

Specifications

Safety & Compliances

Maximum voltage between any terminal and earth ground:	1000V ac/dc
Compliances:	Complies with CSA C22.2 No 1010.1-92, ANSI/ISA-S82, 01-94 to 1000V Overvoltage Category III.
Certifications:	UL & cUL standard UL 3111-1 Listed CE-marking certified
Surge Protection:	7kV peak per IEC 1010.1-92
Fuse Protection for mA or μA inputs:	1000V / 440mA IR 10kA Fast fuse
Fuse Protection for A input:	1000V / 11A IR 10kA Fast fuse

Physical Specifications

Display (LCD):	Digital – 50000 (Model 1007) / 5000 (Model 1005) count Primary display, 5000 count secondary Display; updates 4/sec. nominal Analog - 25 segments, updates 40/sec. 0°C to 50°C -20°C to 60°C
Operating Temperature:	0°C to 50°C
Storage Temperature:	-20°C to 60°C
Temperature Coefficient:	nominal 0.15 x (specified accuracy) / °C @ (0°C to 18°C or 28°C to 50°C), or otherwise specified
Relative Humidity:	0% to 80% @ (0°C to 35°C) 0% to 70% @ (35°C to 50°C)
Altitude:	Operating – up to 2000m Storage – 10000m
Battery Type:	Single 9V battery – NEDA 1604, JIS 006P or IEC 6F 22
Battery Life:	150hrs. Typical (with backlight off)
Shock Vibration:	Per MIL-T-PRF 28800 for Class II instruments
Pollution Degree:	2
Electromagnetic Compatibility (EMC):	Susceptibility – Commercial Limits for EN 50081-1
Size (H x W x D):	208 x 103 x 54mm (not including mounted accessory)
Weight:	Approx. 655g
Warranty:	Lifetime
Calibration Interval:	1 year

Feature Summary

Backlight:	For clear readings in poorly lighted areas
Fast Autoranging:	Meter automatically selects the best range momentarily
AC + DC total RMS (@ 40Hz to 10kHz):	Choices for AC only, AC+DC readings for AC DC dual display
dBm, dB V:	User selectable impedance references for dBm User selectable voltage references for dB V
Auto Hold:	Holds readings on display
Continuity/ Open test:	Beeper sounds
Fast Bar Graph:	25 segments for peaking and nulling
Memory Locations:	20
Duty Cycle / Pulse Width:	Measure the time signal is ON or OFF in % or milliseconds
MIN/Max Mode:	Record maximum, minimum, and average values
1ms PEAK Mode:	Captures peaks to 1 millisecond
Closed-Case Calibration:	No internal adjustments needed
Battery / Fuse Access Door:	Battery or fuse replaceable without voiding calibration
High-Impact Overmolded Case:	Protective holster features

Electrical Specifications

Accuracy is given as \pm ([% of reading] + [number of digits]) at 18°C to 28°C with relative humidity up to 80%, for a period of one year after calibration. True RMS responding accuracies are specified from 10% to 100% of range or otherwise specified; Crest Factor < 3:1 at full scale and < 6:1 at half scale.

DC Voltage

Range	Resolution		Accuracy	
	1005	1007	1005	1007
50mV	10µV	1 µV	0.1% + 3	0.05% + 10
500mV	100µV	10µV	0.1 + 2	0.05% + 2
5V	1mV	100 µV		
50V	10mV	1mV		
500V	100mV	10mV		
1000V	1V	100mV		0.1% + 2

NMRR: > 60dB @ 50/60Hz

CMRR: > 120dB @ DC, 50/60 Hz, Rs=1kΩ

Input Impedance: 10MΩ, 30 pF nominal
(50MΩ, 100 pF nominal for 50mV & 500mV ranges)

AC Voltage

Range	Resolution		Accuracy							
	1005	1007	40Hz – 1kHz		1kHz – 5kHz		5kHz – 20 kHz		20kHz – 50kHz	
			1005	1007	1005	1007	1005	1007	1005	1007
500mV	100µV	10µV	0.5% + 5	0.3% + 10	1.0% + 5	1.0% + 10	2.0% + 5	2.0% + 20	Unspecified	Unspecified
5V	1mV	100µV							1.2% + 2	0.8% + 20
50V	10mV	1mV	0.5% + 2	0.3% + 10	0.8% + 2	0.5% + 10	0.8% + 2	0.5% + 10		
500V	100mV	10mV							Unspecified	Unspecified
1000V	1V	100mV	0.8% + 5	0.4% + 10	0.8% + 5	0.5% + 20	Unspecified	Unspecified		

CMRR: > 60dB @ DC to 60Hz, Rs=1kΩ

Input Impedance: 10MΩ, 30 pF nominal
(50MΩ, 100 pF nominal for 500mV range)

DC Current

Range	Resolution		Accuracy	
	1005	1007	1005	1007
500µA	100nA	10nA	0.5% + 2	0.1% + 5
5mA	1µA	100nA		
50mA	10µA	1µA		
500mA	100µA	10µA		
5A	1mA	100µA	0.5% + 5	0.3% + 10
10A	10mA	1mA		0.3% + 20

AC Current

Range	Resolution		Accuracy			
	1005	1007	40Hz – 1kHz		1kHz – 10kHz	
			1005	1007	1005	1007
500µA	100nA	10nA	0.5% + 2	0.3% + 5	1.0% + 5	0.8% + 10
5mA	1µA	100nA				
50mA	10µA	1µA				
500mA	100µA	10µA				
5A	1mA	100µA	0.8% + 10	0.4% + 10	Unspecified	Unspecified
10A	10mA	1mA		0.4% + 20		

(AC + DC) Voltage and (AC + DC) Current

Function	Range	Resolution 1005 / 1007	Accuracy			
			40Hz – 1kHz		1kHz – 10kHz	
			1005	1007	1005	1007
DC mV	500mV	100µV	0.5% + 5	0.5% + 5	0.8% + 5	0.8% + 5
DC V	5V	1mV	0.5% + 3	0.5% + 3	0.8% + 3	0.8% + 3
	50V	10mV				
	500V	100mA	0.8% + 5	0.8% + 5	0.8% + 5	0.8% + 5
	1000V	1V				
DC µA	500µA	100nA	0.5% + 3	0.5% + 3	1.0% + 5	1.0% + 5
	5mA	1µA				
DC mA	50 mA	10µ				
	500mA	100µA				
DC A	5A	1mA	0.8% + 10	0.8% + 10	Unspecified	Unspecified
	10A	10mA				

Resistance

Range	Resolution		Accuracy	
	1005	1007	1005	1007
50Ω	0.01Ω	0.001Ω	0.5% + 5 *1	0.5% + 20 *1
500Ω	0.1Ω	0.01Ω	0.3% + 2 *1	0.1% + 5 *1
5kΩ	1Ω	0.1Ω		0.1% + 2
50kΩ	10Ω	1Ω		
500kΩ	100Ω	10Ω		
5MΩ	1kΩ	100Ω	0.5% + 4	0.3% + 5
50MΩ	10kΩ	1kΩ	1.0% + 4	0.5% + 20

Open Circuit Voltage: < 1.3V dc

*1. Using Relative (Δ) mode

Conductance (5,000 counts only)

Range	Resolution	Accuracy
20nS	0.01nS	0.1% + 10

Continuity

Audible threshold: the beeper sounds if the measured resistance is lower than 10Ω, and turns off when greater than about 70Ω.

Response time: <1 msec.

Diode Test

Range	Accuracy	Test Current (Typical)	Open Circuit Voltage
4V	2% + 1	1mA	<3.0V dc

Capacitance (5.000 counts only)

Range	Resolution	Accuracy *1	
		1005	1007
5nF	1pF	1.0% + 5 *2	1.0% + 5 *2
50nF	10pF	1.0% + 3 *2	1.0% + 3 *2
500nF	100pF		
5µF	1nF	2.0% + 3	2.0% + 3
50µF	10nF	3.0% + 3	3.0% + 3
500µF	100nF		
5000µF	1µF	3.5% + 5	3.5% + 5

*1. Accuracy with film capacitor or better

*2. Using Relative (Δ) mode

Frequency, Duty Cycle, Pulse Width and Temperature

Function	Range	Resolution	Accuracy	
			1005	1007
Frequency [Minimum Frequency: 0.5Hz Sensitivity: 250mV]	50Hz	0.001Hz	0.01% + 3	0.002% + 3
	500Hz	0.01Hz		
	5kHz	0.1Hz		
	50kHz	1Hz		
	500kHz	10Hz		
	5MHz	100Hz		
Duty Cycle	0.1% to 99.9%	0.1%	0.5Hz to 300kHz (pulse width > 3µsec.) (0.1% + 0.05% per kHz + 1 count) for 5V input (logic signals only)	
Pulse Width	Input Frequency 0.5Hz to 300kHz		Pulse width > 3 µs	
Temperature	-50°C to 1.300°C (-50°F to 2.372°F)	0.1°C (0.1°F)	With k-type Thermocouple ± 3°C (± 5.4°F) typical	

dBm and 1 ms PEAK Hold (5.000 counts only)

Function	Characteristics	Accuracy
dBm	Selectable reference impedance of 1Ω to 1.999Ω At 600Ω : -11.76 dBm to 54.25 dBm Input impedance: 10MΩ, 30 pF nominal	± 0.25 dB + 2 digits (@ 40Hz to 20 kHz)
1ms PEAK	Specified voltage or current measurement accuracy ± 30 counts of the peak value of a single 1ms pulse	

Burden Voltage (A, mA, µA)

Function	Range	Burden Voltage (typical)
mA / µA	500µA	150µV / µA
	5000µA	150µV / µA
	50mA	3.3mV / mA
	500mA	3.3mV / mA
A	5A	0.03V / A
	10A	0.03V / A