

INDUSTRIAL GRADE PROFESSIONAL MULTIMETER RUGGED, WATER & DUST PROOF PRO 21

INTRODUCTION

General Specifications

- 6000 Counts Extra Large Backlit LCD Display
- MAX/MIN Record Function
- Double Injection Mould
- Relative Measurement
- T-RMS Auto-Ranging
- IP-67, Water and Dust Proof
- 2m Shock-proof
- Fast Blow Fuse
- Auto Power Off
- Low Battery Indication
- 9V Battery Operated
- CE Certified, CAT-III 1000V, CAT-IV 600V
- AC Measurement Bandwidth 1kHz

Enclosure : Double Moulded, Waterproof

Shock (Drop Test) : 6.5 feet (2 meters)

Diode Test : Test current of 0.9mA maximum
open circuit voltage approx 3.2V DC typical.

Continuity Check : Audible signal will sound if the resistance is
less than 50Ω (approx.), test current <0.35mA.

Input Impedance : > 10MΩ VDC & > 10MΩ VAC.

AC Response : True RMS.

ACV Bandwidth : 45Hz to 1KHz.

Crest Factor : ≤ 3 at full scale up to 500V, decreasing linearly to ≤ 1.5 at 1000V.

Display : 6,000 Counts 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.

Peak : Captures peaks > 1 ms.

Low Battery Indication : "  " is displayed if battery voltage drops below operating voltage.

Battery : One 9 Volt (NEDA 1604) battery.

Fuses : mA, μA ranges; 0.8A/1000V ceramic fast blow A range; 10A/1000V ceramic fast blow.

Operating Temperature : 5 to 40°C (41 to 104°F)

Storage Temperature : -20 to 60°C (-4 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 : 2000 meters (7000 ft) maximum.

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 610108-2-031, 1st Edition (2003).



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SPECIFICATIONS

DC Voltage

Range	Resolution	Accuracy
60.00mV	0.01mV	±(0.9% + 9 digits)
600.0mV	0.1mV	
6.000V	0.001V	±(0.5% + 5 digits)
60.00V	0.01V	
600.0V	0.1V	±(0.6% + 6 digits)
1000V	1V	

AC Voltage (45Hz to 1KHz) T-RMS

Range	Resolution	Accuracy
60.00mV	0.01mV	±(0.9% + 9 digits)
600.0mV	0.1mV	
6.000V	0.001V	±(0.8% + 3 digits)
60.00V	0.01V	
600.0V	0.1V	±(0.8% + 8 digits)
1000V	1V	

All AC voltage ranges are specified from 5% of range to 100% of range.

AC voltage bandwidth: 45Hz to 1kHz(Sine); 45Hz to 60Hz (All wave).

VFD

Range	Resolution	Accuracy
50.0 to 700V	0.1V/1V	±(4% + 3 digits)

DC Current

Range	Resolution	Accuracy
600.0µA	0.1µA	±(1.0% + 3 digits)
6000µA	1µA	
60.00mA	0.01mA	
600.0mA	0.1mA	
6.000A	0.001A	±(1.5% + 3 digits)
10.00A	0.01A	

(10A: 30 sec max with reduced accuracy)

AC Current (45Hz to 1 KHz) T-RMS

Range	Resolution	Accuracy
600.0µA	0.1µA	±(1.5% + 3 digits)
6000µA	1µA	
60.00mA	0.01mA	
600.0mA	0.1mA	±(2.0% + 3 digits)
6.000A	0.001A	
10.00A	0.01A	

(10A: 30 sec max with reduced accuracy)

All AC voltage ranges are specified from 5% of range to 100% of range.

AC voltage bandwidth: 45Hz to 1kHz(Sine); 50/60Hz (All wave).

Resistance

Range	Resolution	Accuracy
600.0Ω	0.1Ω	±(1.0% + 2 digits)
6.000kΩ	0.001kΩ	±(0.8% + 2 digits)
60.00kΩ	0.01kΩ	
600.0kΩ	0.1kΩ	
6.000MΩ	0.001MΩ	±(1.2% + 2 digits)
60.00MΩ	0.01MΩ	±(1.0% + 5 digits)

Capacitance

Range	Resolution	Accuracy
99.99nF*	0.01nF	±(5.0% + 20 digits)
999.9nF	0.1nF	±(4.0% + 5 digits)
9.999µF	0.001µF	
99.99µF	0.01µF	
999.9µF	0.1µF	
9.999mF	0.001mF	± 10% reading
99.99mF	0.01mF	

*<99.99nF Not specified

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Frequency (Electronic)

Range	Resolution	Accuracy
9.999Hz	0.001Hz	±(0.1 % + 4 digits)
99.99Hz	0.01Hz	
999.9Hz	0.1Hz	
9.999kHz	0.001kHz	
99.99kHz	0.01kHz	
999.9kHz	0.1kHz	
9.999MHz	0.001MHz	

Sensitivity: 0.8V RMS min. at 20% to 80% duty cycle and <100kHz;
5Vrms min at 20% to 80% duty cycle and >100kHz.

Frequency (Electrical)

Range	Resolution	Accuracy
10.00 - 1kHz	0.01Hz	±0.5% reading

Sensitivity: ACmV Range (≥100mV), ACV Range (≥6% Range)
6000µA/600.0mA/10.00A Range (≥6% Range);
600.0µA/60.00mA/6.000A (≥60% Range).

Duty Cycle

Range	Resolution	Accuracy
0.1 to 99.9%	0.1%	±(1.2% + 2 digits)

Pulse width: 100µs-100ms; Frequency: 5Hz to 150kHz.

Temperature (Type-K)

Range	Resolution	Accuracy
-40 to 1000°C	1°C	±(3.0% + 3°C/5°F digits) (Probe accuracy not included)
-40 to 1832°F	1°F	

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.

Note: Accuracy is stated at 18 to 28°C [65 to 83°F] and less than 75% RH.

