Instrumentation & Navigation

DIRECTRON

Compact Catalogue
2024

DIRECTRON
Direction of Perfection

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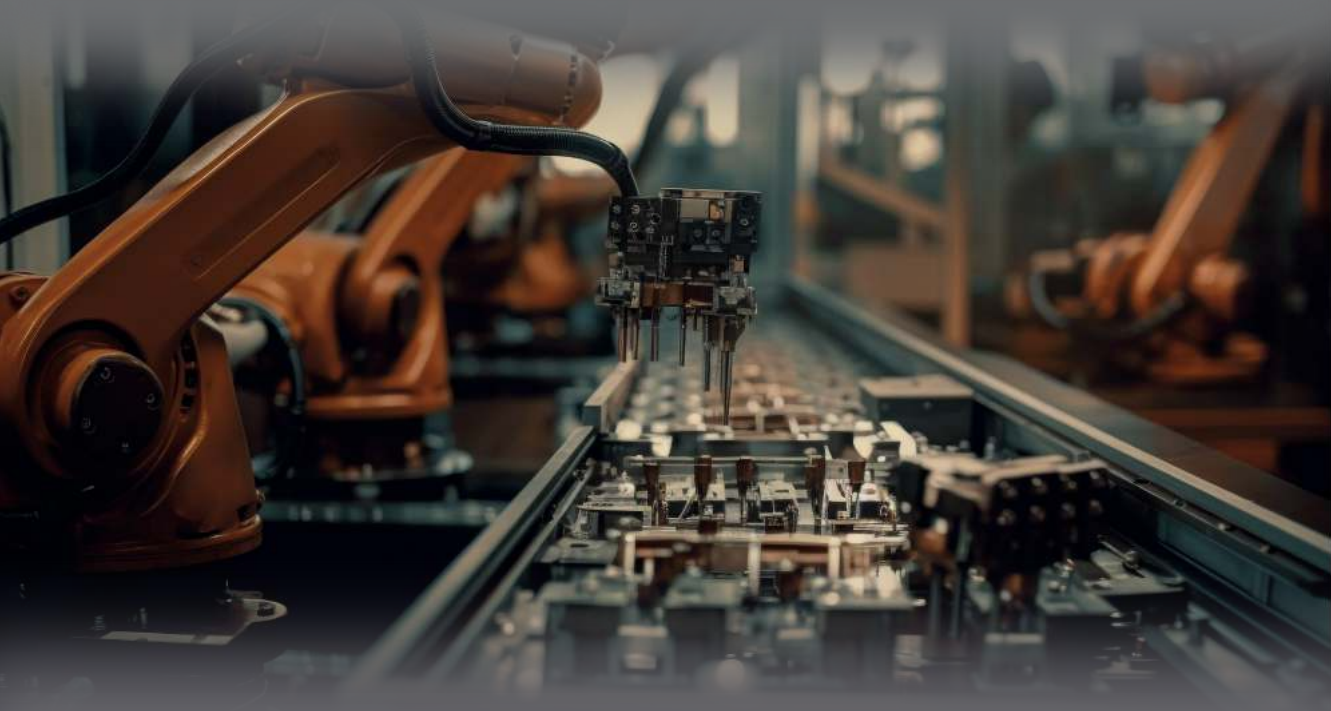
A Technological Revolution in Inclinometers' Reliability



About Us

"Directron" specializes in designing, manufacturing, and calibrating measuring devices utilizing microelectromechanical sensors (MEMS).
Through the parallel advancement of calibration technology and equipment, our team has made significant progress in localizing advanced measurement tools.
Alongside product development in precision instruments and navigation, "Directron" technical team excels in consulting and implementing projects within instrumentation systems.
With a relentless dedication to excellence, "Directron" strives to deliver top-notch MEMS-based inclinometers that meet the highest standards of accuracy and reliability. Our cutting-edge technology and meticulous attention to details ensure that our products provide unparalleled performance in a variety of applications. By choosing Directron, you are choosing a partner who shares your dedication to precision and quality. Join us on this path as we continue to lead the industry in innovation and customer satisfaction.

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HORIZON Inclinometer

Dual-Axis with Digital Output

Features

- MEMS-based
- Full range in two axes (X,Y).
- Accuracy maintaining throughout the range with 3D acceleration data processing.
- Accuracy of 0.015°.
- Compensated temperature -75 ~ +30°C or -85 ~ +40°C .
- Utilization of multi-factor temperature calibration technology.
- Maximum temperature error of 0.030°.
- Long-term stability of 0.02° per year.
- IP67 Standard.

Description

The HORIZON inclinometer, designed based on micro-electromechanical sensors (MEMS), is a two-axis static inclinometer that measures angles with the local horizon within ±5° | ±30° | ±90° with an accuracy better than 0.015°. The sensor is tailored for operational environments and maintains accuracy throughout the ±180° measuring range due to 3D acceleration data processing. Hence, HORIZON delivers highly accurate output information.

Primarily used in construction, mining, power plants, oil and gas industries, telecommunication infrastructure, power transmission lines, and geology, the HORIZON sensor monitors surface and structure slopes and orientations with a high precision. It boasts resistance to shocks and vibrations, connectivity to data monitoring systems, and the ability to measure various angles and slopes, making it valuable in technical applications.

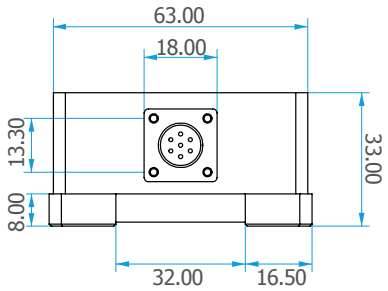
Utilizing multi-factor temperature calibration technology and temperature compensation based on the internal temperature sensor, HORIZON sensors achieve a high temperature stability compared to its competitors, with temperature error kept below 0.030° across the entire temperature range.

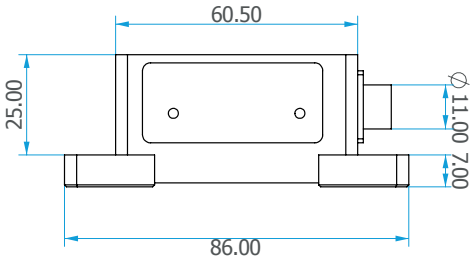
With resistance to electromagnetic interference and high long-term stability (0.02°/year), HORIZON sensors excel in noisy industrial environments. Another important and key features of this device, is its various outputs. HORIZON has RSΣΛo interface and based on customer's order, RS232 or CAN interface.

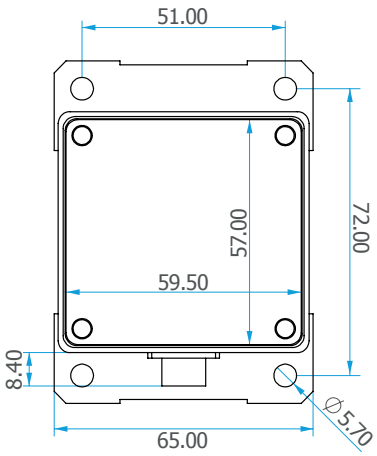
Product Specifications

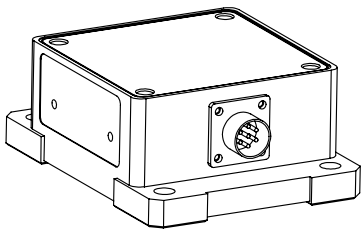
Measuring Axis	Dual Axis (X, Y)
Measuring Range	±90° | ±30° | ±5° (Based on Customer's Order)
Resolution	0.001°
Limits Of Error	0.015°
Maximum Temperature Drift	<0.03¢
Operating Temperature Range	-40~+85°C
Compensated Temperature Range	-30~+75°C
Long Term Stability	0.02°/year

Size Description

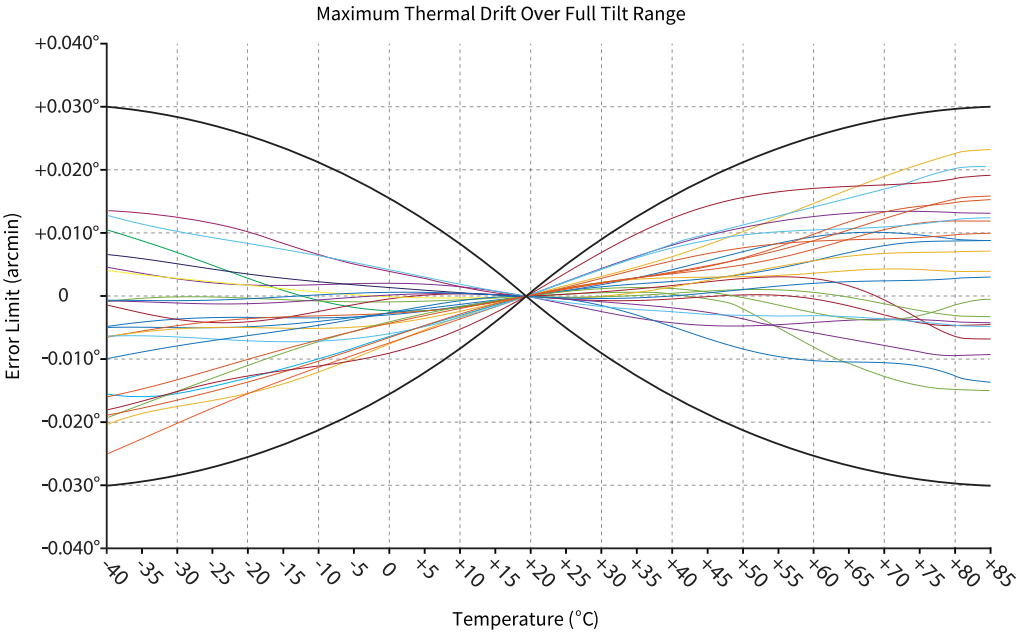








Temperature Profile



Some Applications

- Setting axes in CNC machines and industrial robots
- Deflection measurement of huge pipelines
- Dimensional quality control of parts in steel industry
- Accurate alignment in the installation of rail structures
- Calibrating linacs and other sensitive medical equipment
- Local terrain adjustment of radars
- Testing and control of tables with several degrees of freedom

HORIZON-U INCLINOMETER SENSOR

Dual-Axis with Digital Output

Features

- MEMS-based
- Full range in two axes (X,Y).
- Accuracy maintaining throughout the range with 3D acceleration data processing.
- Error limit of 10 arc seconds.
- The compensated temperature is - 30 ~ +75°C or - 40 ~ +85°C .
- Using "multi-factor temperature calibration" technology
- Maximum temperature error of one arc minute by combining data from multiple accelerometers.
- Long-term stability of 30 seconds of arc in ٦ months
- IP67 Standard

Description

The HORIZON-U sensor, designed based on the micro-electromechanical linear accelerometer (MEMS), is a two-axis static inclinometer that measures an angle to the local horizon at a range of ±5° with an accuracy better than 10 arc seconds.

The sensor is specially developed for operating environments and has been able to maintain its accuracy over the entire measurement range thanks to the use of "three-dimensional processing of accelerated data".

With the use of "Multi-Factor Temperature Calibration" Technology and temperature compensation based on the internal temperature sensor, HORIZON-U sensors have been able to achieve the highest temperature stability among all commercial inclinometers in the world and maintain the temperature error in the entire temperature range less than 1 arc minute.

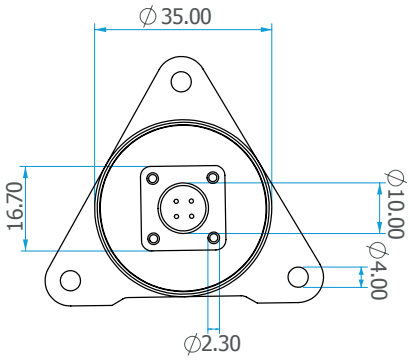
Resistance to electromagnetic interference and high long-term stability have made these sensors perform acceptable in industrial environments.

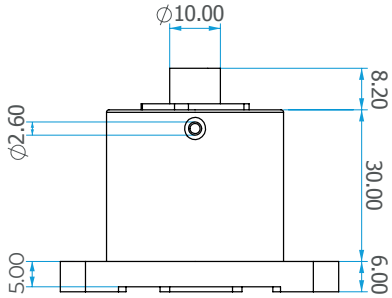
The HORIZON-U sensor is suitable for stationary platforms and does not perform well in accelerated systems.

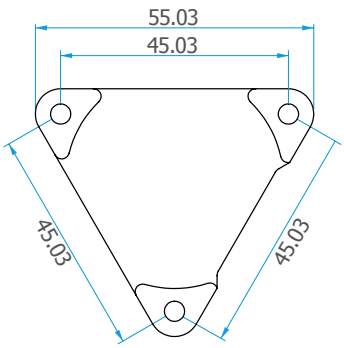
Product Specifications

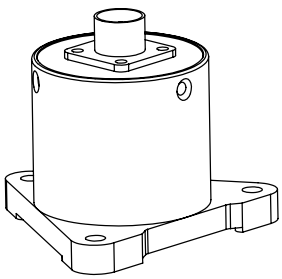
Measuring Axis	Dual Axis (X, Y)
Measuring Range	±5°
Resolution	1 arcsec
Limits of Error	10 arcsec
Maximum Temperature Drift	< 1 arcmin
Operating Temperature Range	- 40 ~ +85℃
Compensated Temperature Range	(-30~ +75℃) or (-40 ~+85℃)(Based on Customer's Order)
Long Term Stability	< 30 arcsec / 6 months

Size Description

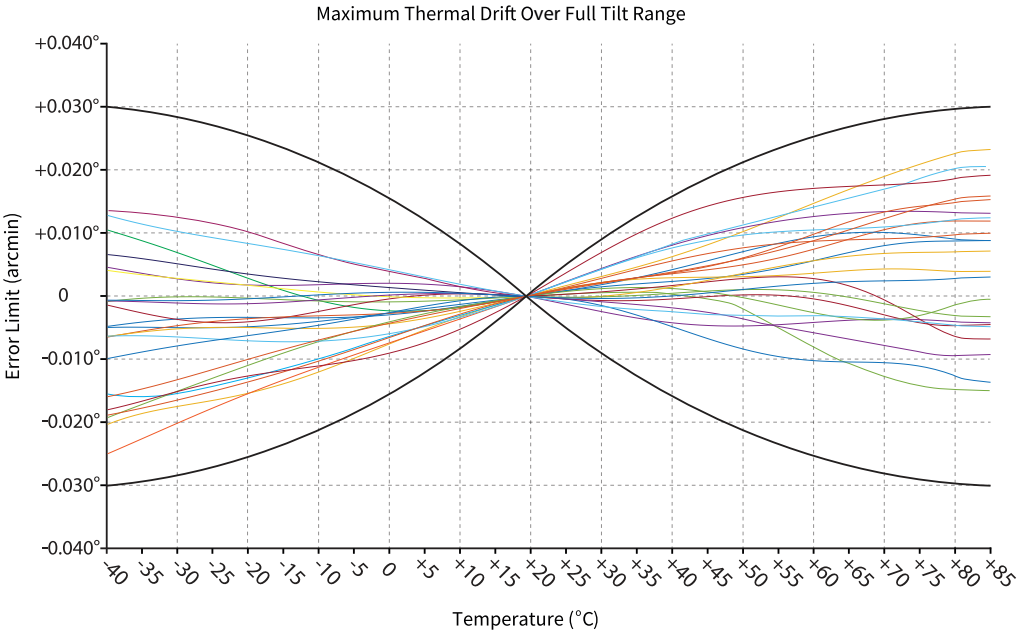








Temperature Profile



Some Applications

- Highly accurate alignment for various machining equipment
- Elimination of long-standing errors in inertial measurement units
- Behavior of large-scale building structures
- Alignment and calibration of radar and satellite ground stations
- Vertical angle monitoring for wind turbines and telecommunications docks
- Solar panel angles
- Alignment and monitoring of deviation in large-scale pipelines
- Measuring slope in structures
- Altimetry for construction equipment
- Monitoring changes in vehicle orientation

PRESTINE-N DIGITAL INCLINOMETER

High-Accuracy with Digital Display

Features

- Full-range measurement in two axes.
- Quick calibration capability by the user. (User Quick Calibration).
- 2.4" Touch screen.
- The measurement accuracy is 0.030° and the resolution is 0.001° .
- Accuracy throughout the range with "3D Acceleration Data Processing".
- Temperature compensation in the entire operating range (0~40°).
- More than ten hours of continuous work with a single charge.

Description

The PRESTINE-N inclinometer is a two-axis hand-held inclinometer designed to measure the slope of the surface in the range of ±180° with an accuracy of better than 0.030°. To use this device, the user usually connects it to the surface where he wants to measure its slope or angle, then the device shows the information related to the slope or angle through a digital screen.

Absolute and relative measurement, temperature compensation and fast calibration capability have made it a reliable product for operational environments and industrial applications.

PRESTINE-N is used in various industries with its impressive technical capabilities and reasonable price compared to competitors. For example, this digital inclinometer is used in the construction industry to measure the slope of roofs or horizontal surfaces, in geological sciences to measure the slope of mountains and land surfaces, and even in mechanical engineering to control the slope of various parts.

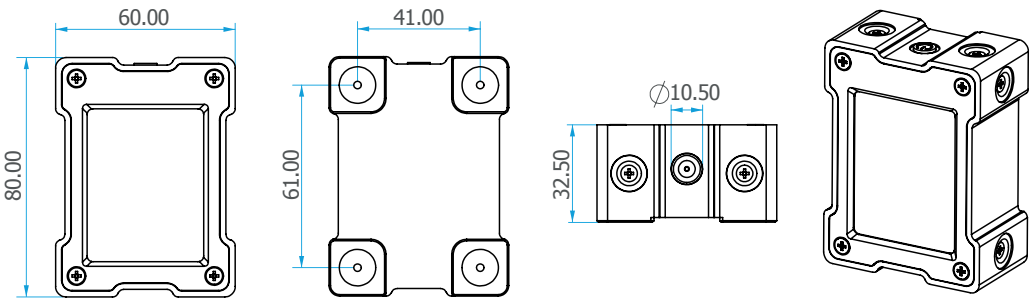
Thanks to the low consumption design, intelligent energy storage and the use of 1500 mAh lithium-ion battery, you can use PRESTINE-N for more than 10 hours with each charge. The 2.4" touch screen and graphical user interface, measurement in units of degrees and seconds of arc, and the ability to change the resolution and quick response are among the features that make measurement with PRESTINE-N easier.

By using microelectromechanical sensors (MEMS) and "3D processing of acceleration data",PRESTINE-N inclinometers have been able to keep their accuracy constant throughout the measurement range of ±180° . Also, thanks to temperature compensation and the use of "multi-factor temperature calibration" technology, the temperature drift of the device is less than 0.030° in the entire temperature range (0-40°C).

Product Specifications

Measuring Axis	Dual Axis (X, Y)
Measuring Range	±180°
Resolution	0.001°
Limits of Error	0.030°
Maximum Temperature Drift	< 0.030° over 0~+40°C
Compensated Temperature Range	0~+40°C
Battery	1500mAh Rechargeable Lithium Ion Battery | 10 Working Hours
Display	2.4" Touch & Resistive TFT LCD 240*320 Pixels| Full-color
Features	Small Size, Auto-sleep, Auto-Power Off, Smart Filter, Plane mode, 12 Neodymium magnets in 5 Reference Side

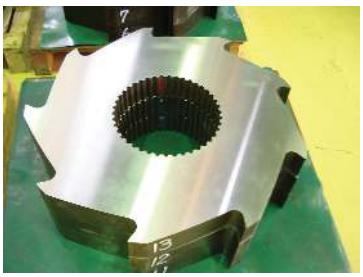
Size Description



Some Applications

- Setting axes in CNC machines and industrial robots
- Deflection measurement of huge pipelines
- Dimensional quality control of parts in steel industry
- Accurate alignment in the installation of rail structures
- Calibrating linacs and other sensitive medical equipment
- Local terrain adjustment of radars
- Testing and control of tables with several degrees of freedom



PRESTINE DIGITAL INCLINOMETER

Dual-Axis with Digital Output

Features

- Quick calibration capability by the user (User Quick Calibration).
- 2.8‟ Touch screen.
- The measurement accuracy is 0.030° and the resolution is 0.001°.
- Accuracy maintaining throughout the range with "3D Acceleration Data Processing“.
- Temperature compensation in the operating range (0~50°).
- Ability to connect with HORIZON and HORIZON-U sensors.

Description

The PRESTINE Edigital inclinometer is a two-axis hand-held inclinometer designed to measure the slope with an accuracy of 10 seconds of arc in the range of ±5° and an accuracy of 1 arcmin in the range of ±180°. Temperature compensation, fast calibration capability and the ability to being connected with HORIZON and HORIZON-U series have made PRESTINE digital inclinometer a reliable product for operational environments.

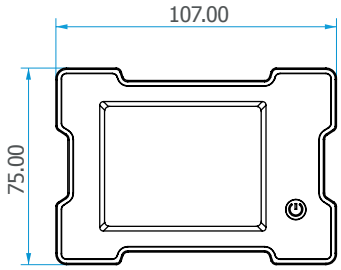
Thanks to the low-power design, intelligent energy storage and the use of a 3600 mAh lithium-ion battery, you can use the device for more than 36 hours with each charge. Taking advantage of 2.8” touch screen, graphical user interface and measurement in degree and arcsecond units is some of the features that make measuring with PRESTINE easier.

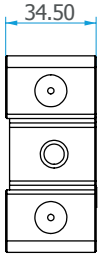
Using micro-electromechanical sensors (MEMS) and "3D Acceleration Data Processing", PRESTINE inclinometers have been able to maintain their basic accuracy throughout the measurement range. Also, thanks to temperature compensation and the use of "multi-factor temperature calibration" technology, the temperature drift of the device in the entire temperature range (0~50°C) is less than one arc minute.

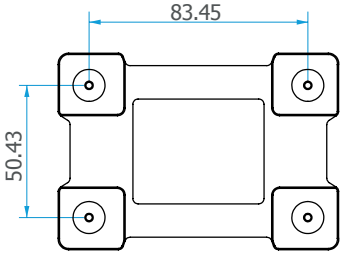
Product Specifications

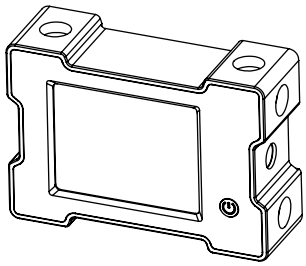
Measuring Axis	Dual Axis (X, Y)
Measuring Range	±180°
Resolution	0.001°
Error Limit	10 arcsec in ±5° (S-mode) 1 arcmin in ±180°(Full range-mode)
Maximum Temperature Drift	< 0.030° over 0~+50°C
Compensated Temperature Range	0~+50°C
Battery	3600mAh Rechargeable Lithium Ion Battery | 36 Working Hours
Display	2.8" Touch & Resistive TFT LCD 240*320 Pixels | Full-color

Size Description









Some Applications

- Setting axes in CNC machines and industrial robots
- Measuring deflection of large pipelines
- Quality control of parts in the steel industry
- Precise alignment in the installation of rail structures
- Calibrating linacs and other sensitive medical equipment
- Adjusting local terrain for radars
- Testing and controlling tables with multiple degrees of freedom







Get It Level with DIRECTRON!

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