

# 3<sup>3</sup>/<sub>4</sub> DIGITS DIGITAL CLAMPMETER + MULTIMETER MODEL - KM 111M / KM 112M

**Model KM 111M - Average Sensing - 18 FUNCTIONS 30 RANGES**  
**KM 112M - True RMS Sensing - 19 FUNCTIONS 30 RANGES**

## SPECIAL FEATURES :

- 600A AC Clamp-on + Multimeter ranges
- Ultra-slim jaws to access tight places
- Light weight & compact body to fit your hand
- Fully Auto-ranging for fast measurements
- Input Protection on all ranges
- Fast 30ms MAX Hold to capture in-rush currents
- Relative Zero mode
- Measures non-invasive ACA Frequency via clamp jaws
- Line level frequency measurements
- Data Hold function

**Transient protection**  
6.5KV (1.2/50 S surge)

## GENERAL SPECIFICATIONS :

- \* **Sensing** : Average sensing (KM 111M ); True RMS Sensing (KM 112M)
- \* **Jaw Opening Size** : 26mm
- \* **Basic Accuracy** : 0.5%
- \* **Display** : 3<sup>3</sup>/<sub>4</sub> Digits 4000 counts LCD display
- \* **Update Rate** : 3 per second nominal
- \* **Polarity** : Automatic
- \* **Low Battery** : Below approx. 2.4V.
- \* **Operating Temperature**: 0°C to 40°C.
- \* **Relative Humidity**: Maximum relative humidity 80% for temperature upto 31°C decreasing linearly to 50% relative humidity at 40°C
- \* **Altitude** : Operating below 2000m
- \* **Storage Temperature** : -20°C ~ 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** : Single 3V coin Battery IEC CR-2032.
- \* **Power Consumption** : 2.8mA typical, except 3.3mA typical for current function.
- \* **APO Timing** : Idle for 30 minutes.
- \* **APO Consumption** : 5 A typical.
- \* **Dimension** : 190(L) x 63(W) x 32(H)mm
- \* **Weight** : Approx. 139gm

## Safety :

- **Safety** : Meets IEC61010-2-032, EN61010-2-032, UL61010B-2-032, IEC61010-1 2nd Ed., EN61010-1 2nd Ed., UL61010-1 2nd Ed.  
Measurement Category : CAT III 600 Volts AC & DC.
- **Pollution degree** : 2
- **E.M.C.** : Meets EN61326 (1997, 1998/A1), EN61000-4-2 (1995, 2000/A2), and EN61000-4-3 (2002)  
In an RF field of 3 V/m :  
Capacitance function is not specified.  
Total Accuracy = specified Accuracy + 65 digits.  
Other function ranges :  
Total Accuracy = Specified Accuracy + 45 digits.  
Performance above 3V/m is not specified.
- **Overload Protections** :  
ACA Clamp-on jaws : AC 600A rms Continuous.  
+ / A & COM terminals : 600VDC / VAC rms.
- **Transient protection** : 6.5KV (1.2/50 S surge)
- Rugged Fire-retarded casing

## ACCESSORIES :

Test lead pair, Battery installed, User's Manual & Carrying case.



**CAT III**  
**600V**

**Ultra Slim jaw**



## ELECTRICAL SPECIFICATIONS : KM 111M / KM 112M

Accuracy is  $\pm$  (% reading digits + number of digits) or otherwise specified, at 23°C  $\pm$  5°C & less than 75% R.H. True RMS accuracy of ACV is specified from 5% to 100% of range, & ACA is specified from 10% to 100% of range, or otherwise specified. Maximum Crest Factor <1.75 : 1 at full scale & <3.5 : 1 at half scale, and with frequency spectrums, besides fundamentals, fall within the meter specified AC bandwidth for non-sinusoidal waveforms.

### AC CURRENT (CLAMP-ON) (50HZ / 60HZ)

| Range   | Resolution | Accuracy <sup>1)2)3)</sup> |
|---------|------------|----------------------------|
| 40.00 A | 10 mA      | $\pm(1.5\%rdg + 8dgts)$    |
| 400.0 A | 100 mA     |                            |
| 600 A   | 1 A        |                            |

<sup>1)</sup> Induced error from adjacent current-carrying conductor : 0.05/A

<sup>2)</sup> Specified accuracy is from 1% to 100% of range and for measurements made at the jaw center. When the conductor is not positioned at the jaw center, position errors introduced are:

Add 2% to specified accuracy for measurements made BEYOND jaw marking lines (toward jaw opening)

<sup>3)</sup> Add 8d to specified accuracy @ reading < 10% of range.

### AC VOLTAGE (50HZ ~ 500HZ)

| Range   | Resolution | Accuracy                |
|---------|------------|-------------------------|
| 4.000 V | 1 mV       | $\pm(1.5\%rdg + 5dgts)$ |
| 40.00 V | 10 mV      |                         |
| 400.0 V | 100 mV     |                         |
| 600 V   | 1 V        | $\pm(2.0\%rdg + 5dgts)$ |

CMRR : > 60dB @ DC to 60Hz, Rs=1k

Input Impedance : 10 M  $\Omega$  , 30pF Nominal.

### DC VOLTAGE

| Range    | Resolution  | Accuracy                |
|----------|-------------|-------------------------|
| 400.0 mV | 100 $\mu$ V | $\pm(0.3\%rdg + 4dgts)$ |
| 4.000 V  | 1 mV        | $\pm(0.5\%rdg + 3dgts)$ |
| 40.00 V  | 10 mV       |                         |
| 400.0 V  | 100 mV      |                         |
| 600 V    | 1 V         | $\pm(1.0\%rdg + 4dgts)$ |

NMRR : > 50dB @ 50/60Hz

CMRR : > 120dB @ DC, 50/60Hz; Rs=1K

Input impedance : 10M  $\Omega$  , 30pF nominal  
(1000M  $\Omega$  for 400.0mV range)

### DIODE TESTER

| Open Circuit Voltage | Test Current (typical) |
|----------------------|------------------------|
| < 1.6 VDC            | 0.25mA                 |

### MAX HOLD (WHERE APPLICABLE)

Specified ac  
> 25ms in duration.

### HZ FREQUENCY

| Function | Sensitivity (sine Rms) | Range        |
|----------|------------------------|--------------|
| 400.0 mV | 350 mV                 | 10Hz ~ 2KHz  |
| 4.000 V  | 1 V                    | 5Hz ~ 5KHz   |
| 40.00 V  | 32 V                   | 5Hz ~ 100KHz |
| 400.0 V  | 90 V                   | 5Hz ~ 10KHz  |
| 600 V    | 500 V                  | 5Hz ~ 5KHz   |
| 400.0 A  | 60 A                   | 40Hz ~ 400Hz |

Display counts : 5000

Best Resolution : 0.001Hz

Accuracy :  $\pm(0.5\%rdg + 4dgts)$

### RESISTANCE

| Range   | Resolution | Accuracy                |
|---------|------------|-------------------------|
| 400.0   | 0.1        | $\pm(0.8\%rdg + 6dgts)$ |
| 4.000 K | 1          | $\pm(0.6\%rdg + 4dgts)$ |
| 40.00 K | 10         |                         |
| 400.0 K | 100        |                         |
| 4.000 M | 1 k        | $\pm(1.0\%rdg + 4dgts)$ |
| 40.00 M | 10 k       | $\pm(2.0\%rdg + 4dgts)$ |

Open Circuit Voltage : 0.4VDC typical

### CAPACITANCE

| Range <sup>1)</sup> | Resolution | Accuracy <sup>2) 3)</sup> |
|---------------------|------------|---------------------------|
| 500.0 nF            | 100 pF     | $\pm(3.5\%rdg + 6dgts)$   |
| 5.000 F             | 1 nF       |                           |
| 50.00 F             | 10 nF      |                           |
| 500.0 F             | 100 nF     |                           |
| 3000 F              | 1 F        |                           |

<sup>1)</sup> Additional 50.00nF range accuracy is not specified.

<sup>2)</sup> Accuracies with film capacitor or better

<sup>3)</sup> Specified with battery voltage above 2.8V (approx. half full battery). Accuracy decreases gradually to 12% at low battery warning voltage of approx. 2.4V.

### AUDIBLE CONTINUITY TESTER

| Audible threshold | between 20 and 120 . |
|-------------------|----------------------|
|-------------------|----------------------|

All specifications are subject to change without prior notice.

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