PREZIOHM TFR is innovative product of TAURUS designed to measure impedance along with resistance of transmission line tower footing without disconnecting the overhead earth wire. The tower earthing has an important influence on a) Reducing the number of Faults in power system. b) Dealing with effects of proximity between power system and railway or telecommunication systems & c) Ensuring the safety of people near tower.

PREZIOHM TFR is a high frequency earth tester, used to measure the tower earth resistance to discharge transient power frequencies in to ground ensuring the equipment and personnel are safe from any hazard. Also useful in determining the effectiveness of lightning or surge grounding capacity of any tower by measuring the tower footing impedance.

**Description**

PREZIOHM TFR is a portable system specially designed to measure impedance and resistance of transmission line tower footing without necessitating removal of top ground wire.

PREZIOHM TFR has a wide measurement range (0 to 2k ohms) and is immune to power frequency interference and its harmonics. The instrument is designed to operate in a highly induced environment and to give highly stable, reliable, repeatable readings with its strong capability of noise & leakage current/voltage suppression.

**Advantages**

- Measures impedance along with resistance of the transmission line tower footing without isolating overhead earth wire
- Automatic suppression of all noise and leakage currents
- Metallic shielding to suppress EMI interference and EMC compliance
- Dynamic measurement
- Rock steady, reliable and repeatable readings in induced environment
- High capacity battery for long and continuous operation
Salient Features

- The equipment operates at 25 kHz which and virtually isolates the parallel transmission tower earth path without physical isolation of over head earth wire by use of this high frequency and neutralizing circuits.
- Reliable, steady, repeatable readings in induced environment
- Constant current output (20mA) from a high voltage source (250V) to override the noise in the induced environment.
- The TAUROS PREZIOHM TFR is designed to be immune to power frequency and its harmonics
- Dynamic measurement.
- Housed in IP67 pelican casing.

Specification:

- Principle of operation: Fall of potential (3 point) with high frequency
- Application: Soil resistivity and ground resistance measurement
- Range: 0.01Ω to 2 kΩ
- Voltage output: 250V
- Frequency: 25 kHz as per IEEE 81-1983
- Short circuit current: 20mA
- Measurement Accuracy: +/- 5%
- Graphic LCD display with high resolution
- 12V, 7Ah rechargeable maintenance free battery for long and continuous operation
- IP 67 pelican casing
- Operating and storage temperature: -10° to + 50°C
- Memory: automatic storing of 1000 results
- Download to PC with GPS - optional

Validations:

- The guide IEEE 81-1983 in their numeral 12.6 suggests that the transmission lines tower footing measurement should be implemented with a high frequency ground resistance meter, which operates at 25KHz.
- The degree of lightning protection depends on the impulse impedance and not the power frequency resistance.
- Cigre paper on “Methods for measuring the earth resistance of transmission towers equipped with earth wires” gives reference to frequency dependency of tower earth impedance. For low frequencies the earth impedance is a pure resistance and raises with constant and equal to its dc resistance. At high frequency the earthing behaviour is inductune the impedance value raises with the square root of frequency.