

EL In-Place Tilt Meter

Proven electrolytic technology
Uniaxial & biaxial options
Vibration resistant
Single cable Digital BUS system
High accuracy & resolution



EL In-Place Tilt Meter



Overview



The Geosense® Digital EL In-Place Tilt Meter measures uniaxial or biaxial tilt, which is measured from the plane(s) perpendicular to the base.

It is designed to be installed in either the vertical or horizontal position by either bonding, bolting or strong magnetic fixing directly to a structure or mounting plate.

The tilt sensors, based on well-established Electrolytic technology, are mounted within a rugged, heavy-duty waterproof die-cast metal enclosure suitable for the harsh environments found within construction and building industries.

In order to compensate for the effects of temperature on the enclosure, mountings and structure, the unit is fitted with an integral thermistor.

The digital RS-485 output signal provides the ultimate in accuracy together with the advantage of being able to create a digital BUS system where all sensors can be linked together and cable quantities significantly reduced.

Each unit is individually calibrated to provide the ultimate in system accuracy and repeatability.

APPLICATIONS

For monitoring tilt in:

Retaining walls

Diaphragm walls

Concrete dams

Party walls

Structures

Bridge piers

Tunnels

Compensation grouting

Slopes

Piles

FEATURES

EMC compliant to EN61326-1:2013

Uniaxial and Bi-axial options

High accuracy and resolution

Uniaxial or biaxial sensors option

LSHF cable option

Resistant to vibration

Horizontal or vertical mounting

Easy to install

Digital bus available (RS-485)

IP67 waterproof enclosure

Durable powder coating



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Specifications

MODELS	IPTM-E 5-1-485	IPTM-E 5-2-485	IPTM-E 10-1-485	IPTM-E 10-2-485	IPTM-E 15-1-485	IPTM-E 15-2-485
Range	±5°	±5°	±10°	±10°	±15°	±15°
Axis	Uniaxial	Biaxial	Uniaxial	Biaxial	Uniaxial	Biaxial
PERFORMANCE						
Signal Output	RS-485/BUS	RS-485/BUS	RS-485/BUS	RS-485/BUS	RS-485/BUS	RS-485/BUS
Accuracy (±25% of range)	±0.002° ±7.2 arc sec ±0.035 mm/m ±0.02% FS	±0.002° ±7.2 arc sec ±0.035 mm/m ±0.02% FS	±0.005° ±18 arc sec ±0.09 mm/m ±0.025% FS	±0.005° ±18 arc sec ±0.09 mm/m ±0.025% FS	±0.005° ±18 arc sec ±0.09 mm/m ±0.025% FS	±0.005° ±18 arc sec ±0.09 mm/m ±0.025% FS
Accuracy (full range)	±0.01° ±36 arc sec ±0.17 mm/m ±0.1% FS	±0.01° ±36 arc sec ±0.17 mm/m ±0.1% FS	±0.01° ±36 arc sec ±0.17 mm/m ±0.05% FS	±0.01° ±36 arc sec ±0.17 mm/m ±0.05% FS	±0.01° ±360 arc sec ±1.74 mm/m ±0.3% FS	±0.01° ±360 arc sec ±1.74 mm/m ±0.3% FS
Resolution	0.0003° 1 arc sec 0.005 mm/m 0.003% FS	0.0003° 1 arc sec 0.005 mm/m 0.003% FS	0.0003° 1 arc sec 0.005 mm/m 0.003% FS	0.0003° 1 arc sec 0.005 mm/m 0.003% FS	0.0003° 1 arc sec 0.005 mm/m 0.003% FS	0.0003° 1 arc sec 0.005 mm/m 0.003% FS
Repeatability	±0.005° ±18 arc sec ±0.087 mm/m ±0.05% FS	±0.005° ±18 arc sec ±0.087 mm/m ±0.05% FS	±0.005° ±18 arc sec ±0.087 mm/m ±0.05% FS	±0.005° ±18 arc sec ±0.087 mm/m ±0.05% FS	±0.005° ±18 arc sec ±0.087 mm/m ±0.05% FS	±0.005° ±18 arc sec ±0.087 mm/m ±0.05% FS
Operating Temperature	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C
ELECTRICAL						
Sensor	Electrolytic					
Excitation	8-15VDC					
PHYSICAL						
Protection	IP67					
Dimensions	160 x 85 x 60mm					
Weight	980g					
MATERIALS						
Sensor enclosure	Die-cast aluminium					
EXTENSION CABLE (If required, to extend to data logger)						
Cable	Type 800 Multi-core with Braid					

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Accessories & Ordering Information

MOUNTING BRACKETS¹

Vertical surface mounting bracket (Pic 1) (G40-037A)

Horizontal surface mounting bracket (Pic 2) (G40-038A)

Horizontal/vertical adjustable mounting bracket (Pic 3) (G40-039)

DATA ACQUISITION

GeoLogger G8 Plus – Specification will vary (G211-001)

WI-SOS 480 Digital Node - Wireless digital node that can be connected to a maximum of 30 IPI sensors (G216-046)

RS-485 to RS-232 Interface - Enables digital RS-485 sensors to be used with Campbell Scientific loggers (Q38-010)

10" Windows Tablet - Manual data display (G200-040)

SOFTWARE

GeoAxiom – Software which provides data handling, storage, visualisation, alarms, reporting and web-based access. Specification will vary according to project requirement (T10-020)

G-TILT - Data display software for use with Windows Tablet

ELECTRICAL

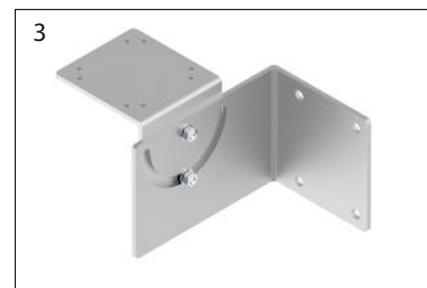
Cable Type - 800/TP/04/050/PUR/GY/8.0 (Q10-150)

End of line resistor /3.5m fly lead – Right hand (Q12-101)

End of line resistor /3.5m fly lead – Left hand (Q12-101A)

EMC Splice Kit (Q12-105)

¹ Magnetic options available on request



ORDERING INFORMATION

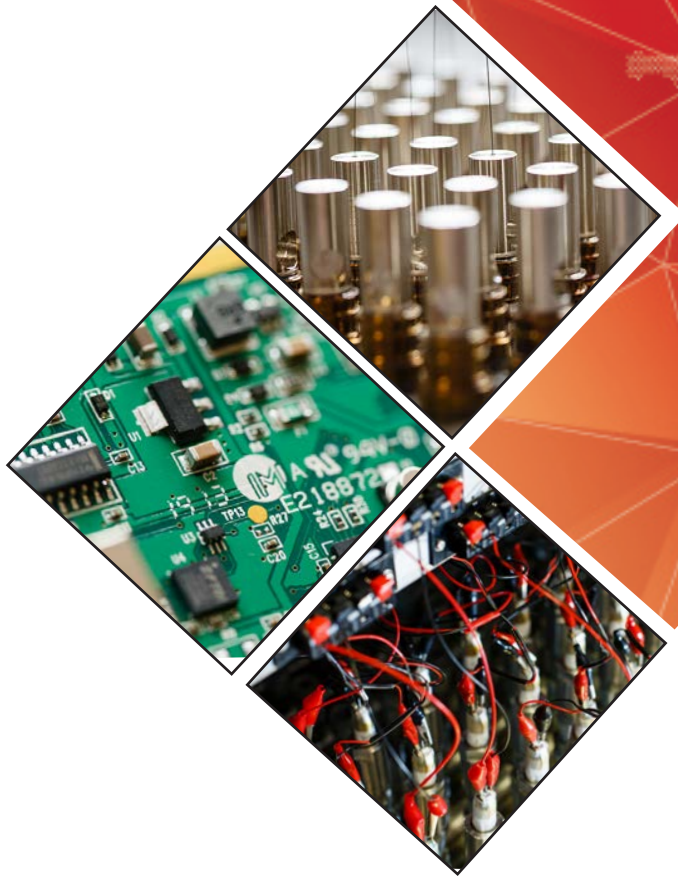
Range

Axis

Orientation

Bracket type

Readout



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