

Specifications

All specifications apply from +18°C to +28°C unless stated otherwise.

All specifications assume a 5 minute warmup period.

DC Volts Measurement

Range (V dc)	Resolution	Accuracy, \pm (% of Reading + Counts)
4.000	0.001V	0.1% + 1
40.00	0.01V	0.1% + 1
400.0	0.1V	0.1% + 1
1000	1V	0.1% + 1

Input impedance: 10 M Ω (nominal), < 100 pF
Normal mode rejection ratio: >60 dB at 50 Hz or 60 Hz
Common mode rejection ratio: >120 dB at dc, 50 Hz, or 60 Hz
Overvoltage protection: 1000V

The standard specification interval is 1 year.

Note

"Counts" means number of increments or decrements of the least significant digit.

DC Millivolts Measurement

Range (mV dc)	Resolution	Accuracy (% of Reading + Counts)
400.0	0.1 mV	0.1% + 1

AC Volts Measurement

Range (ac)	Resolution	Accuracy, \pm (% of Reading + Counts)		
		50 Hz to 60 Hz	45 Hz to 200 Hz	200 Hz to 500 Hz
400.0 mV	0.1 mV	0.7% + 4	1.2% + 4	7.0% + 4
4.000V	0.001V	0.7% + 2	1.2% + 4	7.0% + 4
40.00V	0.01V	0.7% + 2	1.2% + 4	7.0% + 4
400.0V	0.1V	0.7% + 2	1.2% + 4	7.0% + 4
1000V	1V	0.7% + 2	1.2% + 4	7.0% + 4

Specifications are valid from 5% to 100% of amplitude range.

AC conversion: true rms

Maximum crest factor: 3

For non-sinusoidal waveforms, add \pm (2% reading + 2% f.s.) typical

Input impedance: 10 M Ω (nominal), < 100 pF, ac-coupled

Common mode rejection ratio: >60 dB at dc, 50 Hz, or 60 Hz

AC Current Measurement

Range 45 Hz to 2 kHz	Resolution	Accuracy, \pm (% of Reading + Counts)	Typical Burden Voltage
1.000A (Note)	0.001A	1% + 2	1.5V/A

Note: 440 mA continuous, 1A 30 seconds maximum

Specifications are valid from 5% to 100% of amplitude range.

AC conversion: true rms

Maximum crest factor: 3

For non-sinusoidal waveforms, add \pm (2% reading + 2% f.s.) typical

Overload protection 440 mA, 1000V fast-blow fuse

DC Current Measurement

Range	Resolution	Accuracy, \pm (% of Reading + Counts)	Typical Burden Voltage
30.000 mA	0.001 mA	0.05% + 2	14 mV/mA
1.000A (Note)	0.001A	0.2% + 2	1.5V/A

Note: 440 mA continuous, 1A 30 seconds maximum

Overload protection: 440 mA, 1000V fast-blow fuse

Ohms Measurement

Range	Resolution	Measurement Current	Accuracy, \pm(% of Reading + Counts)
400.0 Ω	0. 1 Ω	220 μ A	0.2% + 2
4.000 k Ω	0.001 k Ω	59 μ A	0.2% + 1
40.00 k Ω	0.01 k Ω	5.9 μ A	0.2% + 1
400.0 k Ω	0.1 k Ω	590 nA	0.2% + 1
4.000 M Ω	0.001 M Ω	220 nA	0.35% + 3
40.00 M Ω	0.01 M Ω	22 nA	2.5% + 3
<p><i>Overload protection: 1000V</i> <i>Open circuit voltage: <3.9V</i></p>			

Frequency Counter Accuracy

Range	Resolution	Accuracy, \pm (% of Reading + Counts)
199.99 Hz	0.01 Hz	0.005% + 1
1999.9 Hz	0.1 Hz	0.005% + 1
19.999 kHz	0.001 kHz	0.005% + 1

Display updates 3 times/second at >10 Hz

Frequency Counter Sensitivity

Input Range	Minimum Sensitivity (rms Sinewave) 5 Hz to 5 kHz*
1 V	0.1 V
4 V	1 V
40 V	3 V
400 V	30 V
1000 V	300 V

* Usable 0.5 Hz to 20 kHz with reduced sensitivity.

Diode Test and Continuity Test

Diode test indication: display voltage drop: 0.2 mA nominal test current at 0.6V: 2.4V full scale, accuracy $\pm(2\% + 1 \text{ count})$

Continuity test indication: continuous audible tone for test resistance $<100\Omega$

Open circuit voltage: $<3.9\text{V}$

Short circuit current: 1.2 mA typical

Overload protection: 1000V rms

DC Current Output

Source mode:

Span: 0 mA or 4 mA to 20 mA, with overrange to 24 mA

Accuracy: 0.05% of span

Compliance voltage: 12V with battery voltage $>8.5\text{V}$

Simulate Mode:

Span: 0 mA or 4 mA to 20 mA, with overrange to 24 mA

Accuracy: 0.05% of span

Loop voltage: 24V nominal, 30V maximum, 15V minimum

Compliance voltage: 21V for 24V supply

Burden voltage: $<3\text{V}$

General Specifications

Maximum voltage applied between any jack and earth ground: 1000V

Storage temperature: -40°C to 60°C

Operating temperature: -20°C to 55°C

Operating altitude: 2000 meters maximum

Temperature coefficient: 0.05 x specified accuracy per $^{\circ}\text{C}$ for temperatures $<18^{\circ}\text{C}$ or $>28^{\circ}\text{C}$

Accuracy adders for use in RF Fields: In an RF field of 3V/m, change the accuracy specifications as follows:

For DC Millivolts Measurement, add 0.03% of range

For AC Volts Measurement, add 0.37% of range

For DC Current Measurement, 30.000 mA range, add 0.14% of range

For DC Current Output, add 0.02% of span

Accuracy for all meter functions is not specified in RF fields $> 3\text{V/m}$.

Relative humidity: 95% up to 30°C , 75% up to 40°C , 45% up to 50°C , and 35% up to 55°C

Vibration: Random 2g, 5 to 500 Hz

Shock: 1 meter drop test

Water and dust protection: Complies with IEC529 IP52
(normal operating vacuum used for dust test)

Safety: Complies with IEC1010-1, ANSI/ISA S82.01-1994 and CAN/CSA C22.2 No. 1010.1-92 Overvoltage Category III.

Certifications: CSA, UL, TÜV

Power requirements: Single 9V battery (ANSI/NEDA 1604A or IEC 6LR61)

Size: 32 mm H x 87 mm W x 187 mm L (1.25 in H x 3.41 in W x 7.35 in L);

With holster and Flex-Stand: 52 mm H x 98 mm W x 201 mm L (2.06 in H x 3.86 in W x 7.93 in L)

Weight: 369 g (13 oz);

With holster and Flex-Stand: 638 g (22.5 oz)