DISTRIBUTION BY CTRMAT

Earth resistivity meter

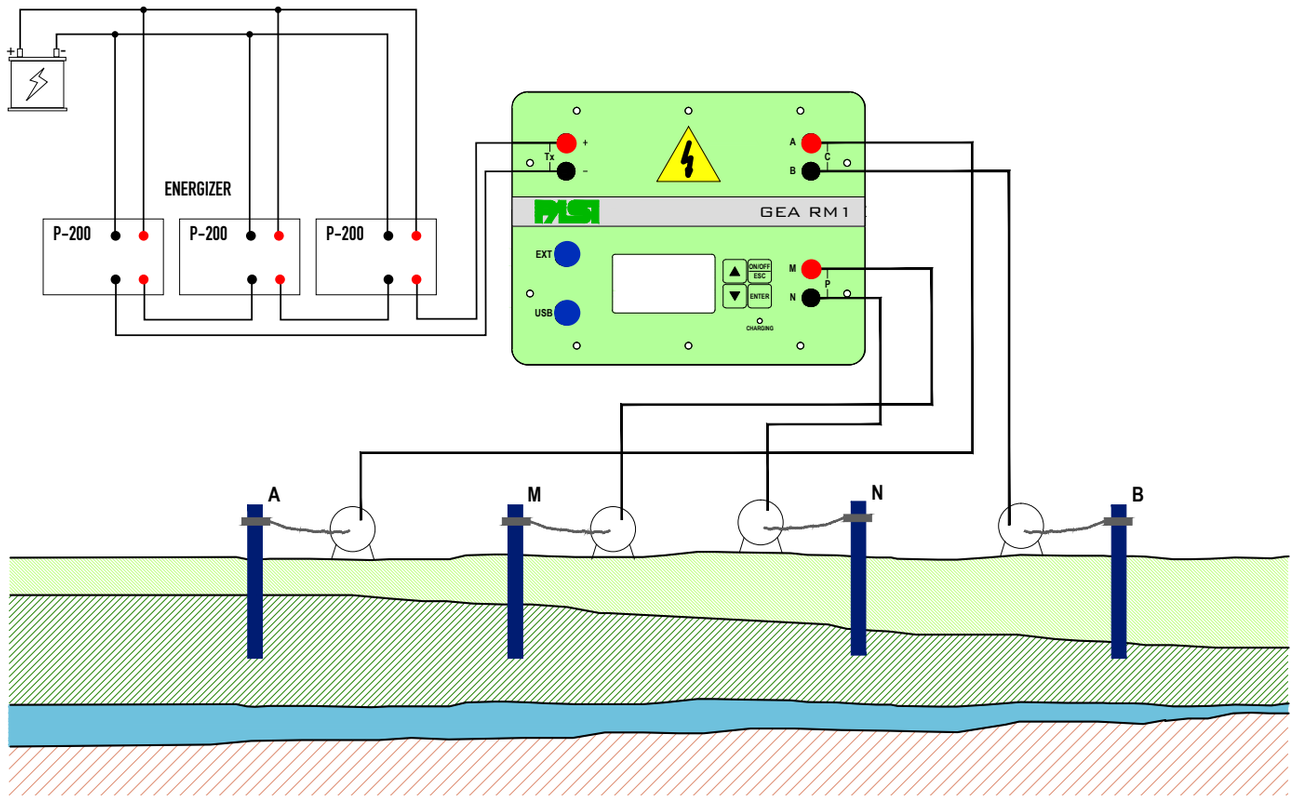
is a compact versatile earth resistivity meter with 24 bit data acquisition board, specifically designed for all 1D geo-electrical measurements. All parameters in "stand alone" mode can easily be set using the console keyboard, even in harsh environmental conditions. Supplied as a bundle with its programming, acquisition and data management software, RM1 not only works in "stand alone" mode but also remotely, connected to any external PC.
This way, the operator can easily create VES tables by using the guided preparation tools (Wenner, Schlumberger, Dipolo-Dipolo, etc.) or realize any kind of **"tailor-made" measuring sessions (VES/ERT).**

*PC not included in the supply

METHODS

- **VERTICAL ELECTRICAL SOUNDINGS** (VES)
- **HORIZONTAL ELECTRICAL SOUNDINGS** (HES)
- **SELF POTENTIAL** (SP)
- **INDUCED POLARIZATION** (IP)
- **ELECTRICAL TOMOGRAPHY IN DIRECT CURRENT** (ERT 2D WITH 16 OR 32 EL.)

Whereas the depth of investigation is in function of the max. spreading length (that is, maximum distance between the AB electrodes in the case of a Schlumberger or Wenner spreading), it will be necessary to **energize the ground using multiple P200 energizers** connected to RM1 and powered by an **external 12V battery**.
In stand alone mode, RM1 can run individual measurements and VES measurement sessions with 4 electrodes already stored inside its internal memory.



ACCESSORIES

VES accessories

P200

The P200 energizer is the perfect energy source for VES in direct current

Test Box

A very useful tool to test the performance of your earth resistivity meter before a measuring session in the field. Compatible with all PASI earth resistivity meters

AB Cables

100, 200, 300, 500 m cables mounted on reel, cross-section 1 mm

MN Cables

50,100, 200, 300, 500 m cables mounted on reel, cross-section 1 mm

ACCESSORIES

VES accessories

AB Stainless Steel Stakes

Pair of stakes in stainless steel for current electrodes (AB), diam. 15mm, approx. length 500mm

MN Copper Stakes

Pair of stakes in copper for potential electrodes (MN), diam. 22mm, approx. length 500mm

Unpolarizable Electrodes

In microporous porcelain, ideal for self potential measurements (SP). Can be used as MN potential electrodes. Before use, they must be filled with a saturated solution of $CuSO_4$ and re-filled as necessary during use

Mallets

Pair of 2.5 kg mallets with ergonomic handle, ideal for driving stakes into the ground

ACCESSORIES

ERT accessories

P200

The P200 energizer is the perfect energy source for ERT measurements in direct current together with RM1

MPX

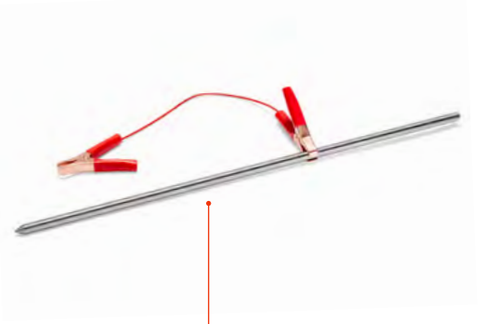
Switching box for managing each group of 16 electrodes. Compatible with both POLARES and RM-1

RM1 TA - ERT Adapter

Adapter to connect RM-1 to a MPX and perform ERT multielectrode profiles

Multielectrode cable

For 16 electrodes - standard spacing: 5m (80m length) or 10m (170m length)



ERT Stake with cable

Stainless steel stake, length 500mm, diam.10mm, supplied with connecting clip for multielectrode cable (16 electrodes required for each cable)

QUANTITY		DESCRIPTION
1		EARTH RESISTIVITY METER MOD. RM-1 requires external PC, not included
2		CABLE REEL WITH 300 m CABLE (section 1mm) - AB cable
2		CABLE REEL WITH 100 m CABLE (section 1mm) - MN cable
2		P200 ENERGIZER (200V, 1000mA)
2		STAINLESS STEEL ELECTRODE
2		COPPER ELECTRODE
2		1.25 KG MALLET
1		TEST BOX

RECOMMENDED CONFIGURATIONS

Configuration

1

complete system with **2xP200** energizers, AB distance **600 m**

MAIN TECHNICAL FEATURES

- **24-bit Sigma-Delta ADC** + oversampling for noise reduction
- High **resolution**: 2nV - 1nA
- **A.I. (Artificial Intelligence) function with automatic setting** of all acquisition parameters (V, I, Te, T0, Ti, etc.)
- **Standard deviation setting** (σ) to optimize measurement accuracy and acquisition times
- **Internal memory** > 5000 measurements (standard version)
- **Electrical Resistivity Tomography function** (ERT) - 32 el. (optional)
- **USB** data transfer
- **Internal battery autonomy:** > 1300 continuous measurements (electrical tomography); more than 40h works in SEV mode
- Power supply from **external power bank (optional)** or **PC** (via USB)
- **Automatic Filtering** – oversampling – **50/60Hz** noise removal
- **Noise reduction with stacking** and average of the acquired values
- **Autocalibration** at start-up
- **Connects to any external energy source -** max.1000V-1A (5A opt.)
- **Light and compact**

TECHNICAL SPECIFICATIONS

2-YEAR WARRANTY

A-B (C1-C2)

CURRENT CIRCUIT

SWITCHING SECTION	
Insulation	2500 V galvanic insulation from M-N Unit and USB
Max. Switching Voltage	1000 V (2000 Vpp)
Max. Switching Current	Autoranging 1A (2000 mA pp), 5A optional
Fully protected with Diagnostic	Input Overvoltage (Power Unit supplies more than 1000 V) Bad Polarity (Power Unit wrong connection) Internal Fuse blown Output Overcurrent (short on A-B electrodes or similar)
CURRENT MEASURING SECTION	
Technology	High Resolution 24 bit SigmaDelta ADC Oversampling for noise reduction High rejection for 50 Hz and 60 Hz noise
Maximum Measurable Current	5A (10000 mA pp)
Theoretical Resolution	1nA

Technical specifications subject to change without notice

TECHNICAL SPECIFICATIONS

2-YEAR WARRANTY

M-N (P1-P2)

POTENTIAL CIRCUIT

Insulation	2500 V galvanic isolation from A-B Unit and USB
Technology	High Resolution 24 bit SigmaDelta ADC Oversampling for noise reduction High rejection for 50 and 60 Hz noise Automatic ranging
Maximum Applicable Voltage	+/-1500V
Maximum Measurable Voltage	+/-250V (500V pp)
Theoretical Resolution	2nV
Input Impedance	10 MOhm

Technical specifications subject to change without notice

TECHNICAL SPECIFICATIONS

2-YEAR WARRANTY

SYSTEM

Technology	Solid State (no moving parts) High Performance 32 bit Microprocessor
Display	Graphical Transflective LCD with white Led backlight
Work mode	Stand-alone or PC connected via USB Artificial Intelligence for the best setting of all measurement parameters
Power Supply	Internal lithium battery rechargeable via USB connector
Measure results	V_{MN}, I_{AB}, V_{MN}/I_{AB}, Resistivity, Self Potential, Induced Polarization
Dynamic Automatic set of all Parameters	Input range, current pulse length, integration intervals, number of stackings, power unit voltage output (only if connected to a PASI compatible energizer)
Precision	> 0.5% > 0.1% in the range 1 – 1000 Ohm
Dimensions and Weight	270x246x123 mm - 2.9 kg Shock resistant PELI case IP 67IP 67
Operating temperature range	From -10°C to + 50°C
Storage temperature range	From -20°C to + 80°C

Technical specifications subject to change without notice