

Focus-Information

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>> Groundwater monitoring

Piezopress System

Pore pressure measurement with retrievable pressure sensors

Typical applications

Pore pressure measurement:

- In the bedrock and in the contact zone dam-bedrock
- Monitoring of unstable slopes
- Monitoring of excavation sites
- For groundwater monitoring at waste disposal sites
- In tunnel construction projects



Solexperts' services

- Technical advice for the realisation of the measuring concepts
- Configuration, sale and installation of the Piezopress systems
- Sale or leasing of the read-out units
- Data acquisition and reporting
- Presentation of the results with the WebDAVIS data visualisation tool

Features of the system

- Cost-effective and high-quality system for the multi-level pressure monitoring
- Suitable for hydraulic pressure measurements in all formations, as in bedrock, soil and in the contact zones between bedrock and structures
- Multiple measuring intervals per borehole
- Each observation interval is accessible via an separate stand pipe
- Each observation interval is hydraulically isolated yielding a fast response to pressure changes
- Sealing between the observation intervals with clay-cement-water suspension
- Pressure sensors are retrievable for calibration or control and can be re-installed or re-used
- Possibility to perform hydraulic tests and to take water samples



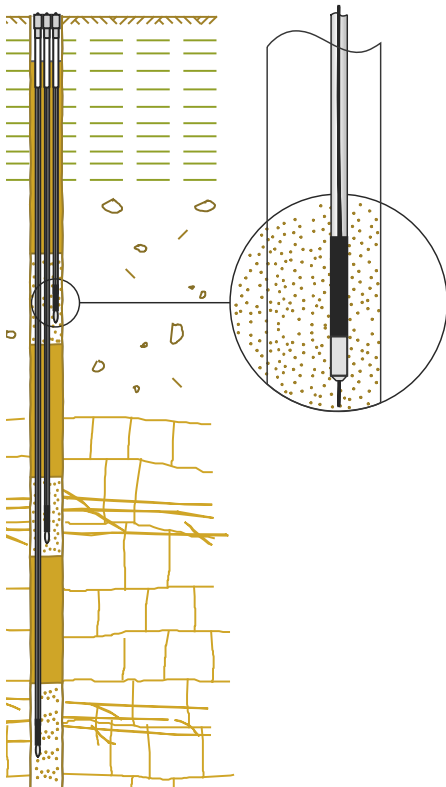
HPVC (left) and press-in filter tip (right)



Pressure sensor with connection for installation rods



Piezopress protective tube with SDL data logger



Schematic graph of a PiezoPress System installation

Components (selection)

Filter tips:

- Filter tips made of HPVC, nominal diameter 1" with 0.5m long geotextile filter screen (shorter or longer filter screens on request) and 0.5m long connection tube
- Press-in filter tip made of stainless steel, sintered plastic filter screen, L=10cm

Stand pipes with nominal diameter of 1":

- Made of HPVC with threaded connections - custom-made lengths: 0.25m, 0.5m, 1m, 2m
- Made of PE (Polyethylen)
- Made of stainless steel to install the press-in filter tip

Head sealing tubes:

- Piezopress end cap made of stainless steel with HPVC-tube, L=1m
- Piezopress end cap with tube - both made of stainless steel, L=1m

Piezopress pressure sensor and accessories:

- Piezoresistive absolute pressure sensor, range 0–20bar, accuracy: +/- 0.05% FS (optional: integrated temperature sensor / integrated lightning protection)
- Vibrating wire absolute pressure sensor, range 0–20 bar, accuracy: +/- 0.01% FS with integrated temperature sensor
- Piezoresistive absolute pressure sensor with integrated data storage; range 0–10bar, accuracy: +/- 0.05% FS, memory for 57'000 measurements, battery powered, life time about 4 years
- PUR-coated shielded sensor cable, D=7mm
- Sensor installation rods made of GRP, D=7mm, with connection thread

Data acquisition: see separate brochures and data sheets

- MRD – Solexperts digital read-out unit
- SDL – Solexperts data logger optional with GPRS remote data transmission
- Solexperts GeoMonitor – Data acquisition system for automatic on-line data recording
- WebDAVIS – Internet based data visualisation

Optional accessories / testing and maintenance

- Pump to perform pumping tests or water sampling
- Down-hole sampler (to take samples at formation level)
- Bailer
- Hose made of polyamide, D=12/10mm

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