



इ रि से ट
बाहरी दूरसंचार प्रयोगशाला
प्रयोग नं: एल पी - 6

IRISET
OUTDOOR TELECOMMUNICATION
LABORATORY
EXPERIMENT NO.: LP - 6

नाम

Name : _____

अनुक्रमांक

Roll No : _____

पाठ्यक्रम

Course : _____

दिनांक

Date : _____

प्राप्त अंक

Marks Awarded : _____

अनुदेशक का अधाक्षर

Instructor Initial : _____

PURPOSE: Study of Earth Tester and Techniques of Measurements with it.

APPARATUS USED:

PROCEDURE (a) obtain the assistance of the instructor to get familiarised with the Operating Control.
(b) Read the instructions manual carefully.

1. Determine the earth resistance of the electrode "x" by 3-point method.

Mark Y, Z point in addition to the reference Electrode x, preferably as points of an equilateral Triangle, with distance between the two points being not less 5 meters each (minimum) determine the resistance R1, R2, & R3 between X-Y, Y-Z & X-Z.

Draw the connection diagram and tabulate observations as follows:-

Cell voltage on load =V

Measurements of current:

Forward Current	Reverse Current	Average Current
Between X & Y		
Between Y & Z		
Between X & Z		

Calculation of resistance:

2. Determine the earth resistance by direct method using earth tester JTS-Terrific III.

- (a) Mark U2, H2, 2 points in addition to the reference electrode 'E' in a straight line with distance 20 metres from E to U and 40 metres from E to H.
- (b) Link H1 and U1, terminals of earth tester.
- (c) Connect E to H1 terminal, U to U2 terminal and H to H2 terminal. Rotate the generator and adjust the coarse and fine controls to bring the needle to the Red mark on the scale, ensuring that the button is kept at '0' mark. Now cross the Button to 'M' Mark rotating the handle. Record the value of the readings. Multiply this value with the range multiplier figures (1, 2, 10, 100 and 1000). This is the earth resistance of the electrode 'E'.

Connection diagram

Observations

Reading obtained on the meter =

Range selected =

Desired RX =

3. Determine the earth resistance by direct method using earth tester null balance type.

- a) Mark the additional electrodes as done in second method above.
- b) Link C1 & P1 terminal of earth tester.
- c) Connect E to C1 terminal, U to P2 terminal and H to C2 terminal and rotate the handle of generator and adjust the dial to bring the needle to center mark on the scale.

Connection diagram

Reservations

Reading obtained on the dial =

Range selected =

Earth resistance =

REVIEW QUESTIONS:

1. Distinguish between ohmic resistance, earth resistance and specific soil resistance?
2. Describe briefly with simple sketch the principles of operation of earth tester JTS "Terratic" III?
3. Draw a standard earth (10 ohms) used in Railway S& T circuits(RDSO Drawing)?

Date:

Signature of Trainee