

SuperSting R8 IP

8 channel Memory Earth Resistivity and IP Meter



The **SuperSting R8 IP** is a state-of-the-art multi-channel portable memory earth resistivity meter with memory storage of readings and user defined measure cycles. It provides the highest accuracy and lowest noise levels in the industry.

This new instrument revolutionizes the field of resistivity imaging surveys by its capability to simultaneously measure up to 8 channels using a high power transmitter so that field data production can reach previously unheard of speeds.

With the high power transmitter good data can be recorded in difficult locations where time-consuming stacking was the only alternative before.

SuperSting R8 IP uses the new Multi-channel Swift Dual Mode Automatic Multi-electrode cable (patent 6,404,203) based on the successful design used in our single-channel cables. With this new cable it is now possible to efficiently record 3D data and use a virtually unlimited quantity of electrodes in a single layout. The electrode address is now a 16 bit number which sets range at about 65000 electrodes!

The controller for this new cable is completely built into the **SuperSting R8 IP** main instrument so there are no extra boxes to carry and connect in the field.

Key Benefits

- 8 channel simultaneous measure capability, cuts field time dramatically!
- High power transmitter. Can use both 12V and 24V batteries for added power.
- Field adapted rugged construction. Built to last in real conditions.
- Easy to use menu driven system.

- The best accuracy and noise performance in the industry!
- Large capacity internal memory for storage of measurement results.
- User programmed measure cycles can be loaded into memory from a PC and later executed in the field.
- Directly controls the Multi-Channel Swift Dual Mode Automatic Multi-electrode system (patent 6,404,203)!
- Induced Polarization mode records 6 individual IP chargeability windows.
- Manual measurements are available via four banana pole screws on the top of the instrument for connecting current and potential electrodes. Manual measurement array types include: Resistance, Schlumberger, Wenner, Dipole-dipole, Pole-dipole, and Pole-pole.

TECHNICAL SPECIFICATION:

Measurement modes	Apparent resistivity, resistance, induced polarization (IP), battery voltage.
Measurement range	+/- 10V.
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	200W.
Input channels	Eight channels.
Input gain ranging	Automatic, always uses full dynamic range of receiver.
Input impedance	>150 MOhm.
Input voltage	Max 10 V.
SP compensation	Automatic cancellation of SP voltages during resistivity measurement. Constant and linearly varying SP cancels completely (V/I and IP measurements).
Type of IP measurement	Time domain chargeability (M), six time slots measured and stored in memory.
IP current transmission	ON+, OFF, ON-, OFF.
IP cycle times	0.5, 1, 2, 4 and 8 s.
Measure cycles	Running average of measurement displayed after each cycle. Automatic cycle stops when reading errors fall below user set limit or user set max cycles are done.
Resistivity cycle times	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. Autoranging 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 resistance (dV/I) and

	apparent resistivity (ohmm or ohmft). Resistivity is calculated using user entered electrode distances.
Noise suppression	Better than 100 dB at $f > 20$ Hz.
Powerline noise suppression	Better than 120 dB at power line frequencies (16 2/3, 20, 50 & 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 and pole-pole.
Operating system	Stored in re-programmable flash memory. Updated versions 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 instrument to a Windows type computer on user command.
Automatic multi-electrodes	<p>The SuperSting is designed to run dipole-dipole, pole-dipole, pole-pole, Wenner and Schlumberger surveys including roll-along surveys completely automatic with the Swift Dual Mode Automatic Multi-electrode system (patent 6,404,203).</p> <p>The SuperSting can run any other array by using user programmed command files.</p> <p>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.</p>
Manual measurements	The instrument has four banana pole screws for connecting current and potential electrodes during manual resistivity measurements.
User controls	<p>20 key tactile, weather proof keyboard with numeric entry keys and function keys.</p> <p>On/Off switch</p> <p>Measure button, integrated within main keyboard.</p> <p>LCD night light switch (push to illuminate).</p>
Display	Graphics LCD display (16 lines x 30 characters) with night light.
Power supply, field	<p>12V or 2x12V DC external power (one or two 12V batteries), connector on front panel.</p> <p>Maximum power output is increased when using 2x12V supply.</p>

Power supply, office	Mains operated 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 +50°C.
Weight	10.2 kg (22.5 lb), instrument only.
Dimensions	Width 184 mm (7.25"), length 406 mm (16") and height 273 mm (10.75").