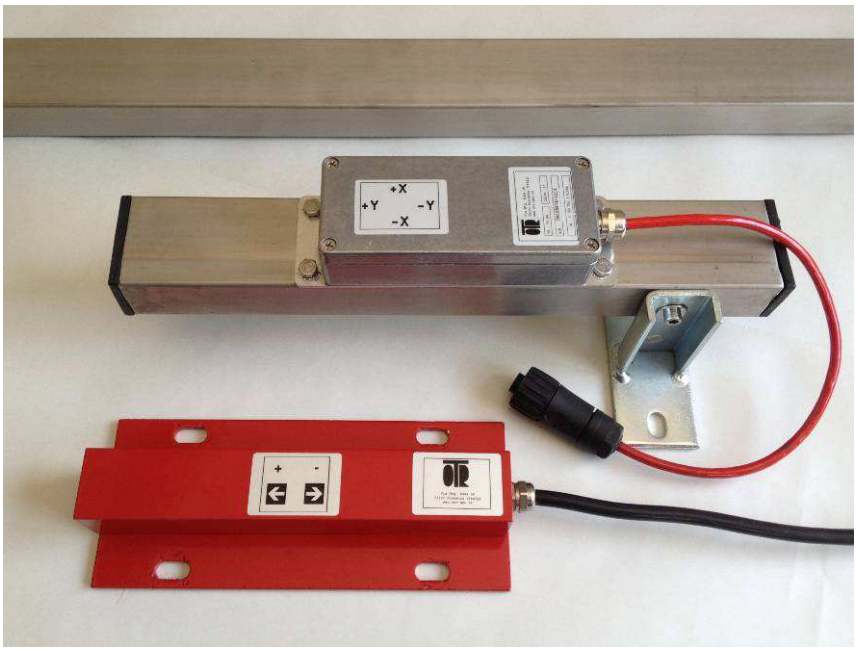
Tilt Beam and mini-Tilt Beam

For structural monitoring



Applications

The Tilt Beam is used to monitor the rotation of structures such as buildings, deformations of railways, to verify the rotation of diaphragms during the excavation and in the following applications:

- Monitoring of deformations of railways and underground subways
- Control of vertical movements during controlled injections
- Retaining walls
- Tunnels and excavations
- Bridges, viaducts and civil structures

Features

The instrument consists of a watertight box containing an inclinometer which can be of two types: monoaxial/ biaxial micro electromechanical type (MEMS Tilt Beam and mini-Tilt Beam), or biaxial electrolytic (Tilt Beam). The latter is characterized by an excellent thermal stability while the MEMS type provides an excellent linearity and an excellent thermal stability. A full scale of only +/-2°, allows resolution and stability that are adequate to usual operating conditions. Thanks to the spherical joint, device positioning is precise and reliable over time.
The integrated thermometer allows to evaluate the termical effect on the structure and on the sensor so that a distinction between seasonal variations and actual rotations can be made. The electrolytic functioning principle ensures an excellent thermal stability. The case, suitable for outdoors positioning, can be requested at protection degree IP67. The sensor is compatible with Geotester, D400, D800, D1600, D3200.
If needed, remote data management can be achieved through OTR service **MyOtr,** which allows the management of measurements.

Installation

The inclinometer sensor housed inside a metal housing can be mounted right or upside-down (example: a ceiling of a prefabricated element) that can be directly fixed to the structure to be monitored (mini-tilt beam, tilt beam) or to a reference bar (tilt beam). Reference bars are made of stainless steel for optimal rigidity and are available in lengths up to three meters.

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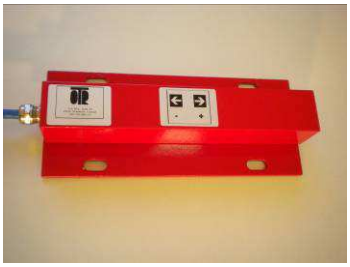
Geotechnical and structural instrumentation & monitoring

Technical Specifications



Code	OINBAR10000 OINBAR20000	OINBAR30000	OINBIN00L1 OINBIN00L2 OINBIN00L3
Description	Mini Tilt Beam monoaxial and biaxial MEMS	Tilt Beam electrolytic biaxial sensor	Tilt Beam for longitudinal bar (train track)
Principle of functioning	MEMS	electrolytic	MEMS
Range	+/- 5°	+/- 2°	+/- 5°
Resolution	0.001°	0.001°	0.001°
Power supply	12-24 Vdc	12-24 Vdc	12-24 Vdc
No linearity	< 0.5% F.S.	< 1% F.S.	< 0.5% F.S.
Temperature sensor	NTC3K termistor or PT100	NTC3K termistor	NTC3K termistor or PT100
Termal drift	<0.002°/K	<0.001°/K	<0.002°/K
Operating temperature	from -20°C to +60°C	from -20°C to +60°C	from -20°C to +60°C
Output signal	mV – 4-20 mA with converter (optional)		
Sensor encloser	Stainless steel	Aluminum	Stainless steel
Degree of protection	IP 65 or more on request		
Bar length	Prepared for bar length.= 1,2,3 m	1000-2000-3000 mm	
Bar material	Stainless steel /Aluminum		

Accessories

Cables
Code OCABLE00000 2x2x0.25 cable, pur, shielded 5 mm
Code OCABLE00001 3x2x0.25 cable, pur, shielded 7 mm

Datalogger D800
(Code O0D800C0008)

Watertight connector
(Code OCONST00000)

Details

Tilt Beam biaxial horizontal Inclinometers bar L = 3m mounted in series.