

MULTI ELECTRODE RESISTIVITY METER SSR-MP1-ME



The IGIS Microprocessor based Signal Enhancement Resistivity Meter Model SSR-MP1 is a high quality microprocessor based data acquisition system incorporating several innovative features. The instrument design incorporates several advanced techniques of digital circuitry to make it reliable geophysical tool that provides high quality data useful for all types of mineral and groundwater exploration research etc.

IGIS Multielectrode solution (MES)

The multi-electrode method is popularly used for identifying potentially favourable zones for obtaining groundwater, such as areas with a maximum depth of weathered zones of fracturing and faulting, and high porosity and permeability zones associated with lithological contacts.

The apparent resistivity pseudo sections measured with such a technique are processed by an inversion software which gives interpreted resistivity and depth values for the anomalies detected along the profile. The multi-electrode resistivity technique consists in using a multi-core cable with as many takeouts (24, 48, 60, 120) as electrodes plugged into the ground at a fixed spacing, every 10m for instance.

MES control unit supplied along with the unit acts as an interface to the instrument SSR-MP1-ME and the relays located at each electrode ensures the switching of those electrodes according to a sequence of readings predefined /configured /stored in the internal memory of the MES control unit. The various combinations of transmitting (A,B) and receiving (M,N) pairs of electrodes construct the mixed sounding / profiling section, with a maximum investigation depth which mainly depends on the total length of the cable. The 2D resistivity images obtained with such a multi-electrode technique are used for studying the shallow structure of the underground located a few tens of meters down to about one hundred metres depth; these images supply an information which complements the one obtained with the more traditional Vertical Electrical Sounding (VES) technique, which mainly aims at determining the depths of horizontal 1D structures from the surface down to several hundred meters depths. Several examples are presented for various types of applications: groundwater, mineral, geo-technical, environmental and so on.

The application is designed in such a way that once the electrodes are plugged onto the ground as per the spacing, the user can opt for any of the methodologies like Wenner / schlumberger / Gradient / Dipole or user defined one after the other or as per his choice.



Welcome to IGIS



MODEL SSR-MP1-ME

TECHNICAL SPECIFICATIONS

Input Power Source

: 24V rechargeable batteries

Power Output

: 100watts (Current upto 2 Amp) 400V(800V peak to peak)
Automatic voltage selection.

Frequency

: 0.3Hz (Approx.)

Noise Rejection

: 95 db

Potential Measuring range

: Microprocessor based unit with measurement resolution
of 10 micro volts.

Range selection

: Automatic

Resistance Range

: 10^{-5} to 10^4 ohms.

Self potential cancellation

: Automatic

Dynamic Range

: 15 bits

Accuracy

: $\pm 1\%$

Interaction with the System

: 20x4 Alphanumeric Liquid Crystal Display.

Measurement Display

: Stack No./Stacks selected, Current and running average of
Resistance.

Output

: Resistance, through 20x4 Alphanumeric Liquid
Crystal Display.

Protection

: Protected against circuit overloads.

Error Signals for

: Poor current and Potential electrode grounding and
Discontinuity.

IGIS GEOPHYSICAL INSTRUMENTS

The circuit technology, the building structure and housing design make IGIS instruments widely acceptable as

● Functionally Accurate

● Operationally convenient

● Ruggedly Field Worth

Specifications are likely to change with R&D.

IGIS also makes custom-build resistivity meters to individual specifications.

IGIS Instruments carry one-year guarantee against manufacturing defects.



Manufactured by:

**Integrated Geo Instruments
& Services (P) Limited**

12-13-382, Street No. 18, Tarnaka, Hyderabad - 500017,
Telangana, India. Ph.: 040-42218456

email: info@igisindia.com

Web: www.igisindia.com / www.igisindia.in