

TLT2 ELECTROLEVEL TILTSENSOR

Datasheet TLT2



**Description**

The Electrolevel Tiltensor is based on a proven Fredericks 0711 series electrolevel sensor and measures rotation of structures in the vertical plane.

The sensor is housed in a sealed enclosure incorporating an adjustable mounting plate.

The measurement of vertical rotation perpendicular to the structure is obtained by using an optional 90 degree angle bracket.

The sensor mounting incorporates an adjustment for zeroing and protects the sensor against thermal gradients.

**Features**

- Simple, well proven device, ideal for measuring tilt in structures
- Accurate and precise
- Measures vertical rotation

**Benefits**

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



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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)

## Operation

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

The sensor is fixed to the structure. Once installed, thumbwheels at one end allow the sensor to be adjusted to the zero position using a handheld readout.

## Associated products

For details on:

Catalogue code:

|                             |        |
|-----------------------------|--------|
| Datalogger                  | D1     |
| HELM                        | TLT1-3 |
| 'Argus' Monitoring Software | D4     |

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## Applications

The Electrolevel Tiltensor 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
- Vertical rotation (heave and settlement) due to adjacent construction activities
- Bridges and dams
- Impounding and loading effects in short or long term
- Differential levels
- Tunnels
- Monitoring vertical rotation and track formation



### 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**

#### 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

|                         | Electrolevel                                 |
|-------------------------|--|
| Range                   | ±45 arc minutes (±13mm/m)                    |
| Accuracy <sup>1</sup>   | ±0.1mm/m                                     |
| Resolution <sup>2</sup> | 0.02% full scale                             |
| Repeatability           | ±0.05% full scale                            |
| Excitation voltage      | 2.5v AC                                      |
| Current consumption     | < 1µA  |
| Output signal           | Ratiometric AC                               |
| Operating temperature   | -20 to +50°C                                 |
| Zero adjustment range   | ±5° fine adjustment / ±25° coarse adjustment |
| Ingress protection      | IP66   |

### Cable Fitment

|                    |                 |
|--------------------|-----------------|
| On site connection | Screw terminals |
|--------------------|-----------------|

### Dimensions

L 135mm x H 127mm x W 60mm

### Weight

890g

<sup>1</sup> Accuracy within precision range (± 14 arc minutes)

<sup>2</sup> Resolution dependant on readout (CR1000)

## Ordering Information

### Electrolevel Tiltensor

Range  $\pm 13\text{mm/metre}$  ( $\pm 45$  arc minutes)

TLT2-1.5-1 Uniaxial tiltensor

### Electrolevel Tiltensor Accessories

TLT2-1.5-3 90° bracket for TLT2-1.5-1. To read the rotation perpendicular to the structure for uniaxial tiltensors. Includes fixings

### 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, 16/0.20, screened

### Handheld Electrolevel Levelling Tool - Helm

TLT1-3.1 Handheld electrolevel readout (HELM)

### Manuals

MAN-173 Electrolevel beam, tilt and hand held electrolevel readout (HELM)

**soil**  
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