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4-in-1 Dynamic inclinometer ISen-H401

Datasheet

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Product Overview

ISen-H401 4-in-1 dynamic inclinometer is a high-performance measuring device that integrates3-axis ultra-low noise acceleration output, 3-axis angular rate output, 3-axis angle output and temperature output. It maintains ultra-high measurement accuracy over a wide operating temperature range. A high-speed microprocessor performs linear modulation and temperature compensation to ensure data accuracy and reliability.

ISen-H401 is mainly applied in vibration monitoring, tower monitoring, overturn protection, tilt alarm and other fields. For example, it can accurately measure wind turbine tower sway, foundation settlement, tower vibration, tower inclination and tower top deflection, providing strong support for the safe operation and structural health monitoring of wind turbines.

Main Features

- Ultra-high precision multi-parameter measurement
- Ultra-low noise and ultra-high resolution
- Advanced temperature compensation algorithm with ultra-low drift
- Ultra-low power consumption and wide power input range
- Excellent electromagnetic compatibility and safety protection

Technical Parameters

Product name	4-in-1 dynamic inclinometer
Model	ISen-H401
System configuration	4-in-1 dynamic inclinometer installed at both tower top and tower base
Attitude angle	
Number of axes	Heading, roll, pitch
Range	±90°
Dynamic accuracy	Roll & pitch: ±0.1°; heading: ±0.2°
Static accuracy	Roll & pitch: ±0.005°
Zero temperature drift	0.0011°/℃
Resolution	0.001°
Angular velocity	
Number of axes	Heading, roll, pitch
Range	±250°/s
Zero bias stability (10s averaged)	≤13°/h
Zero bias instability (Allan variance)	≤8°/h
Full-temperature bias (10 s averaged)	≤0.08°/s
Scale factor error	≤2‰
Acceleration	
Number of axes	3-axis acceleration
Range	±4g
Zero bias stability (10s averaged)	≤0.12mg
Zero bias instability (Allan variance)	≤65ug

Full-temperature bias (10 s averaged)	≤3mg
Scale factor error	≤3‰
Temperature	
Temperature compensation	Yes
Range	-40 ~ +125 °C
Temperature resolution	±0.5 °C
Electrical parameters	
Output refresh rate	50 Hz
Linearity	±0.003°
Repeatability	±0.002°
Shock limit	1000g
Supply voltage	10 - 24 Vdc
Insulation resistance (@100Vdc)	>100 MΩ
Power-on time	<100 mSEC
Environmental conditions and structure	
Operating temperature	-40 ~ +85 °C
IP grade	IP67
Housing dimensions (L x W x H)	90*50*23.5mm
Weight (excluding cables)	<200 Gram
Housing material	Oxidized aluminum alloy
Connector (if applicable)	M8X1.0,5-PINS SOCKET

Product Dimension Diagram

Dimensional drawing: