1689 & 1689 M RLC Testers

Fast and Accurate RLC Measurements

The GenRad 1689 Precision Digibridge RLC Tester gives you the best performance for your most demanding applications whether they be production test, incoming inspection, component design and evaluation, process monitoring or dielectric measurement. It is a versatile, full function microprocessor-based passive component tester that's available in either bench top (1689) or rack mountable, high speed (1689M) models.

USES:

- Meters used for impedance measurements (inductance, capacitance, and resistance) to characterize the performance of a variety of electrical components and materials.
- Test Resistors, Capacitors, Inductors or any type of passive component
- Testing Electronic Components
- Calibration Lab

Features

- 0.02% Accuracy for RLC
- 0.0001 Accuracy for DQ measurements.
- Programmable test voltages from 5mV to 1.275Vrms
- Up to 30 or 50 measurements per second respectively, with high speed option
- Wide range of measurement parameters
- IEEE-488 Bus and Component Handler Option
- Programmable test frequencies from 12Hz to 100kHz for maximum testing versatility.
- A full, five-digit LED display for RLC ; our-digit readout for D and Q

Description

The 1689 is a sophisticated, microprocessor controlled tester that brings new levels of flexibility, simplicity and accuracy to RLC measurement. It is a high performance automated tester with a range of programmable test frequencies and test voltages, as well as automatic limit comparison, automatic parameter selection, remote programmability, automatic binning, and automatic zeroing.

The 1689/1689M provides a powerful combination of features designed to maximize productivity in all testing environments.

- 0.02% Accuracy for RLC measurements.
- 0.0001 for D and Q measurements.
- Programmable test frequencies from 12Hz to 100kHz for maximum testing versatility.
- Programmable test voltages from 5mV to 1.275V permits testing at exact manufacturer- specified voltage levels.
- Full range keyboard-selectable test speeds: 1689-Variable up to 30 measurements per second with high speed option; 1689M-Variable up to 50 measurements per second with high speed option, complements automatic handling equipment to maximize throughput.
- 2 selectable measurement modes: Continuous and Triggered with averaging available in each ensures measurement flexibility.
- Optional IEEE-488 Bus and Handler Interface enable remote programming and allow the addition of a component handler to optimize throughput.
- Wide choice of measurement parameters allow you to work with familiar units.
- A full, five-digit LED display for RLC measurements and a four-digit readout for D and Q testing, simultaneously display both test results for each measurement, automatically.
- Guarded Kelvin measurement techniques protect measurement integrity.
- Automatic limit comparison and binning ensure fast, mistake-proof sorting of components.

1689 & 1689M RLC Testers

SPECIFICATIONS

Measurement Parameters: C/D, L/Q, R/Q, or C/R (series or parallel)

Test Frequencies: Over 500 programmable test frequencies (12Hz to 100kHz) 0.01% Accuracy.

Applied Voltage: 5mV to 1.275V (programmable in 5mV steps).

Measurement Speed: Up to 30 measurements/second with High Speed Option (1689).
Up to 50 measurements/second with High Speed Option. (1689M).

Measurement Mode: Continuous or Triggered with averaging up to 256 measurements.

Display Format: Dual Display featuring 5 full digit LED for RLC and 4 full digit LED for DQR
Bin Number, Delta RLC, Delta %, Value
Automatically positioned decimal points and minus signs where appropriate.
Individual LED indicators for parameters, units, and measurement conditions.
GO/No GO Lights

Bias: Internal 2.0VDC
External up to 60VDC

Automatic Functions: Auto ranging with manual hold
Auto parameter (RLC) with manual selection

Binning: Thirteen pass bins for RLC
Two fail bins, RLC and DQR

Interfaces: IEEE-488/Handler Interface option, High speed Measurement/IEEE-488/Handler Interface option

Ranges:

Parameter	Direct Reading Range	Extended Ranges Ratio and DQ in PPM
R	0.00001Ω to 99999kΩ	0.00010μΩ to 9999.9GΩ
L	0.00001mH to 99999H	0.00010nH to 9999.9MH
C	0.00001pF to 99999μF	0.00010aF to 9999.9F
R with C	0.0001Ω to 9999kΩ	not extended
D with C	0.0001 to 9999	1 to 9999ppm
Q with R or L	0.0001 to 9999	1 to 9999 ppm

Accuracy: (Primary parameter) Basic RLC ±0.02%.
(Secondary parameter) Basic DQ ±0.0001

Zeroing: Open and short circuit compensation.

General Features:
- Charged Capacitor Protection (1 Joule)
- Keyboard Lock (Store Test Conditions)
- Constant Voltage Mode (25Ω source)
- Programmed Delay (1 to 99999ms)
- DQ in PPM
- Bin Count Summary
- Programmed Integration Time
- Median Value Mode

Test Fixture: 4-Terminal Kelvin **1689:** Built-in **1689M:** BNC Connectors

Temperature Effects (Typical): R,L or C ± 5ppm / °C
Q or D to ±[2ppm / °C + (3ppm / °C) x frequency in kHz].

Dimensions: (w x h x d): **1689:** 14.781 x 4.40 x 13.50in (375.4 x 111.8 x 342.9mm)
(w x h x d): **1689M:** 17.25 x 5.625 x 15.160in (438.15 x 142.87 x 385.2mm)

Weight: **1689**: 10 lbs. (4.5kg) net, 15.1lbs. (6.83kg) shipping.
1689M: 14 lbs. (6.41kg) net, 19.1lbs. (8.63kg) shipping.

Accessories Supplied:
- Axial lead Adapters (1689 only)
- 1689-9602 BNC to BNC Extender Cable with Banana/Alligator Clips (1689M only)
- Power Cable
- Instruction Manual
- Calibration Certificate traceable to NIST

Enviromental: Operating: 0°C to +50°C Storage: -45°C to +75°C Humidity: <85%

Power: • 90 - 250V AC • 50 or 60 Hz • 60W max

ORDERING INFORMATION

1689-9700	1689 Precision RLC Digibridge
1689-9750	1689M Precision RLC Digibridge

Includes:

4200-0300	AC Power Cable
1689-0120	Instruction Manual
1657-5995	Axial Lead Adaptors (1689 only)
1689-9602	BNC Extender Cable (1689M only)
No P/N	Calibration Certificate traceable to NIST

Optional Accessories:

1689-9630	High Speed IEEE/Handler Interface
1658-9620	IEEE/Handler Interface
1689-9601	BNC Adapter
1689-9602	BNC to BNC Extender Cable*
1657-9600	Banana/Alligator Clip Extender Cable
1688-9600	874 Connector Extender Cable
1689-9600	Remote Test Fixture
7000-05	Chip Component Tweezers
1689-9605	GO/NO GO Remote Test Fixture
1689-9604	Calibration Kit
7000-03	Kelvin Clip Extender Cable
1689-9611	Rack Kit for 1689M only

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