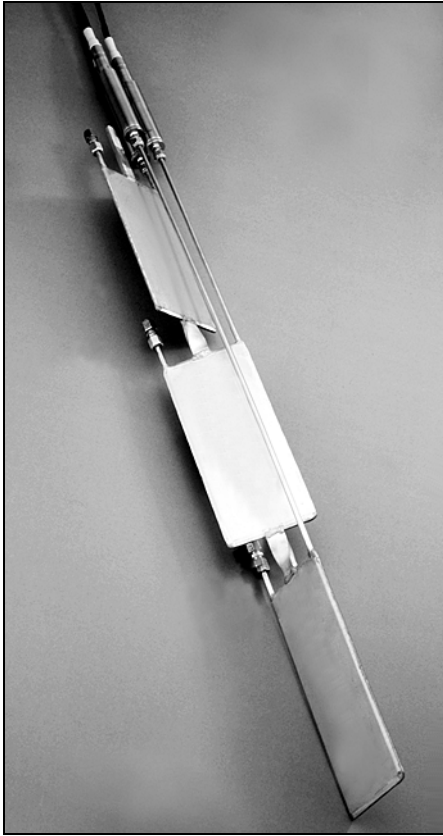


VW Stress Stations



Applications

The Interfels VW stress station is designed to monitor stress in soil or soft rock.

Operation

The stress station is connected to a steel cable and lowered to the specified depth in the borehole. The borehole is then backfilled with grout.

After the grout cures, oil is pumped through pressurization tubing into each cell. This inflates the cell, forcing the sensitive side of the cell into contact with the surrounding grout.

The total pressure acting on the sensitive surface of the cell is transmitted to the oil inside the cell and measured by the VW transducer.

1-axis, 2-axis, or 3-axis stress measurements can be taken, depending on which type of stress station is used.

Advantages

Small Height to Width Ratio: The small height to width ratio of the cell provides superior performance.

Multiple Axes: Stress stations are available in one, two, or three axis versions.

VW Transducer: The VW pressure transducer provides consistent readings.

Manual or Automatic Readout: The transducer can be read manually with a vibrating wire readout or automatically with a data logger.

STRESS STATIONS

1-Axis Stress Station52608110

Station is configured with one total pressure cell for 1-axis stress measurements. Station dimensions are 320 x 100 x 20 mm (12 x 4 x 0.8"). Cell dimensions are 250 x 100 x 6 mm (10 x 4 x 0.2"). Does not include transducer, pressurization tubing or signal cable.

2-Axis Stress Station52608120

Station is configured with two total pressure cells oriented 90° apart for 2-axis stress measurements. Station dimensions are 920 x 100 x 100 mm (36 x 4 x 4"). Cell dimensions are 250 x 100 x 6 mm (10 x 4 x 0.2"). Does not include transducers, pressurization tubing or signal cable.

3-Axis Stress Station52608130

Station is configured with three total pressure cells oriented 120° apart for 3-axis stress measurements. Station dimensions are 1,890 x 100 x 100 mm (74 x 4 x 4"). Cell dimensions are 250 x 100 x 6 mm (10 x 4 x 0.2"). Does not include transducers, pressurization tubing or signal cable.

VW TRANSDUCERS

3.5 bar (50 psi) Transducer52611420

7 bar (100 psi) Transducer52611430

17 bar (250 psi) Transducer52611440

35 bar (500 psi) Transducer52611450

VW transducers have built-in thermistor or RTD. Signal cable is not included.

Transducer/Readout Resolution: 0.025% FS.

Repeatability: ±0.5% FS

Maximum pressure: 150% the rated range.

PRESSURIZATION TUBING

Pressurization Tubing52608132

Stainless steel tubing includes adapter to connect to cell and quick connect coupling for hand pump. Separate tubes are required for each cell.

SETTING RODS

Setting Rod, 2m52608134

Setting Rod, 3m52608136

Used to orient the monitoring station in the borehole. Rods can be retrieved after station is oriented. Includes 5 mm connecting screws. Specify number of 2 or 3 m lengths.

SIGNAL CABLE

Signal Cable50613524

Four 22-gauge tinned-copper conductors, shielded, with polyurethane jacket. Does not include connector. Specify length.

Universal Connector57705001

Terminal Box57711600

Provides connections for 12 sensors and an indicator. Sensors selected by rotary switch. Weatherproof fiberglass box measures 290 mm wide x 345 mm high x 135 mm deep, (11.5 x 13.5 x 5.25").

ACCESSORIES

Hand Pump52608138

Connects to pressurization tubing to pump oil into the cells through the pressurization tubing.

Grout Tubing50721008

Used to deliver grout from grout pump to borehole. 0.5" polyethylene tubing with burst pressure rating of 29 bar (425 psi) at 22°C.

Steel Cable50402310

Used to lower the monitoring station into the borehole.

READOUTS & DATA LOGGERS

Compatible readouts include the VW Data Recorder and other pluck-type VW readouts. See separate data sheets for details.

Compatible data loggers include the Campbell Scientific CR10X with a VW interface and an AM16/32 multiplexer, which can accommodate 16 VW transducers with temperature readings or 32 VW transducers without temperature readings. See separate data sheet for details.