

# BK Precision LCR Bridge

Part Nos. 01BK878 and 01BK879

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## General Specification

Items	879	878A
<b>Parameters Measured</b>	L/C/R/D/Q/θ	L/C/R/D/Q
<b>Measuring Circuit Mode</b>	<b>Inductance (L)</b> –Defaults to series mode <b>Capacitance/ Resistance (C/R)</b> –Defaults to parallel mode	
<b>Displays</b>	L/C/R: Maximum display 19999 D/Q: Maximum display 999 (Auto Range).	
<b>Ranging Mode</b>	Auto & Manual	
<b>Measuring Terminals</b>	3 terminals with sockets	
<b>Test Frequency Accuracy:</b> ±0.1 %	100Hz=100 Hz 120Hz= 120 Hz 1KHz =1010 Hz 10KHz= 9.6 KHz	120Hz= 120 Hz 1KHz =1010 Hz
<b>Backlit display</b>	Included	Excluded
<b>Tolerance mode</b>	1%, 5%, 10%, 20%	1%, 5%, 10%
<b>Test Signal Level</b>	0.6Vrms approx.	
<b>Measuring Rate</b>	1 time/second, nominal	
<b>Response time</b>	Approx. 1 second/ DUT (device under test)(@ manual range)	
<b>Auto Power-Off</b>	5 minutes approx. without operation	
<b>Temperature Coefficient</b>	0.15 x (Specified Accuracy) / °(0-18° or 28-40°)	
<b>Operation Temperature</b>	0° to 40°; 0-70% R.H.	
<b>Storage Temperature</b>	-20° to +50°; 0-80% R.H.	
<b>Low Battery Indication</b>	Approx. 6.8V	
<b>Power Consumption</b>	Approx. 40mA for operation/ 0.08mA after Auto Power-off.	
<b>Power Requirements</b>	1) DC 9V Battery 2) Ext. DC Adaptor: DC 12Vmin –15Vmax. (Load 50mA Min.)	
<b>Protective Fuse</b>	0.1A/250V Fuse (input protective)	
<b>Standard Accessories</b>	Test alligator clips (pair) DC 9V Battery. User manual	
<b>Dimensions (L/W/H)</b>	7.2/ 3.4/ 1.6" (184/ 87/ 41 mm)	
<b>Weight</b>	11.6oz (330 grams)	

## Electrical Specification

Accuracy is expressed as:  $\pm$  (% of reading + no. of least significant digits) at  $23^{\circ}\pm 5^{\circ}$  and  $<75\%$  R.H.z

### Model 879:

#### • Resistance (Parallel mode)

Test Frequency: 100 / 120 Hz

Range	Maximum Display	Accuracy		Specified Note
		@ 100 Hz	@ 120Hz	
10M $\Omega$	9.999M $\Omega$	2.0%+8 *3	2.0%+8 *3	After open cal.
2000K $\Omega$	1999.9K $\Omega$	0.5%+5	0.5%+5	After open cal.
200K $\Omega$	199.99K $\Omega$	0.5%+3	0.5%+3	-
20K $\Omega$	19.999K $\Omega$	0.5%+3	0.5%+3	-
2000 $\Omega$	1999.9 $\Omega$	0.5%+3	0.5%+3	-
200 $\Omega$	199.99 $\Omega$	0.8%+5	0.8%+5	After short cal.
20 $\Omega$	19.999 $\Omega$	1.2%+40	1.2%+40	After short cal.

Test Frequency: 1K / 10K Hz

Range	Maximum Display	Accuracy		Specified Note
		@ 1K Hz	@ 10KHz	
10 M $\Omega$	9.999M $\Omega$	2.0%+8 * 3	3.5%+10 * 3	After open cal.
2000 K $\Omega$	1999.9K $\Omega$	0.5%+5	2.0%+10	After open cal.
200 K $\Omega$	199.99K $\Omega$	0.5%+3	1.5%+5	-
20 K $\Omega$	19.999K $\Omega$	0.5%+3	1.5%+5	-
2000 $\Omega$	1999.9 $\Omega$	0.5%+3	1.5%+5	-
200 $\Omega$	199.99 $\Omega$	0.8%+5	2.0%+10	After short cal.
20 $\Omega$	19.999 $\Omega$	1.2%+40	2.5%+200	After short cal.

#### Notes:

1. This specification is based on the measurement performed at the test socket.
2. DUT (Device Under Test) & Test leads be properly shielded to GUARD if necessary.
3. This specification is based on battery operation.

#### • Capacitance (Parallel mode)

Test Frequency: 100 / 120 Hz

Range	Maximum Display	Accuracy		Spec. Note
		Capacitance	DF	
10mF	19.99mF *5	3.0%+5 (DF<0.1)	10%+100/Cx+5 (DF<0.1)	After short cal.
1000 $\mu$ F	1999.9 $\mu$ F*6	1.0%+5 (DF<0.1)	2%+100/Cx+5 (DF<0.1)	After short cal.
200 $\mu$ F	199.99 $\mu$ F	0.7%+3 DF<0.5	0.7%+100/Cx+5 (DF<0.5)	-
20 $\mu$ F	19.999 $\mu$ F	0.7%+3 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	-
2000nF	1999.9nF	0.7%+3 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	-
200nF	199.99nF	0.7%+5 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	After open cal.

20nF	19.999nF	1.0%+5 (DF<0.1)	2%+100/Cx+ (DF<0.1)	After open cal.
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**Test Frequency: 1 KHz**

Range	Maximum Display	Accuracy		Spec. Note
		Capacitance	DF	
1mF	1.999mF *5	3.0%+5 (DF<0.1)	10%+100/Cx+5 (DF<0.1)	After short cal.
200µF	199.99µF	1.0%+5 (DF<0.1)	2.0%+100/Cx+5 (DF<0.1)	After short cal.
20µF	19.999µF	0.7%+3 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	-
2000nF	1999.9nF	0.7%+3 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	-
200nF	199.99nF	0.7%+3 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	-
20nF	19.999nF	0.7%+5 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	After open cal.
2000pF	1999.9pF	1.0%+5 (DF<0.1)	2.0%+100/Cx+5 (DF<0.1)	After open cal.

**Test Frequency: 10 KHz**

Range	Maximum Display	Accuracy		Spec. Note
		Capacitance	DF	
50µF	50.0µF	3.0%+8 (DF<0.1)	12%+100/Cx+10 (DF<0.1)	After short cal.
20µF	19.999µF	3.0%+6 (DF<0.2)	5.0%+100/Cx+8 (DF<0.2)	After short cal.
2000nF	1999.9nF	1.5%+5 (DF<0.5)	1.5%+100/Cx+6 (DF<0.5)	-
200nF	199.99nF	1.5%+5 (DF<0.5)	1.5%+100/Cx+6 (DF<0.5)	-
20nF	19.999nF	1.5%+5 (DF<0.5)	1.5%+100/Cx+6 (DF<0.5)	-
2000pF	1999.9pF	2.0%+6 (DF<0.5)	3.0%+100/Cx+6 (DF<0.5)	After open cal.
200pF	199.99pF	3.0%+8 (DF<0.1)	5.0%+100/Cx+8 (DF<0.1)	After open cal.

Notes:

1. Q Value is the reciprocal of DF.
2. This specification is based on the measurement performed at the test socket.
3. DUT & Test leads should be properly shielded to GUARD if necessary.

4. Cx=Counts of displayed C value, e.g. C=88.88μF then Cx=8888.
5. This reading can be extended to 1999 MAX display with accuracy not specified.
6. This reading can be extended to 19999 MAX display with accuracy not specified.

• **Inductance (Series mode)**

**Test Frequency: 100 / 120Hz**

Range	Maximum Display	Accuracy (DF<0.5)		Spec. Note
		Inductance	DF	
1000H	999.9H	1.0%+(Lx /10000) %+5	2%+100/Lx+5	After open cal.
200H	199.99H	0.7%+(Lx /10000) %+5	1.2%+100/Lx+5	-
20H	19.999H	0.7%+(Lx /10000) %+5	1.2%+100/Lx+5	-
2000m	1999.9mH	0.7%+(Lx /10000) %+5	1.2%+100/Lx+5	-
200mH	199.99mH	1.0%+(Lx /10000) %+5	3%+100/Lx+5	After short cal.
20mH	19.999mH	2.0%+(Lx /10000) %+5	10%+100/Lx+5	After short cal.

**Test Frequency: 1 KHz**

Range	Maximum Display	Accuracy (DF<0.5)		Spec. Note
		Inductance	DF	
100H	99.99H	1.0%+(Lx /10000) %+5	2.0%+100/Lx+5	After open cal.
20H	19.999H	0.7%+(Lx /10000) %+5	1.2%+100/Lx+5	-
2000mH	1999.9mH	0.7%+(Lx /10000) %+5	1.2%+100/Lx+5	-
200mH	199.99mH	0.7%+(Lx /10000) %+5	1.2%+100/Lx+5	-
20mH	19.999mH	1.0%+(Lx /10000) %+5	3.0%+100/Lx+5	After short cal.
2000mH	1999.9mH	2.0%+(Lx /10000) %+5	10%+100/Lx+5	After short cal.

**Test Frequency: 10 KHz**

Range	Maximum Display	Accuracy (DF<0.5)		Spec. Note
		Inductance	DF	
1000mH	999.9mH	2.0%+(Lx /10000) %+ 8	2.0%+100/Lx+10	-
200mH	199.99mH	1.5%+(Lx /10000) %+8	2.0%+100/Lx+10	-
20mH	19.999mH	1.5%+(Lx /10000) %+10	3.0 %+100/Lx+15	-
2000mH	1999.9mH	2.0%+(Lx /10000) %+10	8.0 %+100/Lx+20	After short cal.

**Notes:**

- 1.Q Value is the reciprocal of DF.
2. This specification is based on the measurement performed at the test socket.
3. DUT & Test leads shall be properly shielded to GUARD if necessary.
4.  $L_x$ =counts of displayed L value, e.g.  $L=88.88H$ , then  $L_x=8888$ .

**Model 878A:****• Resistance (parallel mode)****Test Frequency: 120Hz / 1KHz**

Range	Maximum Display	Accuracy		Specified Note
		@ 120 Hz	@ 1KHz	
10MΩ	9.999MΩ	2.0%+8 *3	2.0%+8 *3	After open cal.
2000KΩ	1999.9KΩ	0.5%+5	0.5%+5	After open cal.
200KΩ	199.99KΩ	0.5%+3	0.5%+3	-
20KΩ	19.999KΩ	0.5%+3	0.5%+3	-
2000Ω	1999.9Ω	0.5%+3	0.5%+3	-
200Ω	199.99Ω	0.8%+5	0.8%+5	After short cal.
20W	19.999W	1.2%+40	1.2%+40	After short cal.

**Notes:**

1. This specification is based on the measurement performed at the test socket.
2. DUT (Device Under Test) & Test leads be properly shielded to GUARD if necessary.
3. This specification is based on battery operation.

**• Capacitance (parallel mode)****Test Frequency: 120 Hz**

Range	Maximum Display	Accuracy		Spec. Note
		Capacitance	DF	
10mF	19.99mF *5	3.0%+5 (DF<0.1)	10%+100/Cx+5 (DF<0.1)	After short cal.
1000μF	1999.9μF*6	1.0%+5 (DF<0.1)	2%+100/Cx+5 (DF<0.1)	After short cal.
200μF	199.99μF	0.7%+3 DF<0.5	0.7%+100/Cx+5 (DF<0.5)	-
20μF	19.999μF	0.7%+3 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	-
2000nF	1999.9nF	0.7%+3 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	-
200nF	199.99nF	0.7%+5 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	After open cal.
20nF	19.999nF	1.0%+5 (DF<0.1)	2%+100/Cx+ (DF<0.1)	After open cal.

**Test Frequency: 1 KHz**

Range	Maximum Display	Accuracy		Spec. Note
		Capacitance	DF	
1mF	1.999mF *5	3.0%+5 (DF<0.1)	10%+100/Cx+5 (DF<0.1)	After short cal.
200μF	199.99μF	1.0%+5 (DF<0.1)	2.0%+100/Cx+5 (DF<0.1)	After short cal.
20μF	19.999μF	0.7%+3 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	-

2000nF	1999.9nF	0.7%+3 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	-
200nF	199.99nF	0.7%+3 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	-
20nF	19.999nF	0.7%+5 (DF<0.5)	0.7%+100/Cx+5 (DF<0.5)	After open cal.
2000pF	1999.9pF	1.0%+5 (DF<0.1)	2.0%+100/Cx+5 (DF<0.1)	After open cal.

**Notes:**

1. Q Value is the reciprocal of DF.
2. This specification is based on the measurement performed at the test socket.
3. DUT & Test leads should be properly shielded to GUARD if necessary.
4. Cx=Counts of displayed C value, e.g. C=88.88µF then Cx=8888.
5. This reading can be extended to 1999 MAX display with accuracy not specified.
6. This reading can be extended to 19999 MAX display with accuracy not specified.

**• Inductance (Series mode)**

**Test Frequency: 120Hz**

Range	Maximum Display	Accuracy (DF<0.5)		Spec. Note
		Inductance	DF	
1000H	999.9H	1.0%+(Lx /10000) %+5	2%+100/Lx+5	After open cal.
200H	199.99H	0.7%+(Lx /10000)%+5	1.2%+100/Lx+5	-
20H	19.999H	0.7%+(Lx /10000)%+5	1.2%+100/Lx+5	-
2000m	1999.9mH	0.7%+(Lx /10000)%+5	1.2%+100/Lx+5	-
200mH	199.99mH	1.0%+(Lx /10000)%+5	3%+100/Lx+5	After short cal.
20mH	19.999mH	2.0%+(Lx /10000)%+5	10%+100/Lx+5	After short cal.

**Test Frequency: 1 KHz**

Range	Maximum Display	Accuracy (DF<0.5)		Spec. Note
		Inductance	DF	
100H	99.99H	1.0%+(Lx /10000) %+5	2.0%+100/Lx+5	After open cal.
20H	19.999H	0.7%+(Lx /10000)%+5	1.2%+100/Lx+5	-
2000mH	1999.9mH	0.7%+(Lx /10000)%+5	1.2%+100/Lx+5	-
200mH	199.99mH	0.7%+(Lx /10000)%+5	1.2%+100/Lx+5	-
20mH	19.999mH	1.0%+(Lx /10000)%+5	3.0%+100/Lx+5	After short cal.
2000mH	1999.9mH	2.0%+ (Lx/10000)%+5	10%+100/Lx+5	After short cal.

**Notes:**

1. Q Value is the reciprocal of DF.
2. This specification is based on the measurement performed at the test socket.