DATASHEET

Total Earth Pressure Cell - 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

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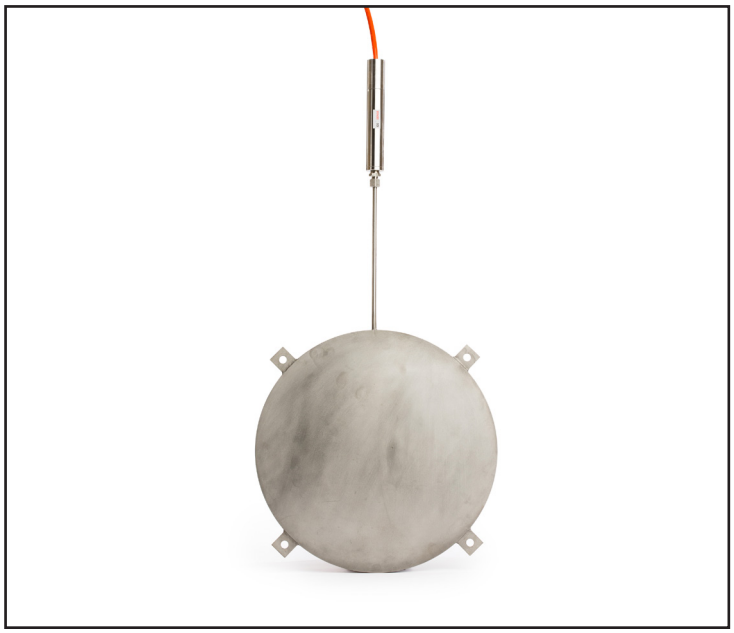
Overview



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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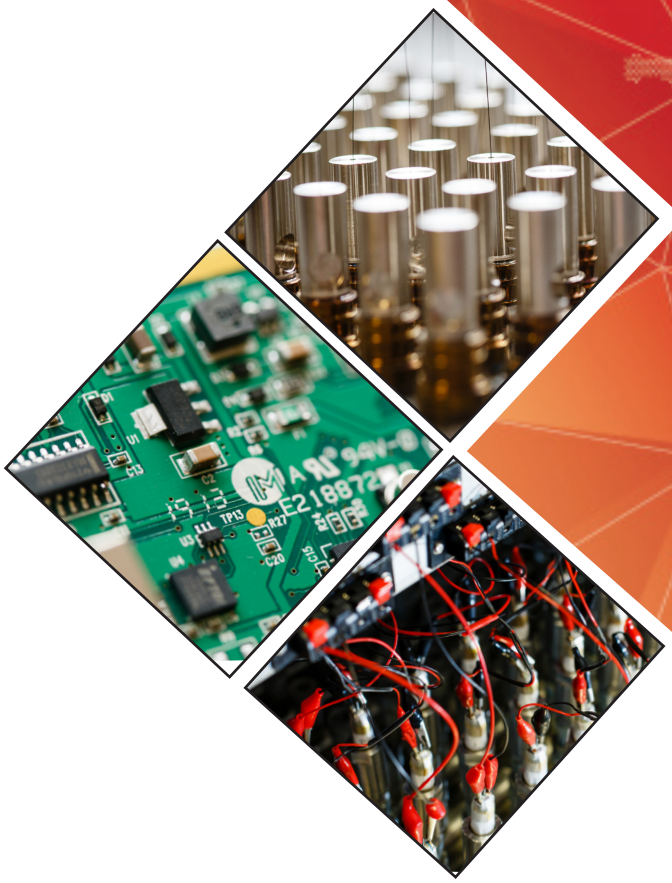
Specifications

MODEL	VWTPC-4000	VWTPC-4010	SGTPC-4020	SGTPC-4030
Pressure range	345, 518, 690, 1034 kPa 1, 2, 3, 5.2, 6.9, 10.3, 20.7 MPa	345, 518, 690, 1034 kPa 1, 2, 3, 5.2, 6.9, 10.3, 20.7 MPa	350, 700 kPa 1000, 3.5 MPa	350, 700 kPa 1000, 3.5 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	7.5mm	11mm	7.5mm	11mm
Operating temp	-20°C to +80°C	-20°C to +80°C	-30°C to +95°C	-30°C to +95°C
Cable	Type - 900 VW Sensor with Foil Screen & Drain Wire; Type - 710 Heavy Duty			

ORDERING INFORMATION
Type
Size
Pressure range
Cable length
Accessories
Crimping tool

[1] Calibrated accuracy of pressure sensor



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