LIST OF PRODUCTS

* Digital Multimeter
* Digital AC & AC/DC Clampmeter
* AC Clamp Adaptor
* AC/DC Current Adaptor
* Thermo Anemometer
* Thermo Hygrometer
* Distance Meter
* Digital Lux Meter
* Network Cable Tester
* Power Factor Regulator
* Earth Resistance Tester
* Digital Panel Meters
* DC Power Supplies
* High Voltage Detector
* Calibrators
* Gas Analysers
* Frequency Counter
* Function Generator
* Phasing Sticks
* Battery Tester
* Waterproof Pen Testers
* Solar Power Meter
* EMF Detector
* Wood, Paper & Grain Moisture Meter
* Transistorised Electronic Analog & Digital Insulation Resistance Testers(upto 10 KV)
* Digital Sound Level Meter & Sound Level Calibrator
* Digital contact & Non-contact Type Tachometer
* Digital Non-contact (infrared) Thermometer
* Maximum Demand Controller/Digital Power Meter
* Digital Hand Held Temperature Indicators

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AC / DC DIGITAL CLAMPMETER Model KM 2009

OPERATION MANUAL

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AC / DC
DIGITAL CLAMPMETER
Model KM 2009

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INDEX

⚠ **Warning** ⚠

Thank you for purchasing our company's **High Accuracy Leakage Clampmeter.** For better use of this product, please:

❖**Read carefully the user's manual.**

❖**Follow strictly safety rules and notes listed in this manual.**

- Under all circumstances, please pay special attention to your safety in the course of using this leakage clampmeter.
- Give heed to label texts and symbols on panel and back plate of this leaker.
- Please be more careful if the line voltage is above 60 VDC or 30VAC.
- Please don't place and store this meter in hot and humid condition, locations with moisture condensation and under direct sunlight for a long time.
- In case voltage of battery is low, please replace batteries.
- In case this leaker would not be used for a long time, please take out batteries.
- When changing batteries, please pay attention to the polarity of battery.
- Use, disassembly and maintenance of this meter shall be operated by authorized personnel.
- Do not use the meter if it is damaged. It can be dangerous
- Users shall carry out operation based on Warning sign ⚠ on leakage clampmeter and manual.

- Users shall carry out safety operation based on instruction listed in this manual e.g. " " and danger signs on this manual.
- Please use **mA** to test leakage current (test by clamping grounding line, single-phase line together).

I) INTRODUCTION

High Accuracy Leakage Clampmeter model KM-2009 is specially designed for measurement of AC/DC current; adopting up-to-date CT technology and digital integration technology. There is no exposed metal on clamp head, non-contact measurement, to ensure safe operation. It is a product with relatively small size, high accuracy and perfect function compared with similar instruments in the world. The meter could be widely used in different fields such as electricity, communications, meteorology, railroad, oilfield, construction, measurement, scientific & research teaching institutes, industrial and mining establishments. It is an essential tool for electrician safety testing.

This High Accuracy Leakage Clampmeter has have those functions such as peak hold, data hold and data storage. It has one **RS232 interface,** communication cable and monitoring software, through which on-line monitoring, historical data inquiry, is available. It also have function such as active curve drawing, indication of max, min and average value, alarm setting and indication. Saving to documents and printing when connected to PC.

II) ELECTRICAL SIGNS

⚡	Extremely dangerous! Operators shall strictly ad here to safety rules; otherwise there would be dangers of electric shock to cause personal injuries or casualties
⚠	Dangerous! Operators shall strictly adhere safety rules; otherwise there would be dangers of electric shock to cause personal injuries or casualties.
⚠	Warning! Operators shall strictly keep ad here the safety rules; otherwise personal injuries or equipment damages might be caused.
⧈	Double insulation
~	AC
⏚	DC

III) Range and Accuracy

Function	Range	Accuracy	Resolution
DC current	0.0A~600A DC	±2%rdg±3dgts	0.1A
AC current	0.0A~600A AC	±2%rdg±3dgts	0.1A

IV) ELECTRICAL SPECIFICATIONS

Function	Measurement of AC/DC current, Peak value hold, on-line monitoring
Power Supply	Standard 9V battery
Test Mode	Clip-on CT, integral mode
Display Mode	Four digits LCD display
Dimension	LWH : 175mm x 70mm x 38mm
LCD Dimension	35mm x 21.5mm display domain : 32mm x 15mm
Sampling Rate	2 times/s
Frequency	50/60Hz Automatically
Polarity Indication	DC current auto indentified and display " — "

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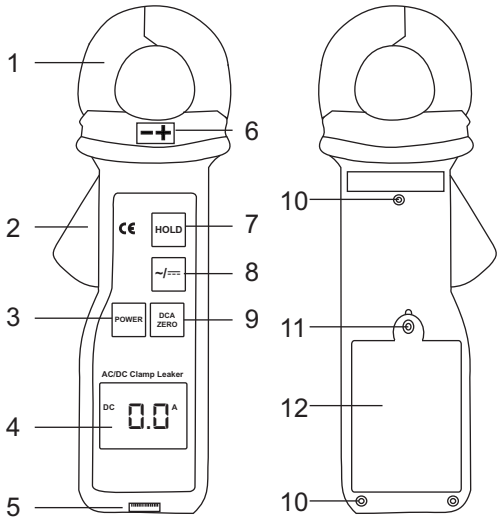
Clamp Size	30mm x 35mm
Test Position	Tested wire in the jaw center; Error may increase by 1.5%rdg max if deviate the center
Range Shift	Automatically
Line Voltage	AC600V
RS232 Interface	Data Stored in the memory of the meter via RS232 uploaded to PC, or on-line monitoring
Com-Configure	Baud rate : 9600, data bit :8, stop bit :1
Data Memory	99units, **"FULL"** blinks when the memory is full
Peak Hold	Push **"HOLD"** without release, the meter will show the peak value
Reading Hold	**"DH"** indicating the reading is hold
Out of Range	**"OL"** indicating the current is out of range
Auto Power-off	5 Minutes after power on, it will power off automatically to lower the power consumption
Battery Voltage	Indicating the battery voltage is lower then 7.2V. Then the battery has to be changed
Weight	180g (including the battery)
Consumption	10mW
Temperature and Humidity	Working : -10°C~50°C, below 80% RH Storage : -10°C~60°C, below 70% RH
Max error refer to environment	10°C~0°C, 40°C~50°C, Error will increase max by 1% rdg
Insulating Strength	AC2kV/rms (between the alloy of the clamp and the housing)

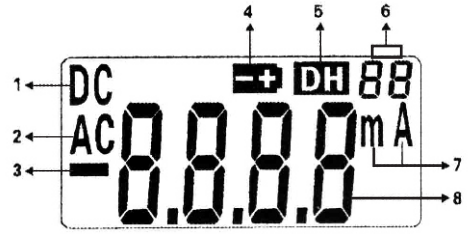
Applicable Safety Rules	IEC1010-1, IEC1010-2-032, Pollution level 2,CAT III (600V)

V) Structure of the Leakage Clampmeter



1. Double Input Clamp
2. Clamp Opening Lever
3. "**POWER**" key
4. LCD
5. RS232 Interface
6. Positive direction
7. "**HOLD**" key
8. "~/⎓ " AC/DC switch key
9. "**DCA ZERO**" Adjust 0 key
10. Housing Screws (3 PCS)
11. Battery cover screw
12. Battery cover

VI) LCD Display



1. DC indication
2. AC indication
3. Negative polarity indication
4. LCD battery symbol
5. Data hold indication
6. Stored data code
7. Unit annumeiated
8. Reading

VI) OPERATING METHOD

1. Start-up, Shutdown

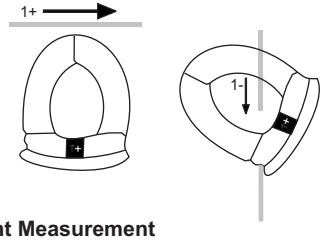
Press **POWER** key to start up, LCD will begin to display; Press the **POWER** key again, the meter will shut down. After starting up for 5 minutes, LCD will flick notes that the meter will shut down automatically. After flickering for 30s, it will shut down formally to reduce battery consumption. In case you have pressed "**POWER**" key when LCD was flickering, the leaker will continue to work for 5 minutes. If LCD is very dark after starting up, it might be caused by low-voltage battery, in this case, please change battery immediately.

2. AC/DC measurement switch

The tester default to DC measurement after boot up. Press ~/⎓ to switch the AC/DC function. LCD will display DC or AC to corresponding switch function.

3. DC Calibration

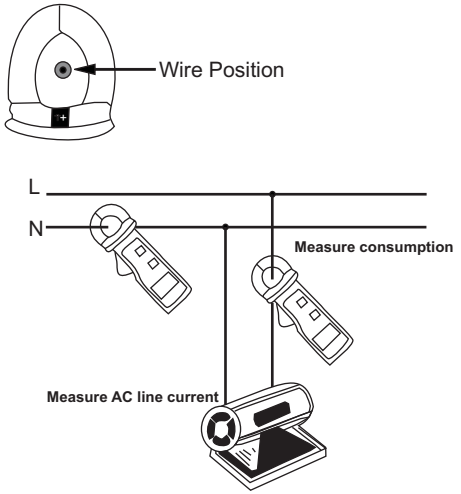
Before measuring DC current, press DCA ZERO key to reduce the residual magnetism to Zero, and then conduct measurement. Rational usage of this Adjust Zero function will make the results more accurate. For example, after boot, before measurement, we can take the jaw close to the DC current wire. LCD will show an inductive current. Press DCA ZERO to calibrate, which deduct the inductive value, Showing below:

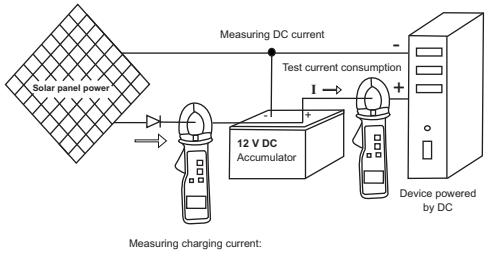


4. Current Measurement

⚡	High voltage, extremely dangerous! Operators shall strictly keep to safety rules; otherwise there would be risk of electric shock to cause personal injuries or casualties.
⚠	Dangerous! Please don't use it to measure current higher than 600A; otherwise there would be risk of electric shock to cause personal injuries or equipment damages

1) Power on.
2) Press ~/⎓ to DC or AC measurement.
   Conduct Adjust Zero before measure DC current.
3) Release the clamp lever to open input clamp and clamp measured conductors. Be attention that the clamp must be totally closed and the measuring wire passing through the center of the jaw.
4) Read LCD display data. In case **OL mA** symbol was displayed, it means that current of measured line is beyond the maximum limit of this meter.





⚠	Attention! For your safety, when measuring heavy current, after confirmed the completion of correct operating test, please move the meter away from measured conductor,
	In locations with difficulty to read out data, please use the data holding function. If [DH] symbol displayed, please exit data hold state first, and then do the test.

5. Peak Hold

Pressing "**HOLD"** key continually in the course of measurement (More than 3 seconds), the meter will display PEHd and capture current peak values of lines in this period of time, release the key, it then will return to measuring state.

6. Hold, Storage and Access Reading

1) Pressing "**HOLD"** key for a short time in the course of measurement (less than 3 seconds), "**DH"** symbol will be displayed, the meter will hold current measuring data and automatically store it in the memory with a code; press "**HOLD"** key again to release the hold state, and the meter continues its measuring; in case stored data reached to 60 groups, press "**HOLD"** key again, the **"FULL"** symbol will display, which means storage memory is full; press "**HOLD"** key to cancel "**FULL**" flickering and return to measuring mode.

2) Press "**HOLD" + "POWER"** keys to enter into data access mode and display shows Unit 1 storage data automatically; and then press "**HOLD"** key again to turn the page of stored data; "**NULL"** will display when there is no data stored in the memory, press "**POWER"** key to exit data access mode.

3) After entering into data access mode, press "**HOLD"** key for more than 3 seconds will clean up all stored data; when the meter displays "**dEL**" symbol, it means that it has finished cleanup process, and then return to measuring state automatically.

7. Data Upload

Make proper connection of RS232 Communication wire of the Tester, switch on the Tester and run monitoring software, and if the software display that interface is open and the connection is successful, then it can read the stored historical data, upload to computer and save it.

Monitoring software has the function of online real-time monitoring and historical inquiry, dynamic display, with the maximum, minimum, and average value indication, with alarm value settings and alarm indicator, and the function of historical data access, reading, save, print and other functions.

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IX How to Change Battery

⚠	Warning! It is dangerous to carry out test when the battery cover plate is not in its position
	Please pay attention to the polarity of battery to avoid damaging the meter.
	Change the low battery in time
	If not use the meter for a long time, please remove the battery for storage.

1) "⊟+" symbol means the battery is undercharge and need to be replaced.
2) Press **POWER** key to shut down the meter; before opening the battery cover, please confirm the meter is in off position, and then replace with qualified new battery; special attention shall be paid to the polarity of battery; at last, cover battery cover plate.

X) Accessories

Clamp tester	1 pc
RS 232 Com cable	1 pc
Software	1 disk
Battery (6F22 9V)	1 pc
User Manual	1 copy

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MUMBAI

TEST CERTIFICATE

AC/DC CLAMP METER

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 2009**

SERIAL NO. _____

DATE: _____

ISO 9001
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 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, 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.

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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.

KUSAM-MECO®

G 17,Bharat Industrial Estate, T. J. Road,
Sewree (W), Mumbai - 400 015. INDIA.
Sales Direct : (022) 24156638
Tel. : (022) 24124540, 24181649. **Fax :** (022) 24149659
Email : kusam_meco@vsnl.net
Website : www.kusamelectrical.com
www.kusam-meco.co.in