BK PRECISION

894

The BK Precision 894 is a high-accuracy bench LCR meter designed for precise impedance measurements of components and materials over a frequency range of 20 Hz to 500 kHz. Featuring a vivid 4.3-inch color TFT LCD, 0.05% basic impedance accuracy, and a versatile 201-point programmable list sweep function, the 894 is an ideal tool for R&D, manufacturing, and quality control. Standard interfaces include USB, RS232, and LAN.

SPECIFICATIONS

General

Interfaces	USB (Host and Device), LAN, GPIB, Handler
Display	4.3-inch color TFT LCD, 480 x 272 resolution
Warm-Up Time	30 minutes
Programming Command Set	SCPI
Warranty	3 Years

Physical

Power Supply	110/220 V AC ±10%, 47 Hz to 63 Hz, power consumption < 80 VA
Operating Temperature	0°C to 40°C °C
Dimensions (W×H×D)	312 mm x 105 mm x 365 mm mm
Weight	4.3 kg kg

Measurement Parameters & Functions

Primary Parameters	L, C, R, Z, Y, Rdc
Secondary Parameters	D, Q, X, G, B, θ (deg), θ (rad)
Equivalent Circuit Modes	Series, Parallel
Impedance Measurement Range (Z)	0.00001 Ω to 99.9999 MΩ
Resistance Measurement Range (R)	0.00001 Ω to 99.9999 MΩ
Reactance Measurement Range (X)	0.00001 Ω to 99.9999 MΩ
DC Resistance Measurement Range (Rdc)	0.00001 Ω to 99.9999 MΩ
Capacitance Measurement Range (C)	0.00001 pF to 9999.99 mF
Inductance Measurement Range (L)	0.00001 µH to 9999.99 H
Dissipation Factor Range (D)	0.00001 to 9.99999
Quality Factor Range (Q)	0.00001 to 99999.9
Conductance Range (G)	0.01 nS to 999.999 S
Susceptance Range (B)	0.01 nS to 999.999 S
Admittance Range (Y)	0.01 nS to 999.999 S
Phase Angle Range (Degrees)	-179.999° to 179.999°
Phase Angle Range (Radians)	-3.14159 to 3.14159
Math Functions	Deviation, % Deviation

Test Signal Characteristics

Test Frequency Range	20 Hz to 500 kHz
Test Frequency Resolution	0.01 Hz
Test Frequency Accuracy	±0.01%
Test Signal Voltage Range	5 mVrms to 2.0 Vrms
Test Signal Current Range	50 µArms to 66.7 mArms
Source Output Impedance	30 Ω, 50 Ω, 100 Ω
Automatic Level Control (ALC)	Maintains constant voltage or current applied to the DUT
Test Signal Monitoring	Voltage (Vm) and Current (Im) monitoring

Measurement Speed & Accuracy

Basic Impedance Accuracy	0.05%
Measurement Speed (Fast Mode)	13 ms/reading
Measurement Speed (Medium Mode)	67 ms/reading
Measurement Speed (Slow Mode)	187 ms/reading
Trigger Sources	Internal, Manual, External, Bus

DC Bias Source

Internal DC Bias Voltage Range	-5 V to +5 V
Internal DC Bias Voltage Resolution	1 mV
Internal DC Bias Voltage Accuracy	±(1% + 2 mV)
Internal DC Bias Current Range	-50 mA to +50 mA
Internal DC Bias Current Resolution	10 µA
Internal DC Bias Current Accuracy	±(1% + 20 µA)

Sweep & Graphic Analysis

Sweep Parameters	Frequency, AC Voltage, AC Current, DC Voltage, DC Current
Sweep Type	Linear, Logarithmic
Number of Sweep Points	201 points
List Sweep Function	201-point programmable sweep

Calibration & Compensation

Open Compensation	Supported
Short Compensation	Supported
Load Compensation	Supported
Cable Length Correction	0 m, 1 m, 2 m, 4 m

Hardware Interfaces & Connectivity

Test Port Configuration	4-terminal pair
USB Host Port	Front panel USB port for data storage
USB Device Port	Rear panel USB (USBTMC / Virtual COM protocol)
LAN Port	Standard RJ45 interface
RS232 Port	Standard DB9 female interface
Handler Interface	Standard 36-pin optocoupler isolated interface

Display & User Interface

Display Type	Color TFT LCD
Display Size	4.3-inch
Display Resolution	480 x 272 pixels
Zoom Function	Enlarges measured values to full screen

Environmental & Compliance

Storage Temperature Range	-10°C to 55°C
Storage Humidity Range	< 90% RH

Supported Configurations & Accessories

Included Accessories	4-terminal fixture, Kelvin clip test leads, power cord, certificate of calibration
Transformer Measurement Parameters	Not supported

Interfaces

GPIB Port	Standard

Performance

Measurement Resolution	6-digit

Measurement Control

Averaging Factor	1 to 255
Trigger Delay Time	0 ms to 60 s (1 ms steps)
Step Delay Time	0 ms to 60 s (1 ms steps)
Cable Length Compensation	0 m, 1 m, 2 m, 4 m
Comparator Bins	9 primary bins (BIN1 to BIN9), OUT bin, and AUX bin

DC Bias

External DC Bias Voltage	0 to ±40 V

Storage

Internal Storage	Save/recall up to 100 setups (including 10 list sweep setups)
External Storage	USB host port supporting FAT16 and FAT32 file systems

Power

Power Consumption	80 VA max.
Power Line Frequency	47 Hz to 63 Hz

Test Signal

Test Signal AC Voltage Resolution	100 µV (20 mV to 200 mV), 1 mV (200 mV to 2 V)
Test Signal AC Current Resolution	1 µA (100 µA to 2 mA), 10 µA (2 mA to 20 mA)
Test Signal Voltage Accuracy	±(10% + 2 mV) @ 1 kHz
Test Signal Current Accuracy	±(10% + 10 µA) @ 1 kHz

Transformer Measurements

Turns Ratio Range	0.9 to 200
Mutual Inductance Range	0.00001 µH to 99999.9 H
Leakage Inductance Range	0.00001 µH to 99999.9 H
Primary/Secondary Resistance Range	0.01 mΩ to 99.9999 MΩ

Compliance

Safety Compliance	EN 61010-1
EMC Compliance	EN 61326-1

Environmental

Operating Altitude	Up to 2000 m
Pollution Degree	2

TECHNOLOGY

Impedance Measurement / LCR Metering

APPLICATIONS

R&D, manufacturing, component testing, and quality control

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