

Motech Handheld LCR Meters

MT 4080A (100KHz)/MT 4080D (10KHz)



The First One on the Market

- ▶ 100KHz maximum test frequency (4-5 test frequency options)
- ▶ Three test voltage selections: 1V/250mV/50mV
- ▶ 0.2% best accuracy
- ▶ D, Q, θ , ESR measurement parameters
- ▶ Auto-range or range-hold selection
- ▶ Relative mode
- ▶ Fast/Slow measuring speeds
- ▶ Open and short calibration
- ▶ Standard Mini USB (virtual COM Port) interface
- ▶ Adapter or battery powered



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Specifications

Measurement Parameters:

- Primary Parameters Display:
- Z : AC Impedance
 - DCR : DC Resistance
 - Ls : Serial Inductance
 - Lp : Parallel Inductance
 - Cs : Serial Capacitance
 - Cp : Parallel Capacitance
- Secondary Parameters Display:
- θ : Phase Angle
 - ESR : Equivalence Serial Resistance
 - D : Dissipation Factor
 - Q : Quality Factor
- Display Combinations:
- Serial Mode : Z- θ , Cs-D, Cs-Q, Cs-ESR, Ls-D, Ls-Q, Ls-ESR
 - Parallel Mode : Cp-D, Cp-Q, Lp-D, Lp-Q

Frequency: 100Hz / 120Hz / 1KHz / 10KHz / 100KHz (MT 4080A only)

Frequency Accuracy: 0.1%

Level: 1Vrms / 250mVrms / 50mVrms / 1VDC (DCR only)

Level Accuracy: 5%

Output Impedance: 100 Ω ±5%

Measuring Speed: Fast : 4.5 meas. / sec.
Slow : 2.5 meas. / sec.

Note

- The accuracy applies when the test level is set to 1Vrms.
- Multiply Ae by 1.25 when the test level is set to 250mVrms.
- Multiply Ae by 1.50 when the test level is set to 50mVrms.
- When measuring L and C, multiply Ae by $\sqrt{1+D_x^2}$ if the $D_x > 0.1$.
- When measuring ESR, multiply Ae by $\sqrt{1+Q_x^2}$ if the $Q_x > 0.1$.
- *: Ae is not specified if the test level is set to 50mV.
- Please check the tables for the actual LCR measurement range.

General:

- Temperature : 0°C to 40°C (Operating)
-20°C to 70°C (Storage)
- Relative Humidity : Up to 85%
- Battery Type : 2 AA-size Ni-Mh
- Battery Charge : Approximately constant current 150mA
- Battery Operating Time : 2.5 hours typical
- AC Operation : 110/220Vac 50/60Hz, 6Vdc with proper adapter
- Low Power Warning : Under 2.2Vdc
- Dimensions : 174mm x 86mm x 48mm (L x W x H)
- Weight : 470g

|Z|, ESR, DCR Accuracy (Ae) and Measurement Range

Freq.	Zx	20M ~ 10M (Ω)	10M ~ 1M (Ω)	1M ~ 100K (Ω)	100K ~ 10 (Ω)	10 ~ 1 (Ω)	1 ~ 0.1 (Ω)
DCR		2% ± 1	1% ± 1	0.5% ± 1	0.2% ± 1	0.5% ± 1	1% ± 1
100Hz		*					*
120Hz							
1KHz							
10KHz		5% ± 1	2% ± 1				
		*					
100KHz (MT 4080A)		N/A	5% ± 1	2% ± 1	0.4% ± 1	2% ± 1	5% ± 1
			*				*

Capacitor Accuracy (Ae) and Measurement Range

100Hz	79.57pF 159.1pF 2% ± 1 *	159.1pF 1.591nF 1% ± 1	1.591nF 15.91nF 0.5% ± 1	15.91nF 159.1uF 0.2% ± 1	159.1uF 1.591uF 0.5% ± 1	1.591uF 15.91mF 1% ± 1 *
120Hz	66.31pF 132.6pF 2% ± 1 *	132.6pF 1.326nF 1% ± 1	1.326nF 13.26nF 0.5% ± 1	13.26nF 132.6uF 0.2% ± 1	132.6uF 1.326mF 0.5% ± 1	1.326mF 13.26mF 1% ± 1 *
1KHz	7.957pF 15.91pF 2% ± 1 *	15.91pF 159.1pF 1% ± 1	159.1pF 1.591nF 0.5% ± 1	1.591nF 15.91uF 0.2% ± 1	15.91uF 159.1uF 0.5% ± 1	159.1uF 1.591mF 1% ± 1 *
10KHz	0.795pF 1.591pF 5% ± 1 *	1.591pF 15.91pF 2% ± 1	15.91pF 159.1pF 0.5% ± 1	159.1pF 1.591uF 0.2% ± 1	1.591uF 15.91uF 0.5% ± 1	15.91uF 159.1uF 1% ± 1 *
100KHz (MT 4080A)	N/A N/A	0.159pF 1.591pF 5% ± 1 *	1.591pF 15.91pF 2% ± 1	15.91pF 159.1nF 0.4% ± 1	159.1nF 1.591uF 2% ± 1	1.591uF 15.91uF 5% ± 1 *

Inductance Accuracy (Ae) and Measurement Range

100Hz	31.83KH 15.91KH 2% ± 1 *	15.91KH 1591H 1% ± 1	1591H 159.1H 0.5% ± 1	159.1H 15.91mH 0.2% ± 1	15.91mH 1.591mH 0.5% ± 1	1.591mH 159.1uH 1% ± 1 *
120Hz	26.52KH 13.26KH 2% ± 1 *	13.26KH 1326H 1% ± 1	1326H 132.6H 0.5% ± 1	132.6H 13.26mH 0.2% ± 1	13.26mH 1.326mH 0.5% ± 1	1.326mH 132.6uH 1% ± 1 *
1KHz	31.83KH 1.591KH 2% ± 1 *	1.591KH 159.1H 1% ± 1	159.1H 15.91H 0.5% ± 1	15.91H 1.591mH 0.2% ± 1	1.591mH 159.1uH 0.5% ± 1	159.1uH 1.591uH 1% ± 1 *
10KHz	318.3H 159.1H 5% ± 1 *	159.1H 15.91H 2% ± 1	15.91H 1.591H 0.5% ± 1	1.591H 159.1uH 0.2% ± 1	159.1uH 1.591uH 0.5% ± 1	1.591uH 15.91uH 1% ± 1 *
100KHz (MT 4080A)	31.83H 15.91H N/A	15.91H 1.591H 5% ± 1 *	1.591H 159.1mH 2% ± 1	159.1mH 15.91uH 0.4% ± 1	15.91uH 1.591uH 2% ± 1	1.591uH 0.159uH 5% ± 1 *

Ordering Information

- MT 4080A
100KHz Handheld LCR Meter
- MT 4080D
10KHz Handheld LCR Meter

Standard Accessories

- Shorting Bar
- DC 6V Power Adapter
- 2 AA-Size Ni-Mh Rechargeable Batteries
- User Manual

Optional Test Fixtures/Accessories

- TL08A SMD Test Probe
- TL08B 4-Wire Test Clips
- TL08C Kelvin Clips
- Carrying Case