

Locator One GNSS Sensor

The Locator One GNSS sensors are compact, self-powered, automated GNSS receivers with cloud connectivity. Each sensor is fully autonomous, obtaining geodetic data from satellites and transmitting data to the Cloud.

The receiving cloud server processes the data, applies adjustments, and outputs absolute coordinates. Changes from baseline coordinates reveal the magnitude and direction of displacements.

A GeoCloud website presents the data visually in map views and graphs and generates alerts if displacements exceed alarm thresholds.

Locator One Advantages

- Sensors are fully autonomous: no cable, no power supplies, no gateways, no protective housing, and no maintenance needed.
- The precise coordinates of each sensor are established at time of installation using an RTK receiver. Afterwards, sensors track their own positions.
- Measurements are not affected by fog, rain, or snow.

Locator One Specifications

Observation Technique: Fast-static, with 186 channels available for recording observations at 1Hz for 5 minutes. Default observation time can be modified as needed.

Satellite Constellations: Compatible with GPS, GLOSNASS, Galileo, QZSS, and BeiDou satellites.

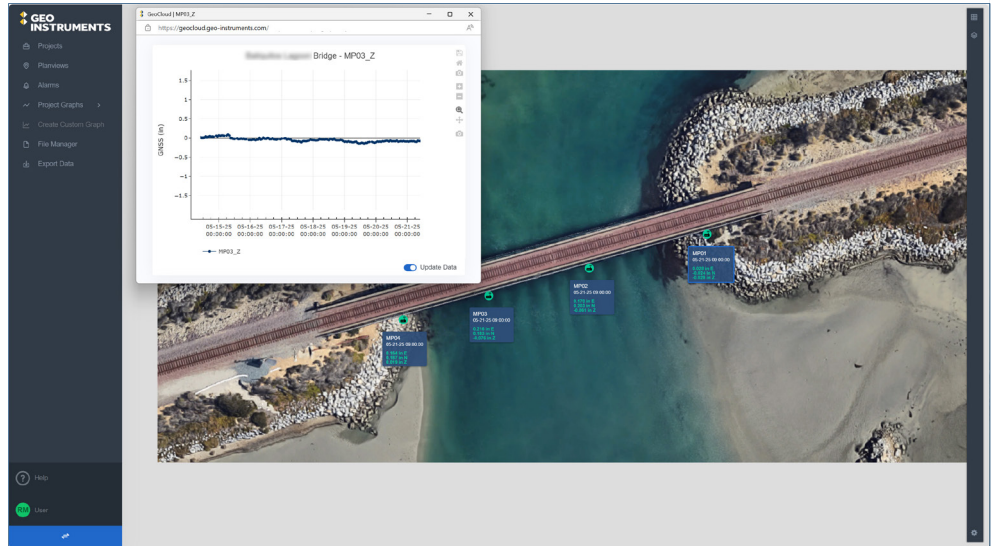
Post-Processed Averaged Precision: $\pm 2\text{mm}$ horizontal, $\pm 4\text{ mm}$ vertical.

Measurements per Day: 6 per day is standard. Up to 24 per day is possible at ideal locations.

Weather Rating: IP 65 for water ingress, -4 to 140 °F for temperature.

Power: Supercapacitor charged by built-in solar panel. Fully charged supercapacitor can provide 8 months of power without solar.

Technology & specifications courtesy of Basetime B.V.



GeoCloud project website shows 4 Locator One GNSS sensors deployed to monitor bridge. The label for each sensor shows its current X, Y, Z measurements. Clicking on a value generates a plot.



Highway bridge monitored for displacements during construction of new ramps.



Rail bridge monitored for displacements during construction of replacement

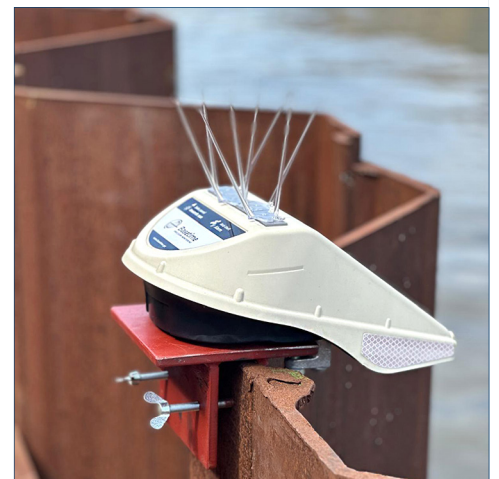
Installation Requirements

Cellular Connection: LTE-M cellular connectivity is required and is widely available.

Monitoring Points: One sensor is installed at each monitoring point. There is no practical limit for the number of monitoring points.

Reference Point: One extra sensor should be installed outside the zone of influence. Used to correct for any atmospheric distortions of satellite signals. Line of sight not needed.

Clear Horizon: Ideal locations for sensors have a clear horizon with no obstacles above an elevation of 10°.



Bird spikes are a simple but effective way to keep the sensor and its built-in solar panel clean.