



# 6,000 COUNTS DUAL DISPLAY DIGITAL MULTIMETER WITH VFD FEATURE

## 16 FUNCTIONS 56 RANGES

Model KM 711



### SPECIAL FEATURES :

- VFD-V & VFD-Hz in Dual Display
- 5msCREST-MAX capture mode (Peak Hold)
- Autoranging Relative -Zero mode
- Display Hold
- EF-Detection (NCV)
- Beep-Jack input warning
- Hz Line Level Frequency
- Hz Logic Level Frequency
- Diode Test
- Continuity Test

### GENERAL SPECIFICATIONS

- \* **Sensing** : Average sensing
- \* **Display** : 3-5/6 digits 6000 counts + 3 digits 999 counts dual LCD display
- \* **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
- \* **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** : 5.4mA typical
- \* **APO Timing** : Idle for 34 minutes
- \* **APO Consumption** : 10 A typical
- \* **Dimension** : 186(L) x 87(W) x 35.5(H) mm ; 198(L) x 97(W) x 55.5(H) mm with Holster.
- \* **Weight** : Approx. 340 gms; 430gm with holster.

### SAFETY :

- Double insulation per IEC61010-1 2<sup>nd</sup> Ed., EN61010-1 2<sup>nd</sup> Ed., UL61010-1 2<sup>nd</sup> Ed., & CAN/CSA C22.2 No. 61010.1-0.92 to Category II 1000V, CAT III 600V & CAT IV 300V AC & DC.
- **Transient Protection** : 6kV (1.2/50 s surge)
- **Terminals (to COM) Measurement Category** :  
 V : CAT II 1000V, CAT III 600V & CAT IV 300V AC & DC.  
 mA : CAT III 500Vac & 300Vdc.  
 A : CAT III 600Vac & 300Vdc.
- **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 + 100 dgts  
 Performance above 3V/m is not specified.
- **Overload Protection** :  
 A & mA : 0.63A/500Vac, IR 50kA or better, F Fuse  
 A : 10A/600Vac, IR 100kA or better, F Fuse  
 V : 1050 Vrms, 1450 Vpeak

### ACCESSORIES :

Test lead (pair), Holster, Battery installed,  
User Manual & Carrying case.

### OPTIONAL ACCESSORIES :

Current Clamp CA300,  
Current Clamp Adaptor CA500, CA1000, CA2000,  
High Voltage Probe PD-28.

All Specifications are subject to change without prior notice

# ELECTRICAL SPECIFICATIONS : KM 711

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

## DC VOLTAGE

Range	Resolution	Accuracy
60.00 mV	0.01 mV	$\pm(0.6\%rdg + 3dpts)$
600.0 mV	0.1 mV	$\pm(0.3\%rdg + 3dpts)$
6.000 V	0.001 V	$\pm(1.2\%rdg + 3dpts)$
60.00 V	0.01 V	$\pm(0.6\%rdg + 3dpts)$
600.0 V	0.1 V	$\pm(1.0\%rdg + 3dpts)$
1000 V	1 V	$\pm(1.0\%rdg + 3dpts)$

Input Impedance : 10M , 50pF nominal

## AC VOLTAGE

Range	Resolution	Accuracy
<b>50Hz ~ 500Hz</b>		
60.00 mV	0.01 mV	$\pm(1.3\%rdg + 5dpts)$
600.0 mV	0.1 mV	$\pm(1.0\%rdg + 5dpts)$
6.000 V	0.001 V	$\pm(2.0\%rdg + 5dpts)$
60.00 V	0.01 V	$\pm(1.3\%rdg + 5dpts)$
600.0 V	0.1 V	$\pm(2.0\%rdg + 5dpts)$
1000 V	1 V	$\pm(2.0\%rdg + 5dpts)$

Input Impedance : 10M , 50pF nominal

## RESISTANCE

Range	Resolution	Accuracy
600.0	0.1	$\pm(0.8\%rdg + 8dpts)$
6.000 K	0.001 K	$\pm(0.6\%rdg + 4dpts)$
60.00 K	0.01 K	
600.0 K	0.1 K	$\pm(1.5\%rdg + 5dpts)$
6.000 M	0.001 M	
60.00 M	0.01 M	$\pm(2.5\%rdg + 5dpts)$

Open Circuit Voltage : 0.45VDC typical.

## DC CURRENT

Range	Resolution	Accuracy	Burden Voltage
600.0 A	0.1 A	$\pm(1.2\%rdg + 5dpts)$	0.25mV/ A
6000 A	1 A	$\pm(1.0\%rdg + 5dpts)$	0.25mV/ A
60.00mA	0.01 mA	$\pm(2.0\%rdg + 5dpts)$	4.0mV/mA
600.0mA	0.1 mA	$\pm(1.5\%rdg + 3dpts)$	4.0mV/mA
6.000A	0.001 A	$\pm(1.5\%rdg + 5dpts)$	0.045V/A
9.00A <sup>1)</sup>	0.01 A <sup>1)</sup>	$\pm(1.2\%rdg + 3dpts)$	0.045V/A

<sup>1)</sup>9A continuous, >9A to 15A for 30 seconds max with 5 minutes cool down interval.

## AC CURRENT

Range	Resolution	Accuracy <sup>1)</sup>	Burden Voltage
<b>50Hz ~ 500Hz</b>			
600.0 A	0.1 A	$\pm(2.0\%rdg + 6dpts)$	0.25mV/ A
6000 A	1 A	$\pm(1.5\%rdg + 5dpts)$	0.25mV/ A
60.00mA	0.01 mA	$\pm(2.5\%rdg + 6dpts)$	4.0mV/mA
600.0mA	0.1 mA	$\pm(2.1\%rdg + 5dpts)$	4.0mV/mA
6.000A	0.001 A	$\pm(2.0\%rdg + 6dpts)$	0.045V/A
9.00A <sup>1)</sup>	0.01 A <sup>1)</sup>	$\pm(1.8\%rdg + 5dpts)$	0.045V/A

<sup>1)</sup>9A continuous, >9A to 15A for 30 seconds max with 5 minutes cool down interval.

## VFD-VOLTAGE (LPF-ACV)

Range	Resolution	Accuracy <sup>1)</sup>
<b>10.0Hz ~ 20.0Hz</b>		
6.000 V	0.001 V	$\pm(3.5\%rdg + 8dpts)$
60.00 V	0.01 V	
600.0 V	0.1 V	
1000 V	1 V	
<b>20.0Hz ~ 200Hz</b>		
6.000 V	0.001 V	$\pm(2.5\%rdg + 8dpts)$
60.00 V	0.01 V	
600.0 V	0.1 V	
1000 V	1 V	
<b>200Hz~400Hz<sup>2)</sup></b>		
6.000 V	0.001 V	$\pm(7.0\%rdg + 8dpts)$
60.00 V	0.01 V	
600.0 V	0.1 V	
1000 V	1 V	

Input Impedance : 10M , 50pF nominal

<sup>1)</sup> Not specified for fundamental frequency > 400Hz

<sup>2)</sup> Accuracy linearly decreases from 2.5% + 8d @ 200Hz to 7.0% + 8d @ 400Hz

## AUDIBLE CONTINUITY TESTER

Audible Threshold	Response Time
between 10 and 120	< 32ms

## Crest-MAX Capture (V & A only)

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

## DIODE TESTER

Range	Accuracy
1.000V	
Test Current (Typical)	0.2mA
Open Circuit Voltage	<1.8V DC typical

## LOGIC LEVEL FREQUENCY

Range	Accuracy
5.000Hz ~ 300.0KHz	0.2% + 4d

1) Accuracy is specified at <20VAC rms

Input Signal : Square wave with duty cycle > 40% & 70%, or Sine wave

Sensitivity :

5Hz-20Hz : > 1Vrms Sine wave;  
20Hz-300kHz : > 2.6Vp; or 1.9Vrms Sine wave.

## ~Hz LINE LEVEL FREQUENCY (DUAL DISPLAY)

AC Function Range	Sensitivity (Sine RMS)	Range
600 mV	0.1 V	10Hz ~ 100kHz
6 V	0.6 V	10Hz ~ 10kHz
60 V	6 V	10Hz ~ 50kHz
600 V	60 V	10Hz ~ 50kHz
1000 V	600 V	45Hz ~ 10kHz
VFD 6 V	0.6V ~ 2.1V <sup>1)</sup>	10Hz ~ 400Hz
VFD 60 V	6V ~ 21 V <sup>1)</sup>	10Hz ~ 400Hz
VFD 600 V	60V ~ 210V <sup>1)</sup>	10Hz ~ 400Hz
600 A	60 A	10Hz ~ 10kHz
6000 A	600 A	10Hz ~ 10kHz
60 mA	6 mA	10Hz ~ 10kHz
600 mA	60 mA	10Hz ~ 10kHz
6 A	0.6 A	20Hz ~ 3kHz
9 A	6 A	20Hz ~ 3kHz

Accuracy : 0.2% + 4d

<sup>1)</sup>VFD sensitivity linearly decreases from 10% F.S. @ 200Hz to 35% F.S. @ 400Hz

All specifications are subject to change without prior notice.

## CAPACITANCE

Range	Resolution	Accuracy <sup>1)</sup>
60.00nF <sup>2)</sup>	0.01 nF	$\pm(2.0\%rdg + 5dpts)$
600.0nF	0.1 nF	
6.000 F	0.001 F	$\pm(3.5\%rdg + 5dpts)$
60.00 F	0.01 F	
600.0 F <sup>3)</sup>	0.1 F	
3000 F <sup>3)</sup>	1 F	

<sup>1)</sup> Accuracies with film capacitor or better

<sup>2)</sup> Accuracy unspecified.

<sup>3)</sup> T. C. : 0.25 x specified accuracy / °C @ 0 - 18°C, 28 - 40°C

## NON-CONTACT EF-DETECTION

Typical Voltage	Bar-Graph Indication
20V (tolerance : 10V ~ 36V)	-
55V (tolerance : 23V ~ 83V)	--
110V (tolerance : 59V ~ 165V)	---
220V (tolerance : 124V ~ 330V)	----
440V (tolerance : 250V ~ 1000V)	-----

Indication : Bar-graph segments & audible beep tones proportional to the field strength

Detection Frequency : 50/60Hz

Detection Antenna : Top end of the meter 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.

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