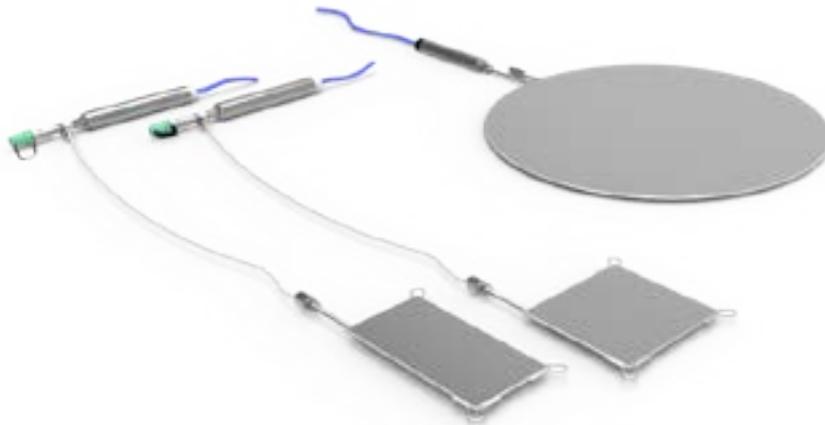


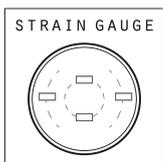
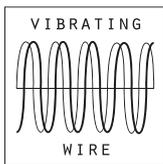
L111

# — HYDRAULIC PRESSURE CELLS

PRESSURE  
& LOAD CELLS



## HYDRAULIC PRESSURE CELLS



Hydraulic pressure cells are designed to measure stresses in shotcrete tunnel linings, contact pressures on structures, and stresses in rock walls.

The cell consists of two steel plates welded at the edges to form a cavity, which is then filled under vacuum with de-aired oil. A length of high-pressure tubing connects the cavity of the cell to the pressure pad to the pressure transducer.

To accommodate shrinkage of the concrete after curing, a repressurizing device can be used to expand the cells and restore good contact.

### APPLICATIONS

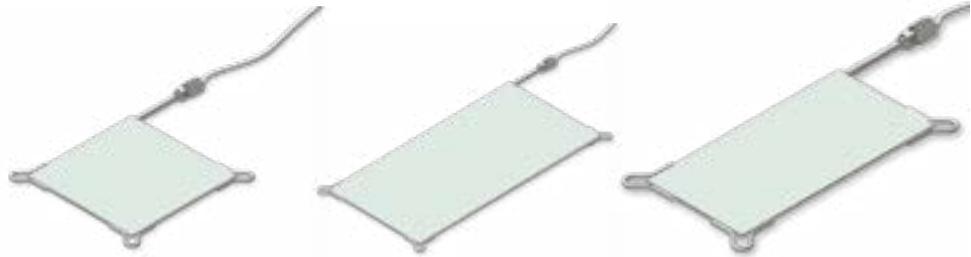
- Pressure on tunnel linings
- Radial and tangential stresses in shotcrete tunnel lining
- Contact pressure on foundation structure
- Stress in rock walls of unlined tunnels and caverns
- Contact pressures on the surface of retaining walls

### FEATURES

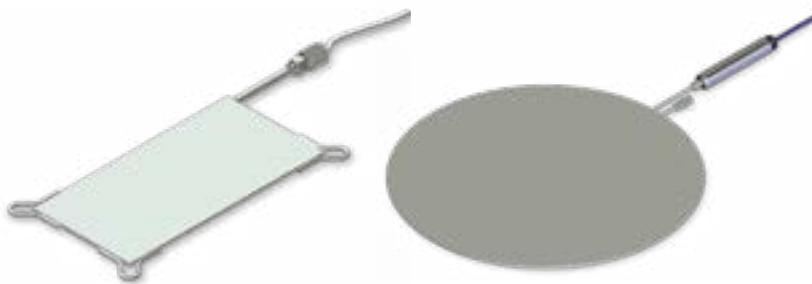
- Rugged and waterproof construction for high reliability
- Double side sensitive pad
- Both vibrating wire and piezo-resistive pressure transducers are available
- Can be read with portable readout or connected to data acquisition system

 Meet the essential requirements of the EMC Directive 2014/30/UE

## PRESSURE PADS



	OL111151500	OL111102000	OL111152500
Main application	radial stress in concrete (with repressurizing valve)	tangential stress in concrete (with repressurizing valve)	contact soil/rock-structure (with repressurizing valve)
Material	galvanized steel	galvanized steel	galvanized steel
Pad size	150 X 150 mm (5.9" x 5.9")	100 X 200 mm (3.9" x 7.9")	150 x 250 mm (5.9" x 9.8")
Weight	0.6 kg (1.3 lbs)	0.6 kg (1.3 lbs)	1 kg (2.2 lbs)
Working pressure	up to 5.0 MPa up to 725 psi	up to 20.0 MPa up to 2900 psi	up to 10.0 MPa up to 1450 psi



	OL111204000	OL111D05000
Main application	contact soil/rock-structure (with repressurizing valve)	contact soil-concrete (no repressurizing valve)
Material	galvanized steel	stainless steel
Pad size	200 X 400 mm (7.9" x 15.7")	circular, 500mm OD (19.7" OD)
Weight	1.9 kg (4.2 lbs)	0.6 kg (1.3 lbs)
Working pressure	up to 5.0 MPa up to 725 psi	up to 1.0 MPa up to 145 psi



## PRESSURE TRANSDUCERS

	PK45H MODEL	P252A MODEL
Description	VW pressure transducer	piezo-resistive pressure transducer
Full scales (FS)	0-350 kPa up to 0-20.0 MPa 0-50 psi up to 0-2900 psi	0-200 kPa up to 0-20.0 MPa, 0-29 psi up to 0-2900 psi
Sensitivity	0.03% FS	0.002% FS
Accuracy: Pol. MPE <sup>(1)</sup>	< ±0.25% FS (< ±0.1% FS on request)	< ±0.20% FS (for 200kPa FS) < ±0.15% FS (all other FS)
Typical frequency range <sup>(2)</sup>	2250 - 3000 Hz	-
Output signal	frequency	4-20 mA current loop
Electrical supply	-	12-40 VDC
Operating temperature range	-20°C +80°C	-20°C +80°C
Transducer size	OD 27 mm, 180 mm long OD 1", 7.1" long	OD 27 mm, 180 mm long OD 1", 7.1" long
Material	stainless steel	stainless steel
Weight	0.6 kg	0.6 kg
Cable	OWE104K00ZH	OWE102KEOZH
Max cable length to logger <sup>(3)</sup>	1000 m (for more information see <a href="#">FAQ#77</a> )	1000 m (for more information see <a href="#">FAQ#77</a> )

(1)MPE is the Maximum Permitted Error on the measuring range (FSR). In the Calibration Report, the accuracies of the gauge are calculated using both linear regression (≤ Lin. MPE) and polynomial correction (≤ Pol. MPE) (2) The expressed frequency may vary +/-10% (3) Refer to FAQ section of Sisgeo website: [www.sisgeo.com/faq](http://www.sisgeo.com/faq)

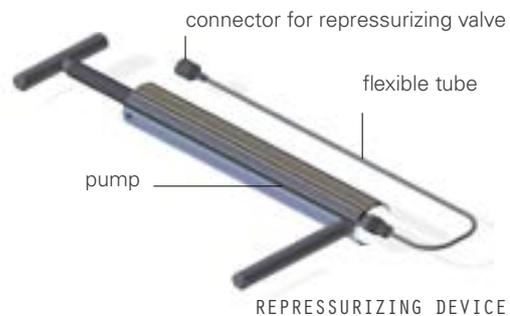
## ACCESSORIES AND SPARE PARTS

### REPRESSURIZING DEVICE OL111PUMPOO

This device permits to increase the volume of the hydraulic oil inside the cavity of the pressure pad, expanding it, in order to maintain close contact between the pad and the surrounding material after the concrete has cured.

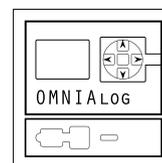
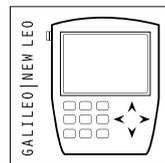
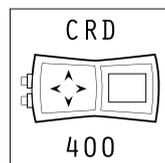
### DEAIIRED OIL 10000IL1KGMG

Special deaired oil for repressurizing device. Supplied in 1 kg tank.



REPRESSURIZING DEVICE

## READABLE BY



Refer to separate datasheets for further information.

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### TECHNICAL ASSISTANCE

SISGEO offers customers e-mail and phone assistance to ensure proper use of instruments and readout and to maximize performance of the system.

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