

Total Earth Pressure Cells

TPC-4000 SERIES



Geosense® TPC-4000 series Total Earth Pressure cells are designed to measure total pressure (effective stress and pore water pressure) in soils and at the interface between structures and the wall of excavation.

They are constructed from two stainless steel plates, welded around their periphery with the narrow gap between the plates filled with hydraulic fluid.

External pressure on the outside surfaces of the cell squeezes the two plates together creating an internal fluid pressure. A length of stainless steel tube connects the cell to a pressure transducer (VWDT-5000 or SGT-3000) which converts the fluid pressure into an electrical signal which can be directly readout or transmitted to a data logging system.

Models 4000 and 4020 are designed to measure soil pressure within soils. Models 4010 and 4030 are designed to measure soil pressures on structures and are fitted with fixing lugs. They have an extra thick backplate on one side which is placed against the structure to avoid any warping of the cell. The other side has a thin plate welded to the backplate which provides sensitive measurement of soil pressures.

Applications

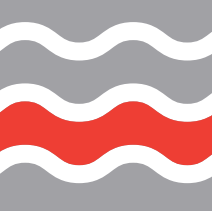
Measurement of total pressure in or on:

- ~ Concrete dams
- ~ Diaphragm walls
- ~ Retaining wall surfaces
- ~ Slurry walls
- ~ Sheet piles
- ~ Tunnel lining
- ~ Fills & embankments
- ~ Mine backfilling
- ~ Rail track

Features

- ~ High accuracy
- ~ Long-term stability
- ~ Stainless steel construction
- ~ High height to diameter ratio
- ~ Dynamic measurement possible
- ~ VW or strain gauge readout
- ~ Suitable for remote reading and data logging





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Specifications

Model	VWTPC-4000	VWTPC-4010	SGTPC-4020	SGTPC-4030
Pressure range	344, 518, 690, 1034 kPa	344, 518, 690, 1034 kPa	400, 600, 1000 kPa	400, 600, 1000 kPa
	2.1, 3.4, 5.2, 6.9, 10.3, 13.8, 20.7, 34.5 MPa	2.1, 3.4, 5.2, 6.9, 10.3, 13.8, 20.7, 34.5 MPa	1.6, 2.5, 4.0, 6.0, 10.0 MPa	1.6, 2.5, 4.0, 6.0, 10.0 MPa
Over range	150% FS	150% FS	150% FS	150% FS
Signal output	2000 - 3500 Hz	2000 - 3500 Hz	4-20mA	4-20mA
Resolution	± 0.025% FS	± 0.025% FS	Infinite	Infinite
Accuracy ¹	± 0.1% FS	± 0.1% FS	± 0.25% FS	± 0.25% FS
Linearity	<0.5% FS	<0.5% FS	-	-
Outer diameter	165, 245, 320mm	165, 245, 320mm	165, 245, 320mm	165, 245, 320mm
Active diameter	150, 230, 305mm	150, 230, 305mm	150, 230, 305mm	150, 230, 305mm
Lug size	-	25 x 25 x 5mm	-	25 x 25 x 5mm
Lug hole diameter	-	10mm	-	10mm
Fixing centres	-	190, 270, 345	-	190, 270, 345
Thickness	7mm	10.5mm	7mm	10.5mm
Operating temp	-20°C to +80°C	-20°C to +80°C	-30°C to +95°C	-30°C to +95°C

¹ Calibrated accuracy of pressure sensor

Ordering Information

- ~ Pressure range
- ~ Diameter
- ~ Sensor type
- ~ Cable length
- ~ Readout



Specifications may change without prior notice

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