



# DIGITAL EARTH RESISTANCE TESTER

3 1/2 DIGIT L.C. Display (Provided with Ni-Cd Re-chargeable Battery)

**MODEL : DET-2**

- MICROPROCESSOR BASED
- AUTORANGING
- TEN MEMORIES
- RANGE : 0-2-20-200-2000 $\Omega$  (AUTO)
- RESOLUTION : 0.001 $\Omega$
- RUGGED ABS MOULDED BODY
- FOUR TERMINAL TYPE  
(To Measure Earth Resistance as well as specific soil Resistivity)
- Easy to use hand held meter
- Facility to make bench top type instrument
- Lo-BAT Indication appears on display. The batteries can be recharged by connecting the charger provided with the instrument
- Accurate & Reliable
- Confirms to ISS : 9223/1979
- Wide range suitable for different types of soil



**INSTRUMENTS FOR ACCURACY & RELIABILITY**

**APPLICATION :** "CIE" Digital Earth Resistance Tester is designed to measure the resistance of earth used in power circuit, Telecommunications, Railway Electrification, Domestic and Industrial electrical installations. The tester measures directly the resistance of the earth and also measures the ground resistivity. The sturdy, elegant and compact body makes the instrument portable, easy to use, Hand-held instrument.

Model "DET-2" is an autoranging Digital Earth Tester having Ranges : 0-2-20-200-2000Ω with resolution 0.001 Ω

**TECHNICAL SPECIFICATION :-**

- DISPLAY : 3 ½ digit LCD Display
- RANGE : AUTORANGING (0-2-20-200-2000Ω)
- RESOLUTION : 0.001Ω
- ACCURACY : ±1% rdg± 3 digit
- MEMORY : Last Ten Memories

**MAXIMUM OUTPUT VOLTAGE :** 50 V A.C.

**FREQUENCY :** 200Hz ± 10Hz

Standard Accessories : Carrying Case, Battery Charger,, Instruction Manual, Manufacturer's Traceable Test Certificate

Optional Accessories : 4 Nos. M.S. Spike (45 cm length), Cable length (10 mtr.... 1No., 20 mtr.... 2Nos., 30 mtr..... 1No.) (at extra cost) 1 No. Hammer, 1 No. Plier, 1 No. Screw driver, all in one Bag.

**PROCEDURE FOR TESTING**

The Digital Earth Resistance tester has four terminals marked as E1, P1, P2 & E2 is suitable for measuring earth resistance as well as Earth resistivity.

**MEASUREMENT OF EARTH RESISTANCE :**

To measure Earth resistance with digital earth tester, it should be used as three terminal type. For that terminals E1 & P1 are to be shorted and connected to the Earth connection whose resistance has to be found (As shown in Fig. 1) Connect as per Fig. 1 and take the reading by pressing the Test switch. Note down the reading displayed on the LCD of the instrument.

**MEASUREMENT OF EARTH RESISTIVITY**

To find out the earth resistivity for preferred positioning and depth of proposed electrode system, four terminals method is to be used. Connect the instrument terminals as per Fig. 2

All the four spikes to be buried in one straight line and distance between them to be kept same. The value of "L" may be kept between 50' to 70'. Take the reading by pressing the Test switch, observed value is in ohm. The value of Earth Resistivity "ρ" may be obtained from the following formula.  $\rho = 2\pi LR \Omega\text{-cm}$

Where R = Value of Earth Resistance measured in Ω.

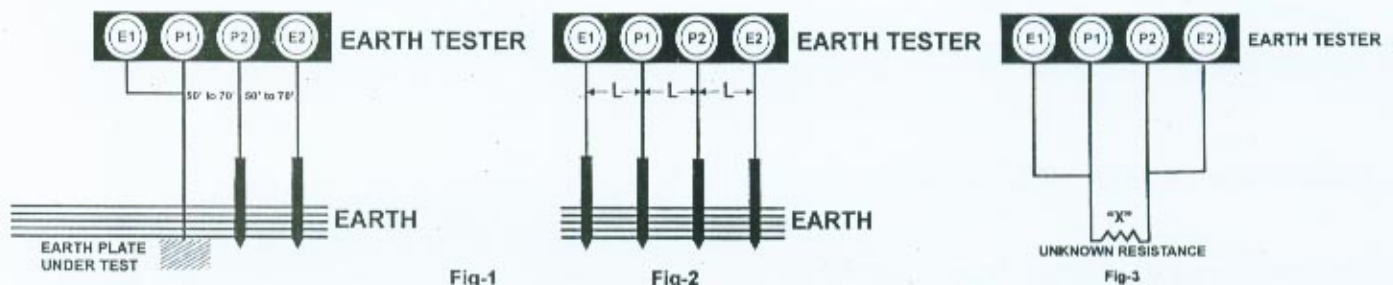
L = Distance between spikes in cm

$\pi = 3.14$

$\rho =$  Earth's Resistivity in Ω-cm

**How to Operate and store the reading in memory :**

- 1) Make the connection as shown is diagram Fig. 1 or 2 or 3
- 2) First put-on the power ON-OFF switch at the right hand side of the instrument
- 3) The Meter will display "ldLE" only.
- 4) Now press Test switch on the Top Panel of the instrument & wait for stable display of reading on the LCD. Now press MEMORY switch while the test switch still pressed the address where the data will be stored is displayed on the LCD as for example ▲ R01



"CIE" in a continuing effort to offer excellent products at a fair value, reserves the right to change models, specifications and designs without notice.

*Manufactured & Designed by :*

**CAMBRIDGE INSTRUMENTS & ENGINEERING CO.**