



# ROSCTEST

## PISA-M - In-Place MEMS Inclinometer



**SINGLE SERIAL CABLE INSTALLATION  
LOW COST REAL TIME MONITORING  
EXCELLENT REPEATABILITY**

The in-place MEMS model PISA-M inclinometers are used for continuous and unattended measurements of lateral displacement of soil, rock and structures.

### Description

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The **PISA-M** in-place MEMS inclinometer is either a uniaxial or biaxial tilt transducer with signal conditioning electronics, housed inside a rugged tube. A set of wheels directs the in-place MEMS inclinometer in the inclinometer casing.

Two configurations are possible: the serial-sensor one (basic configuration) or the single-sensor configuration for monitoring a discrete zone. In the first case, only one jumper cable is required to connect the top of the sensor string to the data logger. In the second case, each sensor is connected via its own cable to the data logger.

The data from the string of sensors in a borehole provides a vertical profile of the borehole. By comparing profiles over time, deflection and rate of movement can be calculated. The **PISA-M** can be reused on other projects once the monitoring

### Key Features

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- Single serial cable installation
- Real time monitoring
- Good repeatability
- Durable and reusable
- High resolution
- Built-in signal conditioning
- Configurable gauge length
- Long-term reliability
- Quick response time
- Low cost

### Applications

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- Slope stability
- Performance of dams and embankments
- Deformation of sheet piles and diaphragm walls
- Ground deformation due to tunneling
- Deflection of laterally loaded piles

### Specifications

Angular range	± 10°
Resolution with SENSLOG	0.0025°
Repeatability	± 0.006°
Output channels	One or two orthogonal tilt channels: ± 2.5 volts differential per channel
Power requirements	+8 to + 15 VDC
Housing	Stainless steel, 32 mm diameter, waterproof to 2 MPa
Weight	1.6 kg with sensor and 2 m gauge length
Cable	Each sensor is supplied with cable sufficient for 3 m gauge lengths
Casing	70 or 85 mm diameter casing
Sensor type	MEMS tilt sensors for inclination readings Thermistor for temperature readings
Max number of sensors *	50 (40 m), 40 (92 m), 30 (165 m), 20 (258 m), 10 (375 m)

\* Representing nominal limits of serial sensors per length of jumper cable

### Ordering Information

Please specify:

- Uniaxial or biaxial version
- Inclinometer casing size diameter
- Tubing for 1, 2 or 3 m gauge length (or custom)
- Cable length

A standard IPI system requires inclinometer casing, sensors with wheels, gauge tube, jumper cable (serial configuration), signal cable for each sensor (non-serial configuration), a suspension kit, and a data acquisition system.