

E3 DIGITAL TAPE EXTENSOMETER

Datasheet E3



**Description**

The Digital Tape Extensometer is a portable device used for measuring displacement between pairs of eyebolts.

These may be installed on a structure or in an excavation such as a tunnel or shaft.

The Digital Tape Extensometer unit comprises a Stainless Steel measuring tape with equally spaced precision punched holes.

The tape winds onto a reel, which incorporates a tape tensioning device and a digital LCD readout.

**Features**

- Measuring range of up to 30m
- Digital LCD readout giving precise measurement
- Stainless Steel measuring tape
- Optical tension indicator

**Benefits**

- Compact, portable and lightweight
- Accurate and robust
- Simple, reliable and easy to read
- Repeatable measurements using the optical tape tension indicator
- Can be operated by one person
- A single instrument can read multiple arrays



Comprehensive information about this product and our full range is available at [www.soil.co.uk](http://www.soil.co.uk)  
If you would like to speak with someone directly please call +44 (0)1825 765044 or email [sales@soil.co.uk](mailto:sales@soil.co.uk)

PRECISELY MEASURED

instrumentation and monitoring

## Operation

The instrument only requires one person to operate. The body of the extensometer has a hook connector that connects to the first eyebolt. An identical hook on the free end of the tape connects on to the opposing eye bolt.

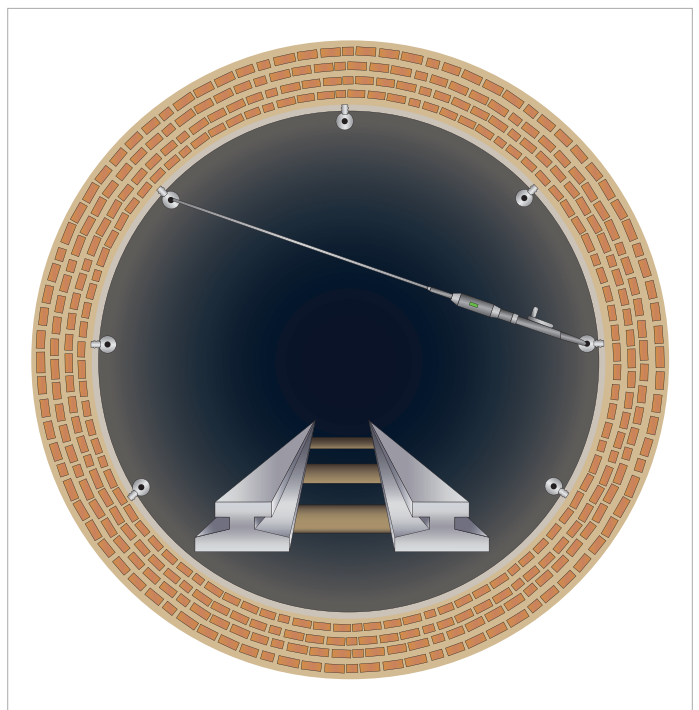
The user then tensions the instrument and record the readings from the digital LCD display.

The measurements are not absolute, but relative to the previous measurement. This provides an accurate record of displacement over time.

## Applications

Typical applications include:

- Radial movements and convergence of tunnels, shafts, linings and caverns
- Displacement of retaining walls, cuttings, bridge piers, arches and abutments
- Monitoring and control of construction by the sprayed, shotcrete tunnelling method
- Monitoring of deformation of embankment dam crests



### THE TECHNICAL RATING FOR THIS PRODUCT:

As the correct installation of any monitoring sensor or system is vital to maximise performance and accuracy, Soil Instruments makes the following recommendations, for the skill level of the installation contractor.

#### ADDITIONAL SUPPORT

We offer installation and monitoring services to support this system. For more information please email : [sales@soil.co.uk](mailto:sales@soil.co.uk) or call : **+44 (0) 1825 765044**

**BASIC** 

**ADVANCED** 

**INTERMEDIATE** 

**BASIC** 

The installer is trained and experienced in the installation of this type of instrument or systems, and is ideally a specialist Instrumentation and Monitoring contractor.

The installer already has previous experience and/or training in the installation of this instrument or system.

As a minimum the installer has read and fully comprehends the manual, and if possible has observed these instruments or systems being installed by others.

## Specifications

### Digital Tape Extensometer

Range	20m   30m   50m		
Accuracy <sup>1</sup>	±0.01mm		
Resolution	0.01mm		
Repeatability <sup>2</sup>	0.1mm		
Operating Temperature	-10 to 60°C		
Tape Tension	13.5kg		
Tension Indicator	Optical		
Weight Excluding Tape	1kg		
Power Off	Automatic		
Power On	Automatic (upon movement of the micrometer)		

### Tapes

Lengths	20m	30m	50m
Weight	410g	610g	1kg
Material	Stainless Steel		
Hole Pitch	25mm		

### Groutable Eyebolt Anchors 16mm Diameter

Rebar Length	100mm	250mm	500mm
Eye Bolt Material	Stainless Steel		
Rebar Material	Zinc Plated Carbon Steel		
Weight	170g	407g	802g

### Threaded Eye Bolts

Material	Stainless Steel
Thread Size	M6 x 1 Pitch
Weight	12g

### Reference Bar

Dimensions	1200 x 80 x 130mm
Weight	3.5kg

<sup>1</sup>Accuracy of the micrometer

<sup>2</sup>Dependent on operator experience

## Ordering Information

### Digital Tape Extensometer

Tapes are Stainless Steel for use with E3-2 eyebolts

E3-4.3-20	20 metre tape length
E3-4.3-30	30 metre tape length

### Convergence Eyebolts

E3-2.31	With groutable anchor, 100mm length
E3-2.34	Protective cap for E3-2 anchors

### Installation Equipment

W6-4.4	Polyester resin cartridge 150ml, To fix anchor into drill hole
W6-4.5	Cartridge injection tool
W6-4.2	Metal adhesive for securing eyebolt to metal structure
E3-3.8	Tool kit for drilling holes in metal structures. Tool kit includes; 8.5mm diameter drill, tap wrench and M10 taps.

### Extensometer Accessories

E3-5.18	Portable reference bar
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### Extensometer Spares

E3-5.13	Replacement stainless steel tape, 20 metre length
E3-5.14	Replacement stainless steel tape, 30 metre length
E3-5.20	Spare battery R44

### Manual

MAN-063	Digital Tape Extensometer
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INSTRUMENTS

Bell Lane, Uckfield, East Sussex  
TN22 1QL United Kingdom

t: +44 (0) 1825 765044  
f: +44 (0) 1825 744398

e: [info@soil.co.uk](mailto:info@soil.co.uk)  
w: [www.soil.co.uk](http://www.soil.co.uk)

Soil Instruments Ltd. Registered in England. Number: 07960087. Registered Office: 34 Bell Lane, Uckfield, East Sussex, TN22 1QL