



Professional True RMS Industrial Digital Multimeter with TFT color LCD display, providing fast A/D converting sampling time, high accuracy, built-in datalogging and Trend Capture features. It can trace any interrupted problems of the equipments and keeps watching on without person. It is easy to find and solve the problems of the production equipments, with Bluetooth technology and memorizing the datasheets. It can perform safe measurements with double molded plastic housing design and IP67 waterproof function.

This meter measures AC/DC Voltage, AC/DC Current, 4-20mA %, Resistance, Capacitance, Frequency (electrical & electronic), Duty Cycle, Diode Test and Continuity plus Thermocouple Temperature. It can store and recall data. It features a waterproof, rugged design for heavy duty use.



DT-9987

TRUE RMS INDUSTRIAL MULTIMETER

Per IEC1010 Overvoltage Installation Category

Overvoltage Category III

Equipment of OVERVOLTAGE CATEGORY III is equipment in fixed installations. Note – Examples include switches in the fixed installation and some equipment for industrial use with permanent connection to the fixed installation.

Overvoltage Category IV

Equipment of OVERVOLTAGE CATEGORY IV is for use at the origin of the installation.

Note - Examples include electricity meters and primary over-current protection equipment.

Safety Instructions

Input Protection Limits	
Function	Maximum Input
V DC or V AC	1000VDC/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	1000VDC/AC rms
Temperature	1000VDC/AC rms
Surge Protection: 8kV peak per IEC 61010	

- | HOLD Freezes the present reading in the display and allows the display to be saved. Also accesses AutoHold.
- | RANGES switches the Meter range mode to manual and then cycles through all ranges.
- | MAX/MIN Starts and stops MIN MAX recording
- | 50,000 Counts Large Colored Display
- | IP-67 Protection
- | Blue tooth PC Interface

General Specifications

Enclosure	Double molded, waterproof
Shock (Drop Test)	6.5 feet (2 meters)
Diode Test	Test current of 0.9mA maximum, open circuit voltage 3.2V DC typical
Continuity Check	Audible signal will sound if the resistance is less than 25Ω (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 100000Hz
Crest Factor	<3 at full scale up to 500V, decreasing linearly to <1.5 at 1000V
Display	50,000 count backlit liquid crystal with bargraph
Overrange indication	"OL" is displayed
Auto Power Off	5-30minutes (approximately) with disable feature
Polarity	Automatic (no indication for positive); Minus (-) sign for negative
Measurement Rate	20 times per second
Low Battery Indication	"  +" is displayed if battery voltage drops below operating voltage
Fuses	Fuses are FF 0.8A/1000V+FF 10A/1000V
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	7000ft. (2000meters) 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 61010B -2-031, 1st Edition (2003)
Bluetooth specification	Version 2.0+EDR, Frequency range 2400 MHz ... 2483.5 MHz. (ISM-Band), Guard band 2 MHz < F < 3.5 MHz. Modulation method GFSK, 1 Mbps, 0.5 Gaussian; Receiving signal range -82 to -20 dBm; Transmission power Minimum: -18dBm to +4 dBm Diameter: 20.0mm; High 3.2mm; Typical Weight
Built-in lithium	3.0 grams (0.10 oz.); Designation: ANSI / NEDA-5004LC, IEC-CR2032; Normal Voltage: 3.0 Volts; Typical Capacity: 240 mAh; Storage 5 Year Chemical type: Lithium polymer, Standard: GB/T
Li-ion Battery	18287-2000; Normal Voltage: 7.4 Volts; Charge up Voltage: 8.4 Volts; Typical Capacity: 2400 mAh. Cycle life: 500 times

Electrical Specifications

Function	Range	Resolution	Accuracy
DC Voltage	50mV ^[1]	0.001mV	(0.05% + 20)
	500mV ^[1]	0.01mV	(0.025% + 5digits)
	5V	0.0001V	(0.025% + 5digits)
	50V	0.001V	(0.025% + 5digits)
	500V	0.01V	(0.05% + 5digits)
	1000V	0.1V	(0.1% + 5)

[1] When using the relative mode (REL Q) to compensate for offsets.

Function	Range	Resolution	Accuracy
AC Voltage			50 to 10000Hz
	50mV	0.001mV	50/60Hz (0.3% + 25) <1KHz (0.5% + 25) <5KHz (3% + 25)
	500mV	0.01mV	
	5V	0.0001V	
	50V	0.001V	
	500V	0.01V	
	1000V	0.1V	
	All AC voltage ranges are specified from 5% of range to 100% of range		

Function	Range	Resolution	Accuracy
(AC+DC)			0 to 1000Hz
	50mV	0.001mV	<1KHz (1% + 25) <10KHz (3.5% + 25)
	500mV	0.01mV	
	5V	0.0001V [1]	
	50V	0.001V	
	500V	0.01V	
	1000V	0.1V	

[1] Add 1% above 5k

Function	Range	Resolution	Accuracy
DC Current	500μA	0.01μA	0.1%+20
	5000μA	0.1μA	
	50mA	0.001mA	
	500mA	0.01mA	0.15%+20
	10A	0.001A	0.3%+20
	(20A: 30 sec max with reduced accuracy)		

Function	Range	Resolution	Accuracy
AC Current			50 to 10000Hz
	500μA	0.01μA	50/60Hz (0.6% + 25) <1KHz (1.5% + 25) <10KHz (3% + 25)
	5000μA	0.1μA	
	50mA	0.001mA	
	500mA	0.01mA	
	10A	0.001A	
	(20A: 30 sec max with reduced accuracy)		
All AC current ranges are specified from 5% of range to 100% of range			

Function	Range	Resolution	Accuracy
(AC+DC)			0 to 1000Hz
	500μA	0.01μA	(1.0% + 25)
	5000μA	0.1μA	
	50mA	0.001mA	
	500mA	0.01mA	
	10A	0.001A	

Function	Range	Resolution	Accuracy
AC Voltage (5000+Count)			5K-100K
	50mV	0.001mV	(5.0% + 40)
	500mV	0.01mV	
	5V	0.0001V	
	50V	0.001V	

NOTE: Accuracy is stated at 18 to 28°C (65 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.

Function	Range	Resolution	Accuracy
Resistance	50Ω ^[1]	0.001Ω	0.5%+20
	500Ω ^[1]	0.01Ω	0.05%+10
	5kΩ	0.0001kΩ	0.05%+10
	50kΩ	0.001kΩ	
	500kΩ	0.01kΩ	0.1%+10
	5MΩ	0.0001MΩ	0.2%+20
	50MΩ	0.001MΩ	2%+20

[1] When using the relative mode (REL Q) to compensate for offsets.

Electrical Specifications

Function	Range	Resolution	Accuracy	
Capacitance	5nF ^[1]	0.001nF	±(2% + 40)	
	50nF ^[1]	0.01nF		
	500nF	0.1nF		
		5µF	0.001µF	±(2% + 40 digits)
		50µF	0.01µF	
		500µF	0.1µF	
		10mF	0.01mF	
			±(5% +40 digits)	

[1] with a film capacitor or better, using relative mode (REL) to zero residual.

Function	Range	Resolution	Accuracy
Frequency (electronic)	50Hz	0.001Hz	±(0.01% + 10)
	500Hz	0.01Hz	
	5kHz	0.0001kHz	
	50kHz	0.001kHz	
	500kHz	0.01kHz	
	5MHz	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.

Function (electrical)	Range	Resolution	Accuracy
Frequency (electrical)	40.00-10kHz	0.01 - 0.001kHz	±(0.5% reading)
	Sensitivity: 1V RMS		

Function	Range	Resolution	Accuracy
Duty Cycle	0.1 to 99.90%	0.01%	±(1.2% reading + 2digits)
	Pulse width: 100µs - 100ms, Frequency: 5Hz to 150kHz		
4-20mA%	-25 to 125%	0.01%	±50 digits
	0mA=-25%, 4mA=0%, 20mA=100%, 24mA=125%		

Function	Range	Resolution	Accuracy
Temp (type-K)	-50 to 1000°C	0.1°C	±(1.0% reading + 2.5°C)
	-58 to 1832°F	0.1°F	

Accessories

Carrying Case, Testing Leads, Temperature Probe, Battery, Instruction manual and Test Certificate.

