

GW Instek LCR-7000

Precision LCR Meter

New Product Announcement

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

LCR-7000 Precision LCR Meter

New Product Announcement

GW Instek has launched its new generation of precision LCR meters – the LCR-7000 series, featuring touch operation and sweep curve functionality. This series offers five corresponding models with test frequencies ranging from 2 kHz/20 kHz/100 kHz/200 kHz/300 kHz, replacing the existing LCR-6000 series. This series inherits the core measurement capabilities of the LCR-6000 series, including 16 sets of measurement parameter combinations, 0.05% basic accuracy, 25 ms measurement speed (fastest), 10-step list testing, and other existing features and functions, allowing users to easily replace the existing system without re-evaluation during the transition. Furthermore, command compatibility greatly enhances customer convenience, especially for users with integrated systems, allowing them to continue using their existing systems without modifying existing computer software. The LCR-7000 series boasts a diverse range of features, making it an invaluable tool for all stages of passive component applications, including R&D, engineering testing, material screening, incoming inspection, and production sorting.

The entire LCR-7000 series utilizes a 5-inch touchscreen color LCD display to present a wealth of parameters. In addition to displaying setting conditions and primary/secondary parameter measurement results, it also adds two extra monitored parameters; in short, up to four parameter results can be displayed on the same screen, significantly improving measurement efficiency. Furthermore, the newly added GO/NOGO mode not only emphasizes the measurement results but also provides PASS/FAIL judgments, making test determination faster and more convenient.

To eliminate errors (parasitic impedance) caused by test leads and fixtures so as to ensure the accuracy of measurement results, the LCR-7000 series offers two zeroing modes: full-frequency and spot. Full-frequency zeroing allows measurement at any frequency point within the applicable frequency range without shutting down the power or changing the test fixture, saving time wasted on repeated zeroing. Spot zeroing is performed at a specific frequency. Furthermore, the frequencies within the range are consecutive, allowing users to input the actual required frequency value for the most realistic component testing.

The LCR-7000 series also features diverse ancillary measurements to meet the measurement requirements of different materials. For instance, the series provides the automatic level control (ALC) function to satisfy the test voltage requirement of MLCC. For inductive component measurements, the series provides the adjustable test current function and the D.C. resistance measurement function. The optional external bias current adapter (± 2.5 A) is to satisfy the measurement requirements. With respect to the D.C. bias voltage test for capacitive components requirements, the series allows users to conduct verification measurement on materials by its internal ± 5 V adjustable voltage or via an optional external bias voltage adapter (± 45 V). Furthermore, the SWEEP function and 10-step list test function allow users to observe trends or specific frequency point in the characteristics of the component under test according to their settings.

The LCR-7000 series has 10 memory sets defined by panel setting criteria to facilitate users in selecting test criteria and saving time in repeated settings. 10,000 measurement result storage capability can easily record measurement results instantaneously. The USB host allows easy access to recorded results without connecting the series to the PC. The USB host also allows USB to retrieve and save screen so as to assist users in compiling setting guidelines.

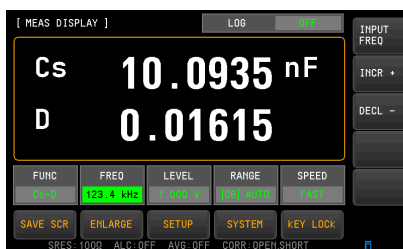
For the external control, the LCR-7000 series provides handler interface and collocates with its measurement sorting function (9BIN, AUX: 1BIN) to facilitate the connection with sorting machine so as to sort out the materials. For remote control and measurement result retrieval requirements, the LCR-7000 series provides RS-232C/LAN/USB (Type C) to assist setting control or measurement result retrieval via the PC commands. Additionally, the free PC software gives users an instant tool to store measurement results that saves time in developing programs.

The new compacted LCR-7000 series can effectively improve the limitation of space. Diverse measurement functionalities and display methods are making the series the high CP ratio choice in meeting the requirements of R&D, component assessment for engineering departments, category sorting requirements for component production, and IQC for verification on component specifications.

See More. Measure Better.

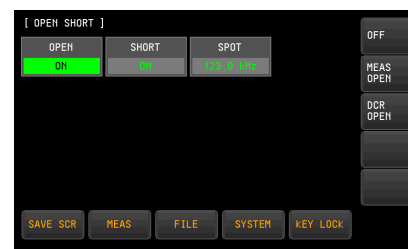
Consecutive frequency and Convenient zero function

The LCR-7000 series, within the provided frequency range, features consecutive and adjustable frequency capability which allows users to conduct measurement and analysis on components with the most genuine frequency requirements. For OPEN/SHORT fixture compensation function, the LCR-7000 series is equipped with full frequency range zero and spot zero selections. After executing full frequency range zero, users, under the conditions of not turning off the power and not changing test fixture, can freely change test frequency for the LCR-7000 series to execute component measurements that tremendously saves time in repeatedly zeroing test fixture after changing frequency.



Consecutive and adjustable frequency

Freely input frequency within provided frequency range

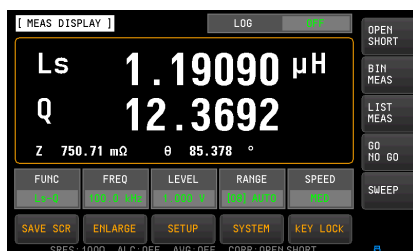


Selectable fixture zeroing methods

Full frequency range zero or spot zero

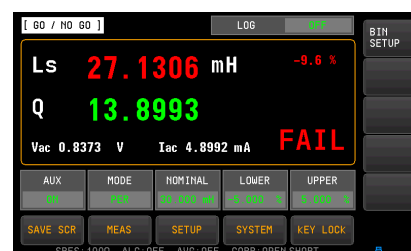
Rich and diverse information display

The measurement result display of the LCR-7000 series not only reveals primary and secondary measurement parameters but also includes two monitoring parameters. Therefore, four DUT related parameters can be simultaneously shown on the display screen to save time if repeated measurements are required. With respect to display screen, the LCR-7000 series features diverse display to meet users' observation requirements. For instance, MEAS display shows setting parameters and measurement results at the same time; GO/NOGO display focuses on measurement results and PASS/FAIL judgment is available, which is conducive to assist engineers to swiftly obtain the validity of measurement results.



MEAS display

Parameter setting and four measurement parameters

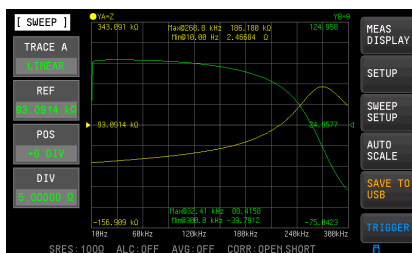


GO/NOGO display

Measurement results and PASS/FAIL judgment

Sweep function and 10-point list test.

The LCR-7000 series offers two key component analysis functions. One is the sweep curve function, allowing users to define initial and final frequency ranges to plot characteristic curves on the display screen. The other is the 10-point list test function, which allows users to define a set of measurement parameters for the device under test (DUT) (e.g., Cs – Rs) and set 10 test conditions with identical properties (e.g., frequency or voltage/current) but different values for measurement. Regardless of the function used, users can quickly and clearly obtain the trend of DUT characteristic changes, thereby determining the DUT's suitability for practical applications. Measurement results can be directly stored in internal memory or stored in USB drive and then transferred to a PC for further analysis.



Sweep characteristic curve

Listed tests

Provide more delicate characteristic variation trend

Variation criteria based upon frequency or voltage/current

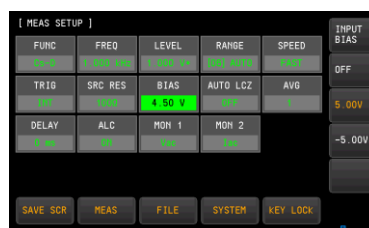
Diverse ancillary measurement functions

To satisfy the diverse measurement application requirements for different components and materials, the LCR-7000 series collocates with many auxiliary measurement functions. For capacitor measurement, Automatic Level Control (ALC) is mainly for component which requires a constant or rated test voltage such as multi-layer ceramic capacitor (MLCC). An internal D.C. bias voltage (± 5 V, internal) is allowing simulating A.C. and D.C. coexistence to learn capacitance variation. For inductor measurement, the D.C. resistance measurement function is to validate D.C. resistance characteristics. Additional, the LCZ function is to quickly identify components' characteristics. When the function is activated, the LCR-7000 series will automatically determine DUTs' characteristics and reveal the optimum parameters to show the measurement results.



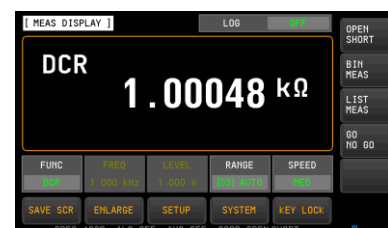
Automatic level control

Ideal for measuring components
with voltage requirements



Internal bias (± 5 V adjustable)

Ideal for capacitive components'
characteristic tests



D.C. resistance measurement

Ideal for inductive components' D.C.
characteristics verification

Comprehensive Control Interface

In terms of interface configuration, the LCR-7000 series offers a Handler interface suitable for external connection control; this interface provides 10 BIN (9 BIN, AUX:1 BIN) sorting result output, which can be used to connect to a sorting machine for component sorting operations. For remote control, it provides USB (Type C)/LAN/RS-232C interfaces, suitable for system integration or automation applications, allowing setting controls or reading measurement results via PC commands.



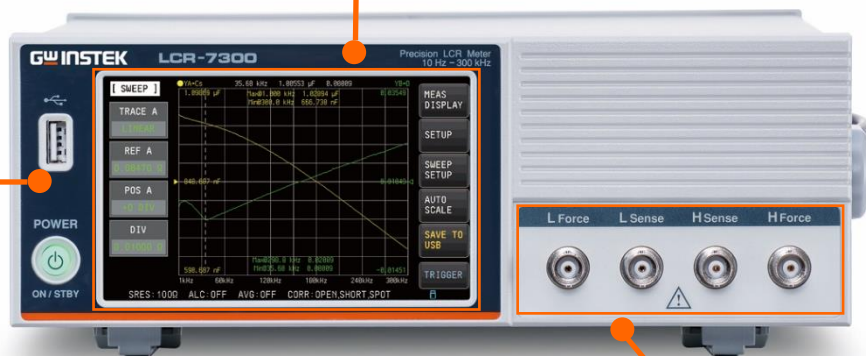
Comprehensive Control Interfaces

Product Features

- ※ 5" Touch color LCD
- ※ 5 models (10 Hz to 2 kHz/20 kHz/100 kHz/200 kHz/300 kHz)
- ※ Consecutive test frequency
- ※ Basic accuracy : 0.05%
- ※ Measuring speed up to 25 ms (max.)
- ※ Full frequency range for OPEN/SHORT/SPOT
- ※ 16 major/secondary parameter measurement combinations and two additional monitoring parameters(maximum four different parameters can be shown simultaneously)
- ※ Two Curves Sweep Mode
- ※ DCR measurement and internal D.C. bias voltage (± 5 V)
- ※ Go/NoGo judgment
- ※ Auto Level Control (ALC) function
- ※ BIN function provides 9BIN and 1AUX, totally 10 BIN
- ※ 10 steps listed tests to select different frequency, voltage and current criteria
- ※ Standard interface : RS-232C, Handler, USB Host / Device (Type C) and LAN

A USB host can save internal data and capture display

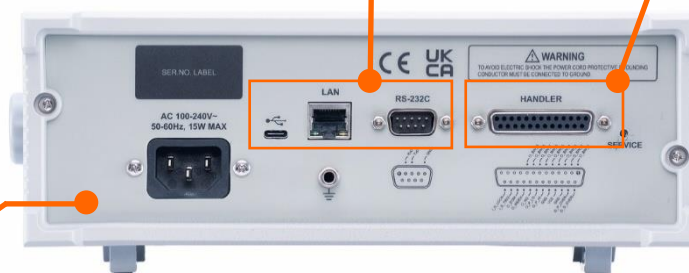
A 5-inch touchscreen TFT LCD display provides observation of measurement results, including numerical values and curves.



Four-wire terminal

USB/LAN/RS-232C port (Standard)

Handler port (Standard)



*Universal input
AC 100-240V*

Comparison: LCR-7000 vs LCR-6000

Compared to existing products, the LCR-7000 series offers richer testing capabilities, such as continuously adjustable frequency, DC resistance measurement, automatic level control (ALC), sweep curves, 10-point table measurements, etc., to assist users in their testing tasks.

Blue markings indicate relatively good performance.

"X" indicates "This function is not available".

		GW LCR-7300	GW LCR-6300
Outlook			
Operation		Touch	Key-pad
Frequency Range		10 Hz to 300 kHz (Consecutive)	10 Hz to 300 kHz (Consecutive)
Test Signal Level		10mV ~ 2 Vrms / 100μA ~ 20mA	10mV ~ 2 Vrms / 100μA ~ 20mA
Test Signal Monitoring		Yes	Yes
Auto Level Control (ALC)		Yes	Yes
Measurement Parameters	R, X, Z	0.00001Ω ~ 99.9999MΩ	0.00001Ω ~ 99.9999MΩ
	G, B, Y	0.01nS ~ 999.999S	0.01nS ~ 999.999S
	L	0.00001uH ~ 9999.99H	0.00001uH ~ 9999.99H
	C	0.00001pF ~ 9999.99mF	0.00001pF ~ 9999.99mF
	D	0.00001 ~ 9.99999	0.00001 ~ 9.99999
	Q	0.00001 ~ 99999.9	0.00001 ~ 99999.9
	θd	-179.999° ~ 179.999°	-179.999° ~ 179.999°
	θr	-3.14159 ~ 3.14159	-3.14159 ~ 3.14159
	DCR	0.00001Ω ~ 99.9999MΩ	0.00001Ω ~ 99.9999MΩ
Basic Accuracy		0.05 %	0.05 %
Speed (MED)		100 ms	100 ms
Internal DC Bias		±5 V adjustable	±2.5 V adjustable
Measurement Combinations		Cs-Rs, Cs-D, Cp-Rp, Cp-D, Lp-Rp, Lp-Q, Ls-Rs, Ls-Q, Rs-Q, Rp-Q, R-X, Z-θr, Z-θd, Z-D, Z-Q, DCR	Cs-Rs, Cs-D, Cp-Rp, Cp-D, Lp-Rp, Lp-Q, Ls-Rs, Ls-Q, Rs-Q, Rp-Q, R-X, Z-θr, Z-θd, Z-D, Z-Q, DCR
Monitoring Parameters		Z, D, Q, θr, θd, R, X, G, B, Y, Vac, lac, Δ, Δ%	Z, D, Q, θr, θd, R, X, G, B, Y, Vac, lac, Δ, Δ%
DCR Function		Yes	Yes
Auto LCZ Function		Yes	Yes
Zeroing Compensation		Open/Short/SPOT	Open/Short/SPOT
Cable Length Compensation		X	X
List Test		10 Points (by frequency/Volt./Curr.)	10 Points (by frequency/Volt./Curr.)
Sweep Curve		Dual curve (by frequency)	X
BIN Function		Yes	Yes
SCPI Interface		RS-232C/USB (Type C)/LAN	RS-232C/USB
USB Storage		Yes	Yes
Handler		Yes	Yes
Scan		X	X
Dimensions		258 mm(W) x 102 mm(H) x 320 mm(D)	265 mm(W) x 107 mm(H) x 312 mm(D)

Target Markets and associated features

■ R&D and engineering

- Broad frequency range; and consecutive and adjustable frequency can be applied to the measurement simulating components' realistic applications.
- Various auxiliary measurement functions satisfy the measurement requirements for different components or materials.
- The Sweep curve (by frequency) provides detailed component characteristic analysis.
- The listed test function can simultaneously set 10 points test criteria (based on frequency, voltage or current) to conduct tests for observing components' or materials' characteristic variation.
- Free PC software to save program development time; and the software also provides maximum 1,000 points test criteria settings so as to obtain components' delicate characteristic variation.
- The 2U height design is the optimum space saver suitable for either bench top or system rack.

■ Quality Assurance Verification

- High measurement display resolution (6 digits) and accuracy (0.05%) provide accurate measurements on components' specification characteristics.
- Broad frequency and diverse auxiliary measurement functions satisfy the measurement requirements for different components.
- Enlarge display mode, Pass/Fail judgment, and sound response function can effectively expedite the verification time.
- The Sweep curve (by frequency) provides detailed component characteristic analysis.
- The listed test function can simultaneously set 10 points test criteria (based on frequency, voltage or current) to conduct tests for observing components' or materials' characteristic variation.
- Free PC software can rapidly retrieve and record measurement results to facilitate the follow-on component analysis.

■ Education Lab and Training Institution

- Broad frequency and diverse auxiliary measurement functions satisfy the measurement requirements for different components.
- High measurement display resolution (6 digits) and accuracy (0.05%) provide accurate measurements on components' specification characteristics.
- The Sweep curve (by frequency) provides detailed component characteristic analysis.
- The listed test function can simultaneously set 10 points test criteria (based on frequency, voltage or current) to conduct tests for observing components' or materials' characteristic variation.
- Free PC software can rapidly retrieve and record measurement results to facilitate the follow-on component analysis.
- The 2U height design is the optimum space saver suitable for either bench top or system rack.

■ **Component or material manufacturing**

- Broad frequency and diverse auxiliary measurement functions satisfy the measurement requirements for different components.
- High measurement display resolution (6 digits) and accuracy (0.05%) provide accurate measurements on components' specification characteristics.
- The standardly equipped Handler interface and the sorting function can be applied to connect with sorting machine so as to sort out materials.
- The 2U height design is the optimum space saver suitable for either bench top or system rack.

Key Dates for Product Announcement

1. New product announcement to distributors (sample unit order) – October 8, 2026
2. Global market announcement – October 23, 2026

Service Policy

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

The service instructions in the Service Manual will help distributors repair defective units promptly. Should the board replacement is necessary to fix the defective unit, the board swapping service support is provided by Good Will Instrument to facilitate the repair jobs done at the distributor's site.

3. GW Instek continually provides the after-sales support through its website. The most up-to-date version of service manual and Marcom material of the LCR-7000 will be posted on the distributor zone of GW Instek Website at <https://www.gwinstek.com>

Specifications

TEST FREQUENCY	
	LCR-7300: 10 Hz to 300 kHz ($\pm 0.01\%$) (4 digits resolution) LCR-7200: 10 Hz to 200 kHz ($\pm 0.01\%$) (4 digits resolution) LCR-7100: 10 Hz to 100 kHz ($\pm 0.01\%$) (4 digits resolution) LCR-7020: 10 Hz to 20 kHz ($\pm 0.01\%$) (4 digits resolution) LCR-7002: 10 Hz to 2 kHz ($\pm 0.01\%$) (4 digits resolution)
OUTPUT IMPEDANCE	
	30 Ω / 50 Ω / 100 Ω selectable
BASIC ACCURACY	
Slow / Med	0.05 %
Fast	0.1 %
TEST SPEED	
	FAST:25 ms / MED:100 ms / SLOW:333 ms
TEST SIGNAL LEVELS	
AC Voltage	10.00 mV to 2.00 V ($\pm 10\%$) CV :10.00 mV to 2.00 V($\pm 6\%$)
Current	100.0 μ A to 20.00 mA ($\pm 10\%$) CC :100.0 μ A to 20.00 mA ($\pm 6\%$) (@2 V max.)
DCR	+2 V, 0.066 A(Max.), Output impedance fixed 30 Ω
DC BIAS	
Internal	± 5 V (0.5 % + 0.005 V)
DISPLAY RANGE	
R, X, Z	0.00001 Ω to 99.9999 M Ω
G, B, Y	0.01 nS to 999.999 S
L	0.00001 μ H to 9999.99 H
C	0.00001 pF to 9999.99 mF
D	0.00001 to 9.99999
Q	0.00001 to 99999.9
θ_d	-179.999° to 179.999°
θ_r	-3.14159 to 3.14159
DCR	0.0000 1 Ω to 99.9999 M Ω
$\Delta\%$	-99999 % to 99999 %
TEST MODE	
16 Combinations	Cs-Rs, Cs-D, Cp-Rp, Cp-D, Lp-Rp, Lp-Q, Ls-Rs, Ls-Q, Rs-Q, Rp-Q, R-X, Z- θ_r , Z- θ_d , Z-D, Z-Q, DCR
Monitor parameter (2 selectable)	Z, D, Q, Vac, Iac, Δ , $\Delta\%$, θ_r , θ_d , R, X, G, B, Y
LISTED MODE	
Steps	10 steps
Parameters	Freq./Volt./Curr.

BIN FUNCTION	
Numbers	10 (BIN: 1 to 9 , AUX:1 BIN)
Comparators	ABS/PER/SEQ
SWEEP	
Swept graphical	Two of measurement parameters
Swept parameter	Frequency
X-AXIS/Y-AXIS	LINEAR/LOG
Value point	more than 250 points
Measure function	MAX/MIN Frequency point and value
SCALE	TRACE A/B, AUTO SCALE
Cursor function	Available
Storage function	Data (.csv) & Screen capture (bmp file)
MEMORY	
INT – panel setting	10 file name
INT – measured data	10000 Data(.csv)
USB storage	10 file name for setting, 9999 file name for data, 999 Log file for LCD screen
OTHER FUNCTION	
Auto Level Control (ALC)	ON/OFF
GO/NoGO	Available
Average	1 to 256 times
Trigger	INT / MAN / EXT / BUS
Delay	0 ms to 60 s
Judgment	PASS / FAIL
Auto LCZ	ON / OFF
Screen Capture	Saving in to USB (Bmp file)
DISPLAY	
	5' Touch LCD
INTERFACE	
SCPI	RS-232, Device(Type C), LAN
Others	Handler, USB Host
POWER SOURCE	
	AC 100 V to 240 V, 50 Hz to 60 Hz, Max. 15 W
DIMENSIONS & WEIGHT	
	256(W) mm x 101(H) mm x 315(D) mm, Approx. 3 kg

Ordering information

LCR-7300	DC, 10 Hz to 300 kHz Precision LCR Meter
	Part Number: 01CR730000GS EAN Code: 4711458124182
LCR-7200	DC, 10 Hz to 200 kHz Precision LCR Meter
	Part Number: 01CR720000GS EAN Code: 4711458124175
LCR-7100	DC, 10 Hz to 100 kHz Precision LCR Meter
	Part Number: 01CR710000GS EAN Code: 4711458124168
LCR-7020	DC, 10 Hz to 20 kHz Precision LCR Meter
	Part Number: 01CR702000GS EAN Code: 4711458124151
LCR-7002	DC, 10 Hz to 2 kHz Precision LCR Meter
	Part Number: 01CR700200GS EAN Code: 4711458124144

Standard Accessories

Safety Instruction Sheet x 1, Power cord x 1,
Test fixture LCR-06B x 1, D-sub kit (for handler) x1

Option

LCR-16 +/- 45V DC Bias Voltage Box
LCR-17 +/- 2.5A DC Bias Current Box
LCR-DB1 +/- 200V DC Bias Voltage Box (Freq. up to 2MHz)

Optional Accessories

LCR-05 Test Fixture for Axial & Radial Lead components
LCR-06B Test Lead with Kelvin clip (4 wire type)
LCR-07 Test Lead with Alligator clip (2 wire type)
LCR-08A Test Fixture (Tweezers) for SMD/Chip components
LCR-15 Test Fixture for SMD/Chip components
RS-232 RS-232C Cable, 9-pin Female to 9-pin, null Modem for Computer, Approx. 2000 mm
GRA-459 Rack Mount Kit (19" 2U)

Should you have any questions on the LCR-7000 announcement, please don't hesitate to contact us.

Sincerely yours,

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