battery(8.4V)	
<b>DIMENSIONS &amp; WEIGHT</b>		
	90(W) $\times$ 195(H) $\times$ 41(D) mm, Approx. 380g	

Specifications subject to change without notice.

LCR-1100/1010\_ID1DH

#### ORDERING INFORMATION

**LCR-1100 100kHz Hand-held LCR Meter**

#### ACCESSORIES

User manual, Safety Instruction Sheet, Rechargeable Lithium battery (LCR-305), Kelvin Clip (LCR-101), Short circuit bar (LCR-100), USB Cable Type A-C (LCR-205), Carry bag (LCR-503), Tweezers Test fixture (LCR-108)

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#### OPTIONAL ACCESSORIES

**LCR-108** Test fixture (Tweezers) for SMD/Chip Components