LIST OF PRODUCTS

* Digital Multimeter
* AC Clamp Adaptor
* Thermo Anemometer
* Distance Meter
* Network Cable Tester
* Earth Resistance Tester
* DC Power Supplies
* Calibrators
* Frequency Counter
* Phasing Sticks
* Waterproof Pen Testers
* EMF Detector
* Digital AC & AC/DC Clampmeter
* AC/DC Current Adaptor
* Thermo Hygrometer
* Digital Lux Meter
* Power Factor Regulator
* Digital Panel Meters
* High Voltage Detectors
* Gas Detectors
* Function Generator
* Battery Tester
* Solar Power Meter
* Discharge Rods(400 KV)
* Wood, Paper & Grain Moisture Meter
* Transistorised Electronic Analog & Digital Insulation Resistance Testers(upto 15 KV)
* Digital Sound Level Meter & Sound Level Calibrator
* Digital contact & Non-contact Type Tachometer
* Digital Non-contact (infrared) Thermometer/ Thermal Imaging Camera
* Maximum Demand Controller/Digital Power Meter
* Digital Hand Held Temperature Indicators

KUSAM-MECO®

OFFICE ADDRESS / SERVICE CENTER

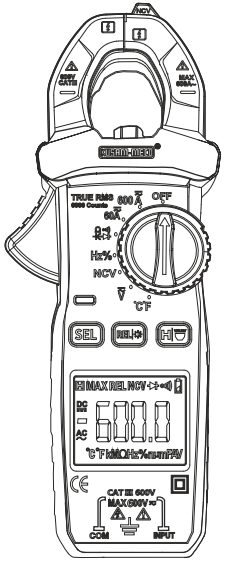
Shop No.18, 1st Floor, CIDCO Shopping Complex, Plot # 9, Sector-7,
Rajiv Gandhi Marg, Sanpada, Navi Mumbai-400705.
Tel : +91-9867488006, 9867675093
E-mail : sales@kusam-meco.co.in ; **Website :** www.kusamelectrical.com

KUSAM-MECO®

AN ISO 9001:2015 COMPANY

600A AC / DC TRMS DIGITAL CLAMPMETER

MODEL - KM 2732



Designed and Conforms to IEC61010-1 CAT.III 600V

OPERATION MANUAL

Introduction

This Digital AC/DC Current Clampmeter is a safe & reliable portable measuring instrument with stable performance. The function switch has one-handed operation for easy measurement. It has overload protection & low battery indicating, with clamp head frequency measurement function.

The circuit design of the clampmeter has intelligent IC Dual integral A/D convertor as the core, and is equipped with full range overload protection circuite. It can be used to test AC current, DC current, AC Voltage, DC Voltage, Frequency, Resistance, Temperature, Duty Cycle, Capacitance, measurement, Diode & Continuity test.

Safety Standards :⚠WARNING

In order to fully understand the function of the instrument & ensure safe operation, please read & follow carefully the instructions in this manual.

Special attention should be paid when using this instrument. Improper use may cause electric shock or damage to the instrument. In use, the usual safety procedures should be followed & effective safety precautions taken.

This instrument conforms to the general technical conditions of GB/T 13978-92 digital multi-purpose table GB4793.1-1995 (IEC-61010-1, IEC-61010-2-032) Electronic measuring

instrument safety full requirements, belong to secondary pollution, in line with CAT III 600V over pressure standard.

Follow the safe operation guide & use the instrument safely.

Precautions

- When using, the instrument, the correct function & range must be selected. It is forbidden to measure beyond the selected range.
- When the meter is connected to the measuring circuit, do not touch the metal part of the meter.
- When measuring, if the measured voltage is higher than 60V DC or 30V AC RMS, care should be taken to keep the hand behind the finger protector at all times.
- If the voltage between the measuring terminal & the ground exceeds 600VAC, do not measure the voltage.
- In manual range state, if the measured value is not known in advance, the highest range should be selected.
- The test leads should be removed from the circuit under test before turning the range switch to change the measuring function.
- Do not measure resistance capacitance diode & line off.
- Do not measure the capacitor to have polarity until the capacitor is fully discharged.
- Do not use this instrument near explosive gas, steam or dust.
- Discontinue use of the meter if any abnormality or malfunction is observed.

- The meter should not be used unless the meter bottom case & battery cover are fully fastened in place.
- Avoid storing or using instruments in direct sunlight, high temperature, & high humidity.
- Symbol indicating that the input voltage or current should not exceed the marked value. This is for protection.
- Internal wiring protected from damage.
- When wiring "⚠", connect the common test wire first, & then connect the live test wire. When removing the connection. Live test wire should be removed first.
- When the "🔋" symbol is displayed, the accuracy of measurement is not guaranteed, that is, the battery should be replaced in time.

Safety symbols

⚠	This symbol indicates the user must refer to the manual for further information.
⚡	Dangerous voltage
⧈	Double insulation
CAT III	Safety standards for overvoltage (installation) Level III and contamination Level 2 according to IEC-61010-1.
CE	In line with European Community (EU) standards
⏚	Earth ground

GENERAL SPECIFICATIONS :

- ✳ Automatic selection of measuring function & range.
- ✳ Full range overload protection
- ✳ The maximum allowable voltage between the measuring terminal & the ground is 600VDC or 600VAC
- ✳ **Working height :** Max 2000m
- ✳ **Display :** 3-5/6 Digit 6000 Counts Backlight LCD display
- ✳ **Jaw Opening :** Max. 26mm
- ✳ **Polarity Indication :** Automatic indicator '-' indicates negative polarity.
- ✳ **Hyperview display :** 'OL' or '-OL'.
- ✳ **Sampling time :** about 3 times / second
- ✳ **Unit display :** with function, unit display of electricity.
- ✳ **Temperature coefficient:** less than 0.1X accuracy / °C
- ✳ **Operating temperature :** 0°C ~ 40°C
- ✳ **Storage temperature :** -10°C ~ 50°C
- ✳ **Auto power off :** After 15 minutes.
- ✳ **Battery undervoltage indication :** LCD display "🔋" symbol.
- ✳ **Power :** 1.5V AAA x 2 battery.
- ✳ **Dimension :** Approx.185(L) x 71(W) x 35(H)mm.
- ✳ **Weight :** Approx. 200 gm (Including battery)
- ✳ **ACCESSORIES :** Test leads (pair), User's manual, Battery, Bead type Thermocouple upto 250°C & Carrying case .

- ✳ **SAFETY :** IEC61010-1, IEC61010-2-032 CAT III 600V.

ELECTRICAL SPECIFICATIONS

Accuracy is ± (% reading digits + number of digits) or otherwise specified, at 18°C ± 28°C; <75% R.H.

DC VOLTAGE

Range	Resolution	Accuracy
600 mV	0.1 mV	±(1.0% rdg + 2 dgts)
6 V	0.001 V	±(0.8% rdg + 3 dgts)
60 V	0.01 V	
600 V	0.1 V	

Input resistance : 10MΩ
The maximum input voltage : 600VDC

AC VOLTAGE (TRMS)

Range	Resolution	Accuracy
6 V	0.001 V	±(0.8% rdg + 3 dgts)
60 V	0.01 V	
600 V	0.1 V	

Input resistance : 10MΩ
Frequency Response : 40Hz ~ 400Hz
The maximum input voltage : 600VAC (effective value)

DC CURRENT

Range	Resolution	Accuracy
60 A	0.01 A	± (2.5% rdg + 8 dgts)
600 A	0.1 A	

Maximum Input Current : 600A DC

AC CURRENT

Range	Resolution	Accuracy
60 A	0.01 A	± (3.0% rdg + 6 dgts)
600 A	0.1 A	

Maximum Input Current : 600A AC
Frequency Range : 40Hz ~ 400Hz

RESISTANCE

Range	Resolution	Accuracy
600 Ω	0.1 Ω	±(0.8 %rdg + 3 dgts)
6 KΩ	0.001 kΩ	
60 KΩ	0.01 kΩ	
600 KΩ	0.1 kΩ	
6 MΩ	0.001MΩ	±(1.2 %rdg + 3 dgts)
60 MΩ	0.01 MΩ	

Overload Protection : 250V DC or AC
Open Circuit Voltage : Approx 0.4V

TEMPERATURE

Range	Resolution	Accuracy
-50 ~ 1300°C	1°C	± (1.0% rdg + 3dgts)
-58 ~ 2372°F	1°F	± (1.0% rdg + 3dgts)

Accuracy does not include the error of thermocouple probe.
Supplied Thermocouple has range upto 250°C only.
Overload Protection : 250V DC or AC

CAPACITANCE

Range	Resolution	Accuracy
6 nF	0.001 nF	±(4.5%rdg + 5 dgts)
600 nF	0.01 nF	
6 μF	0.1 nF	
60 μF	1 nF	
600 μF	10 nF	
6 mF	1 μF	
60 mF	10 μF	

Overload Protection : 250V DC or AC

Duty Cycle

Range	Resolution	Accuracy
0.1 ~ 99.9%	0.1%	± 3.0%

DUTY Ratio in Hz / % range
Frequency response : 10 ~ 10MHz
Input impedance : 10MΩ
Input Voltage Range : 0.2V AC
(as the measured frequency increases, lose the incoming voltage should increase accordingly)
Maximum input Voltage : 600V AC

BUZZER CONTINUITY

Function	Resolution	Description
•)))	0.1Ω	Built in buzzer will sound if Resistance is less than 50Ω

Overload Protection: 250V DC or AC

FREQUENCY

Frequency Measurement with function switch in Ampere position

Range	Resolution	Accuracy
99.99Hz	0.01Hz	± (1.5% rdg + 5 dgts)
999.9Hz	0.1kHz	
>1kHz	0.001kHz	Only reference

Measuring Range : 10Hz ~ 1kHz
Maximum input current : 600A
Input signal range : 4A AC (TRMS)
(As measured frequency increases, input current should also increase)

FREQUENCY

with function switch in Volt position

Range	Resolution	Accuracy
99.99Hz	0.01Hz	± (1.5% rdg + 5 dgts)
999.9Hz	0.1kHz	
>1kHz	0.001kHz	Only reference

Measuring Range : 10Hz ~ 1kHz Input impedance : 10MΩ
Input Voltage range : 0.2V AC (TRMS)
(As measured frequency increases, input the voltage should increase accordingly)
Maximum input Voltage : 600V AC

Hz% Switch

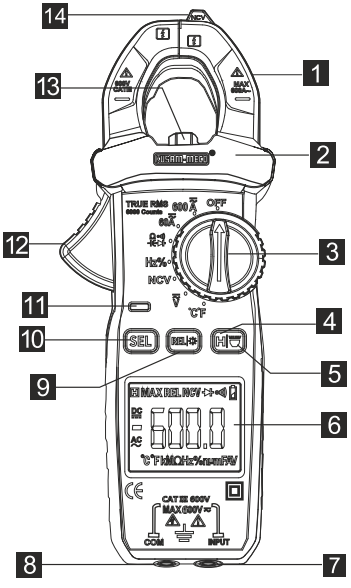
Range	Resolution	Accuracy
9.999Hz	0.001Hz	± (0.5% rdg + 2dgts)
99.99Hz	0.01Hz	
999.9Hz	0.1Hz	
9.999kHz	0.001kHz	
99.99kHz	0.01kHz	
999.9kHz	0.1kHz	
9.999MHz	0.001MHz	

DIODE TEST

Function	Range	Description
→|←	0.001V	Display approximate for ward voltage of diode

Overload : 250V DC or AC
Forward DC Current is about 1mA
Reverse DC Voltage is about 3.3V

PRODUCT DESCRIPTION



1 Clamp
2 Clamp head lamp
3 Function knob
4 hold button
5 Lighting button
6 LCD
7 Input Terminal
8 COM common end Terminal
9 Zero and backlight buttons
10 function button selection
11 caution light
12 trigger
13 floodlight
14 NCV

DESCRIPTION OF SWITCHES, BUTTONS & INPUT TERMINAL

NCV Button : Used to enable non-contact voltage measurement.

SEL Button : Used to switch between measurement functions.

HOLD Button : For reading hold.

LED / BL Button : Flashlight or backlight control.

OFF Position : Power off.

Input Jack : Voltage resistance frequency duty cycle, capacitance, diode line on & off input terminal.

COM Jack : Voltage resistance frequency duty ratio, capacitance, diode line off common terminal.

Range switch : Used to select functions & ranges.

Clamp Head : Used for measuring electrical current.

4. Operation Guide

4.1 Reading Hold

When measuring, if you need to hold the reading, you can press the "H" key to display the value of the monitor which will be locked. Press the "H" key again, can release the reading holding state.

4.2 Frequency and Duty cycle switching

4.2.1 Instrument in voltage and current range LCD displays the measured AC voltage and frequency of AC current signal.

4.2.2 The meter displays the duty cycle of the measured voltage and current signal at "Hz/ %".

4.3 Function Switching

4.3.1 In " ", press" SEL" key, will be in resistance, diode, on-off detection, capacitance Four gear cycle switch.

4.4 Back light source and tongs lighting

4.4.1 In the process of measurement, if the ambient light is too dark to make the reading difficult, you can press" ❄ "Button to turn on the backlight and turn it off automatically after 30 seconds.

4.4.2 Press the " ❄ " key during this period to turn off the backlight.

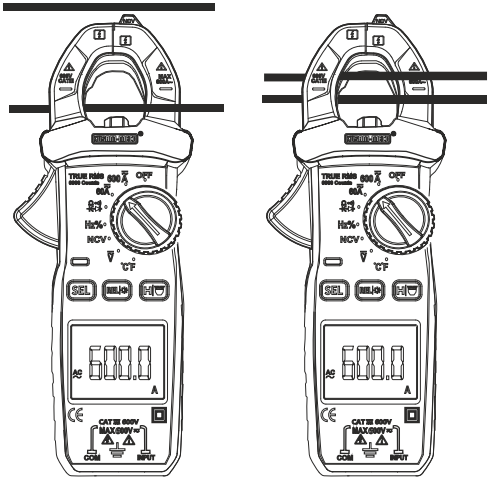
4.5 Automatic Shutdown

4.5.1 If there is no operation within 15 minutes after startup, the instrument will automatically shut down to save power. 1 minute before the shutdown, the buzzer has three prompts, and the shutdown begins after one long sound The state of sleep.

4.6 AC current measurement

⚠WARNING

Danger of electric shock.
Remove the marker from the meter before measuring with the current clamp.



proper operation **faulty operation**

4.6.1 Range switch in 60A or 600A range position. This is the AC current measurement state.

4.6.2 Hold the trigger, open the head of the clamp, and clamp a wire of the measured line into the clamp. Reading on the LCD monitor.

⚠WARNING

• Clamping two or more wires of the line under test at the same time cannot obtain correct measurement results.
• For accurate reading, the conductor under test should be centered on the current clamp as far as possible.
• " ⚠ " indicates that the maximum input current is 600A (relative) and the DC current is 600A

4.7 DC CURRENT MEASUREMENT

⚠WARNING

Danger of electric shock.
Remove the marker from the meter before measuring with the current clamp.

4.6.1 Range switch in 60A or 600A range position. This is the AC current measurement state.

4.6.2 Press "SEL" to enter the DC current measurement, and press "REL" to return the base number before measurement.

4.6.3 Hold the trigger, open the head of the clamp, and clamp a wire of the measured line into the clamp. Reading on the LCD monitor.

⚠WARNING

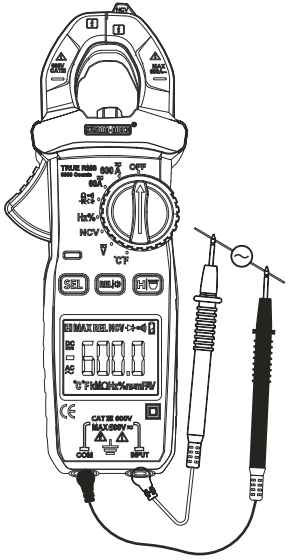
• Clamping two or more wires of the line under test at the same time will not give correct measurement results.
• For accurate reading, the conductor under test should be centered on the current clamp as far as possible.
• "⚠ " indicates that the maximum input current is 600A (relative) and the DC current is 600A.

4.8 AC VOLTAGE MEASUREMENT

⚠WARNING

Danger of electric shock.
Take extra care to avoid electric shock when measuring high voltages.
Do not input a voltage higher than AC600V RMS.

4.8.1 Inserting the black Test Lead into the COM jack Insert the red Test Lead into the INPUT jack.
4.8.2 The range switch is placed in V position of AC voltage.
4.8.3 Connect the Test Leads to both ends of the voltage source or load Take measurements and read them on the LCD.

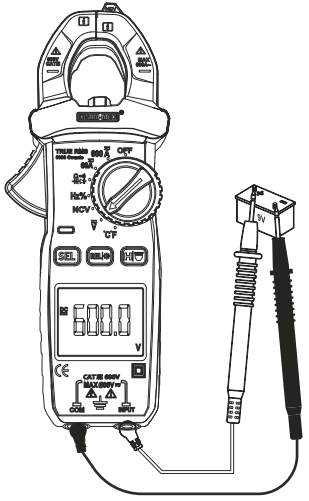


4.9 DC VOLTAGE MEASUREMENT

⚠WARNING

Danger of electric shock.
Take extra care to avoid electric shock when measuring high voltages.
Do not input voltage higher than DC600V.

4. 9 .1 Insert the black Test Lead into the COM jack and the Red Test Lead into the INPUT jack.
4. 9 .2 The range switch is placed in the voltage V, position. The DC Voltage selected by pressing SEL, button.
4. 9 .3 Connect the Test Lead to both ends of the voltage source or load for measurement.
4. 9 .4 Reading on the LCD. The polarity display will indicate the polarity of the end to which the red Test Lead is attached.



⚠WARNING

• In the mV range, with the input open, the meter may have a pulsating reading, which is Normal, this is due to the high sensitivity of the instrument, when the Test Lead is connected to the measured electricity In the load, you will get the true measurement.

• "" Indicates that the maximum input voltage is 600V DC.

• If the meter takes a reading greater than 600V DC, the meter will display "OL".

The alarm went "Wow!"

4.10 Frequency Measurement

4 10 1 Frequency Measurement with clamp(through A) :

⚠WARNING

Danger of electric shock.

Remove the Test Lead from the meter before measuring with the current clamp.

4.10.1.1 Range switch in the 6A/60A/ 600A range position.

4.10.1.2 Hold the trigger and open the head of the clamp, and clamp one conductor of the measured line into the clamp.

4.10.1.3 Press the "Hz/ %" key to switch to the frequency measurement state.

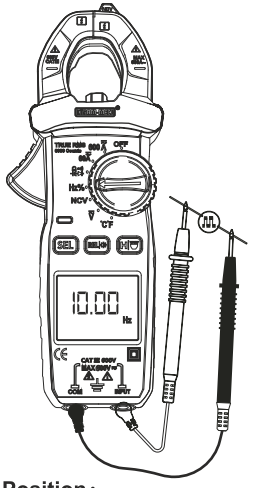
4 10 1 4 Reading on the LCD monitor.

⚠WARNING

• Clamping two or more wires of the line under test at the same time will not give correct measurement results.

• Frequency measurement range is 10Hz-1kh z, if the measured frequency is less than 10Hz, LCD Display "00.0"; It is possible to measure frequencies higher than 1kHz, but measurement is not guaranteed Accuracy.

• ": indicates that the maximum input current is 600A AC (valid).



4.10.2 Through V Position:

⚠WARNING

Danger of electric shock.

Take extra care to avoid electric shock when measuring high voltages.

Do not input voltage higher than AC600 V RMS.

4.10.2.1 Insert the black test lead into the COM jack and the red test lead into the INPUT jack.

4.10.2.2 Range switch in V position of AC voltage.

4.10.2.3 Press "Hz/ %" to switch to the frequency measurement state.

4.10.2.4 Connect the test lead to the signal source or both ends of the load for Volt measurement and read on the LCD.

⚠WARNING

• Frequency measurement range is 10HZ-10khz. If the measured frequency is lower than 10Hz, it will be displayed 00.0; It is possible to measure frequencies higher than 10kHz, but accuracy is not guaranteed.
• " ⚠ " Indicates that the maximum input voltage is 600V AC (valid value).

4.10.3 Through Hz/% :

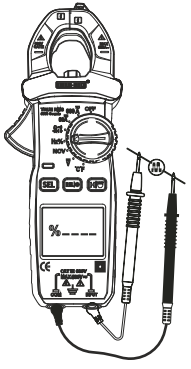
⚠WARNING
Danger of electric shock.
Take extra care to avoid electric shock when measuring high voltages.
Do not enter a voltage higher than the AC 250V RMS.

4.10.3.1 Insert the black test lead into the COM jack and the red test lead into the COM jack IN PUT.
4.10.3.2 Range switch in Hz/ DUTY position.
4.10.3.3 Connect the test lead to both ends of the signal source or load for measurement.
4 10 3 4 Reading on the LCD.

4.11 Duty Cycle Measurement

⚠WARNING
Danger of electric shock.
Take extra care to avoid electric shock when measuring high voltages.
Do not input voltage higher than AC250V RMS.

4.11.1 Insert the black test leadinto the COM jack and the red test lead into the INPUT jack.
4.11.2 Range switch in Hz/% position.



4.11.3.4 Connect the test lead to the signal source or both ends of the load for measurement and read on the LCD.

⚠WARNING
The measurement range of duty cycle is 10-99%. If the duty cycle measured is less than 10%, then"UL" is displayed.
If the duty ratio is higher than 99%, "OL" is displayed.
The frequency range of the input signal is 10-10 KHZ, and the signal above 10 KHZ is measured Duty cycle is possible, but measurement accuracy is not guaranteed.

4 12 Resistance Measurement

⚠WARNING

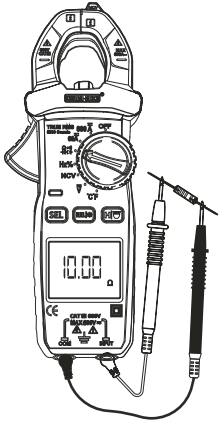
Danger of electric shock.
When measuring the impedance on the line, the circuit power supply should be off, the capacitor on the line Discharge completely.

4.12.1 Inserting the black test lead into the COM Jack
Insert the red test lead into the INPUT jack.
4.12.2 Range switch in " " position,
At this time, the meter is in resistance measurement state.
4.12.3 Connect the test leads to both ends of the resistance or line under test.Take measurements and read on the LCD display.

Note:

1) When the input is open, the LCD will display "OL".

2) If the resistance of the measured resistance is higher than 10MΩ,The meter may take a few seconds to stabilize the reading,This is normal for high resistance readings.



4.13 Temperature Measurement

Switch the rotary switch to ° C / ° F and insert the thermocouple probe into the input socket. The positive terminal is connected to the red input terminal. The main display displays the temperature measured in degrees Celsius, The secondary displays the Fahrenheit value of the measured temperature.

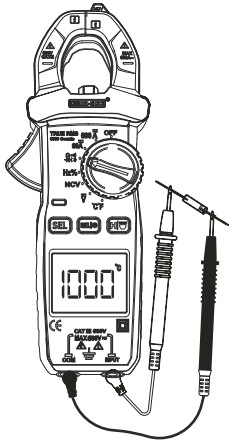
⚠WARNING

4.14 Diode test

4.14.1 Insert the black test lead into the COM jack and the red test lead into the I NPUT jack.
4. 14.2 Range switch in the " " cutting position. Press SEL button to switch to " " test state.
4.14.3 Connect the red test lead to the diode anode and the black test lead to the diode cathode for testing.
4 14 4 Reading on the LCD.

⚠WARNING

The meter shows an approximation of the diode forward voltage drop.
If the test lead is reversely connected or the test lead is open, the LCD displays "O·L".

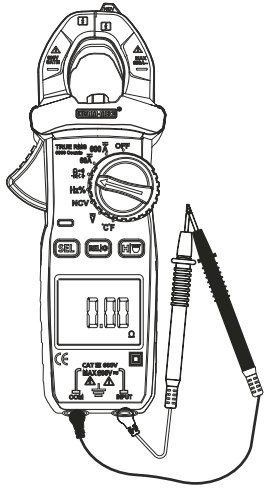


4.15 Continuity Test

⚠WARNING

Danger of electric shock.
When testing the circuit on and off, the power should be mentioned. The circuit power supply is disconnected and the capacitor on the circuit is fully discharged.

4.15.1 Insert the black test lead into the COM jack, red test lead is inserted into the INPUT jack.
4.15.2 Range switch in •)) position.
4.15.3 Press "SEL" button to switch to continuity state.
4.15.4 Connect the test leads to both ends of the line for measurement. If the resistance of the line under test is less than 50 ohms A buzzer inside the meter will sound.
"OL" is displayed if the test lead is open or the resistance of the line under test is greater than 600Ω.



4 16 Capacitance Measurement

⚠WARNING

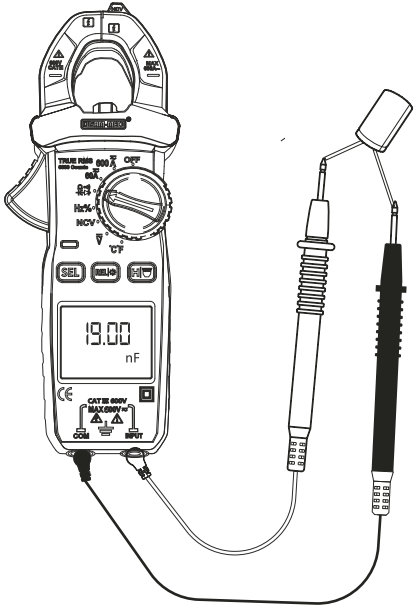
Danger of electric shock.
To avoid shock, discharge the capacitor completely before measuring it.

4.16.1 Insert the black test lead into the COM jack and the red test lead into the INPUT jack.
4.16.2 Range switch, is in the "•)) Ω" position. Press "SEL" button to switch to capacitance test state.

4.16.3 After the capacitor is completely discharged, connect the test leads to both ends of the measured capacitor for measurement.

4.16.4 Reading on the LCD.

Pay attention:
A certain amount of time is required to stabilize the reading when measuring large capacitance (60μF and 60mF).



5. MAINTENANCE

⇨ Please do not attempt to open the bottom case to adjust or repair the meter. Calibration or repair can only be done by a professional person.

⇨ Remove the test leads from the line under test before opening the bottom case of the meter or the battery cover.

⇨ To avoid an electric shock that may be caused by an incorrect reading, when the meter displays the "🔋" symbol,Replace the battery immediately.

⇨ Use a damp cloth and mild detergent to clean the instrument. Do not use abrasives or solvents.

⇨ When the instrument is not in use, the power should be turned OFF and the range switch should be turned off.

⇨ If the meter is not used for a long time, take out the battery to prevent battery leakage from damaging the meter.

5.1 Replacing a Battery

⚠**WARNING**

Before opening the battery cover of the meter, remove the test leads from the measuring circuit to avoid Danger of electric shock.

5.1.1 If the "🔋" symbol appears, it indicates that the battery should be replaced.
5.1.2 Unscrew and remove the fastening screw from the battery cover of the instrument.
5.1.3 Replace the old battery.
5.1.4 Install the battery cover as originally installed.

Pay attention:
The polarity of the battery cannot be reversed.

MUMBAI

TEST CERTIFICATE

600A AC / DC
TRMS DIGITAL CLAMPMETER

This Test Certificate warranties 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 2732**

SERIAL NO. _____

DATE: _____

ISO 9001:2015
REGISTERED

QC
KUSAM-MECO
PASS

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 warranty 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, 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.