

Submersible Jointmeter Sensor



Applications

Jointmeters are used to monitor movement at joints and cracks. The submersible sensor used in the jointmeter is designed to withstand extended submersion in water to depths of 245 meters. Typical applications include:

- Monitoring movement at construction joints in concrete dams.
- Monitoring movement of joints in tunnels or tanks.

Operation

The primary components of a jointmeter are one or more submersible jointmeter sensors and user supplied brackets to hold the sensors.

A reference bracket is mounted on one side of the joint and extends across the joint. End brackets are mounted on the other side of the joint, positioned to hold each sensor parallel to the planes of movement to be measured. The design of the brackets depends on site-specific details, such as the height of joint covers and the degree of protection needed.

The sensors monitor changes in the distance between the reference bracket and the end brackets. The initial reading for each sensor serves as a datum. Subsequent readings are compared to the datum to calculate the magnitude and rate of movement at the joint.

Advantages

High Resolution: The sensors detect movements as small as 0.03 mm (0.001").

Pressure Tested: The sensors are waterproof to 24 bar, or approximately 245 meters of water.

Manual or Automatic Readings: The sensors can be read manually or are easily connected to a data logger for unattended monitoring.

SUBMERSIBLE SENSOR

Submersible Sensor91706150

Type: Potentiometer.

Range: 150 mm (6 inches).

Resolution: 0.03 mm FS (0.001" FS).

Precision: $\pm 0.15\%$ FS.

Waterproof: 24 bar (348 psi).

Temperature Rating: -20 +50 °C.

Materials: Stainless Steel (all wetted parts).

Length: 590 mm closed, 740 mm fully extended, including swivel joint at each end.

Mounting: One end of the sensor is fixed to the reference bracket by an M10 bolt (supplied). The other end of the sensor is fixed to the end bracket by an M10 all thread rod (supplied), which can be cut to the required length.

SIGNAL CABLE

Signal Cable 50613527

Shielded cable with seven 22-gauge, tinned copper conductors and polyurethane jacket. Specify the full length of cable required for each sensor. Cable is factory attached to sensor and contains no splices.

READOUTS

DataMate MP57710900

The DataMate MP is a multi-purpose readout that can display and record readings from many type of sensors, including vibrating wire, potentiometers, and EL sensors. See separate data sheet for details.

Extensometer Indicator51810100

Portable indicator for reading potentiometers used in soil strainmeter and sometimes in rod extensometers. Displays readings, but does not record them. See separate data sheet for details.

DATA LOGGERS

Campbell Scientific CR10X data logger.
See separate data sheet for details.