



MTD20KWe

- Digital and automatic
- 3½ digits display
- Earth resistance measurement
- 4 pole soil resistivity measurement (Wenner method)
- Ground voltage (noise) measurement
- Advanced filtering for high noise voltage rejection
- Audible signal indicates anomalies in the current circuit
- Resolution: 0.01 Ω
- Resistance reading: up to 20 k Ω
- Rechargeable battery
- Battery charger

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Description

The **MTD20KWe** digital earth tester allows for the measurement of Earth Resistances and Soil Specific Resistivity, and also the spurious voltages caused by parasitic voltages present in the soil.

This equipment is suitable for fast and easy measurement of the grounding resistance in residential and industrial buildings, hospital installations, lightning rods, antennas, substations, etc. Furthermore, its soil resistivity measurement capabilities allow for soil stratification modelling in order to optimize the design of highly complex grounding systems.

Its state-of-the-art system of active and passive filters provides it with high immunity to electric interferences, making it possible to obtain reliable measurements even in the presence of spurious voltages, such as the ones that can be found in some urban areas and near primary substations.

A 1470 Hz internal generator injects alternated current on the soil through an auxiliary rod. The voltage generated over the earth resistance is measured by the apparatus, and the resistance value is evaluated. The test current is automatically regulated.

It has an audible signal which advises the operator when the generated current is not enough to carry out reliable measurements. Due to the fact that it may not be noticed, this alarm also prevents further testing.

Because of its wide range of measurement (from 0.01 Ω up to 20 k Ω), this equipment allows for reliable testing in all kinds of soils, including those that offer very high resistivity. The use of this instrument is very simple, it has a high-visibility 3½ - digit display with direct readings, even under sunlight.

This earth tester is supplied with a rechargeable internal battery. The smart charger is microprocessor-controlled, and can be powered from a 12 V car battery (or a similar one).

It has a sturdy, easy and safe to carry cabinet, with IP54 protection level (with closed lid). It is suitable to work under adverse geographical and environmental conditions, with extreme temperatures in cold or tropical regions and in high mountain areas, showing a reliable performance in the field.

MTD 20KWe

Technical specifications

APPLICATION

Measurement of grounding resistances (3 terminals), soil resistivity (4 terminals) and spurious voltages present in the soil.

RESISTANCE MEASUREMENT METHOD

The equipment injects an electronically stabilized current in the soil, and measures, with high precision, the voltage developed in the soil by means of that current flowing through grounding diffusion resistances. Display shows the Resistance value.

IMMUNITY TO INTERFERENCE

Operation frequency: 1470 Hz

This operation frequency complies with the equation:

$$fg = \frac{2n + 1}{2} \times fi$$

Where:

fg = frequency of the current generated by the earth meter.

n = integer number.

fi = industrial frequency (50 or 60 Hz).

The compliance with this equation implies that the operation frequency will not coincide with any harmonic of the industrial frequency, in order to minimize the effect of parasitic currents present in the surveyed soils, by means of the use of appropriate filters.

OPERATION AS AN VOLTMETER

In the voltmeter function, the equipment operates as an AC conventional voltmeter, making it possible to check the presence and to measure voltages generated by parasitic currents.

MEASUREMENT RANGES

Resistances: 0-20 Ω ; 0-200 Ω ; 0-2,000 Ω and 0-20 k Ω

Voltage: 0-200 V~

ACCURACY

Resistances measurements: \pm (2% of the measured value + 1% of the maximum value of the selected range).

Voltage measurement: \pm (2% of the measured value + 1% of end of scale value)

READING RESOLUTION

0.01 Ω in the resistance measurement.

0.1 V in the voltage measurement.

OUTPUT POWER AND CURRENT

The output power is less than 0.5 W, and the output current is limited to less than 15 mA (Peak to peak)

BATTERY STATUS CHECKING

It makes it possible to verify the battery charge status under normal use conditions.

AUDIBLE ALARM

It warns the operator in case that there are abnormalities in the current circuit, which make it difficult to obtain a reliable result.

POWER SUPPLY

By means of an internal rechargeable battery, from a 12 V external battery.

BATTERY CHARGER

A smart, microprocessor controlled, circuit adjusts the battery charge to the optimized parameters in order to ensure the maximum service life. It is supplied by means of an external AC adapter (provided with the equipment) or from a 12 V car battery.

OPERATION TEMPERATURE

14°F to 122°F (-10°C to 50°C).

STORAGE TEMPERATURE

-13°F to 149°F (-25°C to 65°C).

HUMIDITY

95% RH (without condensation).

EQUIPMENT WEIGHT

Approx. 5.3 lb (2.4 kg) (without accessories).

DIMENSIONS

8.70" x 7.44" x 3.89" (221 x 189 x 99 mm).

INCLUDED ACCESSORIES

- Four steel rods.
- Connection wire to supply the charger with a 12 V external battery (the car battery).
- Battery charger power supply, 100-240 V~ input voltage.
- One 131.23 ft (40 meters) cable in red color.
- Two 65.62 ft (20 meters) cable in blue and green color.
- One 16.40 ft (5 meters) cable in black color.
- One 16.40 ft (5 meters) cable to connect to the grounding system to be measured.
- Canvas bag.
- User guide.