

## **WARRANTY**

Each "KUSAM-MECO" product is warranted to be free from defects in material and workmanship under normal use & service. The warranty period is Two year (24 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, Burn't PCB 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 transaction are subject to Mumbai Jurisdiction.



G-17, Bharat Industrial Estate, T. J. Road, Sewree(W),  
Mumbai-400 015.(INDIA)

**Sales Direct :** (022) 24156638 **Tel :** 24124540, 24181649

**Fax :** 91-22-2414 9659 **Email :** kusam\_meco@vsnl.net

**Website:** www.kusamelectrical.com, www.kusam-meco.co.in



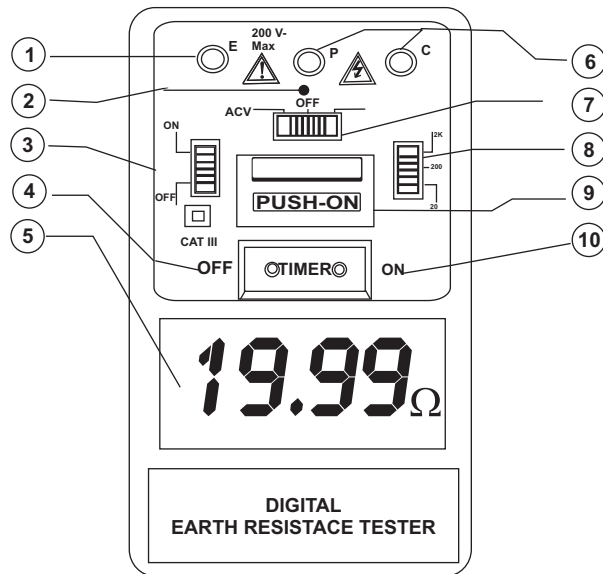
An ISO 9001:2000 Company

# **DIGITAL EARTH RESISTANCE TESTER**

## **KM-1520**

## **INSTRUCTION MANUAL**

**1. PRODUCT DESCRIPTION**



- |                                     |                                     |
|-------------------------------------|-------------------------------------|
| 1. Jack For "EARTH" Lead connection | 6. Jacks For "LINE" Lead connection |
| 2. Operation Indicator              | 7. Function Switch                  |
| 3. Data Hold Switch                 | 8. Ohm Range Switch                 |
| 4. Timer off Button                 | 9. Push button Operation            |
| 5. LCD Display                      | 10. Timer On Button                 |

**2. INTRODUCTION**

**NOTE**

This meter has been designed and tested according to IEC Publication 348, Safety Requirements for Electronic Measuring Apparatus, IEC1010 (EN 61010) and other safety standards. Follow all warnings to ensure safe operation.

**WARNING**

READ "SAFETY NOTES" BEFORE USING THE METER.

**3. SAFETY NOTES**




Read the following safety information carefully before attempting to operate or service the meter.

Use the meter only as specified in this manual; otherwise the protection provided by this meter may be impaired.

Rated environmental conditions:

- 1) Indoor use
- 2) installation Category III
- 3) Pollution degree 2
- 4) Altitude up to 2000 Meter
- 5) Relative Humidity 80% Max
- 6) Ambient Temperature 0-40°C

Observe the international Electrical Symbols listed below.

-  Meter is protected throughout by double insulation or reinforced insulation.
-  Warning ! Risk of electric shock
-  Caution ! Refer to this manual before using the meter.

#### 4. FEATURES

- Capable of measuring earth voltage.
- 2 mA measuring current permits earth resistance tests without tripping earth leakage current breakers in the circuit under test.
- Battery operated.
- Auto power off function. The timer operates automatically about 3 ~ 6 minutes when the "PUSHBUTTON SWITCH" and "TIMER ON BUTTON" are pressed at the same time to keep the tester power on.
- Data hold function.
- Small and light weight.
- Designed to meet IEC-1010-1 (EN61010-1) CAT III 200V

#### 5. SPECIFICATIONS

- **Measurement system :**  
Earth Resistance by constant current inverter.  
820Hz, 2 mA approx.
- **Earth Voltage :** 0 ~ 200V AC, 40 ~ 500 Hz
- **Earth Resistance :** Range and resolution  
0~20 ohm (0.01ohm)  
0~200 ohm(0.1 ohm)  
0~2000 ohm(1 ohm)
- **Accuracy :**  
Earth Voltage  $\pm (1\%rdg + 2dgt)$   
Earth resistance  $\pm (2\% rdg + 2dgt)$  or  $\pm 0.1$   
which ever is greater.
- **Safety standard :**  
IEC -1010(EN 61010), installation category III
- **Low battery indication :**  
"B" symbol appears on the display
- **Over range indication :**  
"DH" symbol appears on the display
- **Timer (Auto power off):** about 3 ~ 6 minutes
- **Display :** LCD 3 ½ digit (2000 counts)
- **Power source :** 1.5V x 6 pieces dry batteries
- **Dimensions :** 163 (L) x 100 (W) x 50 (D) mm
- **Weight :** Approx. 800g( battery included)
- **Accessories :**  
Test leads (red- 15M, yellow- 10M, green -5M),  
Auxiliary Earth Bars, Heavy Case, Instruction Manual.

## 6. MEASURING METHODS

BEFORE PROCEEDING WITH MEASUREMENT,  
READ THE SAFETY NOTES ON PAGE 2.

1. Connection with test leads :  
Connect green, yellow and red test leads to instrument terminals E, P and C with auxiliary earth bars P1, C1 driven into earth "IN A STRAIGHT LINE"; (Fig.1)
2. Set the function switch to ACV position and make certain that the voltage reading is LESS THAN 10V AC, otherwise accurate earth resistance measurement may not be made.

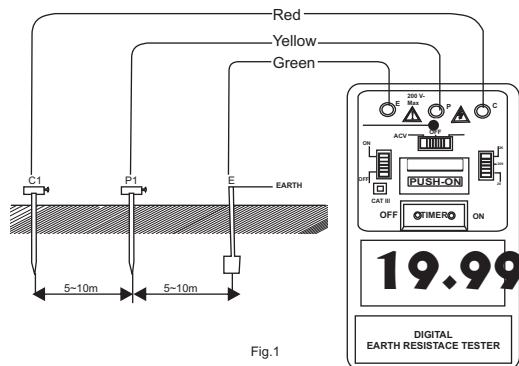


Fig.1

3. Set the Range Switch to suitable range and set the function switch to position then press the PUSH-ON BUTTON and TIMER ON BUTTON at the same time and take the reading on the display.
  - ★ : When none of E, P and C terminals connected with test leads, the display shows "1" at function.
  - ★ : Follow the proper connection such as Fig. 1, the LED (red) indicator will lit. This proves a correct current circulation is under its operation.

## 7. MAINTENANCE

### ● Battery Replacement :

When the symbol "B" appears on the display, replace the batteries as follows :

1. Disconnect the Test Leads from the instrument and turn off the power.
2. Use a screwdriver to unscrew the screw on back cover then slide the cover, take out the batteries and replace with new batteries Type SUM-3
3. Place back cover and secure by a screw.

### ● Cleaning and Storage :

#### **WARNING**

To avoid electrical shock or damage to the Meter, do not get water inside the case

Periodically wipe the case with a damp cloth and detergent; do not use abrasives or solvents.

If the meter is not to be used for periods of longer than 60 days, remove the batteries and store them separately.