

Keithley Instruments, Inc.
 28775 Aurora Road
 Cleveland, Ohio 44139
 1-888-KEITHLEY
 www.keithley.com

6 1/2-Digit Resolution Digital Multimeter Specifications

1. SPECIFICATION LIST

DC characteristics: Accuracy¹ ± (% of reading + % of range)

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

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

¹ Specifications valid after 2-hour warm-up:

- ADC set for continuous trigger operation.
- Input bias current <30pA at 25 °C.
- Input protection 1000V all ranges (2-W input).
- Measurement rate set to 1 PLC.

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

Measurement noise rejection DC (60Hz / 50Hz)

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

Temperature (RTD)

Range	Resolution	4-WIRE ACCURACY ⁵
		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: 100Ω platinum (PT100), D100, F100, PT385, or PT3916

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

SENSOR CURRENT: 1mA (pulsed).

AC characteristics: Accuracy⁶ ± (% of reading + % of range)

² 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 100Ω and 1kΩ ranges; add 1kΩ per lead for all other ranges.

³ For 1kΩ unbalance in LO lead.

⁴ For line frequency ± 0.1%.

⁵ 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	100mV to 750V ⁷	3-5	0.10
		5-40	0.05
		40-300k	0.01

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

2. GENERAL SPECIFICATIONS

⁶ 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.

⁷ 750Vac range is limited to 100kHz.

⁸ 750Vac range is limited to 100kHz.

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Item	Limitation and description
AC CMRR ⁹	70dB
Power supply	120V/220V/240V
Power line frequency	50/60Hz auto detected
Power consumption	25VA 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)	112mm high x 256mm wide x 375 deep (4.4 in x 10.1 in x 14.75 in)
Weight	4.1 kg / 9 lbs
Safety ¹⁰	IEC61010-1:2001/EN61010-1:2001 (2 nd Edition) Over-Voltage Category CAT II, CAT I 1000V UL61010-1:2004 Installation CAT II, Measurement CAT III at max. 1000V Pollution Degree 2
EMC	Conforms to European Union EMC Directive
Warranty	One year
Environment	For indoor use only
Digital I/O interface	USB - compatible Type B connection

⁹ For 1kΩ unbalance LO lead.

¹⁰ 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.