LIST OF PRODUCTS

* Digital Multimeter
* Digital AC & AC/DC Clampmeter
* AC Clamp Adaptor
* AC/DC Current Adaptor
* Transistorised Electronic Analog & Digital Insulation Resistance Testers
* Digital Sound Level Meter & Sound Level Calibrator
* Digital contact & Non-contact Type Tachometer
* Digital Non-contact (infrared) Thermometer
* Thermo Hygrometer
* Thermo Anemometer
* Wood Moisture Meter
* Distance Meter
* Digital Hand Held Temperature Indicators
* Digital Lux Meter
* Network Cable Tester
* Power Factor Regulator
* Maximum Demand Controller/Digital Power Meter

KUSAM-MECO®

An ISO 9001:2015 Company

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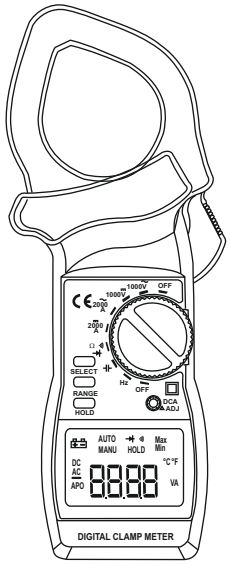
KUSAM-MECO®

An ISO 9001:2015 Company

2000A AC/DC DIGITAL CLAMP METER

MODEL - KM 2775



OPERATION MANUAL

KUSAM-MECO

TAKE MEASUREMENTS CAREFULLY AND YOU'LL SPARE YOUR METER AND YOURSELF, SOME PAIN

Nearly every electrical engineer has a hand held digital clamp meter (Tongtester). We sometimes take them for granted, until we damage them or "burn them out". If you incorrectly connect your clamp meter to a circuit, or if you have the clamp meter on wrong setting, you damage the meter and possibly hurt yourself. You can also get into trouble if you try to measure the voltage across a charged capacitor.

Clamp meter users frequently burn their meters by trying to measure current the same way as they measure voltage. Remember, you measure voltage across a circuit, and current through a circuit. When you use the current input, your clamp meter becomes a low impedance circuit element.

Even if you correctly insert your clamp meter in to the circuit, you can still damage your meter. Don't try to measure current in excess of your meter's capacity. Check the current capacity of the Clamp meter.

If you are measuring current in industrial environment to prevent excess current from flowing through your meter, always disconnect your test leads from the circuit under test whenever you change Clamp meter functions. Set your meter to the correct function, say current, and its highest range for the setting. If the reading is small, change the range to the next lower range till the reading can be read with the best possible accuracy. When measuring voltage, connect the test leads before your apply power to your circuit. To be safe, start by setting your meter to its highest range first.

KUSAM-MECO

INDEX PAGE

KUSAM-MECO

1. INTRODUCTION

NOTE

This meter has been designed and tested According to IEC Publication 348, Safety Requirements for Electronic Measuring Apparatus, IEC-1010 (En61010) and other safety standards. Follow all warnings to ensure safe operation.

WARNING

READ “SAFETY NOTES” (NEXT PAGE) BEFORE USING THE METER.

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2. SAFETY NOTES

Read the following safety information carefully before attempting to operate or service the Meter.

- Use the meter only as specified in this manual : Otherwise the protection provided by the meter may be inpaired.
- Always keep hands behind the meter barrier.
- Use extreme caution when clamping around uninstalled conductors or bus bars.
- Never clamp around any conductor carrying a voltage above 600V R. M. S.
- Rated environmental conditions :
  1. Indoor use.
  2. Installation category III.
  3. Pollution degree II.
  4. Altitude up to 2000 meter.
  5. Relative humidity 80% max.
  6. Ambient temperature 0-40°C.

Observe the international Electrical Symbols listed below :


Meter protected throughtout by double insulation or reinforced insulation.


Warning ! Risk of electric shock.


Caution ! Refer to this manual before using the meter.


Alternating current.


Earth (ground) terminal.


Application around and removal from hazardous live conductors is permitted.

3. FEATURES

- 4000 - Count LCD
- Full Automatic measurement
  - ⦿ Voltage measurement
  - ⦿ Current measurement
  - ⦿ Resistor measurement
  - ⦿ Capacitor measurement
  - ⦿ Frequency Counter
- Range change function.
- Data Hold Function freezes the reading.
- Continuity check.
- Diode measurement.
- Low battery indication
- Auto Power Off (APO) function.
- Safety design throughout with no exposed metal parts, shielded banana plugs and recessed input terminals.

CAT IV - Is for measurements performed at the source of the low voltage installation.

CAT III - Is for measurements performed in the building installaton.

CAT II - Is for measurement performed on circuits directly connected to the low voltage installation.

CAT I - Is for measurements performed on circuits not directly Connected to Mains.

4. GENERAL

- **Overload Protection :**

  ACV 1000V rms

  DCV 1000V

  Frequency & Ohm 500V rms
- **Conductor Size :** Approx 55mm max
- **Dimensions :** 260mm(L) X 95mm(W) x 43mm(D)
- **Weight :** Approx. 540g. (Battery included)
- **Power Source :** Standared 9V Battery.
- **Operating Principle :** Dual slope integration
- **Over range indication :** “OL” indicated.
- **Low Battery indication :** “ ⊞ ” sign appears on the display when the battery voltage drops below accurate operating level.
- **Response Time :** Approx. 1 second.
- **Sample Rate :** Approx. 2 times per second.
- **Temperature & Humidity for Guaranteed**
- **Accuracy :** -10°C to 50°C at < 80% max. Relative humidity.

- **Storage Temperature & Humidity :**

  -20°C to 60°C at < 80% max. relative humidity.

- **Battery Life :**

  Approx. 100 hours on continuous use.

  (Alkaline)

- **Accessories :**

  Test leads, Carrying Case, instruction manual, Battery (one standard 9V).

5. SPECIFICATIONS (All at 23°C±5°C, ≤80% R.H.)

AC Voltage

Range	Resolution	Accuracy (at 40-500Hz)
400 mV	0.1 mV	± (2.0% rdg + 3dgt)
4 V	1 mV	± (1.5% rdg + 3dgt)
40 V	10 mV	± (1.5% rdg + 3dgt)
400 V	100 mV	± (1.5% rdg + 3dgt)
1000 V	1 V	± (1.5% rdg + 3dgt)

* **Overload Protection :** 1000V AC RMS

* **Frequency Response :** 0~400mV at 40Hz~100Hz
4V~1000V at 40Hz ~ 1KHz

DC Voltage

Range	Resolution	Accuracy (at 40-500Hz)
400 mV	0.1 mV	± (1.0% rdg + 3dgt)
4 V	1 mV	± (1.0% rdg + 3dgt)
40 V	10 mV	± (1.0% rdg + 3dgt)
400 V	100 mV	± (1.0% rdg + 3dgt)
1000 V	1 V	± (1.0% rdg + 3dgt)

* **Overload Protection :** 1000V DC

AC Current

Range	Resolution	Accuracy (at 40-500Hz)
400 A	0.1 A	± (2.0% rdg + 4dgt)
2000 A	1 A	± (2.0% rdg + 4dgt)

* **Frequency Response :** 40Hz ~ 1KHz

DC Current

Range	Resolution	Accuracy (at 40-500Hz)
400 A	0.1 A	± (1.5% rdg + 4dgt)
2000 A	1 A	± (1.5% rdg + 4dgt)

Resistance :

Range	Resolution	Accuracy
400 Ω	0.1 Ω	± (1.5% rdg + 3dgt)
4 KΩ	1 Ω	± (1.5% rdg + 3dgt)
40 KΩ	10 Ω	± (1.5% rdg + 3dgt)
400 KΩ	100 Ω	± (1.5% rdg + 3dgt)
4 MΩ	1 KΩ	± (1.5% rdg + 3dgt)
40 MΩ	10 KΩ	± (2.0% rdg + 4dgt)

* **Overload Protection :** 500V AC RMS or 500V

Continuity Test

Range	Audible threshold
400 Ω	Less than 25Ω

* **Overload Protection :** 500V AC RMS or 500V DC

Diode Test

Range	Resolution	Accuracy
2V	1 mV	± (1.5%rdg + 3dgt)

Capacitor

Range	Resolution	Accuracy
4 nF (30p-4nF)	1 pF	± (3.0% rdg + 5dgt)
40 nF	10 pF	± (2.0% rdg + 5dgt)
400 nF	100 pF	± (2.0% rdg + 5dgt)
4 μF	1 nF	± (2.0% rdg + 5dgt)
40 μF	10 nF	± (2.5% rdg + 5dgt)
400 μF	100 nF	± (2.5% rdg + 5dgt)
4 mF	1 μF	± (2.5% rdg + 5dgt)

* **Overload Protection :** 500V AC RMS or 500V DC

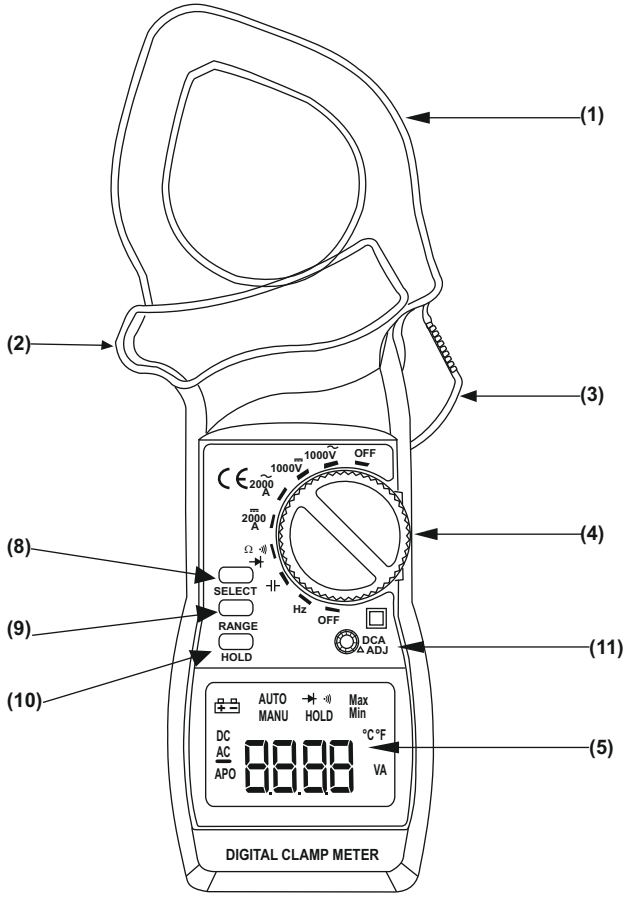
Frequency Counter

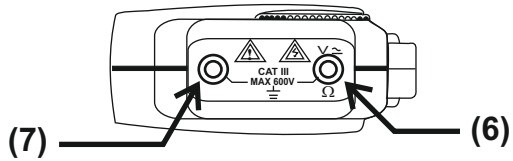
Range	Resolution	Accuracy
4 KHZ	1 Hz	± (0.3% rdg + 2dgt)
40 KHz	10 Hz	± (0.3% rdg + 2dgt)
400 KHz	100 Hz	± (0.3% rdg + 2dgt)
4 MHz	1 KHz	± (0.3% rdg + 2dgt)
40 MHz	10 KHz	± (0.5% rdg + 2dgt)

* **Overload Protection :** 500V AC RMS or 500V DC

* **Trigger level :** 0.2V

6. INSTRUMENT LAYOUT





(1) Transformer Jaws

Pick up the AC current or DC current flowing through the conductor. The "+" marking on the jaw indicates direction of DC current existing on the conductor being tested which follows forward and vertically with jaws, the reading shown on display is positive.

(2) Barrier

Provide a protective distance from hands to conductor.

(3) Jaw Trigger

Press the lever to open the transformer jaws.

When the lever is released, the jaws will close again.

(4) Function selector rotary switch

The rotary switch selects the function.

(5) LCD Display

The LCD display indicates the function mode, bar graph, annunciator, and measured value of a signal. Field effects 3¾ digit LCD with maximum reading of 3999.

(6) Volt / Ohm / Frequency Terminal

This is positive input terminal for Voltage/Ohm/ Frequency measurement. Use the RED test lead to connect.

(7) COM Terminal

This is the ground input terminal. Use the BLACK test lead to connect.

(8) Select Button

In the resistance + continuity + diode function Press the Select button to selects resistance, Continuity or diode function.

(9) Range Button

Press the Range button to selects the manual range mode and turns off the AUTO annunciator and turns on the manual annunciator and changes the full scale range. In manual range mode, each time press Range button (less than one second), the range increments and a new value is displayed. To exit the manual range mode and return to auto mode, press the RANGE button (more than one second).

(10) HOLD Button

Press the HOLD button (HOLD annunciator turns on) makes the meter stop updating the LCD display. This mode can be nested in most of the special modes. Enabling HOLD function in automatic mode makes the meter switch to manual mode, but the full scale range remains the same. HOLD function can be cancelled by changing the measurement mode, pressing Range, or push HOLD again.

(11) DCA zero adjust shaft

(12) Auto Power Off (APO)

The meter has a default auto power off function (APO annunciator turns on). If the meter idles for more than 10 minutes, the meter automatically turns the power off. When this happens, the state of the meter is saved. In order to disable auto power off function, power function, power on the meter when any of the push function, except for HOLD, is pressed down.

7. MEASUREMENT

Before proceeding with measurement, read the safety notes.

(1) Voltage Measurement

Insert the BLACK test lead to COM and the RED one to the other terminal.
Switch to ACV function for AC voltage or DCV function for DC Voltage.
Use the test lead tip to the circuit and read the reading of display directly.
If the readings exceed AC1000V (DC1000V), may be the reading value is wrong and it is dangerous. (Refer to the safety notes).

(2) Current Measurement

Switch to ACA function for AC Current or DCA function for DC Current.
If the initial reading of DCA is not zero, use the DCA zero adjust shaft to adjust.
Make sure that the test lead is not connecting to the terminal.
Press the jaw trigger to open the transformer jaws & clamp onto one conductor only. Read the display reading directly.

(3) Resistance Measurement

Switch to OHM range & make sure there is no power in the circuit being measured. Insert the BLACK lead to the COM and the RED one to another.
Connect the test leads to the circuit or device under test & read the display directly.

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(4) Continuity Check

Continuity check shares the same configuration with 400.0Ω manual resistance measurement mode, but with buzzer output to indicate continuity. The buzzer generates a 2KHz sound whenever the digit number less than 25Ω. Because the cycle time of measurement is only 50ms, the least significant digit will not display.

(5) Diode Measurement

Diode measurement mode shares the same configuration with 4.000V manual voltage measurement mode.

If the test circuit is open or the voltage drop between the two ports of the device (diode) under test are larger than 2V, the LCD panel will show “OL”.

The buzzer generates a 2KHz sound whenever the digit number is less than 0.25V. Because the cycle time of measurement is only 50ms, the least significant digit will not display.

(6) Capacitance Measurement

Switch to capacitance measurement mode. Insert the BLACK test lead to COM and the RED one to the other terminal.

Connect the test leads to the capacitance test and read the display directly.

In order to obtain an accurate reading, a capacitor must be discharged before measurement begins. The chip has a built-in discharge mode to automatically discharge the capacitor.

In discharge mode, the LCD displays DSC Discharging through the chip is quite slow. We recommend the user to discharge the Capacitor with same other apparatus.

(7) Frequency measurement

Switch to frequency measurement mode. Insert the BLACK test lead to COM and the RED one to the other terminal. Apply the test leads to the points across which the frequency is to be measured, and read the result directly from the display.

8. MAINTENANCE

Battery Replacement :

When low battery warning appears, chance a new battery as follows :

(1) Disconnect the test leads from the instrument and turn off power.

(2) Unscrew the battery cover and replace a new battery.

Cleaning and Storage :

WARNING

To avoid electrical shock or damage to the meter, do not get water inside the case.

Periodically wipe the case with a damp cloth and detergent. Do not use abrasives or solvents.
If the meter is not used for over 60 days, remove the battery for storage.

Due to our policy of constant improvement and development, we reserve the right to change specifications without notice.

KUSAM-MECO

MUMBAI

TEST CERTIFICATE

DIGITAL CLAMPMETER

This Test Certificate warrantees that the product has been inspected and tested in accordance with the published specifications.

The instrument has been calibrated by using equipment which has already been calibrated to standards traceable to national standards.

MODEL NO. KM 2775

SERIAL NO. _____

DATE: _____

ISO 9001:2015
REGISTERED

QC
KUSAM-MECO
PASS

KUSAM-MECO

WARRANTY

Each “KUSAM-MECO” product is warranted to be free from defects in material and workmanship under normal use & service. The warranty period is one year (12 months) and begins from the date of despatch of goods. In case any defect occurs in functioning of the instrument, under proper use, within the guarantee period, the same will be rectified by us free of charges, provided the to and fro freight charges are borne by you.

This warranty extends only to the original buyer or end-user customer of a “KUSAM-MECO” authorized dealer.

This warranty does not apply for damaged Ic’s, fuses, burnt pcb’s, disposable batteries, carrying case, test leads, or to any product which in “KUSAM-MECO’s” opinion, has been misused, altered, neglected, contaminated or damaged by accident or abnormal conditions of operation or handling.

“KUSAM-MECO” authorized dealer shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of “KUSAM-MECO”.

“KUSAM-MECO’s” warranty obligation is limited, at option, free of charge repair, or replacement of a defective product which is returned to a “KUSAM-MECO” authorized service center within the warranty period.

THIS WARRANTY IS BUYER’S SOLE AND EXCLUSIVE REMEDY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. “KUSAM-MECO” SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, INCLUDING LOSS OF DATA, ARISING FROM ANY CAUSE WHATSOEVER.

All transaction are subject to Mumbai Jurisdiction.