

Digital T-RMS Auto-Ranging Multimeter PRO 27

PRODUCT INTRODUCTION

This is a 6000 counts backlit LCD display, Auto-Ranging T-RMS Multimeter with 61 Segment Analogue Bar-graph and is a best fit for all applications regarding electrical motors.

This IP67 water and dust proof instrument can be used for Variable Frequency Drive (VFD) measurements and also measures Ghost Voltage (Lo-Z). One press of a button and you can toggle between Voltage-Frequency & Current-Frequency.

Features Data Hold, Peak Hold and Relative Measurement facilities. It has Auto Power-Off to save battery life along with Low Battery indication as well. Confirms to CATIII 1000V and CATIV 600V.


Input Protection Limits	
Function	Maximum Input
V DC	1000V AC RMS/1000V DC
V AC	1000V AC RMS/1000V DC
LoZ AC/DC Voltage	600V AC RMS/600V DC
mA AC/DC	800mA 1000V fast acting fuse
A AC/DC	10A 1000V fast acting fuse (30 seconds max every 15 minutes)
Frequency, Resistance, Capacitance, Diode Test, Continuity	250V DC/AC RMS
Surge Protection : 8kV peak per IEC 61010	

GENERAL SPECIFICATIONS

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	6000 Counts back-lit liquid crystal with bar-graph
Over Range Indication	"OL" is displayed
Auto Power Off	15 minutes (approximately) with disabling feature



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Polarity	Automatic (No indication for positive): Minus (-) sign for negative
Measurement Rate	2 times per second, nominal
Peak	Captures peaks > 1ms
Low Battery Indication	"  " is displayed if battery voltage drops below operating voltage
Battery	One 9 volt (NEDA 1604) battery
Fuses	mA, μ A 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 2 nd Edition (2001) to CATIV 600V and CATIII 1000V; Pollution Degree 2. The meter also meets UL 61010-1, 2 nd Edition (2004). CAN/CSA C22.2 No. 61010 -1 2 nd Edition (2004), and UL 61010B-2-031, 1 st Edition (2003).

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)

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);

LoZ AC/DC Voltage

Range	Resolution	Accuracy
6.000V	0.001V	±(3.0% + 30 digits)
60.00V	0.01V	
600.0V	0.1V	

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);

Input Impedance : Approx 3k Ω

VFD

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

DC Current

Range	Resolution	Accuracy
600.0 μ A	0.1 μ A	±(1.0% + 3 digits)
6000 μ A	1 μ A	
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)

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AC Current (45Hz to 1KHz)

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

10A: 30 sec max with reduced accuracy.

All AC Current Ranges are Specified from 5% of range to 100% of range.

AC Voltage Bandwidth: 45Hz to 1kHz (Sine);
50Hz to 60Hz (All wave);

Flexible Coil Current (45Hz to 1kHz)

Range	Resolution	Accuracy
30.00A	0.01A	±(3.0% + 5 digits)
300.0A	0.1A	
3000A	1A	

Protection Against Overcharge: 3000A DC/AC RMS

All AC Current Ranges are Specified from 5% of range to 100% of range.

AC Voltage Bandwidth: 45Hz to 1kHz (Sine);
45Hz to 60Hz (All wave);

Resistance

Range	Resolution	Accuracy
600.0Ω	0.01Ω	±(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	
99.99mF	0.01mF	± 10% reading

*<99.99nF Not specified

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. @ 20% to 80% duty cycle and <100kHz; 5V RMS min @ 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% +2digits)

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.