

Data Sheet

40,000 Count Dual-Display Handheld LCR Meters 878B and 879B



Full Featured Handheld LCR Meters

B&K Precision's 878B and 879B 40,000-count handheld LCR meters measure inductance, capacitance, and resistance quickly and precisely. Additionally, the 879B can calculate impedance, Theta, and ESR, features typically found in bench LCR meters only.

Fast auto ranging and quick measurement configuration such as measurement parameter and test frequency selection make the 878B and 879B very simple to operate. The meters also include handy functions such as data hold, Min/Max/Average recording, tolerance sorting, and relative mode.

Measurement data can continuously transfer to a PC via the meter's mini USB interface, using either the provided data logging software or SCPI commands sent from a custom program.

ESR Measurements

Model 879B has the ability to measure the ESR (Equivalent Series Resistance) of capacitors. ESR is the sum of in-phase AC resistance of a capacitor and used to rate a capacitor's quality. An ideal capacitor would be lossless and have an ESR of zero. A capacitor could measure the correct capacitance value, yet still be defective, due to the component's excessive in-phase AC resistance. The 879B would be able to detect this faulty component.

Features & Benefits

- 40,000 counts resolution on primary and 10,000 counts resolution on secondary display
- L, C, R and Z (879B only) primary measurements
- Automatic calculation of secondary parameters D, Q, Θ, ESR (Θ/ESR for 879B only)
- 0.5% basic accuracy
- Fast auto range design for rapid, easy component measurements
- Relative mode
- Visible and audible tolerance mode
- Data Hold and Min/Max/Average recording
- USB (Virtual COM) interface
- SCPI compliant commands for remote communication
- Software for datalogging and front panel emulation available as free download
- Selectable auto-power-off options
- Configurable power-up-states
- 3 year warranty

Applications

- Passive component trouble shooting
- Electronic assembly
- Quality control (component sorting)

Specifications	878B	879B
Measurements	L, C, R, D, Q	L, C, R, Z, D, Q, Θ, ESR
Test frequency	120 Hz, 1 kHz	100Hz, 120 Hz, 1 kHz, 10 kHz
Backlit display	No	yes
Tolerance mode	1%, 5%, 10%	1%, 5%, 10%, 20%

▲ Versatile Configuration

Flexible Operation

A tilt stand provides position flexibility for viewing and operating the meter. The over-molding rubber case protects the meter for better durability. A single 9V battery or the included DC 12V power adapter (with model 879B) can be used to power the meter, giving the user options for portable or bench-top use.

Faster Auto Range

The advanced auto range circuit design means you get faster measurements without the need to manually select ranges.

Dual Display

The 878B and 879B's dual display allows multiple measurements to be conveniently displayed at once.

Increase Productivity with PC Connectivity

Free downloadable software is available for your handheld LCR meter. View and log measurements and setup and configure the instrument's measurement parameters.



▲ Easy Front Panel Operation



Specifications

General

Model	878B	879B
Measurement Parameters	L/C/R/D/Q	L/C/R/Z/D/Q/ θ /ESR
Test Frequency Accuracy is 0.02% of actual test frequency	120 Hz, 1 kHz (Test setting) 120.048 Hz, 1 kHz (Actual frequency)	100 Hz, 120 Hz, 1 kHz, 10 kHz (Test setting) 100 Hz, 120.048 Hz, 1 kHz, 10 kHz (Actual frequency)
Tolerance Mode	1%, 5%, 10%	1%, 5%, 10%, 20%
Backlit Display	None	Yes
Test Signal Level		\approx 0.6 Vrms
Measuring Circuit Mode		Series mode / Parallel mode
Basic Accuracy		0.5%
Ranging Mode		Auto
Measuring Terminals		3 terminals with sockets
Measurement Rate		1.5 reading/second (range auto search not included)
Response Time		\approx 680 ms/DUT
Auto Power-Off		5, 15, 30, 60 minutes, None
Operation Temperature		32° F to 104° F (0° to 40° C); 0-70 % R.H.
Storage Temperature		-4° F to 122 °F (-20° to +50° C); 0-80 % R.H.
Low Battery Indication		\approx 6.8 V
Battery Life		\approx 16 hours using Alkaline Battery @ 1 kHz with 100 Ω DUT, with backlight off
Power Consumption		\approx 28 mA (under full power battery) for operation/ 2 μ A after Power-off.
Power Requirements		1) DC 9V Battery, 2) Ext. DC Adapter*: DC 12 Vmin – 15 Vmax. (Load 50 mA Min.)
Dimensions (L/W/H)		7.5" x 3.5" x 1.6" (190 x 90 x 41) mm
Weight		0.7 lbs (330 grams)

Three-Year Warranty	
Standard Accessories	Banana to Alligator Test Leads, 9V Battery, Mini USB Interface Cable, Manual, AC Adapter* (879B only)
Optional Accessories	BE800 120 VAC Wall Adapter, BE802 230 VAC European Two Prong Wall Adapter

* The 879B includes a 120 V AC adapter. For a 230 V AC adapter, order model 879B EXD. The AC adapters are optional accessories for the 878B.

Accuracy Specifications

Accuracy is expressed as \pm (% of reading + number of last significant digits) and based within 10% to 100% of full scale of range
Valid after 30 minutes of warm up time and operation at 23 °C \pm 5 °C, <75% R.H.

Inductance	Range	Max Display	Lx Accuracy	DF (Dx < 0.5)	Measurement Mode
100 Hz*/120 Hz	1000 H	1000.0 H	1.5% + 3 digits	1.5% + 50 digits	Parallel
	400 H	399.99 H	0.7% + 2 digits	0.7% + 50 digits	Parallel
	40 H	39.999 H	0.7% + 2 digits	0.7% + 50 digits	Series/ Parallel
	4000 mH	3999.9 mH	0.5% + 1 digits	0.5% + 50 digits	Series
	400 mH	399.99 mH	0.6% + 2 digits	0.6% + 50 digits	Series
	40 mH	39.999 mH	0.9% + 2 digits	0.9% + 50 digits	Series
	4 mH	3.9999 mH	2.8% + 3 digits	2.8% + 50 digits	Series
	100 H	100.00 H	1.5% + 3 digits	1.5% + 50 digits	Parallel
	40 H	39.999 H	0.7% + 2 digits	0.7% + 50 digits	Parallel
	4000 mH	3999.9 mH	0.7% + 2 digits	0.7% + 50 digits	Series/ Parallel
1 kHz	400 mH	399.99 mH	0.5% + 1 digits	0.5% + 50 digits	Series
	40 mH	39.999 mH	0.6% + 2 digits	0.6% + 50 digits	Series
	4000 μ H	3999.9 μ H	0.9% + 2 digits	0.9% + 50 digits	Series
	400 μ H	399.99 μ H	2.8% + 3 digits	2.8% + 50 digits	Series
	1000 mH	1000.0 mH	1.5% + 3 digits	1.5% + 50 digits	Parallel
	400 mH	399.99 mH	0.7% + 2 digits	0.7% + 50 digits	Series/ Parallel
	40 mH	39.999 mH	0.5% + 1 digits	0.5% + 50 digits	Series
	4000 μ H	3999.9 μ H	0.6% + 2 digits	0.6% + 50 digits	Series
	400 μ H	399.99 μ H	0.9% + 2 digits	0.9% + 50 digits	Series
	40 μ H	39.99 μ H	2.8% + 3 digits	2.8% + 50 digits	Series
10 kHz	1000 mH	1000.0 mH	1.5% + 3 digits	1.5% + 50 digits	Parallel
	400 mH	399.99 mH	0.7% + 2 digits	0.7% + 50 digits	Series/ Parallel
	40 mH	39.999 mH	0.5% + 1 digits	0.5% + 50 digits	Series
	4000 μ H	3999.9 μ H	0.6% + 2 digits	0.6% + 50 digits	Series
	400 μ H	399.99 μ H	0.9% + 2 digits	0.9% + 50 digits	Series
	40 μ H	39.99 μ H	2.8% + 3 digits	2.8% + 50 digits	Series

Specifications (cont.)

Capacitance 100 Hz* / 120 Hz	Range	Max Display	Cx Accuracy	DF (Dx < 0.5)	Measurement Mode
	20 mF	20.000 mF	8% + 3 digits	8% + 50 digits	Series
	4000 µF	3999.9 µF	2% + 2 digits	2% + 50 digits	Series
	400 µF	399.99 µF	0.7% + 2 digits	0.7% + 50 digits	Series
	40 µF	39.999 nF	0.5% + 1 digits	0.5% + 50 digits	Series
	4000 nF	3999.9 nF	0.5% + 1 digits	0.5% + 50 digits	Series/ Parallel
	400 nF	399.99 nF	0.5% + 2 digits	0.5% + 50 digits	Series/ Parallel
	40 nF	39.999 nF	0.7% + 1 digits	0.7% + 50 digits	Parallel
	4 nF	3.9999 nF	2.5% + 2 digits	2.5% + 50 digits	Parallel
	1000 µF	1000.0 µF	3.7% + 3 digits	3.7% + 50 digits	Series
	400 µF	399.99 µF	2% + 2 digits	2% + 50 digits	Series
	40 µF	39.999 µF	0.7% + 2 digits	0.7% + 50 digits	Series
	4000 nF	3999.9 nF	0.5% + 1 digit	0.5% + 50 digit	Series
	400 nF	399.99 nF	0.5% + 2 digits	0.5% + 50 digits	Series/ Parallel
	40 nF	39.999 nF	0.5% + 2 digits	0.5% + 50 digits	Series/ Parallel
	4000 pF	3999.9 pF	0.7% + 2 digits	0.7% + 50 digits	Parallel
	400 pF	399.9 pF	2.5% + 2 digits	2.5% + 50 digits	Parallel
	100 µF	100.00 µF	3.9% + 5 digits	3.9% + 50 digits	Series
	40 µF	39.999 µF	3.7% + 3 digits	3.7% + 50 digits	Series
	4000 nF	3999.9 nF	0.7% + 2 digits	0.7% + 50 digits	Series
	400 nF	399.99 nF	0.5% + 2 digits	0.5% + 50 digits	Series
	40 nF	39.999 nF	0.5% + 1 digit	0.5% + 50 digit	Series/ Parallel
	4000 pF	3999.9 nF	0.5% + 2 digits	0.5% + 50 digits	Series/ Parallel
	400 pF	399.9 pF	0.7% + 2 digits	0.7% + 50 digits	Parallel
	40 pF	39.99 pF	2.5% + 2 digits	2.5% + 50 digits	Parallel

Resistance/Impedance* 100 Hz* / 120 Hz / 1 kHz / 10 kHz	Range	Max Display	R/Zx Accuracy	θ Accuracy*	Measurement Mode
	10 MΩ	10.000 MΩ	5.5% + 3 digits	±3.2°	Parallel
	4000 kΩ	3999.9 kΩ	2.5% + 2 digits	±1.5°	Parallel
	400 kΩ	399.99 kΩ	0.7% + 2 digits	±0.4°	Parallel
	40 kΩ	39.999 kΩ	0.5% + 2 digits	±0.3°	Series/ Parallel
	4000 Ω	3999.9 Ω	0.5% + 2 digits	±0.3°	Series/ Parallel
	400 Ω	399.99 Ω	0.5% + 2 digits	±0.3°	Series
	40 Ω	39.999 Ω	0.7% + 2 digits	±0.4°	Series
	4 Ω	3.9999 Ω	2.0% + 2 digits	±1.2°	Series

ESR* 100 Hz / 120 Hz / 1 kHz / 10 kHz	Range	Max Display	ESR Accuracy	Measurement Mode
	1000 Ω	999.9 Ω	0.5% + 2 digits	Series
	100 Ω	99.99 Ω	0.5% + 2 digits	Series
	10 Ω	9.999 Ω	0.7% + 2 digits	Series
	1 Ω	.9999 Ω	2.0% + 2 digits	Series

* = Model 879B only

Данный компонент на территории Российской Федерации**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибуторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ Р В 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru
moschip.ru_4

moschip.ru_6
moschip.ru_9