AGI Advanced Geosciences, Inc.

SUPERSTING™ R8/IP

8-channel Memory Earth Resistivity/IP Meter

Applications:

- The SuperSting is an 8-channel automatic resistivity/IP imaging system used with the patented dual mode multi-electrode system or with passive cables and a switch box.
- Since the SuperSting is an 8-channel multi-electrode instrument, it will take up to 8 readings for each current injection and is therefore up to 8 times faster than any single channel instrument.
- The SuperSting system is especially useful for time-consuming surveys like 3D surveys, bore-hole-to-bore-hole surveys and large 2D surveys.
- This instrument is used for resistivity & IP imaging in applications such as groundwater exploration, geo-technical investigations, horizontal drilling, mapping of pollution plumes, cavity detection, archeological and environmental work etc.

SuperSting™ R8 IP

EIGHT CHANNEL MEMORY EARTH RESISTIVITY & IP METER

TECHNICAL SPECIFICATION

Measurement modes	Apparent resistivity, resistance, 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 intensity	1mA - 2000 mA continuous, measured to high accuracy.
Output voltage	800 Vp-p, actual electrode voltage depends on transmitted current and ground resistivity.
Output power	200 W.
Input channels	Eight channels.
Input gain ranging	Automatic, always uses full dynamic range of receiver.
Input impedance	>150 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.
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 0.2, 0.4, 0.8, 1.2, 3.6, 7.2 or 14.4 s as selected by user via keyboard. Auto-ranging and com mutation 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) for measurement cycles of 1.2 s and above.
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 in a job oriented file system.
Data display	Apparent resistivity (Ohmmeter), current intensity (mAmp) and measured voltage (mVolt) are displayed and stored in memory for each measurement.
Memory capacity	The memory can store more than 79,000 measurements (resistivity mode) and more than 26,000 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 alpha/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 (one or two 12 V batteries), connector on front panel.
Power supply, office	DC power supply.
Operating time	Depends on survey conditions and size of battery used. Internal circuitry in auto mode adjusts current to save energy.
Operating temperature	-5 to+ 50ºC
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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