Instruments and Systems

As the world leader in precision GNSS and total stations, Trimble enables professionals to create a system for projects of any size and scope. You can combine Trimble instruments and software with external geotechnical sensors to create complete, customized monitoring solutions.

**TRIMBLE NETR9 GNSS REFERENCE RECEIVER**

Trimble GNSS provides continuous high precision measurements and rapid updates to monitor over long distances. The Trimble NetR9™ GNSS Reference Receiver includes features and performance designed for scientific and monitoring applications. Compact and rugged, the Trimble NetR9 is capable of tracking all existing and planned GNSS signals. The new Trimble NetR9 Tri-M receiver is now supported for real-time monitoring applications.

GNSS reference receivers often operate unattended for long periods in remote locations. The Trimble NetR9 uses built-in Internet Protocol (IP) to provide robust communications and control. In addition to reliable data transfer, the Trimble NetR9 can be controlled, configured and updated via a built-in Web interface. To provide highest accuracy, the Trimble NetR9 supports the Trimble Ag25, Trimble GNSS Choke Ring, and the Trimble Zephyr™ 2 GNSS geodetic antennas.

**TRIMBLE S7, S8, S9 TOTAL STATIONS**

Designed to handle demanding jobs and difficult environments, Trimble Total Stations are ideal for engineering and monitoring applications that depend on fast, accurate measurements. Trimble S7, S8 and S9 combines Trimble FineLock™ technology with long-range, distance measurement to provide fast, precise monitoring measurements. You can measure to targets up to 2,500 meters away with one-centimeter accuracy. In urban or residential areas, Trimble MagDrive™ Servo technology delivers silent operation that won’t disturb residents or businesses.

**TRIMBLE STRONG MOTION SYSTEMS**

Trimble’s strong motion recording instruments and sensors for structural health monitoring (SHM) integrate seamlessly with Trimble’s monitoring solutions. Trimble 4D Control can monitor peak acceleration and can apply FFT analysis to high frequency vibrational data. This data can be alarmed and visualized through the web interface.

**TRIMBLE KESTREL SYSTEM (MODEL SG160-09)**

The SeismoGeodetic System integrates seismic recording with GNSS geodetic measurements in a single compact, ruggedized package to create high-rate (200 sps), full epoch-to-epoch measurement integrity, real-time displacement with sufficient accuracy and very low latency for infrastructure monitoring and precise scientific applications with a focus on a wide spectrum of natural hazard mitigation applications.
Software is the core of a monitoring project. It triggers alarms based on user defined thresholds as well as controls the measurements, manages data and compiles and analyzes the results. From campaign monitoring to real-time, multi-sensor operations, Trimble 4D Control can handle the challenge of complex monitoring applications.

**Trimble 4D Control Software**

**TRIMBLE 4D CONTROL**

Trimble 4D Control provides a project and sensor management to configure monitoring projects and associated sensors that will be visualized in Trimble 4D Web. You can create projects, review coordinate system information, create sensors and then connect them to the real-time data provided by Trimble 4D Control Server.

**TRIMBLE 4D LITE—PROFESSIONAL MONITORING MADE EASY**

Many monitoring projects do not require continuous measurements. With Trimble 4D Lite, surveyors, engineers, scientists and others can visit projects periodically, collect data and display and analyze the data without the need for a complex real time monitoring system. T4D Lite is a cloud-based web application designed with the same advanced web interface and back-end stability that you have come to expect with Trimble 4D Control, with the advantage that this is available for the analysis of any form of data time series.

**TRIMBLE 4D WEB**

Trimble 4D Web is used to analyze and visualize monitoring projects, and provides access to your monitoring system over a fast, feature-rich Web interface. Whenever you connect to the Internet, you can connect to Trimble 4D Control Web and view your project in real-time.

**TRIMBLE 4D CONTROL ROOM WEB**

The Trimble 4D Control Room Web allows you to monitor projects that belong to one or more Trimble 4D Control Web installations. This add-on to the T4D software shows information that is published by the individually linked Trimble 4D Web instances.

**KEY FEATURES**

**Collect and Manage Data**

A Trimble monitoring system automatically manages measurement cycles, communications and the flow of incoming data. In addition to Trimble optical and GNSS sensors, Trimble 4D Control supports a wide variety of geotechnical instruments.

**Computations and Analysis**

Trimble 4D Control provides tools for rigorous analysis on your monitoring data. Your results arrive quickly and easily. And because the raw information is stored in an SQL database, it’s easy to extract your data for use in external applications.

**Visualization and Mapping**

Use Trimble 4D Control to create visual results using maps, charts and graphs. You can import photographs and aerial images to provide basemaps and backgrounds for real-time data on sensors and project status.

**Automated Alerts and Alarms**

You can define sets of conditions for alarms, including tolerances for displacement at any point. When needed, Trimble 4D Control sends alarms via SMS and email to specified stakeholders.