

# VW Crackmeter



## Applications

The VW crackmeter is suitable for surface monitoring of movement at joints and cracks in concrete structures or rock. Typical applications include:

- Monitoring joints for unexpected movement to provide early warning of performance problems.
- Monitor joints and cracks in structures that may be affected by nearby excavation and construction activities.
- Monitor cracks in structures that experienced seismic activity.

## Operation

The VW crackmeter consists of a VW displacement sensor and a set of groutable anchors. The anchors are installed on opposite sides of the crack. The sensor is then fixed to the anchors via ball joints, which accommodate movement in other planes.

Readings are taken with a VW read-out 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 changes in the distance across the crack.

## Advantages

**High Resolution:** The crackmeter can detect movements of 0.15 mm with a repeatability of  $\pm 0.3$  mm.

**Two Ranges:** The VW crackmeter is available in 60mm and 100 mm ranges (2.4 and 4 inch).

**Twist-Proof Shaft:** The crackmeter has a unique, twist-proof shaft that prevents accidental damage to the sensor during installation.

**Suitable for Data Logging:** The crackmeter is easily connected to a data logger for unattended monitoring. It can also be read manually.

**VW CRACKMETER KITS**

- 60mm, Splashproof . . . . .52636381
- 60mm, Waterproof . . . . .52636388
- 100mm, Splashproof . . . . .52636382
- 100mm, Waterproof . . . . .52636389

The VW Crackmeter consists of two components: a vibrating wire displacement sensor and a set of anchors. Signal cable, ordered separately, is connected to the sensor at the factory.

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

**Range:** 60 mm or 100 mm.

**Resolution:** 0.025% FS with VW Data Recorder.

**Calibration Accuracy:** ±0.1% FS.

**Repeatability:** ±0.5% FS.

**Waterproof Rating:** Waterproof crackmeter is rated to 17 bar (250 psi).

**Materials:** Stainless steel body and shaft, Neoprene O-rings, plated-steel swivels, mild-steel anchors.

**Nominal Length:** 60 mm crackmeter is 400 mm (15.7") long; 100 mm crackmeter is 530 mm (21") long.

**SIGNAL CABLE**

- Signal Cable . . . . . 50613824
- Shielded cable with four 22-gauge tinned copper conductors and polyvinyl chloride (PVC) jacket. Specify cable length for each sensor.

**EXTRA ANCHORS**

- Anchor Set . . . . . 52636080
- Set of two groutable anchors. Needed if the crackmeter is moved to a new location.

- Ball Joint . . . . . 02700196
- One ball joint. Needed if either of the original ball joints supplied with the crackmeter are damaged or corroded.

**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 Sensor . . . . .52613310
- 4-Channel V-Logger . . . . .52615140

**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.

