

BOREHOLE FIXED INCLINOMETER



This inclinometer is designed and developed to measure horizontal deformations of sliding surfaces occurring in retaining walls, geological features and embankments.

The instrument is fixed upright inside a vertical permanent casing to measure rotations. The casing length varies according to soil and applications.

In general the inclinometer is made up of a string of torpedoes with retractable sprung wheels to hold the instrument rigidly within the borehole which is permanently anchored at its deepest point.

Using real data derived by the device, an algorithm calculates the deformation curve of the casing and, consequently, its displacement. The number of transducers are determined by the physical length of the casing and the required accuracy of the readings.

The more readings the more sensitive the reaction to movement.

The principle is that the ABS/aluminium casing deforms exactly as the material which surrounds it.

This system can replace manual measurements. The accuracy is comparable to a servo-accelerometer, and the structure under examination can be kept under constant scrutiny at minimal cost.

The effective number of sensors is determined by the physical length of the casing.

Modern software such as AGISCO's **ECLIPSE** can produce incredibly accurate results from a minimal number of readings, although the more readings the more accurate the result.

Today it is possible to use a fixed inclinometer instead of an inverted pendulum for dams.

Main features:

- Easy installation
- Precision measurement
- Reliable and long lasting
- Automatic and/or remote reading
- More accurate than expensive servo-accelerometer systems
- Value for money

There are 4 main types of inclinometer depending on the type of sensor:

- Electrolytic
- Capacitive
- Magneto-resistive
- Servo-accelerometric
- MEMS

There are mono-axial and bi-axial sensors available dependant upon usage.

They may be supplied by a single cable to each torpedo or connected in a group by one multi-polar cable.

TECHNICAL SPECIFICATIONS

FIXED BOREHOLE INCLINOMETER MEMS type

Type of sensor	MEMES
Number of measuring points	Varies according to casing length and application
Measuring range	$\pm 15^\circ$ $\pm 30^\circ$
Resolution	0,001°
Power supply	12 - 18 V dc
Linearity	< 0.5% FS
Operating Temperature Range	from -20°C to +60°C
Diameter of grooved ABS/Al casing	From 45 mm a 100 mm
Level of protection	IP68

Agisco reserve the right to change their products and specifications without notice

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