GEO INSTRUMENTS

GNSS METER
STRUCTURAL MONITORING

Applications

The GNSS meter is designed to track 3D movements in structures, foundations, and infrastructure with precision and reliability over long-term monitoring periods.

The system provides automated measurement of point movements and offers several advantages over traditional monitoring systems, including 24/7 readings, easy installation, and long-term operation without the need for frequent maintenance or external power sources.

It also allows for near-real-time data transmission, improving response times for detecting potential issues.

All data from the GNSS meter can be automatically transferred to GEO-Instruments' QuickView monitoring platform for visualisation and analysis.

Typical sound monitoring applications include:

- Dams
- Road and Rail
- Bridges
- Piers and outdoor structures
- Buildings
- Excavations
- Soil consolidation
- Land reclamation
- Mining subsidence
- Slope stability and early warning systems

Installation & Operation

The setup has flexible configuration options and can function as a base or rover depending on project requirements.
The included field tools can be used for radio link testing.

Comprised of the main comms housing and LoRa and GNSS antennas, there are several mounting options for horizontal and vertical surfaces as well as poles or beams.
The antennas can be extended and individually mounted away from the unit if needed.

The sensor can be setup and configured locally via an app or configured remotely using online software.
Data can be exported to third-party software via MQTT, REST API, or FTP.

Specifications

Sensor Type:

- GNSS sensor
- MEMS accelerometer

Correction Technology:

- Multi-band Real Time Kinematic (RTK)

Resolution:

- <10mm (aggregated)

Measurement Interval:

- 1 hour (with 6h and 24h aggregation options).

Power Requirements:

- 4x 3.6 V D-size replaceable batteries

Key Advantages

Millimetric Precision:
Sub-centimeter precision with hourly position updates, offering 6h and 24h aggregation for higher precision.

Versatile sensing:
Integrated Tiltmeter and environmental sensors. detects changes in structures and provides data when RTK conditions are unavailable.

Wireless, long-term monitoring:
Low power requirements and long battery life provides more than 3 years of autonomous measurement.