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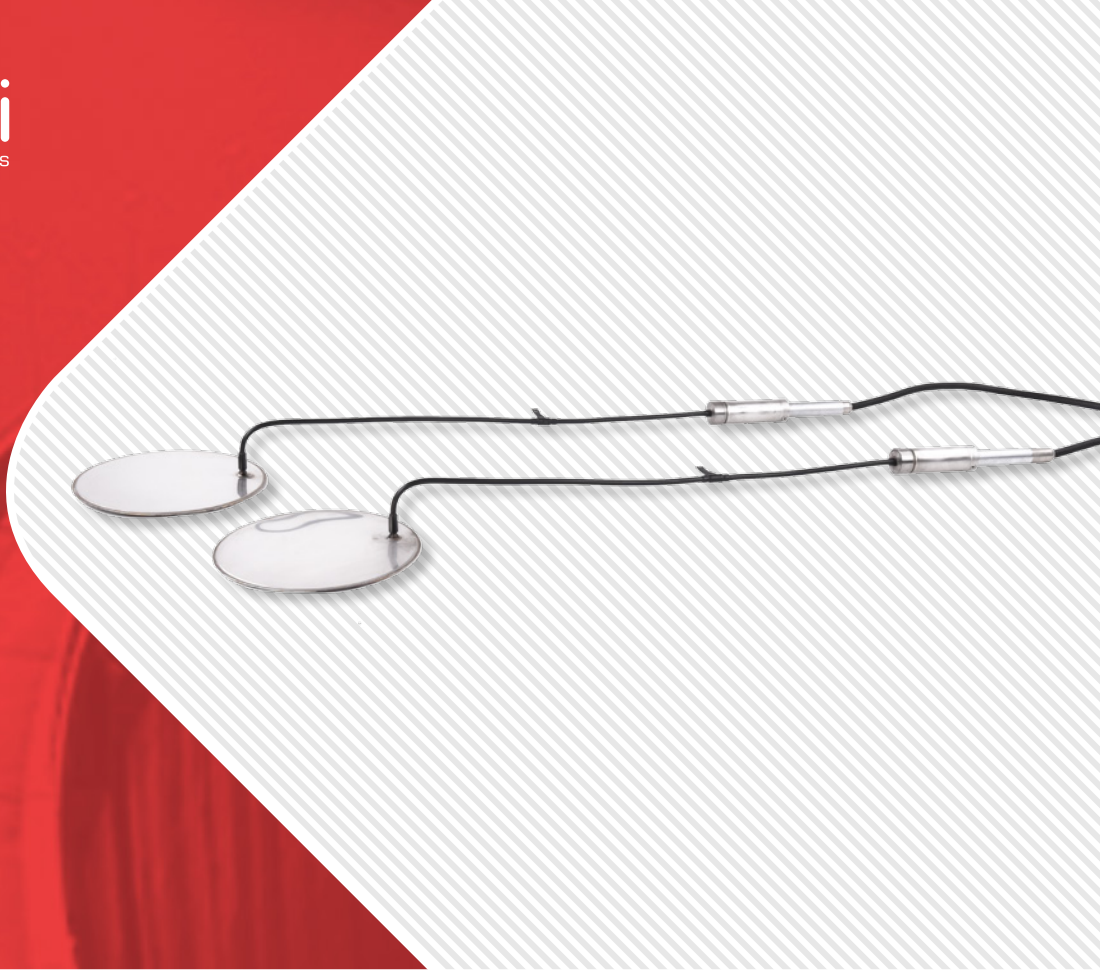


Total Pressure Cells

www.pizzi-instruments.it
Instruments and Systems for Geotechnical and Structural Monitoring

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Total Pressure Cells



Description

These load cells are used for checking the stress state in earthfill embankments and for the control of the pressure of earth on structures and foundations. To obtain a measure with the maximum sensitivity, the cell is very thin (5mm) with respect to the surface ($F = 230 \text{ mm}$) and the instrument has the main surfaces free as the measuring transducer is separate.

Load cells have the well known advantages of vibrating wire instruments. Rectangular section cells are also

available for different applications, complete with a device for pressurization after installation (see related datasheet).

These cells can be equipped with a vibrating wire sensor, electric sensor or strain-gauge for automatic measurement or with a mechanical device for direct manual measurement.

Applications

- Earth dams
- Galleries
- Rail and road embankments
- Diaphragms and supporting bulkheads
- Piles
- Bridges
- Viaducts
- Metal structures for attics
- Various



Features and benefits _____

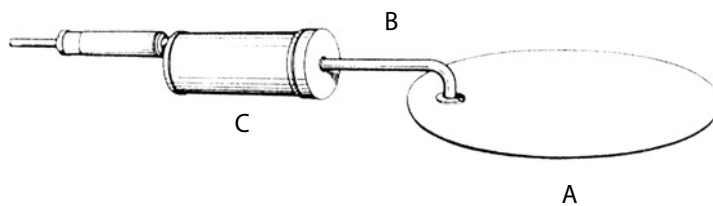
The vibrating wire sensor offers :

- **High precision**
- **Robustness**
- **High sensitivity**
- **Ease of installation**
- **Long life**
- **Not vulnerable to induced surges**
- **Not affected by drifts**

Measuring principle _____

The instrument is generally formed of two thin discs of stainless steel (A) welded together and filled with oil, linked through a thin tube (B) sealed to a vibrating wire gauge (C). The hydraulic pressure induced in the cell corresponds to the pressure transmitted from the ground and is measured by the manometer. The reading of the manometer is made with portable units, ns. mod. DEC5 and our acquisition systems DAC and CUM.

The rectangular shaped cells, generally used for control of loads transmitted from rigid surfaces, or otherwise immersed at least in one face into the concrete, are equipped with a pressurization device for restoring the contact between cell and concrete, after the first effect of shrinkage. Cells can also be supplied with mechanical sensor (Bourdon Gauge) or with strain-gauge sensor.



Technical Specifications

Sensor

Type	Vibrating Wire
Range (kg/cmq)	3, 5, 10, 15, 20, 30 (greater range upon request)
Precision	<±0,1% f.s.
Resolution	0,02% f.s.
Linearity	<0,4% f.s.
Operative Range (Hz)	350 - 1200
Drift in temperature	0,025% f.s. per °C

Cell

Material	Stainless steel AISI 304
Manufacturing	Electro-welding (TIG)
Dimensions	D=230 mm; thickness 5mm
Sealing	Through electro-welding
Cable Sealing	By welded metalglass, resin and conduit

Cabling

Cable	Rubber Insulated FG7OGtpv/450-750 V 90 °C LSZH
Conductors	2 x 1 mm ² 3 x 1 mm ²
Cable outside diameter	11 mm
Allowable Maximum Tensile	15 N/mm ² movable installations; 50 N/mm ² fixed installations
Weight for 100m	3 x 1 mm ² : 18 Kg 2 x 1 mm ² : 16 kg

Technical assistance

If you have any requests or questions about our instruments or if you have special needs that require different solutions from the standard, please contact us. Our team will provide all the necessary information and will be very happy to work with you to study, develop and customize instruments and solutions suitable for your specific needs.

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The product information may be subject to variations at any time.
Please carefully check the release and contact Pizzi Instruments for further details.

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