

MODEL KM 3001

SPECIAL FEATURES :

- 1500V DC range suitable for solar
- AutoCheck™ Voltage & Ohms
- VFD-V & VFD-Hz function
- 5ms CREST-MAX capture mode (Peak Hold)
- Autoranging Relative -Zero mode
- Display Hold function
- EF-Detection (NCV)
- Backlight LCD Display
- Auto Power Off
- Diode Test & Continuity Test
- PC Interface (Optional)

GENERAL SPECIFICATIONS :

- * **Sensing** : TRMS sensing
- * **Jaw Opening** : 55mm max.
- * **Display** : 3-5/6 digits 6000 counts & 3½ digits 1,999 counts for Hz.
- * **Update Rate** : 5 per second nominal
- * **Polarity** : Automatic
- * **Low Battery** : Below approx <2.4V
- * **Operating Temperature** : 0°C to 40°C
- * **Relative Humidity** : Maximum 80% R. H. for temperature upto 31°C decreasing linearly to 50% Relative Humidity at 40°C
- * **Storage Temperature** : -20°C to 60°C, < 80% R.H. (With battery removed)
- * **Altitude** : Operating below 2000m
- * **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** : Typical 14mA for Current function, & 5.2mA for others.
- * **APO Timing** : Idle for 34 minutes
- * **APO Consumption** : 10µA typical
- * **Dimension** : 264(L) x 97(W) x 43(H) mm
- * **Weight** : Approx. 608gm.
- * **Accessories** : Test leads (pair), user's manual, Bkp60 banana plug K-type Thermocouple x 1 & carrying case.
- * **Optional Accessories** : USB interface kit BRUA-19X, BKB32 banana plug to type-K socket plug adaptor

SAFETY :

- Meets IEC/EN/BSEN/CSA_C22.2_No/UL standards of 61010-1 Ed.3.1 & 61010-2-032 Ed.4.0 to measurement categories CAT IV 1000V AC & DC & CAT III 1500Vdc
- **Transient Protection** : 12 kV (1.2/50µs surge)
- **Overload Protection** :
Clamp-on jaws : 2000A DC/AC rms continuous
Voltage via terminals : 1650Vdc / 1100Vac rms
Other functions via terminals :
1500Vdc / 1000Vac rms
- **Pollution degree** : 2
- **EMC** : Meets EN61326-1:2013
In an RF field of 3V/m :
Capacitance function is not specified
Other function ranges : Total Accuracy = Specified Accuracy + 200 digits
Performance above 3V/m is not specified.



Preliminary Data

ELECTRICAL SPECIFICATIONS : KM 3001

Accuracy is ± (% readings digits + number of digits) or otherwise specified, at 23°C ± 5°C 0

True RMS model ACV, DC+ACV, ACA & DC+ACA accuracies are specified from 5% to 100% of range or otherwise specified.

Maximum Crest Factor <1.4:1 at full scale & <2.8:1 at half scale, & with frequency components within the specified frequency bandwidth for non-sinusoidal waveforms.

ACA CURRENT(Clamp on)

Range	Resolution	Accuracy ¹⁾
50Hz – 60Hz		
200.0 A	100 mA	±(2.0%rdg + 5dgts)
0 ~ 500 A	1 A	±(2.5%rdg + 5dgts)
500~2000 A	1 A	±(3.0%rdg + 5dgts)
40Hz~50Hz & 60Hz~400Hz		
200.0 A	100 mA	±(2.5%rdg + 5dgts)
0 ~ 500 A	1 A	±(3.0%rdg + 5dgts)
500~1000 A	1 A	±(3.5%rdg + 5dgts)
1000~2000 A	1 A	Unspecified

True RMS Crest Factor :

< 1.4:1 at full scale & <2.8:1 at half scale

¹⁾Induced error from adjacent current carrying conductor :

<0.1A/A

DCA CURRENT(Clamp on)

Range	Resolution	Accuracy ¹⁾²⁾
200.0 A	100 mA	±(2.0%rdg + 5dgts)
0 ~ 500 A	1 A	±(2.0%rdg + 5dgts)
500~2000 A	1 A	±(3.0%rdg + 5dgts)

¹⁾Induced error from adjacent current carrying conductor :
<0.1A/A

²⁾Specified with Relative Zero Δ mode applied to offset the non-zero residual readings, if any.

DC + ACA CURRENT(Clamp on)

Range	Resolution	Accuracy ¹⁾²⁾
DC, 50Hz ~ 60Hz		
200.0 A	100 mA	±(3.0%rdg + 8dgts)
2000 A	1 A	
40Hz ~ 50Hz & 60Hz ~ 400Hz		
200.0 A	100 mA	±(3.5%rdg + 8dgts)
0 ~ 1000 A	1 A	
1000~2000 A	1 A	Unspecified

True RMS Crest Factor :

< 1.4:1 at full scale & <2.8:1 at half scale

¹⁾Induced error from adjacent current carrying conductor :
<0.1A/A

²⁾Specified with Relative Zero Δ mode applied to offset the non-zero residual readings, if any.

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

ELECTRICAL SPECIFICATIONS : KM 3001

DC VOLTAGE

Range	Resolution	Accuracy
6.000 V	1 mV	±(0.5%rdg + 5dgts)
60.00 V	10 mV	
600.0 V	100 mV	
1500 V	1 V	

Input Impedance : 10MΩ, 50pF nominal

AC VOLTAGE

Range	Resolution	Accuracy
50Hz ~ 400Hz		
6.000 V	1 mV	±(1.2%rdg + 5dgts)
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	

Input Impedance : 10MΩ, 50pF nominal

AC + DC VOLTAGE

Range	Resolution	Accuracy
DC, 50Hz ~400Hz		
6.000 V	1 mV	±(1.4%rdg + 7dgts)
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	

Input Impedance : 10MΩ, 50pF nominal

VFD_ACV (with Low Pass Filter)

Range	Resolution	Accuracy ¹⁾
10Hz ~ 20Hz		
6.000 V	1 mV	±(4%rdg + 80dgts)
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	
20Hz ~ 200Hz		
6.000 V	1 mV	±(2%rdg + 60dgts)
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	
200Hz~420Hz²⁾		
6.000 V	1 mV	±(7%rdg + 80dgts)
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	

¹⁾ Not specified for fundamental frequency > 400Hz³⁾ Accuracy linearly decreases from 2% + 50d @ 200Hz to 7% + 80d @ 400Hz

CAPACITANCE

Range	Resolution	Accuracy ¹⁾
60.00 nF	10 pF	±(2.0%rdg + 5dgts)
600.0 nF	100 pF	
6.000 μF	1 nF	±(3.5%rdg + 5dgts) ²⁾
60.00 μF	10 nF	
600.0 μF	100 nF	±(4.0%rdg + 5dgts) ²⁾
2000 μF	1 μF	

¹⁾ Accuracies with film capacitor or better²⁾ Temperature Coefficient : 0.25 x (specified accuracy) / °C @ (0°C ~ 18°C or 28°C ~ 40°C)

OHM

Range	Resolution	Accuracy
600.0 Ω	0.1 Ω	±(0.5%rdg + 5dgts)
6.000 KΩ	1 Ω	
60.00 KΩ	10 Ω	±(0.8%rdg + 5dgts)
600.0 KΩ	100 Ω	
6.000 MΩ	1 KΩ	±(1.2%rdg + 5dgts)
40.00 MΩ	10 KΩ	±(2.3%rdg + 5dgts)

Open Circuit Voltage : 0.45VDC typical.

NON-CONTACT EF-DETECTION

Typical Voltage	Bar-Graph Indication
89V (tolerance : 12V ~ 165V)	-
177V (tolerance : 81V ~ 272V)	---
589V (tolerance : 178V ~ 1000V)	-----

Indication : Bar-graph segments & audible beep tones proportional to the field strength**Detection Frequency :** 50/60Hz

Detection Antenna : Top side of the stationary jaw Probe-Contact EF-Detection: For more precise indication of live wires, such as distinguishing between live and ground connections, use the Red (+) test probe for direct contact measurement.

TEMPERATURE

Range	Resolution	Accuracy
-50°C ~ 1000°C	1°C	±(0.3%rdg + 4dgts)
-58°F ~ 1832°F	1°F	±(0.3%rdg + 6dgts)

K-type Thermocouple range & accuracy not included

-Hz LINE LEVEL FREQUENCY

Function	Sensitivity (Sine RMS)	Range
6 V	2 V ²⁾	40Hz ~ 1999Hz
60 V	20 V ²⁾	40Hz ~ 1999Hz
600 V	100 V ²⁾	40Hz ~ 1999Hz
1000 V	600 V ³⁾	40Hz ~ 1999Hz
200 A	10 A ²⁾	20Hz ~ 400Hz
2000 A	100 A ²⁾	20Hz ~ 400Hz
VFD 6 V ¹⁾	0.6V ~ 2.4 V ²⁾	10Hz ~ 400Hz
VFD 60 V ¹⁾	6 V ~ 24 V ²⁾	10Hz ~ 400Hz
VFD 600 V ¹⁾	60 V ~ 200 V ²⁾	10Hz ~ 400Hz

Accuracy : 0.1% + 4d

¹⁾ VFD sensitivity linearly decreases from 10% F.S. @ 200Hz to 40% F.S. @ 400Hz²⁾ DC-bias, if any, not more than 50% of Sine RMS³⁾ DC-bias, if any, not more than 100V

AUDIBLE CONTINUITY TESTER

Audible Threshold	Response Time
between 10Ω and 200Ω	32ms approx.

DIODE TESTER

Range	Test Current (Typical)	Open Circuit Voltage
1.000V	0.56mA	<1.8V DC typical

Accuracy : 1.0% + 3d

CREST-MAX CAPTURE MODE

Accuracy : Specified accuracy plus 250 digits for changes > 5ms in duration

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