

# CM-3120

## Crack Meter



Model CM -3120 Crackmeter are used to measure movements across surface cracks or joints in structures, concrete or rock. The Crackmeter incorporates vibrating wire sensor with the resonant frequency of vibration of a tensioned steel wire is proportional to the strain or tension in the wire. This fundamental relationship is utilized in a variety of configurations for the measurement of load. The design contributes to the outstanding features and performances over conventional Vibrating Wire Crackmeter. The Model CM -3120 Vibrating Wire Crackmeter offers:

- Unprecedented sensitivity
- Long term stability and reliability
- Isolation of the sensor from the effects of total stresses acting on the body of the Jointmeter/Crack meter
- Robust and sturdy construction
- Slim-line design

#### ▶▶ **TYPICAL AAPPLICATION:**

The Crack meter is designed to measure:

- Lifts in Dams
- Fault movement in rock
- Strata deformation
- Crack separations
- Separation of Shot Crete

#### ▶▶ **FEATURES:**

- Accurate, highly sensitive and reliable
- In-built thermistor and gas discharge tube
- Extremely stable for long term operations
- Frequency output for transmission over long distances
- Suitable for remote reading, scanning and datalogging
- Stainless steel construction

## ▶▶ VIBRATING WIRE SENSOR

The Vibrating wire sensor has a unique design. It comprises of a small stainless steel enclosure having a high tensile strength, heat treated and tempered steel wire. The wire is anchored at one end to the enclosure and at the other to a small pin. A coiled assembly or precisely located at the centre of the wire inside the same enclosure. This greatly enhances the response characteristics of the vibrating wire. The sensor is placed in such a way that any movement of the displacement shaft cause its pin to move. The 'O' Ring seal provides complete water proofing and high degree of protection from humid and corrosive environment condition.

## ▶▶ OPERATION:

The Crackmeter transducer employs a shaft coupled by a spring, which is attached to heat treated high tensile strength steel wire. Movement of the shaft changes the tension in the spring and in the wire causing a corresponding change in its frequency of vibration. The wire is plucked by energizing the coil magnet so that it vibrates at its natural resonant frequency. The resonant frequency is proportional to the square root of the tension of the wire. A conventional readout unit can accurately measure the frequency of the wire. A microprocessor based readout unit can display the frequency as well as the value of the measured pressure directly in engineering units. The Crackmeter are suitable for connection to data loggers for recording data in engineering units automatically at pre determined intervals. By the use of appropriate software, the data logger can present recorded data in desired formats, predict trends of variations and even generate alarms at pre-determined set points. The thermistor mounted in the Jointmeter and crackmeter enables simultaneous measurement of temperature. This allows any corrections to be made in the observed readings due to temperature changes. Crackmeter with lightning protection is available on request.

Standard Ranges 12.5, 25, 50, 100, mm

Resolution 0.025% F.S.

Accuracy  $\pm 0.2\%$  F.S.

Nonlinearity  $< 0.5\%$  F.S.

Temperature Range  $-20^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$

Diameter 16 mm (shaft)

Lengths 320, 340, 380, 550 mm (transducer)

## Regulatory compliances



## Corporate Social Responsibility

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