



High Frequency Earth Tester

Model ER25K

- Fast, safe, and reliable testing without disconnecting ground wires
- Built-in printer and rechargeable battery
- Lightweight and ruggedly constructed

DESCRIPTION

The testing of the quality of the grounding (G) of power transmission towers poses a serious problem as they are all electrically interconnected by means of Ground Wires which act as lightning rods, protecting the lines from atmospheric discharges.

Because of this connection, any attempt to measure a tower grounding (G) resistance using a conventional earth meter leads to incorrect results. The error is caused by the tower's shunt grounding (G) impedance at low frequency. Disconnecting the ground wire from an energized line is a risky operation due to the need to climb the tower as well as the close proximity of the high voltage conductors.

The ER25K is based on the use of a high frequency measurement current (25 kHz), for which ground wire inductive impedance reduces the effect from any adjacent towers. The ER25K measures only the ground resistance of the surveyed tower, including its base. The extensive G system, such as meshes, buried wires, metal pipes, are measured only considering the closest section to the connection point. The measured value represents the performance, against a pulse signal similar to an atmospheric discharge. Values obtained better represent the system capacity to ground lightning currents than the ones obtained with low frequency conventional equipment, even when disconnecting the ground wire.

The test is performed by making current of a known-value flow through the earth diffusion resistance and an auxiliary electrode, called the current electrode, and by measuring the voltage produced between grounding and another auxiliary electrode. This electrode is placed in the ground in the area of the potential created by flowing current (Potential Plateau).

The current injected by the earth meter is automatically adjusted to the pre-determined value and the equipment directly indicates the resistance value.

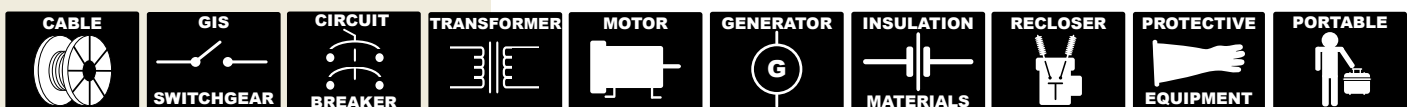


TESTING APPLICATIONS

Used for measuring earth resistance of electrical pylons. The influence of adjacent pylons is minimized by a Guard cable connection.

DESIGN FEATURES

- Operation frequency 25 kHz
- Resistance reading up to 300 Ω
- Automatic compensation of inductive component
- Automatic current injection
- USB interface
- Built-in memory and printer
- Rechargeable battery



MEASUREMENT RANGES	0 – 300 Ω
OPERATION FREQUENCY	25,000 Hz
TEST CURRENT	20 mA automatic
INDUCTIVE COMPONENT COMPENSATION	Through a bank of capacitors integrated into the equipment Maximum capacity 4.2 μ F, Resolution 10 nF
MEASUREMENT ACCURACY	$\pm 2.5\%$ of reading ± 1 digit
DISPLAY	Alphanumeric display (LCD)
MAX EARTH RESISTANCE OF AUXILLIARY RODS	2000 Ω (current rod) 2000 Ω (voltage rod)
BUILT-IN MEMORY	Up to 2000 test readings
DATA OUTPUT	USB interface
POWER SUPPLY	Internal or external rechargeable battery, 12 V. Internal battery autonomy at least 2 hours.
BATTERY CHARGER	For 100-240 V, 50/60 Hz
OPERATION TEMPERATURE	-5°C to 50°C
STORAGE TEMPERATURE	-15°C to 65°C
HUMIDITY	Up to 95% RH (non-condensing)
DIMENSIONS	13" (340 mm) L x 12" (295 mm) W x 6" (152 mm) H
WEIGHT	11 lbs (4.9 kg)
ACCESSORIES INCLUDED	4 50 cm steel core rods with copper coating 1 rod extractor 1 70 m shielded cable 1 50 m shielded cable 1 30 m cable to current rod 1 70 m cable to auxiliary potential rod 1 50 m cable to auxiliary potential rod 1 cable adapter for current electrode 1 external battery cable 1 cable for connection to the electrode (tower) 1 carrying case for accessories 1 operating handbook

High Voltage • High Current • High Power Test Systems and Components

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