(KUSAM-MECO)

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DIGITAL MULTIMETER 405





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

Nearly every electrical engineer has a hand held digital multimeter (DMM). We sometimes take them for granted, until we damage them or "burn them out" if you incorrectly connect your DMM to a circuit, or if you 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 lower 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 10A. 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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Overview



To avoid electric shock or personal injury, read the "Safety Information" and "Rules for Safe Operation" carefully before using the Meter.

Digital Multimeter Model - 405 (hereafter referred to as "the Meter") is a 4½ digits TRMS Multimeter with steady operations, and highly reliable hand-held measuring instrument having different measurement positions. The Multimeter not only can measure AC/DC Voltage, AC/DC Current, Resistance, Frequency, Diode Test, Logic Test, but also has Data Hold, Full Icon Display.

Terms in this manual

Marning: 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 instrument.



Unpacking Inspection

Open the package case and take out the Multimeter. Check the following items carefully to see any missing or damaged part:

Item	Description	Qty.
1	English Operating Manual	1 piece
2	Test Lead	1 pair

In the event you find any Part missing or damaged, please contact your dealer immediately.

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FEATURES:

indication.

- Low power consumption CMOS double integration, A/D transform integrated circuit, Auto Zero Calibration. Auto Polarity display. Data Hold. Low Battery & Over range
- Display: 4½ digit (19999 Counts) with digit height 17mm and function/units sign annunciators.
- Selected Range displayed on LCD.
- High Accuracy Digital Reading.
- Instant Continuity Buzzer.
- Overload Protection in all Ranges.
- Recessed Safety Designed Input Jacks.
- " DATA HOLD " switch freezes reading.
- CE Approved, GS-approved.
- IEC61010 overload category II

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GENERAL SPECIFICATIONS:

Display

: 4½ digit LCD. Maximum reading 19999

with Function and unit sign annunciators. : 17mm(H)

Diait Size Polarity

: Automatic, (-) negative polarity indication.

Overrange : '1' most significant digit. indication

Low Battery Indication

: The " = " sign is displayed when the battery voltage drops below the operating

Auto Power Off

Voltage. : Meter automatically shuts

45.minutes of inactivity. Measurement rate: 2.5 times per Second, nominal

: -20°C to 60°C, 0 to 80% RH

with battery removed.

Operating

environment Storage

temperature

: 0°C to + 50°C, <70% R.H.

down after approx.

Power : Single 9 V Battery. Power : 14mW Typical.

Consumption

: 189mm (H) X 87mm(W) X Dimension

37mm(D) : Approx. (330 grams) Weight

including battery. Accessories : Test Leads, Carrying Case,

User Manual, Battery, Tilt stand, Protective Holster

ELECTRICAL SPECIFICATION:

DC VOLTAGE

Rang	je	Reso	lution	Accuracy				
200	mV	10	V					
2	V	100	V					
20	V	1	mV	±(0.05% rdg + 3dgts)				
200	V	10	mV					
1000	V	100	mV					
		_						

Input Impedance : 10M

Overload Protection: 500V DC/350Vrms on 200mV range, 1000V DC/750V rms on all other ranges

AC VOLTAGE 50Hz~500Hz (TRUE RMS)

	,							
Range Resolution		olution	Accuracy					
200	mV	10	V					
2	V	100	V	±(1.0% rdg +10 dgts)				
20	V	1	mV	1 ±(1.0 % rag + ro agis)				
200	V	10	mV					
750	V	100	mV	±(2.0% rda + 20 dats)				

Input Impedance: 10M

Overload Protection: 500V DC or 350Vrms on 200mV range, 1000V DC or 750Vrms on all other range

AC VOLTAGE 500Hz to 2KHz (TRUE RMS)

-								
	Ran	ige	Resc	lution	Accuracy			
[200	mV	10	V				
1	2	V	100	V	±(2.0% rdg + 20 dgts)			
1	20	V	1	mV	1 ±(2.0 % rug + 20 ugis)			
	200	V	10	mV				
	750	V	100	mV	Unspecifled			

Input Impedance: 10M

Overload Protection: 500V DC or 350Vrms on 200mV range 1000V DC or 750Vrms on all other range

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AC CURRENT (TRUE RMS)

		•		,
Range Resolution		lution	Accuracy	
200	Α	10	nΑ	
2	mΑ	100	nΑ	±(0.8% rdg + 10 dgts)
20	mΑ	1	Α	±(0.0 % rug + 10 ugis)
200	mΑ	10	Α	
20	A*	1	mA	±(2.5% rdg + 10 dgts)

Burden Voltage : 300mV for 200 A, 2mA, 20mA 600mV for 200mA & 800mV for 20A.

Overload Protection: 500mA/600V fuse on mA inputs (fast blow ceramic fuse). * 20A/600V fuse on 20A inputs (fast blow ceramic fuse).

20A for 30 seconds maximum

DC CURRENT

	JO GOTALETTI								
Range		Resolution		Accuracy					
200	Α	10	nΑ						
2	mA	100	nA	±(0.5% rdg + 5 dgts)					
20	mΑ	1	Α	±(0.5 % rug + 5 ugis)					
200	mΑ	10	Α						
20	A*	1	mA	±(2.0% rdg + 10 dgts)					

Burden Voltage: 300mV for 200 A, 2mA, 20mA 600mV for 200mA & 800mV for 20A.

Overload Protection: 500mA/600V fuse on mA inputs (fast blow ceramic fuse). * 20A/600V fuse on

20A inputs (fast blow ceramic fuse). 20A for 30 seconds maximum.

RESISTANCE

IXEOIO IA	ILOIO IAITOL							
Range	Resolution	Accuracy						
200	0.01	±(0.25% rdg + 10 dgts)						
2 K	0.1							
20 K	1	±(0.15% rdg + 3 dgts)						
200K	10]						
2 M	100	±(0.25% rdg + 10 dgts)						
20 M	1 K	±(1.0% rdg + 10 dgts)						

Overload Protection: 500V DC or AC rms Burden Voltage: 3.3V DC

FREQUENCY

Ra	nge	Res	olution	Accuracy	Input	Imped.
2	KHz	0.1	Hz			
20	KHz	1	Hz	±(0.5% rdg+3dgts)	10M	// 10pF
200)KHz	10	Hz			

Sensitivity: 50mV rms (Sine Wave), 400mV rms at > 30% and < 70% duty cycle Input Frequency: More than 10 Hz at pulse width > 2 sec.

Overload Protection: 500V DC or AC rms

DUTY CYCLE

Range				
0 - 90.0%	0.1%	> 10	sec.	±(2.0% rdg +10dgts)

Overload Protection: 500V DC or AC rms Frequency Range: 20 Hz to 20 KHz

LOGIC TEST

Threshold				Pulse Rise	
Logic Hi	Logic Low	Width(min)	dth(min) (max)		
	0.8V±0.5V		1Mpps	10 sec	

Test Voltage: 5V DC

Duty Cycle: >20% and <80%

Indication: 40msec beep at logic Hi

Overload Protection: 500V DC or AC rms

Frequency Response: 20MHz

CONTINUITY TEST

Range	Audible Indication	Response Time	Open Circuit Volts
2 V	Less than 150	Approx. 500ms	3.3V DC Typical

Overload Protection: 500V DC or AC rms

DIODE TEST

Range	Resol.	Accuracy	Test Current	Open Circuit Volts
2 V	0.1mV	±(0.5% rdg + 1dgt)	1.0mA	3.3V DC Typical

Overload Protection: 500V DC or AC rms

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Rules For Safe Operation (1)

Marning

To avoid possible electric shock or personal injury, and to avoid possible damage to the Meter or to the equipment under test, adhere to the following rules:

- Before using the Meter inspect the case. Do not use the Meter if it is damaged or the case (or part of the case) is removed. Look for cracks or missing plastic. Pay attention to the insulation around the connectors.
- Inspect the test leads for damaged insulation or exposed metal. Check the test leads for Continuity. Replace damaged test leads with identical electrical Specifications before using the Meter.
- Do not apply more than the rated voltage, as marked on the Meter, between the terminals or between any terminal and grounding.
- The rotary switch should be placed in the right position and no any changeover of range shall be made while measurement is conducted to prevent damage of the Meter.
- When measurement is taken at an effective voltage over 60V in DC or 30V rms in AC, special care should be taken for there is danger of electric shock.
- Use the proper terminals, function, and range for your measurements.
- Do not use or store the Meter in an environment of high temperature, humidity, explosive, inflammable and strong magnetic field. The performance of the Meter may deteriorate after the meter is dampened.
- When using the test leads, keep your fingers behind the finger guards.

Rules For Safe Operation (2)

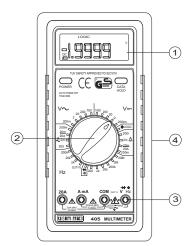
- Disconnect circuit power and discharge all high -voltage capacitors before testing resistance, continuity, diodes, or current.
- Replace the battery as soon as the battery indicator appears. With a low battery, the Meter might produce false readings that can lead to electric shock and personal injury.
- Turn the Meter power off when it is not in use and take out the battery when not using for a long time.
- Constantly check the battery as it may leak when it has not been used for some time, replace the battery as soon as leaking appears. A leaking battery will damage the Meter.

International Electrical Symbols

	AC (Alternating Current).	
===	DC (Direct Current).	
	Both DC & AC.	
<u></u>	≟ Grounding.	
	Double Insulated.	
- +	Deficiency of Built-In Battery.	
Continuity Test.		
	Diode.	
-	Fuse.	
\triangle	Warning! Refer to the Operating Manual.	
Ź	Caution ! Risk of Electric Shock.	
♦	Logic test	

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The Multimeter Structure (see figure 1)



(Figure 1)

1) LCD DISPLAY:

A 4½ digit display (maximum reading 19999) indicates measured values, and features symbols indicating function, Low Battery, Continuity, Diode, Logic.

2) FUNCTION SELECTOR:

To Select ACV, DCV, ACA, DCA, Resistance, Frequency, Diode, Continuity & Logic Test.

3) INPUT JACKS (V m and COM):

Test leads are inserted into these jacks for Voltage, Resistance, Current measurements, Continuity & Diode Checks.

4) PROTECTIVE HOLSTER:

Prevents the instrument from damage.

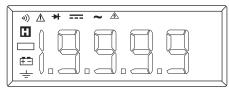
Functional Buttons

Below table indicates the functional button operations

below table indicates the functional button operations				
Buttons	Operation Performed			
POWER (Black Button)	Switch the Meter on and off. Press the POWER button to switch on the Meter. Press the POWER button to turn off the Meter.			
DATA-HOLD (Black Button)	 Press HOLD Button to hold the reading on the display. Press HOLD button again to exit hold mode. 			



Display Symbols (see figure 2)



(Figure 2)

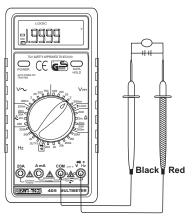
, 3 /					
No.	Symbol	Meaning			
1	4	Dangerous Voltages.			
2	- +	The battery is low. Marning: To avoid false readings, which could lead to possible electric shock or personal injury, replace the battery as soon as the battery indicator appears.			
3		Indicator for AC voltage or current, The displayed value is the mean value.			
4	_	Indicates negative reading.			
5	→	Test of diode.			
6		Data Hold is active.			
7	•)))	The continuity buzzer is on.			
8	Α	A: Amperes (amps). The unit of current.			
9	V	V : Volts. The unit of voltage.			
10	Hz	Hz : The unit of frequency.			
11	%	% : The unit of Duty cycle.			
12	, k , M	: Ohm. The unit of resistance. K : kilohm. 1 x 10³ ohms. M : Mega Ohm 1 x 10° ohms.			
13	A	▲ : The symbol of logic Hi ▼ : The symbol of logic Low			

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Measurement Operation

- Make sure the Low Battery display is not on, otherwise false readings may be provided.
- Pay extra attention to the symbol which is located besides the input terminals of the Meter before carrying out measurement.

A) DC voltage measurement (see figure 3)



(Figure 3)

\triangle Warning

To avoid harms to you or damages to the Meter from electric shock, please do not attempt to measure voltages higher than 1000V or 750V rms although readings may be obtained.

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The DC Voltage ranges are :200mV, 2V, 20V, 200V, 1000V

To measure DC voltage, connect the Meter as follows:

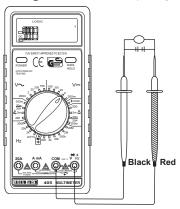
- Insert the red test lead into the V input terminal and the black test lead into the COM input terminal
- 2) Set the rotary switch to an appropriate measurement position in V == range.
- 3) Connect the test leads across with the object being measured.

The measured value is shown on the display.

Caution :

- If the value of voltage to be measured is unknown, use the maximum measurement position (1000V) and reduce the range step by step until a satisfactory reading is obtained.
- The LCD displays "1" indicating the existing selected range is overloaded, it is required to select a higher range in order to obtain a correct reading.
- In each range, the Meter has an input impedance of approx. 10M . This loading effect can cause measurement errors in high impedance circuits.
 If the circuit impedance is less than or equal to 10k . the error is negligible (0.1% or less).
- When DC voltage measurement has been completed, disconnect the connection between the testing leads and the circuit under test.

B) AC Voltage Measurement (see figure 4)



Marning: (figure 4)

To avoid harm to you or damages to the Meter from electric shock, please do not attempt to measure voltages higher than 1000V or 750V rms although readings may be obtained.

The AC Voltage measurement has 5 measurement positions on the rotary switch : 200mV, 2V, 20V, 200V and 750V

To measure AC Voltage, connect the Meter as follows:

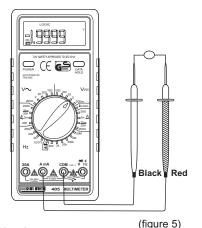
- Insert the red test lead into the V terminal and the black test lead into the COM terminal.
- Set the rotary switch to an appropriate measurement position in V ~ range.
- Connect the test leads across with the object being measured.
 The measured value is shown on the display.

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🗘 Caution :

- If the value of voltage to be measured is unknown, use the maximum measurement position (750V) and reduce the range step by step until a satisfactory reading is obtained.
- The LCD displays "1" indicating the existing selected range is overloaded, it is required to select a higher range in order to obtain a correct Reading.
- When AC Voltage measurement has been completed, disconnect the connection between the testing leads and the circuit under test.

C) AC Current Measurement (see figure 5)





Never attempt an in - circuit current measurement

where the open circuit voltage between terminals and

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ground is greater than 60V DC or 30V rms. If the fuse burns out during measurement, the Meter may be damaged or the operator himself may be hurt. Use proper terminals, function, and range for the measurement. When the testing leads are connected to the current terminals, do not parallel them across any circuit.

The AC Current measurement has 5 measurement positions on the rotary switch: 200 A, 2mA, 20mA, 200mA, 20A.

To measure AC Current, connect the meter as follows :

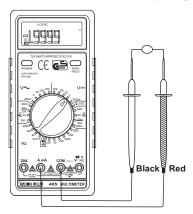
- Turn off power to the circuit. Discharge all High - Voltage capacitors.
- Insert the red test lead into the mA or 20A terminal and the black test lead into the COM terminal.
- 3) Set the rotary switch to an appropriate measurement position in Current range.
- 4) Break the current path to be tested. Connect the red test lead to the positive side of the path and the black test lead to the negative side of the path.
- Turn on power to the circuit.
 The measured value is shown on the display.

Caution

- If the value of current to be measured is unknown, use the maximum measurement position (20A) and 20A terminal, and reduce the range step by step until a satisfactory reading is obtained.
- When current measurement has been Completed, switch off power in the circuit and then disconnect the connection between the testing leads and the circuit under test.

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D) DC Current Measurement (see figure 6)



(figure 6)

⚠ Warning :

Never attempt an in - circuit current measurement where the open circuit voltage between terminals and ground is greater than 60V DC or 30V rms. If the fuse burns out during measurement, the Meter may be damaged or the operator himself may be hurt. Use proper terminals, function, and range for the measurement. When the testing leads are connected to the current terminals, do not parallel them across any circuit.

The DC current measurement has 5 measurement positions on the rotary switch : 200 A, 2mA, 20mA, 200mA, 20A.

To measure DC Current, connect the meter as follows:

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- Turn off power to the circuit. Discharge all High - Voltage capacitors.
- Insert the red test lead into the mA or 20A terminal and the black test lead into the COM terminal
- 3) Set the rotary switch to an appropriate measurement position in Current range.
- 4) Break the current path to be tested. Connect the red test lead to the positive side of the path and the black test lead to the negative side of the path.
- Turn on power to the circuit.
 The measured value is shown on the display.

⚠ Caution

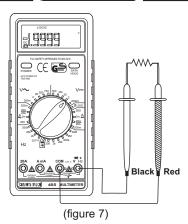
- If the value of current to be measured is unknown, use the maximum measurement position (20A) and 20A terminal, and reduce the range step by step until a satisfactory reading is obtained.
- When current measurement has been completed, switch off power in the circuit and then disconnect the connection between the testing leads and the circuit under test.

E) Resistance Measurement (see figure 7)



To avoid damages to the Meter or to the devices under test, disconnect circuit power and discharge all the high-voltage capacitors before measuring resistance.

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The resistance range has 6 measurement positions on the rotary switch: 200

To measure resistance, connect the meter as follows

- follows

 1) Insert the red test lead into the V terminal and
- the black test lead into the **COM** terminal.

 2) Set the rotary switch to an appropriate
- measurement position in range.
 3) Connect the test leads across with the resistance being measured.

The measured value is shown on the display.

Note:

The test leads can add 0.1 to 0.3 of error to the Resistance measurement. To obtain precision readings in low-resistance, that is the range of 200, short-circuit the input terminals beforehand and record the reading obtained (call this reading as X). (X) is the additional resistance from the test lead



Then use the equation:

Measured resistance value (Y) - (X) = precision Reading of resistance.

- When there is no input, for example in open circuit condition, the Meter displays "1"
- When resistance measurement has been completed, disconnect the connection between the testing leads and the circuit under test.

🛕 Caution :

- Never connect high voltage to the input sockets with the switch in Resistance range.
- Using Resistance measurement function in a Live circuit will produce false results and may damage the instrument. In many cases the suspect component must be disconnected from the circuit to obtain an accurate reading.

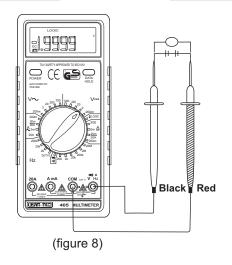
F) Frequency Measurement (see figure 8)

⚠ Warning:

To avoid harm to you or damages to the Meter, do not attempt to measure voltages higher than 60V in DC or 30V rms in AC although reading may be obtained.

When the frequency signal to be tested is higher than 30V rms, the Meter cannot guarantee accuracy of the measurement.

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The frequency measurement range is 2kHz, 20kHz, 200kHz.

To measure frequency, connect the Meter as follows:

- Insert the red test lead into the V terminal and the black test lead into the COM Terminal
- 2) Set the rotary switch in the appropriate frequency range.
- Connect the test leads across which the frequency is to be measured.

The measured value is shown on the display.



Caution:

 When Hz measurement has been completed, disconnect the connection between the testing leads and the circuit under test.

G) Duty Cycle Measurement

- 1)Set the rotary selector switch to the "Hz" range desired for a measurement.
- 2)Insert the BLACK and RED test leads into the "COM" and "V" input terminals respectively.
- 3)Apply the test leads to the points across which the frequency is to be measured and read the result directly from the display.
- 4)To make duty cycle test during frequency measurements, place the range selector switch into the "DUTY %" position. The display will indicate 0% of the frequency duty cycle.

🖄 Caution :

The frequency ranges have overload protection to 500 VAC / VDC. Do not exceed this limit. To do so could damage your multimeter.

H) Logic Testing

- 1 Insert the BLACK and RED test leads into the "COM" and "V " input terminals respectively.
- 2. Select the logic function by rotating the selector dial to the () logic position.
- 3) Connect the BLACK probe tip to the Common Bus of the logic circuitry to be measured.
- Connect the RED probe tip to the point to be tested.
- 5) With a logic high pulse (1), the indicator " ▲ " will display in the L CD and a beeping sound will emit. With a logic low pulse (O), the indicator "▼" will appear in the LCD.

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I) Measuring Diodes & Continuity

△ Warning

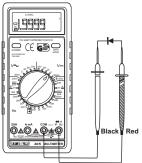
To avoid damage to the Meter or to the equipment under test, disconnect circuit power and discharge all high-voltage capacitors before measuring diodes and continuity.

Testing Diodes

Use the diode test function to check diodes, The diode test sends a current through the

Semiconductor junction, and then measures the voltage drop across the junction. A good silicon junction drops between 0.5V and 0.8V.

To test a diode out of a circuit, connect the Meter as follows:



- Insert the red test lead into the V terminal and the black test lead into the COM terminal.
- 2) Set the rotary switch to ->->)) position.
- For forward voltage drop reading on any Semiconductor component, place the red test lead on the component's anode and place the black test lead on the component's cathode. The measured value is shown on the display.

🕰 Caution :

- In a circuit, a good diode will produce a forward voltage drop reading of 0.5V to 0.8V; However; the reverse voltage drop reading can Vary depending on the resistance of other path ways between the probe tips.
- Connect the test leads to the proper terminals as said above, to avoid error display. The LCD will display "1" indicating open-circuit for wrong connection. The unit of diode is Volt (V), displaying the positive connection voltage-drop Value.
- When diode testing has been completed, disconnect the connection between the testing leads and the circuit under test.

Testing for Continuity

To test for continuity, connect the Meter as below:

- Insert the red test lead into V terminal and the black test lead into the COM terminal.
- Set the rotary switch to → •)) position
- Connect the test leads across with the object being measured.

The buzzer sounds if the resistance of a circuit under test is less than 150 .

The LCD displays the resistance value of a circuit under test.

A Caution :

- The LCD displays "1" indicating the circuit being tested is open.
- When continuity testing has been completed, disconnect the connection between the testing leads and the circuit under test.

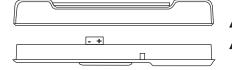
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Maintenance

To avoid false reading, replace the battery as soon as the battery indicator appears.

To replace battery / fuse :

- Disconnect the connection between the testing leads and the circuit under test, and remove the testing leads away from the input terminals of the Meter.
- Turn the Meter OFF.
- Remove the screws from the bottom case and separate the bottom case from the top case.
- Remove the battery/fuse from the battery/fuse compartment.
- Replace the battery/fuse with a new Standard 9V Battery/same specification fuse.
- Rejoin the bottom case and the top case, and install the screw







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. 405

SERIAL NO. _____

(27)

DATE: _____

ISO 9001 REGISTERED





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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.

KUSAM-MECO :

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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