

## Keithley Instruments 6 1/2-Digit Resolution Digital Multimeter Specifications

28775 Aurora Road  
 Cleveland, Ohio 44139  
 1-800-935-5595  
[tek.com/keithley](http://tek.com/keithley)

### 1. SPECIFICATION LIST

DC characteristics: Accuracy<sup>1</sup> ± (% of reading + % of range)

Function	Range	Resolution	Input resistance	1 year (23 °C ± 5 °C)
DC voltage	100.0000 mV	0.1 µV	> 10 GΩ	0.0055 + 0.0040
	1.000000 V	1.0 µV	> 10 GΩ	0.0045 + 0.0008
	10.00000 V	10 µV	> 10 GΩ	0.0038 + 0.0006
	100.0000 V	100 µV	10 MΩ	0.0050 + 0.0007
	1000.000 V	1 mV	10 MΩ	0.0055 + 0.0010

Function	Range	Resolution	Shunt resistance	1 Year (23 °C ± 5 °C)
DCI (DC current)	10.00000 mA	10 nA	5.1 Ω	0.055 + 0.025
	100.0000 mA	100 nA	5.1 Ω	0.055 + 0.006
	1.000000 A	1 µA	0.1 Ω	0.120 + 0.015
	3.00000 A	10 µA	0.1 Ω	0.150 + 0.025

<sup>1</sup> Specifications valid after 2-hour warm-up:  
 a. ADC set for continuous trigger operation.  
 b. Input bias current <30 pA at 25 °C.  
 c. Input protection 1000 V all ranges (2-W input).  
 d. Measurement rate set to 1 PLC.

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Function	Range	Resolution	Test current	1 year (23 °C ± 5 °C)
Resistance <sup>2</sup>	100.0000 Ω	100 μΩ	1 mA	0.015 + 0.005
	1.000000 kΩ	1 mΩ	1 mA	0.015 + 0.002
	10.00000 kΩ	10 mΩ	100 μA	0.013 + 0.002
	100.0000 kΩ	100 mΩ	10 μA	0.015 + 0.002
	1.000000 MΩ	1 Ω	5 μA	0.017 + 0.002
	10.00000 MΩ	10 Ω	500 nA	0.045 + 0.002
	100.0000 MΩ	100 Ω	500 nA    10 MΩ	1.00 + 0.020
Diode test	1.0000 V	10 μV	1 mA	0.040 + 0.020
Continuity	1000.00 Ω	10 mΩ	1 mA	0.024 + 0.030

### Measurement noise rejection DC (60 Hz / 50 Hz)

Rate	Digits	CMRR <sup>3</sup>	NMRR <sup>4</sup>
10 PLC	6 1/2	140 dB	60 dB
0 PLC	5 1/2	140 dB	60 dB

### Temperature (RTD)

Range	Resolution	4-WIRE ACCURACY <sup>5</sup>
		1 Year
-100 °C to + 100 °C	0.001 °C	±0.1 °C
-200 °C to + 630 °C	0.001 °C	±0.2 °C

**RTD TYPE:** 100 Ω platinum (PT100), D100, F100, PT385, or PT3916

**MAXIMUM LEAD RESISTANCE (each lead):** 12 Ω (to achieve rated accuracy).

**SENSOR CURRENT:** 1 mA (pulsed).

### AC characteristics: Accuracy<sup>6</sup> ± (% of reading + % of range)

<sup>2</sup> Specifications for 4-W ohms mode. For 2-W ohms, use zero null or subtract lead resistance from displayed reading.

a. Max lead resistance 10% of range per lead for 100 Ω and 1 kΩ ranges; add 1 kΩ per lead for all other ranges.

<sup>3</sup> For 1 kΩ unbalance in LO lead.

<sup>4</sup> For line frequency ± 0.1%.

<sup>5</sup> Excluding probe errors. 23 °C ± 5 °C.

Specifications are subject to change without notice.

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Function	Range	Frequency (Hz)	1 Year (% of reading) 23 °C ± 5 °C
Frequency and Period	100 mV to 750 V <sup>7</sup>	3-5	0.10
		5-40	0.05
		40-300 k	0.01

Function	Range	Resolution	Frequency (Hz)	1 year (23 °C ± 5 °C)
ACV (AC TRMS voltage)	100.0000 mV	0.1 µV	3-5	1.15 + 0.05
			5-10	0.45 + 0.05
			10-20 k	0.08 + 0.05
			20k-50 k	0.15 + 0.06
			50k-100 k	0.70 + 0.09
			100k-300 k	4.25 + 0.60
	1.000000 V to 750.000 V <sup>8</sup>	1.0 µV To 1 mV	3-5	1.10 + 0.04
			5-10	0.4 + 0.04
			10-20 k	0.08 + 0.04
			20k-50 k	0.14 + 0.06
			50k-100 k	0.70 + 0.08
			100k-300 k	4.35 + 0.50
ACI (AC TRMS current)	1.000000 A	1 µA	3-5	1.10 + 0.05
			5-10	0.40 + 0.05
			10-5 k	0.15 + 0.05
	3.000000 A	10 µA	3-5	1.25 + 0.07
			5-10	0.45 + 0.07
			10-5 k	0.20 + 0.07

## 2. GENERAL SPECIFICATIONS

<sup>6</sup> Specifications valid for 2-hour warm-up at 6 1/2 digits:

- a. Slow ac filter (3Hz bandwidth).
- b. Pure sine wave input greater than 5% of range.

<sup>7</sup> 750 Vac range is limited to 100 kHz.

<sup>8</sup> 750 Vac range is limited to 100 kHz.

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Item	Limitation and description
AC CMRR <sup>9</sup>	70 dB
Power supply	100 V/120 V/220 V/240 V
Power line frequency	50/60 Hz auto detected
Power consumption	25 VA max
Operating temperature	5 °C to 40 °C
Operating humidity	Maximum relative humidity 80% for temperature up to 31 °C, decreasing linearly to 50% relative humidity at 40 °C
Storage temperature	-25 °C to 65 °C
Operating altitude	Up to 2000 meters above sea level
Bench dimensions (with handles and feet)	112 mm high x 256 mm wide x 375 deep (4.4 in x 10.1 in x 14.75 in)
Weight	4.1 kg / 9 lbs
Safety <sup>10</sup>	Conforms to European Union Low Voltage Directive
EMC	Conforms to European Union EMC Directive
Warranty	One year
Environment	For indoor use only
Digital I/O interface	USB—compatible Type B connection

<sup>9</sup> For 1k $\Omega$  unbalance LO lead.

<sup>10</sup> The LO jack is marked with 500Vpk against ground and SENSE HI to LO is only marked with 200Vpk, in opposition to the label of 600V CAT II and/or 1000V CAT I against ground and IEC 61010-1.