» inclinometer casing | inclinometer systems | tilt meters & sensors

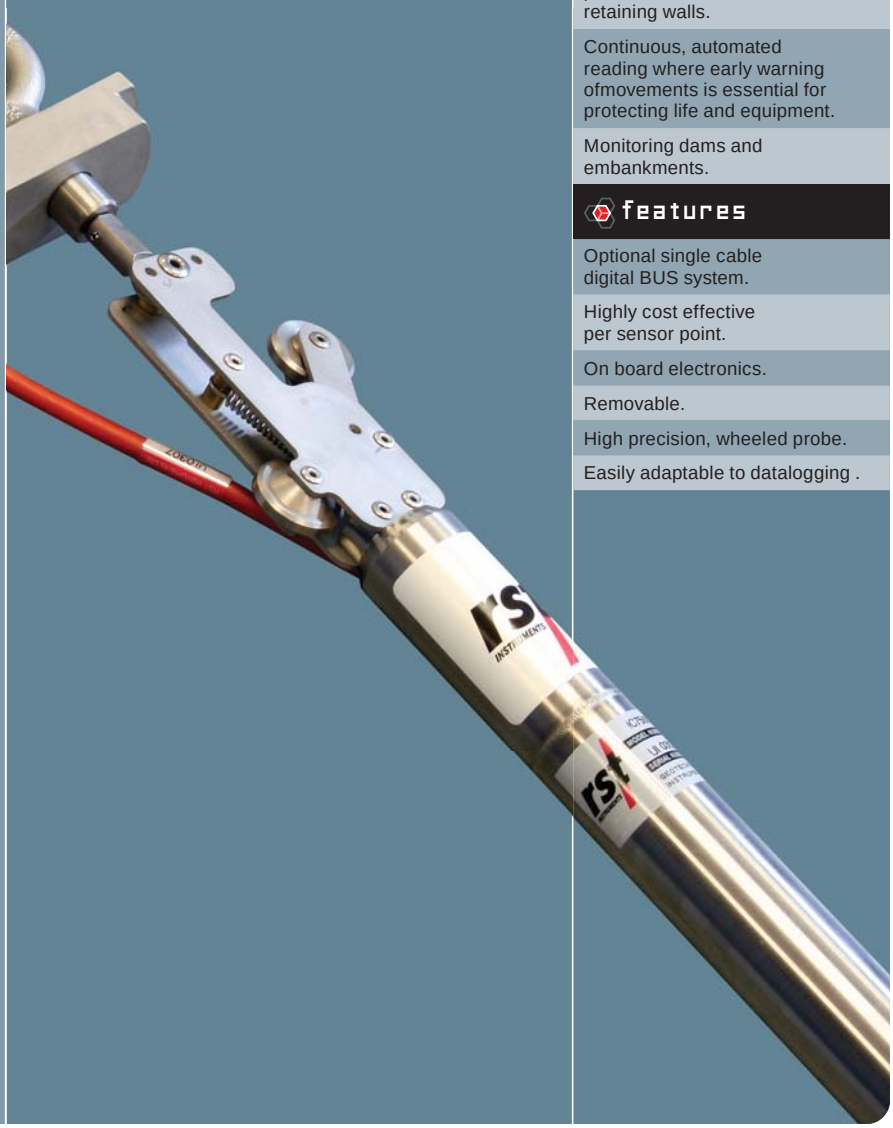
Vertical In-place MEMS Inclinometer

MEMS TILT & INCLINATION SERIES

Vertical In-place MEMS Inclinometer Systems are designed to measure lateral movement of soil and rock or deflection of man made structures such as piles or retaining walls, when remote and continuous monitoring is required.

In-place inclinometers consist of one or more MEMS inclinometer sensors housed in a 31.75 mm (1.25 in.) diameter, water-tight, stainless steel enclosure. Each sensor is separated from the next by stainless steel rods and wheel assemblies. Rod lengths can be varied to alter the gauge length and sensors can be concentrated in areas of expected movement.

Wheel assemblies are sized to fit 70 mm (2.75 in.) or 85 mm (3.34 in.) O.D. inclinometer casing. As movement occurs and the inclinometer casing deforms, each sensor can be automatically monitored and can be read at a remote readout location. If necessary, an alarm can be triggered when movement reaches a preset critical rate or magnitude.



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applications

- Monitoring stability adjacent to excavations or underground workings.
- Monitoring deflection of piles, piers, abutments or retaining walls.
- Continuous, automated reading where early warning ofmovements is essential for protecting life and equipment.
- Monitoring dams and embankments.

features

- Optional single cable digital BUS system.
- Highly cost effective per sensor point.
- On board electronics.
- Removable.
- High precision, wheeled probe.
- Easily adaptable to datalogging .

GEOTECHNICAL . MINING . ENVIRONMENTAL . STRUCTURAL

ICB0009R

Certified System ISO 9001

specifications + ordering info

Vertical In-place MEMS Inclinometer

MEMS TILT & INCLINATION SERIES

specs: vertical in-place inclinometer

DESCRIPTION	SPECIFICATION
ELECTRICAL	
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)
MECHANICAL	
Gauge Length	0.5 - 3 meters
Housing Diameter	31.75mm (1.25 in.) (sensor)
Wheel Assembly	70 mm (2.75 in.) 85 mm (3.34 in.)
Extension Rod Diameter	25 mm (1.0 in.)

ordering info: sensors

ANALOG CABLE SYSTEM	PART #
MEMS IPI sensor assembly: Biaxial for 70 mm casing	IC7505
MEMS IPI sensor assembly: Biaxial for 85 mm casing	IC7515
MEMS IPI sensor assembly: Uniaxial for 70 mm casing	IC7500
MEMS IPI sensor assembly: Uniaxial for 85 mm casing	IC7510
DIGITAL BUS CABLE SYSTEM	**PART #**
MEMS IPI bus sensor assembly: Biaxial for 70 mm casing	IC7565
MEMS IPI bus sensor assembly: Biaxial for 85 mm casing	IC7575
MEMS IPI bus sensor assembly: Uniaxial for 70 mm casing	IC7560
MEMS IPI bus sensor assembly: Uniaxial for 85 mm casing	IC7570
WIRE ROPE SYSTEM	**PART #**
MEMS IPI wire rope sensor assembly: Biaxial 70 mm casing with bottom wheel assembly	IC7535
MEMS IPI wire rope sensor assembly: Biaxial 85 mm casing with bottom wheel assembly	IC7545
MEMS IPI wire rope sensor assembly: Uniaxial 70 mm casing with bottom wheel assembly	IC7530
MEMS IPI wire rope sensor assembly: Uniaxial 85 mm casing with bottom wheel assembly	IC7540

general ordering info

Part number
Number of boreholes
Number of sensors per borehole
Location of sensors in borehole
Gauge length
Wheel assembly size
Length of signal cable

options

Submersible cable connector for bus options.

ordering info: collar hangers

ANALOG OR DIGITAL BUS SYSTEM	PART #
Collar hanger w/1 bottom wheel assembly for 70 mm casing	IC7070
Collar hanger w/1 bottom wheel assembly for 85 mm casing	IC7085
WIRE ROPE SYSTEM	**PART #**
Collar hanger for 70 mm casing	IC7070R
Collar hanger for 85 mm casing	IC7085R

ordering info: extension rods

ANALOG, DIGITAL BUS, OR WIRE ROPE SYSTEMS	PART #
Extension rod for 0.5 m gauge length	IC7700
Extension rod for 1 m gauge length	IC7701
Extension rod for 1.5 m gauge length	IC7702
Extension rod for 2 m gauge length	IC7703
Extension rod for 2.5 m gauge length	IC7704
Extension rod for 3 m gauge length	IC7705

ordering info: cables

ANALOG, DIGITAL BUS, AND WIRE ROPE SYSTEM	PART #
6 conductor, 22 gauge polyurethane jacketed cable (analog)	EL380006
4 conductor, 22 gauge polyurethane jacketed cable (digital bus)	EL380004
SUSPENSION CABLE - FOR WIRE ROPE SYSTEM ONLY	**PART #**
Stainless steel suspension cable 3/32"	IC7300

ordering info: readouts

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)	

WORKS WITH flexDAQ DATALOGGERS
custom, turn-key datalogger systems shipped "ready to run"

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