

APPLICATIONS

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

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

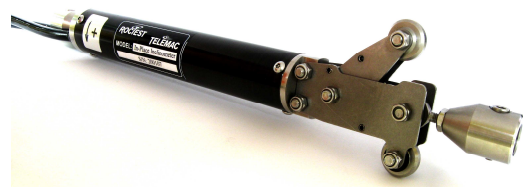
The in-place MEMS inclinometer model **PISA-M** is used as an alternative to the portable inclinometer readout system for surveying inclinometer casing installations in hard-to-reach or remote locations, and when real-time data acquisition and alarm systems are required. These IPI are installed in serial configuration, requiring only one cable for all sensors. This increases the maximum amount of sensors per borehole significantly.

TECHNICAL DESCRIPTION

The 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.

Multiple units are attached together to simplify installation and withdrawal.

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



FEATURES

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

TECHNICAL SPECIFICATIONS

Angular range	$\pm 10^\circ$
Resolution with Senslog	0.0015°
Repeatability	0.0037°
Output channels	One or two orthogonal tilt channels: ± 2.5 volts differential per channel
Power requirements	+8 to + 15 VDC
Housing	Stainless steel, 38 mm diameter, waterproof to 2 MPa
Weight	1.6 kg with sensor and 2 m gauge length
Cable	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

ORDERING INFORMATION

A standard IPI system requires inclinometer casing, sensors with wheels, gauge tube, signal cable for each sensor, a suspension kit, and a data acquisition system.

Please specify:

- Uniaxial or biaxial version
- Set of four guide wheels (specify casing size)
- Tubing for 1, 2 or 3 m gauge length (or custom)
- Cable length