EM4055

EARTH RESISTANCE TESTER

- ☑ EARTH RESISTANCE MEASUREMENT
- ☑ GROUND RESISTIVITY (WENNER'S METHOD)
- ☑ HIGH SPURIOUS VOLTAGE REJECTION
- ☑ SPURIOUS VOLTAGE MEASUREMENT
- ☑ 0,01 RESOLUTION
- ☑ UP TO 20K RESISTANCE RANGE
- ☑ AUTO-RANGE
- ☑ ALPHANUMERICAL DISPLAY
- ☑ HEAVY DUTY EQUIPMENT
- ♦ AUTOMATIC INTERFERENCE DETECTION
- ♦ RECHARGEABLE BATTERY
- ♦ BUILT-IN PRINTER
- ☑ DIRECT READING OF GROUND RESISTIVITY
- ☑ UP TO 50m SELECTABLE DISTANCE
- ♦ 900 READINGS MEMORY
- ☑ RS-232 DATA OUTPUT
- ☑ IP-54 PROTECTION
- ☑ CE MARK

☑ Standard feature

♦ Extended feature

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The EM-4055 Earth Meter is a digital, microprocessor-controlled instrument that allows to measure the earth resistance and ground resistivity (using Wenner´s method), as well as to detect parasitic voltages present in the ground. This instrument is well suitable to measure earth systems in power substations, industries, distribution networks, etc., according to VDE 0413. It is also suitable for soil resistivity measurements, in order to optimize the earth systems project.

It is a fully automatic and easy-to-operate equipment. Before starting each measurement, the equipment will check that the conditions are within appropriate limits and will notify the operator in case of finding any abnormality (too much resistance in the test spikes, too high interference voltage, very low test current, etc). Then, it will look for the most suitable range and show measurement results in an alphanumeric display with up to 3 ½ digits.

In order to conveniently test the earth system, EM-4055 allows to perform measurements using the test current which frequency may be chosen by the operator (270 Hz or 1470 Hz). On one hand, the lowest frequency will allow to analyze the earth system behavior with respect to the fault currents of industrial frequency, while on the other hand, the measurement performed with the highest frequency will best show the behavior in connection with electrical currents caused by lightning and will offer a very high immunity related to interference voltages that are usually present in soils, specially near substations.

The instrument has four ranges that are automatically selected, covering measurements from 0,01 up to 20K , which allows to obtain very accurate measurements for any kind of soils.

During the measurement of ground resistivity, the operator may indicate the distance between the spikes for the equipment to apply Wenner's formula and to show directly the resistivity value. In its extended version, EM-4055x has enough memory to store up to 900 measurements and a built-in printer, besides the serial data output (available for all versions) that allows to communicate measured values to a computer or data logger for their later analysis. It is a portable, strong and lightweight equipment, suitable to be used out in the field and under severe weather conditions. It is powered by a rechargeable battery with a 110V or 220V charger and it is supplied with all the necessary accessories for measurements (test spikes, leads, etc) within an auxiliary case that makes it simple to carry.

EM 4055 - TECHNICAL SPECIFICATIONS

APPLICATIONS
Earth resistance measuring of simple or complex electrode systems, according to VDE 0413
Ground resistivity measurements (Four terminal Wenner´s principle)

RESISTANCE RANGES
0,01 to 19,99
0,1 to 199,9
1 to 1999
0,01 K to 19,99 K

AUTORANGING
The optimal range to perform the measurement is automatically selected

TEST FREQUENCY
270 Hz ± 1 Hz or 1470 Hz ± 1 Hz
Operators select the test frequency by pressing a key

TEST CURRENT (A.C.)
100 A r.m.s. to 10 mA r.m.s. (according the resistance range)

BASIC ACCURACY
± 2% of reading ± 2 digits

RESOLUTION
Down to 0,01

DISPLAY
Alphanumerical LCD display, with big characters.
It shows the measured values and error messages

ADVANCED FEATURES
Automated detection of abnormal conditions that may cause excessive errors (low battery, too high noise interference, too high test spikes resistance)

SOIL RESISTIVITY COMPUTING
When performing soil resistivity measurements, the operator informs to the EM4055 the distance between spikes and the equipment automatically computes the soil resistivity value.

SERIAL DATA OUTPUT
RS-232 @ 4800 bps. Suitable for data collection in an external serial printer, computer or data-logger.

BUILT-IN PRINTER
For a printed register of measured values. It is offered as an optional feature.

ENVIRONMENTAL PROTECTION
IP54 with closed lid.

SAFETY CLASS
Meets the requirements of IEC 61010-1/1990, IEC 61010 1/1992 amendment 2

E.M.C
In accordance with IEC 61326-1

ELECTROSTATIC IMMUNITY
In accordance with IEC 1000-4-2

ELECTRO MAGNETIC IRRADIATION IMMUNITY
In accordance with IEC 61000-4-3

POWER SUPPLY
Internal battery powered
Battery is rechargeable, Ni MH type, 12 V 1,3 Ah

BUILT-IN BATTERY CHARGER
For 110-127 or 220-230 VAC mains

OPERATING TEMPERATURE RANGE
-5 C to 50 C

STORAGE TEMPERATURE RANGE
-25°C to 65°C

HUMIDITY RANGE
95% RH (non condensing)

ALTITUDE MAXIMUM
2000m

WEIGHT
Approx. 3 kg, including battery

DIMENSIONS
274 X 250 X 124 mm

INCLUDED ACCESSORIES
- ☑ Test spikes (4)
- ☑ Test leads (4)
- ☑ Carrying case for the accessories
- ☑ User guide

CE MARK

Technical modifications reserved.

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