

TLT1 ELECTROLEVEL BEAM SENSOR

Datasheet TLT1



Description

The Electrolevel Beam Sensor measures rotation of structures in the vertical plane.

The sensor is based on the well established Fredericks 071 1series electrolevel sensor. The sensor mounting incorporates an adjustment for zeroing and protects the sensor against thermal gradients.

The sensor is attached to a rigid beam for installation and various beam lengths are available. Both ends of the beam are fixed using anchor bolts.

When multiple beams are placed end to end, a differential displacement profile of the structure from anchor point to anchor point can be derived.

Features

- Multiple beams in a chain give a complete displacement profile
- Simple, well proven device, ideal for measuring tilt in structures
- Accurate and precise
- Measures tilt along the whole length of a beam
- Measures vertical rotation

Benefits

- Easy to automate using data acquisition systems and 'Argus' software
- Removes the need for manual monitoring
- Recoverable and reusable
- Suitable for safety critical applications
- Low power consumption



Comprehensive information about this product and our full range is available at www.soilinstruments.com
If you would like to speak with someone directly please call +44 (0)1825 765044 or email sales@soilinstruments.com

Operation

The Electrolevel Beam Sensor consists of a precision glass electrolevel vial, mounted in an inert ceramic compound which is itself placed in an adjustable mount.

Both ends of the beam are attached to the structure using either expanding shells or groutable anchors. When multiple beams are placed end to end, a differential displacement profile of the structure from anchor point to anchor point can be derived.

Once installed, thumbwheels allow the sensor to be adjusted to the zero position using a handheld readout such as the HELM.

Electrolevel Beams are easily automated via a data acquisition system and 'Argus' monitoring software.

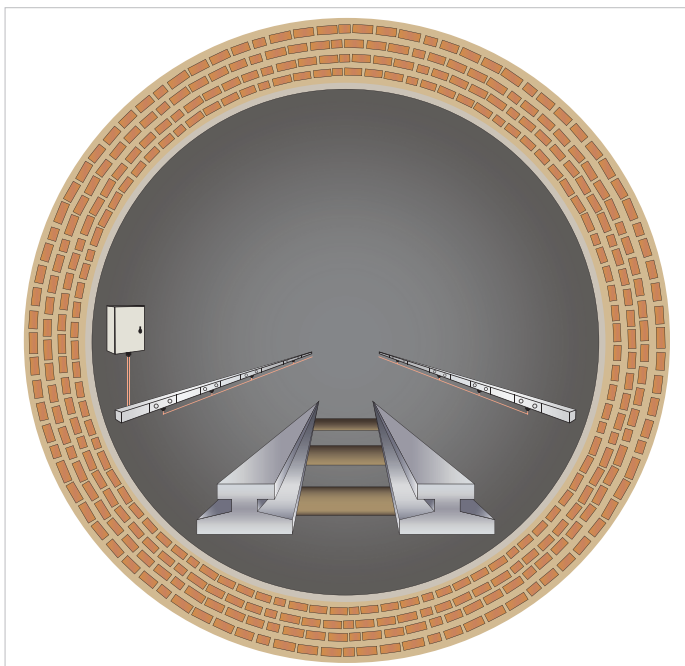
Applications

The Electrolevel Beam sensor monitors vertical rotations of structures. Its most common use is to monitor settlement and heave of existing structures and tunnels caused by adjacent excavations or tunnelling works.

The sensor is especially useful where topographic measurements are precluded, or where access is restricted.

Typical monitoring applications include:

- Brick and stone buildings
- Heave and settlement due to adjacent construction activities
- Bridges and dams
- Impounding and loading effects in the short or long term
- Pipelines
- Differential levels
- Tunnels
- Vertical rotation and track deformation



Associated products

For details on:

Catalogue code:

Datalogger

D1

HELM

TLT1-3

'Argus' Monitoring Software

D4

View our full product range on www.soilinstruments.com

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@soilinstruments.com or call : **+44 (0) 1825 765044**

ADVANCED



ADVANCED



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.

INTERMEDIATE



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

BASIC



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

Sensor Type	Horizontal	Vertical
Range		±45 arc minutes (±13mm/m)
Accuracy ¹		±0.1mm/m
Resolution ²		0.02% full scale
Repeatability		±0.05% full scale
Operating temperature		-20 to +50°C
Current consumption		< 1 µA
Output signal		Ratiometric AC
Ingress protection		IP66
Range	5°	±5° fine adjustment, ±25° Course
Cable Fitment		On site connection
Dimensions	L 180mm x H 31mm x W 25mm	L 135mm x H 127mm x W 60mm
Weight	210g	890g

¹ Within precision range (± 14 arc minutes)

² Dependent on readout (CR1000)

Ordering Information

Electrolevel Beam Sensor

TLT1-1.1	Horizontal assembly
TLT1-1.2	Vertical assembly

Electrolevel Beam - Horizontal

TLT1-H.1	1 metre length
TLT1-H.2	2 metre length
TLT1-H.3	3 metre length
TLT1-2.4	Fixing kit

Electrolevel Beam - Vertical

TLT1-V.1	1 metre length
TLT1-V.2	2 metre length
TLT1-V.3	3 metre length
TLT1-2.4	Fixing kit
TLT1-2.6	Universal mounting plate

Connecting Cable And Fittings

CA-3.1-4-IC	Instrument cable, 4 core, 7/0.20, screened
CA-3.2-4-FR	Low smoke cable, 4 core

Handheld Electrolevel Levelling Tool - Helm

TLT1-3.1	Handheld electrolevel readout (HELM)
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Manuals

MAN-173	Electrolevel Beam, Tilt and Hand Held Electrolevel Readout (HELM)
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