

IRIS INSTRUMENTS



ELREC-2

THE LIGHTWEIGHT TWO-CHANNEL RESISTIVITY AND IP RECEIVER

- Two receiver dipoles
- Four chargeability windows
- High accuracy and sensitivity

ELREC-2 is a two dipole Time Domain Induced Polarization receiver designed for deep resistivity sounding and high productivity surveys in mineral exploration. It has been designed for being both a user friendly and a very sensitive IP receiver. **ELREC-2** measuring process has been optimized to provide the best possible accuracy in real field conditions.

Main qualities of the ELREC-2

- **RELIABILITY :**
 - Automatic synchronization with the transmission signal through a waveform recognition process ; besides it automatically resynchronizes at each new pulse to avoid errors due to a possible shift in the period of the transmitted signal.
 - Noise monitoring function enabling the operator to check the level of noise observed on each dipole before the measurement : the digital voltmeter function displays on the LCD the raw instantaneous value of potential. In particular, it is possible to numerically observe the presence of a pulse square waveform corresponding to a primary voltage signal and showing the operation of a transmitter. This function is also available during the acquisition of a reading.



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ELREC-2

• ACCURACY :

- Automatic SP compensation, including linear drift correction (up to 1 mV/s) through a digital filter.
- Low-pass analog filter, which reduces the effect of higher frequency natural cultural noises (50-60 Hz).
- Automatic digital stacking to enhance the signal-to-noise ratio for as long as the operator wants, with a maximum of 250 stacks.

• OPTIMIZATION :

Continuous quality test procedure, which stops the averaging process when the noise level becomes too high, but keeps the previously stacked data. The averaging procedure starts again when the noise decreases.

APPLICATIONS

- Mining exploration
- Groundwater exploration
- Geothermal exploration
- Environmental studies
- Civil engineering
- Structural geological investigation

SPECIFICATIONS

TECHNICAL CHARACTERISTICS

Input channels : 2

Input impedance : 10 Mohms

Input voltage range : each dipole : 5 V max

Automatic SP bucking : ± 5 V with linear drift correction up to 1 mV/s

Converters : 20 bits AD

Power line rejection : 50 to 60 Hz

Sampling rate : 10 ms

Common mode rejection : 86 dB (for RS = 0)

Automatic measuring process : a microprocessor fully controls the synchronization, the gain ranging, the stacking, and the display of the results including the apparent resistivity

Computation of apparent resistivity, average chargeability and standard deviation

Grounding resistance measurement from 0.1 to 1000 Kohms (Line check / ground resistance measurement that permits to check that the electrodes are properly connected to the receiver)

Battery test : manual and automatic before each measurement

Memory capacity : 1022 readings
RS 232 link for data transfer to micro computers and printers (300 to 19 200 bauds rate)

Remote control through the serial link

OPERATING MODE

- Signal waveform : Time Domain (ON+, OFF, ON-, OFF) with pulse duration of 0.5, 1 or 2 seconds
- IP chargeability windows : Preset or fully Programmable by the user
- Primary voltage : resolution : 1 μ V after stacking
accuracy : typ. 0,3 %
- Chargeability : resolution : 0.1 mV/V
accuracy : 1 % of displayed value

The chargeabilities and the standard deviations of both dipoles are displayed during and after the acquisition for a real time monitoring of the quality of the on-going readings.

A Normalized chargeability option : the Normalized option refers the chargeability to a standard IP decay curve, and permits to point out any EM coupling effect on the measured signal.



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