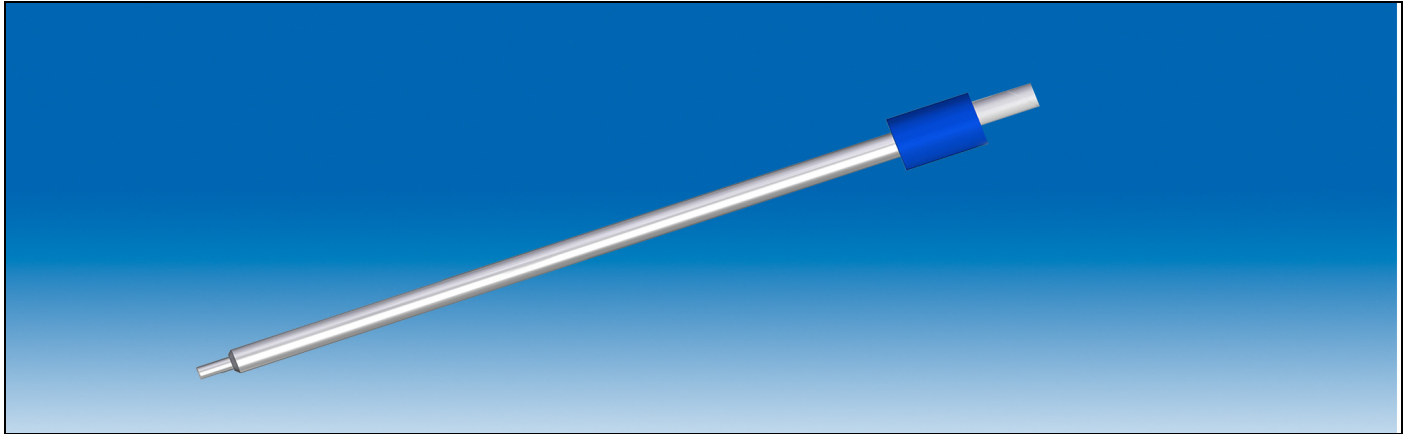


VW Displacement Sensor



Applications

The Vibrating Wire Displacement Sensor is utilized in Rod Extensometers, VW Crackmeters, and VW Jointmeters. When used in these products, it is suitable for measuring a displacement, or change in distance, between two points. Typical applications include:

- Rod Extensometer: Monitoring settlement or heave of tunnels, utilities, or subgrade beneath new structures, as well as monitoring vertical rock faces.
- VW Crackmeter: Monitor cracks in structures that may be affected by nearby excavation, construction activities or seismic activity.
- VW Jointmeter: Monitor joints in concrete structures that may be affected by concrete curing, nearby excavation, construction activities or seismic activity.

Operation

The Vibrating Wire Displacement Sensor converts lateral movement to a frequency via a tensioned steel wire and an electromagnetic coil. Once calibrated, the transducer becomes the sensing component of the Rod Extensometer, VW Crackmeter, or the VW Jointmeter.

Readings are taken with a VW Data Recorder or a data logger. Calibration factors are applied to the frequency readings to convert them to a distance in mm or inches.

The initial reading establishes a baseline. Subsequent readings are compared to the baseline to determine the magnitude of displacement.

Advantages

Multiple Ranges: The VW Displacement Sensor is available in a variety of ranges from 12.5mm to 500mm ranges (0.5 to 19.7 inches).

Rugged Construction: The VW Displacement Sensor is waterproof to 16 bar (232 psi). They are also thermally aged to minimize long term drift.

Suitable for Data Logging: The sensor is easily connected to a data logger for unattended monitoring and distribution of the data by telemetry, if required. It can also be read manually.

VW DISPLACEMENT SENSORS

12.5mm	.....	.92636135
25mm	.....	.92636255
50mm	.....	.92636055
75mm	.....	.92636075
100mm	.....	.92636335
150mm	.....	.92636155
200mm	.....	.92636205
300mm	.....	.92636305
500mm	.....	.92636505

Signal cable, ordered separately, is connected to the sensor at the factory.

Sensor Type: Vibrating wire. A built-in thermistor provides temperature measurements.

Thermistor: 3k Ohms at 25 °C.

Over-Range: Range + 20%.

Resolution: 0.025% FS.

Calibration Accuracy: ±0.1% FS.

Non linearity: <0.5% FS.

Frequency Range: 1650 - 2700 Hz.

Nominal zero value: 1850 Hz.

Waterproof Rating: Waterproof crackmeter is rated to 16 bar (232 psi).

Diameter: 12.5mm to 300mm range are 13mm in diameter. 500mm range is 16mm in diameter.

LENGTH:

Range (mm)	.....	Length (mm)
12.5	.....	.195
25	.....	.243
50	.....	.275
75	.....	.369
100	.....	.400
150	.....	.530
200	.....	.660
300	.....	.917
500	.....	.1433

SIGNAL CABLE

Signal Cable 90613324
 Shielded cable with four 22-gauge tinned copper conductors and polyurethane (PUR) jacket. Specify cable length for each sensor.

TERMINAL BOXES

Terminal Box for 6 sensors 57711606
Terminal Box for 12 Sensors 57711600
Terminal Box for 24 Sensors 97711624

Provides terminals for signal cable from 6, 12, or 24 sensors. Sensors are selected by rotary switch. Small 6-sensor box is 240 x 190 x 120 mm (9.5 x 7.5 x 4.75"). Larger 12 and 24-sensor box is 290 x 345 x 135 mm (11.5 x 13.5 x 5.25").

READOUTS

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

DATA LOGGERS

Data Loggers

VW MiniLogger for 1 Sensor52613310
4-Channel V-Logger52615140

Campbell Scientific Data Loggers

VW displacement transducers connect directly to the VW MiniLogger, V-Logger and Campbell Scientific CR6. Campbell Scientific CR800 or CR1000 require an AVW200 vibrating wire adapter. See separate data sheets.

