Horizon Pico Inclinometer

DESCRIPTION

The HORIZON PICO is a compact dual-axis inclinometer built on advanced MEMS linear accelerometer technology. It measures angles relative to the local horizontal with an accuracy better than 0.02° across the LS and FS ranges. With an internal temperature sensor and advanced thermal calibration, it provides excellent thermal stability, maintaining a maximum temperature error of just 0.030° over the –30°C to +70°C operating range.

Engineered for demanding industrial environments, the HORIZON PICO offers strong resistance to electromagnetic interference, shock, and vibration, ensuring long-term reliability.

Designed for non-accelerating platforms, its compact form factor makes it particularly suitable for robotics and industrial systems. Using 3D acceleration processing, it maintains consistent accuracy throughout the full measurement range.

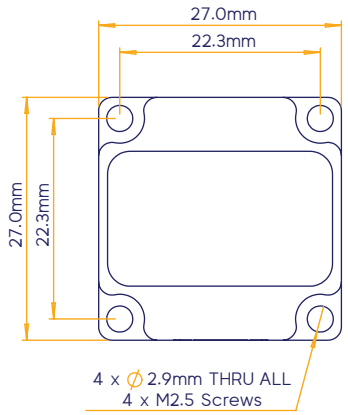
It integrates easily into monitoring systems and provides continuous angle and inclination data, making it a practical solution for a wide range of technical applications.

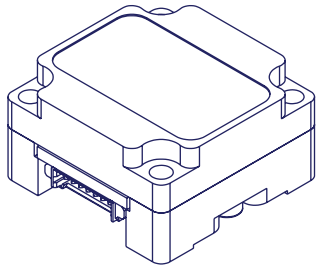
The HORIZON PICO is widely used in drilling and cutting equipment, construction, mining, power generation, oil and gas, telecommunications, power transmission, geology, and other fields requiring precise inclination and structural orientation monitoring.

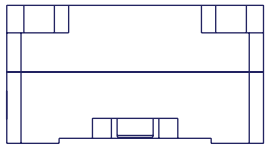
Features

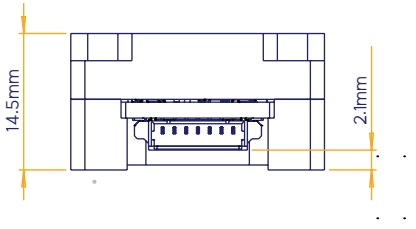
- Dual-axis measurement over the full range: LS: ±10°, FS: ±90°
- Absolute accuracy: 0.02°
- Resolution: 0.001°
- Maintains accuracy across the full range using 3D acceleration data processing
- Temperature compensation from -30℃ to +70℃
- Maximum temperature error: 0.030°over the -30℃ to +70℃ range
- MEMS-based sensing technology
- Supports RS485 communication interface

Dimension Specifications:









Technical SPEC

Parameter	Value (FS)	Value (LS)
Axis	Dual-Axis (X,Y)	Dual-Axis(X,Y)
Range	±90°	±10°
Resolution	0.001°	0.001°
Repeatability	0.001°	0.001°
Accuracy	0.02°	0.02°
Temperature Drift (Delta From 20°C) *Mv:Measured Value	±0.0006 °/°c	±(0.01% Mv+0.0001)°/°c
Compensated Temperature	-30°c ~ +70°c	-30°c ~ +70°c
Response Time	0.35 s	0.35 s
Long Term Stability (After 1 Year) *Mv:Measured Value	± (0.05 % Mv + 0.025 °)	± 0.015°

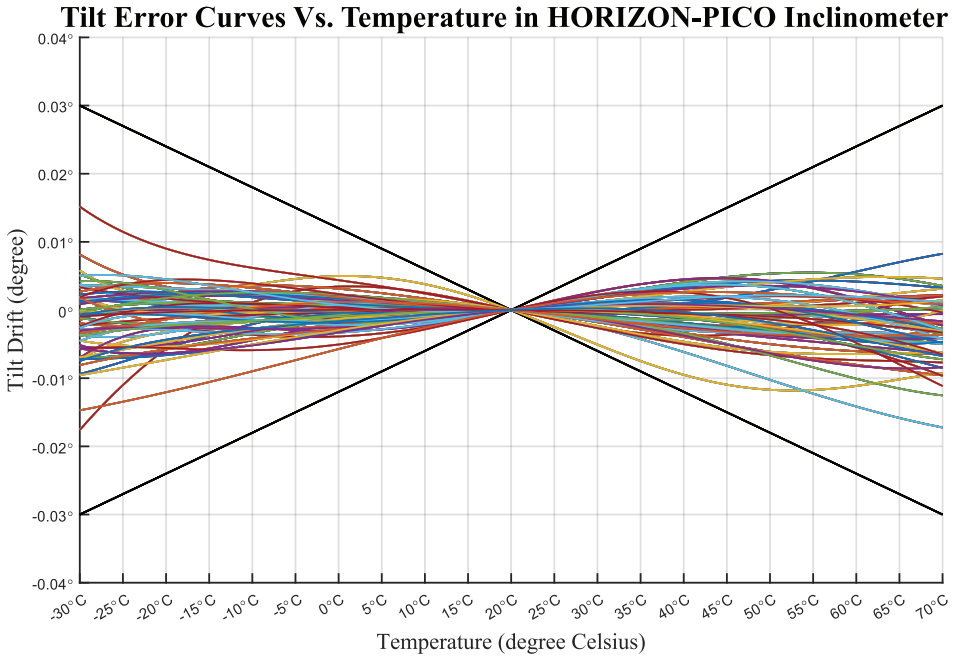
Electronic SPEC

Parameter	Value	Unit
External Power Supply	3.3	V
Current Consumption	40 @ 3.3V	mA
Startup Time	1	s
Digital Output	RS485	
Sampling Rate	RS485 12.5 Hz (Default) in continuous mode (LS) RS485 4 Hz (Default) in continuous mode (FS)	
Output Data Rate	115200 bit/sec (Default)	
Frame Data Structure	ASCII Modbus / RTU Modbus / String	
Connector	Molex PicoBlade 1.25mm - 7 Pin	
Cable Specifications	Female cable compatible with Molex PicoBlade 1.25mm-7Pin	

Mechanical & Environmental SPEC

Parameter	Value	Unit
Dimensions	27x27x14.5	mm
Material	Hard Anodized Aluminum	-
Weight	21	gr
Installation Method	Bolt and Nut (M2.5)	-
Operating Temperature	-30 ~ +70	°c
Storage Temperature	-40 ~ +80	°c

TEMPERATURE SPECIFICATIONS



APPLICATIONS

- Monitoring and measuring the inclination of surfaces with difficult access relative to the local horizon or other reference surfaces.
- Monitoring the angle of axes in industrial robots, drilling tools and cutting tools
- Adjusting the installation angle of radio transmitters and receivers relative to the local horizon.
- Monitoring and leveling multi-degree-of-freedom tables.
- Installation and monitoring of rail structures.