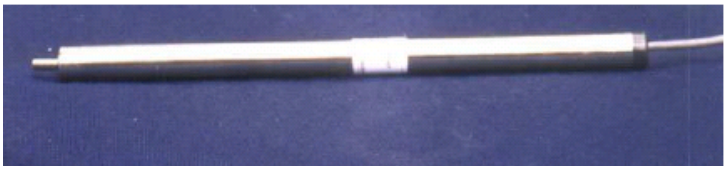
# crackmeter
## vibrating wire joint



## Features

- Sensor with unique integral magnet design
- Accurate, highly sensitive and reliable
- In-built thermistor and gas discharge tube
- Frequency output for transmission over long distances
- Suitable for remote reading, scanning and data logging
- Stainless steel construction
- Long term stability and reliability
- Unprecedented sensitivity
- Robust and sturdy construction
- Slim-line design
- Waterproof

## Applications

The crackmeters are used to measure movements across surface cracks or joints in structures, concrete or rock.

Separations across lifts in dams, crack separations, surface crack on joints and separation in shotcrete can all be monitored using this instrument. Fault movement in rock near the surface is easily monitored using crackmeters.

Several crackmeters can be aligned at different orientations to achieve a triaxial result of movement.

The applications for crackmeters are numerous and diverse.

# Technical Specifications

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|---|---|---|---|
| **Standard Range** | 25, 50, 100, 150 mm<br>(Other ranges available on request) | **Operating Temperature** | -20°C to 70°C |
| **Over Range** | 1.5 x Range | **Coil Resistance** | 120-140 ohm nominal |
| **Resolution** | 0.1 mm | **Thermistor 3k ohm** | Included |
| **Accuracy** | 1% of Full Scale or better | **Electrical Surge Protection** | Optional |
| **Repeatability** | ± 0.03 mm | **Dimensions** | 25 mm range: Ø 16 x 295 mm<br>50 mm range: Ø 16 x 295 mm<br>100 mm range: Ø 16 x 430 mm<br>150 mm range: Ø 16 x 565 mm |
| **Thermal Zero Shift** | ± 0.1% FS/°C | **Electrical Cable** | 4-conductor, shielded |
| **Material** | Stainless Steel | **Wiring Code** | V/W sensor Red & Black<br>Thermistor White & Green |

# Operating Principal

Vibrating wire jointmeter / crackmeter incorporates vibrating wire sensor with unique integrated magnet design. A miniature magnet coil assembly is located inside the small stainless enclosure of the sensor at a very close proximity to the vibrating wire. The design contributes to the outstanding features and performances over conventional vibrating wire jointmeter / crackmeter. All the models are provided with thermistor encapsulated. The thermistor enables temperatures to be measured for study the effect of temperature.

The jointmeter / 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 energising the miniature 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 jointmeter / crackmeter is 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 / crackmeter enables simultaneous measurement of temperature. This allows any corrections to be made in the observed readings due to temperature changes. Jointmeter / crackmeter with lightning protection is available on request.

Socket Assembly—facilitate assembly of joint meter in concrete / masonry dams.

Mounting Brackets—facilitate the use of joint meter for crack measurement

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