



GW Instek LCR-1000

Hand-held LCR Meter

New Product Announcement

This document allows GW Instek's partners to quickly grasp product's main features and ordering information.

LCR-1000 Series Hand-held LCR Meter

New Product Announcement

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 (0.3V/0.7V/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.

Selection Guide

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
Other Functions		
Touch Panel Operation	√ (settable)	√ (settable)
Auto LCZ	√	√
Comparator	√ (Primary only)	√ (Primary only)
Key Beep	√	√
Brightness	50% / 100% selectable	50% / 100% selectable
Dim Display	√ (settable)	√ (settable)
Auto Power Off	√ (settable)	√ (settable)
Data Hold	√	√
Interface	USB (Type C)	USB (Type C)
Accessories		
Short circuit bar	√	√
Kelvin clip	√	√
Lithium battery	√	√
USB Cable	√	√
Carry bag	√	√
Test fixture (Tweezers)	√	Option

LCR-1000 Feature & Outlook



- 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



Specification Comparison (LCR-1100 vs LCR-916)

Specifications highlighted in red represent better performance

“X” represents “no such function” or “function not available”

	GW	GW
	LCR-1100	LCR-916
		
Frequency	50/100/120/1k/2k/10k/50k/100kHz	100/120/1k/10k/100kHz
Main Display	50,000 counts	20,000/2,000 counts
Sub Display	50,000 counts	2,000 counts
Function	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- θ r, Z- θ d	L/C/R/DCR/D/Q/ θ /ESR, Combined
Basic accuracy	0.2%	0.2%
Level	0.3V, 0.7V, 1Vrms and \pm 1Vdc	0.6Vrms and 1Vdc
Equivalent	Series · Parallel	Series · Parallel
Auto LCR	YES	YES
Range	Auto/Manual	Auto
Speed	Fast:10 times/sec Slow:2.5 times/sec	R/L/C:1-6sec DCR:2-12sec
Output Impedance (RO)	100 Ω	X
Test terminal	5-terminal, 3-terminal	5-terminal, 2-terminal
Correction	Open · Short	Open · Short
Display	2.8" LCD Color display Touch screen	LCD mono display
Backlight	50% · 100%	X
Auto power off	Available	Available
Comparator	\pm 1%, \pm 5%, \pm 10%, \pm 20%, Input%	+0.1%, +0.2%, +0.25%, +0.5%, +1.0%, +2.0%, +5.0%, +10.0%, +20.0%, +80%/-20%
Data hold	YES	YES
Other Features	Auto power save	Max, Min
Source	Lithium battery (rechargeable)	AA Battery or DC 5V (AC adapter)
Interface	USB (Type C) ~ Device class (HID), Virtual serial port(VCOM)	USB (mini) ~ Virtual serial port (VCOM)
SCPI Command	Available	X

Key Dates for Product Announcement

1. Distributor Announcement & Demo Unit Order (28th November)
2. Global Market Announcement & Quantity Order (8th December)

Service Policy

1. **1 year warranty**
2. **Service Support**

The service instructions in the Service Manual will help distributors repair defective units promptly. Should a board replacement be necessary to fix a defective unit, a board swapping service is provided by Good Will Instrument to facilitate the repairs done at a distribution site.

3. GW Instek continues to provide the after sales support through its website. The most updated version of the service manual and Marcom material for LCR-1000 series will be posted on the distributor zone of GW Instek Website at <https://www.gwinstek.com>

Specifications:

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

Ordering Information:**LCR-1100** 100kHz Hand-held LCR Meter**Part Number:** 03ALCR11000S**EAN Code:** 4711458120085**Included 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)

LCR-1010 10kHz Hand-held LCR Meter**Part Number:** 03ALCR10100S**EAN Code:** 4711458120078**Included 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)

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

Should you have any questions on the LCR-1000 series announcement, please don't hesitate to contact us.

Sincerely yours,

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