



Summit Ex

The Intrinsically Safe Seismic System !

Summit Ex is the only intrinsically safe seismic exploration system worldwide. It is specialised for use in potentially explosive underground environments like for instance in coal mines. The system is based on the Summit II Plus Technology and allows flexible layout configuration for any underground application like in-seam seismics, underground tomography and borehole applications.

Specialised for Underground Seismic Exploration !

- Optimised for seismic surveys in mines through its ATEX certification
- Fast and Easy setup with unique snap-on technology
- Extremely robust but lightweight casing
- Supreme service via rapid reaction support hotline



Technical Specifications

Sample Interval	1/48, 1/32, 1/16, 1/8, 1/4, 1/2, 1, 2, 4, 8 ms
Record Length	0.5 K samples, ..., 120 K samples
Preamp Gain	0 dB, 20 dB or 40 dB
A/D Converter	24 bit delta sigma technology
Maximum Input Signal	2.0 Volt RMS 5.6 Volt peak to peak
Input Impedance	20 kOhm
Instantaneous Dynamic Range	≥ 120 dB @ 2 ms sampling interval
System Input Noise	Less than 0.2 µV RMS @ 2 ms
Crosstalk	≥ 112 dB (between channels)
Total Harmonic Distortion	≤ 0.0008 %
Common Mode Rejection Ratio	≥ 100 dB
Gain Accuracy	Typical 1 % (between all channels)
Time Accuracy	Typical 5 ppm (between all channels)
Power Supply	Built-in accumulator
Dimensions	26.5 x 23.5 x 7.6 cm
Weight	2.7 kg

Analogue Anti-Alias Filter	7.2 kHz 6 dB/octave
Analogue Low-Cut Filter	1 Hz 6 dB/octave
Digital Anti-Alias Filter	0.8 x Nyquist
Rejection at Nyquist Frequencies	-120 dB
Pass Band Ripple	+/- 0.05 dB
Built-In Test Functions	- Sine wave - Pulse - Instrument noise - Geophone step - Sweep transfer - Auto correlation - Cross correlation
System Check	- Battery status - Equivalent input noise - Total harmonic distortion - Instantaneous dynamic range - Common mode rejection - Cross talk - Time accuracy
Geophone Check	- Impedance - Damping - Natural frequency - Noise - Leakage

Subject to technical changes

Environmental Specifications

Operation Temperature	-20°C to + 70°C
Humidity Range	0 – 95 %
Case	Solid waterproof housing

Overall System Performance and Flexibility

Typical Shot Cycling Time

- 10 seconds @ 1 ms sampling rate
- 2 K trace length with 256 channels inclusive data storage

Mobile System Control

- Via easy to handle portable ATEX certified computer

Power Supply

- Via internal accumulator

Connectors

- Geophone or string connector
- Snap-on connector for variable line position

Line Length

- Unlimited by using Repeater Units every 250 m

Cross Lines

- Realised by Repeater Units deploying as Cross or Distribution Units