

## SUMMIT II Ex

### The Intrinsically Safe Seismic System!

SUMMIT II 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<br>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 Rejection         | ≥ 112 dB (between channels)                    |
| Total Harmonic Distortion   | ≤ 0.0008 %                                     |
| Common Mode Rejection       | ≥ 100 dB                                       |
| Gain Accuracy               | Typical 1 %<br>(between all channels)          |
| Time Accuracy               | Typical 5 ppm<br>(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<br>- Pulse<br>- Instrument noise<br>- Geophone step<br>- Sweep transfer<br>- Auto correlation<br>- Cross correlation   |
| System Check                     | - Battery status<br>- Equivalent input noise<br>- Total harmonic distortion<br>- Instantaneous dynamic range<br>- Common mode rejection<br>- Cross talk<br>- Time accuracy |
| Geophone Check                   | - Impedance<br>- Damping<br>- Natural frequency<br>- Noise   |

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

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