

SPECIAL FEATURES :

- VFD V & Hz readings.
- Paper-White Backlight LCD Display
- Record MAX / MIN readings.
- Display Hold Function.
- Dual Digital Display.
- PI & DAR Function.
- Autoranging.
- Pass /Fail Insulation Resistance Compare function; 12 selectable Preset Values.
- LOCK-Test mode for Insulation Resistance & Earth Continuity Test.
- BeepJack™ audible & visible input warning.
- Remote Probe for insulation Resistance & Earth Continuity Test.

GENERAL SPECIFICATIONS :

- * **Sensing** : AC, True RMS
- * **Display** : 3-5/6 digits 6000 Counts Backlight LCD Display.
- * **Polarity** : Automatic
- * **Update Rate** : 5 per second nominal
- * **61 Segments Analog Bar Graph** : 60 per second max.
- * **Power Supply**: Four Alkaline AA batteries
- * **Power Consumption**: 4.5mA typical except : ACV^{Hz} & VFD ACV^{Hz} : 7.0mA

Earth Continuity Test : 110mA @20Ω range, 220mA @2.0Ω range.

Tester can perform at least 3000 Earth Continuity Test measurements with new alkaline batteries at room temperature. These are standard test of 1Ω with a duty cycle of 5 seconds on & 25 seconds off.

Insulation Resistance @ 1mA Test Current :

50V output Voltage : 25mA, 100V output Voltage : 45mA
250V output Voltage : 85mA, 500V output Voltage : 170mA
1000V output Voltage : 440mA

Tester can perform at least 950 Insulation Tests with new alkaline batteries at room temperature.

These are standard tests of 1000V into 1MΩ with a duty cycle of 5 seconds on and 25 seconds off.

- * **Operating Temperature** : -10°C ~ 40°C
- * **Relative Humidity** : Maximum relative humidity 90% for temperature up to 28°C decreasing linearly to 50% relative humidity at 40°C.
- * **Pollution degree** : 2
- * **IP Rating Design** : IP40
- * **Storage Temperature** : -20°C ~ 60°C, < 80% R.H. (with battery removed)
- * **Altitude** : Operating below 2000m
- * **Temperature Coefficient** : Nominal 0.15 x (specified accuracy)/ °C @(-10°C~18°C or 28°C~40°C), or otherwise specified.
- * **Low Battery**: approx. 4.6V
- * **APO Timing**: Idle for 20 minutes
- * **APO Consumption**: 50μA typical
- * **Auto or Manual-ranging mode.**
- * **Auto Power Off.**
- * **Dimension**: 208(L) X 103(W) X 64.5(H) mm with holster
- * **Weight**: 635 gm with holster.

SAFETY :

- * **Safety** : Double insulation per IEC/UL/EN61010-1 Ed. 3.0, IEC/EN61010-2-030 Ed. 1.0, IEC/EN61010-2-033 Ed. 1.0, IEC/UL/EN61010-031 Ed. 1.1 and CAN/CSA-C22.2 No. 61010-1-12 Ed. 3.0 to CAT III 1000 V AC & DC and CAT IV 600V AC & DC.
- * **Compliance to IEC/EN61557; 2007 (per CE requirements, not certified by UL or ETL)** : IEC/EN61557-1, IEC/EN61557-2 & IEC/EN61557-4 where applicable.
- * **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 + 25 digits.
Performance above 3V/m is not specified.
- * **Transient Protection** : 8KV(1.2/50μS Surge)
- * **Overload Protections** :
Earth Continuity Test : 0.25A/1KV, IR 30kA or better
V : 1100Vrms
mV, Ω & Others : 1000 Vrms

ACCESSORIES : Test probe pair, BRP21S2-C Remote probe, Alligator clip pair, Holster, User manual & Carrying Case.

OPTIONAL ACCESSORIES : Magnetic hanger.

23 FUNCTIONS 73 RANGES

MODEL KM 877



Preliminary Data

ELECTRICAL SPECIFICATIONS : KM 877

Accuracy is $\pm$ (% of reading digits + number of digits) or otherwise specified, at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ & less than 80% relative humidity.

True RMS voltage & current accuracies are specified from 1 % to 100 % of range or otherwise specified.

Maximum Crest Factor < 1.70:1 at full scale & < 3.4:1 at half scale, and with frequency components fall within the specified frequency bandwidth for non-sinusoidal waveforms.

DC VOLTAGE

Range	Resolution	Accuracy
6.000 V	1 mV	$\pm(0.2\%\text{rdg} + 3\text{dgt})$
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	$\pm(0.3\%\text{rdg} + 3\text{dgt})$

Input Impedance : 10M Ω , 110pF nominal

VFD AC VOLTAGE

Range	Resolution	Accuracy ¹⁾
10Hz ~ 45Hz		
600.0 V	100 mV	$\pm(4\%\text{rdg} + 5\text{dgt})$
45Hz ~ 200Hz		
600.0 V	100 mV	$\pm(2\%\text{rdg} + 5\text{dgt})$
200Hz ~ 440Hz		
600.0 V	100 mV	$\pm(7\%\text{rdg} + 5\text{dgt})$ ²⁾

¹⁾ Unspecified for fundamental frequency > 440Hz

²⁾ Accuracy linearly decreases from 2% + 5d @ 200Hz to 7% + 5d @ 440Hz

Input impedance : 10M Ω , 110pF nominal.

EARTH CONTINUITY TEST

Range	Test Current	Accuracy	Measuring Range ¹⁾
2.000 Ω	> 200 mA	$\pm(1.5\%\text{rdg} + 3\text{dgt})$	0.015 Ω ~ 2.199 Ω
20.00 Ω	> 90 mA		0.15 Ω ~ 21.99 Ω

Open Circuit Voltage : > 4VDC

Live Circuit Detector : Inhibit test if terminal voltage > 2V prior to initialization of test.

¹⁾ Specified measuring range at percentage operating uncertainty B(%)
 $\leq \pm 30\%$ per IEC/EN61557-4 requirements.

INSULATION RESISTANCE

Test Voltage ¹⁾	Range	Test Current	Accuracy
50 V	3.000M Ω , 30.00M Ω , 55.0M Ω	1mA @50k Ω	$\pm(1.5\%\text{rdg} + 5\text{dgt})$
100 V	3.000M Ω , 30.00M Ω , 110.0M Ω	1mA @100k Ω	
250 V	3.000M Ω , 30.00M Ω , 275.0M Ω	1mA @250k Ω	
500 V	3.000M Ω , 30.00M Ω , 300.0M Ω , 550.0M Ω	1mA @500k Ω	
1000 V	3.000M Ω , 30.00M Ω , 300.0M Ω	1mA @1M Ω	$\pm(1.5\%\text{rdg} + 5\text{dgt})$
	3000M Ω		$\pm(2.0\%\text{rdg} + 5\text{dgt})$
	25.0G Ω		$\pm(10\%\text{rdg} + 5\text{dgt})$

¹⁾ Actual output voltage : 100% ~ 120% of Test Voltage

Live Circuit Detector : Inhibit test and display voltage reading instead if terminal voltage > 30V prior to initialization of test.

Display Voltage Accuracy : DCV : 1.5% + 5d ;

ACV : 3.0% + 5d @50Hz ~60Hz (unspecified @ >600Vac)

Specified measuring range is 0.020M Ω ...25.0G Ω for percentage operating uncertainty B(%)
 $\leq \pm 30\%$ per IEC/EN61557-2 requirements.

DIODE TESTER

Range	Resolution	Accuracy ¹⁾
2.000 V	1 mV	$\pm(1.5\%\text{rdg} + 4\text{dgt})$

Test Current : 0.5mA typically

Open Circuit Voltage : < 2.8VDC typically

AC VOLTAGE

Range	Resolution	Accuracy
50Hz ~ 60Hz		
6.000 V	1 mV	±(1%rdg + 3dgts)
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	
60Hz ~ 1kHz		
6.000 V	1 mV	±(2%rdg + 3dgts)
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	
1kHz ~ 3kHz		
6.000 V	1 mV	±(2%rdg + 3dgts)
60.00 V	10 mV	
600.0 V	100 mV	Unspecified
1000 V	1 V	
3kHz ~ 5kHz		
6.000 V	1 mV	±(4%rdg + 5dgts)
60.00 V	10 mV	
600.0 V	100 mV	Unspecified
1000 V	1 V	

Input Impedance : 10M Ω , 110pF nominal

RESISTANCE

Range	Resolution	Accuracy
600.0 Ω	100 m Ω	$\pm(0.9\%\text{rdg} + 5\text{dgt})$
6.000k Ω	1 Ω	$\pm(0.9\%\text{rdg} + 2\text{dgt})$
60.00k Ω	10 Ω	
600.0k Ω	100 Ω	
6.000M Ω	1 k Ω	$\pm(1.2\%\text{rdg} + 3\text{dgt})$
60.00M Ω	10 k Ω	$\pm(3.0\%\text{rdg} + 6\text{dgt})$

Open Circuit Voltage : < 1.5VDC typical

~ Hz Line Level Frequency

Function	Range	Sensitivity (Sine RMS)	Range
6	V	0.6 V	10Hz ~ 20kHz
60	V	6 V	
600	V	60 V	10Hz ~ 3kHz
1000	V	600 V	
VFD 600	V	60~240 V ¹⁾	10Hz ~ 440Hz

Accuracy : $\pm(0.02\%\text{rdg} + 4\text{dgt})$

¹⁾ VFD sensitivity linearly decreases from 10% F.S. @200Hz to 40% F.S. @440Hz.

AUDIBLE CONTINUITY TESTER

Audible Threshold	Between 20 Ω and 200 Ω
Response Time	< 30ms approx.

All Specifications are subject to change without prior notice