

INTRODUCTION

This meter measures AC/DC Voltage, AC/DC Current, Resistance, Capacitance, Frequency (electrical & electronic), Duty Cycle, Diode Test, and Continuity plus Thermocouple Temperature. It can store and recall data. It features waterproof, rugged design for heavy duty use. Proper use and care of this meter will provide many years of reliable service. It can store 9999 readings in offline mode and also has wireless PC Interface facility.

SAFETY INSTRUCTIONS

Function	Maximum Input
VDC or VAC	1000VDC/AC rms
mA AC/DC	500mA 1000V fast acting fuse
A AC/DC	10A 1000V fast acting fuse (20A for 40 seconds max every 15 minutes)
Frequency, Resistance, Capacitance	1000VDC/AC rms
Duty Cycle, Diode Test, Continuity Temperature	1000VDC/AC rms
Surge Protection	8kV peak per IEC 61010

TECHNICAL SPECIFICATIONS

Function	Range	Resolution	Accuracy
DC Voltage	400mV	0.01mV	±(0.06% reading + 4 digits)
	4V	0.0001V	
	40V	0.001V	
	400V	0.01V	
	1000V	0.1V	
AC Voltage (T-RMS)	400mV	0.1mV	±(1.0% reading + 40 digits)
	4V	0.001V	
	40V	0.01V	
	400V	0.1V	
	1000V	1V	
All AC voltage ranges are specified from 5% of range to 100% of range			
DC Current	400µA	0.01µA	±(1.0% reading + 3 digits)
	4000µA	0.1µA	
	40mA	0.001mA	
	400mA	0.01mA	
	10A	0.001A	
	(20A: 30 sec max with reduced accuracy)		
AC Current (T-RMS)	400µA	0.01µA	±(1.0% reading + 3 digits)
	4000µA	0.1µA	
	40mA	0.001mA	
	400mA	0.01mA	
	10A	0.001A	
	(20A: 30 sec max with reduced accuracy)		
All AC voltage ranges are specified from 5% of range to 100% of range			

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SALIENT FEATURES

- Overload protection up to 1200V DC / AC RMS in the AC/DC Voltage range.
- Overload protection up to 20A DC/AC RMS by fast blow fuse in the AC/DC Current range.
- Overload protection up to 1000V DC / AC RMS in the capacitance, Frequency, Temperature, Resistance, Continuity and Diode Test Range.
- The instrument has overload protection up to 20A DC/AC RMS in the Voltage Range and 1000V DC/AC RMS in the Current Range.
- Surge Protection of 8 kV peak IEC 61010
- 'O' Ring Seal body.
- The instrument has IP-67 Protection making the body water proof even if dipped in 1m. deep water for 30 mins.
- Double molded injection body with rubber lining to provide insulation against electrical shocks and anti-slip grip.
- Confirms to EN61010-1, CAT IV 600V, CAT III 1000V.
- Two Years' Warranty against any manufacturing defects

Note: Accuracy is started at 18°C to 28°C (65℉F to 83℉F) and less than 75% RH AC switch according to the calibration of sine wave. It generally increase ± (2% reading + 2% full scale) if non sine wave in the wave crest less than 3.0.

TECHNICAL SPECIFICATIONS

Function	Range	Resolution	Accuracy	
Resistance	400Ω	0.01Ω	±(0.3% reading + 9 digits)	
	4kΩ	0.0001kΩ	±(0.3% reading + 4 digits)	
	40kΩ	0.001kΩ		
	400kΩ	0.01kΩ		
	4MΩ	0.0001MΩ		
		40MΩ	0.001MΩ	±(2.0% reading + 10 digits)
Capacitance	40nF	0.001nF	±(3.5% reading + 40 digits)	
	400nF	0.01n	±(3.5% reading + 10 digits)	
	4μF	0.0001μ		
	40μF	0.001μF		
		400μF	0.01μ	±(5% reading + 10 digits)
		4000μF	0.1μF	
		40mF	0.001m	
Frequency (electronic)	40Hz	0.001Hz	±(0.1% reading + 1 digits)	
	400Hz	0.01Hz		
	4kHz	0.0001kHz		
	40kHz	0.001kHz		
	400kHz	0.01kHz		
	4MHz	0.0001MHz		
	40MHz	0.001MHz		
	100MHz	0.01MHz		Not specified
	Sensitivity: 0.8V rms min. @ 20% to 80% duty cycle & <100kHz; 5Vrms min @ 20% to 80% duty cycle & > 100kHz.			
Frequency (electrical)	40.00-10KHz	0.01-0.001KHz	±(0.5% reading)	
	Sensitivity: 1Vrms			
Duty Cycle	0.1 to 99.90%	0.01%	±(1.2% reading + 2 digits)	
	Pulse width: 100μs - 100ms, Frequency: 5Hz to 150kHz			
Temp (type-K)	-58 to 2192°F	1°F	±(1.0% reading + 4.5°F)	
	-20 to 1200°C	1°C	±(1.0% reading + 2.5°C) (probe accuracy not included)	
4-20mA%	-25 to 125%	0.01%	±50 digits	
	0mA=-25%, 4mA=0%, 20mA=100%, 24mA=125%			

Note: Accuracy specifications consist of two elements:

- (% reading) – This is the accuracy of the measurement circuit
- (+ digits) – This is the accuracy of the analog to digital converter

OPTIONAL ACCESSORIES:

- Infra-red non contact temperature adaptor to measure temperature from -30°C to 550°C with fixed emissivity of 0.95 and distance to sighting ratio of 8:1. Model TS-03
- Clamp on Current Adaptor to measure current up to 1000A. Model CA-1000D
- Clamp on Current Adaptor to measure upto 200A AC. Model CA-01

GENERAL SPECIFICATIONS

Store capacitance	9999
Enclosure	Double molded, waterproof
Shock (Drop Test)	2M
Diode Test	Test current of 0.9mA maximum, open circuit voltage 2.8V DC typical
Continuity Check	Audible signal will sound if the resistance is less than 35Ω (approx.), test current < 0.35mA
PEAK	Captures peaks >1ms
Temperature Sensor	Requires type K thermocouple
Input Impedance	>10MΩ VDC & > 9MΩ VAC
AC Response	True rms
AC True RMS:	The term stands for "Root-Mean-Square," which represents the method of calculation of the voltage or current value. Average responding multimeters are calibrated to read correctly only on sine waves and they will read inaccurately on non-sine wave or distorted signals. True rms meters read accurately on either type of signal.
ACV Bandwidth	50Hz to 1000Hz
Crest Factor	≤ 3 at full scale up to 500V, decreasing linearly to ≤ 1.5 at 1000V
Display	4-3/4 Digits, 40,000 count backlit liquid crystal with bargraph
Overrange indication	"OL" is displayed
Auto Power Off	15 minutes (approximately) with disable feature
Polarity	Automatic (no indication for positive); Minus (-) sign for negative
Measurement Rate	2 times per second, nominal
Low Battery Indication	"BAT" is displayed if battery voltage drops below operating voltage
Battery	One 9 volt (NEDA 1604) battery
Fuses	mA, μA ranges; 0.5A/1000V ceramic fast blow A range; 10A/1000V ceramic fast blow
Operating Temperature	5°C to 40°C (41°F to 104°F)
Storage Temperature	-20°C to 60°C (-4°F to 140°F)
Operating Humidity	Max 80% up to 31°C (87°F) decreasing linearly to 50% at 40°C (104°F)
Storage Humidity	<80%
Operating Altitude	2000M maximum.
Weight	342g (includes holster).
Size	187 x 81 x 50mm (includes holster)
Safety	This meter is intended for origin of installation use and protected, against the users, by double insulation per EN61010-1 and IEC61010-1 2nd Edition (2001) to Category IV 600V and Category III 1000V; Pollution Degree 2. The meter also meets UL 61010-1, 2nd Edition (2004), CAN/CSA C22.2 No. 61010-1 2nd Edition (2004), and UL 61010B-2-031, 1st Edition (2003)

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