



DELTA SOLUTIONS

DEFORMATION MONITORING SYSTEM





Geosensor Networks Made Easy

- High-flexibility through the recording and processing of motorized total station and environmental sensor data
- Integrated communications for remote connectivity
- Network adjustment and analysis with automated quality control including elimination of outliers
- Scalable and robust hardware
- Reporting, visualization and alarm features

Topcon Delta Link

Delta Link provides hardware support for autonomous operation in the field. Communications options include Ethernet, Wi-Fi, and a globally approved integrated cellular modem (data SIM provided by third-parties). A 110/240 VAC standard power supply with an internal battery backup allows operation during short power outages. An external battery and solar panel can also be used when mains power is not available. Delta Link manages each power source maximizing system availability.

Standard configuration comes with a temperature and barometric pressure sensor.

Topcon Delta Log

Accessed via a secure web portal, Delta Log provides an intuitive interface to manage observations, target types, and measurement scheduling.

Delta Log provides a simple platform for advanced functionality – unique Topcon features such as matrix detection are instinctively controlled through the software.

Data Continuity

Delta Log will continue to operate the total station should communication with the Delta Watch database fail. Once communication has been restored, data are synchronized and the main database is updated.

No loss of data ensures continuity in the representation and reporting of deformation information. With complete data sets, a thorough understanding of the asset in focus can be determined.



Topcon MS AXII

- Angular accuracy option of either 0.5" or 1"
- Reliable distance accuracy of 0.5 mm
- Automated matrix detection and target acquisition
- TSshield™ total station management system



Topcon Delta Watch

Delta Watch software provides a modular solution to monitor, manage and evaluate automatic and/or manual monitoring data as well as optionally trigger alarms. Data from robotic total stations, GNSS receivers, leveling devices, and a variety of geotechnical and structural sensors can be processed and analyzed individually or as a network-adjusted solution.

As standalone software, Delta Watch delivers accurate and reliable data in a variety of reporting formats to best fit a project's needs. Alternatively, Delta Watch can feed processed data to third-party visualization software to provide system integration capability in large monitoring projects.

Network adjustments are carried out using modern and robust least-squares techniques with all results available for analysis within Delta Watch.

Alerting project events

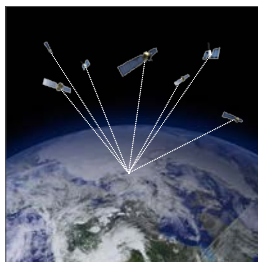
Should measurements exceed project alert thresholds, notifications are distributed via email or SMS message. Customizable reports are distributed on a schedule or following an alert.

Guided by VMT

Guided by VMT represents the best-selling navigation systems in tunneling worldwide. Since 1994, VMT has equipped thousands of tunneling projects with navigation, information, monitoring, and communication systems.



Delta Link	
Dust/Water Rating	IP65
Wind Survival	120 km/h
Mounting Options	Pole diameter 50 - 70 mm Wall mount
Weight	2.2 kg with package
Dimensions	33 x 24 x 9.5 cm
Delta Link On-board Computer	
Operating System	Linux based
Internal Memory	1 GB
Communications	Ethernet, Wi-Fi, Cellular (globally supported)
Environmental Sensor	
Pressure Range	10 to 1200 mBar
Resolution	0.13 mBar
Temperature Range	-40°C to 85°C
Temperature Accuracy	+/- 0.8°C (+/- 0.2°C to +/- 0.4°C at reduced temperature range)
Humidity Accuracy	0-80% = 3%, 80-100% = max 6% (Non-condensing)



Topcon Delta Link

- Autonomous operation in the field
- Various on-board communication methods
- Internal battery backup
- External environmental sensor

Topcon Delta Log

- Standard within Delta Link hardware
- Set observation parameters
- Start and stop sessions
- Remote management services

Topcon Delta Watch

- Core software performs computations, alerts and customized reports
- Observe, assess, and better understand and manage risk
- Modular offering to grow with you as your projects evolve

Topcon Delta Sat

- Optional software module to Delta Watch product
- Include GNSS observations with monitoring projects
- Allows for combination of GNSS and total station network adjustments



For more information:
topconpositioning.com/delta

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