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Hydrostatic Profiler

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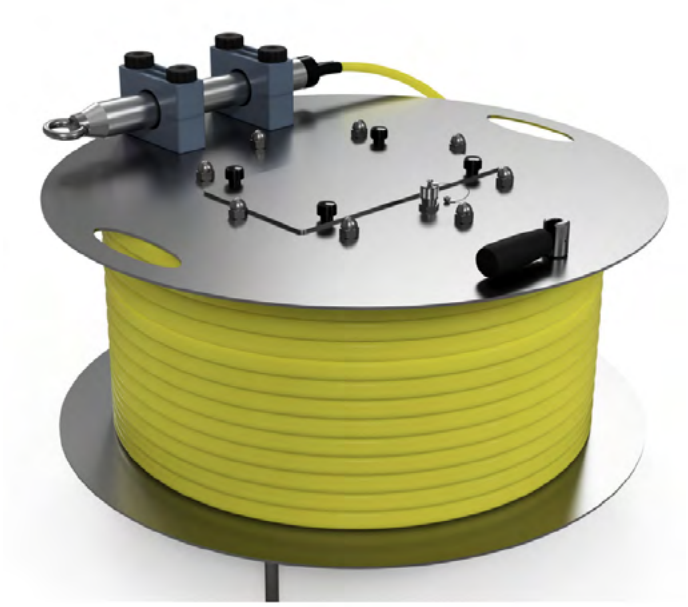
Geotechnical and Structural Monitoring Instruments and Systems

Hydrostatic Profiler



Description

The Hydrostatic Profiler enables manual measurement of settlement in foundation soils, embankments, landfills, and similar structures. A guide tube is installed horizontally along the longitudinal and/or transverse axis of the area to be monitored. The profiler unit is inserted into this guide tube and measures hydrostatic pressure at each point via a high-precision pressure transducer located within the device. This pressure is referenced against the liquid level in an external reservoir tank. By collecting measurements at multiple points over time, the system accurately determines variations in the elevation of the guide tube, allowing for precise assessment of settlement or subsidence across the monitored structure.

Applications

Hydrostatic profiler consisting of:

- Piezoresistive level sensor, measuring range 5 meters water column, 4-20 mA output, linearity: ±10mm, repeatability: ±10mm. Operating temperature 0°C to 50°C (lower for liquids with antifreeze).
- Fully submersible stainless steel (316L) housing, diameter 30 mm, length 150 mm;
- 100 ml of PUR immersible electric connection cable and 100 ml of nylon 8 X 6 mm hydraulic hose assembled inside an additional PUR protective sleeve; on request available with calibrated lengths as required.
- Reading system with liquid crystal display, 4-20 mA input, 12 bit analog/digital converter, 0.2% FS accuracy, rechargeable internal battery, complete with batteries.
- Robust stainless steel cable reel, with integrated reading system and reference reservoir complete with de-aerated liquid.
- Tube length 150 metres.

Characteristics and benefits

- Portable instrumentation
- Ease of use
- Robustness
- Practicality

Measuring principle

A high-resolution, small-field piezometer, connected to a closed hydraulic circuit, measures the hydrostatic load acting on this as a function of its position relative to a fixed reference tank. The instrument, run inside a pipe adjacent to the surface (generator) to be controlled, continuously measures the vertical distance from an external reference point (head of the liquid in the reference tank).

Technical Specifications

Signal	4-20mA
Linearity	± 10mm
Precision	± 10mm
Repeatability	± 10mm
Operating temperature	0°C ÷ 50 °C (<0°C with antifreeze liquid)
Cable length	Standard 100 metri, others upon request
Reading system	Converter 12 bit
Power supply	Rechargeable battery with charger

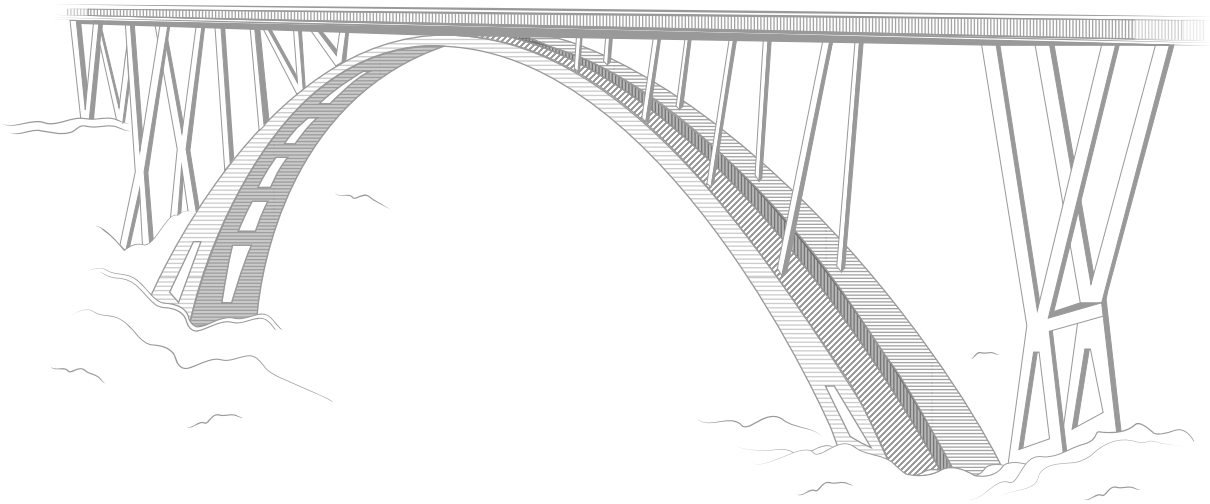
Technical characteristics

Sensors	
Type	Uniaxial or biaxial
Measuring range	±2,5°, ±5°, ±10°, ± 15° (others upon request)
Resolution 0,001°	Resolution 0,001°
Sensor linearity	±0,1% f.s.
Thermal drift	0.01%/°C
Thermal drift offset	-25...85°C (typical) ±0,002 °/°C
	-40...125°C (max) -2,5 ..... +1
Long-term stability	<0,004°
Output	Angle in 0,001° Temperature in 0,1°
Digitalisation	
Type	2 channels, 24 Bit.
Sampling frequency	100 SPS per channel.
Power supply	220VAC or with battery back-up (duration 10 hours).

The company

For over 40 years, we have been producing precision instruments and monitoring of large structures sold worldwide.

Accuracy in design, efficiency in implementation, reliability in operation; these are the prerogatives that every large structure must have and that Structural Monitoring Systems must guarantee.



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