



In-place MEMS Tilt Meter

MEMS
TILT & INCLINATION
SERIES

In-place MEMS Tilt Meter shown with Vertical Mounting Bracket.

RST's MEMS In-Place Tilt Meters measure tilt in either one or 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.

MEMS systems consist of a tiltmeter mounting plate, interconnecting cable, and data logger or readout instrument. The tiltmeter may either be uniaxial or biaxial and is available in both horizontal and vertical versions. 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; however connectors may be provided if required. The interconnecting cable is suitable for direct burial, and is available in an armoured version to suit demanding site conditions.

A variety of signal outputs are available: analog (+/- 5 Volts, loop-powered 6-20 mA), frequency (compatible with the portable VW2106 Vibrating Wire Readout), digital and digital bus allowing several tiltmeters to be daisy-chained on a single cable up to 1200 meters in length.

ordering info

UNIAXIAL	PART #
MEMS Uniaxial Tiltmeter - analog voltage	IC6550
MEMS Uniaxial Tiltmeter - 6-20mA	IC6552
MEMS Uniaxial Tiltmeter - digital output	IC6554
MEMS Uniaxial Tiltmeter - digital bus output	IC6556
MEMS Uniaxial Tiltmeter - frequency	IC6558
BIAXIAL	PART #
MEMS Biaxial Tiltmeter - analog voltage	IC6650
MEMS Biaxial Tiltmeter - 6-20mA	IC6652
MEMS Biaxial Tiltmeter - digital output	IC6654
MEMS Biaxial Tiltmeter - digital bus output	IC6656
MEMS Biaxial Tiltmeter - frequency	IC6658
MOUNTING	PART #
MEMS Tiltmeter Horizontal Mounting Plate	IC6700
MEMS Tiltmeter Vertical Mounting Bracket	IC6705
READOUTS & DATALOGGERS	PART #
MEMS Analog Readout (analog systems)	IC6800-V
Ultra Rugged Field PC (digital bus systems)	IC32000-14803
Digital Interface for Ultra Rugged Field PC with software	ELGL4010
flexDAQ Dataloggers (analog and digital systems)	

specifications

ITEM	DESCRIPTION
Range	±15° (other ranges upon request)
Resolution (analog)	±5 arc sec. (±0.025 mm/m) (10Hz BW)
Resolution (digital)	±2 arc sec. (±0.0006°) (0.01 mm/m)
Non-linearity (analog)	±0.05% F.S. (±0.0075°) (0.13 mm/m)
Non-linearity (digital)	±0.0125% F.S. (±0.002°) (0.03 mm/m)
Repeatability (analog)	±0.025% F.S. (±0.004°) (0.06 mm/m)
Repeatability (digital)	±0.0125% F.S. (±0.002°) (0.03 mm/m)
Sensor	MEMS (Micro-Electro-Mechanical Systems) Accelerometer
Excitation (analog)	8 - 15V DC
Operating Temp.	-40 to 85°C (-40 to 185°F)
Dimensions	80 x 80 x 61mm (3.15 x 3.15 x 2.4 in.) Optional submersible unit's dimensions available upon request.

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applications

Monitor tilt of retaining and building walls.

Tilt of concrete dams.

Structural load testing.

Landslide monitoring.

Building safety along adjacent excavations.

Applications where the failure mode is expected to have a rotational component.

Observation of benches and berms in open pit mines.

Bridge pier monitoring.

Ground subsidence.

features

Uniaxial or biaxial sensors available.

Horizontal or vertical applications.

Analog, digital and frequency outputs available.

Digital bus available.

Data logger and/or manual readout compatible.

High accuracy and repeatability.

Easy to install.

Cost effective.

NEMA 4X (IP-65) weather-proof enclosure.

WORKS WITH

