

# COMPONENT TESTERS

## Selection Guide

B&K Precision offers a wide range of component testers that can measure and identify values of capacitors, resistors, inductors, diodes, ICs, and transistors. The measured values of these components can be used for component sorting or circuit trouble shooting.

LCR Meters are versatile instruments as they can measure most common components used in electronic circuitry. Capacitance meters on the other hand are dedicated to testing capacitors only, and have typically a wider capacitance measurement range. Our transistor testers and meters that measure ESR can be invaluable tools when testing and troubleshooting components “in-circuit”, while logic probes are always used in-circuit. IC Testers are used to identify and test some analog and digital ICs.

Category	Description	Max Range	Basic Accuracy	Model	Page
LCR	LCR Meter	20 mF / 200 H / 20 MΩ	1%	875B	51
	Universal LCR Meter	20 mF / 1 kH / 10 MΩ	0.5%	878B	51
	Deluxe Universal LCR Meter with ESR	20 mF / 1 kH / 10 MΩ	0.5%	879B	51
	Synthesized LCR / ESR Meter with SMD Probe	15.91 mF / 31.83 kH / 20 MΩ	0.2%	885	51
	Synthesized LCR / ESR meter with SMD Probe 100kHz test freq.	15.91 mF / 31.83 kH / 20 MΩ	0.2%	886	51
	Bench LCR/ESR Meter with Component Tester	15.91 mF /	0.1%	889B	51
Capacitance	Compact Capacitance Meter	20 mF	0.5%	810	52
	Dual Display Capacitance Meter	199.99 nF	0.5%	830B	52
	Dual Display Capacitance Meter	50 mF	0.5%	890B	52
Component Tester	Component Tester	20 mF / 20 MΩ	0.5%	815	53
Transistor	Portable Transistor Tester	---	---	510A	52
	Industrial Semiconductor Tester with Leakage Test	---	---	520C	52
IC	Linear IC Tester	---	---	570A	53
	Digital IC Tester	---	---	575A	53
ESR	In-Circuit ESR Tester	2200 μF	---	881	53
Logic Probes	Digital Logic Probe	20 MHz	---	DP 21	53
	Logic Pulser Probe	400 Hz	---	DP 31A	53
	Digital Logic Probe	50 MHz	---	DP 52	53

# COMPONENT TESTERS

## LCR Meters

**LCR meters** measure inductance, capacitance, and resistance and are primarily used for component testing in manufacturing quality control or circuit design. They also find use in many other applications such as characterization of cable assemblies, materials and chemicals.



Model 879B

**Models 878B & 879B** are 40,000 count hand-held meters designed for accurate and fast measurements.

### Features & Benefits

- 40,000 count primary and 10,000 count secondary display (backlight with 879B)
- L/C/R/Z primary measurements (Z with 879B)
- D/Q/θ/ESR secondary measurements (θ/ESR with 879B)
- 0.5% basic accuracy
- USB (Virtual COM) interface
- SCPI compliant commands for remote communication



Model 885

**Models 885 & 886** are 10,000 count hand-held meters equipped with four wire terminal connections to facilitate more accurate measurements.

### Features & Benefits

- Measurement parameters: Z, L, C, DCR, ESR, D, Q, and  $\emptyset$
- Test conditions: 100 Hz, 120 Hz, 1 kHz, 10 kHz, 100 kHz (model 886), 1 Vrms, 0.25 Vrms, 0.05 Vrms
- 0.2% basic accuracy
- Dual LCD display
- SMD surface mount tweezer probe included

**Model 875B** is a manual range, hand-held 20,000 count LCR meter that is reliable and easy to use.

- Measures D (dissipation factor)
- Zeroing adjust knob



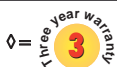
Model 889B

**Model 889B** is a 10,000 count bench meter that uses a four wire interface connection designed for accurate measurements.

### Features & Benefits

- Measurement parameters: ACV, DCV, Z, L, C, DCR, ESR, D, Q, and  $\emptyset$
- LCR test conditions: 100 Hz, 120 Hz, 1 kHz, 10 kHz, 100 kHz, 200 kHz, 1 Vrms, 0.25 Vrms, 0.05 Vrms, 1 VDC (DCR mode only)
- Measures DCV to 600 V and ACV to 600 Vrms @ 40 ~ 1 kHz
- Measures DCA to 2 A and ACA to 2 Arms @ 40 ~ 1 kHz
- 0.1% basic accuracy
- Diode and continuity measurements
- Dual LCD display
- BNC to Kelvin Clip probe included
- USB (Virtual COM) interface

Specifications	Test Signal		Inductance Measurable Range	Capacitance Measurable Range	Resistance Measurable Range	Weight	Dimensions (W x H x D)
	Frequency	Level					
875B <sup>o</sup>	120 Hz, 1 kHz	Approximately 0.5 Vrms	20 uH - 200 H	40 pF - 20 mF	0.2 $\Omega$ - 20 M $\Omega$	14.12 oz (400 g)	3.47" x 6.97" x 1.58" (88 x 177 x 40) mm
878B	120 Hz, 1 kHz	Approximately 0.6 Vrms	20 uH - 1000 H	40 pF - 20 mF	0.4 $\Omega$ - 10 M $\Omega$	11.64 oz (330 g)	3.54" x 7.48" x 1.61" (90 x 190 x 41) mm
879B	100 Hz, 120 Hz, 1 kHz, 10 kHz	Approximately 0.6 Vrms	2 uH - 1000 H	4 pF - 20 mF			
885	100 Hz, 120 Hz, 1 kHz, 10 kHz	1 Vrms, 0.25 Vrms, 50 mVrms, 1 VDC (DCR only)	31.83 kH - 1.591 uH	0.159 pF - 15.91 mF	0.1 $\Omega$ - 20 M $\Omega$	1.1 lbs (470 g)	3.4" x 6.9" x 1.9" (86 x 175 x 48) mm
886	100 Hz, 120 Hz, 1 kHz, 10 kHz, 100 kHz	1 Vrms, 0.25 Vrms, 50 mVrms, 1 VDC (DCR only)	31.83 kH - 0.159 uH	0.159 pF - 15.91 mF			
889B	100 Hz, 120 Hz, 1 kHz, 10 kHz, 100 kHz, 200 kHz	1 Vrms, 0.25 Vrms, 50 mVrms, 1 VDC (DCR only)	0.079 uH - 31.83 kH	0.079 pF - 15.91 mF	0.1 $\Omega$ - 20 M $\Omega$	10 lbs (4.5 kg)	8.7" x 11.8" x 5.9" (220 x 300 x 150) mm



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## Capacitance Meters & Transistor Testers

### Capacitance Meters

The 830B and 890B capacitance meters feature a large 4 1/2 digit LCD with dual display, 11,000 counts resolution, and 9 automatically selected ranges with full scale value from 1.0 pF to 199.99 mF (50 mF model 890B). The meter's dedicated chip and microprocessor support programmable high/low limits or pre-programmed standard capacitor tolerances, making it ideal for inspection, sorting capacitors and testing capacitors against standard tolerances. The 830B comes with software and interface cable for PC based data logging and monitoring. Additionally, these meters meet the latest international safety standards.



#### Features & Benefits

- Auto ranging
- Dual display simultaneously displays value and deviation from selected tolerance
- Sort on preset tolerance of 1, 5, 10%
- Program unique values to sort for specific circuit applications



Model 890B



Model 810C

The 810C is a compact manual ranging capacitance meter, designed for accurate cost effective measurement of capacitive components. It features fused direct-plug-in test sockets and test lead jacks. Also provided a zero adjustment knob to "zero" test lead capacitance.

Specifications	Test Frequencies	Test Level	Measurable Range	Weight	Dimensions (W x H x D)
810C	820 Hz, 82 Hz, 8.2 Hz	<3.5 V	20 pF - 20 mF	11.3 oz (20 g)	3" x 6.75" x 2.2" (76 x 171 x 57) mm
830B	200 Hz, 1.1 kHz, 7.7 kHz, 38 kHz, 166 kHz	<3 V	10 pF - 50 mF	11.3 oz (20 g)	3.42" x 7.24" x 1.61" (87 x 184 x 41) mm
890B		<3 V	10 pF - 199.99 mF		

### Transistor Testers

Transistor testers model 520C and 510A are designed for in circuit and out of circuit transistor testing. They were designed for a minimum amount of control manipulation and setup, allowing for rapid testing of

most devices. The model 520C also has a logarithmically scaled meter that identifies leakage in both Silicon and Germanium devices.

Specifications	Leakage Test	Identifies	Weight	Dimensions
520C	0.1 mA - 5 mA of $I_{CE}$ leakage	NPN or PNP, FET as N-channel or P-channel Silicone or germanium transistors in LO drive, base lead in HI drive all leads of SCR	1 lbs (450 g)	4" x 7.5" x 2" (102 x 191 x 51) mm
510A	N/A	NPN or PNP, FET as N-channel or P-channel FET-gate lead, all leads of		



Model 510A

# COMPONENT TESTERS

## IC, ESR & Logic Probe Testers



Model 570A



Model 881



Model 815

### IC Testers

The 570A interfaces with analog ICs and the 575A with digital ICs. Both versions emulate passive circuitry around the IC under test to ensure that a comprehensive test takes place. High integrity verification offers guaranteed levels of reliability in the results. Conditional and unconditional loop testing modes ensure that intermittent and/or temperature related faults are detected. The units automatically sense the functionality of the device to be tested and display a list of possible equivalents for replacement. Unmarked and house-coded ICs can be identified and tested.

#### Features & Benefits

- Auto identification mode
- Conditional/unconditional loop testing mode
- Functional test unit emulates passive circuitry to implement a comprehensive test in a variety of configurations and gain settings
- Displays diagnostic information down to individual component pins

### In-Circuit ESR & DCR Capacitor Tester

The 881 is a portable In-Circuit ESR Meter that measures the equivalent series resistance of electrolytic capacitors in or out of circuit and can also be used to measure low value non-inductive resistors. In-circuit measurements are dependent on the circuit design of the capacitor being measured.

#### Features & Benefits

- Measures ESR with a range of 0.1 to 30  $\Omega$
- Three color front panel chart shows ESR readings of Good, Fair, and Bad
- Measures DCR with a range of 0.1 to 30  $\Omega$
- 15 mVp-p output test voltage (will not turn on any solid-state devices)
- Includes a one-handed tweezers test probe

### Component Tester

The 815 is a handy meter measuring capacitance (0.1 pF to 20 mF) and resistance (0.1 ohm to 20M ohm) and can also test transistors, diodes, SCRs, LEDs and batteries.

#### Features & Benefits

- Transistor leakage test
- Diode and SCR test
- LED test
- Battery test



Model DP 21

### Logic Probes

For use with TTL and CMOS circuits and ICs

Model	Description
DP 21	20 MHz Digital Logic Probe
DP 31A	400 Hz Digital Pulser Probe
DP 52	50 MHz Digital Logic Probe