FUGRO

SUPERSTING™ R1/IP

Memory Earth Resistivity, SP and IP Meter

Features:

- The SuperSting R1/IP is a single channel automatic resistivity, SP and IP imaging system, used with the patented dual mode multi-electrode system.
- This instrument can be used for automatic resistivity and IP imaging in ; 2D, 3D, resistivity monitoring, underwater, marine and bore-hole to bore-hole applications.
- The SuperSting R1 has a set of stored command files for different electrode arrays such as Schlumberger, Wenner, dipole-dipole, pole-dipole and pole-pole.
- The instrument can be programmed to perform any type of resistivity/IP survey automatically.
- Roll-along and selection of electrode spacing are handled internally.
- Used for resistivity, SP & IP imaging in applications such as groundwater exploration, geotechnical investigations, horizontal drilling, mapping of pollution plumes, cavity detection, archeological and environmental work etc.

SuperSting™ R1/IP

MEMORY EARTH RESISTIVITY & IP METER

TECHNICAL SPECIFICATION

Measurement modes	Apparent resistivity, resistance, self potential (SP), induced polarization (IP), battery voltage.
Measurement range	+/- 10Vp-p.
Measuring resolution	Max 30 nV, depends on voltage level.
Screen resolution	4 digits in engineering notation.
Output current	1mA - 1.25 A continuous.
Output voltage	800 Vp-p, actual electrode voltage depends on transmitted current and ground resistivity.
Output power	200 W.
Input gain ranging	Automatic, always uses full dynamic range of receiver.
Input impedance	>20 MOhm.
SP compensation	Automatic cancellation of SP voltages during resistivity measurement. Constant and linearly varying SP cancels completely.
Type of IP measurement	Time domain chargability (M), six time slots measured and stored in memory.
IP current transmission	ON+, OFF, ON-, OFF.
IP time cycles	0.5, 1 s, 2 s, 4 s and 8 s (combined resistivity/IP mode).
Measure cycles	Running average of measurement displayed after each cycle. Automatic cycle stop when reading errors fall below user set limit or user set max cycles are done.
Resistivity time cycles	Basic measure time is 0.4, 0.8, 1.2, 3.6, 7.2 or 14.4 s as selected by user via keyboard. auto-ranging and commutation adds about 1.4 s.
Signal processing	Continuous averaging after each complete cycle. Noise errors calculated and displayed as percentage of reading. Reading displayed as voltage, current and apparent resistivity (Ohmmeter). Resistivity is calculated using user entered electrode array coordinates.
Noise suppression	Better than 100 dB at f>20 Hz. Better than 120 dB at power line frequencies (16 2/3, 20, 50 and 60 Hz).
Total accuracy	Better than 1% of reading in most cases (lab measurements). Field measurement accuracy depends on ground noise and resistivity. Instrument will calculate and display running estimate of measuring accuracy.
System calibration	Calibration is done digitally by the microprocessor based on correction values stored in memory.
Supported configurations	Resistance, Schlumberger, Wenner, dipole-dipole, pole-dipole, pole-pole.
Operating system	Stored in re-programmable flash memory. New version can be downloaded from our web site and stored in the flash memory.
Data storage	Full resolution reading average and error are stored along with user entered coordinates and time of day for each measurement. Storage is effected automatically.
Memory capacity	The memory can store more than 24,000 measurements (resistivity mode) and 15,000 measurements in combined resistivity/IP mode.
Data transmission	RS-232C channel available to dump data from the instrument to a Windows type computer on user command.
Automatic multi-electrodes	The SuperSting is designed to run dipole-dipole, pole-dipole, pole-pole, Wenner and Schlumberger surveys including roll-along surveys completely automatic using our Swift Dual Mode Automatic Multi-electrode system (Pat. 6,404,203) or our passive cables and switch box. The SuperSting can run any other array by using user programmed command files. These files are ASCII files and can be created using a regular text editor. The command files are downloaded to the SuperSting RAM memory and can at any time be recalled and run. Therefore there is no need for a fragile computer in the field.
User controls	20 key tactile, weather proof keyboard with numeric entry keys and function keys. On/off switch. Measure button, integrated within main keyboard. LCD night light switch (push to light).
Display	Graphics LCD display (16 lines x 30 characters) with night light.
Power supply, field	12V or 2x12V DC external power, connector on front panel.
Power supply, office	DC power supply.
Operating time	Depends on conditions, internal circuitry in auto mode adjusts current to save energy.
Weight	10.9 kg (24 lb).
Dimensions	Width 184 mm (7.25"), length 406 mm (16") and height 273 mm (10.75").

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