

## DIGITAL T-RMS MULTIMETER PRO-587

### INTRODUCTION

Professional True-RMS Industrial Digital Multimeter with a 6000/60000 count LCD display. This meter measures AC/DC Voltage, AC/DC Current, Resistance, Capacitance, Frequency (electrical & electronic), Duty Cycle, Diode Test and Continuity plus Thermocouple Temperature. It features a waterproof, rugged design for heavy-duty use. Proper use and care of this meter will provide many years of reliable service.

### INPUT PROTECTION LIMITS

Function	Maximum Input
V DC or V AC	1000V DC/AC RMS
mA AC/DC	800mA 1000V fast acting fuse
A AC/DC	10A 1000V fast acting fuse (20A for 30 seconds max every 15 minutes)
Frequency, Resistance, Capacitance, Duty Cycle, Diode Test, Continuity Temperature	600V DC/AC RMS


Surge Protection : 8kV peak per IEC 61010

### GENERAL SPECIFICATIONS

<b>Enclosure</b>	: Double-moulded, Waterproof
<b>Shock (Drop Test)</b>	: 6.5 feet (2 meters)
<b>Diode Test</b>	: Test current of 0.9mA maximum, open circuit voltage 2.8V DC typical
<b>Continuity Check</b>	: Audible signal will sound if the resistance is less than 35Ω (approx.), test current <0.35mA
<b>PEAK</b>	: Captures peaks > 1 ms
<b>Temperature Sensor</b>	: Requires K-type thermocouple
<b>Input Impedance</b>	: >10MΩ VDC
<b>AC Response</b>	: True-RMS
<b>AC True RMS</b>	: 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.
<b>ACV Bandwidth</b>	: 50Hz to 100KHz
<b>Display</b>	: 6000/60,000 count backlit liquid crystal with bargraph
<b>Overrange Indication</b>	: "OL" is displayed
<b>Auto Power Off</b>	: 15 minutes (approximately) with disable feature
<b>Polarity</b>	: Automatic (no indication for positive); Minus (-) sign for negative



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<b>Measurement Rate</b>	: 3 times per second, nominal
<b>Low Battery Indication</b>	: “  ” is displayed if battery voltage drops below operating voltage
<b>Battery</b>	: 4*1.5 volt (NEDA 1604) battery
<b>Fuses</b>	: mA, µA ranges; 0.8A/1000V ceramic fast blow A range; 10A/1000V ceramic fast blow
<b>Operating Temperature</b>	: 5°C to 40°C (41°F to 104°F)
<b>Storage Temperature</b>	: -20°C to 60°C (-4°F to 140°F)
<b>Operating Humidity</b>	: Max 80% up to 87°F (31°C) decreasing linearly to
<b>Storage Humidity</b>	: 50% at 40°C (104°F)
<b>Operating Altitude</b>	: <80% 7000ft. (2000 meters) maximum.
<b>Safety</b>	: 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 61010-2-032 61010-2-033

**MAX/ MIN** - Records the Maximum and Minimum values while taking measurements

**AUTO-HOLD** - As soon as a reading is stable, once pressed, would hold the stable reading on the screen

**DATA-HOLD** - Freezes the data displayed on the screen

**RELATIVE MEASUREMENT** - Allows to make measurements relative to a stored reference value

### SPECIFICATIONS

**6000 Counts:** Accuracy calculated as [%reading + (num. digits\*resolution)] at 18°C~28°C <75%RH

**60000 Counts:** Accuracy calculated as [%reading + (10\*num. digits\*resolution)] at 18°C~28°C <75%RH

#### DC Voltage

Range	Resolution	Accuracy
600mV	0.1mV	±(0.9% reading + 5digits)
6V	0.001V	
60V	0.01V	
600V	0.1V	
1000V	1V	±(1.2% reading + 5digits)

#### AC Voltage

Range	Resolution	Accuracy		
		50 to 1000Hz	1KHz to 5KHz [1]	5-100KHz [1]
600mV	0.1mV	±(1.0% reading + 5digits)	±(3.0% reading + 5digits)	±(5.5% reading + 30digits)
6V	0.001V			
60V	0.01V			
600V	0.1V		Unspecified	
1000V	1V	Unspecified	Unspecified	Unspecified

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

[1] upper 10% of range, sine wave.

**Low Pass Filter** : Range 1000V 50/60Hz, ±(1% + 20)

60~400Hz ±(3%+20) >3KHz (-3dB)



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### DC Current

Range	Resolution	Accuracy
600µA	0.1µA	±(1.5% reading + 5digits)
6000µA	1µA	
60mA	0.01mA	
600mA	0.1mA	
10A	0.01A	

(20A: 30 sec max with reduced accuracy)

### AC Current

Range	Resolution	Accuracy	
		50 to 1000Hz	1K to 5KHz
600µA	0.1µA	±(2.5% reading + 5digits)	±(3.5% reading + 5digits)
6000µA	1µA		
60mA	0.01 mA		
600mA	0.1mA		
10A	0.01A		Unspecified

(20A: 30 sec max with reduced accuracy)

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

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

### Resistance

Range	Resolution	Accuracy
600Ω	0.1Ω	±(2.0% reading + 9digits)
6kΩ	0.001kΩ	±(1.2% reading + 5digits)
60kΩ	0.01kΩ	
600kΩ	0.1kΩ	
6MΩ	0.01MΩ	±(2.0% reading + 10digits)
60MΩ	0.01MΩ	

### Capacitance

Range	Resolution	Accuracy
60nF	0.01nF	±(3.5% reading + 10digits)
600nF	0.1nF	
6µF	0.001µF	±(2.5% reading + 10digits)
60µF	0.01µF	
600µF	0.1µF	
6000µF	1µF	±(3.5% reading + 10digits)

### Frequency (Electronic)

Range	Resolution	Accuracy
60Hz	0.001Hz	±(1.0% reading + 2digits)
600Hz	0.01Hz	
6kHz	0.0001kHz	
60kHz	0.001kHz	
600kHz	0.01kHz	
6MHz	0.0001MHz	
10MHz	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
40.00-10KHz	0.01Hz	±0.5% reading

**Sensitivity:** 15Vrms

### Duty Cycle

Range	Resolution	Accuracy
0.1 to 99.90%	0.1%	±(1.2% reading + 2digits)

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

### Temperature (Type-K)

Range	Resolution	Accuracy
-58 to 1400°F	1°F	±(2.0% reading + 5.5°F)
-50 to 760°C	1°C	±(2.0% reading + 3°C) (probe accuracy not included)

### 4-20mA%

Range	Resolution	Accuracy
-25 to 125%	0.1%	±20 digits

0mA=-25%, 4mA=0%, 20mA=100%, 24mA=125%