

	PRODUCT CATEGORY:
	INCLINOMETERS + TILT SENSORS



Close up section of the Track Monitoring System [MEMS] with damping pad

Track Monitoring System (MEMS)

The Track Monitoring System (MEMS) is intended for monitoring settlement and twist of railroad tracks which may be affected by nearby construction activity such as tunnelling or adjacent excavation, or locales near hazardous zones such as potential washout or landslide areas.

The Track Monitoring System consists of bussed MEMS accelerometer sensors mounted longitudinally along the track alignment, typically with a mount spacing of 2 or 3 meters. The 2 or 3 meter lengths can be cut down in the field to fit the actual tie locations.

The Track Monitoring sensor is based on the same MEMS devices used in RST's MEMS Tilt & Inclination Series of products from RST Instruments. These sensors are fully compatible with RST's flexDAQ Data Loggers and RSTAR Affinity Digital Suite or GeoExplorer software for data display and management (see separate brochures).

> APPLICATIONS

Railroad track monitoring in construction zones.

Railroad track monitoring in geologically unstable areas (prone to washout, landslide, etc.)

> FEATURES

High accuracy MEMS digital tilt sensors. Single cable digital bus system.

Easily adaptable to data logging with RST's Affinity Data Loggers, DT2485 DT-BUS Data Loggers, and flexDAQ Data Loggers.

Available for wooden tie and concrete tie systems.

Data can be viewed in near-real time in the RSTAR Affinity Digital Suite or GeoExplorer.

> BENEFITS

✓ **Increase Safety**

✓ **High Accuracy**

✓ **Fast Installation**

✓ **Robust**

✓ **Low Profile**

SPECIFICATIONS

Range	±30°
Resolution	±0.0002° (0.004 mm/m) ¹
Sensor Precision	±0.0013° (0.02 mm/m) ¹
	±0.0005°(0.01 mm/m) ²
Sensor 24hr Stability	±0.03 mm/m ¹
	±0.01 mm/m ²
Sensor	MEMS 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)

READOUTS & DATA LOGGERS	PART #
Rugged Handheld PC	IC32000-NAUTIZ
Digital Interface for Rugged Handheld and Desktop PC with software	ELGL4010
DT2485 DT-BUS Data Logger	DT2485
FlexDAQ Data Loggers	
RSTAR Affinity Data Loggers	

ORDERING INFO

BUSSED SENSORS	PART #
Track Settlement Sensor- MEMS Biaxial Digital Bus- 2M w/Cable and Connectors, includes 1 anchor	IC9052B
Track Settlement Sensor- MEMS Biaxial Digital Bus- 3M w/Cable and Connectors, includes 1 anchor	IC9053B
MOUNTING	PART #
Track Monitor End Anchor Kit (one required per string) includes anchor spacers, end plug, end anchor pivot bolt/nut, x1 damping pad	IC9040

CABLES AND PLUGS

SENSOR-TO-LOGGER COMMUNICATION CABLE		SENSOR-TO-SENSOR COMMUNICATION CABLE FOR WIRE ROPE CONFIGURATION	
ITEM	PART #	ITEM	PART #
5 m Top Cable	IC8051	5 m	IC8085
10 m Top Cable	IC8052	10 m	IC8085-10M
20 m Top Cable	IC8053	15 m	IC8085-15M
Custom Length Top Cable	IC8050	20 m	IC8085-20M
Bottom Cable Male Plug	IC8060		