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INTELLITEST
CONSULTING I EQUIPMENT I TESTING

X612EM144

VHR multichannel resistivimeter 144 embedded channels

:: METHODOLOGIES ::

Multi-electrode geoelectrical prospecting
Spontaneous Potential Measurement
Induced Polarization measurement
V.E.S. / S.E.O.

X612EM144 MAE response to new demands of high resolution and 3D analysis for geoelectrical measures. Instrument embeds all necessary for VES and multielectrode geoelectric prospection with 144 embedded electrodes.

Main feature of the instrument is the great performing speed both for 2D and 3D surveys, due to new and innovative data recording platform which allows data recording an almost all channels simultaneously. X612EM144 has "preview" function, which allows to visualize preview of pseudosection derived from all data just recorded on field. This function allows to immediately check recorded data. Instrument performs measurement or measurements cycle set bu user in automatic mode. Once concluded measurements, recorded data can be immediately visualized through "preview" function. 250 W power of internal generator can be increased up to 600 W upon customer request. Recording and data saving is made on internal Disk on Module memory or on disk on key USB. Unit is totally computerized and all operative functions are selected simply touching related menu on LCD color tranflective 12,2" monitor with embedded touch screen.

- STRONG POINTS -

- Parallelization of pole-dipole, pole-pole, dipole-dipole measurements and three-dimensional configurations
- Resolution 24 bit
- Pseudo section in real time
- Scalability (by increasing the number of electrodes, also the number of measuring channels increases)
- embedded CPU and display.

Modern techniques of 2D and 3D geoelectrical tomography at high resolution require a quantity of measures which is twice the one required by traditional techniques.
Unlike instruments used till now and characterized at most by some tens of measuring channels, X612EM144 can perform simultaneously measures of potential between any two of connected electrodes (except couple used for current input). Generally in a configuration with N electrodes, instrument has N-2 acquisition channels.
For instance, with a configuration of 144 electrodes you can simultaneously record on 142 channels, with only one input of current!

Advantages of the acquisition architecture of MAE X612EM144:

- Extraordinary reduction of survey time. For instance, a set of 2709 measures with pole-dipole configuration is performed in about 5 minutes, instead of 150 minutes necessary to complete it with a single channel-instrument
- Possibility to deal with surveys which were not acceptable before, because of high number of measures requested
- Possibility to repeat measures more than once, so that to reduce error, with same operative time
- Lower energy consumption
- Increasing of electrodes number and so of measurements, is automatically balanced by simultaneous increase of the number of channels; in that way uniformity of performances is ensured.

Measurements quality is also granted by 24 bit resolution of the A/D converters used, top-quality in their category. Another important aspect of geoelectrical data acquisition process is their coherence and stability control. With X612EM144 this becomes particularly easy due to:

- Recording of the standard deviation for each measure

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- Graphic representation with errors bars on the measure points
- Visualization in real time of the pseudo section of resistivity
- Availability of a function for automatic repeat of the measures with error percentage higher than a settable threshold.

SPECIFICATIONS

Output current:

- Automatic regulation (5 steps)
- Maximum intensity: 5 A at 50V
- Output voltages: ±800V peak to peak 1600 V
- Maximum power: 250W (600W optional)
- Input time: settable from 0,25 sec. (graphic visualization of the wave set)
- Measure precision: ±0,2A

Potential measurement:

- Simultaneous measure on all the channels set
- Auto range
- Maximum full scale: ±25V
- Input impedance: 100 MOHM
- Network frequency filter: 50 Hz
- Protection: up to 1000V
- Measure's precision: ±1,5V within the range of ±25V
- Noise reduction: with average from 2 to 10 measures
- Automatic reset or cancellation of the spontaneous potential
- Accuracy of the resistivity measured: 0,2%
- Chargeability measured on four temporal windows of 1,2 sec. total duration.

General data:

- Visualization of the pseudo section in real time
- Manageable electrodes: 144
- Power supply: 12V DC, provided with proper power box 24Ah batteries or cable with claws provided as standard and connected to 12V external battery.
- Average absorption: max. output of 2,5A, 20A (50A with 600W option)
- Data formats: TSV, CSV, DAT
- Interfaces available: LAN, USB, VGA
- Operating systems: Windows Embedded Standard
- Environmental operating conditions: -10/50 °C
- Display: LCD 12.2" with optical bonding touch-screen integrated
- Dimensions and weight: 51x39x23 cm, 12 Kg (cables and sensors excluded)

Lead times:

- Pole-dipole: 539 measures in 110 sec

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