ELREC 6

Multi Channel IP/Resistivity Receiver

ELREC 6

MULTI CHANNEL IP/RESISTIVITY RECEIVER

Features

· Six simultaneous dipoles

· Twenty programmable chargeability windows

· High accuracy and sensitivity

General

ELREC 6 is a six dipole Time Domain Induced Polarization/Resistivity Receiver designed for high productivity surveys in mineral and groundwater exploration

ELREC 6 has been designed for being both a user friendly and very sensitive IP/Resistivity receiver.

ELREC 6 is available in two models: the first option includes twenty programmable windows in Time Domain mode, the second provides both ten programmable windows in Time Domain mode as well as the Frequency Domain mode.

Six dipoles

The six channels of the receiver permit to measure six dipoles simultaneously, which provides a high efficiency in the field.

Twenty programmable windows

Beside the classical preset logarithmic and arithmetic modes, ELREC 6 also offers up to twenty fully independent programmable windows which the operator can define by himself according to the way he wants to sample the IP decay curve.

Automatic measuring process

A microprocessor fully controls the synchronization, the gain ranging, the stacking, and the display of the results including the apparent resistivity.

Monitoring display

During the acquisition, the chargeabilities of the six dipoles can be displayed simultaneously on the LCD display for a global visualization of the readings ; the standard deviations of these chargeabilities can also be displayed simultaneously for a real time monitoring of the quality of the ongoing readings.

Internal memory

The memory can store up to 2500 readings, each reading including the full set of parameters characterizing the measurements; the date and time of the reading, given by the Real Time Clock of the instrument, are also stored. A serial link permits to transfer the data to a printer or computer.

Remote control

ELREC 6 can be fully driven by a microcomputer through the serial link for remote operation applications.

Frequency mode

The frequency effect and the phase shift between the fundamental and the third harmonics may be measured for a Frequency Domain waveform (ON+, ON-), or for a Time Domain waveform (ON+, OFF, ON-, OFF).

Time Domain waveform

(ON+, OFF, ON-, OFF).

Field Proof Instrument

ELREC 6 operates in a wide range of temperature and humidity. It also features a fiberglass case for increased resistance to field shocks and vibrations.

ELREC 6 Measuring Process

Elrec 6 measuring process has been optimized to provide the best possible accuracy in real field conditions. Included features are:

Available Electrode Arrays

A range of electrode arrays are available, they include Dipole Dipole, Pole Dipole, Pole Pole, Gradient Rectangle, Schlumberger and Wenner Soundings and Profilings, Borehole Electrodes, etc.

Noise Monitoring System

A monitor function enables the operator the check the level of noise observed on each dipole before the measurement: the LCD digital voltmeter function displays the raw instantaneous value of potential. In reality, it is possible to digitally observe the presence of a pulse square waveform corresponding to a

Terraplus Inc.

52 West Beaver Cr. Rd. #12, Richmond Hill, ON. Canada L4B 1L9

Tel: 905-764-5505
Fax: 905-764-8093

Email: sales@terraplus.ca
Website: www.terraplus.ca

primary voltage signal and showing the operation of a transmitter nearby. This function is also available during the acquisition of a reading.

Line Check/Ground Resistance:
A line check/ground resistance measurement which permits to check that all seven electrodes are properly connected to the receiver.

Low-Pass Filter:
A low-pass analog filter which reduces the effect of higher frequency natural and cultural noises (50-60 Hz).

Automatic SP Compensation:
The automatic SP compensation includes linear drift correction (up to 1 mV/s) through a digital filter.

Automatic Gain Ranging:
automatic gain ranging is applied within a voltage range of +/- 10V.

Automatic Synchronization Process:
ELREC 6 automatically synchronizes with the signal through a waveform recognition process ; it also automatically re-synchronizes at each new pulse to avoid errors due to a possible shift in the period of the transmitted signal.

Automatic Digital Stacking:
To enhance the signal-to-noise ratio for as long as the operator wants, automatic digital stacking stack to a 250 maximum. During the stacking, the operator can monitor either the instantaneous value (to observe the level of noise), or the cumulative value (to observe the convergence of the average value).

Continuous Quality Test:
A 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 noise decreases. This procedure optimizes the time of data acquisition in very noisy areas.

Resolution After Stacking:
A resolution after stacking of 1 µV for primary voltage, and of 0.01 mV/V for chargeability, for pointing out low amplitude anomalies. The standard deviations of the chargeability of the six dipoles are displayed during and after the acquisition to give an indication on the noise level.

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

Compatibility:
The ELREC 6 is compatible with VIP 3000 , VIP 4000, VIP 10000 and with most of time domain IP/Resistivity Transmitters currently available.

Specifications

Input Channels: Six

Signal Waveform: Time Domain (ON+, OFF, ON-, OFF) with pulse duration of 0.5, 1, 2, 4, 8 seconds

IP Chargeability Windows: Up to twenty arithmetic, logarithmic, or fully programmable

Apparent Resistivity Computation: Average chargeability and standard deviation.

Input Impedance: 10 Mohm

Input Overvoltage Protection: up to 1000 volts

Input Voltage Range: Each dipole: 10V max sum of voltage of dipoles 2 to 6: 15V max

Automatic SP Bucking: ± 10V with linear drift correction up to 1 mV/s

Power Line Rejection: 50 to 60 Hz

Sampling Rate: 10 ms

Common Mode Rejection: 100 dB (for RS = 0)

Grounding Resistance: Measurement from 0.1 to 467 Kohm

Battery Test: Manual and automatic before each measurement

Primary Voltage:

Resolution: 1 µV after stacking

Accuracy: typical 0.3%

Chargeability:

Resolution : 0.01 mV/V

Accuracy: typical *0.6%*

Memory capacity: 2500 readings

Data Transfer: RS 232 link for data transfer to microcomputers and printers (300 to 19200 baud rate)

Remote Control: through the serial link

Frequency Mode

Signal waveform: (ON+, ON-) or (ON+, OFF, ON-, OFF)

Pulse Duration: 1s or 2s

Measured Parameters: Frequency effect and relative phase fundamental and third harmonics

Resolution: about 0.01% after stacking

Miscellaneous

Dimensions: 31x21x21 cm

Weight: 6 kg with dry cells, 8 kg with internal battery

Operating temperature: -40°C to +70°C

Power supply: either 12V internal rechargeable battery, or six 1.5V D size dry cells. In both cases, a 12V external battery can also be used.

Standard Components

ELREC 6 Console, (Alkaline or Rechargeable Batteries with Charger), external 12V Power Cable, RS-232 Data Transfer Cable with Cross-connectors, Data Transfer Program, Operations Manual and Shipping Case.

Ordering Information

Description	Order Number
ELREC 6 w/20 windows	500-200-0010
ELREC 6 w/10 windows & frequency mode	500-200-0015