

FEATURES

Preliminary Data

- Light Weight & Stylish ; 45mm Large jaws opening
- 1000A AC Clamp-on + Multimeter ranges
- 600V AC/DC input protection on all functions
- AC True RMS voltage and current functions
- + Dual display Power Factor (PF) & A-Lags-V Phase-Shift indication.
- Automatic selection of DCV, ACV & ACA measurements (Auto V.A)
- Fast PEAK-rms Hold (65ms to 90%) for In-rush ACA & ACV readings
- PC-Comm (optical isolated PC interface capability)
- Software kit for Win 95/98/ME/2000/XP (optional purchase)
- Data HOLD
- 5Hz ~ 500Hz line Frequency measurements
- DCV & ACV 0.1V to 600.0V
- ACA 0.01A to 1000A non-invasive current measurements
- Ohm 0.1Ω to 999.9Ω
- Fast Audible Continuity
- Battery cover with Probe holders
- Rugged Fire-retarded casing; Soft carrying pouch
- Transient Protection 6KV 1.2/50μS lightning Surge.
- LVD EN61010-2-032 CAT III 600V
- EMC EN61326(1997/1998A1) / EN61000-4-2(1995/2000A2) / EN61000-4-3(2002)

GENERAL SPECIFICATIONS :**Display :**

Voltage function : 6000 counts LCD display

Power, Ohm & Hz functions : 9999 counts LCD display

ACA clamp-on function : 4000 counts LCD display

Update Rate :

Power function : 2 per second nominal

Voltage, ACA clamp-on & Ohm functions : 2 per second nominal

Hz function : 1 per second nominal

Polarity : Automatic

Low Battery : Below approx. 2.4V

Operating Temperature : 0°C to 40°C**Relative Humidity :** Maximum relative humidity 80% for temperature up to 31°C decreasing linearly to 50% relative humidity at 40°C.**Storage Temperature :** -20°C to 60°C, <80%R.H. (With battery removed)**Temperature Coefficient :** Nominal 0.15 x (specified accuracy) / °C @ (0°C -18°C or 28°C - 40°C), or otherwise specified.**SAFETY :****Meets IEC61010-2-032(2002)EN61010-2-032(2002), UL61010B-2-032(2003)****Measurement Category :** CAT III 600Volts AC & DC**Transient protection :** 6.5KV(1.2/50μS surge)**Pollution Degree :** 2**E.M.C. :** Meets EN61326 (1997,1998/A1), EN61000-4-2 (1995,2000/A2), & EN61000-4-3 (2002)

In an RF Field of 3V/m : Total Accuracy = Specified accuracy + 50digits Performance above 3V/m is not specified.

Overload Protections :

ACA Clamp-on jaws : AC 1000A rms continuous + & COM terminals (all functions) : 600V DC/VAC rms

Altitude : Operating below 2000m**Sensing :** True RMS sensing**Power Supply :** Standard 1.5V AAA Size (NEDA 24A or IEC LR03) battery x 2**Power Consumption :**

Voltage, ACA, Hz & Power functions : 11mA typical

Ohm function : 5.5mA typical

APO Timing : Idle for 30 minutes**APO Consumption :** 4 μA typical**Dimension :** (L)224mm x (W)78mm X (H)40mm.**Weight :** 224gm approx.**Jaw Opening & Conductor diameter :** 45mm max**Special Features :** AutoVA™ (Auto selection on ACV, DCV or ACA functions); selectable Power parameters of W, VAR & VA ; Display Hold; PEAK-rms HOLD; PC-Comm computer interface capabilities.**Accessories :** Test Leads (pair), batteries installed, User's manual & Soft Carrying case.**Optional Accessories :** PC interface kit (including BA-1xx optical adapter back, BC-100R cable & software CD)

ELECTRICAL SPECIFICATIONS

Accuracy is \pm (% reading digits + number of digits) or otherwise specified at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ & less than 75% R.H.
 True RMS ACV & ACA clamp-on accuracies are specified from 0% to 100% of range or otherwise specified.
 Maximum Crest Factor are as specified below, and with frequency spectrums, besides fundamentals, fall within the meter specified AC bandwidth for non-sinusoidal waveforms. Fundamentals are specified at 50Hz and 60 Hz.

AC VOLTAGE

RANGE	ACCURACY
50Hz / 60Hz	
600.0V	0.5% + 5d
45Hz ~ 500Hz	
600.0V	1.5% + 5d
500Hz ~ 3.1kHz	
600.0V	2.5% + 5d

CMRR : > 60dB @ DC to 60Hz, RS=1k Ω

Input Impedance : 2M Ω , 30pF nominal

Crest Factor :

< 2.3 : 1 at full scale & < 4.6:1 at half scale

ACV AutoVA™ Threshold : 30VAC

(40Hz ~ 500Hz only) nominal

ACA CURRENT (Clamp-On)

RANGE	ACCURACY ^{1) 2)}
50Hz / 60Hz	
40.00A, 400.0A, 1000A	1.0% + 5d
45Hz ~ 500Hz	
40.00A, 400.0A	2.0% + 5d
1000A	2.5% + 5d
500Hz ~ 3.1kHz	
40.00A, 400.0A	2.5% + 5d
1000A	3.0% + 5d

ACA AutoVA™ Threshold : 1A AC(40Hz~500Hz only)nominal

Crest Factor : < 2.5 : 1 at full scale & < 5.0 : 1 at half scale
 for 40.00A & 400.0A ranges

< 1.4 : 1 at full scale & < 2.8 : 1 at half scale for 1000A range

¹⁾ Induced error from adjacent current-carrying conductor : < 0.06A/A

²⁾ Specified accuracy is from 1% to 100% of range and for measurements made at the jaw center.

When the conductor is not positioned at the jaw center, position errors introduced are : Add 1% to specified accuracy for measurements made WITHIN jaw marking lines (away from jaw opening)

Add 4% to specified accuracy for measurements made BEYOND jaw marking lines (toward jaws opening)

Peak-RMS HOLD (ACA & ACV only)

Response : 65ms to 90%

FREQUENCY

RANGE	ACCURACY
5Hz ~ 500Hz	0.5% + 4d

Sensitivity (Sine RMS) : 40A range : > 4A

400A range : >40A

1000A range : > 400A

600V range : > 30V

DC VOLTAGE

RANGE	ACCURACY
600.0V	0.5% + 5d

NMRR : > 50dB @ 50/60Hz

CMRR : > 120dB @ DC 50/60Hz, RS=1k Ω

Input Impedance : 2M Ω , 30pF nominal

DCV AutoVA™ Threshold : 2.4VDC nominal

OHMS

RANGE	ACCURACY
999.9 Ω	1.0% + 6d

Open Circuit Voltage : 0.4VDC typical

Audible Continuity Tester

Audible Threshold : between 10 Ω and 300 Ω

Response time : 250 μ S

SINGLE-PHASE & 3-PHASE 3 BALANCED-LOAD POWER

RANGE	ACCURACY ^{1) 2) 3)}			
	F~10 th	11 th ~45 th	46 th ~51 st	
0 ~ 600.0kVA				
@PF= 0.99~0.1	2.0%+6d	3.5%+6d	5.5%+6d	
RANGE	ACCURACY ^{1) 2) 4)}			
0.~ 600.0kW / kVAR	F~10 th	11 th ~25 th	26 th ~45 th	46 th ~51 st
@PF= 0.98 ~ 0.70	2.0%+6d	3.5%+6d	4.5%+6d	10%+6d
@PF= 0.70 ~ 0.50	3.0%+6d			
@PF= 0.50 ~ 0.30		4.5%+6d		
@PF= 0.30 ~ 0.20		10%+6d		15%+6d

¹⁾Specified accuracy is for ACA clamp measurement at the center of jaws. When the conductor is not positioned at the jaw center, position errors introduced are :

Add 1% to specified accuracy for ACA measurements made WITHIN jaw marking lines (away from jaw opening)
 Accuracy is not specified for ACA measurement made BEYOND jaw marking lines (toward jaws opening)

²⁾Add 4d to specified accuracy for 3-phase Balanced-Load Power measurements.

³⁾Add 1% to specified accuracy @ ACA fundamental <6A or ACV fundamental <90V. Accuracy is not specified @ACA fundamental < 1A or ACV fundamental < 30V

⁴⁾Add 1% to specified accuracy @ ACA fundamental <6A or ACV fundamental <90V. Accuracy is not specified @ ACA fundamental < 2A or ACV fundamental <50V.

TOTAL POWER FACTOR (PF)

RANGE	ACCURACY ¹⁾	
0.10 ~ 0.99	F ~ 21 st	22 nd ~ 51 st
	3d	5d

¹⁾Specified accuracy @ ACA fundamental > 2A;
 ACV fundamental > 50V

A-lags-V Indication :

LCD annunciator A-lags-V turns on to indicate an inductive circuit, or Current A lags Voltage V

(i.e., Phase-shift angle θ is +).

A-lags-V indication is specified at 50/60Hz fundamental without the presence of harmonics, and at ACV > 90V,

ACA > 9A and PF < 0.95

Note: All Specification are Subject to change.



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