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ISO 9001

In-place Tiltmeter (MEMS).

WORKS WITH flexDAQ DATALOGGERS — READY TO RUN: pre-assembled, pre-wired, pre-tested, pre-programmed

rstar AFFINITY

PRODUCT CATEGORY:
INCLINOMETERS + TILT SENSORS

In-Place Tiltmeter

RST's In-Place Tiltmeters (MEMS) measure tilt in two axial planes perpendicular to the surface of the base plate. The unit is intended to be permanently installed to provide long term observation with maximum resolution and sensitivity, and is conveniently designed for manual monitoring or remote data acquisition.

The system consists of a tiltmeter mounting plate, interconnecting cable, and data logger or readout instrument. The electronics are housed in a NEMA 4X (IP-65) enclosure for environmental protection, and is typically bolted or bonded to the structure. For maximum resistance against water ingress, the cable is typically hard wired to the enclosure. The interconnecting cable is suitable for direct burial.

> APPLICATIONS

Monitor tilt of retaining and building walls.	Tilt of concrete dams.
Structural load testing.	Landslide monitoring.
Building safety along adjacent excavations.	Ground subsidence.
Various horizontal or vertical applications.	Bridge pier monitoring.
Observation of benches and berms in open pit mines.	Applications where the failure mode is expected to have a rotational component.

> FEATURES

High accuracy and repeatability.	Easy to install.
Cost effective.	Data logger and/or manual readout compatible.
Digital bus output	NEMA 4X (IP-65) weather-proof enclosure.

ORDERING

BIAXIAL	PART #
MEMS Biaxial Tiltmeter - digital bus output	IC6656B
MOUNTING	**PART #**
MEMS Tiltmeter Horizontal Mounting Plate	IC6700
MEMS Tiltmeter Vertical Mounting Bracket	IC6705
TEMPERATURE MEASUREMENT	
Included	
READOUTS & DATA LOGGERS	**PART #**
Rugged Handheld PC	IC32000-NAUTIZ
Digital Interface for Rugged Handheld PC with software	ELGL4010
DT2485 DT-BUS Data Logger	DT2485
flexDAQ Dataloggers	
RSTAR Affinity Data Logger	

CABLE ORDERING

ITEM	DESCRIPTION
EL380004	Two twisted pairs cable with polyurethane jacket

ELECTRICAL

Supply Voltage	5 to 15V DC
Operating Current	490 uA (Reading Average, per sensor)
Standby Current	<20uA (per sensor)
Signal Output	RS485 Digital Bus (MODBUS RTU Protocol)

SPECIFICATIONS

ITEM	DESCRIPTION
Range	±30°
Resolution	0.0002° (0.004° mm/m)
Sensor Accuracy	±0.002° (0.03 mm/m)[1]
Sensor Precision	±0.0013° (0.02 mm/m)[1] ±0.0005° (0.01 mm/m)[2]
Sensor 24 h Stability	±0.03 mm/m[1] ±0.01 mm/m[2]
Sensor	MEMS (Micro-Electro-Mechanical Systems) Accelerometer
Temperature Dependent Uncertainty	± 0.016 mm/m/°C (±0.001°/°C) , for ± 5° from vertical ± 0.033 mm/m/°C (±0.002°/°C) , for ± 15° from vertical
Temperature Accuracy	± 0.5 °C (0°C to 60°C) ± 1.0 °C (-40°C to 60°C)
Temperature Resolution	0.06 °C
Operating Temperature	-40 to 60°C (-40 to 140°F)
Dimensions	80 x 80 x 61mm (3.15 x 3.15 x 2.4 in.)

1: 99% Confidence Interval
2: 68% Confidence Interval