

1 PHASE TRMS POWER CLAMP-ON METER WITH POWER W, VA & VAR MEASUREMENTS & PC INTERFACE

MODEL KM351

SPECIAL FEATURES :

- Ultra-Slim jaw to access tight places.
- 600A AC Clamp-on + Multimeter ranges
- 600V AC/DC input protection on all functions
- AC True RMS Voltage and Current functions.
- Balanced-Load 3-phase / 1-phase Power W, VA & VAR measurements.
- + Dual display Power Factor (PF) & A-Lags-V Phase-Shift indication
- AutoVA™ (Auto Selection on ACV, DCV or ACA functions)
- Power measurement of Selectable W, VAR & VA with dual-display Total Power Factor features..
- Display PEAK-rms HOLD & Data Hold function.
- Fast Peak-rms Hold (65ms to 90%) for In-rush ACA & ACV readings.
- Measure line-level ACV Frequency via test leads
- Measure non-invasive ACA frequency via clamp jaws.
- Battery Cover with probe holders.
- Fast Audible Continuity.
- PC-Comm computer interface capabilities (Optional).

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 : 1 per second nominal

Voltage, ACA clamp-on, Ohm, & Hz functions : 4 per second nominal

* Polarity : Automatic

* Low Battery : Below approx 2.4V

* Jaw opening & Conductor diameter : 26mm max

* Sensing : True RMS sensing

* Operating Temperature : 0°C to 40°C

* Relative Humidity : Maximum relative humidity 80% for temperature upto 31°C decreasing linearly to 50% relative humidity at 40°C

* Altitude : Operating below 2000m

* 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.

* Power supply : Standard 1.5V AAA Battery x 2.

* Power Consumption : Voltage, ACA, Hz & Power functions : 10mA typical

Ohm function : 4mA typical

* APO Timing : Idle for 17 minutes

* APO Consumption : 10µA typical

* Dimension : 189(L) x 78(W) x 40(H) mm

* Weight : Approx. 192 gms

SAFETY :

- Meets IEC61010-1 2nd Ed., EN61010-1 2nd Ed., UL61010-1 2nd Ed., CAN/CSA C22.2 No. 61010.1-0-92, IEC61010-2-032, EN61010-2-032, UL61010B-2-032 & CAN/CSA C22.2 No. 61010-2-032-04:

Measurement Category : III 600 Volts AC & DC.

- **Transient Protection** : 6.5kV (1.2/50µs surge)

- **Pollution degree** : 2

- **E. M. C.** : Meets EN61326-1:2006 (EN55022, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11)

In an RF field of 3V/m : Total Accuracy = Specified Accuracy + 45 digits

Performance above 3V/m is not specified

- **Overload Protections** :

ACA Clamp-on jaws : AC 600A rms continuous

+ & COM terminals(all functions) : 600VDC/VAC rms

- Rugged Fire-retarded casing.

- LVD EN61010-1 & EN61010-2-032 CAT III 600V

ACCESSORIES : Test leads (pair), Battery installed, User's Manual, Carrying Case

OPTIONAL ACCESSORIES : PC interface Kit BRUA-13X (including BA-1XX optical adapter black, BC-100R Cable, BUA-2303 USB-to-Serial adaptor & Bs Software / Driver CD).



Software CD



USB to Serial adaptor

ELECTRICAL SPECIFICATIONS - KM 351

Accuracy is \pm (% reading digits + number of digits) or otherwise specified, at 23°C \pm 5°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 60Hz.

AC CURRENT (Clamp-On)

Range	Resolution	Accuracy ^{1) 2)}
50Hz / 60Hz		
40.00 A	10 mA	$\pm(1.0\%rdg + 5dgts)$
400.0 A	100 mA	$\pm(1.0\%rdg + 5dgts)$
600 A	1 A	$\pm(1.0\%rdg + 5dgts)$
45Hz ~ 500Hz		
40.00 A	10 mA	$\pm(2.0\%rdg + 5dgts)$
400.0 A	100 mA	$\pm(2.0\%rdg + 5dgts)$
600 A	1 A	$\pm(2.5\%rdg + 5dgts)$
500Hz ~ 3.1kHz		
40.00 A	10 mA	$\pm(2.5\%rdg + 5dgts)$
400.0 A	100 mA	$\pm(2.5\%rdg + 5dgts)$
600 A	1 A	$\pm(3.0\%rdg + 5dgts)$

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

Crest Factor : < 2.5 :1 at full scale & < 5 :1 at half scale for 40.00A & 400.0A ranges.

< 3 :1 at full scale & < 6 :1 at half scale for 600A ranges.

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

²⁾ Specified accuracy is from 1% to 100% of range & 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)

OHMS

Range	Resolution	Accuracy
999.9 Ω	0.1 Ω	$\pm(1.0\% rdg + 6dgts)$

Open Circuit Voltage : 0.4VDC typical

AUDIBLE CONTINUITY TESTER

Audible threshold	between 10 Ω and 300 Ω
Response time	250 μ s

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-LAGS¹⁾ INDICATION

"A-lags" LCD annunciator turns on to indicate an inductive circuit, or Current A lags Voltage V (i.e., Phase-shift angle θ is "+").

¹⁾ A-lags Indication is specified at 50/60Hz fundamental without harmonics, and at ACV > 90V, ACA > 9A and PF < 0.95

AC VOLTAGE

Range	Resolution	Accuracy
50Hz / 60Hz		
600.0V	0.1V	$\pm(0.5\%rdg + 5dgts)$
45Hz ~ 500Hz		
600.0V	0.1V	$\pm(1.5\%rdg + 5dgts)$
500Hz ~ 3.1kHz		
600.0V	0.1V	$\pm(2.5\%rdg + 5dgts)$

Input Impedance : 2M Ω , 30pF nominal

Crest Factor : < 2 : 1 at full scale & < 4 : 1 at half scale

ACV AutoVA™ Threshold : 30VAC (40Hz ~ 500Hz only) nominal

DC VOLTAGE

Range	Resolution	Accuracy
600.0V	0.1V	$\pm(0.5\%rdg + 5dgts)$

Input Impedance: 2M Ω , 30pF nominal

DCV AutoVA™ Threshold : 2.4VDC nominal

FREQUENCY

Range	Accuracy
5.00Hz ~ 500.0Hz	$\pm(0.5\%rdg + 4dgts)$

Sensitivity (Sine RMS)

40A range : > 4A;

400A range : > 40A

600A range : > 400A;

600V range : > 30V

PEAK-rms HOLD (ACA & ACV only)

Response : 65 ms to 90%

POWER

Range	Accuracy ^{1) 2)}			
0 ~ 360.0 kVA	F ~ 10 th	11 th ~ 46 th	47 th ~ 51 st	
@ PF = 0.99 ~ 0.1	2.0%+6d	3.5%+6d	5.5%+6d	
Range 0 ~ 360.0 kW / kVAR	Accuracy ^{1) 3)}			
	F ~ 10 th	11 th ~ 25 th	26 th ~ 46 th	47 th ~ 51 st
	@ PF = 0.99 ~ 0.70	2.0%+6d	3.5%+6d	4.5%+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 1% to specified accuracy @ ACA fundamental < 6A or ACV fundamental < 90V.

Accuracy is not specified @ ACA fundamental < 1A or ACV Fundamental < 30V

³⁾ Add 1% to specified accuracy @ ACA fundamental < 6A or ACV fundamental < 90V.

Accuracy is not specified @ ACA fundamental < 2A or ACV fundamental < 50V

Note: All Specification are Subject to change without prior notice.