KUSAM-MECO®

An ISO 9001:2015 Company

1000A AC TRUE RMS DIGITAL CLAMP METER MODEL- KM-4000

THINK SAFETY
THINK KUSAM-MECO®

KM-4000 is a 6000-count digital clamp meter with auto range, large LCD, True RMS, autoscale memory, and NCV functions. They conform to CAT III 1000V/ CAT IV 600V safety rating and certified by CE/ETL. KM-4000 has LoZ mode for eliminating 'ghost 'voltage, LPF ACV function for measuring INV and VFD voltage, and Inrush current mode for capturing transient current. The KM-4000 also features high-precision temperature measurement with 0.1 °C resolution, and can be equipped with a flexible current probe to extend the AC current measurement range to 3000A.

25 FUNCTIONS 23 RANGES



Preliminary Data

■ FEATURES:

- True RMS
- Inrush current
- Flashlight
- LPF ACV
- NCV (audible/visual alarm)
- Backlight Disply
- LoZ ACV
- Data hold
- 31 Analog Bar Graph
- Max/Min/ relative mode
- Diode/ Continuity test
- Optional Flex Clamp (3000A) (KM-CCT3K).

CAT III 1000
CAT IV 600V

■ GENERAL SPECIFICATIONS :

- **Sensing :** AC True RMS
- **Sensor type:** Coil induction
- **Display :** 6000 Counts display
- **Display Size :** 43 x 45mm
- **Jaw opening:** 42mm
- Polaritydisplay : Auto
- **Sampling rate**: 3 times/s
- **Overload display:** "OL" or "-OL"
- **Low battery indication:** " " is displayed.
- **Test position error :** If the source under test is not placed at the
- **Power Supply :** 1.5V AAA x 3 batteries.
- **Weight :** Approx. 492gms.
- **Dimension :** Approx.272(W) x 81(H) x 43.5(D)mm

■ **Accessories :** User Manual, Test leads pair, K-Type Thermocouple, battery & carrying case.

■ **Optional Accessories :** Flex Clamp (3000A) (KM-CCT3K).



Inrush current capture

ELECTRICAL SPECIFICATIONS : KM 4000

AC Current (Ã)

Range	Resolution	Accuracy
60.00A	0.01A	± (2.0%+5)
600.0A	0.1A	
1000A	1A	

- **Overload Protection :** 1000V DC/AC
- **Display:** True RMS
- **Accuracy :** 5%~100% of range. Open circuit allows least significant digit ⩽10.
- **Frequency response:** 50Hz~60Hz **(KM 4000)**
- When the measured current is above 500A, the continuous measurement time cannot exceed 60s **(KM 4000)**.
- The AC crest factor will reach 3.0 at 3000 counts while only reach ⩽1.5 at 6000 counts. The additional error should be added according to the crest factor of a non-sinusoidal wave are :
  a) Add 4% when crest factor is 1~2
  b) Add 5% when crest factor is 2~2.5
  c) Add 7% when crest factor is 2.5~3
- For current frequency monitoring, the resolution is 0.1Hz and accuracy is ± (0.1%+3). The input amplitude should be ⩾10% of range.

Inrush Current (Ã)

Function	Range	Resolution	Accuracy
Inrush current (ACA)	60.00A	0.01A	± (10%+10)
	600.0A	0.1A	
	1000A	1A	
Inrush current (flexible current probe)	30.00A	0.01A	± (10%+10)
	300.0A	0.1A	
	3000A	1A	

Measurement time : 100ms.
Overload Protection :
Inrush Current (ACA) :1000A
Inrush Current (Flexible Current Probe) :3000A

AC Voltage (Ṽ)

Range	Resolution	Accuracy
6.000V	0.001V	± (1.2%+3)
60.00V	0.01V	
600.0V	0.1V	± (1.0%+8)
1000V	1V	

- Overload Protection: 1000V
- Display: True RMS
- Accuracy : 5%~100% of range. Short circuit allows least significant digit ⩽5.
- Input impedance: About ⩾10MΩ
- Frequency response: 40Hz~400Hz
- The AC crest factor will reach 3.0 at 3000 counts while only reach ⩽1.5 at 6000 counts. The additional error should be added according to the crest factor of a non-sinusoidal wave as follows:

a) Add 4% when crest factor is 1~2
b) Add 5% when crest factor is 2~2.5
c) Add 7% when crest factor is 2.5~3

- For voltage frequency monitoring, the resolution is 0.1Hz and accuracy is ± (0.1%+3). The input amplitude should be ⩾10% of range.

All Specifications are subject to change without prior notice.

LPF ACV

Range	Resolution	Accuracy
600.0V	0.1V	± (2.0%+5)
1000V	1V	

- Overload Protection: 1000V
- Display: True RMS
- Accuracy : 5%~100% of range. Short circuit allows least significant digit ⩽5.
- Input impedance: About ⩾10MΩ
- Frequency response: 40Hz~200Hz
- The AC crest factor will reach 3.0 at 3000 counts while only reach ⩽1.5 at 6000 counts. The additional error should be added according to the crest factor of a non-sinusoidal wave as follows:

a) Add 4% when crest factor is 1~2
b) Add 5% when crest factor is 2~2.5
c) Add 7% when crest factor is 2.5~3

- The -3dB frequency of LPF is about 2.5kHz Only manual range for LPF ACV. Use the RANGE button to change the range.
- For voltage frequency monitoring, the resolution is 0.1Hz and accuracy is ± (0.1%+3). The input amplitude should be ⩾10% of range.

LoZ V~

Range	Resolution	Accuracy
600.0V	0.1V	± (2.0%+5)
1000V	1V	

- Overload Protection: 1000V
- Display: True RMS
- Accuracy : 5%~100% of range. Short circuit allows least significant digit ⩽5.
- Input impedance: About 2kΩ
- Frequency response: 40Hz~400Hz
- The AC crest factor will reach 3.0 at 3000 counts while only reach ⩽1.5 at 6000 counts. The additional error should be added according to the crest factor of a non-sinusoidal wave as follows:

a) Add 4% when crest factor is 1~2
b) Add 5% when crest factor is 2~2.5
c) Add 7% when crest factor is 2.5~3

- **When the measured voltage is above 220V, the continuous measurement time cannot exceed 30s and the rest interval should be more than 30s.**
- For voltage frequency monitoring, the resolution is 0.1Hz and accuracy is ± (0.1%+3). The input amplitude should be ⩾10% of range.

DC voltage ($\overline{\overline{V}}$)

Range	Resolution	Accuracy
600.0mV	0.1mV	± (0.8%+3)
6.000V	0.001V	± (0.5%+5)
60.00V	0.01V	
600.0V	0.1V	
1000V	1V	

Input impedance: ⩾10MΩ
Accuracy : 5%~100% of range. Short circuit allows least significant digit ⩽5.
Overload Protection : 1000V

Capacitance (⊣⊢)

Range	Resolution	Accuracy
60.00nF	0.01nF	± (4.0%+25)
600.0nF	0.1nF	± (4.0%+5)
6.000μF	0.001μF	
60.00μF	0.01μF	
600.0μF	0.1μF	
6.000mF	0.001mF	± (10.0%+9)
60.00mF	0.01mF	

Measurement result = displayed value – capacitance of open-circuit test leads
For capacitance ⩽1μF, it is recommended to use "REL" measurement mode.
Accuracy : 5%~100% of range
Overload Protection : 1000V

Resistance(Ω)

Range	Resolution	Accuracy
600.0Ω	0.1Ω	± (1.0%+3)
6.000kΩ	0.001kΩ	± (1.0%+2)
60.00kΩ	0.01kΩ	
600.0kΩ	0.1kΩ	
6.000MΩ	0.001MΩ	± (2.0%+8)
60.00MΩ	0.01MΩ	

Open circuit voltage: About 1V
Measurement result = displayed value – resistance of shorted test leads
Accuracy : 5%~100% of range
Overload Protection : 1000V

Temperature (°C/°F)

Range	Resolution	Accuracy
-40℃~300℃	0.1℃	±(1.0%+20)
300℃~1000℃	1℃	±(1.0%+2)
-40℉ ~572℉	0.2℉	±(1.0%+40)
573℉~1832℉	1℉	±(1.0%+4)

Only K-type thermocouple is applicable.
If the ambient temperature in the meter differs by ±5 °C, the accuracy can only be guaranteed after 1 hour of cool down.
Open circuit display: "OL"
Overload Protection : 1000V

Frequency / Duty Ratio (Hz%)

Range	Resolution	Accuracy
10Hz~1 MHZ	0.01Hz~1KHz	±(0.1%+3)
10.0%~90.0%	0.1%	±(2.6%+7)

Frequency input amplitude:
10Hz~100kHz: 250mVrms ⩽input amplitude ⩽20Vrms
100kHz~1MHz: 600mVrms ⩽input amplitude ⩽20Vrms

Duty ratio:
10%~90%: for square waves of 10Hz~1kHz
30%~70%: for square waves of 1kHz~10kHz
2Vpp⩽ input amplitude ⩽20Vpp

Continuity (•))

Range	Resolution	Accuracy
600.0Ω	0.1Ω	Open circuit: Resistance ⩾70Ω, no beep Well-connected circuit: Resistance ⩽30Ω, consecutive beeps

Open circuit voltage: About 1V
Resistance value is between 30Ω and 70Ω, the Buzzer maybe beep
Overload Protection : 1000V

Diode (▶|)

Range	Resolution	Accuracy
6.000V	0.001V	Open circuit voltage: About 3V Measurable PN junction: Forward voltage drop ⩽3V For silicon PN junction, the normal value is generally about 0.5~0.8V.

Overload Protection : 1000V

Non-contact AC voltage sensing (NCV)

Range	Accuracy	Overload Protection
NCV	Bring the NCV sensor (upper tip) close to a wire to start sensing. When no voltage is sensed, the LCD displays "EF". As the intensity of the detected voltage increases, more segments "—" will be displayed, and higher frequently occurs for buzzer and flashing LED.	1000V

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