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 transaction are subject to Mumbai Jurisdiction.

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KUSAM-MECO®

AN ISO 9001:2015 COMPANY

DIGITAL EARTH RESISTANCE TESTER KM 1520



INSTRUCTION MANUAL

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1. INTRODUCTION

This meter has been designed and tested according to CE safety requirements for Electronic Measuring Apparatus, EN61010-1 and other safety standards. Follow all warnings to ensure safe operation.

- **Application :**

Earth Resistance Tester is used to measure the ohms(Ω) of an earth grounding installation for buildings (residential, office, labs, hospitals), computer server rooms, military installations, cellular sites, radio and cable towers, etc. It is used to determine if the earth (or ground) is a good conductor of electricity.

- **Purpose of Earth Grounding :**

(1) Avoid human and animal electrical shock.
(2) Aviod unnecessary property and equipment damage.
(3) Prevent fire or explosion.
(4) Integrate electrical signal to attain proper operation or measuring purpose.
(5) Provide a means of dissipation for power surges caused by lighting strikes, static charges, and other types of electrical interference.

2. 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.

3. 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 auto matically about 3 ~ 5 minutes when the “PUSH BUTTON SWITCH” and TIMER ON BUTTON” are pressed at the same time to keep the tester power on.

- Data hold function.

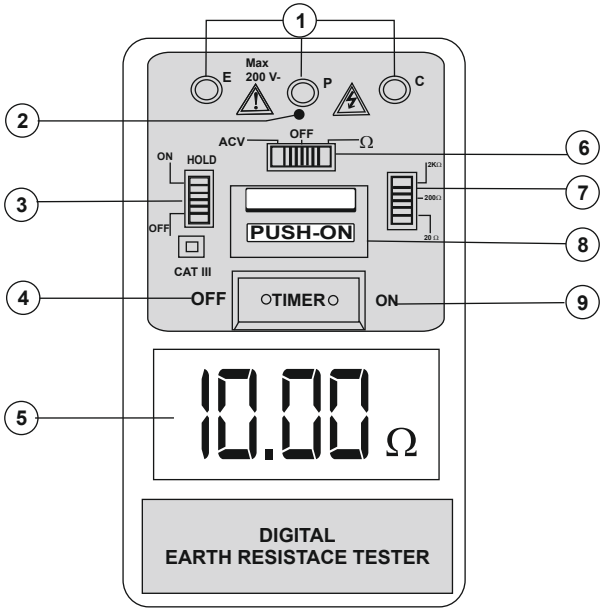
- Small and light weight.

- Designed to meet EN61010-1 CAT III 200V.

4. SPECIFICATIONS

- **Measurement Ranges :**
  Earth Resistance : 0~20Ω / 0~200Ω / 0~2000Ω
  Earth Voltage : 0 ~ 200V AC (40 ~ 500Hz)
- **Accuracy :**
  Earth resistance : ± (2%rdg +2dgt) or ± 0.1Ω ,
  which is greater.
  Earth Voltage : ± (1%rdg + 2dgt)
- **Earth Resistance Resolution :**
  0~20Ω (0.01Ω); 0~200Ω (0.1Ω); 0~2000Ω (1Ω)
- **Measurement System :**
  Earth Resistance by constant current inverter.
  inverter 820Hz, approx 2mA.
- **Safety standard :** EN 61010-1 CAT III 200V.
- **Low battery indication :**
  "B" symbol appears on the display.
- **Data Hold indication :** "DH" symbol appears on the display
- **Over range indication :** "1" (MSD)
- **Open Circuit indication :** LED will be unit
- **Display LCD :** 3½ digit (2000 counts)
- **Power source :** 1.5V(AA) x 6 batteries
- **Dimensions :** 163 (L) x 100 (W) x 50 (D) mm
- **Weight :** Approx. 480g.
- **Accessories :**
  Test leads (red- 15M, yellow- 10M, green -5M),
  Auxiliary Earth Bars, Carrying Case, Instruction Manual &
  Batteries.

5. LAYOUT



1. "E", "P", "C" Terminal
2. Operation Indicator
3. Data Hold Switch
4. Timer off Button
5. LCD Display
6. Function Switch
7. Ohm Range Switch
8. Pushbutton Operation
9. Timer On Button

6. MEASURING METHODS

BEFORE PROCEEDING MEASUREMENT, READ SAFETY NOTES ON PAGE 2.

⚠ In proceeding with measurement, if “B” symbol appears on the display, replace with new batteries.

• Earth Voltage Measurement :

(1) Connection with test leads :

Connect green, yellow test leads to instrument terminals E, P with auxiliary earth bars P1, driven into earth “IN A STRAIGHT LINE”. (Fig.1)

(2) Set the function switch to ACV position and press the “PUSH-ON” button and “TIME ON” button at the same time make certain that the voltage reading is LESS THAN 10V AC, otherwise accurate earth resistance measurement may not be made.

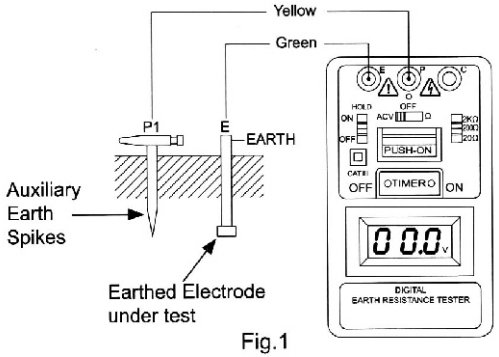


Fig.1

• Earth Resistance Measurement :

(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.2)

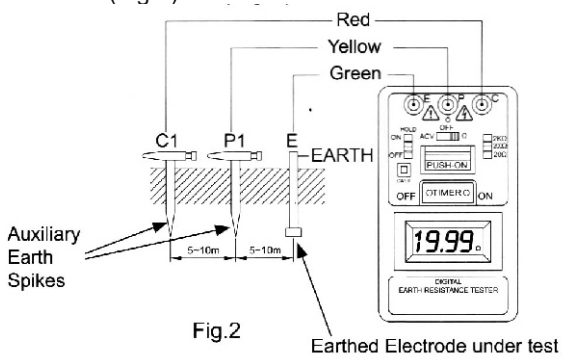


Fig.2

(2) Set the range switch to suitable range and set the function switch to Ω position then press the PUSH-ON BUTTON and TIME ON BUTTON at the same time and take the reading on the display.

⚠ WARNING

• When none of E, P and C terminals connected with test leads, the display shows “1” at Ω function.

• Follow the proper connection such as Fig.2, 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

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

MUMBAI

TEST CERTIFICATE

DIGITAL EARTH RESISTANCE TESTER

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 1520**

SERIAL NO. _____

DATE: _____

ISO 9001:2015
REGISTERED

QC
KUSAM-MECO
PASS