pizzi instruments

Simplified Tiltometer version TILT2000-S

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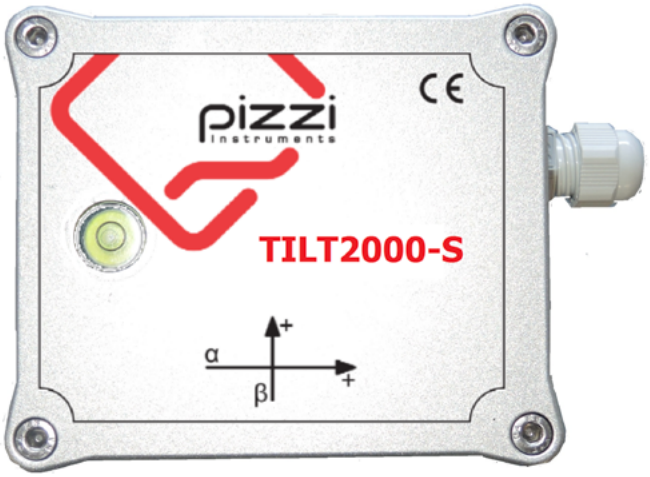
Geotechnical and Structural Monitoring Instruments and Systems

Simplified Tiltometer version TILT2000-S



Description

The clinometer we propose, built with an electrolyte bubble sensor, allows the measurement of the variation in inclination of a rigid body in two mutually orthogonal directions. The instrument is installed in a fixed position and, when connected to an automatic acquisition system, it allows long-term monitoring in a periodically programmed manner. The sensor output in the standard version is analog, 4-20mA; on request we can offer the digital version RS485 with proprietary protocol. The instrument is available in single and dual axis versions; in box container, IP67, with supports for vertical or flat wall application.

Applications

The instrument, in its standard versions, is used for checking variations in the inclination of structures. Depending on the installation method followed, it is also possible to use the instrument for surveying deformations or movements of 'bodies,' whether rigid or incoherent. Particularly used in the railway field for track monitoring, it also finds application in structural monitoring during both the execution and management of works. Valid alternative to TILT2000.

Also used for:

- Retaining walls
- Rotation of walls and posts
- Bridges
- Dams
- Landslides
- Embankments
- Monuments

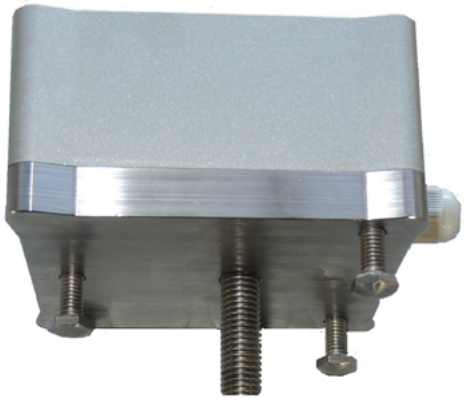
- Structures of archaeological interest
- Towers
- Chimneys
- Minarets
- Others

Measuring principle

The sensor behaves like a potentiometer; however, since the resistance is made up of an electrolyte liquid, the sensor requires an AC power supply. The supply voltage normally used ranges from 0.5V to 5V, with a frequency range from 20Hz to 20,000Hz. The instrument meets the electromagnetic compatibility requirements as for TILT2000. The instrument is equipped with a specific signal conditioner for DC power supply and signal regulation; the average life can be estimated at 400,000 hours.

Characteristics and benefits

System



- Limited (almost no) thermal drift.
- Available in single- or dual-axis form.
- Application on vertical or flat walls.
- Analogue or digital output.
- Manual or automatic readout.
- High accuracy and repeatability.
- Easy to install.
- Robust and compact.
- Recoverable and reusable.
- Ideal for all applications.
- IP67.

Sensors

- Max. measuring range ±30', (on request: ±30, ±10°, ±25°)
- Resolution 0.0001° or 0.0003°
- Robust design, high strength
- Excellent stability under temperature variations and over long acquisition periods

Technical specifications

Total field:	60’
Measurement error: In the range 9’: In the range -9’ ÷ -30’ and +9’ ÷ +30’:	 <0,15% f.s. <4% f.s.
Maximum absorption:	<120mA (biaxial)
Converter 4-20 mA:	13 bit
Zero point temperature coefficient (null):	5”/50 °C
Scale factor temperature coefficient:	0,06% f.s./°C
Time constant	TC = 2,5 sec
Operating temperature of the air conditioner:	da -25°C a +70°C
Drift with converter temperature 4-20 mA	100 ppm/°C
Supply voltage:	24 Vdc -25% / +50%
Optional	Electronic decoupler 3000 Vdc for galvanic separation between supply voltage and signal circuitry

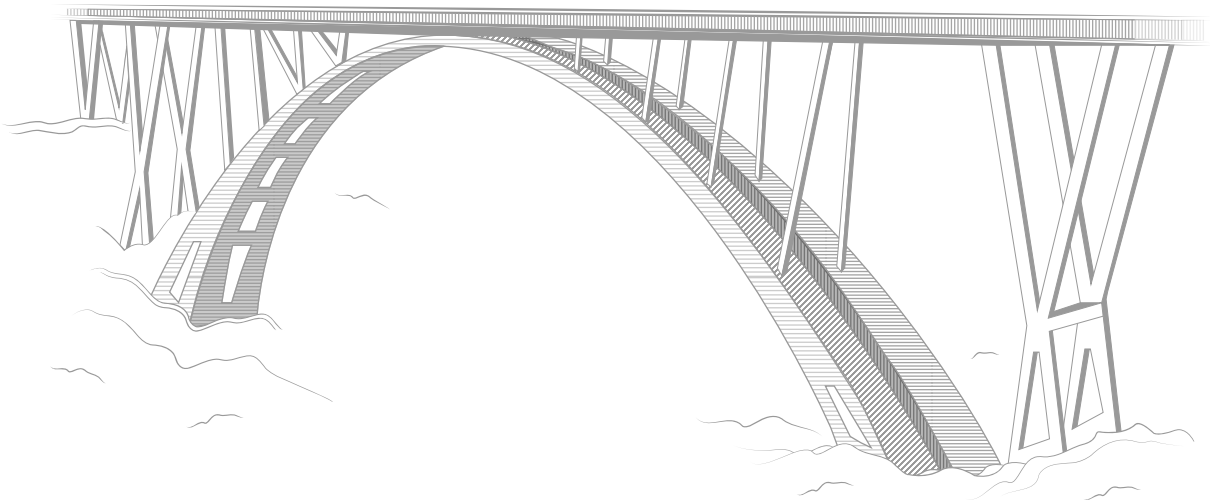
Accessories

Bracket for TILT2000-S wall mounting

Double plate for TILT2000-S application on flat base

The company

For more than 40 years we have been producing precision instruments and monitoring of large structures sold worldwide.
Accuracy in design, efficiency in implementation, reliability in operation; these are the prerogatives that every large structure must have and that Structural Monitoring Systems must guarantee.



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