

FEATURES

- 60,000 count and dual input channels
- 0.04% DC basic accuracy and 0.2% AC basic accuracy
- Bandwidth of 10KHz(max)
- Fast ACV, ACA response
- Dual channels measurement similar to a dual channels DSO(V+V,V+A)
- Hz + duty cycle dual display
- Capacitance measurement
- Standalone data logging of 10,708 records for both channels(803)
- RS-232C interface
- Application Software (Option)
- 1/7 the cost



SPECIFICATION

The following accuracy is specified for one single channel (channel 1 or channel 2). If dual channels are used at the same time, additional % of accuracy should be added to the listed accuracy. Please refer to the supplemental dual channels specification. The following accuracy is also specified for the ZEROED (relative) value. The accuracy is given as  $\pm\%$  of reading  $\pm$  number of least significant digits.

**Continuity :** (  $\rightarrow$  , open voltage 3V approx.)

Range	Resolution	Beeper	Overload Protection
999.99 $\Omega$	0.01 $\Omega$	< 40 $\Omega$ ( approx )	AC 1000V

**Frequency :** (TTL) (Overload Protection AC 1000V)

Range ( Auto )	Resolution	Accuracy
1.000Hz - 2MHz	0.0001Hz - 0.0001MHz	$\pm 0.005\% \pm 4$ dgts

**DC Voltage:** (Input Impedance: 10M $\Omega$  )(Overload Protection DC 1000V)

Range	Resolution	Accuracy
60.000mV	0.001mV	$\pm 0.2\% \pm 9$ dgts
600.00mV	0.01mV	$\pm 0.04\% \pm 6$ dgts
6.0000V	0.0001V	$\pm 0.04\% \pm 6$ dgts
60.000V	0.001V	$\pm 0.04\% \pm 6$ dgts
600.00V	0.01V	$\pm 0.04\% \pm 6$ dgts
1000.0V	0.1V	$\pm 0.08\% \pm 6$ dgts

**DC Current:** (10A terminal is protected by a 20A fast blown, high energy fuse, and the terminal of  $\mu$  A and mA is protected by 1A fast blown, high energy fuse )

Range	Resolution	Accuracy
600.00 $\mu$ A	0.01 $\mu$ A	$\pm 0.4\% \pm 20$ dgts
6000.0 $\mu$ A	0.1 $\mu$ A	$\pm 0.2\% \pm 20$ dgts
60.000mA	0.001mA	$\pm 0.4\% \pm 20$ dgts
600.00mA	0.01mA	$\pm 0.2\% \pm 20$ dgts
1.0000A	0.0001A	$\pm 0.2\% \pm 20$ dgts
10.000A 1	0.001A	$\pm 0.6\% \pm 20$ dgts

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**Diode Test:** (open voltage 3V approx. overload protection AC 1000V)

Range	Resolution	Accuracy	Short Circuit Current
3.0000V	0.0001V	±2%±5dpts	0.8 mA typical

**Duty Cycle:** (% , TTL, 1Hz – 600KHz) (Overload Protection AC 1000V)

Range	Resolution	Accuracy
0.001% - 9.999%	0.001%	±30d/KHz±30dpts
10.00% - 100.00%	0.01%	±3d/KHz±3dpts

**Resistance:** ( Ω )

Range	Resolution	Accuracy	Overload Protection
999.99 Ω	0.01 Ω	±0.25%±9dpts	AC 1000V
9.9999K Ω	0.0001K Ω	±0.15%±6dpts	AC 1000V
99.999K Ω	0.001K Ω	±0.15%±6dpts	AC 1000V
999.99K Ω	0.01K Ω	±0.15%±6dpts	AC 1000V
9.9999M Ω	0.0001M Ω	±0.3%±9dpts	AC 1000V
40.000M Ω	0.001M Ω	±1.5%±9dpts	AC 1000V

**Capacitance:** ( \*\* ), auto range , and for film capacitor or better)

Range	Resolution	Accuracy 1
60.00nF	0.01nF	±1.2% ± 8dpts
600.0nF	0.1n F	±2.5% ± 8dpts
6.000 μ F	0.001 μ F	±2.5% ± 8dpts
60.00 μ F	0.01 μ F	±3.0% ± 8dpts
600.0 μ F	0.1 μ F	±5.0% ± 8dpts

**AC Voltage:** The accuracy of ACV or AC mV is specified for 5%-100% of range from 20Hz-10KHz, average sensing. Input Impedance is 10M Ω , and overloaded protection is AC 1000V for all range. Accuracy is also specified for single channel (channel 1 or channel 2). If dual channels measurements are performed, additional specification of accuracy will be introduced. Please refer to the supplemental dual channels specification. Due to the wide bandwidth, the reading might not be zero when no inputs present. But the residual reading does not affect the listed accuracy. If the AC reading is less than 100 least significant counts, it is set to zero by the unit.

Range (ACV)	Resolution	Accuracy (50/60Hz)	Accuracy (45Hz-1KHz)	Accuracy (20Hz-45Hz)	Accuracy (1KHz-10KHz)
60.000mV	0.001mV	±0.2%±40dpts	±0.6%±40dpts	±1.6%±50dpts	±4% 40dpts
600.00mV	0.001mV	±0.2%±40dpts	±0.6%±40dpts	±1.6%±50dpts	±2%±40dpts
6.0000V	0.01mV	±0.2%±40dpts	±0.6%±40dpts	±1.6%±50dpts	±2%±40dpts
60.000V	0.0001V	±0.2%±40dpts	±0.6±40dpts	±1.6%±50dpts	±2%±40dpts
600.00V (0-400V)	0.001V	±0.2%±40dpts	±1.0%±40dpts	±1.6%±50dpts	±9%±40dpts
600.00V (400-600V)	0.01V	±0.2%±40dpts	±1.0%±40dpts	±1.6%±50dpts	Not Specified
1000.0V (0-400V)	0.1V	±0.2%±40dpts	±4%±60dpts	±1.6%±50dpts	±4%±80dpts
1000.0V (400-1000V)	0.1V	±0.2%±40dpts	(45Hz-400Hz) ±4%±60dpts	±1.6%±50dpts	Not Specified

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**Supplemental Dual Channels Specification (DC – 400Hz):** The following accuracy should be added to all the listed accuracy if dual channels measurements are performed.


	ACV (Ch2)	DCV (Ch2)	ACA (Ch2)	DCA (Ch2)
ACV (Ch1)	$\pm 2\% \pm (V1-V2) * 200 \text{ PPM}$ (Ch1,Ch2)	$\pm 0.9\% \pm (V1-V2) * 20 \text{ PPM}$ (Ch1,Ch2)	$\pm 0.2 \mu\text{A/V} (\mu\text{A}, \text{Ch2})$ $\pm 2 \mu\text{A/V} (\text{mA}, \text{Ch2})$ $\pm 0.4 \text{mA/V} (\text{A}, \text{Ch2})$ $\pm 4 \text{mV/A} (\text{mV}, \text{Ch1})$ $\pm 9 \text{mV/A} (\text{V}, \text{Ch1})$	$\pm 0.5\%$ (Ch1, Ch2)
DCV (Ch1)	$\pm 0.9\% \pm (V1-V2) * 20 \text{ PPM}$ (Ch1,Ch2)	$\pm 0.5\%$ (Ch1,Ch2)	$\pm 0.5\%$ (Ch1,Ch2)	$\pm 0.5\%$ (Ch1,Ch2)

**AC Current:** (The accuracy is specified for a single channel for 5%-100% of range for 45Hz–10KHz, average sensing, 10A terminal is protected by a 20A fast blown, high energy fuse, and the terminal of  $\mu\text{A}$  and mA is protected by 1A fast blown, high energy fuse. If the AC reading is less than 100 least significant digits, it is set to zero by the unit)

Range (ACA)	Resolution	Accuracy (50/60Hz)	Accuracy(45Hz-1KHz)	Accuracy (20Hz-45Hz)	Accuracy (1KHz-10KHz)
600.00 $\mu\text{A}$	0.01mA	$\pm 0.6\% \pm 40 \text{dgts}$	$\pm 0.8\% \pm 40 \text{dgts}$	$\pm 2\% \pm 20 \text{dgts}$	$\pm 4\% \pm 20 \text{dgts}$
6000.0 $\mu\text{A}$	0.1mA	$\pm 0.6\% \pm 40 \text{dgts}$	$\pm 0.8\% \pm 40 \text{dgts}$	$\pm 2\% \pm 20 \text{dgts}$	$\pm 4\% \pm 20 \text{dgts}$
60.000mA	0.001mA	$\pm 0.6\% \pm 40 \text{dgts}$	$\pm 0.8\% \pm 40 \text{dgts}$	$\pm 2\% \pm 20 \text{dgts}$	$\pm 0.9\% \pm 20 \text{dgts}$
600.00mA	0.01mA	$\pm 0.6\% \pm 40 \text{dgts}$	$\pm 0.8\% \pm 40 \text{dgts}$	$\pm 2\% \pm 20 \text{dgts}$	$\pm 0.9\% \pm 20 \text{dgts}$
1.0000A	0.0001A	$\pm 0.6\% \pm 40 \text{dgts}$	$\pm 0.8\% \pm 40 \text{dgts}$	$\pm 2\% \pm 20 \text{dgts}$	$\pm 2.5\% \pm 20 \text{dgts}$
10.000A 1	0.001A	$\pm 0.9\% \pm 40 \text{dgts}$	$\pm 0.9\% \pm 40 \text{dgts}$	$\pm 3.9\% \pm 20 \text{dgts}$	$\pm 2.5\% \pm 20 \text{dgts}$

Range (ACA)	Accuracy (20Hz-45Hz)	Accuracy (1KHz-10KHz)	Accuracy (10KHz-20KHz)
600.00 $\mu\text{A}$	$\pm 1\% \pm 20 \text{dgts}$	$\pm 2\% \pm 20 \text{dgts}$	$\pm 1\% \pm 20 \text{dgts}$
6000.0 $\mu\text{A}$	$\pm 1\% \pm 20 \text{dgts}$	$\pm 2\% \pm 20 \text{dgts}$	$\pm 1\% \pm 20 \text{dgts}$
60.000mA	$\pm 1\% \pm 20 \text{dgts}$	$\pm 0.5\% \pm 20 \text{dgts}$	$\pm 1\% \pm 20 \text{dgts}$
600.00mA	$\pm 1\% \pm 20 \text{dgts}$	$\pm 0.5\% \pm 20 \text{dgts}$	$\pm 1\% \pm 20 \text{dgts}$
1.0000A	$\pm 1\% \pm 20 \text{dgts}$	$\pm 1.5\% \pm 20 \text{dgts}$	Not Specified
10.000A 1	$\pm 2\% \pm 20 \text{dgts}$	$\pm 1.5\% \pm 20 \text{dgts}$	Not Specified

### General Specification:

Battery Type:	9V
Display:	5 + 5 digits LCD with 30 segments bar graph
Range Selection:	auto and manual
Overload Indication:	OL
Power Consumption:	4 mA (approx)
Low battery Indication:	
Operating Temperature:	-10°C to 50°C
Operating Humidity:	less than 85% relative
Altitude:	up to 2000M
Storage Temperature:	-20°C to 60°C
Storage Humidity:	less than 75% relative
Dimension:	207mm(L) x 101mm (W) x 47mm (H) 8.15" (L) x 4" (W) x 1.85" (H)
Weight:	430g / 15.2oz (battery included)
Accessories:	Users manual x 1 9V battery x 1 801A1:Holster 801A2:RS-232C interface cable + software

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