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EM31Mk2 Data Sheet

The EM31-MK2 is an updated version of the standard EM31. Ground conductivity and in-phase measurements are read directly from the data logger screen. Data is transferred wirelessly from the instrument to the data logger via Bluetooth communication. The data logger is readily removed from the console for easy data handling or, if preferred hand carried during the survey.



EM31MK2 with integrated GPS.

The EM31-MK2 maps geological variations, groundwater contaminants or any subsurface feature associated with changes in the ground conductivity using a patented electromagnetic inductive technique that makes the measurements without electrodes or ground contact. With this inductive method, surveys can be carried out under most geological conditions including those of high surface resistivity such as sand, gravel and asphalt.

The effective depth of exploration is about six meters, making it ideal for many geotechnical and groundwater contaminant surveys. Important advantages of the EM31-MK2 over conventional resistivity methods are the speed with which surveys can be conducted, the precision with which small changes in conductivity can be measured and the continuous readout and data collection while traversing the survey area. The in-phase component is especially useful for detecting shallow ore bodies and buried metal hazardous waste.

For applications where a shallower investigation depth is required Geonics offer the EM31-SH. The EM31-SH is a

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variant of the EM31MK2 with a shorter 2m coil separation effectively improving lateral resolution and reducing the depth of investigation to 3m.

For large area surveying Geomatrix recommends the use of the Messa 2 ultra-rugged Windows 10 tablet running RTMAP 31 data acquisition software from Geomar Software Inc. Geomar produce a whole suite of data acquisition and navigation packages for many instrument which integrate GPS positions to guide the operator in real time, eliminating the need to establish a local grid and will contour and plot data as it is being recorded.

Product Dimensions

Physical	Dimensions (L x W x H)	Weight
(instrument only)	400cm x 15cm x 22cm	12.4kg

Technical Specifications

Measured Quantities:	- Apparent conductivity in millisiemens per metre (mS/m) - In-phase ratio of the secondary to primary magnetic field in parts per thousand (ppt)
Primary Field Source:	Self-contained dipole transmitter.
Sensor:	Self-contained dipole receiver.
Intercoil Spacing:	3.66 metres.
Operating Frequency:	9.8 kHz.
Power Supply:	8 disposable alkaline 'C' cells (approx. 20h continuous).
Measuring Ranges:	Conductivity: 10, 100, 1000 mS/m In-phase: +/- 20ppt
Measurement Resolution:	+/- 0.1% of full scale.
Measurement Accuracy:	+/- 5% at 20 mS/m.
Noise Levels:	Conductivity: 0.1 mS/m In-phase: 0.03ppt
Data Storage:	10,000 records (2 components); 16,500 records (1 component) (ext. memory available).

Gallery

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EM31MK2 in operation.

Videos

https://www.youtube.com/watch?v=dVvzLqO-_e0
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