



Product Datasheet


ENGLISH

Stock No: 144-5337

MeterScope



General Specification

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 25 Ω (approx.), test current <0.35mA
PEAK	Captures peaks > 1ms
Temperature Sensor	Requires type K thermocouple
Input Impedance	> 10M Ω VDC & > 9M Ω 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 Temperatur	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 EN61010-1:2010 and EN61010-2-030:2010, EN61010-2-033:2012 to Category IV 600V and Category III 1000V
Bluetooth specification	Version 3.0+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
Built-in lithium	Diameter: 20.0mm; High 3.2mm; Typical Weight 3.0 grams (0.10 oz.); Designation: ANSI / NEDA-5004LC,IEC-CR2032; Normal Voltage: 3.0 Volts; Typical Capacity: 240 mAh ; Storage 5 Year
Li-ion Battery	Chemical type: Lithium polymer,Standard: GB/T 18287-2000; Normal Voltage: 7.4 Volts; Charge up Voltage: 8.4 Volts; Typical Capacity: 2400 mAh. Cycle life: 500 times ;

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)
	500mV	0.01mV	<1KHz(0.5% + 25)
	5V	0.0001V	<5KHz(3% + 25)
	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	
	500mV	0.01mV	<1KHZ(1% + 25)
	5V	0.0001V ^[1]	<10KHZ(3.5% + 25)
	50V	0.001V	
	500V	0.01V	
	1000V	0.1V	

[1] Add 1% above 5k

Function	Range	Resolution	Accuracy
DC Current	500 μ A	0.01 μ A	0.1% + 20
	5000 μ A	0.1 μ A	
	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
	500 μ A	0.01 μ A	50/60Hz(0.6% + 25)
	5000 μ A	0.1 μ A	<1KHz(1.5% + 25)
	50mA	0.001mA	<10KHz(3% + 25)
	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
	500 μ A	0.01 μ A	(1.0% + 25)
	5000 μ A	0.1 μ A	
	50mA	0.001mA	
	500mA	0.01mA	
	10A	0.001A	(1.5% + 40)

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	(6.0% + 40)	

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 $\pm(2\%$ reading + 2% full scale) if non sine wave in the wave crest less than 3.0.

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

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

Function	Range	Resolution	Accuracy
Capacitance	5nF ^[1]	0.001nF	$\pm(2\% + 40)$
	50nF ^[1]	0.01nF	
	500nF	0.1nF	$\pm(2\% + 40 \text{ digits})$
	5 μ F	0.001 μ F	
	50 μ F	0.01 μ F	
	500 μ F	0.1 μ F	$\pm(5\% + 40 \text{ digits})$
	10mF	0.01mF	

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

Function	Range	Resolution	Accuracy
Frequency (electronic)	50Hz	0.001Hz	$\pm(0.01\% + 10)$
	500Hz	0.01Hz	
	5kHz	0.0001kHz	
	50kHz	0.001kHz	
	500kHz	0.01kHz	
	5MHz	0.0001MHz	
	10MHz	0.001MHz	
Sensitivity: 2V RMS min. @ 20% to 80% duty cycle and <100kHz; 5V RMS min @ 20% to 80% duty cycle and >100kHz.			
Frequency (electrical)	40.00-10kHz	0.01 - 0.001kHz	$\pm(0.5\% \text{ reading})$
	Sensitivity: 2V RMS		

Function	Range	Resolution	Accuracy
Duty Cycle	0.1 to 99.90%	0.01%	$\pm(1.2\% \text{ reading} + 2\text{digits})$
	Pulse width: 100 μ s - 100ms, Frequency: 5Hz to 150kHz		

Function	Range	Resolution	Accuracy
Temp (type-K)	-50 to 1000°C	0.1°C	$\pm(1.0\% \text{ reading} + 2.5^\circ\text{C})$
	-58 to 1832°F	0.1°F	$\pm(1.0\% \text{ reading} + 4.5^\circ\text{F})$ (Probe accuracy not included)



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Oscilloscope Section

EN



Features

- Brand new design, compact size, simple portability
- TFT color LCD display, waveform display much more clear and stable
- Real time sample rate: 500Sps—50 Msa/s
- Storage depth: 3Kpts
- Trigger function: rising edge, falling edge
- Waveform record
- Auto search
- 10 set waveform storage/output; waveform data can be transmitted by Bluetooth or wireless USB interface to upper computer for further operation
- Cursor test
- Multi-screen display for channel waveform and FFT waveform
- Menu display mode, much flexible and natural operation for customer
- English online help system
- A user manual
- Product warranty card
- Certificate of quality
- One set of 1:1 probe
- One adaptor
- A charger according with user's country standard
- CD (pc software)

Appendix 2: Specifications

Function	Main specification	Format or note
LCD display	3.5" color TFT-LCD; 320 X 240 pixels	
Refresh rate	15~50 V/S	Fast / Slow
Bandwidth	10MHz	0 - 10 MHz
Input	Coupling, AC, DC	AC, DC
Input impedance	1000C/CA:1M Ω +/-2% // 15pF +/-2pF	
Max input voltage	1000V/600V (DC+AC peak value, 1M Ω input impedance)	CAT I, CAT II , CAT III
Probe attenuation	1X	
Sampling mode	Real time sampling, random sampling	Single channel 3K,
Real time sample rate	50MSa/s~ 500pts	
Sampling resolution	8 bits	
Record length	3K / 10pages	SRAM
Storage length	10 charts	EEPROM
Time error	± 5 s / 24hours	
FFT collect	4-256 points	
Bluetooth transmission range	9600 baud rate	
Li-ion battery	7.4V 2400MAH	