

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
- * 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
- * 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)



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KUSAM-MECO®

AN ISO 9001:2015 COMPANY

TRMS ENHANCED PRACTICAL MULTIMETER MODEL - KM 2807CSE



OPERATION MANUAL

TAKE MEASUREMENTS 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.

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1) SAFETY

Terms in this manual

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

CAUTION identifies conditions and 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.

Observe proper safety precautions when working with voltages above 30 Vrms, 42.4 Vpeak, or 60 VDC. These voltage levels pose a potential shock hazard to the user. Disconnect the test leads from the test points before changing functions. Do not expose this product to rain or moisture. The meter is intended only for indoor use.

Keep your hands/fingers behind the hand / finger barriers (of the meter and the test probe assembly, where applicable) that indicate the limits of safe access of the handheld parts during measurements. Inspect lead wires, connectors, and probes for damaged insulation or exposed metal periodically. If any defects are found, replace them immediately. Only use the test probe assembly provided with the meter or a UL Listed test probe assembly to the same meter ratings or better. Optional offer premium test probe assembly using silicone lead wire insulation, at agent's discretion, is equipped with white inner insulation layers as wear indicators. Replace them immediately if any of the white layers has become visible.

The meter meets IEC/EN/BSEN/CSA_C22.2_No./UL standards of 61010-1 Ed. 3.1 and 61010-2-033 Ed. 2.0 to Measurement Categories CAT III 1000V and CAT IV 600V. The accompanied test probe assembly meets IEC/EN/BSEN/CSA_C22.2_No./UL standards of 61010-031 Ed. 2.0 to the same meter ratings or better. The 61010-031 requires exposed conductive test probe tips to be $\leq 4\text{mm}$ for CAT III & CAT IV ($\leq 19\text{mm}$ for CAT II) ratings. The accompanied add-on caps (or permanent insulated tips option) have to be used for applications under CAT III & CAT IV. Refer to the category markings on your probe assemblies as well as on the add-on accessories (like detachable Caps or Alligator Clips), if any, for applicable rating changes.

2. INTERNATIONAL ELECTRICAL SYMBOLS

	Marking of Electrical and Electronic Equipment (EEE). Do not dispose of this product as unsorted municipal waste. Contact a qualified recycler
	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
	Three-phase Alternating Current
	Application around and removal from hazardous live conductors is permitted

BRIEF INFORMATION ON MEASUREMENT CATEGORIES

Measurement Category IV is applicable to test and measuring circuits connected at the source of the building's low-voltage MAINS installation. Examples are measurements on devices installed before the main fuse or circuit breaker in the building installation.

Measurement Category III is applicable to test and measuring circuits connected to the distribution part of the building's low-voltage MAINS installation. Examples are measurements on distribution boards (including secondary meters), circuit-breakers, cables, bus-bars, junction boxes, switches, socket-outlets, stationary motors in the fixed installation, and equipment for industrial use.

Measurement Category II is applicable to test and measuring circuits connected directly to utilization points (socket outlets and similar points) of the low-voltage MAINS installation. Examples are measurements on MAINS CIRCUITS of household appliances, portable tools and similar equipment.

3. CENELEC DIRECTIVES

The instruments conform to (CE) Low-Voltage Directive 2014/35/EU, Electromagnetic Compatibility Directive 2014/30/EU, and RoHS 2 Directive 2011/65/EU plus amendment Directive (EU) 2015/863.

4. SPECIFICATIONS :**GENERAL SPECIFICATIONS :**

Display: 3-5/6 digits 6,000 counts

Update Rate: 5 per second nominal

Operating Temperature: -10°C to 50°C

Relative Humidity: Maximum relative humidity 80% for temperature up to 31°C decreasing linearly to 50% relative humidity at 50°C

Altitude: Operating below 2000m

Storage Temperature: -20°C ~ 60°C, < 80% R.H. (with battery removed)

Temperature Coefficient: Nominal 0.15 x (specified accuracy)/°C @ (-10°C ~ 18°C or 28°C ~ 50°C), or otherwise specified

Sensing: True RMS sensing

Pollution Degree: 2

Safety: Certified per IEC/UL/EN61010-1 Ed. 3.1, IEC/UL/EN61010-2-033 Ed. 2.0, IEC/UL/EN61010-031 Ed. 2.0 and the corresponding CAN/CSA-C22.2 regulations to

Measurement Categories: CAT III 1000V and CAT IV 600V

Transient Protection: 8.0kV (1.2/50µs surge)

E.M.C.: Meets EN61326-1:2013

mV, Diode, Ohm, & Temperature; in an RF field of 1V/m:

Total Accuracy = Specified Accuracy + 100 digits

Other functions; in an RF field of 3V/m:

Total Accuracy = Specified Accuracy + 100 digits

Overload Protection:

µA & mA: 0.63A/1000V DC/AC rms, IR 10kA, F fuse; or better

A: 11A/1000V DC/AC rms, IR 20kA, F fuse; or better

V: 1100V DC/AC rms

mV, Ohm, & others: 1000V DC/AC rms

Low Battery: Below approx. 2.5V

Power Supply: 1.5V AAA Size battery X 2

Power Consumption (typical): 3.2mA

iAPO Consumption (typical): 10µA

iAPO Timing: Idle for approx. 32 minutes

Accessories: Test lead set, User's manual, Banana-plug type-K thermocouple

Optional purchase accessories: BKB32 banana-plug to type-K socket plug adaptor

SPECIAL FEATURES:

- VFD-ACV & VFD-Hz;
- Hi/Lo EF-Detection (NCV & Single pole);
- Display Hold w/Hold-alert™ warning;
- MAX Hold;
- BeepLit™ Diode w/BeepPass™ indication;
- BeepLit™ Continuity;
- Relative-Zero mode;
- Backlighted LCD display;
- BeepJack™ audible & visible input warning

Electrical Specification:

Accuracy is given as ± (% of reading digits + number of digits) or otherwise specified @ 23°C ± 5°C AC Voltage & Current accuracies are specified from 1 % to 100 % of range or otherwise specified. Maximum Crest Factor <2:1 at full scale & <4:1 at half scale, and with signal component frequencies limited to the specified bandwidth of the AC functions for non-sinusoidal waveforms

AC VOLTAGE

RANGE	ACCURACY
50Hz ~ 60Hz	
60.00mV ¹⁾ , 600.0mV ²⁾	1.0% + 3d
6.000V, 60.00V, 600.0V, 1000V	0.7% + 3d
45Hz ~ 500Hz	
60.00mV ¹⁾ , 600.0mV ²⁾	2.0% + 3d
6.000V, 60.00V, 600.0V, 1000V	2.0% + 3d
500Hz ~ 1kHz	
60.00mV ¹⁾ , 600.0mV ²⁾	2.0% + 3d
6.000V, 60.00V, 600.0V, 1000V	Unspecified

Input Impedance: 10MΩ, 20pF nominal

1) Signal peak absolute values, including DC bias, less than 130mVpeak

2) Signal peak absolute values, including DC bias, less than 1300mVpeak

VFD-ACV (with Low Pass Filter)

RANGE	ACCURACY ¹⁾
10Hz ~ 100Hz	
600.0V, 1000V	1.0% + 3d
10Hz ~ 100Hz	
600.0V, 1000V	10.0% + 3d ²⁾

- 1)Not specified for fundamental frequency > 400Hz
 2)Accuracy linearly decreases from 1% + 3d @100Hz to 10% + 3d @400Hz

DC VOLTAGE

RANGE	ACCURACY
60.00mV, 600.0mV, 6.000V	0.3% + 2d
60.00V	0.4% + 2d
600.0V	0.2% + 2d
1000V	0.4% + 2d

Input Impedance: 10MΩ, 20pF nominal

Ohm

RANGE ¹⁾	ACCURACY
600.0Ω, 6.000kΩ	0.3% + 3d
60.00kΩ, 600.0kΩ	0.5% + 3d
6.000MΩ ²⁾ , 60.00MΩ ³⁾	0.9% + 2d ⁴⁾

- 1)Open Circuit Voltage: 1.6VDC typical
 2)Constant Test Current: 0.2μA Typical
 3)Constant Test Current: 0.02μA Typical
 4)5%+20d @ >30Mμ

BeepLit™ Continuity Tester

Continuity Threshold: Between 30Ω and 480Ω
 Continuity ON Response Time: <15ms
 Audible Indication: Beep sound
 Visible Indication: LCD Backlight

Capacitance

RANGE	ACCURACY
20.00nF, 200.0nF	1.5% + 8d
2000nF	1.5% + 3d
20.00μF, 200.0μF, 2000μF	

Accuracies with film capacitor or better

BeepLit™ Diode Tester

RANGE	ACCURACY	Test Current (Typical)	Open Circuit Voltage
3.0000V	0.9% + 2d	0.3mA	<3.2 VDC

BeepPass™ Indication (Short-beep): Drop Across 0.850V
 BeepLit™ Indication (Continuity) Threshold: < 0.100V
 Audible Indication: Beep Sound
 Visible Indication: LCD Backlight

DC CURRENT

RANGE	ACCURACY	BURDEN VOLTAGE
600.0mA, 6000mA	1.0% + 3d	0.1mV / mA
60.00mA, 600.0mA	0.7% + 3d	3.0mV / mA
6.000A, 10.00A ¹⁾		25mV / A

1)10A continuous, >10A to 20A for 30 seconds max with 5 minutes cool down interval

AC CURRENT

RANGE	ACCURACY	BURDEN VOLTAGE
50Hz~500Hz		
600.0mA, 6000mA	1.5% + 3d	0.1mV / mA
60.00mA, 600.0mA	1.0% + 5d	3.0mV / mA
6.000A, 10.00A ¹⁾		25mV / A

1)10A continuous, >10A to 20A for 30 seconds max with 5 minutes cool down interval Logic Frequency

LOGIC FREQUENCY

RANGE	SENSITIVITY (SQUARE WAVE)
5.00Hz~300.0kHz	3Vpeak

Accuracy: 0.03% + 4d

TEMPERATURE

RANGE	ACCURACY
-40°C to 0.0°C	1% + 2°C
-0.0°C to 99.9°C	
-100°C to 400°C	1% + 2°C
-40.0°F to 32.0°F	1% + 4°C
-32.0°F to 99.9°F	1% + 2°C
-100°F to 752°F	

°F selection can be left out as factory calibration default for countries that only accept metric units

1)Accuracies assume the meter interior and the ambient have reached the same temperature (isothermal stage) for a correct junction voltage compensation. Allow enough settling time for a significant change in ambient temperature. It can take up to an hour for changes > 5°C

2)Type-K thermocouple range & accuracy not included

LINE FREQUENCY

FUNCTION	SENSITIVITY (SINE RMS)	RANGE
6V	5V	10Hz ~ 50kHz
60V	10V	10Hz ~ 50kHz
600V	50V	10Hz ~ 1kHz
1000V	500V	50Hz ~ 1kHz
VFD 600V	50V	10Hz ~ 1kHz
VFD 1000V	500V	50Hz ~ 1kHz
600mA, 6000mA	500mA	10Hz ~ 5kHz
60mA, 600mA	50mA	10Hz ~ 5kHz
6A, 10A	8A	50Hz ~ 1kHz

Accuracy: 0.03% + 4d

NON-CONTACT EF-DETECTION

BAR GRAPH INDICATION	EF-H (Hi Sensitivity)	EF-L (LO Sensitivity)
	TYPICAL VOLTAGE (Tolerance)	
—	15V (3V ~ 30V)	70V (30V ~ 120V)
— —	30V (10V ~ 60V)	140V (60V ~ 240V)
— — —	60V (20V ~ 120V)	280V (120V ~ 480V)
— — — —	120V (40V ~ 240V)	560V (240V ~ 960V)
— — — — —	240V (>80V)	1000V (>900V)

Indication: Display bar-segments, backlight flashing, & beep tones in proportion to the field strength

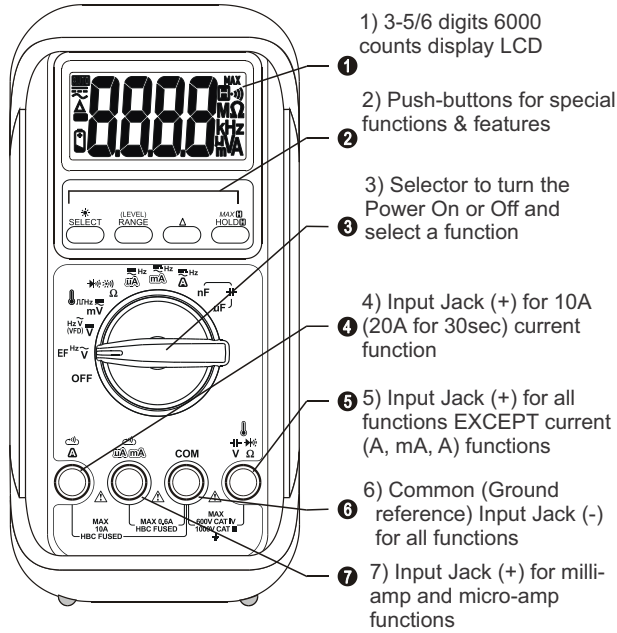
Detection Frequency: 50/60Hz

Detection Antenna: Top end center of the meter

Probe-Contact EF-Detection: For more precise indications of live wires, such as distinguishing between live and ground connections, use direct contact testing with one single test-probe via the input terminal COM or V. The COM terminal (Black) has the best sensitivity.

3) PRODUCT DESCRIPTION

This user's manual uses only representative model(s) for illustrations. Please refer to detailed specifications for function availability to a particular model.

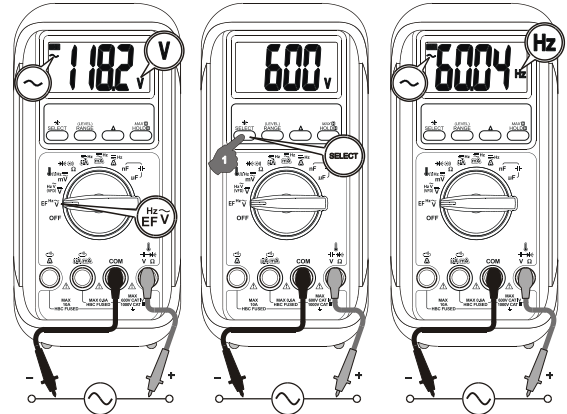


4) OPERATION

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

ACV; Line-level Hz

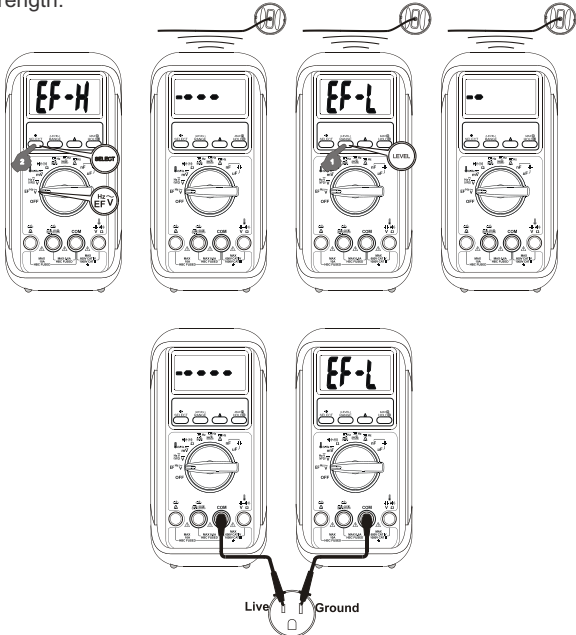
Inputs are made via the terminals COM/V. Startup defaults to ACV Function. Press the **SELECT** button momentarily to select the **Line-level Hz** function.



Note: Input sensitivity varies automatically with the function range selected while activating the Hz function. 6V function range has the highest and the 1000V range has the lowest. When activated, the trigger voltage range will be displayed right before the Hz readings start. Press momentarily the **RANGE** button can manually select another trigger voltage range. It is recommended to first measure the signal voltage level and activate the Hz function in that range to get the most appropriate trigger level. If the Hz reading becomes unstable, select lower sensitivity to avoid electrical noise. If the reading shows zero, select higher sensitivity.

EF-Detection of Electric Field

Startup defaults to **ACV** Function. Press the **SELECT** button momentarily twice to select the **EF-Detection** function. The meter displays "**EF-H**", the High sensitivity, when it is ready. If it is too sensitive for your applications, press the **(LEVEL)** button momentarily to toggle to **EF-L**, the Low sensitivity. The detected Electric Field is indicated as a series of display bar-segments, backlight flashing, and beep sounds in proportion to the field strength.

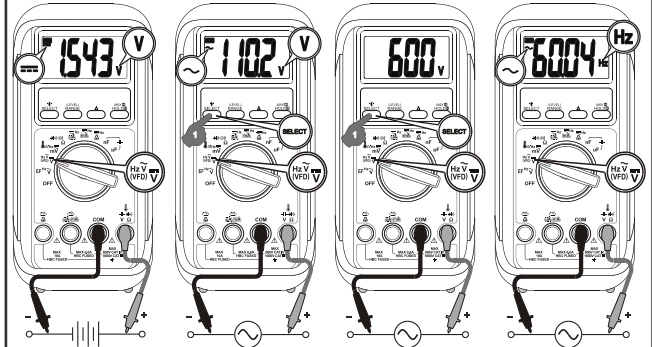


•**Non-Contact EF-Detection (NCV):** An antenna is located near the top end center of the meter, which detects the ac electric field surrounding energized conductors. It is ideal for tracing live wiring connections, locating wiring breakages, and distinguishing between live and earth connections.

•**Probe-Contact EF-Detection (Single-pole):** For more precise indications of live wires, such as distinguishing between Live and Ground connections, use one single test probe to test via terminal **COM** for direct metal contact-probing to achieve the most distinctive indications.

DCV; VFD-ACV & Line-level VFD-Hz

Inputs are made via the terminals **COM/V**. Startup defaults to **DCV** Function. Press the **SELECT** button momentarily to select the subject functions in sequence.

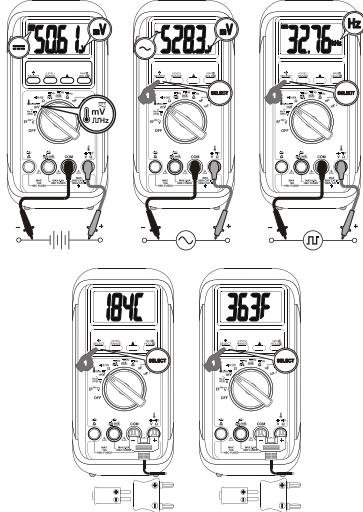


Note: **VFD-ACV** and **VFD-Hz** are equipped with a digital low-pass filter (DSP) and are capable of handling **VFD** (Variable Frequency Drives) signals for fundamental V & Hz readings. It also improves ACV and Hz reading stability when being used in most electrically noisy environments.

Note: Input sensitivity varies automatically with the function range selected while activating the VFD-Hz function. 600V function range has the highest and the 1000V range has the lowest. When activated, the trigger voltage range will be displayed right before the Hz readings start. Press momentarily the **RANGE** button can manually select another trigger voltage range. It is recommended to first measure the signal voltage level and activate the Hz function in that range to get the most appropriate trigger level. If the Hz reading becomes unstable, select lower sensitivity to avoid electrical noise. If the reading shows zero, select higher sensitivity.

DCmV; ACmV; Logic-level Hz ; °C/°F

Inputs are made via the terminals COM/V. Startup defaults to CmV Function. Press the SELECT button momentarily to select the subject functions in sequence.



Note:

1) In ACmV function:

1-1) ACmV startup defaults to the AC 600.0mV range. Auto-ranging is not available. Press the RANGE button momentarily to toggle to the AC 60.00mV range for extended resolution.

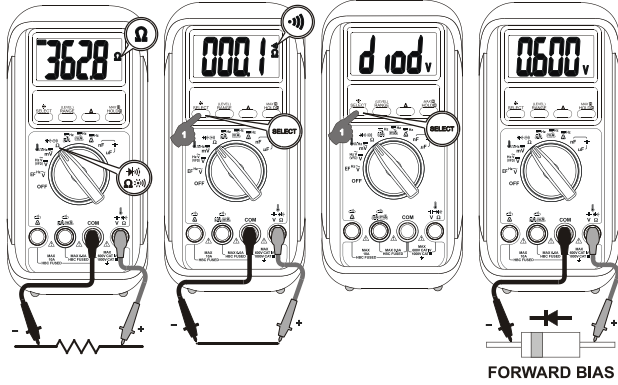
1-2) Using the ACmV function in a composite signal beyond the peak levels specified in the specifications will saturate the respective ranges and produce false results. Instead, the meter shows OL with both DC & AC icons when the peak value is exceeded in this regard. Suspected signal levels can be verified with the DCV and ACV functions. 1-3) To measure ACmV signals coupled merely in AC nature when required, it is recommended to add in series an appropriate DC blocking capacitor in the measurement loop.

2) In temperature function:

2-1) Be sure to insert the banana-plug type-K temperature bead-probe with correct +- polarities. Banana-pins to type-K socket adapter Bkb32 (Optional purchase) can be used to accept other type-K probes using standard miniature plugs. 2-2) Temperature accuracies assume the meter interior has the same temperature (isothermal stage) as the ambient, particularly at the plug of the probe being used, for a correct junction voltage compensation. Allow the meter interior temperature to catch up with that of the plug after a sudden change in the measuring environment and hence the ambient temperature. This can take up to an hour, for changes > 5°C, within a low ventilated sturdy meter housing. The uncompensated temperature differences, if any, will be reflected as offsets on the meter readings.

2-3) °F selection can be left out as factory calibration default for countries that only accept metric units.

Ω Resistance; 📡 BeepLit™ Continuity; & 🔌 BeepLit™ Diode
 Inputs are made via the test lead terminals **COM/Ω**. Startup defaults to **Ω Resistance**. Press the **SELECT** button momentarily to select the subject functions in sequence.



📡 BeepLit™ Continuity

This function is having improved convenience for checking wiring connections and operation of switches. The resistance threshold is being used. A continuous beep sound together with display backlight flashing indicates a complete wire. Such audible and visible indications improve continuity readabilities in noisy working environments.

🔌 BeepLit™ Diode

● **Reading indication:** Forward voltage drop (forward-biased) for a good silicon diode is between 0.400V to 0.900V. A higher reading indicates a leaky diode (defective). A zero reading indicates a shorted diode (defective). An over-range display indicates an open diode (defective). Reverse the test leads

connections (reverse biased) across the diode. The digital display shows an over-range if the diode is good. Any other readings indicate the diode is resistive or shorted (defective).

● **BeepPass™ indication (Short-beep):**

When the display reading drops across 0.850V, the BeepPass™ indication gives a short beep sound to signal a Good forward voltage drop of common diodes.

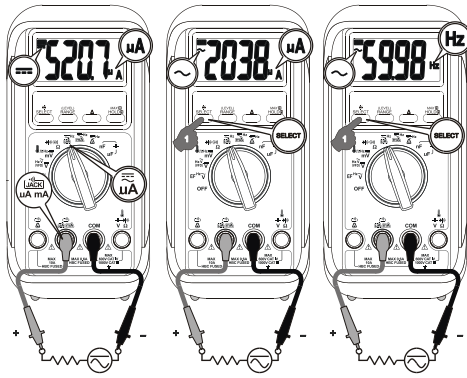
● **BeepLit™ indication (Continuity):**

If the reading further drops below 0.100V, the BeepLit™ indication gives a continuous beep sound together with the display backlight flashing to indicate a shorted diode or a complete wire. It is similar to that of the resistive BeepLit™ Continuity function but this BeepLit™ indication, instead, is based on the voltage threshold to indicate continuity.

Note: Using **Resistance, BeepLit™ Continuity, or BeepLit™ Diode** function in a live circuit will produce false results and may damage the meter. In many cases, the component(s) under test must be disconnected from the circuit to obtain an accurate measurement reading.

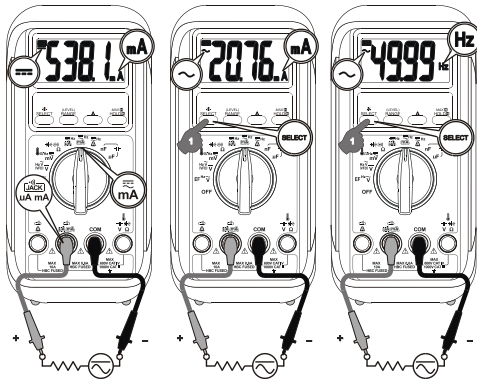
DCmA; ACmA; ACmA-Hz

Inputs are made via the test lead terminals **COM/mA mA**. Startup defaults to **DCmA**. Press the **SELECT** button momentarily to select the subject functions in sequence.



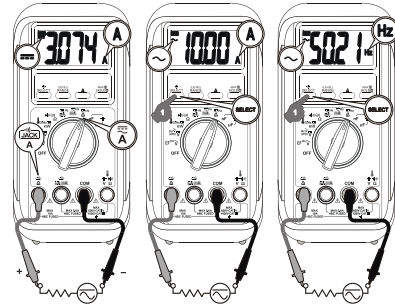
DCmA; ACmA; ACmA-Hz

Inputs are made via the test lead terminals COM/mA mA. Startup defaults to DCmA. Press the SELECT button momentarily to select the subject functions in sequence.



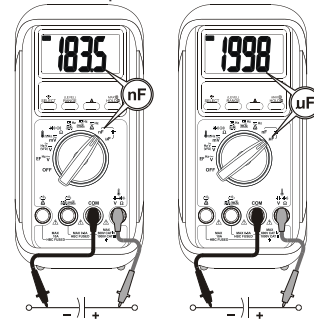
DCA; ACA; ACA-Hz

Inputs are made via the test lead terminals COM/A. Startup defaults to DCA. Press the SELECT button momentarily to select the subject functions in sequence.



-(nF & nF) Capacitance

Inputs are made via the test lead terminals COM/HF. Turn the rotary switch to select measurements in nF or in μ F. There are 3 auto-ranges (20.00, 200.0, and 2000) in each unit position making it 6 ranges altogether in the capacitance function.



Note: Discharge capacitor(s) before making capacitance measurements. Large-value capacitors should be discharged through an appropriate resistance load. Using the Capacitance function in a live circuit will produce false results and may damage the meter. In many cases, the suspected component(s) must be disconnected from the circuit to obtain accurate measurement readings.

Manual-ranging Override (Voltage, Current, and Ω functions only)

Press the **RANGE** button momentarily to select manual-ranging. The meter will remain in the range it was in; the LCD **AUTO** turns off. Press the button momentarily again to select the next range in sequence. Press and hold the button for 1 second or more to resume auto-ranging.

HOLD (with Hold-alert™ Warning)

HOLD feature freezes the display reading and stops further measurements for later views. LCD "**H**" turns on flashing, and the frozen reading also flashes; it is the Hold alert™ feature to warn the user of a displaying reading that is inactive. Press the **HOLD** button momentarily to toggle the **HOLD** feature.

MAX HOLD

Press the "MAX **H**" button for one second or more to activate **MAX HOLD** feature. LCD **MAX & H** turn on; Auto-Power-Off is disabled automatically; the meter beeps when a new **MAX** (maximum) reading is updated. When activated, the measuring speed (reading update rate) will be boosted to 40 times per second to capture RMS reading surges in the Voltage & Current functions; the speed remains unchanged in all other functions. Press the button for 1 second or more to exit.

Relative mode

Relative Δ mode allows the user to offset the meter consecutive measurements with the main-display displaying reading as the reference value. LCD " **Δ** " turns on. Press the **Δ** button momentarily to toggle **Relative Δ** mode.

LCD Backlight and Auto-Backlight-Off (ABO)

Press the **SELECT** button for 1 second or more to toggle the LCD backlight. The **ABO** mode turns the LCD backlight off automatically after around 32 minutes of backlight activation to extend battery life. See **Power-on Options** section for disabling **ABO**.

Intelligent Auto-Power-Off (iAPO)

The **iAPO** mode turns the meter off automatically to extend battery life after idling around 32 minutes of no specified activities, where applicable, below:

- 1) Rotary switch or push button operation
- 2) Significant measuring reading of above 8.5% of its range
- 3) Non-over-range reading for Resistance, Continuity, or Diode function
- 4) Non-zero reading for Hz function
- 5) Significant bar-segment indication in EF-Detection function

In other words, the meter will intelligently reset the **iAPO** mode when it is under normal measurements. To wake the meter up from **iAPO**, press the **SELECT** or **HOLD** button momentarily, or turn the rotary switch OFF and then back on. Always turn the rotary switch to the OFF position when the meter is not in use.

Power-on Options

■ Disabling both iAPO and ABO

Press and hold the **SELECT** button while powering on the meter to disable both **iAPO** and **ABO** features temporarily during the power-on session. The LCD will display "**dAPO**" to confirm selection before the **SELECT** button is released.

■ Shortening APO idling time for inspection

Press and hold the **HOLD** button while powering on the meter can shorten the **iAPO** idling time to about 8 seconds temporarily during the power-on session. This mode is designed mainly for production verification use.

■ Showing all LCD segments for inspection

Press and hold the **RANGE** or **Relative** button while powering on the meter can hold and show all LCD segments before the button

is released. This mode is designed mainly for production verification use.

5) MAINTENANCE

Note: 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.

Trouble Shooting

If the instrument fails to operate, check batteries and test leads etc., and replace as necessary. Double-check the operating procedure as described in this user's manual. Refer to the LIMITED WARRANTY section for obtaining calibration, repairing, or warranty service.

Accuracy and Calibration

Accuracy is specified for a period of one year after calibration. Periodic calibration at intervals of one year is recommended to maintain meter accuracy.

Cleaning and Storage

Periodically wipe the meter and the test probe assembly with a damp cloth and mild detergent. Do not use abrasives or solvents. Allow drying completely before operating. If the meter is not to be used for periods of longer than 60 days, remove the batteries and store them separately.

Battery and Fuse replacement

Battery use:

Standard 1.5V AAA Size (IEC R03) battery X 2

Fuses use:

Fuse (F1) for μ A-mA current input: 0.63A/1000V ac & dc, IR 10kA, F fuse; or better. Dimensions: 6 x 32 mm

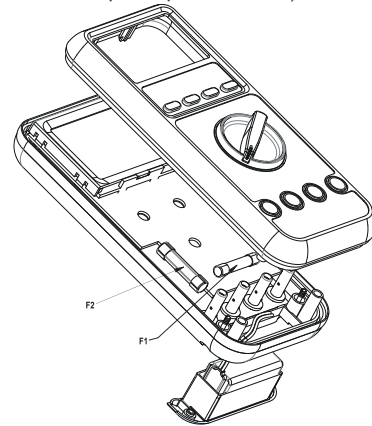
Fuse (F2) for A current input: 11A/1000V ac & dc, IR 20kA, F fuse; or better. Dimensions: 10 x 38 mm

Battery replacement for models 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 batteries. Put back the battery access door and re-fasten the 2 screws.

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

Remove the battery access door as described above (not applicable for the splash proof version).

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 batteries of the splash-proof version. Put back the case bottom; 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 4 screws. Put back the battery access door and re-fasten the 2 screws (not applicable for the splash-proof version).



TEST CERTIFICATE**TRMS ENHANCED
PRACTICAL MULTIMETER**

This Test Certificate warrants 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 2807CSE**

SERIAL NO. _____

DATE: _____

**ISO 9001:2015
REGISTERED**

**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.

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 transactions are subject to Mumbai Jurisdiction.