



MONITORING CATALOG 2026

stonex.it

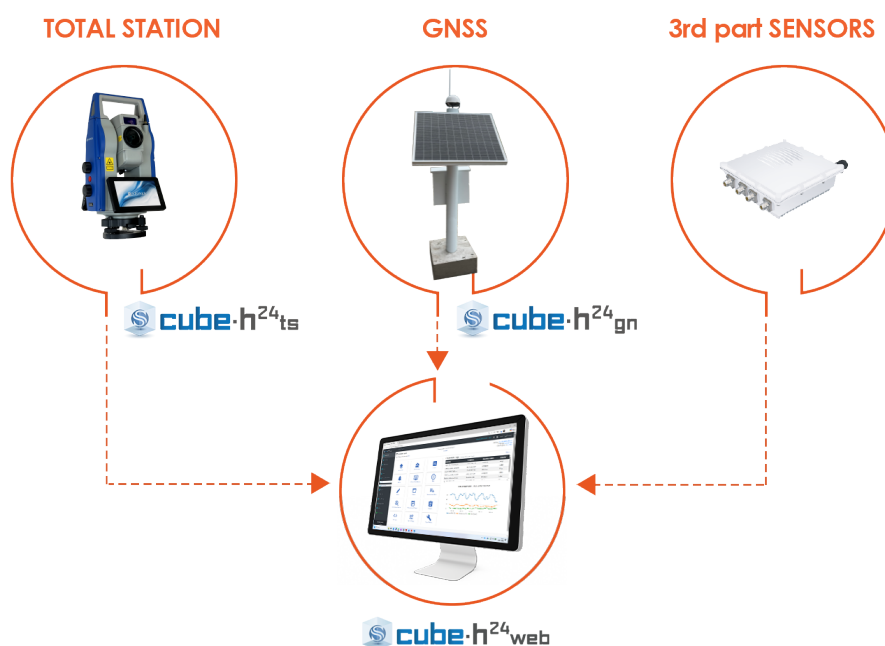
MONITORING

TOTAL STATION, GNSS AND SOFTWARE



Stonex provides advanced monitoring solutions for structural, geotechnical and environmental applications. Our systems are based on Robotic Total Stations and GNSS Receivers, enabling high-precision data acquisition for long-term deformation and stability analysis.

Total Station solutions provide millimetric accuracy for detecting structural displacements, while **GNSS systems** ensure continuous, global positioning for long-range monitoring. Both platforms support autonomous and scheduled measurements, long-term data archiving, real-time visualization through the **Cube-h²⁴ software suite**, and customizable alerts for critical thresholds.





TOTAL STATION SYSTEM

Ideal for high-precision deformation monitoring, this system enables automated or operator-assisted data collection using our Robotic Total Stations (available with 0.5" or 1" angular accuracy).

It supports both continuous and periodic measurements, offering millimetric accuracy for detecting structural movements. Data is securely stored for long-term analysis and can be visualized through intuitive interfaces provided by the **Cube-h²⁴ TS** monitoring software.



GNSS SYSTEM

Designed for applications requiring global positioning and long-range stability analysis, this system employs advanced GNSS receivers and antennas. These systems deliver continuous, high-precision geospatial data with real-time streaming capabilities, long-term storage, and seamless integration with **Cube-h²⁴ GN** software.



MONITORING SOFTWARE

Cube-h²⁴ is a software suite designed for monitoring applications, it gathers information about a selected site and allows surveyors and engineers to remotely evaluate the collected data. This software is developed for Microsoft Windows and Linux OS, it offers the possibility to download, manage, and process the data collected from one or more sensors installed on the monitoring site.



The presence of a web interface enriches the functionality of Cube-h²⁴. **Cube-h²⁴ WEB** allows the user to configure working parameters, review and publish the calculation results. This software will help operators, providing the best functions for data transferring, graphical visualization, and alarm system management.

TOTAL STATION

R180 MONITORING



R180 MONITORING TOTAL STATION

The R180 Monitoring is a high-precision, high-speed Android-based robotic total station. It is available with an angular accuracy of 0.5", making it suitable for a wide range of applications and user requirement.

TECHNICAL FEATURES	R180 Monitoring
ANGLE ACCURACY	0.5"
PRISM MEASUREMENT	6000 m
PRISM ACCURACY	0.8 mm + 1 ppm
REFLECTORLESS MEASUREMENT	1000 m
REFLECTORLESS ACCURACY	2 mm + 2 ppm
MAX ROTATION SPEED	180°/s
APC - TARGET AIMING RANGE	3000 m
DISPLAY	Two sides, 6" Color Touch LCD
OPERATING SYSTEM	Android
MEMORY (RAM/ROM)	3GB/32GB
DATA TRANSFER	4G, LR BT, WLAN, HOTSPOT
OPERATING TEMPERATURE	-20°C to +50°C
PROTECTION CLASS	IP65



Tdrive

The R180 Monitoring features Tdrive motor technology, providing a high rotation speed of 180°/sec, making it one of the most performant instruments in its class. Not only is it fast, but it is also remarkably quiet, with noise levels that are virtually imperceptible.

APC

The robotic total station is equipped with APC (Automatic Prism Centering) technology, enabling rapid and precise prism detection and centering at distance of up to 3000 m.

The advanced EDM technology integrated into the R180 Monitoring ensures fast, reliable, and highly stable distance measurements in all monitoring conditions. Designed for precision and efficiency, the system delivers outstanding performance for long-range measurements and demanding high-accuracy applications.

The instrument features a rotation speed of 180°/sec. Its quiet and smooth prism search and tracking capabilities are among its most notable and appreciated features.

Powered by the Android operating system, the R180 Monitoring allows users to access online services and interact with the touchscreen interface in a simple and intuitive way.



HIGH PRECISION AND PROFESSIONAL RESULTS

R180 Monitoring is available with an angular accuracy of 0.5". This feature ensures outstanding performance in applications requiring the highest level of measurement precision.



HIGH-PERFORMANCE EDM

R180 Monitoring is equipped with a high-performance EDM, enabling high-precision prism measurements with an accuracy of 0.8 mm + 1 ppm and a maximum range of up to 6 km. In reflectorless mode, the instrument measures distances up to 1000 m.



ANDROID ON BOARD

R180 Monitoring is equipped with an onboard Android operating system, enabling simple and intuitive management.

TOTAL STATION

RM100



RM100 RUGGED DATALOGGER & SOFTWARE

RM100 is a rugged data logger integrated with an industrial computer that communicates with the Total Station to measure desired targets, according to predefined schedule. It covers all aspects of the surveying measurement procedure and uploads the measurements to a database or FTP server.



24/7 AUTOMATED
TS MEASUREMENTS



SCHEDULED
FREQUENCY
OF MEASUREMENTS



REMOTE
CONTROL



AUTOMATIC DATA
UPLOAD TO THE
SERVER



AUTOMATIC
CALCULATIONS



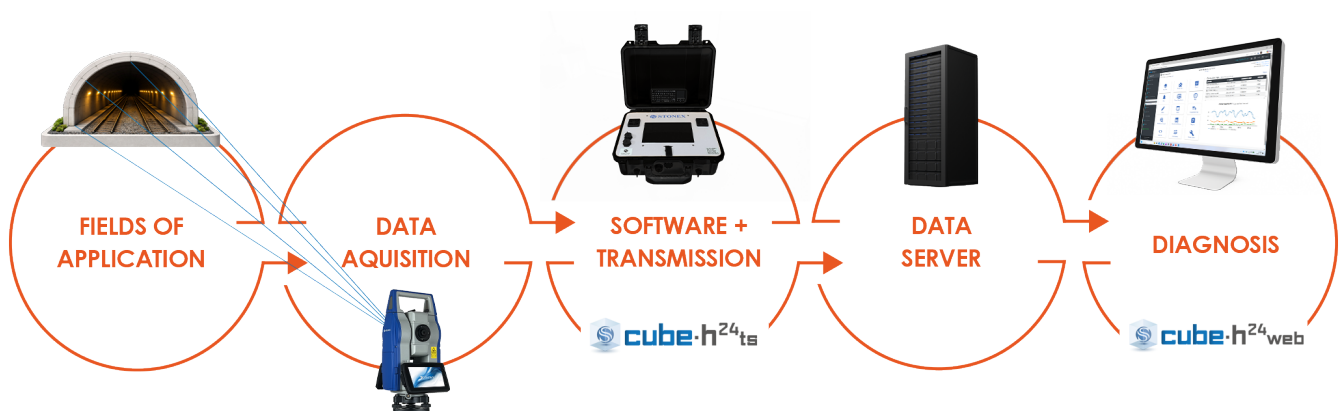
REPORTING AND
ALERTS

TECHNICAL FEATURES	RM100
OPERATIVE SYSTEM	LINUX
RAM	8 GB
STORAGE	128 GB
COMMUNICATION	WI-FI, 4G + GSM (DUAL SIM)
POWE SUPPLY	12V
SIZE	46 x 35 x 17 cm
WEIGHT	8 kg
OPERATING TEMPERATURE	-20° C TO +60° C
DUST AND WATER PROTECTION	IP65

A DEDICATED SOFTWARE FOR REMOTE MANAGEMENT

Cube-h²⁴ TS is a software solution designed for the remote management of total stations in monitoring applications. The software can be installed on various devices; however, to ensure reliable 24/7 performance, it is provided together with a rugged hardware unit RM100.

It enables advanced surveying configurations and measurement options, including the calculation of the total station position using a least squares adjustment and a remote orientation function. It also allows automatic correction of instrument orientation without the need for on-site intervention.



SUITABLE FOR PERIODIC OR CONTINUOUS OPERATIONS

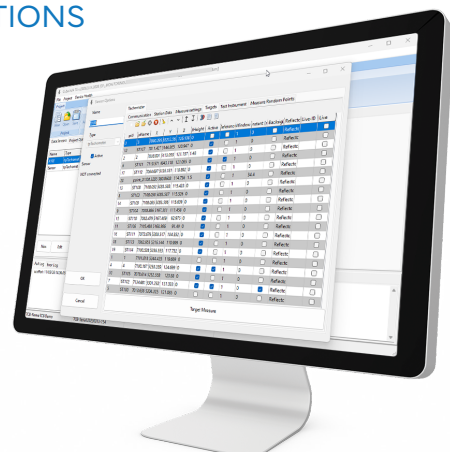
MULTI MEASUREMENT SETTING

DATA UPLOAD TO SERVER

REMOT CONTROL

ALARM AND REPORT

TOTAL STATION DIFFERENT BRANDS



GNSS

SC650



SC650 GNSS CORS

CORS receivers can be used for both new infrastructure deployments and integration into existing networks. It is possible to use CORS receivers as a rover for special applications and with several software solutions according to the customer's request.

The Stonex CORS are GNSS multi-frequency receivers designed to be used either as stand-alone Reference Stations or as part of a GNSS stations' infrastructure. Stonex CORS are typically used as NTRIP server and they represent an ideal solution for all applications that are based on GNSS data acquisition and processing; moreover, the stations also support the recording of raw data with a high frequency of acquisition.

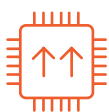
With different performance capabilities, the SC650 can adapt to a wide variety of applications, from static monitoring to dynamic surveying and positioning. The SC650 boasts numerous connection ports, including DB9 9pin, Ethernet, and an M12 connector. This unparalleled flexibility allows for easy integration with various systems and devices, ensuring seamless data exchange and simplified installation.



GPS, GLONASS,
BEIDOU
GALILEO, QZSS



CHANNELS
440+ / 800+



MULTIPLE
CONNECTION PORTS



MEMORY
INTERNAL 32 GB



GNSS

SA85 - SA1100



SA85 GEODETIC ANTENNA

SA85 is a compact GNSS geodetic antenna, perfect as a rover antenna, but with adequate performance for CORS installation and monitoring applications.

The SA85 has good phase center stability, effectively improves measurement accuracy and provides excellent positioning solutions. It is compatible with all GNSS geodetic receivers on the market and can be used for all static and kinematic measurement applications. The ability to receive low-elevation signals with high gain enables it to provide accurate and reliable positioning even under difficult conditions.

HIGH-PRECISION ANTENNAS

The Stonex family of GNSS antennas are designed to enhance and support the performance of Stonex receivers. The antennas receive GNSS multi-constellation signals.

The Stonex antennas can be used in land and marine surveying plus landslide and infrastructure monitoring, such as dams and bridges.



SA1100 MINI CHOKE RING ANTENNA

SA1100 is a Mini Choke Ring Antenna capable of tracking all satellite constellations, GPS, GLONASS, Galileo, BeiDou, QZSS, IRNSS as well as L-Band correction service, and is multi-frequency. This antenna has a high anti-interference function, making it perfect for operations in harsh environments. In addition, SA1100 has high gain even with low elevation signals tracking.

The SA1100 antenna adopts a unique ring structure that offers outstanding multipath suppression performance for satellite signal tracking. The stability of this antenna reaches submillimeter values, ideal for monitoring.

MULTI-CONSTELLATION



MULTI-CONSTELLATION

PHASE CENTER ± 2 mm



PHASE CENTER ± 1 mm

LIGHTWEIGHT - 450 g, $\varnothing$ 150 x 61 mm



STRONG - 1,9 Kg, $\varnothing$ 185 x 148 mm

IP67



IP67

GNSS

SM100



SM100 THE VERSATILE SOLUTION

The integration of the GNSS SC650 CORS receiver with a GNSS antenna results in the SM100 system configuration, delivering a complete and versatile GNSS monitoring solution.

The GNSS system consists of a receiver housed inside a rack or a rugged case, fully protected against weather conditions, and a high-precision antenna mounted externally on a pole or a small pillar.

Its modular design and wide range of configurations make it a versatile solution for any monitoring application, ensuring optimal performance in all conditions.

HIGH-ACCURACY AND CONFIGURATION FLEXIBILITY



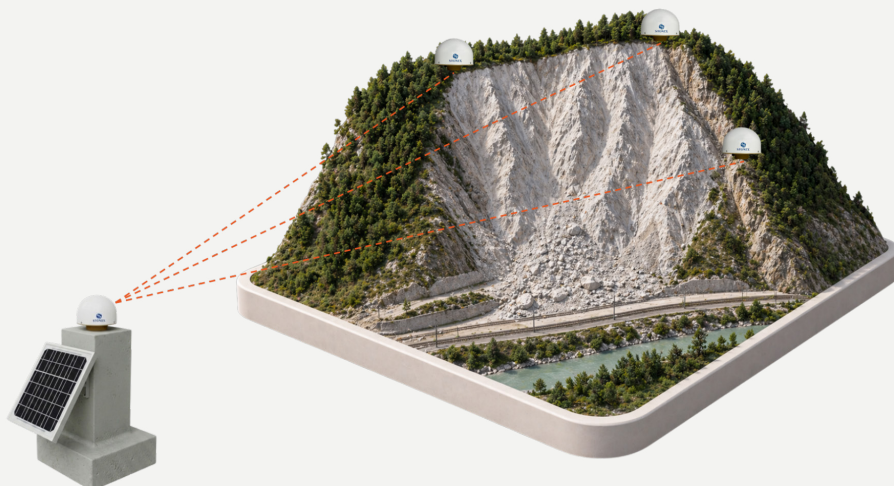
SM100 RACK



SM100 RUGGED



SM100 ARTIC

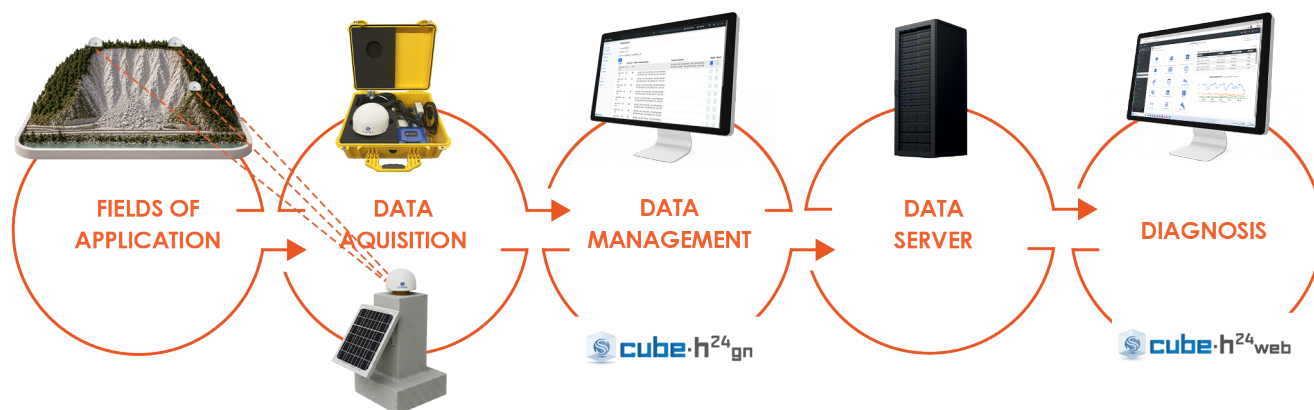


A COMPREHENSIVE PLATFORM FOR DATA PROCESSING

Cube-h²⁴ GN has been designed to manage GNSS CORS receivers data in order to monitor point displacements, in natural environments or man-made structures.

Monitoring points are implemented using dedicated solutions to ensure the sensor stability and achieve maximum accuracy with minimal noise.

The software automates post-processing operations, reading RTK data and saving to database.



PLANNED FOR AUTOMATED CALCULATIONS

WEB BASE APPLICATION

DESIGN SURVEY SCHEMA

SCHEDULER FOR AUTOMATIC CALCULATIONS

MULTI OPERATION SYSTEM

MULTI OPERATIONS PARALLEL

ROBUST ENGINE



GNSS

SM300



SM300 THE FULLY INTEGRATED SOLUTION

The SM300 is a high-performance GNSS receiver designed for precision monitoring and positioning applications. It simultaneously tracks GPS, GLONASS, BEIDOU, GALILEO, QZSS, and SBAS constellations, with PPP support (HAS and B2b PPP), utilizing 800 channels and a sampling rate of up to 20 Hz.

The receiver features 32 GB of internal memory, enabling the storage of more than two years of raw data with circular overwrite capability. Storage can be expanded via TF card up to 512 GB for extended data logging capacity. An integrated tri-axial MEMS accelerometer enhances the system's functionality, supporting structural and geotechnical monitoring applications in addition to GNSS positioning.

The SM300 incorporates onboard GNSS raw data processing technology for static position computation in post-processing mode. At the same time, it is capable of real-time positioning by receiving RTK corrections from a single base station or a permanent reference station network.



GPS, GLONASS,
BEIDOU
GALILEO, QZSS



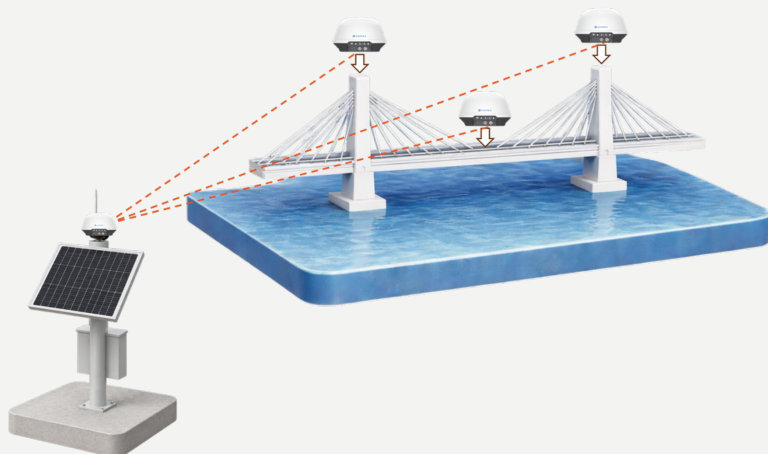
MEMS
SENSOR



ON BOARD POST
PROCESSING



MEMORY
INTERNAL: 32GB
EXTERNAL: UP TO 512 GB



SUITABLE FOR ALL MONITORING APPLICATIONS

SM300 is a fully integrated GNSS system designed for high-precision continuous monitoring applications. It is suitable for use in areas such as geological hazard monitoring, structural monitoring of buildings, bridges, quarry and mining control.

In addition to other specialized applications within the civil and environmental engineering sectors such as slope and highway infrastructure monitoring.

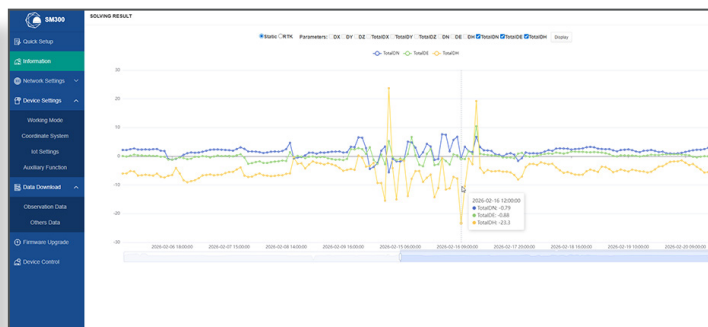
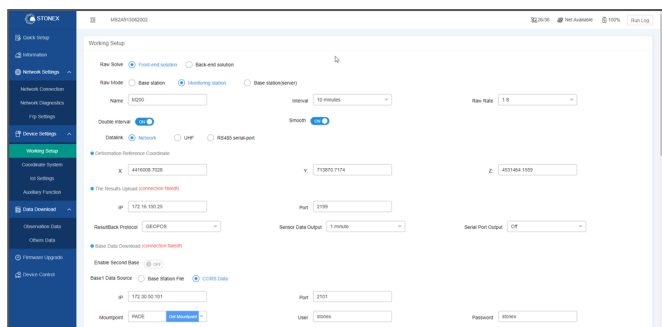


ONBOARD POST-PROCESSING CALCULATION

The receiver can receive RTK corrections from a single base station or a permanent reference station network, providing site analysis with one-second updates.

In addition, the system can perform onboard baseline post-processing using raw data from external stations.

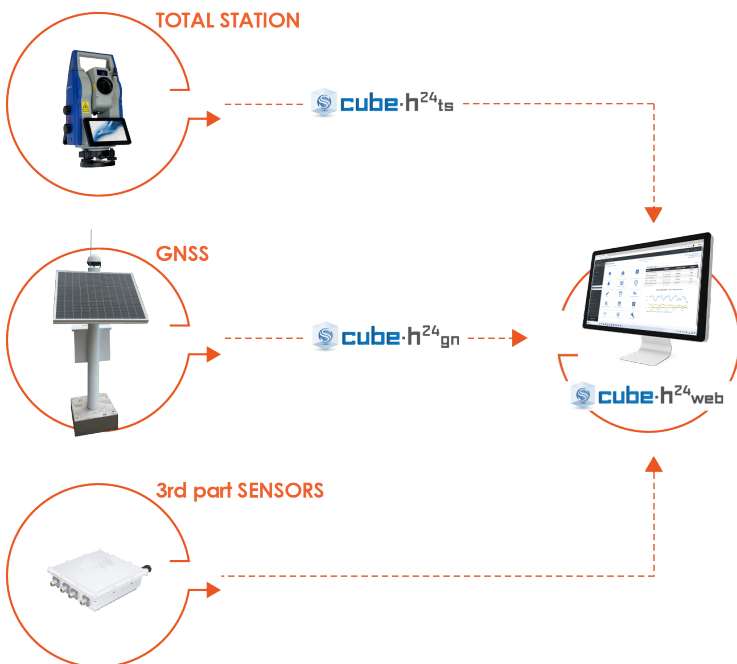
Results can be visualized graphically and published on a dedicated web page.



CUBE-H²⁴ WEB

DATA VISUALIZATION TOOLS FOR THE WEB

Cube-h²⁴ WEB is a monitoring tool designed for surveyors, geologists, civil engineers and more. It's the data publishing platform: a web-based application designed to inspect measurements from a variety of topographic, geotechnical and environmental sensors and supports several advanced features like real time alerting and an automated reporting system. It allows multiple projects to be managed and provides the correct information for interpreting site events to be monitored.



USER MANAGEMENT

SURVEYORS

FINAL CUSTOMER

SUPPORTED SENSORS

GEOTECHNICAL SENSORS:
piezometers, crackmeters, inclinometers,
vibrating sensors, load cells, load and
pressure cells, tilt meters, strain gauges,
extensometers, etc.

METEOSTATION

GEOLOGICAL DATA



ALERTS

Cube-h²⁴ WEB supports real-time alert management: specified users can receive alerts via e-mail or SMS for measurements that have exceed alert or alarm thresholds.

In order to avoid unnecessary alerts and panic, alerts can first reviewed by the project moderator to determine whether they correspond to actual events or false measurements.

PLAN VIEW

MULTI BACKGROUND MAPS

MEASUREMENTS

SENSOR ICONS AND DIRECT LINK TO CHARTS

VECTOR DISPLACEMENT HISTORY

VERTICAL DEFORMATION HISTORY

CUSTOM CHARTS



CHARTS AND REPORTS

The report section allows to generate automated reports based on a template that includes text, harts, data tables and images. These reports are designed to be produced dynamically on specific target dates set by a moderator of the project.

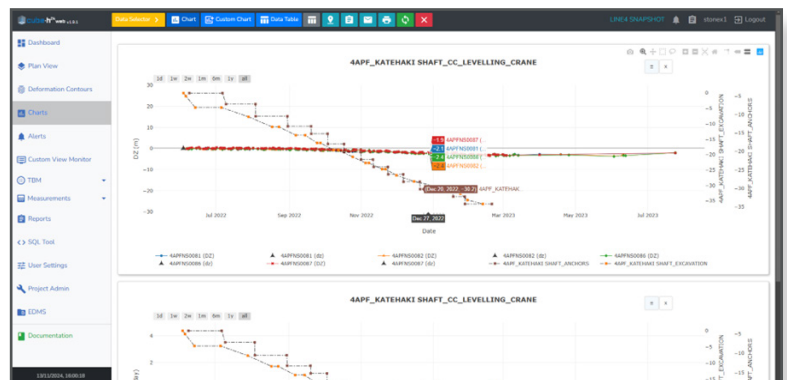
LONG TIME SERIES

DEDICATED CHARTS FOR SENSOR TYPE

MULTIPLE CHARTS FOR GROUP OF SENSORS

CUSTOM CHARTS FROM MULTIPLE SENSORS

CUSTOM VIEW FOR GROUP OF SENSORS



EUROPE HQ

Stonex is an Italian company, based near Milan. With over 200 qualified distributors worldwide, it is one of the world's leading companies in measurement and survey.

Stonex products combine the most advanced technologies with a practical design to simplify your daily work. Everyone's needs are met thanks to a team that is able to handle any pre- and post-sales request.

USA HQ

The Stonex Headquarters in North America is located in Concord, New Hampshire.

With the USA Headquarters as a base, Stonex has the opportunity to be closer to the needs of its American customers through greater territorial coverage and strengthening of global business.



DISCOVER MORE



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