MEGABRAS

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Digital Earth Tester

EM4058

CAT IV 100 V | LFP | 2 YEAR WARRANTY | CE

Remote control by App

IEC/EN 61557-5

Illustrative Image

Features

- Earth resistance measurement
- Ground resistivity (Wenner's method)
- Measure with multiples frequencies (270 Hz, 570 Hz, 870 Hz, 1170 Hz, 1470 Hz)
- High spurious voltage rejection
- Spurious voltage measurement
- Up to 20 kΩ resistance range
- 0.01 Ω resolution
- Auto-range
- Alphanumerical display
- Automatic interference detection
- Rechargeable LFP battery
- Built-in printer
- Direct reading of ground resistivity
- Up to 50 m selectable distance
- Built-in memory
- USB data output
- IP65 protection

Description

The **EM4058** earth tester is a digital 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 suitable to measure earth systems in power substations, industries, distribution networks, etc., according to IEC 61557-5. It is also suitable for soil resistivity measurements, in order to optimize the earth systems project.

In order to conveniently test the earth system, **EM4058** allows to perform measurements using the test current which frequency may be operator-selected (270 Hz, 570 Hz, 870 Hz, 1170 Hz or 1470 Hz). On one hand, the lowest frequency will allow to analyze the earth system behavior related to 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 **EM4058** has a Frequency Scan feature that performs an earth resistance measure with all available frequencies automatically and calculates, displays and prints the average result besides the individual result of each frequency. Those results are saved on the internal memory.

The instrument has four ranges that are automatically selected, covering measurements from 0.01 Ω up to 20 kΩ, which allows to obtain very accurate measurements for any kind of soils. During ground resistivity measurement, the operator may indicate the distance between spikes in order for the equipment to apply Wenner's formula and to show the resistivity value directly.

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 LFP battery 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.

LFP Rechargeable battery

Expected lifetime

2000 charge / discharge cycles (average).

Low self-discharge

When the equipment is not in use, battery charge decreases with time at a much lower rate than other battery technologies.

Safety

In contrast to other lithium battery technologies commonly used, LFP batteries are thermally and chemically stable, significantly improving battery safety.

Remote control by Android™ App

Increased safety and comfort: Set up, start and stop tests in an even safer and more comfortable way

Automatic reports: Generate test reports directly on the App

Smartphone / tablet features: Incorporate smartphone features into your reports (photo, GPS coordinates and test location map)

- Android, Google Play and the Google Play logo are trademarks of Google LLC

Technical specifications

ELECTRICAL	EM4058
Operation frequency	• 270 Hz (resistance or resistivity measurement) • 570 Hz, 870 Hz, 1170 Hz or 1470 Hz (resistance measurement) Max. variation: ± 1 Hz (both cases)
Voltmeter	In the voltmeter function, the equipment operates as a conventional voltmeter, making it possible to measure voltages generated by parasitic currents
Measurement ranges	Resistance: 0-20 Ω; 0-200 Ω; 0-2000 Ω and 0-20 kΩ (auto ranging) Resistivity: 0-50 kΩm (auto ranging) Voltage: 0-60 V~
Accuracy	Resistance and Resistivity measurements: R ≤ 2 kΩ: ± (2% of the measured value ± 2 digits) R > 2 kΩ: ± (5% of the measured value ± 2 digits) Voltage measurement: ± (3% of the measured value ± 2 digits)
Reading resolution	0.01 Ω in the resistance measurement 0.01 Ωm in the resistivity measurement 0.1 V in the voltage measurement
Output current	The short-circuit current is limited to less than 20.0 mA_{RMS} (according the IEC 61557-5 - 4.5)
Max. open circuit voltage	50 V
FEATURES	
Immunity to spurious voltage interference	During the R measurement, it allows for the presence of spurious voltage up to 7 V~, with a error < 10%
Earth resistance of auxiliary rods	In the R measurement it allows from Raux = 100R up to Raux ≤ 50 kΩ with error < 30%
Soil resistivity computing	When performing soil resistivity measurements, the operator informs to the EM4058 the distance between spikes and the equipment automatically computes soil resistivity using the Wenner full equation.
Display	Alphanumerical LCD display, 4 lines / 20 characters (Big Number)
Printer	Built-in thermal printer
Built-in memory	Yes
STANDARDS	
Safety class	IEC 61010-1
Overvoltage protection	CAT IV - 100 V
EMC	IEC 61326-1
Electrostatic immunity	IEC 61000-4-2
Electromagnetic irradiation immunity	IEC 61000-4-3
COMMUNICATION	
Protocol	Modbus
USB	For configuration, control and download the stored values
Bluetooth	For configuration, control and download the stored values

SOFTWARE	
Desktop (PC/Notebook)	MegaLogg 3 software: for remote control, allowing to configure, run tests and generate reports
Android (Smartphone/ Tablet)	BlueLogg app: for remote control, allowing to configure, run tests and generate reports
ENVIRONMENTAL	
IP rating	IP65 (with closed lid)
Operating temperature	-10 °C to 50 °C
Storage temperature	-25 °C to 70 °C
Humidity range	95 % RH (non condensing)
POWER SUPPLY	
Rechargeable battery	LFP, 12 V - 3000 mAh
Battery charger	AC Adapter (12 V - 2 A)
MECHANICAL (OF THE INSTRUMENT)	
Weight	Approx. 3 kg
Dimensions	274 x 250 x 124 mm

Included accessories

- 4 Steel rods
- AC Adapter
- USB cable
- 40 meters cable
- 2x 20 meters cable
- 5 meters cable
- 5 meters cable to connect to the grounding system to be measured
- Connection wire to supply the charger with a 12 V external battery (the car battery)
- User guide
- MegaLogg 3 software (download)
- BlueLogg app (download)
- 2x Canvas bag

Optional accessories

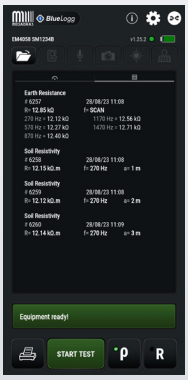
- Steel spike
- 2 m cable for interconnection of the additional spikes

Smartphone App

BlueLogg

Remote control by App

MEGABRAS equipment that has Bluetooth® interface can be controlled remotely via an Android™ smartphone / tablet running the BlueLogg application. Set the parameters, start / stop a test, save the data and generate reports.



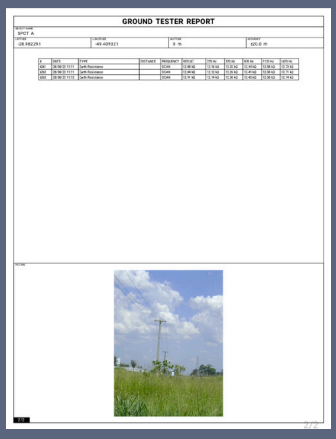
Increased safety

BlueLogg communicates with the equipment through a Bluetooth® connection, allowing remote control of the tests, further increasing user safety in tests with potential risks.

Smartphone features and automatic reporting

Record voice annotation for each measurement, generate automatic test reports directly on the App. Incorporate smartphone / tablet features into the report (photo, GPS coordinates and test location map).

- Voice annotation
- Pictures
- GPS coordinates
- Map



Using the remote control does not require Internet connection (the Internet is only necessary if you want to see a map of the test site or send reports by email).

GET IT ON Google Play

- Android, Google Play and the Google Play logo are trademarks of Google LLC
- Bluetooth is a registered trademark of the Bluetooth SIG, Inc. Worldwide

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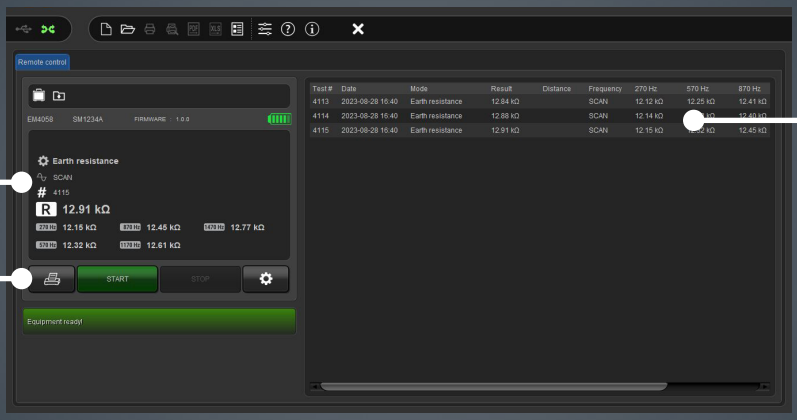
Desktop software

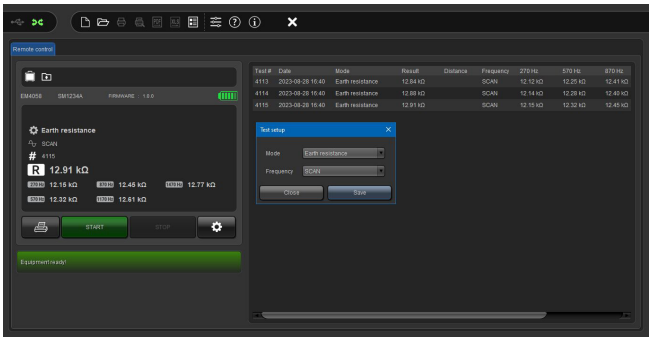
MegaLogg 3

Software for remote control and reporting

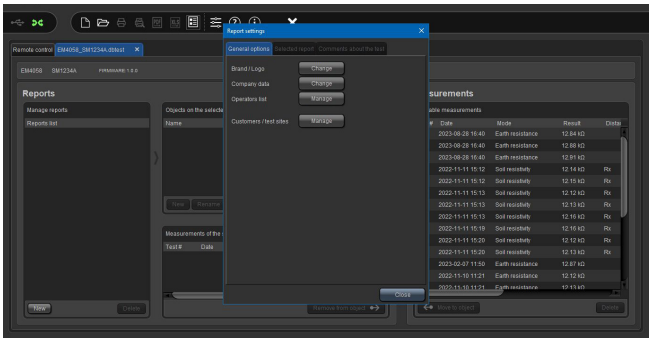
MegaLogg 3 communicates with the equipment through a USB connection. Set the parameters, start / stop a test, save the data and generate reports.



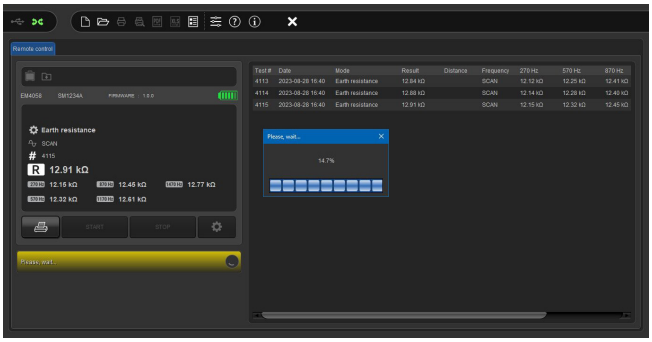
Available for download at: **www.megabras.com/megalogg**



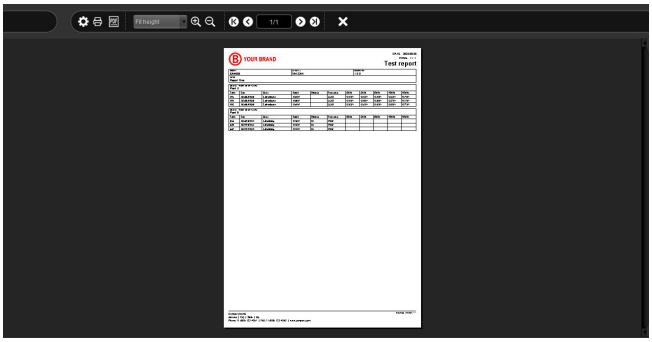
Equipment settings



Report settings



Memory download



Report generation

Global Presence

MEGABRAS equipment are used in more than 40 countries around the world

Test & Measurement equipment

- Digital transformer ratiometer
- Earth ground testers
- Hipots
- Insulating glove tester
- Insulation testers
- Kilovoltmeters
- Micro-ohmmeters
- Power quality analyzers
- Vibration meter

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