

# Load Cell for Tunnel Linings & Struts - EHLC-8000

Typically used to monitor stresses in steel linings, struts, piles and support beams



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## Overview



This consists of a sensitive pressure pad formed by joining two stiff steel discs at their periphery. The void inside the cell is filled with de-aired fluid. When load is applied to the cell the pressure of the inside liquid changes. The changes in pressure correspond directly to the load applied.

The pressure in the loads cell is measured by a resistance transducer.

Mounting surfaces should be flat and parallel for optimum performance and the use of very stiff bearing plates and load distribution plates is recommended. Electric cable connects the load cells to a suitable remote readout system.

This model of load cells is used to monitor stresses in steel linings, struts, piles and support beams.

### APPLICATIONS

Measurement of load acting on:

Steel lining in tunnel construction

Struts in big open excavation

Pile testing

### FEATURES

Specially designed for steel linings and struts

High strength steel construction

Load distribution plates available

Proven long-term accuracy

Accommodates eccentric loading

Multiple gauge system

Data logger compatible

Available with plug connector or cable



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## Specifications

### LOAD CELL

|                                   |                                  |
|-----------------------------------|----------------------------------|
| Measuring range                   | 1,900 & 3,000 kN                 |
| Accuracy                          | >1% FS                           |
| Linearity                         | +/-0.25%FS                       |
| Signal output                     | 4-20 mA (current loop)           |
| Cell plate                        | Sensitised with 16 strain gauges |
| Repeatability                     | > +/- 0.02% FS                   |
| Admissible loads                  | 150% FS                          |
| Ultimate tensile strengths        | 300% FS                          |
| Protection class                  | IP67                             |
| Electrical power supply           | 8-32V DC                         |
| Material                          | Stainless steel                  |
| Operating temperature             | -20°C - +80°C                    |
| Maximum deflection under load     | 0.4 mm                           |
| Insulation                        | > 5,000 mΩ                       |
| Temperature range                 | -10°C/+60°C                      |
| Temperature effect on sensitivity | (5°C) <± 0.005% FS               |

### CELL PLATE DIMENSIONS

| Capacity (kN) | OD (mm) | Height (mm) | Total length inc transducer (mm) |
|---------------|---------|-------------|----------------------------------|
| 1.900         | 220     | 40          | 360                              |
| 3.000         | 270     | 40          | 410                              |

### LOAD DISTRIBUTION PLATES

|       |     |    |
|-------|-----|----|
| 1.900 | 200 | 30 |
| 3.000 | 250 | 30 |

### ORDERING INFORMATION

|                         |
|-------------------------|
| Capacity                |
| Cable length            |
| Readout                 |
| Load distribution plate |
| Connectors              |



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