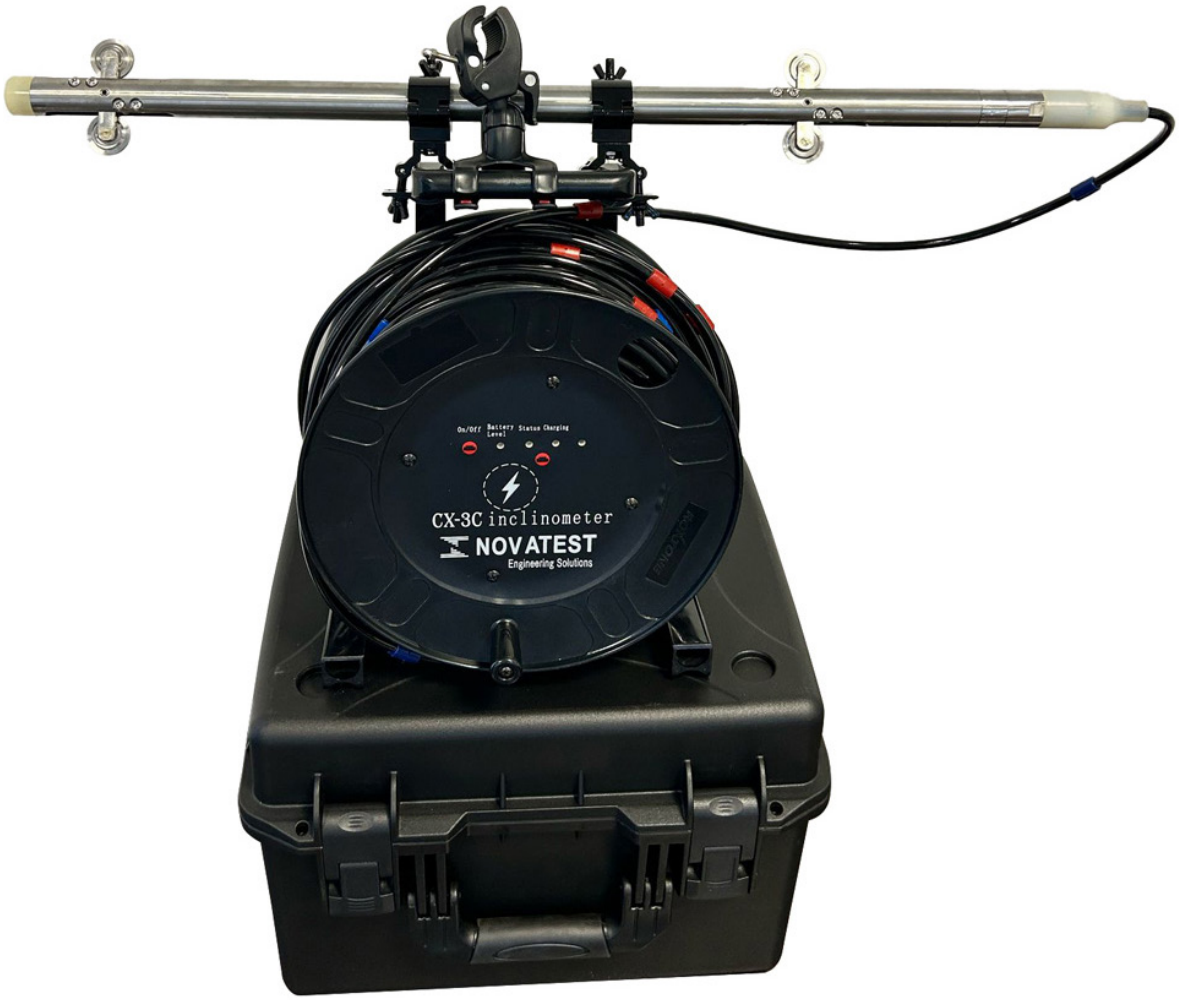
CX-3C
Borehole Inclinometer



NOVATEST
Engineering Solutions

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The **CX-3C** removable borehole inclinometer is a high-precision inclination detection system, designed for **geotechnical and structural monitoring**. It is particularly suitable for geological monitoring, construction, civil engineering, and other similar safety monitoring applications.

Main Product Features:

- MODBUS RTU protocol compliant
- Wide measuring range
- High precision
- Stable performance
- Solid and durable
- Easy maintenance

TECHNICAL FEATURES

Number of Axes	2
Measuring Range	±15° (±30° option available)
Cable	60m with a diameter of 8,40 mm
Output	RS485 (Modbus RTU protocol)
Power Supply	Voltage 8~30VDC
Repeatability	±0.003°
Accuracy	0.001° - 0.005°
Sensor Technology	MEMS
IP Protection Class	IP68
Probe Dimensions	28 mm x 790 mm (diameter * length)
External Dimensions	310 x 400 x 200 mm
Operating and Storage Temperatures	from-20 a +60° C
Continuous Working Time	10 hours
Typical Applications	Geotechnical and structural monitoring
Reference Standards	GB50026-2007 / ISO18674-3-2017

Accessories:

Standard Accessories:

- Wellhead Top Support: A mechanical device installed at the top of the borehole or guide casing. It serves as a stable reference point and support for the correct insertion and positioning of the inclinometer probe and cable. Its function is to ensure precise and repeatable insertion of the probe, protect the guide casing mouth, and facilitate measurement operations.
- Data Logger: An app installed on a Smartphone for collecting, storing, and transmitting inclination data measured by the probe. It includes an interface for connection to the sensor and for transferring data to a computer or remote monitoring system. Its function is to acquire and record inclination readings from the probe for subsequent analysis.
- Guides: Spring-loaded mechanical components mounted on the body of the inclinometer probe. They are designed to slide within the longitudinal grooves of the guide casing installed in the ground or structure. Their function is to ensure that the probe maintains a constant and precise orientation during descent and ascent in the guide casing, allowing for accurate and repeatable measurements along the entire borehole profile.
- Cable: A robust, graduated cable used to lower and raise the inclinometer probe inside the guide casing. In addition to supporting the probe's weight, it integrates electrical conductors for powering the probe and transmitting data to the reading unit. It allows positioning of the probe at specific depths and provides the electrical connection for data transmission.
- Inclinometer Probe: The heart of the system. It is a cylinder containing MEMS sensors capable of measuring inclination on two orthogonal axes with respect to the vertical. It is equipped with guide wheels for insertion into the casing. It measures angular deviations (inclinations) at different depths along the borehole profile, allowing for the determination of lateral displacement of the monitored ground or structure.
- Universal Joint: A flexible mechanical joint that connects segments of the probe or the probe itself to the cable or other components. It allows for a certain angular flexibility between the connected parts. This facilitates navigation of the probe through any minor curvatures or misalignments in the guide casing and reduces mechanical stress on connectors and the probe itself.
- Data Acquisition and Analysis Software: An app on a mobile device to download, display, process, and interpret the collected data. It can also function as a handheld device that connects directly to the probe or cable to display real-time readings and store them.

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- Carrying Case: A robust case designed to protect the probe, data logger, and other components during transport and storage.
- User Manual

Optional Accessories:

- Connection Tube/Extension: Segments of tube, usually of the same length as the probe or standard lengths (e.g., 1m, 2m, 3m), used to extend the overall length of the probe system in a fixed “in-place” installation, or to connect multiple probes in series. This allows monitoring at different predefined depths in a fixed system, or adapts the probe length to specific measurement needs.
- Guide Casing/Inclinometer Casing: A special tube, typically made of PVC, aluminum, or fiberglass, permanently installed in the ground, in a concrete structure, or in an embankment. It has internal longitudinal grooves (usually four, at 90° to each other) that guide the probe wheels. Its function is to provide stable access and a guided path for the inclinometer probe, ensuring that measurements are always taken in the same orientation and position along the vertical profile.
- Extension Cables and Connectors: Used to extend the range of the reading cable or for specific connections.