

A typical Total Earth Pressure Cell.

	<b>PRODUCT CATEGORY:</b>
	LOAD CELLS + PRESSURE SENSORS + STRESS METERS

## Total Earth Pressure Cell

Total Earth Pressure Cells are designed to measure stress acting on plane surfaces. Total Earth Pressure Cells are constructed from two circular stainless steel plates, welded together around their periphery. The annular space between these plates is filled with deaired glycol. The cell is connected via a stainless steel tube to a transducer forming a closed hydraulic system. The stress is then converted to a signal and may be remotely read on a variety of portable readout units or data loggers. Various types of transducers are employed dependent on site requirements.

RST Total Earth Pressure Cells are calibrated as a complete assembly (rather than just the sensor) to capture the calibration of the complete cell for highest quality of data.

### > APPLICATIONS

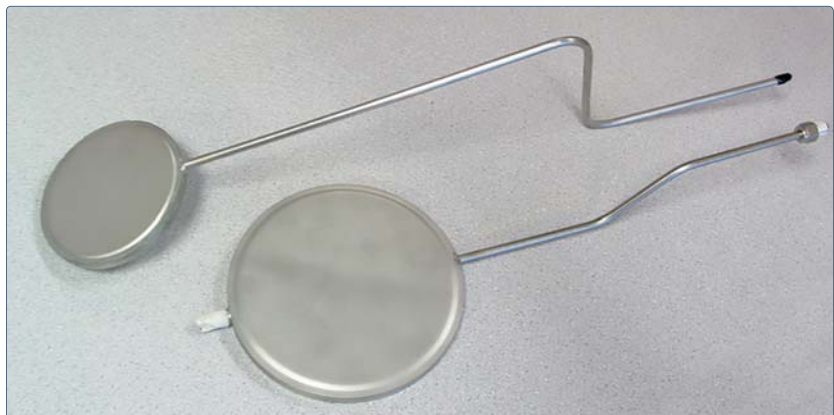
Earth embankments and dams.	Foundations, retaining walls, and piles.
Pipelines and culverts.	Railroad bases.
Beneath raft foundations.	Tunnel linings.
Mine backfill monitoring.	

### > FEATURES

Long term stability.
High accuracy and sensitivity.
Constant monitoring capability.
Ease of data logging.
Stainless steel construction.
Either pneumatic, strain gauge or vibrating wire transducers.
The transducer is located 46 cm (18 in.) from the cell to avoid any influence from the transducer housing.
A 20:1 height to diameter ratio minimizes the effects of stress distribution on the mean plane.

### > BENEFITS

✓ <b>Increase Safety</b>	✓ <b>High Accuracy</b>
✓ <b>High Reliability</b>	✓ <b>Custom Options</b>



Total Earth Pressure Cells shown above with custom shaped stems. RST specializes in custom designed instruments to suit your project's specific requirements. Contact RST for more information.

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## SPECIFICATIONS + ORDERING

SPECIFICATIONS				
DESCRIPTION	MODELS			
	LPTPC-P	LPTPC-S		LPTPC-V
Transducer Type	PETUR® Pneumatic	*Silicon Strain Gauge		Vibrating Wire
Range - Standard Calibration	Up to 2.0 MPa (300 psi)	Up to 2.0 MPa (300 psi)		Up to 2.0 MPa (300 psi)
Range - Max Available	n/a	20 MPa (3000 psi)		20 MPa (3000 psi)
Special Calibration	n/a	Up to 3.4 MPa 500 (psi)		Up to 3.4 MPa 500 (psi)
Calibrated Accuracy	0.15% F.S.	0.15% F.S.		0.15% F.S.
Resolution	Equal to readout instrument	Infinite		0.025% F.S. minimum
Excitation Voltage	n/a	Dependent on sensor		5 V sq. Wave
Signal Output	n/a	0-100 mV 0-1V 0-5V	4-20 mA	1200 - 2000 Hz
Thermistor	No	Optional (can be added)		Yes (standard)
Conductor	2 X 3/16 O.D. Pneumatic Tubes	4 X #22	2 X #22	4 X #22 (2 for VW, 2 for Thermistor)
Operating Temperature	-40° to +40°C -40° to +105°F	-40 to +120°C -40 to +250°F		-29° to +65°C -20° to +150°F

\*Various types of strain gauge transducers are available, please contact RST for more info.

ORDERING INFO				
TRANSDUCER	STANDARD CELL DIA.	STANDARD PRESSURES (0.35 MPa - 3 MPa)	HIGH PRESSURES (>3 MPa - 20 MPa)	LOW PRESSURES (<0.35 MPa)
Pneumatic	11.4 cm (4.5 in.)	LPTPC04-P	N/A	LPTPC04-P
Pneumatic	16.2 cm (6.38 in.)	LPTPC06-P	N/A	LPTPC06-P
Pneumatic	24.1 cm (9.5 in.)	LPTPC09-P	N/A	LPTPC09-P
Pneumatic	31.7 cm (12.5 in.)	LPTPC12-P	N/A	LPTPC12-P
Silicon Strain Gauge	11.4 cm (4.5 in.)	LPTPC04-S	LPTPC04-S-HP	LPTPC04-S
Silicon Strain Gauge	16.2 cm (6.38 in.)	LPTPC06-S	LPTPC06-S-HP	LPTPC06-S
Silicon Strain Gauge	24.1 cm (9.5 in.)	LPTPC09-S	LPTPC09-S-HP	LPTPC09-S
Silicon Strain Gauge	31.7 cm (12.5 in.)	LPTPC12-S	LPTPC12-S-HP	LPTPC12-S
Vibrating Wire	11.4 cm (4.5 in.)	LPTPC04-V	LPTPC04-V-HP	LPTPC04-V-LP
Vibrating Wire	16.2 cm (6.38 in.)	LPTPC06-V	LPTPC06-V-HP	LPTPC06-V-LP
Vibrating Wire	24.1 cm (9.5 in.)	LPTPC09-V	LPTPC09-V-HP	LPTPC09-V-LP
Vibrating Wire	31.7 cm (12.5 in.)	LPTPC12-V	LPTPC12-V-HP	LPTPC12-V-LP

OPTIONAL	
Total Earth Pressure Cell - Axial Mounted.	
Temperature measurement (requires 2 additional conductors).	
Integral pore pressure measurement.	
Special mounting modifications such as mounting ears (3 or 4 tabs).	
Custom sizes and shapes.	
ACCESSORIES	ORDERING INFO
Portable readout instruments.	Part number.
Single channel data acquisition systems.	Pressure range requirements.
Multi channel data acquisition systems.	Cable length.
Readout terminal stations.	Optional equipment.



Above: Total Earth Pressure Cell - Axial Mounted, Model LPTPC06-V-M.



Left: Optional variation shown with mounting ears.