

100kHz Bench Type LCR Meter

Protek 9216A

The Protek 9216A is a useful tool measuring a device characteristics with various functions. It has more than 13 orders of magnitude, basic accuracy of 0.05% and 5 test frequencies.



Features

- Basic Accuracy of 0.05%
- 5 Test Frequencies
- Store up to 9 Setups in the Memory
- RS232C Interface

Accessories

- Radial Fixture
- DB25 Male Connector
- Kelvin Clips(Optional)
- SMD Tweezers(Optional)

Specifications

Description	Protek 9216A
Measurement Modes	Auto, R+Q, L+Q, C+D, C+R
Equivalent Circuit	Serial or Parallel
Parameters Displayed	Value, Deviation, % Deviation or Bin Number. Deviation and % deviation are calculated from a stored relative value.
Averaging	2 ~ 10 Measurement
Measurement Range	R+Q R 0.0001 Ω ~ 2000M Ω Q 0.00001 ~ 50 L+Q L 0.0001 μ H ~ 99999H Q 0.00001 ~ 50 C+D C 0.0001pF ~ 99999 μ F D 0.00001 ~ 10 C+R C 0.0001pF ~ 99999 μ F R 0.00001 ~ 99999k Ω
Test Frequency	100Hz, 120Hz, 1kHz, 10kHz, 100kHz
Frequency Accuracy	\pm 100ppm
Drive Voltage	0.1V, 0.25V, 1Vrms
Drive Level Accuracy	\pm 2%
Measurement Speed	Slow, Medium, Fast: 2, 10 or 20 measurements per second at test frequencies of 1kHz and above and about 0.6, 2.4 or 6 measurements per second at 100Hz and 120Hz
Ranging	Auto or Manual
Trigger	Through External Trigger, Continuous, Manual or Remote over RS232 interface
Bias Voltage	Internal ==> 2.0VDC \pm 2% External ==> 0 to +40VDC (fused@0.25A)
Conditions	At least 30 minute warm up, 23 $^{\circ}$ C \pm 5 $^{\circ}$ C, < 70%
Power Supply	110~ 240 VAC 50/60Hz, \pm 50W
Basic Accuracy	0.05%
Interface	RS232
Standard Products	Manual, Text Fixture 1pc, Power Cable
Dimensions & Weight	363mm(W) X 109mm(H) X 386mm(D) / \pm 5.8kg

200kHz Bency Type LCR Meter

Protek 9216B

High technology & quality circuit design and concentrating essence of LCR Test, Protek-9216B is a new generation compact LCR Meter of low cost and high performance. Also of traditional mechanical power switch, it New Software control power switch. The basic accuracy of 0.05% and good test stability can compare favorably with that high-end model. Being equipped with 4.3" inch TFT LCD Display and brand new interface system, Protek-9216B LCR Meter possess elegant appearance and easy operation. Also, being provided with various interfaces and good compatibility with SCPI commands, Protek-9216B LCR Meter is convenient for constituting all kinds of test system and satisfy various kinds of demands for inspection, and scientific research.



Features

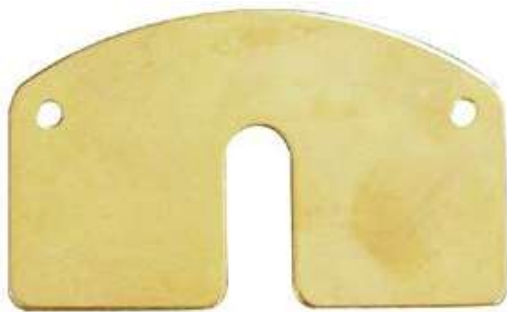
- Low cost, high performance, Small Size
 - 4.3" TFT LCD & Dual display
 - Max 200kHz Test Frequency
 - Max 6 Digit Reading Resolution
 - 10mVrms~2.0Vrms Programmable Signal Level, 0~±5V/50mA
Built-in bias source
 - DCR, 50mV~ 2V Programmable test level, 10μΩ Resolution
 - Ls-Rd / Lp-Rd Function (L, Rd display simultaneously)*
 - Highest test speed 13ms/time
 - Selectable 30Ω/100Ω Impedance Signal Source
 - V/I Monitor and auto level adjustment function
 - Built-in comparator, 10Bins sorting and count function
 - File Storage and firmware update through USB Disk
 - RS-232C, RS485, USB, HANDLER, GPIB Interface
- * Rd means DCR

Specifications

Description		Protek 9216B
Basic Measurement Accuracy	LCRZ	0.05%
	DCR	0.1%
	Cablriration Condition	Warm up time : ≥ 30 minutes ; Environment temperature : $23 \pm 5^\circ\text{C}$ Signal Level : 1Vrms ; Correction: after OPEN, SHORT Testing cable length : 0m
Test Signal Frequency		20Hz ~ 200kHz
Signal Source Output Impedance		30 Ω , 100 Ω , $\pm 1\%$ @1kHz
AC Test Signal Level	Normal	10mV~ 2Vrms
		Resolution : 10mV / Accuracy : 10% x Setting voltage+2mV
		100 μA ~ 20mArms / Resolution : 0.1mA
	Constant level (ALC ON)	20mA~ 1Vrms
		Resolution : 10mV / Accuracy 10%
		200 μA ~ 10mArms / Resolution : 0.1mA
DCR test signal level		50mV~ 2V DC / Resolution : 0.5mV
DC Bias Voltage Source	0V~ ± 5 V	
	Resolution : 0.5mV / Accuracy 1%	
	0mA~ ± 50 mA	
	Resolution : 0.5 μA	
Test Parameter		IZI, IYI, C, L, X, B, R, G, D, Q, θ , DCR
DCR Display Range		0.00001 Ω ~ 99.9999 M Ω
LCR Parameters Display Range	IZI, R, X	0.00001 Ω ~ 99.9999 Ω
	IYI, G, B	0.00001 μs ~ 99.9999s
	C	0.00001pF ~ 9.99999F
	L	0.00001 μH ~ 99.9999Kh
	D	0.00001 ~ 9.99999
	Q	0.00001 ~ 99999.9
	θ (DEG)	-179.999° ~ 179.999°
	θ (RAD)	-3.14159 ~ 3.14159Ω
	$\Delta\%$	-999.999% ~ 999.999%
Display Digits		6 digits
Measurement Time (≥ 10 kHz)		Fast : 75meas/sec(13ms), Medium : 11meas/sec(90ms) ,Slow : 2.7meas/sec(370ms)
Equivalent circuit		Serial, Parallel
Range Mode		Auto, Hold
Trigger Mode		Internal, Manual, External, Bus
Average time		1~255
Correction		Open, Short, Load
Math operation		Direct reading, ΔABS , $\Delta\%$

Specifications

Description		Protek 9216B
Trigger Delay Time Setting		0 ~ 60.000s 1ms steps
Step Delay Time Setting		0 ~ 60.000s 1ms steps
List Sweep		- 10 points list sweep - Frequency, AC voltage/current, internal/external bias voltage/current can be swept. - Each sweep point can be sorted separately
Comparator Function		10 bins, BIN1-BING9, NG, AUX Bin count function PASS, FAIL LED Display on front panel
Built-in Storage		Internal 100 LCRZ instrument setting files, 201 times test results
USB Storage		Instrument setting files, measurement result CSV files, printed screen (GIF format)
Interface	Control	HANDLER
	Communication	USB HOST, RS-232C, RS485(optional), GPIB(optional)
	Storage	USB DEVICE (U-Disk storage)
Dimension		235mm(W) * 105mm(H) * 360mm(D)
Weight		± 3.6 kg
Standard Products		Manual, TEST FIXTURE, Power Cable, Fuse(1), CD, USB Cable



HANDLER



High Resolution Measurement Screen



Setting Screen



Dtat Storage Screen