



Model 4800 Earth › 4810 "Fat Back" Pressure Cells*

The Model 4800 is designed to measure total pressure in earth fills and embankments and consists of two circular stainless steel plates, welded around their periphery, with a narrow cavity filled with de-aired oil. Changing earth pressure squeezes the plates together causing a corresponding increase of oil pressure, which is measured by a vibrating wire pressure transducer connected via a short length of steel tubing. The Model 4810 is similar, but has an extra-thick backplate to minimize point loading effects when installed on concrete or rock surfaces.

Specifications	4800	4810
Ranges ¹	70, 170, 350, 700 kPa; 1, 2, 3, 5, 7.5, 20 MPa	350, 700 kPa; 1, 2, 3, 5 MPa
Over Range	1.5 × rated pressure	1.5 × rated pressure
Resolution	0.025% F.S.	0.025% F.S.
Accuracy ²	±0.1% F.S.	±0.1% F.S.
Temperature Range ¹	-20 °C to +80 °C	-20 °C to +80 °C
Cell Dimensions (H × ø) ¹	7 × 230 mm	15 × 230 mm

¹Other ranges/sizes available on request. | ²Transducer accuracy established under laboratory conditions.



Model 4820 Jackout Pressure Cell*

The Model 4820 Jackout Pressure Cell is used to measure earth pressures on slurry walls. It is designed to fit inside a plate that is pressed against the side of a slurry wall excavation using a hydraulic jack arrangement. This method of installation ensures that the jackout cell is located with its sensitive face in contact with the adjacent soil.

Specifications	
Ranges ¹	70, 170, 350, 700 kPa; 1, 2, 3, 5, 7.5, 20 MPa
Over Range	1.5 × rated pressure
Resolution	0.025% F.S.
Accuracy ²	±0.1% F.S.
Temperature Range ¹	-20 °C to +80 °C
Cell Dimensions (H × ø) ¹	19 × 150 mm

¹Other ranges/sizes available on request. | ²Transducer accuracy established under laboratory conditions.



Model 4830 Push-In Pressure Cell*

The Model 4830 Push-In Pressure Cell is designed to be pushed in place for the measurement of total pressures in soils and earth fills. Where effective stress is required, the cell is fitted with an integral piezometer. The threaded end allows it to be attached to lengths of pipe or drill rods for installation purposes.

Specifications	
Ranges ¹	70, 170, 350, 700 kPa; 1, 2, 3, 5 MPa
Over Range	1.5 × rated pressure
Resolution	0.025% F.S.
Accuracy ²	±0.1% F.S.
Temperature Range ¹	-20 °C to +80 °C
Dimensions (L × W) ¹	610 × 51 mm

¹Other ranges/sizes available on request. | ²Transducer accuracy established under laboratory conditions.



Model 4850 NATM Style Shotcrete Stress Cells

The Model 4850 NATM Style Shotcrete Stress Cells are designed for the measurement of tangential (4850-1) and radial (4850-2) stresses in shotcrete tunnel linings. The cells consist of two rectangular steel plates welded together around the periphery with a de-aired fluid occupying the space between the plates. A short tube connects the cell to a vibrating wire pressure transducer. A prestressing tube is provided for expanding the cell after the concrete has cured. Cells of this type are also used for measurements of stress in mass concrete.

Specifications	4850-1	4850-2
Ranges ¹	7.5, 20, 35 MPa	2, 3, 5 MPa
Over Range	1.5 × rated pressure	1.5 × rated pressure
Resolution	0.025% F.S.	0.025% F.S.
Accuracy ²	±0.1% F.S.	±0.1% F.S.
Temperature Range ¹	-20 °C to +80 °C	-20 °C to +80 °C
Dimensions (L × W × H) ¹	200 × 100 × 6 mm	250 × 150 × 6 mm

¹Other ranges/sizes available on request. | ²Transducer accuracy established under laboratory conditions.



Model 4855 Pile Tip Pressure Cell*

The Model 4855 is used to measure the pressure in cast-in-place concrete piles (caissons). The cell is roughly the diameter of the pile and has a thick upper plate, which includes hooks or sections of rebar attached to allow connection to the bottom of the reinforcement cage. Two vibrating wire pressure transducers are included for redundancy in case damage occurs during installation, and a remote repressurization mechanism ensures good contact between the cell and the surrounding concrete.

Specifications	
Ranges ¹	2, 3, 5, 7.5, 10, 20 MPa
Over Range	1.5 × rated pressure
Resolution	0.025% F.S.
Accuracy ²	±0.1% F.S.
Temperature Range ¹	-20 °C to +80 °C
Dimensions (H × ø) ¹	varies

¹Other ranges/sizes available on request. | ²Transducer accuracy established under laboratory conditions.



Model 3000 › 4900 Load Cells

The Model 4900 Vibrating Wire Load Cell (inset, right) consists of a cylinder of high-strength steel with 3 or 6 vibrating wire strain gauges located around its circumference. Loads applied to the cell are measured by the vibrating wire strain gauges. The effects of uneven and eccentric loading are minimized by averaging the output of all 3 or 6 individual readings. The Model 3000 Load Cell (inset, left) has the same annular design, using high-strength steel or aluminum, but uses electrical resistance strain gauges in a Wheatstone Bridge configuration.

Specifications	3000	4900
Rated Capacities ¹	100 to 10,000 kN	100 to 10,000 kN
Over Range	1.5 × rated pressure	1.5 × rated pressure
Resolution	0.025% F.S.	0.025% F.S.
Accuracy ²	±0.5% F.S.	±0.5% F.S.
Temperature Range ³	-20 °C to +80 °C	-20 °C to +80 °C
Dimensions (ID) ¹	solid, 25, 50, 75, 100, 125, 150, 200, 250 mm	solid, 25, 50, 75, 100, 125, 150, 200, 250 mm

¹Other capacities and diameters available on request. The limit of the GEOKON NIST traceable calibration capability is 12,000 kN (1,200 tons). | ²Transducer accuracy established under laboratory conditions.

³Other ranges available on request.

*Models are also available with semiconductor pressure transducers (please contact GEOKON for details).