

Electra

Multi-channel digital resistivity meter



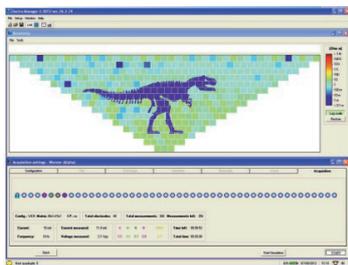
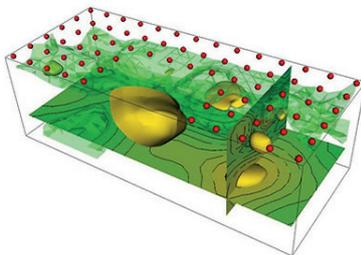
Electra is a **digital system for electrical resistivity and induced polarization surveys**. A series of features make it a unique product in the landscape of georesistivity meters. Acquisition times are drastically reduced thanks to simultaneous data collection across all channels of the line and the use of alternating current.

Weight, dimensions, and power consumption are significantly lower compared to traditional systems. Data **quality is improved** due to digitalization occurring directly at the electrodes and dedicated techniques aimed at increasing the signal-to-noise ratio.

Electra is a **multi-channel digital resistivity meter** composed of a central unit and an extremely lightweight cable, along which digitization modules are positioned and connected to the electrodes. Each module can either inject current or receive the signal, which is then transmitted digitally to the central unit. The digital transmission prevents cross-talk and signal degradation along the cables, ensuring high-quality data even with minimal injected currents.

Electra can inject any type of current into the ground at various frequencies. Alternating current **measurements** are **faster and more precise** since they do not require signal stabilization time and minimize induced polarization effects on the electrodes.

Electra is also available in the MATRIX version, designed for small-scale, high-resolution applications, even in non-geological fields.



Application:

- Water exploration;
- Cavity detection;
- Mineral prospecting;
- Environmental issues;
- Foundation inspections;
- Archaeological research;
- Assessment of wall structures and coatings.

These are just some of the fields where large and small scale electrical surveys can be essential. It allows for subsurface and anthropogenic artifact investigations with an exceptional ease of use.

With Electra, traditional methods such as Wenner, Schlumberger, dipole-dipole, pole-dipole, spontaneous potentials, induced polarization (and others) can be performed fully automatically.



Technical features:

| | |
|--------------------|---|
| Power supply | Internal battery, included in the central unit 12 V, rechargeable |
| A/D conversion | Synchronous on all energization and measurement modules |
| Number of channels | 24, 36, 48, 64, 72 (5-meter spacing) |

Central unit

| | |
|------------------------|--|
| Dimensions | 24 x 20 x 8 cm, weight 2.3 kg |
| Waveform | D/A converter from DC to AC with continuous current and voltage control (feedback) |
| Current | ±200 mA; typical operating values ±10 mA |
| Adjustable frequencies | 1-32 Hz |
| Output | Selectable on 4 ports or cable |
| Output voltage | Automatic adjustment up to 400 V p.p |

Measurement modules

| | |
|-----------------|--|
| Dimensions | 5 x 6 x 2 cm |
| Input | Automatically switchable between 4 different functions (positive and negative stimulation, reference, input) |
| Input impedance | 100 MΩ on 6 V dynamic range; 100 kΩ on 12 V dynamic range |
| Sampling | Synchronous on all modules at 256-512 Hz |
| Transmission | Continuous and real-time transmission of conversion data to the central module and PC |

Accessories:

Electra comes fully equipped with everything needed to perform geoelectrical surveys, including:

- The central unit with an integrated battery;
- The cable chain, channels, and connectors for the electrodes;
- Stainless steel electrodes;
- A hammer for driving the electrodes into the ground;
- A case for the central unit and accessory transport.

