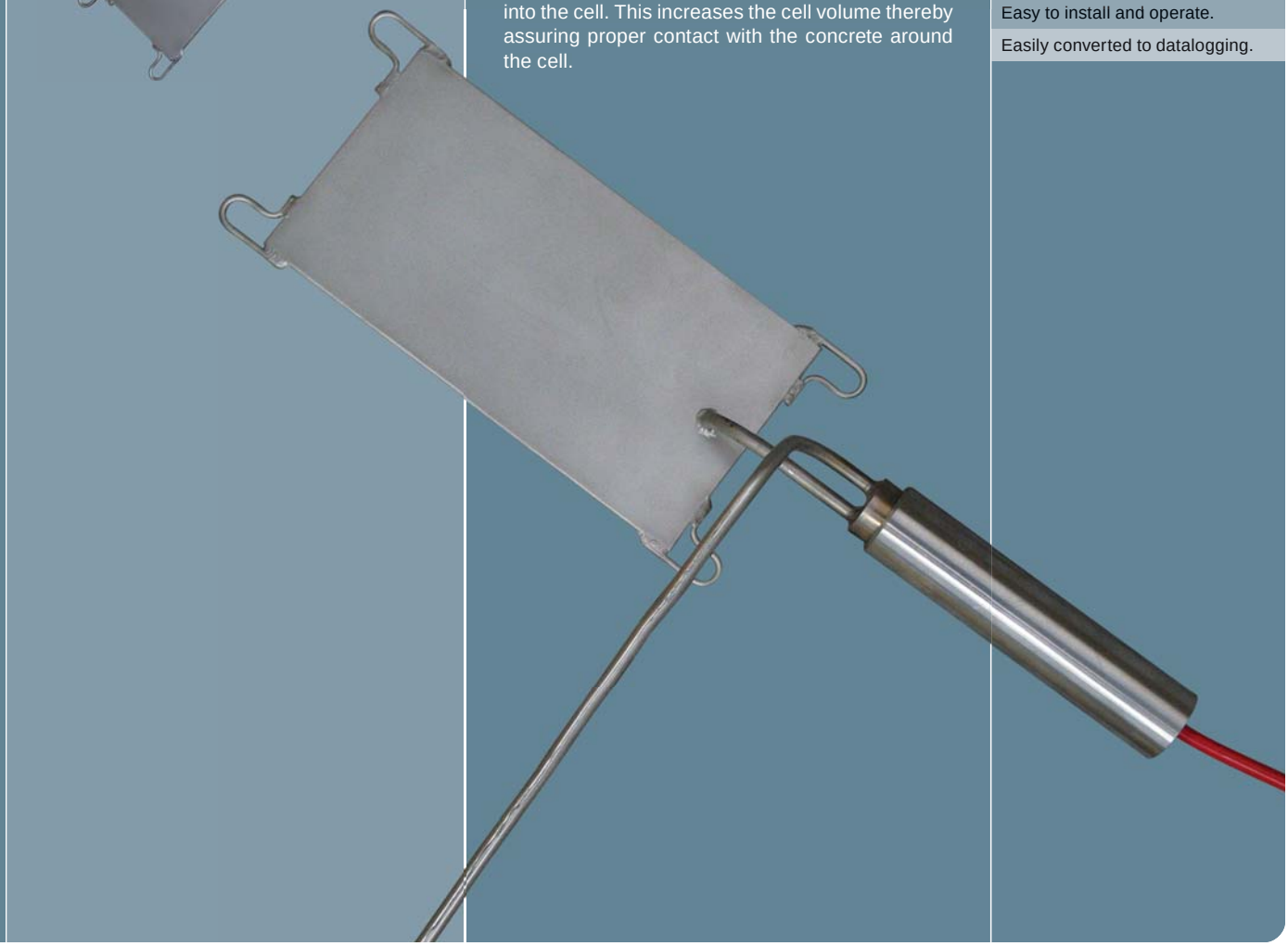
» load cells | pressure sensors | stress meters

Vibrating Wire NATM Stress Cell

RST Vibrating Wire NATM Stress Cells are designed to measure stresses in concrete (shotcrete) linings in tunnels and other underground workings. They feature a higher stiffness than Earth Pressure Cells, and are therefore more suitable for stress measurement in concrete.

The instrument name is associated with New Austrian Tunneling Method (NATM), which is also known as Sprayed Concrete Lining (SCL) and Sequential Excavation Method (SEM). Monitoring of radial and tangential stresses within and on shotcrete lining, along with measurement of tunnel convergence and deformation is an integral, very important part of the method and its successful implementation.

VW NATM cells are constructed of two rectangular steel plates welded around their periphery. The annular space between the plates is filled with fluid. The cell is connected via a stainless steel tube to a vibrating wire pressure transducer. The stress on the cell is then converted to a signal and may be read either with vibrating wire readout or a data logger. Each cell also incorporates a compensating tube that allows adjustment of the cell volume to compensate for shrinkage in the concrete. The compensating tube is squeezed to force more fluid into the cell. This increases the cell volume thereby assuring proper contact with the concrete around the cell.



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applications

To monitor pressure on, and within, linings of tunnels and underground workings.

features

- High accuracy and sensitivity.
- Vibrating wire transducer assures long term stability.
- Easy to install and operate.
- Easily converted to datalogging.

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LPB0008L

specifications + ordering info

Vibrating Wire NATM Stress Cell

ordering info + specifications

VIBRATING WIRE NATM STRESS CELLS

MODEL	CELL DIMENSIONS	PRESSURE RANGES
VW3201-7	100 X 200 mm (3.9 X 7.8 in.)	7 MPa
VW3201-20	100 X 200 mm (3.9 X 7.8 in.)	20 MPa
VW3201-35	100 X 200 mm (3.9 X 7.8 in.)	35 MPa
VW3202-2	150 X 250 mm (5.9 X 9.8 in.)	2 MPa
VW3202-3	150 X 250 mm (5.9 X 9.8 in.)	3 MPa
VW3202-5	150 X 250 mm (5.9 X 9.8 in.)	5 MPa
VW3250	Heavy Duty Crimper for NATM Stress Cells	

pressure transducer specifications

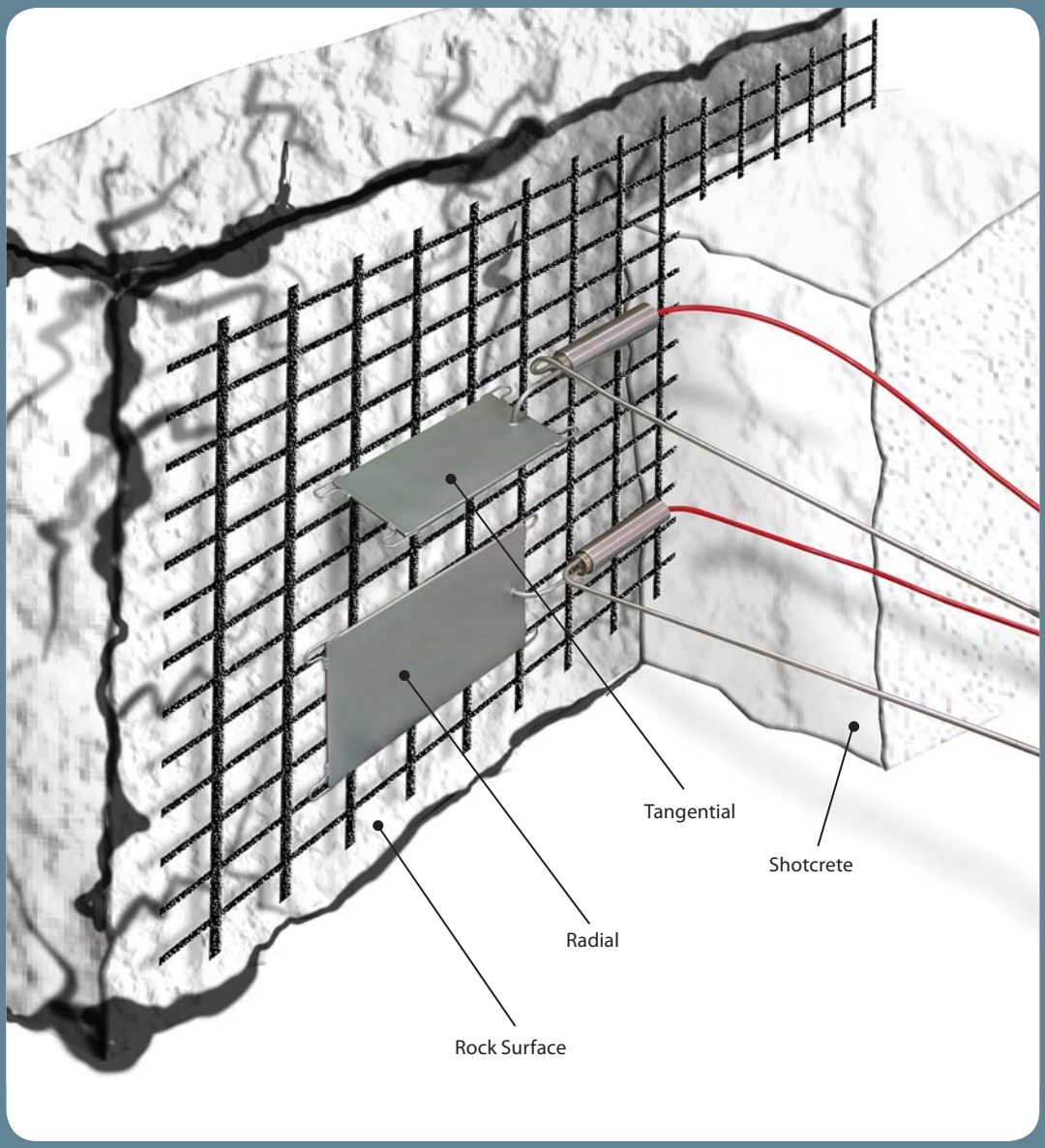
ITEM	SPECIFICATION
Type	Vibrating wire
Overrange	200% F.S.
Accuracy	± to 0.1% F.S.
Resolution	± 0.025% F.S. minimum
Signal Output	2000-3000 Hz
Signal Cable	Two twisted pairs cable with polyurethane jacket

additional ordering info

- Type and Cell size
- Length of signal cable
- Pressure range
- Accessories required

optional equipment

- VW2106 readout
- Dataloggers
- Terminal stations



Section depicting placement of NATM Cells

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