

## NATM STRESS CELL

### Description

NATM stress cells are used to control the pressure acting between a support (for example, a bending in a tunnel) and a prompting soil.

The cell consists of a rectangular steel cavity filled with a special oil and connected to an electric transducer, which transforms every change in pressure acting on the cavity in a variation of the electric signal with standard output 4÷20 mA.

The stress cells have been planned in different versions, which make them versatile and suitable for every mounting need. They are supplied in different shapes:

- without hydraulic tube and with the transducer directly mounted horizontally or vertically on the cell;
- with hydraulic tube for recharge and with transducer directly mounted on the cells or on the tube.

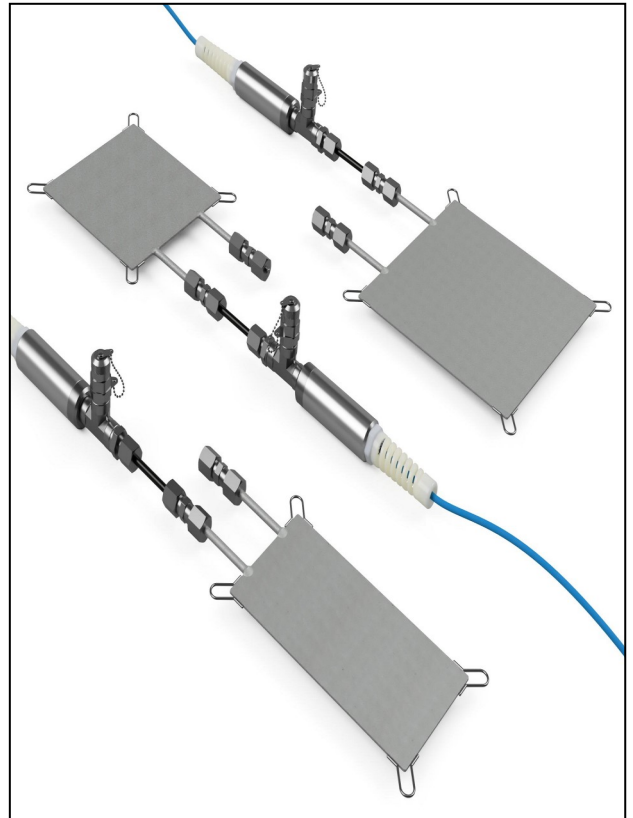
The second type of cell described above has the main feature to be pressurizable through a charging valve installed on the end of the hydraulic Rilsan Tube, whose standard length is 1.5 meters. The repressurization of a stress cell is required, for example, when the cavity is embedded in the concrete of a tunnel covering.

During the consolidation phase, the covering undergoes a contraction, which can determine a contact defect between the surface of the cavity and the concrete. By means of repressurization, it is possible to ensure the normal operation of the instrument, restoring the adhesion of the cavity to the concrete over the entire surface.

The transducer data can be read through the portable control unit or by using an automatic data acquisition system designed to provide continuous monitoring.

### Application

- Pressure measurement in masonry, basements, etc.
- Monitoring of ground thrust on retaining walls, tunnel cladding, etc.
- Pressure Measurement in rocks and soils
- Slurry walls, dams
- Testing during building and working



### Features

- Reliability also for long term monitoring
- Degree of protection IP68
- Sturdy construction and suitable for harsh environments
- Possibility to transmit the signal over long distances

## Technical Specifications

	Stress cells radial	Stress cells tangential
<b>Type</b>	piezoresistive	piezoresistive
<b>Sensor Material</b>	stainless steel	stainless steel
<b>Range</b>	60 bar (on demand)	200 bar (on demand)
<b>Output Signal</b>	4-20 mA	4-20 mA
<b>Total Accuracy</b>	< 0.5% F.S.	< 0.5% F.S.
<b>Supply Voltage</b>	8-30 Vdc	8-30 Vdc
<b>Degree of Protection</b>	IP68	IP68
<b>Operative Temperature</b>	-20.....+60 °C	-20.....+60 °C
<b>Dimensions</b>	rectangular 110X220 mm	squared 150x150 and 200X200 mm
<b>Material</b>	steel	steel

## Accessories and spare parts

- Repressuring pump
- Cut to size hydraulic pipe
- Cut to size signal cable
- Deaired oil

## Please Specify

CODE	PRODUCT DESCRIPTION
CPN-110	NATM stress cell 100x200 mm, FS 60 bar
CPN-210	NATM stress cell 200x200 mm, FS 200 bar
CPN-700	Hydraulic line
CPN-800	Repressuring device
CPN-900	Deaired oil



## For further information:

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