



GeoCloud Tiltmeter

GeoCloud Tiltmeters

Tiltmeters are used to monitor small changes in inclination. They are ideal for monitoring structural rotation, differential settlement, deformation, and convergence.

GeoCloud tiltmeters are a new generation of efficient, battery-powered, wireless digital sensors.

Applications

- Monitoring the stability of structures adjacent to excavations.
- Monitoring landslides, rockfalls, and embankments.
- Monitoring movement of shoring walls.
- Monitoring the tilt of piers and piles.
- Monitoring differential settlement and heave.
- Monitoring deformation in tunnels.
- Monitoring jet, compaction, and compensation grouting in real time.
- Monitoring lateral or vertical displacements (laser extensometer)

Advantages

- **High Performance:** GeoCloud tiltmeters provide high resolution, high precision, low noise measurements.
- **Cloud or Local Access:** The cellular gateway transmits measurements to the internet, where they can be accessed by an internet browser. The USB gateway provides on-site access for real-time control.
- **Versatile Mounting Options:** GeoCloud tiltmeters can be installed in any orientation. A wide variety of plates and brackets provide convenient mounting to walls, stakes and poles, and track ties.
- **Self-Configuring Communications:** GeoCloud tiltmeters automatically optimize communication paths to the gateway.
- **Cable-Free:** GeoCloud tiltmeters provide their own power and transmit measurements by radio, entirely eliminating the cost of cables, cable protection, and cable maintenance.



GeoCloud Mini-Tiltmeters

GeoCloud Tiltmeter Specifications

Sensors: 3 MEMS sensors to measure tilt in three axes.

Range: $\pm 90^\circ$ in each axis.

Resolution: 0.0001°.

Repeatability: $\pm 0.0005^\circ$.

Communications: Wireless mesh network.

Battery life: 12 to 15 years, with data transmissions at 25 minute intervals, and even when acting as a relay node in the mesh network.

Environmental: IP68 at 1m for 24 hours, -40°C to $+85^\circ\text{C}$.

Dimensions: 3.5 x 3.5 x 2.4 inch high.

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Range: $\pm 90^\circ$ in each axis.

Resolution: 0.0001°.

Repeatability: $\pm 0.0005^\circ$.

Communications: Wireless mesh network. Signal range up to 980 feet.

Battery life: 4 to 5 years with data transmissions at 25 minute intervals.

Environmental: IP68 at 2 m for 24 hours, -40°C to $+85^\circ\text{C}$.

Dimensions: 2.3 inch diameter x 1.78 inch high (50 x 45 mm).

Wireless Communications Specifications

Protocol: Proprietary, IEEE802.15.4 compliant.

Frequency: 2400-2485 MHz ISM Band. FCC approved.

Max Transmit power: 6.5 dBm.

Max Antenna Gain: 2.2 dBi.

Range: 980 feet point to point. Can be extended when nodes act as repeaters.

Gateway to Internet: Cellular.

