

6000 COUNTS TRUE RMS DIGITAL INSULATION MULTIMETER MODEL KM 887

SPECIAL FEATURES :

- VFD V & Hz readings.
- LCD Backlight Display
- Record MAX/MIN regular readings.
- Display Hold Function.
- Dual Display +Hz readings.
- Relative zero mode.
- LOCK-Test mode for Insulation Resistance
- BeepJack™ audible & visible input warning.
- High resolution 60.00mV & 60.00Ω ranges.

**CAT III 1000V
CAT IV 600V**

**8KV
Transient
Protection**

GENERAL SPECIFICATIONS :

- * **DC Basic Accuracy** : 0.2%
- * **Sensing** : AC, True RMS
- * **Display** : 3-5/6 digits 6000 Counts Backlight LCD Display.
- * **Polarity** : Automatic
- * **Update Rate** : 5 per second nominal
- * **61 Segments Bar Graph** : 40 per second max.
- * **Operating Temperature** : -10°C ~ 50°C
- * **Relative Humidity** : Maximum relative humidity 90% for temperature up to 28°C decreasing linearly to 50% relative humidity at 50°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 0.1 x (specified accuracy)/ °C @(-10°C~18°C or 28°C~50°C), or otherwise specified.
- * **Low Battery**: approx. 4.6V
- * **APO Timing**: Idle for 20 minutes
- * **APO Consumption**: 20μA typical
- * **Auto Power Off**.
- * **Power Supply**: Four AA Alkaline batteries
- * **Power Consumption**: 6.5mA typical except the followings : VFD ACV^{Hz} : 8mA

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.

- * **Dimension**: Approx. 208(L) X 103(W) X 64.5(H) mm with holster
- * **Weight**: Approx. 635 gm with holster.

SAFETY :

- * **Safety** : Double insulation per IEC / UL / EN61010-1 Ed. 3.0, IEC / UL / EN61010-2-030 Ed. 1.0, IEC / UL / EN61010-2-033 Ed. 1.0, IEC / UL / EN61010-031 Ed. 1.1 & the corresponding CAN / CSA-C22.2 regulations to Measurement CAT III 1000V AC & DC & 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 .
- * **Overload Protections** :
Insulation Resistance, μA & mA : 0.4A/1KV, IR 30kA, F Fuse, or better
A : 11A/1KV, IR 20kA, F Fuse or better
V : 1100Vrms
mV, Ω & Others : 1000 Vrms
- * **Transient Protection** : 8KV(1.2/50μS Surge)
- * **E.M.C.** : Meets EN61326-1:2013
In an RF field of 3V/m:
Total Accuracy = Specified Accuracy + 25 digits.
Performance above 3V/m is not specified.

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

OPTIONAL ACCESSORIES : BKB32 banana plug to type-K socket plug adaptor, Magnetic hanger.



ELECTRICAL SPECIFICATIONS : KM 887

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 < 1.8:1 at full scale & < 3.6:1 at half scale, and with frequency components fall within the specified frequency bandwidth for non-sinusoidal waveforms.

DC VOLTAGE

Range	Resolution	Accuracy
60.00 mV	0.01 mV	$\pm(0.2\%\text{rdg} + 3\text{dgts})$
600.0 mV	0.1 mV	$\pm(0.1\%\text{rdg} + 2\text{dgts})$
6.000 V	1 mV	
60.00 V	10 mV	
600.0 V	100 mV	$\pm(0.2\%\text{rdg} + 3\text{dgts})$
1000 V	1 V	

Input Impedance : 10M Ω , 110pF nominal

VFD AC VOLTAGE

Range	Resolution	Accuracy ¹⁾
10Hz ~ 45Hz		
600.0 V	100 mV	$\pm(4\%\text{rdg} + 5\text{dgts})$
45Hz ~ 200Hz		
600.0 V	100 mV	$\pm(2.5\%\text{rdg} + 5\text{dgts})$
200Hz ~ 440Hz		
600.0 V	100 mV	$\pm(9.0\%\text{rdg} + 5\text{dgts})^{2)}$

Input impedance : 10M Ω , 110pF nominal.

¹⁾ Unspecified for fundamental frequency > 440Hz

²⁾ Accuracy linearly decreases from 2.5% + 5d @ 200Hz to 9.0% + 5d @ 440Hz

RESISTANCE

Range ¹⁾	Resolution	Accuracy
60.00 $\Omega^{2)}$	0.01 Ω	$\pm(0.5\%\text{rdg} + 5\text{dgts})$
600.0 Ω	100 m Ω	$\pm(0.2\text{rdg} + 3\text{dgts})$
6.000k Ω	1 Ω	$\pm(0.2\%\text{rdg} + 2\text{dgts})$
60.00k Ω	10 Ω	
600.0k Ω	100 Ω	$\pm(0.3\%\text{rdg} + 2\text{dgts})$
6.000M $\Omega^{3)}$	1 k Ω	$\pm(1\%\text{rdg} + 3\text{dgts})$
60.00M $\Omega^{4)}$	10 k Ω	$\pm(1.5\%\text{rdg} + 6\text{dgts})^{5) 6)}$

¹⁾ Open Circuit Voltage : 1.7VDC typical

²⁾ Specified assumes input lead resistance been offset by REL Δ or Shrt (short) feature.

³⁾ Constant Test Current : 0.2 μ A typical

⁴⁾ Constant Test Current : 0.2 μ A typical

⁵⁾ Add 1% @ >20M Ω

⁶⁾ Add 2% @ operation temperature >35 $^{\circ}\text{C}$

AUDIBLE CONTINUITY TESTER

Audible Threshold	Between 20 Ω and 350 Ω
Response Time	< 30ms approx.

DIODE TESTER

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

Test Current : 0.4mA typically

Open Circuit Voltage : < 2.8VDC typically

AC VOLTAGE

Range	Resolution	Accuracy
50Hz ~ 60Hz		
60.00 mV	0.01 mV	±(0.7%rdg + 4dgts)
600.0 mV	0.1 mV	
6.000 V	1 mV	
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	
40Hz ~ 1kHz		
60.00 mV	0.01 mV	±(1.3%rdg + 4dgts)
600.0 mV	0.1 mV	
6.000 V	1 mV	
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	±(2%rdg + 4dgts)
1kHz ~ 5kHz		
60.00 mV	0.01 mV	±(2%rdg + 4dgts) ¹⁾
600.0 mV	0.1 mV	
6.000 V	1 mV	
60.00 V	10 mV	
600.0 V	100 mV	
1000 V	1 V	Unspecified
5kHz ~ 20kHz ²⁾		
60.00 mV	0.01 mV	Unspecified
600.0 mV	0.1 mV	±(2%rdg + 20dgts)
6.000 V	1 mV	
60.00 V	10 mV	
600.0 V	100 mV	Unspecified
1000 V	1 V	Unspecified

Input Impedance : 10M Ω , 110pF nominal

¹⁾ Add 20d @ >80% of range

²⁾ Unspecified @ <5% of range

RECORD MODE

This mode records standard measurement Max & Min readings on most functions, Manual or Auto-ranging where available.

Nominal response & accuracy : Same as standard measurement.

ELECTRICAL SPECIFICATIONS : KM 887

DC CURRENT

Range	Resolution	Accuracy	Burden Voltage
600.0 $\mu\text{A}^{(1)}$	0.1 μA	$\pm(0.2\%\text{rdg} + 4\text{dgt})$	0.2mV / μA
6000 $\mu\text{A}^{(1)}$	1 μA	$\pm(0.2\%\text{rdg} + 2\text{dgt})$	
60.00 mA ⁽¹⁾	0.01 mA	$\pm(0.2\%\text{rdg} + 4\text{dgt})$	3mV / mA
600.0 mA ^(1/2)	0.1 mA	$\pm(0.3\%\text{rdg} + 3\text{dgt})$	
6.000 A	0.001 A	$\pm(0.5\%\text{rdg} + 4\text{dgt})$	30mV / A
10.00 A ⁽³⁾	0.01 A	$\pm(0.7\%\text{rdg} + 2\text{dgt})$	

¹⁾ μA / mA DC accuracies will be affected by extreme interior temperatures of the meter.
for rated accuracies, allow 6 to 20 minutes cool down interval after measuring A-currents of
3 to 10A continuously.

²⁾ $\leq 400\text{mA continuous}$: >400mA for < 1.1 hours on per > 20 minutes off

³⁾ 10A continuous upto ambient 35°C; < 15 mins on per >5 mins off @ 35°C~50°C.
>10A to 20A for < 30 second on per >5 mins off.

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

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

CAPACITANCE

Range	Resolution	Accuracy ¹⁾
2.000 $\mu\text{F}^{(2)}$	0.001 μF	$\pm(1.5\%\text{rdg} + 5\text{dgt})$
20.00 μF	0.01 μF	
200.0 μF	0.1 μF	
2000 μF	1 μF	
20.00 mF	0.01 mF	$\pm(5\%\text{rdg} + 5\text{dgt})$

¹⁾ Accuracies with film capacitor or better

²⁾ Specified from 0.200 μF

TEMPERATURE

Range	Accuracy ¹⁾²⁾
-40.0°C to 0.0°C	1% + 2°C
0.0°C to 50.0°C	2.2°C
50.0°C to 537.0°C	1% + 2°C
-40.0°F to 32.0°F	1% + 3.6°F
32.0°F to 122.0°F	4°F
122.0°F to 999.0°F	1% + 3.6°F

¹⁾ Accuracies assume meter interior has the same temperature of
the ambient (isothermal stage) for a correct junction voltage
compensation. Allow enough time to reach the isothermal
stage for a significant change of ambient temperature.
It can take up to an hour for changes > 5°C.

²⁾ Type-K thermocouple range & accuracy not included.

AC CURRENT

Range	Resolution	Accuracy	Burden Voltage
50Hz ~ 60Hz			
600.0 μA	0.1 μA	±(1%rdg + 3dgts)	0.2mV / μA
6000 μA	1 μA		
60.00 mA	0.01 mA		3mV / mA
600.0 mA ⁽¹⁾	0.1 mA		
6.000 A	0.001 A		30mV / A
10.00 A ⁽²⁾	0.01 A		
40Hz ~ 3kHz			
600.0 μA	0.1 μA	±(2%rdg + 3dgts)	0.2mV / μA
6000 μA	1 μA		
60.00 mA	0.01 mA		3mV / mA
600.0 mA ⁽¹⁾	0.1 mA		
6.000 A	0.001 A		30mV / A
10.00 A ⁽²⁾	0.01 A		
3kHz ~ 5kHz			
600.0 μA	0.1 μA	±(2%rdg + 5dgts)	0.2mV / μA
6000 μA	1 μA		
60.00 mA	0.01 mA		3mV / mA
600.0 mA ⁽¹⁾	0.1 mA		
6.000 A	0.001 A	Unspecified	30mV / A
10.00 A ⁽²⁾	0.01 A		

¹⁾ $\leq 400\text{mA continuous}$: >400mA for < 1.1 hours on per > 20 minutes off

²⁾ 10A continuous upto ambient 35°C; < 15 mins on per >5 mins off

@ 35°C~50°C. >10A to 20A for < 30 second on per >5 mins off.

~ Hz Line Level Frequency

Function Range	Sensitivity (Sine RMS)	Range
60 mV	4 mV	6Hz ~ 50kHz
600 mV	40 mV	10Hz ~ 100kHz
6 V	0.4 V	10Hz ~ 50kHz
60 V	4 V	
600 V	40 V	10Hz ~ 30kHz
1000 V	400 V	10Hz ~ 5kHz
VFD 600 V	40 V	10Hz ~ 440Hz
600 μA	40 μA	10Hz ~ 5kHz
6000 μA	400 μA	
60 mA	4 mA	
600 mA	40 mA	
6 A	0.6 A	10Hz ~ 3kHz
10 A	6 A	

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

All Specifications are subject to change without prior notice