

TLT4 DIGITAL PORTABLE TILTMETER

Datasheet TLT4



**Description**

The Digital Portable Tiltmeter is used to measure the angular difference between the sensors axis when held or placed on the X and Y planes of the tiltplate.

Tiltplates are installed either horizontally or vertically on the structure to be monitored and a datum reading is taken from which all subsequent are then compared.

Housed within the unit is a MEMS accelerometer that measures the angular position of the Tiltplate and a Bluetooth transmitter

that transfers data to the Field PC, resulting in a wireless connection between the instrument and the Field PC.

The Field PC is supplied with Soil Instruments 'Tilt-Port' software, which permits individual setup of each tiltplate for easy identification during reading sets. Readings can then be acquired using a remote handheld activator (key fob) to record each tiltplate reading, allowing a history of movement to be quickly and easily acquired.

**Features**

- No connectors between tiltmeter and Field PC
- Accurate and precise measurements using MEMS sensor
- Lightweight and easily portable
- Field PC allows easy interface with most office systems and applications
- Enhanced 'Tilt-Port' software included with Field PC for easy data capture

**Benefits**

- Eliminates water ingress and connection problems
- Digital signal allows interference-free data transmission
- Advanced electronics ensure long, trouble free use in a site environment
- Can take a days' worth of readings on a single battery charge
- Cost effective; requires only one person to take multiple sets of readings



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



Microelectromechanical Systems, or MEMS, is a technology that uses miniaturised mechanical and electromechanical elements that are made using the techniques of microfabrication. The physical dimensions of MEMS devices can vary from well below one micron all the way to several millimetres.

Our MEMS microsensor is a small discrete device that converts a measured mechanical signal, gravity (g) into a voltage signal.

### Operation

To take readings with the Soil Instruments Digital Portable Tiltmeter, tiltplates must first be installed on the structure to be monitored, either horizontally or vertically.

The tiltmeter can read either type of tiltplate by placing it on a tiltplate (for horizontal readings) or holding it against a tiltplate (for vertical readings).

During the initial survey, the operator defines a name for the tiltplate and takes a datum reading. All subsequent readings from that tiltplate are then compared to the datum reading to give a histogram of movement in arc degrees. This process is carried out for each individual tiltplate to be monitored.

### Applications

The Digital Portable Tiltmeter is used to measure changes in the position of the Tiltplate.

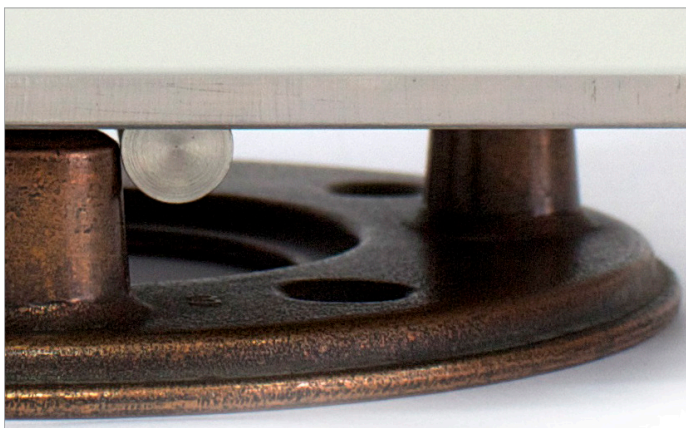
Typical applications include:

- Brick & Stone Buildings
- Settlement and heave
- Bridges & Dams
- Long or short term impounding and loading effects
- Pipelines
- Tunnels
- Vertical rotation and track formation
- Retaining walls
- Horizontal and vertical rotations

### Associated products

For details on:	Catalogue code:
Electrolevel Beam Sensor	TLT-1
Electrolevel Tiltensor	TLT-2
In-Place Inclinometer	C12
Digital Vertical Inclinometer System	C17

View our full product range on [www.soilinstruments.com](http://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](mailto:sales@soilinstruments.com) 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

### Sensor

Range	±10°
Accuracy	±0.004°
Resolution	0.001°
Repeatability	±0.0012°
Operating temperature	-10 to +50°C
Weight	2.0kg
Dimensions	160 x 135 x 150mm
Battery life	> 12hrs continuous use

### Field PC

Display	4.3", Illumiview®, high visibility
Connectivity	Bluetooth® 2.1, Wi-Fi®
Dimensions	184 x 91 x 38mm
Weight	590g
Camera	5 MP
Operating Temperature	-30 to +60°C
Battery Life	Up to 20 hours
Ingress Protection	IP68
Tested to	MIL-STD-810G
Included software	Office Mobile® 2010, 'In-Port'
Ports	RS 232C, USB Host (Full A), USB Client (Micro B), 3.5mm Audio

### Key Fob (Remote Handheld Activator)

Dimensions	65 x 35 x 15mm
Weight	26g
Battery	1 x GP23A

### Tiltplate

Material	Aluminium Alloy PC8A
Dimensions	Ø142mm x 24mm high
Weight	240g

## Ordering Information

### Digital Portable Tiltmeter

Includes tiltmeter, robust Field PC, battery chargers, manual & calibration certification, requires tiltplate TLT4-2.1 per reading position

TLT4-2 Digital Portable Tiltmeter sensor; ±10 degree range

### Tiltmeter Plates

Includes fittings

TLT4-2.1 Tiltplate

### Manuals

MAN-205 Digital Portable Tiltmeter System

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