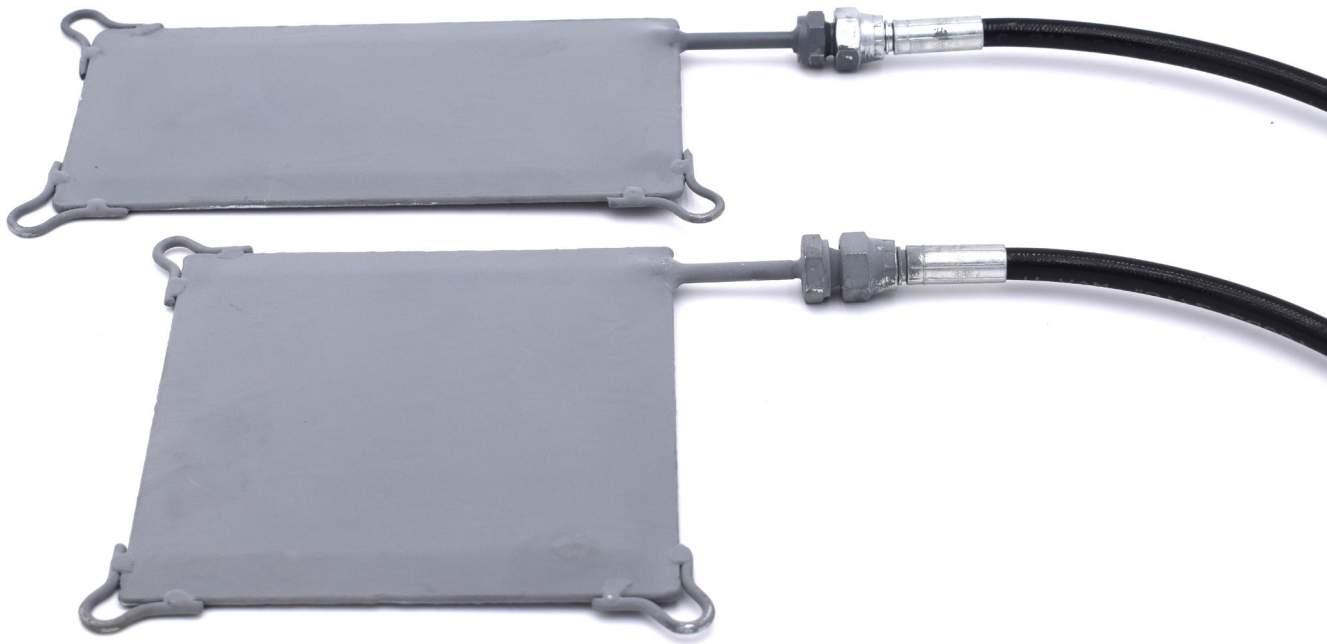




Radial and Tangential Pressure cells

Technical Features



Cells are made of 2 steel plates welded together and are filled up with de-aired oil. The transducer is covered by a thick and resistant external steel protection and is directly connected to the pressure cell. As the shotcrete hardens, a rise of the concrete temperature may cause a dilatation of oil in the cell. The following temperature drop will therefore result in a detachment of the cell plate from the surrounding concrete.

In order to restore the former contact between the plate and the concrete, a steel pipe (standard length 60cm) is linked to the cell and allows an oil repressurization by a simple crimping.

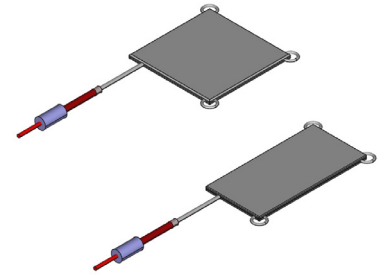
Applications

The NATM pressure cells are designed to detect the state of stress of the concrete lining of tunnels in a radial or tangential position. They are used for monitoring:

- Radial and tangential stresses in the lining of tunnels and underground excavations
- Stress in rock masses
- Pressures under foundations
- Contact pressures on the surface of diaphragm and retaining walls, piers and abutments of viaducts.

Related Instrumentation

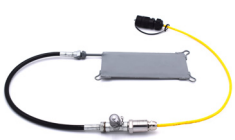
- 2x2x0.25 PUR cable
- NTC Re-Filling Pump
- Manual Readout unit Geotester 3.0
- Datalogger D200-D800-D1600-D3200
- OtrMonitoring web site



Installation

- The radial cell is installed between the rock and the centering so as to detect the pressure exerted radially.
- The tangential cell is positioned in the concrete so as to detect the internal pressure in parallel to the tangent of the arc.
- The load can be measured by a portable readout unit or by a datalogger.

Technical specifications

		
Description	Radial Pressure Cell	Tangential Pressure Cell
Type of sensor	Stainless Steel Membrane Pressure Sensor	Stainless Steel Membrane Pressure Sensor
Range	20-50 Kg/cm ²	100-200 Kg/cm ²
Resolution	0.02% F.S.	0.02% F.S.
No linearity (transducer)	0.3% F.S.	0.3% F.S.
Output signal	4-20 mA	4-20 mA
Over load	120% F.S.	120% F.S.
Temperature operating range	-20°C / +50°C	-20°C / +50°C
Dimension (*)	150x150x5 mm	100x200x5 mm
Material	Galvanized Steel	Galvanized Steel
	(*) Cells of different sizes can be supplied on request.	

Codes & Part Numbers

P/N 2016030
P/N 2016040
P/N 2016050
P/N 2016051

NATM CELLS 150X150 mm
NATM CELLS 100X200 mm
REPRESSURIZING PUMP
DE-AIRED OIL