



## INSTRUCTION MANUAL

### MT500

### ANALOGUE INSULATION TESTER





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## 1. SAFETY INFORMATION

- Read the following safety information carefully before attempting to operate or service the meter.
- To avoid damages to the instrument do not apply the signals which exceed the maximum limits shown in the technical specifications tables.
- Do not use the meter or test leads if they look damaged. Use extreme caution when working around bare conductors or bus bars.
- Accidental contact with the conductor could result in electric shock.
- Use the meter only as specified in this manual; otherwise, the protection provided by the meter may be impaired.
- Read the operating instructions before use and follow all safety Information.
- Caution when working with voltages above 60V DC or 30V AC RMS. Such voltages pose a shock hazard.
- Before taking resistance measurements or testing acoustic continuity, disconnect circuit from main power supply and all loads from the circuit.

## 2. SAFETY SYMBOLS



Caution refer to this manual before using the meter.



Dangerous voltages.



Meter is protected throughout by double insulation or reinforced insulation.

When servicing, use only specified replacement parts.  
CE Comply with EN-61010-1

## 3. SPECIFICATIONS

### 3.1. General Information

#### Environment conditions:

1. Installation Categories III
2. Pollution Degree 2
3. Altitude up to 2000 meters
4. Indoor use only
5. Relatively humidity 80% max.
6. Operation Ambient 0~40°C

#### Maintenance & Cleaning:

1. Repairs or servicing not covered in this manual should only be performed by qualified personnel.
2. Periodically wipe the case with a dry cloth. Do not use abrasives or solvents on this instruments.

Function	Range
Display	Large Analogue display
Measurement Range	3 $\Omega$ , 500 $\Omega$ , 100M $\Omega$ /250V, 200M $\Omega$ /500V,400M $\Omega$ /1000V, 600V/ACV
Operating Temperature	0°C to 40°C (32°F to 104°F) and Humidity below 80% RH
Storage Temperature	-10°C to 60°C (14°F to 140°F) and Humidity below 70% RH
Power source	DC9V (6x1.5V Size "AA" battery or Equivalent)
Dimensions	200(L) x 92(W) x 50(H) mm
Weight	Approx 700g including battery
Accessories	Test leads, 6pcs battery, Carrying case, manual.

### 3.2. Electrical Specifications

Accuracies are specified in the way:

$\pm$ (...% of reading + ...digits) at 23°C $\pm$ 5°C, below 80% RH.

#### OHMS

Range	Resolution	Accuracy	Max. open Circuit Voltage	Max Circuit Current
3 $\Omega$	0.05 $\Omega$	$\pm$ 3%	4.5V	250mA
500 $\Omega$	1 $\Omega$		4.5V	

#### AC Voltage (40Hz~400Hz)

Range	Resolution	Accuracy	Input Impedance	Overload Protection
600V	20V	$\pm$ 5%	1.2M $\Omega$	1000Vrms

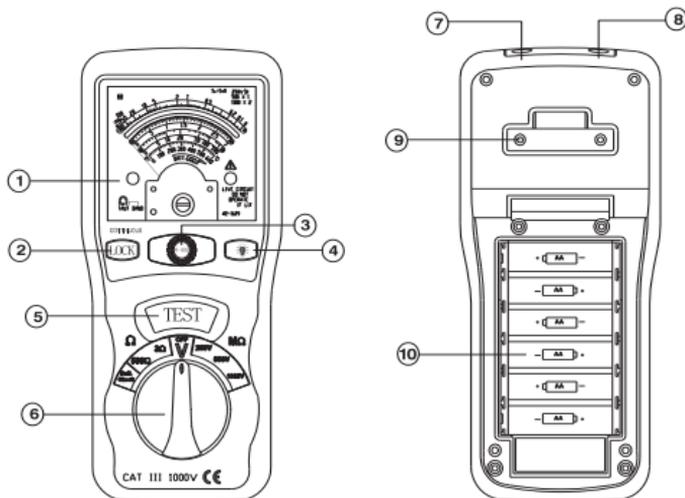
#### Meg OHMS

Range	$\pm$ 5%	$\pm$ 10%	Terminal Voltage
100M $\Omega$ /250V	0.2M $\Omega$ ~5M $\Omega$	5M $\Omega$ ~100M $\Omega$	250V+10%~-0%
200M $\Omega$ /500V	0.5M $\Omega$ ~10M $\Omega$	10M $\Omega$ ~200M $\Omega$	500V+10%~-0%
400M $\Omega$ /1000V	1M $\Omega$ ~20M $\Omega$	20M $\Omega$ ~400M $\Omega$	1000V+10%~-0%

Range	Test Current		Short Circuit Current
1000M $\Omega$ /250V	1mA	250K $\Omega$ (load)	About 1.3mA
200M $\Omega$ /500V		500K $\Omega$ (load)	
400M $\Omega$ /1000V		1M $\Omega$	

## 4. PARTS & CONTROLS

- |                     |                           |
|---------------------|---------------------------|
| 1. Point needle     | 6. Rotary Function switch |
| 2. Lock Button      | 7. V $\Omega$ Jack        |
| 3. 0-Adjust Button  | 8. COM input jack         |
| 4. Backlight Button | 9. Pothook                |
| 5. Test Button.     | 10. Battery Cover         |



## 5. HOW TO CONNECT TEST LEADS.

- On M $\Omega$  Range: Connect the red test lead into the "V $\Omega$ " terminal and the black lead into the "COM" terminal.
- On 3 $\Omega$ /500 $\Omega$  and ACV Range: Connect the red test lead into the "V $\Omega$ " terminal and the black lead into terminal "COM"

## 6. INSULATION RESISTANCE MEASUREMENTS

### 6.1. Measurements at 200M $\Omega$ /500V

This is the voltage used for the majority of insulation resistance tests on normal installation requirement. To measure insulation resistance, press the test button to power on the tester. The point needle will displayed the insulation resistance. Section VII indicated that subdivision of large installations might be necessary because of the large number of parallel insulation resistance. In such a case, an installation may be divided into sections, each being separately tested. Each section must have not less than fifty outlets, an outlet being a switch, socket, lighting point etc. A switched socket counts as one outlet. The minimum acceptable insulation resistance is 1M $\Omega$ . For a large installation, the capacitance of

the insulation will be high, and it will take longer for it to become charged by the direct testing voltage. Care must be taken not to take a reading until there is a steady reading, indicating that the charging process is complete.

**Note:** The charge stored in the insulation will be discharged automatically when the test button is released. Be careful not to turn the range switch knob whilst the test button is pressed, or the instrument will be damaged.

### **6.2. Lock power on Feature**

For hands free operation a lock power on feature is incorporated on the press to test button. Set LOCK button to lock test voltage, Pressing it again will switch it off.

## **7. AC VOLTAGE MEASUREMENTS**

1. Set the range switch to ACV position
2. Connect red test lead to "V  $\Omega$ " terminal and black test lead to terminal "COM".
3. Connect test prods of test leads IN PARALLEL to the circuit being measured.
4. Read the voltage value on meter.



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