

Spectramag-6 Data Acquisition Unit

This portable six-channel 24-bit data acquisition unit is designed for simultaneous collection and analysis of magnetic field, vibration and acoustic data in three axes. The six input channels provide synchronous digitisation of the outputs from magnetic field sensors, accelerometers, or acoustic sensors.



Features

- Can record data at rates up to 10kHz, combined with a PC via a USB interface
- Supplied software collects and displays data in both the time and frequency domain to frequencies up to 5kHz
- Selectable AC and DC coupling, low-pass and FFT options available
- Battery or mains powered

Typical Applications

- Magnetic field and vibration surveys
- Pre-installation MRI/electron microscope site surveys

Spectramag-6 Specifications

Performance	
Number of input channels	Six (2 groups of 3 channels selectable for magnetic field sensors, accelerometers or acoustic sensors)
Input signal range	$\pm 10V$
Input frequency range Magnetic field sensors Accelerometers and acoustic sensors	Up to 5kHz, reduced to 1kHz (1000 gain) DC to 5kHz (DC coupling); 0.01Hz to 5kHz (AC coupling) 0.1Hz to 5kHz (AC coupling only)
Resolution	24 bit A to D converter
Sampling interval	100 μ s (min) to 10s (max) up to 700,000 samples (PC dependent); continuous sampling mode (slower sample rates only)
Frequency domain display options	Amplitude spectrum (RMS, peak-to-peak); Amplitude spectral density (RMS/ \sqrt{Hz} , p-p/ \sqrt{Hz})
Analogue gain control	Software selected x1/x10/x100/x1000
Spectrum range	Software selected as sample rate or maximum frequency
Sensor input (magnetic field sensor)	Unbalanced

Suitable ICP® vibration sensor	PCB Piezoelectronics type 393A03 (1V/g) low-noise rugged PCB Piezoelectronics type 393B31 (10V/g) low-noise rugged
Suitable ICP® microphone	GRAS Microphone Type 40AE (50mV/Pa)
Optional accessories	Tripod and adaptor for Mag-03 sensors Rugged carrying case

Environmental

Operating temperature range	-10°C to +50°C (0°C to +45°C for charging)
Storage temperature range	-20°C to +70°C
Humidity	0–90% non-condensing

Mechanical

Dimensions (W x H x D)	170 x 112 x 210mm
Weight	2.85kg
Carrying case dimensions	616 x 493 x 220mm
Total weight with carrying case	12kg with Spectramag-6, Mag-03 sensor, 5m cable and tripod
Output interface	USB2
Enclosure	Aluminium
Connectors	2 x Hirose RM15TPD10P fixed plug to magnetic field sensors 6 x BNC sockets for ICP® piezoelectric vibration sensors / microphone preamplifiers 1 x USB to PC 1 x 2.1mm socket for 12V input from mains adaptor for recharging

Electrical

Power output to sensor	±15V, ±75mA
Battery	Internal rechargeable Li-Ion 10.8V 72Wh UN approved battery with universal mains adaptor for charging
Battery life	8 hours (typical)
Battery charging time	10 hours for full charge
Input impedance (magnetic field sensor inputs)	1MΩ
ICP® constant current	4mA ±20% for cables up to 1km in length

Software Compatibility

32 and 64 bit	Windows 7, Windows 8, Windows 8.1
32 bit	Windows 98, Windows NT, Windows 2000, Windows XP 32 bit

Data Acquisition Units

Bartington's data acquisition units accept analogue input from our sensors and output the signal in either analogue or digital format, depending on the unit selected.

The range includes:

Product	Function
Spectramag-6 Data Acquisition Unit	Simultaneous collection and analysis of magnetic field, vibration and acoustic data in three axes
Mag-03DAM Data Acquisition Module	Battery-powered processing of DC and low frequency signals from one or two magnetic field sensors

Product Compatibility

	Spectramag-6	Mag-03 DAM
Mag-13	•	•
Mag-03	•	•
Mag-03RC		
Mag639		
Mag648/649		
Mag670	•	•
Mag678/679		
Mag690	•	•