

SPECIAL FEATURES :

- 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 :

- Double insulation per IEC/EN61010-1 2nd Ed., UL61010-1 2nd Ed., & CAN/CSA C22.2 No.61010.1-0.92 to Category CAT IV 1000V AC & DC.
- **Transient Protection** : 12 kV (1.2/50µs surge)
- **Overload Protection** :
Clamp-on jaws : 2000A rms continuous
" + " & COM Terminals (all other functions) : 1000V rms.
- **Pollution degree** : 2
- **EMC** : 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 :
Capacitance function is not specified
Other function ranges : Total Accuracy = Specified Accuracy + 200 digits
Performance above 3V/m is not specified.

Model KM 2777 - TRUE RMS SENSING



Preliminary Data

ELECTRICAL SPECIFICATIONS : KM 2777

Accuracy is ± (% readings digits + number of digits) or otherwise specified, at 23°C ± 5°C & less than 75% R.H.

True RMS Model KM 2777 voltage 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 + 5dgt)
0 ~ 500 A	1 A	±(2.5%rdg + 5dgt)
500~2000 A	1 A	±(3.0%rdg + 5dgt)
40Hz~50Hz & 60Hz~400Hz		
200.0 A	100 mA	±(2.5%rdg + 5dgt)
0 ~ 500 A	1 A	±(3.0%rdg + 5dgt)
500~1000 A	1 A	±(3.5%rdg + 5dgt)
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 :

DCA CURRENT(Clamp on)

Range	Resolution	Accuracy ¹⁾²⁾
200.0 A	100 mA	±(2.0%rdg + 5dgt)
0 ~ 500 A	1 A	±(2.0%rdg + 5dgt)
500~2000 A	1 A	±(2.5%rdg + 5dgt)

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 + 8dgt)
2000 A	1 A	
40Hz ~ 50Hz & 60Hz ~ 400Hz		
200.0 A	100 mA	±(3.5%rdg + 8dgt)
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.

ELECTRICAL SPECIFICATIONS : KM 2777

DC VOLTAGE

Range	Resolution	Accuracy
6.000 V	1 mV	$\pm(0.5\%rdg + 5dgt)$
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	

Input Impedance : 10M Ω , 50pF nominal

AC VOLTAGE

Range	Resolution	Accuracy
50Hz ~ 400Hz		
6.000 V	1 mV	$\pm(1.2\%rdg + 5dgt)$
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	

Input Impedance : 10M Ω , 50pF nominal

AC + DC VOLTAGE

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

Input Impedance : 10M Ω , 50pF nominal

VFD_ACV (with Low Pass Filter)

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

¹⁾ Not specified for fundamental frequency > 400Hz

²⁾ Accuracy linearly decreases from 2% + 50d @ 200Hz to 7% + 80d @ 400Hz

AUTOCHECK™_ACV

Range	Resolution	Accuracy ¹⁾
50Hz ~ 60Hz		
6.000 V	1 mV	$\pm(1.5\%rdg + 5dgt)$
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	

AutoCheck™ Lo-Z ACV Threshold : >1.5V (50/60Hz) nominal.

AutoCheck™ Lo-Z ACV input impedance :

Initially approx. 2.5k Ω , 600pF nominal; impedance increases abruptly within a fraction of a second as display voltage is above 50V (typical). Ended up impedances vs display voltages typically are :

10 k Ω @ 100V
60 k Ω @ 300V
200k Ω @ 600V
420k Ω @ 1000V

AUTOCHECK™_DCV

Range	Resolution	Accuracy
6.000 V	1 mV	$\pm(1.3\%rdg + 5dgt)$
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	

AutoCheck™ Lo-Z DCV Threshold : >+1.5VDC & <-1.5VDC nominal.

AutoCheck™ Lo-Z DCV input impedance :

Initially approx. 2.5k Ω , 600pF nominal; impedance increases abruptly within a fraction of a second as display voltage is above 50V (typical). Ended up impedances vs display voltages typically are :

10 k Ω @ 100V
60 k Ω @ 300V
200k Ω @ 600V
420k Ω @ 1000V

CAPACITANCE

Range	Resolution	Accuracy ¹⁾
60.00 nF	10 pF	$\pm(2.0\%rdg + 5dgt)$
600.0 nF	100 pF	
6.000 μ F	1 nF	$\pm(3.5\%rdg + 5dgt)$ ²⁾
60.00 μ F	10 nF	
600.0 μ F	100 nF	$\pm(4.0\%rdg + 5dgt)$ ²⁾
2000 μ F	1 μ F	

¹⁾ Accuracies with film capacitor or better

²⁾ Temperature Coefficient : 0.25 x (specified accuracy) / °C @ (0°C ~ 18°C or 28°C ~ 40°C)

OHM & AUTOCHECK™_OHM¹⁾

Range	Resolution	Accuracy
600.0 Ω	0.1 Ω	$\pm(0.5\%rdg + 5dgt)$
6.000 K Ω	1 Ω	
60.00 K Ω	10 Ω	$\pm(0.8\%rdg + 5dgt)$
600.0 K Ω	100 Ω	
6.000 M Ω	1 K Ω	$\pm(1.2\%rdg + 5dgt)$
40.00 M Ω	10 K Ω	$\pm(2.3\%rdg + 5dgt)$

Open Circuit Voltage : 0.45VDC typical.

¹⁾AutoCheck™ OhmThreshold : <10.00M Ω nominal.

~Hz LINE LEVEL FREQUENCY

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

Accuracy : 0.1% + 4d

¹⁾VFD sensitivity linearly decreases from 10% F.S. @ 200Hz to 40% F.S. @ 400Hz

NON-CONTACT EF-DETECTION

Typical Voltage	Bar-Graph Indication
20V (tolerance : 10V ~ 36V)	-
55V (tolerance : 23V ~ 85V)	---
110V (tolerance : 59V ~ 600V)	-----

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	$\pm(0.3\%rdg + 4dgt)$
-58°F ~ 1832°F	1°F	$\pm(0.3\%rdg + 6dgt)$

K-type Thermocouple range & accuracy not included

CREST-MAX CAPTURE MODE

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

AUDIBLE CONTINUITY TESTER

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

DIODE TESTER

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

Accuracy : 1.0% + 3d

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