

VW Crack Meter VWCM-4000



Geosense® VWCM-4000 crack meters are used to measure movement across surface cracks and joints in concrete, rock, soil and structures



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Overview



Geosense® VWCM-4000 crack meters are used to measure movement across surface cracks and joints in concrete, rock, soil and structures.

They consist of a sensor outer body tube and an inner free-sliding rod which is connected at the internal end to a vibrating wire sensor by a spring. At the sensor end of the outer body and the external end of the rod anchors are attached which can be fixed either side of a crack to be monitored.

The gauge operates on the principle that a tensioned wire, when plucked, vibrates at its resonant frequency. The square of this frequency is proportional to the strain in the wire. Around the wire is a magnetic coil which when pulsed by a vibrating readout or data logger interface plucks the wire and measures the resultant resonant frequency of vibration.

A change in distance between the anchors caused by the crack opening or closing causes the inner free-sliding rod to move within the outer body which changes the tension on the spring and the vibrating wire thus altering the resonant frequency of the wire.

VWCM-4000 crack meters are installed by grouting, bolting, bonding or fixing expandable anchors to the structure to be monitored. The anchors incorporate ball joints where they are fixed to the gauge which accommodate any differential cross-axis movement and prevent the inner rod from binding within the outer casing.

APPLICATIONS

- Concrete structures
- Stone & brick buildings
- Dams
- Tunnels
- Construction joints
- Pipelines
- Rock formations

FEATURES

- Simple to install and read
- High resolution & accuracy
- Internal thermistor
- Insensitive to long cable runs
- Datalogger compatible
- Ranges from 5 to 100mm
- Waterproof up to 16 bar



Groutable Anchors



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Specifications

DIMENSIONS

Model	Range (mm)	Length Compressed (mm)	Length Extended (mm)	Diameter (mm)
VWCM-4001*	5	244	250	13
VWCM-4002	12.5	259	272	13
VWCM-4003	25	307	331	13
VWCM-4004	50	339	386	13
VWCM-4005	75	432	501	13
VWCM-4006	100	465	557	13
VWCM-4007	150	591	728	13
VWCM-4008	200	723	905	13
VWCM-4009	300	980	1252	13
VWCM-4010	500	1497	1949	13

PERFORMANCE

Resolution	<0.025% FS
Accuracy	±0.1% FS
Nonlinearity	<0.5% FS

ELECTRICAL

Frequency range	1650-2700 Hz
Nominal zero value	1850 Hz

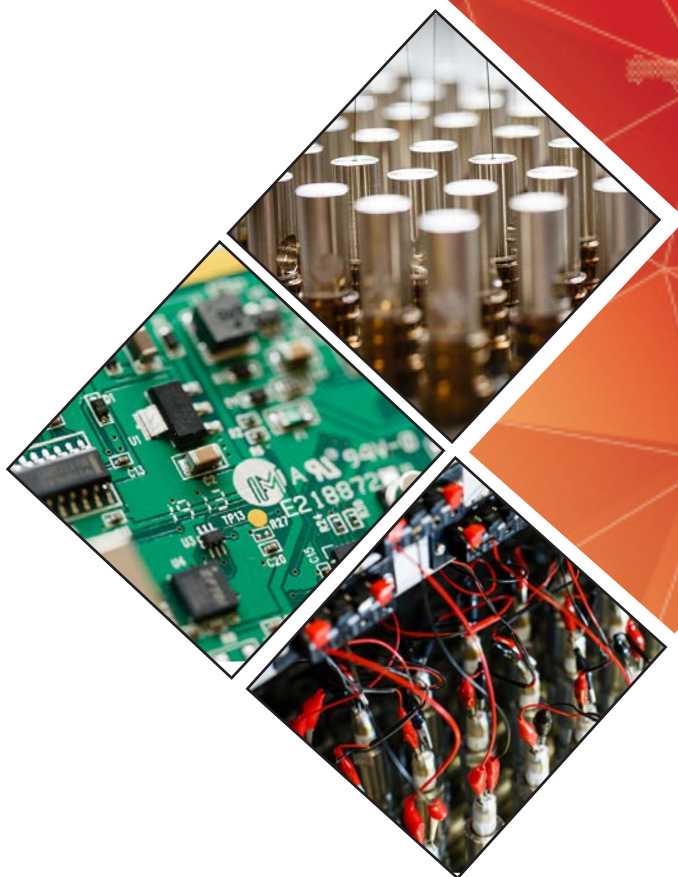
MECHANICAL

Operating range	-20 °C to +80°C
Body material	Stainless steel
Inner rod	Stainless steel
O-ring	Viton
Anchor material	Mild steel, BZP, Stainless Steel
Anchor types	Grout, bond, bolt, expandable
Waterproof rating	IP68 (16 bar)
Cable	2 pair PUR sheath
Cable Type	Type 900 - VW Sensor with Foil Screen & Drain Wire

ORDERING INFORMATION

Range	
Anchor type	
Readout type	

*Available on request



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