KUSAM-MECO®
An ISO 9001:2015 Company

1000A AC TRUE RMS DIGITAL CLAMPMETER WITH VFD, EF-DETECTION, AMPTIP FUNCTION FOR LOW CURRENT MEASUREMENT & 3 PHASE ROTATION CHECK FUNCTION & 3 PHASE SEQUENCE INDICATION

THINK SAFETY
THINK KUSAM-MECO®

25 FUNCTIONS 32 RANGES

MODEL KM 086

NEW



Preliminary Data

SPECIAL FEATURES :

- **AmpTip™ low-current range calibrated at Jaw-tip for slim-conditions for accurate readings**
- **MAX/MIN/AVG Recording mode (Auto ranging)**
- **VFD-V & Hz for fundamental V/Hz of most Variable-Frequency-Drives**
- **Display Hold & Non-Contact EF-Detection (NCV)**
- **Back-lighted easy-to-read LCD display**
- **Fast 80ms Peak-RMS mode to capture in-rush currents**
- **Auto-ranging Relative mode with DC-Zero mode & 5ms Crest (Instantaneous Peak-Hold) mode**
- **3-Phase Rotation-R for MAINS supply (Probe contact)**
- **3-Phase Rotation-M (Hi-sensitivity mode) for Motors (Probe-contact)**

GENERAL SPECIFICATIONS :

- **Sensing :** AC; True RMS
- **Jaws Opening size & conductor diameter :** 51mm Max.
- **Display :** 3-5/6 digits 6000 counts
- **Update Rate :** 5 per second nominal
- **Polarity :** Automatic
- **Operating Temperature :** -10ºC to 50ºC
- **Relative Humidity :** Non condensing (≤ 10ºC) Maximum 90%R.H. at 10-30°C decreasing linearly to 75% R.H. at 30-40°C & 45% R.H. at 40-50°C
- **Altitude :** Operating below 2000m; Storage below 12000m
- **Storage Temperature :** -20°C ~ 60°C, < 80% R.H. (with battery removed)
- **Temperature Coefficient :** Nominal 0.10 x (specified accuracy) / °C @ (-10°C — 18°C or 28°C — 50°C), or otherwise specified
- **Power Supply :** Standard 1.5V AA Battery x 2
- **Power Consumption :** typical 4.3mA
- **Low Battery :** Below approx. 2.85V for Capacitance & Hz
  Below approx. 2.5V for other functions
- **APO timing :** Idle for 32 minutes
- **APO Consumption :** typical 5µA
- **Dimension :** 258(L) x 94(W) x 44(H)mm
- **Weight :** approx 312 gms.

SAFETY :

- **Safety :** Double insulation per UL/IEC/EN61010-1 Ed. 3.0, IEC/EN61010-2-033 Ed. 1.0, CAN/CSA C22.2 No. 61010-1 Ed. 3.0, IEC/EN61010-2-032 Ed. 3.0 & IEC/EN61010-031 Ed. 1.1
- **Measurement Category :** CAT III 1000V AND CAT IV 600V AC & DC
- **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) :
  ACA, DCA and DC+ACA Functions, in an RF field of 1V/m :
  Total Accuracy = Specified Accuracy + 60 digits at around 200MHz~350MHz
  DCµA and Ohm Functions, in an RF field of 1V/m : Total Accuracy = Specified Accuracy + 80 digits
  Other Functions, in an RF field of 3V/m : Total Accuracy = Specified Accuracy + 20 digits
- **Overload Protection :**
  Current & Hz functions via jaws : 1000ADC/AAC rms at <400Hz
  Voltage & 3-Phase Rotation functions via terminals : 1100VDC/ VAC rms
  Other functions via terminals : 1000VDC/ VAC rms
- **Pollution Degree :** 2
- **Transient Protection :** 8.0kV (1.2/50µs surge)
- **Rugged Fire retarded casing.**
- **LVD EN61010-2-032/EN61010-2-033 to CAT III 1000V & CAT IV 600V**

ACCESSORIES :

Test leads set, Users Manual, Soft carrying pouch, Bkp60 banana plug K-type thermocouple, Alligator Clip set, BKB32 banana plug to type-K socket plug adaptor (for optional purchase)

All Specifications are subject to change without prior notice

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ELECTRICAL SPECIFICATIONS : KM 086

Accuracy is ± (% of reading digits + number of digits) or otherwise specified, at 23°C ± 5°C
Maximum Crest Factor <2.5:1 at full scale & <5:1 at half scale or otherwise specified, and with frequency spectrum not exceeding the specified frequency bandwidth for non-sinusoidal waveforms.

AMPTIP™ CLAMP-ON AC CURRENT

Range	Resolution	Accuracy[1) 2) 3)]
40Hz ~ 100Hz		
60.00 A	0.1 A	±(1.5%rdg + 5dgts)
100Hz ~ 400Hz		
60.00 A	0.1 A	±(2.0%rdg + 5dgts)

1) **Induced error from adjacent current-carrying conductor :** < 0.02A/A
2) Specified with Relative Zero Δ mode applied to offset the non-zero residual readings, if any
3) Add 10d to the specified accuracy @ < 4A

REGULAR CLAMP-ON AC CURRENT

Range	Resolution	Accuracy[1) 2)]
40Hz ~ 100Hz		
60.00 A[3)]	0.01 A	±(1.8%rdg + 5dgts)
600.0 A	0.1 A	
1000 A[4)]	1 A	
100Hz ~ 400Hz		
60.00 A[3)]	0.01 A	±(2.2%rdg + 5dgts)
600.0 A	0.1 A	
1000 A[4)]	1 A	

1) **Induced error from adjacent current-carrying conductor :** < 0.05A/A
2) Specified accuracy is for measurements made at the jaw center. When the conductor is not positioned at the jaw center, add 2% to specified accuracy for position errors.
3) Add 10d to the specified accuracy @ < 6A
4) Maximum Crest Factor < 1.4 : 1 at full scale & < 2.8 : 1 at half scale

DCμA (Via Test Leads)

Range	Resolution	Accuracy
200.0 μA	0.1 μA	±(1.0%rdg + 5dgts)
2000 μA	0.1 μA	

Burden Voltage : 3.5mV/μA

HZ LINE LEVEL FREQUENCY

Function	Sensitivity[1)] (Sine RMS)	Range
600 V	50 V	5.00Hz~999.9Hz
1000 V		
60 A (AmpTip™)	20 A	40.00Hz~400.0Hz
60 A	20 A	40.00Hz~400.0Hz
600 A		
1000A		

Accuracy : ±(1%rdg + 5dgts)
1) DC-bias, if any, not more than 50% of Sine RMS.

TEMPERATURE

Range	Accuracy
-40.0ºC ~ 99.9ºC	1.0% ~ 0.8ºC
100.0ºC ~ 400ºC	1.0% ~ 1ºC
-40.0ºF ~ 211.8ºF	1.0% ~ 1.5ºF
212ºF ~ 752ºF	1.0% ~ 2ºF

K-type thermocouple range & accuracy not included

DIODE TESTER

Range	Resolution	Accuracy[1)]
2.000 V	1 mV	±(1.5%rdg + 5dgts)

Test Current : 0.3mA typically **Open Circuit Voltage :** < 3.5VDC typically

AC VOLTAGE (with Digital Low-Pass Filter)

Range	Resolution	Accuracy
50Hz ~ 60Hz		
600.0 V	0.1 V	±(0.8%rdg + 5dgts)
1000 V	1 V	
20Hz ~ 200Hz		
600.0 V	0.1 V	±(1.5%rdg + 5dgts)
1000 V	1 V	
200Hz ~ 400Hz		
600.0 V	0.1 V	±(10%rdg + 5dgts)
1000 V	1 V	

Input Impedance : 10MΩ, 100pF nominal

DC VOLTAGE

Range	Resolution	Accuracy
600.0 V	0.1 V	±(0.8%rdg + 5dgts)
1000 V	1 V	

Input Impedance : 10MΩ, 100pF nominal

RESISTANCE

Range	Resolution	Accuracy
600.0Ω	0.1 Ω	±(1.0%rdg + 5dgts)
6.000KΩ	1 Ω	
60.00KΩ	10 Ω	

Open Circuit Voltage : 1.0VDC typical

CAPACITANCE

Range	Resolution	Accuracy[1)]
200.0 μF	0.1 μF	±(2.0%rdg + 4dgts)
2500 μF	1 μF	

1) Accuracies with film capacitor or better

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 : Inside the top side of the stationary jaw
Probe-Contact EF-Detection : For more precise indication of live wires, such as distinguishing between live and ground connections, use one single probe to test via terminal COM for direct EF-Detection with best sensitivity.

PEAK-RMS (ACV & ACA)

Response	80ms to > 90%

CREST (PEAK-HOLD)

Accuracy	Add 250 digits to specified accuracy for changes > 5ms

AUDIBLE CONTINUITY TESTER

Audible Threshold	Between 10Ω and 250Ω
Response Time	32ms approx.