



# **MEMS Inclinometer Spiral Sensor**





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#### Overview



The MEMS Inclinometer Spiral Sensor is used to determine down-hole helical deformation of installed inclinometer casing. Installed casing spiral is a function of the manufacturing process, casing coupling, and installation technique.

Best casing installation practice requires that the casing be installed with the correct azimuth from the start and throughout the installation, with no torque applied either intentionally or otherwise during the installation. Such carefully installed inclinometer casing would typically maintain groove azimuth to within a few degrees over 30 meters. However, for very deep installations, or installations where twist due to installation problems is suspected, the Digital MEMS Inclinometer Spiral Sensor permits measurement of the installed groove azimuth down-hole.

Operation is similar to the Digital Inclinometer, using the same cable, reel, and hand-held readout. It is only necessary to read one data set; no 180 degree second reading set is required. Typically this measurement is only performed once in the life of the hole, as the casing is torsionally restrained by the backfill, typically grout. Inclinalysis<sup>™</sup> Inclinometer Software processes the resulting spiral data set.

The Digital Inclinometer Spiral Sensor is supplied in a robust carrying case



#### APPLICATIONS

Determining spiral deformation of inclinometer casing

#### FEATURES

Compatible with Digital Inclinometer System simply connect the probe to the reel's connector and get spiral readings on the spot

No additional software required - Software used for the Digital Inclinometer System also processes spiral data

Compact and lightweight design

The use of an inertial sensor to measure the groove azimuth variation eliminates errors due to sensor offset, wheel/groove clearance, friction or magnetic declination



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## Specifications

PERFORMANCE		
Accuracy	±0.25% FS	
Resolution	0.01°	
PHYSICAL		
Weight	1 kg	
Overall Length	570mm	
Gauge Length	400mm	
Compatible Casing Sizes	70-85mm	
Material	Stainless Steel	
CONTROL CABLE		

As spiral surveys are typically performed in deep boreholes, the lightweight Kevlar<sup>®</sup> strain relief employed in the cable, eases operation in comparison to a heavy stainless strain relief cable.



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