SYTMIS probes for microseismic monitoring of underground operations and geosystems

SYTMIS® probes are designed for temporary or permanent installation in subsurface or deep boreholes for quiet monitoring of anthropic or natural seismicity. They offer a unique mean to measure high-quality seismic waveforms in order to characterize ambient noise, fracturing processes and fluid-rock interactions over a geological volume of interest, to measure vibrations and ground motion, to detect critical acceleration and migration of clustered seismicity, and thus to enhance controlling and forecasting capabilities for better anticipation of unexpected events.

SYTMIS® probes may be directly connected to a SYTGEM® monitoring system for optimal monitoring. Depending on the application and field conditions, probes include:

- one or three geophones or accelerometers,
- built-in amplifiers with calibrated output signal,
- 3D orientation device.

Customization of probes to specific site or borehole conditions may be required. Please ask for more information.

Highlights

Ready-to-use for boreholes

Large dynamic range

Built-in amplifier

Built-in 3D compass

Field applications

Mines and quarries

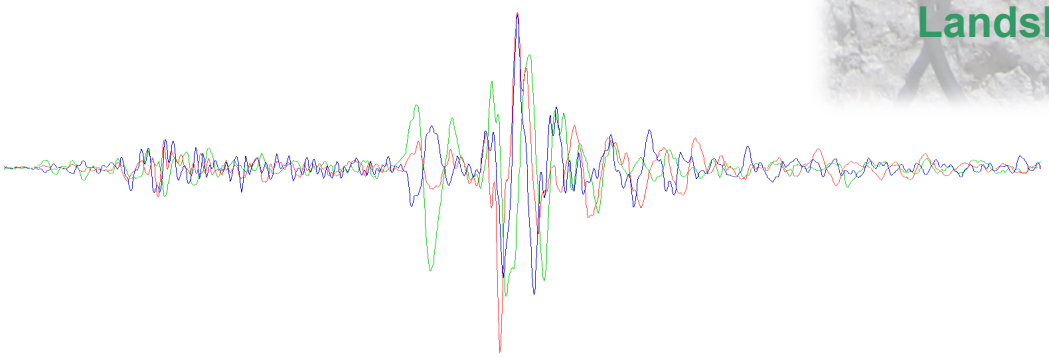
Geological storage

Geothermal systems

Oil & gas reservoirs

Dams and dykes

Landslides and rockfalls



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Main characteristics

Most sensors on the market	geophones:	2 Hz, 4.5 Hz, 10 Hz, 14 Hz and 28 Hz
	accelerometers:	B&K4513: 500 mV.g^{-1}, 1 - 10 000 Hz at ±1 dB
		For other sensors from the market please ask
Optional built-in amplifier	gain:	26 dB ±1%
	bandwidth:	0.1 Hz - 10 kHz at -3 dB
	max. offset / peak-to-peak noise:	±0.5 mV / ±0.2 mV
	min. - max voltage / current:	±7.5 ±18 Vdc - quiescent current: ±5 mA
	output signal / impedance:	±5.5 V / 1 Ω, max. current
	Built-in calibrated output signal :	dual square waves, durations: 10 ms and 100 ms, amplitude: ± 2.5 V
		Note that amplifiers may be deported from the probe
Optional inclinometer	type / range:	MEM's technology - biaxial / ±5°
	resolution / non linearity:	±5.10^{-4}° . / ±0.25%
Optional 3D compass	type / range / accuracy:	multi-accelerometer - magnetometer / ±180° / ±0.5°
	output:	digital, specific junction box, notebook and software needed for measurement by operator
Standard cable	type / length:	2 to 12 twisted pairs following options, dual shielded
	max. length, looped twisted pair on 1 kΩ:	up to ~500 m (following cable spec.)

Standard housing specifications

Dimensions: type / diameter / length / mass:	please ask for information
Temperatures: operating / storage:	-20°C to + 60°C / -20°C to +70°C
Standard casing / sealing:	high-density molded PVC casing / 15 bars, max. depth 125 meters metallic casing / 25 bars, self mechanical anchorage, max. depth 250 meters *For deeper conditions please ask*

For more information and custom applications, please contact us:

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