

Earth Resistivity Meter: RM1



RM1 is a compact versatile earth resistivity meter with 24 bit data acquisition. All parameters in “stand alone” mode can easily be set using the console keyboard, even in harsh environmental conditions; connect the RM1 to your laptop via the dedicated acquisition software, and use the tailor-made measuring session (VES/ERT) to organize your in-field sessions quickly and efficiently.

Applications

- water surveys of the subsoil to shallow, medium and great depths
- geological stratigraphy, landslide studies, etc.
- groundwater contamination by salt water and / or pollutants
- subsoil cavities detection
- mining (sulphides, etc.)
- archaeology

Methodology

- Vertical Electrical Soundings (VES)
- Electrical Profiling (EP)
- Self Potential (SP)
- Induce Polarization (IP)
- Electrical Resistivity Tomography (ERT, Electrical Imaging)

Main 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 > 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 – 50/60 Hz 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 compact PELI IP 67 case - 270x246x123mm - 2.9kg

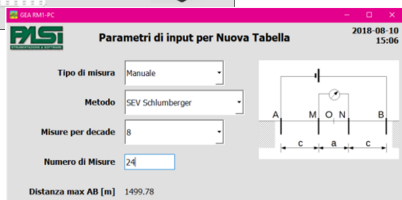
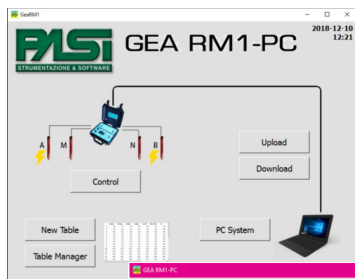
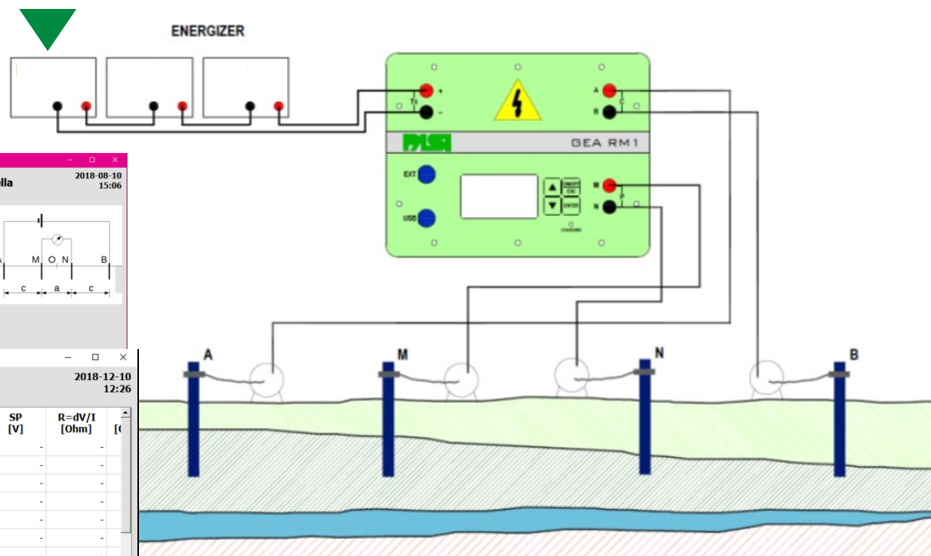


Table Manager (integral view)

	AM [m]	MN [m]	NB [m]	dV [V]	I [mA]	SP [V]	R=dV/I [Ohm]	t [s]
1	0.75	0.50	0.75	-	-	-	-	-
2	1.01	0.50	1.01	-	-	-	-	-
3	1.33	0.50	1.33	-	-	-	-	-
4	1.75	0.50	1.75	-	-	-	-	-
5	2.26	0.50	2.26	-	-	-	-	-
6	2.91	0.50	2.91	-	-	-	-	-
7	3.73	0.50	3.73	-	-	-	-	-
8	4.76	0.50	4.76	-	-	-	-	-
9	6.06	0.50	6.06	-	-	-	-	-
10	7.69	0.50	7.69	-	-	-	-	-
11	9.75	0.50	9.75	-	-	-	-	-
12	12.34	0.50	12.34	-	-	-	-	-
13	15.60	0.50	15.60	-	-	-	-	-

RM1 is **compatible** with any kind of external energizer – max. 1.000V - 1A (optional 5A)



In addition to *stand alone* mode, **RM1** can be connected to an external laptop PC thanks to its *bundle software* for Windows 7 (or later version), allowing you to prepare **VES tables** (Wenner, Schlumberger, Dipole-Dipole soundings, etc.) and also **customized measuring sessions** (VES/ERT).

Technical specifications

A-B (C₁-C₂) Current Circuit SWITCHING SECTION

Insulation:
Max. Switching Voltage:
Max. Switching Current:
Fully protected with Diagnostic:

2500 V galvanic insulation from M-N Unit and USB
1000 V (2000 Vpp)
Autoranging 1 A (2000 mApp), optional 5 A
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 and 60 Hz noise
5A (10000 mApp)
1 nA

Maximum Measurable Current:
Theoretical Resolution:

M-N (P1-P2) Potential Circuit

Insulation:
Technology:

2500 V galvanic isolation from A-B Unit and USB
High Resolution 24 bit SigmaDelta ADC
Oversampling for noise reduction
High rejection for 50 and 60 Hz noise
Automatic ranging
+/-1500 V
+/-250 V (500 Vpp)
2 nV
10 MOhm

Maximum Applicable Voltage:
Maximum Measurable Voltage:
Theoretical Resolution:
Input Impedance

System

Technology:

Solid State (no moving parts)
High Performance 32 bit Microprocessor
Graphical Transflective LCD with white Led backlight
Stand-alone or PC connected on USB
Artificial Intelligence for the best setting of all measurement parameters
Internal lithium battery rechargeable via USB connector
V_{MN}, I_{AB}, V_{MN}/I_{AB}, Resistivity, Self Potential, Induced Polarization
Input Ranges, Current Pulse Length, Integration Intervals,
Number of Stackings, Power Unit Voltage Output (only if connected to a compatible PASI device)
Better than 0.5%
Better than 0.1% in the range 1 – 1000 Ohm
Shock resistant PELI case IP 67 (270x246x123 mm - 2.9 kg)
from -10°C to 50°C,
from -20°C to +80°C

Display:

Work mode:

Power Supply:

Measure results:

Dynamic Automatic set of all Parameters:

Precision:

Case:

Ambient Working Temperature Range:
Storage Temperature Range:

Specifications may be modified without notice

PASI P-200 Energizer

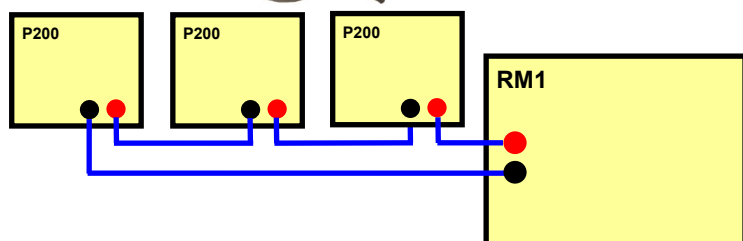
The P200 energizer is the perfect energy source for vertical sounding. Connect to an external 12V battery (not supplied), for a 20V to 200V supply, max 1A, in continuous current.

Up to 5 units can be connected in series to the same external battery of appropriate capacity.

Designed to complete the RM1 earth resistivity meter, the P200 is compatible with all P.A.S.I. geoelectrical instruments.

Technical specifications

- Output voltage from 20-200 V
- Output current guaranteed 1000 mA
- Indication of battery charge on three levels
- Resettable electronic protection from current overload
- Resettable electronic protection from short circuit
- LED warning light and electronic block
- Battery charger connector protected against polarity inversions
- PELI box dimensions: 27x24x10,5 cm
- Weight: 2,7 kg



How to serialize your Energizers

3xP200 for a total of 600V/1000mA

Recommended Configurations and accessories



EARTH RESISTIVITY METER PASI Mod. RM1

Configuration 01: complete system with 2xP200 energizers, AB distance 600m

QTY	CODE	DESCRIPTION
1	GEO-600-000	EARTH RESISTIVITY METER MOD. RM-1 - requires external PC, not included
2	GEO-004-000	CABLE REEL WITH 300 m CABLE (section 1mm) - AB cable
2	GEO-005-000	CABLE REEL WITH 100 m CABLE (section 1mm) - MN cable
2	GEO-434-000	RECHARGEABLE ACCUMULATOR P200(200V, 1000mA)
2	GEO-010-000	INOX STEEL ELECTRODE
2	GEO-011-000	COPPER ELECTRODE
2	GEO-012-000	1.25 kg MALLET

EARTH RESISTIVITY METER PASI Mod. RM1

Configuration 02: complete system with 3xP200 energizers, AB distance 1000m

QTY	CODE	DESCRIPTION
1	GEO-600-000	EARTH RESISTIVITY METER MOD. RM-1 - requires external PC, not included
2	GEO-006-000	CABLE REEL WITH 500 m CABLE (section 1mm)- AB cable
2	GEO-014-000	CABLE REEL WITH 200 m CABLE (section 1mm) - MN cable
3	GEO-434-000	RECHARGEABLE ACCUMULATOR P200(200V, 1000mA)
2	GEO-010-000	INOX STEEL ELECTRODE
2	GEO-011-000	COPPER ELECTRODE
2	GEO-012-000	1.25 kg MALLET

EARTH RESISTIVITY METER PASI Mod. RM1

Configuration 03: complete system with 4xP200 energizers, AB distance 2000m

QTY	CODE	DESCRIPTION
1	GEO-600-000	EARTH RESISTIVITY METER MOD. RM-1 - requires external PC, not included
4	GEO-006-000	CABLE REEL WITH 500 m CABLE (section 1mm) - AB cable
2	GEO-004-000	CABLE REEL WITH 300 m CABLE (section 1mm) - MN cable
4	GEO-434-000	RECHARGEABLE ACCUMULATOR P200(200V, 1000mA)
2	GEO-010-000	INOX STEEL ELECTRODE
2	GEO-011-000	COPPER ELECTRODE
2	GEO-012-000	1.25 kg MALLET

EARTH RESISTIVITY METER PASI Mod. RM1

Configuration 04: complete system with 2xP200 energizers, AB distance 3000m

QTY	CODE	DESCRIPTION
1	GEO-600-000	EARTH RESISTIVITY METER MOD. RM-1 - requires external PC, not included
8	GEO-006-000	CABLE REEL WITH 500 m CABLE (section 1mm) - 6xAB cables+ 2xMN cables
5	GEO-434-000	RECHARGEABLE ACCUMULATOR P200(200V, 1000mA)
2	GEO-010-000	INOX STEEL ELECTRODE
2	GEO-011-000	COPPER ELECTRODE
2	GEO-012-000	1.25 kg MALLET

Ves Data Inversion Software available on request