



Manuals.plus /

- › GuliTech /
- › GuliTech Victor 4090C 5-Digit Digital Desktop LCR Meter User Manual

GuliTech 4090C

GuliTech Victor 4090C Digital Desktop LCR Meter User Manual

Model: 4090C

1. PRODUCT OVERVIEW

The GuliTech Victor 4090C is a high-precision 5-digit digital desktop LCR meter designed for accurate measurement of inductance (L), capacitance (C), and resistance (R). It features a 3.5-inch TFT display and offers various measurement functions suitable for a wide range of electronic component testing.



Figure 1: Front view of the Victor 4090C LCR Meter, showing the display and control panel.

Key Features:

- Measurement frequency up to 100kHz.
- Test level adjustable from 100mV to 2000mV.
- 3.5-inch TFT display with 5.5-digit resolution.
- Basic accuracy of 0.2%.
- Manual and automatic ranging capabilities.
- Equipped with open circuit and short circuit correction functions.
- Supports measurement of DC resistance (DCR) and electrolytic capacitors.
- Internal bias voltage output (1mV-1500mV) with 1mV step adjustment.
- Automatic identification of component measurement type.
- USB and RS232 communication interfaces for PC connectivity.

BENCHTOP DIGITAL LCR METER

Measurement frequency 10kHz Basic accuracy 0.1%



language conversion



Automatic Identification



Data record



Data hold



USB connection



3.5-inch color screen



Figure 2: Overview of the LCR Meter's capabilities, including 10kHz measurement frequency, 0.1% basic accuracy, language conversion, automatic identification, data record, data hold, USB connection, and 3.5-inch color screen.

2. SETUP AND CONNECTIONS

2.1 Unpacking and Initial Inspection

Carefully remove the LCR meter from its packaging. Inspect the device for any signs of damage during transit. Ensure all accessories listed in the packing list are present.

2.2 Power Connection

The Victor 4090C can be powered via its AC power input. Connect the provided power cord to the voltage jack on the rear panel and then to a suitable AC power outlet (AC 200-240V 50-60Hz). Ensure the voltage selection switch is set correctly for your region if applicable.



Figure 3: Rear panel showing the voltage jack, voltage selection switch, USB interface, RS232 interface, and HANDLER interface.

2.3 Adjusting the Handle

The LCR meter is equipped with an adjustable handle for convenient positioning. To adjust, hold the handles on both sides of the unit, pull them outward slightly, and then rotate them to the desired position. Release to lock the handle in place.

Need to adjust the handle of the digital bridge, please hold the handles on both sides of the watch body and pull it outward, and then rotate the handle to the desired position



Quick measurement

3 measurement speeds to meet current needs

10Times/s
FAST

5Times/s
MID

2Times/s
SLOW



Figure 4: Step-by-step guide for adjusting the instrument's handle for optimal viewing angle.

2.4 PC Connection

The Victor 4090C supports RS232 and USB communication interfaces for connection to a computer. This

allows for data transfer and remote control using compatible software. The Handler interface supports comparator sorting and list scanning.



Figure 5: The LCR Meter connected to a computer, illustrating its RS232 and USB communication capabilities.

3. OPERATING INSTRUCTIONS

3.1 Power On/Off

Press the red power switch key located on the front panel to turn the device on or off.

3.2 Basic Measurement

Connect the component to be tested to the appropriate test clip jacks (H Force, H Sense, L Sense, L Force). Use the basic measurement function keys and arrow keys to navigate the menu and select desired parameters such as measurement frequency, test level, and range. The 3.5-inch TFT display will show the measurement results.

3.3 Measurement Speed

The Victor 4090C offers three measurement speeds to suit different testing requirements:

- **FAST:** 10 times/second
- **MID:** 5 times/second
- **SLOW:** 2 times/second



Figure 6: Display indicating the available measurement speeds: Fast, Mid, and Slow.

3.4 Internal Bias Voltage

The meter provides an internal bias voltage output adjustable from 1mV to 1500mV in 1mV steps. This feature is useful for testing components that require a DC bias.

3.5 Automatic Identification

The device can automatically identify the type of component being measured, simplifying the testing process.

3.6 Data Hold and Record

Use the 'HOLD' function to freeze the current measurement on the display. The 'Data record' feature allows for storing measurement data.

4. MAINTENANCE

4.1 Cleaning

To clean the instrument, use a soft, dry cloth. For stubborn dirt, a slightly damp cloth with mild detergent can be used. Do not use abrasive cleaners or solvents, as these may damage the casing or display.

4.2 Calibration

The Victor 4090C is equipped with open circuit and short circuit correction functions. Regular calibration helps maintain measurement accuracy. Refer to the detailed calibration procedures in the full technical manual for precise instructions.

4.3 Storage

When not in use, store the LCR meter in a clean, dry environment, away from direct sunlight and extreme temperatures. Ensure all cables are disconnected and properly stored.

5. TROUBLESHOOTING

5.1 No Power

- Check if the power cord is securely connected to both the instrument and the power outlet.
- Verify that the power outlet is functional.
- Ensure the power switch is in the 'ON' position.
- Check the fuse located near the voltage jack on the rear panel (Fuse: AC 250V 500mA). Replace if blown.

5.2 Inaccurate Readings

- Perform open circuit and short circuit correction.
- Ensure the test leads are properly connected to the component and the LCR meter.
- Verify that the correct measurement frequency and test level are selected for the component type.
- Check for any external interference that might affect measurements.

5.3 Communication Issues (USB/RS232)

- Ensure the correct drivers are installed on your computer.
- Verify that the communication cable is securely connected.
- Check the communication settings (e.g., baud rate) on both the instrument and the computer software.

6. SPECIFICATIONS

The following table provides detailed technical specifications for the Victor 4090C LCR Meter.

LCR meter	4090A	4090B	4090C	4091A	4091B	4091C
Testing frequency	10 points	12 points	16 points	10~10KHz	10~20KHz	10~100KHz
	(100, 120, 200, 400, 800, 1K, 2K, 4K, 8K, 10K)	(100, 120, 200, 400, 800, 1K, 2K, 4K, 8K, 10K, 15K, 20K)	(100, 120, 200, 400, 800, 1K, 2K, 4K, 8K, 10K, 15K, 20K, 40K, 50K, 80K, 100K)	continuous adjust, stepping: 1Hz	continuous adjust, stepping: 1Hz	continuous adjust, stepping: 1Hz
Screen	3.5 inches TFT LCD					
Digits display	Main parameter: 5 digits; auxiliary parameter: 5 digits					
Measuring parameters	Main parameter: L/C/R/Z; auxiliary parameter: X/D/Q/θ/ESR					
Measuring Range (L)	0.01 μH - 9999H					
Measuring Range (C)	0.01pF - 99.999mF					
Measuring Range (R)	0.0001Ω - 99.999MΩ					
Basic accuracy	0.2%					
Measuring speed	2 times/s (slow), 4 times/s (moderate), 8 times/s (fast)					
Bias Voltage	0-1500mV can be adjustable, stepping: 1mV					
Calibration function	Open circuit calibration, short circuit calibration					
Filtering function	Limit scope -50%~+50% can be set; 1%, 5%, 10%, 20% are the fix points					
Interface	Standard accessories RS232(or 485), USB Device, Handle, optional accessories GPIB, USB host					
Others	DCR and electrolytic capacitor measuring mode are available; Backlight luminance can be adjustable, Chinese or English mode are optional					

Figure 7: Comparative specifications for LCR meter models 4090A, 4090B, 4090C, 4091A, 4091B, and 4091C.

Specification	Value
Model Number	G-VICTOR 4090C
Measurement Frequency	Up to 100kHz (16 points: 100, 120, 200, 400, 800, 1K, 2K, 4K, 8K, 10K, 15K, 20K, 40K, 50K, 80K, 100K)
Test Level	100mV ~ 2000mV (0.1V-2V adjustable, at a step of 1mV)
Display Screen	3.5-inch TFT LCD
Number of Display Digits	Principal parameter: 5 digits, Secondary parameter: 5 digits
Measured Parameters	Principal: L/C/R/Z; Secondary: X/D/Q/θ/ESR
Measurement Range (L)	0.001μH ~ 9999H
Measurement Range (C)	0.001pF ~ 99.999mF
Measurement Range (R)	0.0001Ω ~ 99.999MΩ
Basic Accuracy	0.2%
Measuring Display Speed	2 times/s (slow), 4 times/s (medium), 8 times/s (fast)
Internal Bias Voltage	0-1500mV adjustable, at a step of 1mV

Specification	Value
Calibration Function	Open circuit calibration, short circuit calibration
Screening Function	Limit range of screening can be set to -50% ~ +50%, and the fixed points are 1%, 5%, 10% and 20%.
Comparator	5 groups sorting, 3 groups of qualified setting, one group of unqualified setting, one group of auxiliary setting
Interfaces	Standard: RS232 (or 485), USB Device, Handler; Optional: GPIB, USB Host
Other Features	Support DC resistance (DCR), electrolytic capacitor measurement, adjustable backlight brightness, Chinese and English modes.
Product Dimensions	22 x 15 x 12 cm
Item Weight	0.5 Kilograms
Power Source	Battery Powered (1 Lithium Ion battery included)
Manufacturer	Victor
Country of Origin	China
Specification Met	EMC, ISO 9001, RoHS
Upper Temperature Rating	50 Degrees Celsius

7. WARRANTY AND SUPPORT

7.1 Warranty Information

This GuliTech Victor 4090C LCR Meter comes with a **1-year warranty** from the date of purchase. This warranty covers manufacturing defects and malfunctions under normal use. Please retain your proof of purchase for warranty claims.

7.2 Customer Support

For technical assistance, troubleshooting, or warranty inquiries, please contact Gulitech customer support. Refer to your purchase documentation or the seller's contact information for the most up-to-date support channels.