

### MODEL 2100

The Geotechnical Systems Australia Pty Ltd **Boundary Cell** has been designed to easily measure pressures acting on a plane surface. The instruments are rugged, accurate and can tolerate long cable lengths to the reading location. They are capable of being data logged.

### APPLICATIONS

- Earth Embankments
- Dams
- Foundations, retaining walls and piles
- Pressure determination against pipelines, culverts, under buildings and raft foundations
- Tunnel Linings



# Boundary Cell

SPECIFICATION	BOUNDARY CELL	Model 2100
Pressure Ranges (kPa)	250, 350, 700, 2000, 3500, 5000	
Over Range	1.5 times rated pressure	
Resolution	0.025% full scale	
Accuracy	+/- 0.5% full scale	
Operating Temperature	-20 to +65 °C	
Dimensions	175mm dia, 40mm thick	
Weight	2.6kg	
Excitation	4 volt p-p square wave	
Signal Output	Continuous gauge frequency	
Frequency Range	2000 – 3500 Hz	

## OPERATION

The boundary cells are constructed from two circular stainless steel plates, (one rigid, the other flexible) welded together around the periphery. The annular space between these plates is filled with an incompressible fluid. The cell is connected via a stainless tube to a transducer forming a closed hydraulic system. Stress acting on the cell will displace the fluid creating a pressure on the vibrating wire transducer.

The transducer consists of a vibrating wire element connected to a sensitive, perpendicular diaphragm. Exerting pressure on the diaphragm will cause it to deflect therefore altering the tension and corresponding resonant frequency of the vibrating wire. A readout box or datalogger reads the frequency of the wire. By using vibration frequency as a measurement method, water penetration, lead wire and contact resistances are deemed negligible. The stainless steel housing of the transducer ensures resistance to corrosive environments.

## FEATURES

- Rugged Design
- Highly Sensitive
- Simple Installation
- Excellent Long Term Stability
- Can Tolerate Long Cable Lengths
- Waterproof Design
- Ease of Monitoring
- Wide Range of Applications

## ANCILLARY EQUIPMENT

- Portable readout units
- Single channel dataloggers
- Multi channel dataloggers
- Terminal Boxes

## ORDERING INFORMATION

When ordering, please also specify

- Model Number
- Required Cable Length
- Whether thermistor option is required