



**Geomotion**  
AUSTRALIA



Datasheet J2

# Vibrating Wire Crackmeter

## DESCRIPTION

The Vibrating Wire Crackmeter provides accurate measurement of crack propagation for structural or geotechnical monitoring.

The sensor is made from high quality stainless steel, incorporates 'O' rings to allow for underwater use and is designed for long-term, reliable monitoring.

Fitted across a crack or joint, it monitors displacement by detecting a change in tension in the vibrating wire inside the sensor.

## FEATURES

- ✓ Uses proven Vibrating Wire technology
- ✓ Suitable for long-term monitoring
- ✓ Suitable for manual or remote monitoring
- ✓ Fully waterproof
- ✓ Fitted with thermistor for temperature monitoring

## BENEFITS

- ✓ Accurate, repeatable readings over long cable lengths
- ✓ Long working life, long-term stability and reliability
- ✓ Connecting cable is strong, screened and flexible

## OPERATION

The Vibrating Wire Crackmeter consists of a telescoping sensor body incorporating a sprung tensioned Vibrating Wire element. Each end of the telescoping body is anchored either side of the crack to be monitored.

A change in distance between the anchors, by the crack opening or closing, will cause the connecting rod to move within the transducer body, changing the tension on the spring and thus altering the resonant frequency of the wire.

### Applications

The Vibrating Wire Crackmeter measures displacements across cracks and joints in buildings, bridges, dams, pipelines and similar structures. It can measure both the opening and closing of cracks or joints. Some of the typical monitoring applications are:

- ✓ Brick and stone buildings
- ✓ Tunnels and lining cracks
- ✓ Joints and bearing/support interaction
- ✓ Structures susceptible to earthquake and landslide areas
- ✓ Bridges and dams
- ✓ Construction joints
- ✓ Pipelines

## SPECIFICATIONS

### Sensor

Ranges	30mm	50mm	100mm
Resolution <sup>1</sup>		0.025% full scale	
Accuracy		±0.2% full scale	
Temperature range		-20 to +80°C	
Weight less cable	190g	212g	254g
Dimensions <sup>2</sup>	290mm x Ø19mm	340mm x Ø19mm	450mm x Ø19mm
Excitation method		Pluck or sweep	
Material		316 grade Stainless Steel	
Ingress protection		IP68 to 1700 kPa	

### Cable

Type	Standard
Construction	4 Core, PUR sheath, foil screen & drain wire
Diameter	4mm
Weight/m	30g

### Thermistor

Type	NTC 3k Ω
Accuracy	±0.5°C
Resolution <sup>1</sup>	0.1°C

### Anchors

Type	Groutable	Expanding shell
Materials		Zinc plated steel
Diameter	12mm	16mm
Length	100mm	80mm
Weight per pair	176g	180g

<sup>1</sup> Dependent on readout

<sup>2</sup> In the closed position

## ORDERING INFORMATION

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### Vibrating Wire Crackmeters

Armoured cable can only be fitted on site with joint sealing kit CA-4.1

J2-1-30	30mm range
J2-1-50	50mm range
J2-1-100	100mm range
J2-1-30-T	30mm range with thermistor
J2-1-50-T	50mm range with thermistor
J2-1-100-T	100mm range with thermistor

### Mounted Anchors

J2-2.1	Groutable anchor; 2No. required per crackmeter
J2-2.2	Expanding shell anchor; 2No. required per crackmeter

### Connecting Cable and Fittings

CA-3.1-4-IC	Instrument cable, 4 core, 7/0.20, screened; priced per metre, polyurethane jacket
CA-4.1	Joint sealing kit; coloured adhesive tapes
CA-4.2	Coloured adhesive tapes; set of 10No.
CA-4.3	Crimping tool
CA-4.4	Crimping sleeves; set of 100No.
W6-6.1	Nylon ties; 150mm x 3.5mm, pack of 100No.
ST1-3.5	Nylon ties; 370mm x 4.7mm; pack of 100No.

### Installation Equipment

W6-4.4	Polyester resin cartridge; 150ml to fix groutable anchor into drill hole
W6-5.5	Cartridge injection tool

### Manual

MAN-117	Vibrating Wire Crackmeter
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