

Tape Extensometer

FEATURES

- Highly suitable for field applications
- Easy to refill tape
- Accurate, highly sensitive and reliable
- Extremely stable for long term operations
- Light weight
- Dial display for fine measurement

APPLICATIONS

- Measurement of surface movement
- Radial and/or convergence of tunnels, shafts and linings
- Deformation of excavations in underground power house caverns and audits
- Displacement of retaining walls, cuttings, arch and abutments
- Stability of concrete structures and buildings



The ES&S tape extensometer is used to measure displacement between pairs of references in excavations, tunnels, underground power houses, open mines etc. The measurement points may be permanently fixed or demountable type. The tape extensometer consists essentially of a steel survey tape, a tension spring, a tension adjustment screw, a dial indicator or digital gauge and two attachment hooks, which allow the tape to be stretched between two anchor points.

The tape extensometer is manufactured and assembled with high precision and care. Each component is designed depending on the range of measurement. The tape extensometer is a complete unit in itself for installation and measurement of distances with 0.02mm resolution and an accuracy of 0.02mm. The accuracy of the instrument depends upon the experience of the operator or trained technical hand.

TECHNICAL SPECIFICATIONS

Measuring Range	1, to 15, 30, 50m
Dial	Digital / Analogue
Least Count	±0.01mm
Accuracy	±0.01mm
Dimension	Instrument case 22" x 9" x 9"
Weight	1.1kg
Measuring Tape	Invar / Stainless Steel
Optional	Installation Fixtures, Calibration Jig

OPERATING PRINCIPLE

The body of the instrument is made from aluminium which is anodized for corrosion protection. The end of the extensometer which clips on to the tape is spring loaded by an internal compression spring which is held in place by a retaining ring. The spring plunger has an index mark scribed around it which is visible through the window at the end of the spring chamber. The correct tension is applied to the tape when the index mark on the spring plunger lines up with the mark on the window of the spring housing.

The other end of the tape extensometer which hooks directly on to one of the anchoring points is on the end of the shaft which is free to rotate relative to the rest of the instrument. The shaft is journeued through a thrust bearing located below the thimble cap. The thimble cap when rotated alters the length of the instrument and this change in length is measured by means of the dial gauge.