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

KUSAM-MECO®

AC/DC DUAL DISPLAY DIGITAL MULTIMETER MODEL - KM 711

OPERATION MANUAL

KUSAM-MECO®

AC/DC DUAL DISPLAY DIGITAL MULTIMETER WITH VFD FUNCTION

MODEL - KM 711

KUSAM-MECO®

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

Nearly every electrical engineer has a hand held Multimeter. We sometimes take them for granted, until we damage them or "burn them out". If you incorrectly connect your DMM to a circuit or have the DMM 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.

DMM 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 DMM becomes a low impedance circuit element. If you accidentally connect this low impedance path across your circuit, you'll effectively short-circuit it. You can, therefore send high current through your meter and severely damage it. Unless the meter has a fused input, you can even get an explosion or fire.

Even if you correctly insert your DMM into the circuit, you can still damage your meter. Don't try to measure current in excess of your meter's capacity. Handheld DMMs usually have a maximum current rating of 10A or 20A.

If you are measuring current in industrial environment, you can easily exceed those ratings. The best way to avoid damage is to use a clamp meter or to connect a clamp attachment to your DMM.

To prevent excess current from flowing through your meter, always disconnect the test leads from the circuit under test whenever you change DMM functions, Set your meter to the correct function, say current and its highest range for the setting, say 20A.

Next, connect the test leads before you apply power to the circuit. To be safe, start by setting your meter to its highest range first.

KUSAM-MECO®

TABLE OF CONTENTS

KUSAM-MECO®

1. SAFETY INFORMATION

Terms In This Manual

WARNING Identifies conditions & actions that could result in serious injury or even death to the user.

CAUTION Identifies conditions & actions that could cause damage or malfunction in the instrument.

This manual contains information and warnings that must be followed for operating the instrument safely and maintaining the instrument in a safe operating condition. If the instrument is used in a manner not specified by the manufacturer, the protection provided by the instrument may be impaired. The meter is intended only for indoor use.

The meter protection rating, against the users, is double insulation per IEC61010-1 2nd Ed., EN61010-1 2nd Ed., UL61010-1 2nd Ed., & CAN/CSA C22.2 No. 61010.1-0.92,to Category II 1000 Volts, CAT III 600 Volts & CAT IV 300 Volts AC & DC.

Terminals (to COM) measurement category:

V : Category II 1000V, Category III 600V and Category IV 300V AC & DC.

A /mAμA : Category III 600 Volts AC and 300 Volts DC.

Per IEC61010-1 2nd Ed. (2001) Measurement Category

Measurement Category IV (CAT IV) is for measurements performed at the source of the low-voltage installation. Examples are electricity meters and measurements on primary overcurrent protection devices and ripple control units.

Measurement Category III (CAT III) is for measurements performed in the building installation. Examples are measurements on distribution boards, circuit-breakers, wiring, including cables, bus-bars, junction boxes, switches socket-outlets in the fixed installation, & equipment for industrial use & some other equipment, for example, stationary motors with permanent connection to the fixed installation.

Measurement Category II (CAT II) is for measurements performed on circuits directly connected to the low voltage installation. Examples are measurements on household appliances, portable tools & similar equipment.

WARNING

To reduce the risk of fire or electric shock, do not expose this product to rain or moisture. To avoid electrical shock hazard, observe the proper safety precautions when working with voltages above 60 VDC or 30 VAC rms. These voltage levels pose a potential shock hazard to the user. Do not touch test lead tips or the circuit being tested while power is applied to the circuit being measured. Keep your fingers behind the finger guards of the test leads

during measurement. Inspect test leads, connectors, and probes for damaged insulation or exposed metal before using the instrument. If any defects are found, replace them immediately. Do not measure any current that exceeds the current rating of the protection fuse(s). Do not attempt a current measurement to any circuit where the open circuit voltage is above the protection fuse(s) voltage rating(s). Suspected open circuit voltage should be checked with voltage functions. Never attempt a voltage measurement with the test lead inserted in to the µA/mA or A input jack. Only replace the blown fuse(s) with the proper rating as specified in this manual. Only use the lead provided with the equipment or UL Listed Probe Assembly.

CAUTION

Disconnect the test leads from the test points before changing functions. Always set the instrument to the highest range and work downward for an unknown value when using manual ranging mode.

2) CENELEC DIRECTIVES

The instruments conform to CENELEC Low-Voltage directive 2006/95/EC and Electromagnetic compatibility directive 2004/108/EC

3. INTERNATIONAL ELECTRICAL SYMBOLS

	Caution ! Refer to the explanation in this Manual.
	Caution ! Risk of electric shock
	Earth (Ground)
	Double Insulation or Reinforced insulation
	Fuse.
	AC--Alternating Current
	DC--Direct Current

4) SPECIAL FEATURES:

- VFD-V & VFD-Hz in Dual Display
- 5msCREST-MAX capture mode (Peak Hold)
- Autoranging Relative -Zero mode
- Display Hold
- EF-Detection (NCV)
- Beep-Jack input warning
- Hz Line Level Frequency
- Hz Logic Level Frequency
- Diode Test & Continuity Test

5) GENERAL SPECIFICATIONS

- **Display :** 3-5/6 digits 6000 counts + 3 digits 999 counts dual display LCD.
- **Polarity :** Automatic
- **Update Rate**: 5 per second nominal;
- **Operating Temperature :** 0°C to 40°C
- **Relative Humidity :** Maximum relative humidity 80% for temperature up to 31°C decreasing linearly to 50% relative humidity at 40°C
- **Pollution degree :** 2
- **Storage Temperature :** -20°C to 60°C,<80%R.H.(with battery removed)
- **Altitude :** Operating below 2000m
- **Temperature Coefficient (T.C.) :** Nominal 0.15 x (specified accuracy) / °C @ (0°C--18°C or 28°C--40°C) or otherwise specified.
- **Sensing :** Average sensing.
- **Safety :** Double insulation per IEC61010-1 2nd Ed., EN61010-1 2nd Ed., UL61010-1 2nd Ed. & CAN/CSA C22.2 No.61010.1-0.92 to CAT II 1000V, CAT III 600V and CAT IV 300V AC & DC
- **Transient Protections :** 6kV(1.2/50μs surge)
- **Power consumption :** 5.4mA typical
- **Low battery :** Below approx. 2.4V
- **APO Timing :** Idle for 34 minutes
- **APO Consumption :** 10μA typical

- **Terminals (to COM) Measurement Category :**
  V : CAT II 1000V, CAT III 600V & CAT IV 300V AC & DC.
  mAμA : CAT III 500Vac & 300Vdc.
  A : CAT III 600Vac & 300Vdc.

- **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)
  In an RF field of 3V/m.
  Capacitance function is not specified
  Other function ranges :
  Total Accuracy = Specified Accuracy + 100 digits
  Performance above 3V/m is not specified

- **Overload Protections:**
  μA & mA : 0.63A/500Vac, IR 50kA or better, F Fuse
  A : 10A/600Vac, IR 100kA or better, F Fuse
  V : 1050 Vrms, 1450 Vpeak

- **Power Supply :** 1.5V AAA Size battery X 2

- **Dimension :** 186(L) X 87(W) X 35.5(H)mm
  198(L) X 97(W) X 55(H)mm with holster.

- **Weight :** 340gm; 430gm with holster.

- **Accessories :** Test leads(pair),User's Manual, Holster, Batteries installed.

6) ELECTRICAL SPECIFICATIONS :

Accuracy is ± (%readings digits + number of digits) or otherwise specified, at 23°C ± 5°C & less than 75% R.H.

DC VOLTAGE

Range	Resolution	Accuracy
60.00 mV	0.01 mV	±(0.6%rdg + 3dgts)
600.0 mV	0.1 mV	±(0.3%rdg + 3dgts)
6.000 V	0.001 V	±(1.2%rdg + 3dgts)
60.00 V	0.01 V	±(0.6%rdg + 3dgts)
600.0 V	0.1 V	±(1.0%rdg + 3dgts)
1000 V	1 V	±(1.0%rdg + 3dgts)

Input Impedance : 10MΩ, 50pF nominal

AC VOLTAGE

Range	Resolution	Accuracy
50Hz ~ 500Hz		
60.00 mV	0.01 mV	±(1.3%rdg + 5dgts)
600.0 mV	0.1 mV	±(1.0%rdg + 5dgts)
6.000 V	0.001 V	±(2.0%rdg + 5dgts)
60.00 V	0.01 V	±(1.3%rdg + 5dgts)
600.0 V	0.1 V	±(2.0%rdg + 5dgts)
1000 V	1 V	±(2.0%rdg + 5dgts)

Input Impedance : 10MΩ, 50pF nominal

VFD-VOLTAGE (LPF-ACV)

Range	Resolution	Accuracy [1]
10.0Hz ~ 20.0Hz		
6.000 V	0.001 V	±(3.5%rdg + 8dgts)
60.00 V	0.01 V	
600.0 V	0.1 V	
1000 V	1 V	
20.0Hz ~ 200Hz		
6.000 V	0.001 V	±(2.5%rdg + 8dgts)
60.00 V	0.01 V	
600.0 V	0.1 V	
1000 V	1 V	
200Hz~400Hz [2]		
6.000 V	0.001 V	±(7.0%rdg + 8dgts)
60.00 V	0.01 V	
600.0 V	0.1 V	
1000 V	1 V	

Input Impedance : 10MΩ, 50pF nominal

[1] Not specified for fundamental frequency > 400Hz

[2] Accuracy linearly decreases from 2.5% + 8d @ 200Hz to 7.0% + 8d @ 400Hz

Crest-MAX Capture (V & A only)

Accuracy :
Specified accuracy plus 250 digits for change > 5ms in duration

RESISTANCE

Range	Resolution	Accuracy
600.0 Ω	0.1 Ω	±(0.8%rdg + 8dgts)
6.000 KΩ	0.001 KΩ	±(0.6%rdg + 4dgts)
60.00 KΩ	0.01 KΩ	
600.0 KΩ	0.1 KΩ	
6.000 MΩ	0.001 MΩ	±(1.5%rdg + 5dgts)
60.00 MΩ	0.01 MΩ	±(2.5%rdg + 5dgts)

Open Circuit Voltage : 0.45VDC typical.

DC CURRENT

Range	Resolution	Accuracy
600.0 μA	0.1 μA	±(1.2%rdg + 5dgts)
6000 μA	1 μA	±(1.0%rdg + 3dgts)
60.00 mA	0.01 mA	±(2.0%rdg + 5dgts)
600.0 mA	0.1 mA	±(1.5%rdg + 3dgts)
6.000 A	0.001 A	±(1.5%rdg + 5dgts)
9.00 A[1]	0.01 A[1]	±(1.2%rdg + 3dgts)

Burden Voltage :
Range : 600.0 μA - 0.25mV/μA
6000 μA - 0.25mV/μA
60.00 mA - 4.0mV/mA
600.0 mA - 4.0mV/mA
6.000 A - 0.045V/A
9.00 A[1] - 0.045V/A

[1] 9A continuous, >9A to 15A for 30 seconds max with 5 minutes cool down interval.

AUDIBLE CONTINUITY TESTER

Audible Threshold	Response Time
between 10Ω and 120Ω	< 32ms

CAPACITANCE

Range	Resolution	Accuracy [1]
60.00 nF[2]	0.01 nF	±(2.0%rdg + 5dgts)
600.0 nF	0.1 nF	
6.000 μF	0.001 μF	
60.00 μF	0.01 μF	±(3.5%rdg + 5dgts)
600.0 μF[3]	0.1 μF	
3000 μF[3]	1 μF	±(4.0%rdg + 5dgts)

[1] Accuracies with film capacitor or better
[2] Accuracy unspecified.
[3] T. C. : 0.25 x specified accuracy / °C @ 0 ~ 18°C, 28 ~ 40°C

AC CURRENT

Range	Resolution	Accuracy
50Hz – 500Hz		
600.0 μA	0.1 μA	±(2.0%rdg + 6dgts)
6000 μA	1 μA	±(1.5%rdg + 5dgts)
60.00 mA	0.01 mA	±(2.5%rdg + 6dgts)
600.0 mA	0.1 mA	±(2.1%rdg + 5dgts)
6.000 A	0.001 A	±(2.0%rdg + 6dgts)
9.00 A[1]	0.01 A[1]	±(1.8%rdg + 5dgts)

Burden Voltage :
Range : 600.0 μA - 0.25mV/μA
6000 μA - 0.25mV/μA
60.00 mA - 4.0mV/mA
600.0 mA - 4.0mV/mA
6.000 A - 0.045V/A
9.00 A[1] - 0.045V/A

[1]9A continuous, >9A to 15A for 30 seconds max with 5 minutes cool down interval.

AC Function Range	Sensitivity (Sine RMS)	Range
600 mV	0.1 V	10Hz ~ 100kHz
6 V	0.6 V	10Hz ~ 10kHz
60 V	6 V	10Hz ~ 50kHz
600 V	60 V	10Hz ~ 50kHz
1000 V	600 V	45Hz ~ 10kHz
VFD 6 V	0.6V ~ 2.1V[1]	10Hz ~ 400Hz
VFD 60 V	6V ~ 21 V[1]	10Hz ~ 400Hz
VFD 600 V	60V ~ 210V[1]	10Hz ~ 400Hz
600 μA	60 μA	10Hz ~ 10kHz
6000 μA	600 μA	10Hz ~ 10kHz
60 mA	6 mA	10Hz ~ 10kHz
600 mA	60 mA	10Hz ~ 10kHz
6 A	0.6 A	20Hz ~ 3kHz
9 A	6 A	20Hz ~ 3kHz

Accuracy : 0.2% + 4d
[1]VFD sensitivity linearly decreases from 10% F.S. @ 200Hz to 35% F.S. @ 400Hz

Hz LOGIC LEVEL FREQUENCY

Range	Accuracy
5.000Hz ~ 300.0KHz	0.2% + 4d

1) Accuracy is specified at <20VAC rms
Input Signal : Square wave with duty cycle > 40% & 70%, or Sine wave
Sensitivity :
5Hz--20Hz : > 1Vrms Sine wave;
20Hz--300kHz : > 2.6Vp; or 1.9Vrms Sine wave.

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

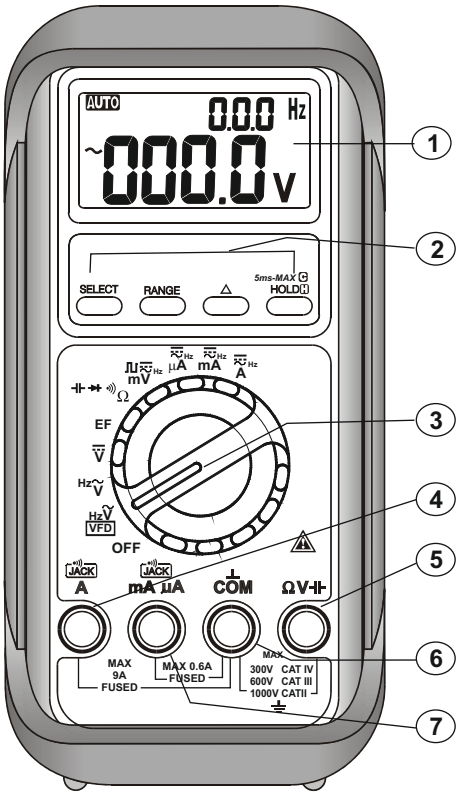
Detection Frequency : 50/60Hz

Detection Antenna : Top end of the meter Probe-Contact EF-Detection; For more precise indication of live wires, such as distinguishing between live and ground connections, use the Red (+) test probe for direct contact measurement.

DIODE TESTER

Range	Test Current (Typical)	Open Circuit Voltage
1.000V	0.2mA	<1.8V DC typical

7) PRODUCT DESCRIPTION



1) 3-5/6 digits 6000 counts + 999 counts Dual LCD display

2) Push-buttons for special functions & features.

3) Selector to turn the Power ON or OFF & select a function.

4) Input Jack (+) for 10A (20A for 30sec) current function

5) Input Jack (+) for all functions EXCEPT current (μA, mA, A) functions.

6) Common (Ground reference) Input Jack (-) for all functions.

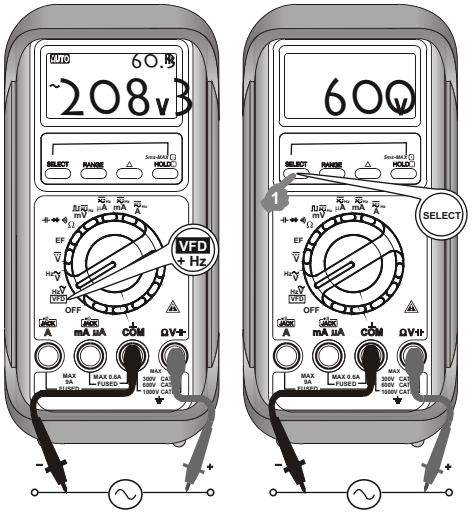
7) Input Jack (+) for milli-amp (mA) & micro-amp (μA) functions.

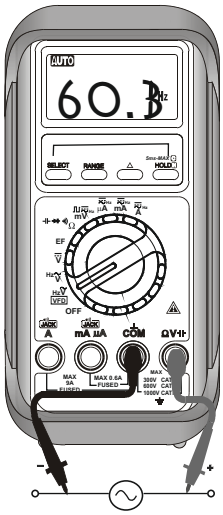
8) MEASUREMENT PROCEDURE

CAUTION

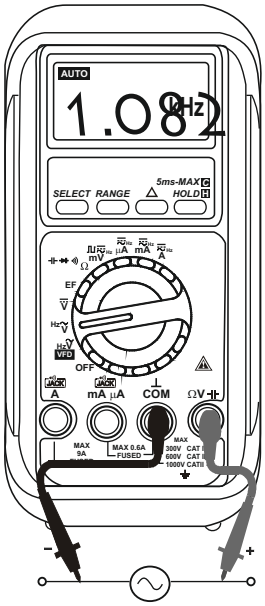
Before & after hazardous voltage measurements, test the voltage function on a known source such as line voltage to determine proper meter functioning.

VFD-ACV $^{+Hz}$ & VFD-Hz (Line Level)



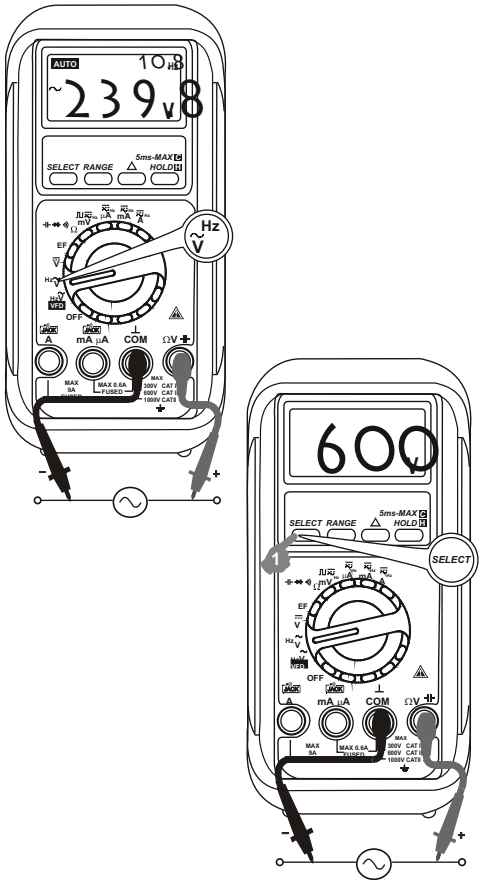


Hz Input sensitivity varies automatically with voltage range selected. 6V range has the highest & 1000V range has the lowest. Press **SELECT** button momentarily toggles to higher resolution **VFD-Hz** in main display. The display shows the selected voltage range for about one second before displaying Hz readings. Pressing the **RANGE** button momentarily repeatedly to display and select any other voltage range. If the Hz reading becomes unstable, select higher voltage range to avoid electrical noise. If the reading shows zero, select lower voltage range for better sensitivity.



Function defaults at **VFD-ACV^{+Hz}**. By default, voltage is set at 600V & 1000V two auto-ranges to best cope with most Variable Frequency Drives (VFD) measurements. High noise-rejection frequency measurement algorithm and Low-pass filter circuit are permanently bundled with all voltage and frequency function-ranges within this rotary-switch position. Press the **RANGE** button momentarily to select other ranges only when needed.

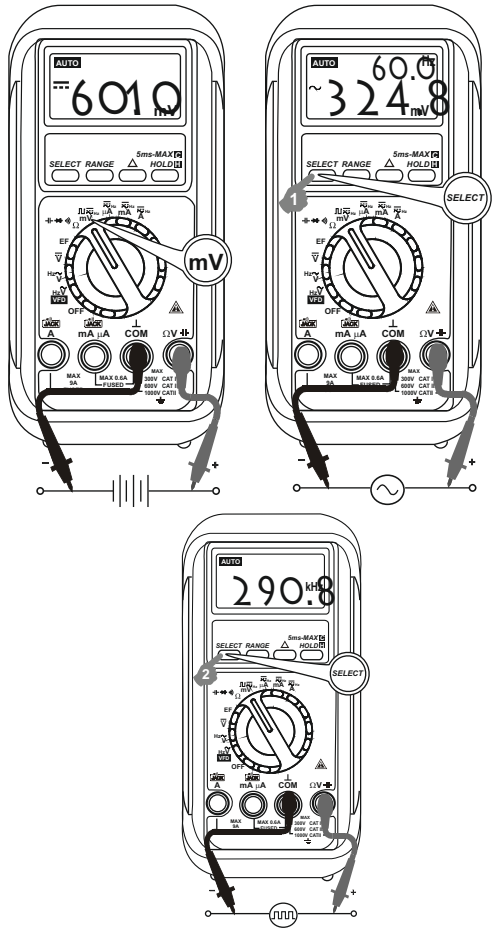
ACV^{+Hz} & Hz (Line Level)



All the voltage and frequency function-ranges within this rotary-switch position are set at regular frequency response without employing LPF. Function defaults at **ACV^{+Hz}**. Hz Input sensitivity varies automatically with voltage range selected. 6V range has the highest and 1000V range has the lowest. Press **SELECT** button momentarily toggles to higher resolution Hz in main display. The display shows the selected voltage range for about one second before displaying Hz readings. Pressing the **RANGE** button momentarily repeatedly to display and select any other voltage range. If the Hz reading becomes unstable, select higher voltage range to avoid electrical noise. If the reading shows zero, select lower voltage range for better sensitivity.

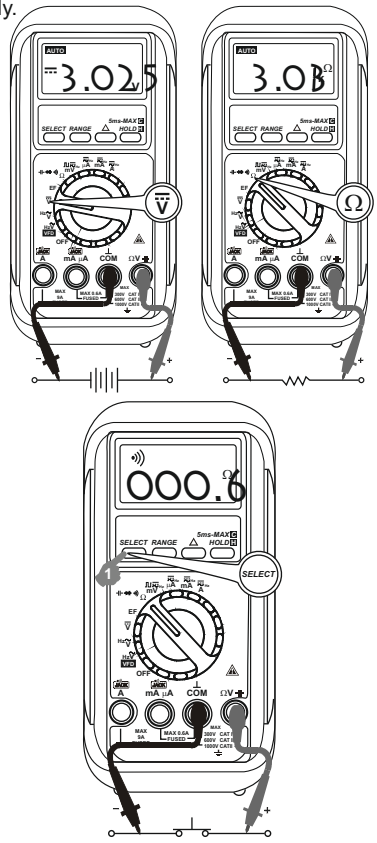
DCmV, ACmV $^{+Hz}$ & Hz (Logic Level)

Function defaults at **DCmV**. Press the **SELECT** button momentarily to select the subject functions in sequence. **Hz** (Logic Level) is set at the highest available sensitivity for logic level frequency measurements.



DCV

Turn rotary switch to DCV function position directly.



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Ω Resistance, •))) Continuity

Defaults at Ω. Press **SELECT** button momentarily to select •))) continuity function which is convenient for checking wiring connections and operation of switches. A continuous beep tone indicates a complete wire.

CAUTION

Using Resistance, Continuity, Diode or Capacitance function in a live circuit will produce false results and may damage the instrument. In many cases the suspected component(s) must be disconnected from the circuit to obtain an accurate measurement reading.

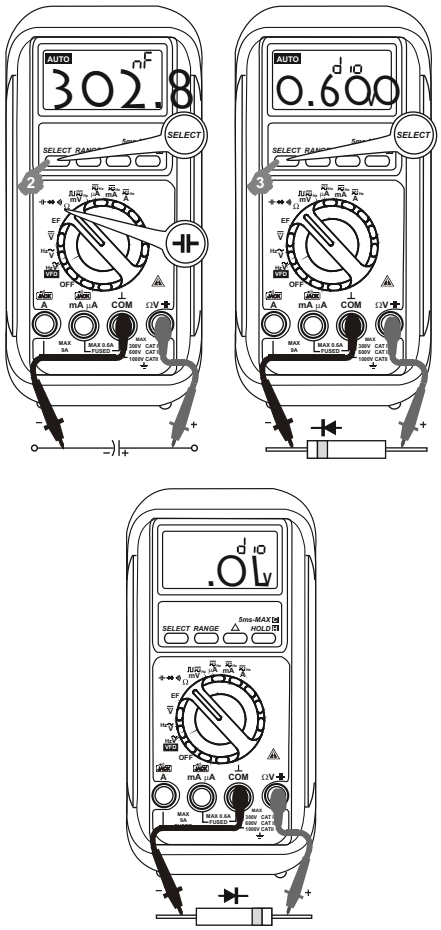
⊣⊢Capacitance

Defaults at Ω. Press **SELECT** button momentarily 2 times to select ⊣⊢ Capacitance function. Relative △ zero mode can be used to zero out the parasitic capacitance of the leads and the internal protection circuitry of the meter when measuring low capacitance in the order of Pico Farad (pF).

CAUTION

Discharge capacitors before making any measurement. Large value capacitors should be discharged through an appropriate resistance load.

KUSAM-MECO®

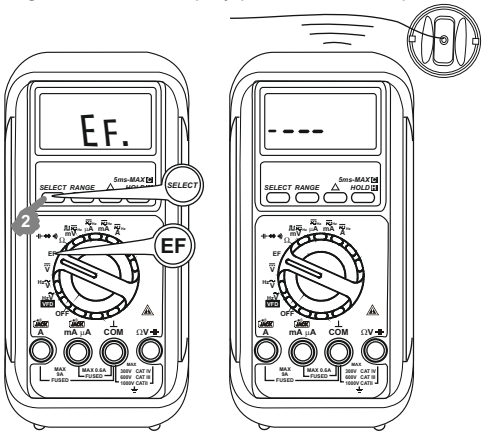


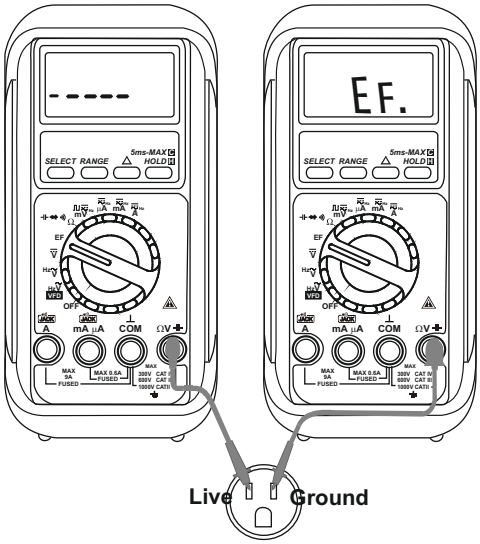
Diode Test

Defaults at Ω. Press **SELECT** button momentarily 3 times to select Diode Test function. Normal forward voltage drop (forward biased) for a good silicon diode is between 0.400V to 0.900V. A reading higher than that indicates a leaky diode (defective). A zero reading indicates a shorted diode (defective). An OL indicates an open diode (defective). Reverse the test leads connections (reverse biased) across the diode. The digital display shows OL if the diode is good. Any other readings indicate the diode is resistive or shorted (defective).

Electric Field EF-Detection

Defaults at **E.F.** Function. Press SELECT button momentarily 2 times to select **E.F.** function. The meter display "E.F." when it is ready. Signal strength is indicated as a series of bar-graph segments on the display plus variable beep tones.



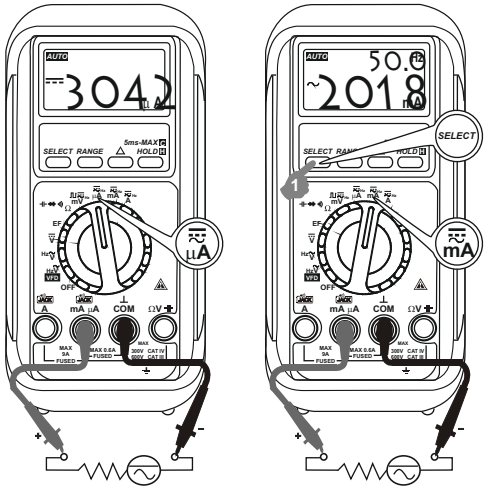


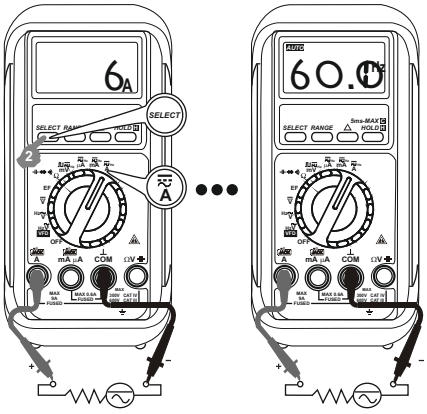
• **Non-Contact EF-Detection :** An antenna is located along the top end of the meter, which detects electric field surrounding current-carrying conductors. It is ideal for tracing live wiring connections, locating wiring breakage and to distinguish between live or earth connections.

• **Probe-Contact EF-Detection :** For more precise indication of live wires, such as distinguishing between live and ground connections, use the Red (+) test probe for direct contact measurements.

μA, mA and A Current functions

Function defaults **DC**. Press **SELECT** button momentarily to select **AC** $^{+Hz}$. Hz Input sensitivity varies automatically with current range selected. 600mA range has the highest and 10A range has the lowest. Press **SELECT** button momentarily further select higher resolution **Hz** in main display. The display shows the selected current range for about one second before displaying Hz readings. Pressing the **RANGE** button momentarily repeatedly to display and select any other current range. If the Hz reading becomes unstable, select higher current range to avoid electrical noise. If the readings shows zero, select lower current range for better sensitivity.





CAUTION

When measuring a 3-phase system, special attention should be taken to the phase-to-phase voltage which is significantly higher than the phase-to earth voltage. To avoid exceeding the voltage rating of the protection fuse(s) accidentally, always consider the phase-to-phase voltage as the working voltage for the protection fuse(s).

5ms CREST-MAX capture mode

Press **5ms-MAX (HOLD)** button for 1 second or more to activate **CREST-MAX** capture (Instantaneous Peak-Hold) mode to capture signal peak of voltage or current in duration as short as 5ms. The LCD “C” & “MAX” turn on. Press the button momentarily again can toggle the combination use of HOLD feature. Press the button for 1 second or more to exit CREST-MAX capture mode. Auto-ranging and Auto-Power Off are disabled automatically in this mode.

Hold

The HOLD feature freezes the display for later view. Press the **HOLD** button momentarily to toggle the HOLD feature.

Relative-Zero (△) mode

Relative-Zero allows the user to offset the meter consecutive measurements with the main display displaying reading as the reference value. Press the △ button momentarily to toggle relative zero mode.

Manual or Auto-ranging

Press the **RANGE** button momentarily to select manual-ranging, and the meter will remain in the range it was in, the LCD **AUTO** turns off. Press the button momentarily again to step through the ranges. Press the hold the button for 1 second or more and release to resume auto-ranging.

Note: Manual ranging feature is not available in Hz and ⊣⊢ functions.

Set Beeper Off

Press the **RANGE** button while turning the meter on to temporarily disable the Beeper feature. Turn the rotary switch OFF and then back on to resume.

Auto- Power off(APO)

The Auto- Power-Off (APO) mode turns the meter off automatically to extend battery life after approximately 34 minutes of no rotary switch or push button operations. To wake up the meter from APO, press the SELECT button momentarily or turn the slide switch OFF and then back on. Always turn the rotary switch to the OFF position when the meter is not in use .

Disabling Auto-Power-Off

Press the **SELECT** button while turning the meter on to temporarily disable the Auto-Power-Off (APO) feature. Turn the rotary switch OFF and then back on to resume.

MAINTENANCE

WARNING

To avoid electrical shock, disconnect the meter from any circuit, remove the test leads from the input jacks and turn OFF the meter before opening the case. Do not operate with open case.

Accuracy and calibration

Accuracy is specified for a period of one year after calibration. Periodic calibration at interval of one year is recommended to maintain meter accuracy. If self diagnostic massage “C_Er” is being displayed while powering on, some meter ranges might be largely out of specifications.

Cleaning and Storage

Periodically wipe the case with a damp cloth and mild detergent; do not use abrasive or solvents. If the meter is not to be used for periods of longer than 60 days, remove the batteries and store them separately.

Trouble Shooting

If the instrument fails to operate, check batteries and test leads etc., and replace as necessary. Double check operating procedure as described in this user's manual.

If the instrument voltage- resistance input terminal has subjected to high voltage transient (caused by lightning or switching surge to the system under test) by accident or abnormal conditions of operation, the protective impedance components in series might be blown off (become high impedance) like fuses to protect the user and the instrument. Most measuring functions through this terminal will then be open circuit. Refer to the WARRANTY selection for obtaining warranty or repairing service.

Battery & Fuse replacement

Battery use :

Standard 1.5V AAA size
(NEDA 24A or IEC Lr03) battery X 2.

Fuse use :

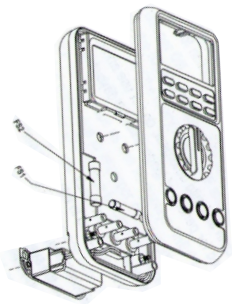
Fuse (Fs1) for μAmA current input :
SIBA # 189020; 0.63A/500Vac, IR 50kA, F fuse, or better
Fuse (Fs2) for A current input :
Bussmann # KTK-10; 10A/600Vac, IR 100kA, F fuse, or better

Battery replacement with battery access door:

Loosen the 2 screws from the battery access door of the case bottom. Lift the battery access door and thus the battery compartment up. Replace the battery. Re-fasten the screws.

Fuse replacement (and also battery replacement for splash proof version without battery access door):

Loosen the 4 screws from the case bottom. Lift the end of the case bottom nearest the input jacks until it unsnaps from the case top. Replace the blown fuse(s) and / or the battery. Replace the case bottom, and ensure that all the gaskets are properly seated and the two snaps on the case top (near the LCD side) are engaged. Re-fasten the screws.



MUMBAI

TEST CERTIFICATE

DIGITAL MULTIMETER

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 711**

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, 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®

“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.

KUSAM-MECO®

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