

# HI50 Series

## Industrial-Grade Inclinometer



The HI50 series is a small-sized, high-performance inclinometer module with a robust waterproof enclosure

### Product Advantages

#### Hardware

- Industrial Redundant Sensor
- Smart Production System, Traceable Products
- Multiple Interfaces: RS-232/RS-485/CAN
- IP68 , Operating Temperature: -40 to 85° C
- Factory Calibration, Exceptional Consistency

#### Software

- Excellent dynamic performance
- Up to 200Hz Data Output
- Dynamic 0.2°、Static 0.1°

#### Certification

- RoHS, CE Certified

HI50 series is equipped with advanced industrial-grade MEMS inertial devices and self-developed extended Kalman filtering and IMU noise dynamic analysis technology, providing users with angular sensors, which can meet the accuracy and response of attitude angle under high dynamics

We have rich experience in many industries, and our products can be used in AGV, robotics, construction machinery and other industries



AGV/AMR



Engineering Machinery

### Product Selection

#### HI50ab-c-d-e

HI Company	a Sensor	b TC	c Interface	d Mode	e Install and range
14 Product Line	M0 1XIMU R1 2XIMU	N Without TC T With TC	232 RS-232 485 RS-485 CAN CAN 2.0	D11 1-dimension dynamic single M12 interface D11 2-dimension dynamic single M12 interface D22 2-dimension dynamic dual M12 interface	V0 Vertical D11: 0-360° D21/D22: X ±180° Y ±85° H0 Horizontal D21/D22: X ±180° Y ±85°
e.g.:HI50R1N-CAN-D21-V0		TC:Temperature Compensation			

### Product Parameters

#### Parameters

Dimension	1	2
Install	Vertical	Horizontal /Vertical
Angle range	0-360°	X ±180° Y ± 85°
Accelerometer range	±6g	±6g
Gyroscope range	500° /s	500° /s
Resolution	0.01°	0.01°
Accuracy	Dynamic 0.2° Static 0.1°	Dynamic 0.2° Static 0.1°

## Electrical

Input voltage Vs	6-50VDC
Power consumption	<350mW
Power short-circuit protection	Support
Reverse polarity protection	Support
Certification	EMC 2014/30/EU RoHS 2011/65/EU
Data frame rate	0-200Hz
Interface	RS-232/RS-485/CAN
Power-up time	<1S

## Mechanical

Connector	1XM12	M12 A 5 Male
	2XM12	M12 A 5 Male M12 A 5 Female
Weight		<90g
Dimension	1XM12	63.5*45*22mm
	2XM12	77*45*22mm
Operating Temperature		-40-85°C
Enclosure Material		Aluminum Alloy
IP		IP68

## Connector Definitions

### M12A 5 Male

	1	2	3	4	5
	Brown	White	Blue	Black	Grey
RS-232	SGND	Vs	GND	RXD	TXD
RS-485	485 GND	Vs	GND	485 A	485 B
CAN	CAN GND	Vs	GND	CAN H	CAN L

### M12A 5 Female

	1	2	3	4	5
	Brown	White	Blue	Black	Grey
RS-232	SGND	Vs	GND	RXD	TXD
RS-485	485 GND	Vs	GND	485 A	485 B
CAN	CAN GND	Vs	GND	CAN H	CAN L

## Cable

Applicable Models

Suitable for HI50 series



Suitable for HI50 series RS-232



Suitable for HI50 series dual M12



## Default Data Cable

## Code

M12 A 5 Pin Straight Female Connector to DB9 Female with External Power Cable 3m PUR	M12A-05SF-03U+DB9F_O
M12 A 5 Pin Straight Female Connector to Open 3m PUR	M12A-05SF-03U+OPEN
M12 A 5 Pin Straight Female Connector to M12 A 5 Pin Angle Male Connector	M12A-05SF-M12A-05SM-03U

You can choose cable lengths of 0.5m, 1m, 3m, and 5m. If you need different lengths or interface information, please get in touch with our technical support at [support@hipnuc.com](mailto:support@hipnuc.com).



## Product Ordering

### 1-dimension



P/N	Name	Specifications
HI50R1N-232-D11-V0	1-Dimension Dynamic Inclinometer	0-360°
HI50R1N-485-D11-V0	1-Dimension Dynamic Inclinometer	0-360°
HI50R1N-CAN-D11-V0	1-Dimension Dynamic Inclinometer	0-360°

### 2-dimension 1XM12



P/N	Name	Specifications
HI50R1N-232-D21-V0	2-Dimension Dynamic Inclinometer	X ±180° Y ±85°
HI50R1N-232-D21-H0	2-Dimension Dynamic Inclinometer	X ±180° Y ±85°
HI50R1N-485-D21-V0	2-Dimension Dynamic Inclinometer	X ±180° Y ±85°
HI50R1N-485-D21-H0	2-Dimension Dynamic Inclinometer	X ±180° Y ±85°
HI50R1N-CAN-D21-V0	2-Dimension Dynamic Inclinometer	X ±180° Y ±85°
HI50R1N-CAN-D21-H0	2-Dimension Dynamic Inclinometer	X ±180° Y ±85°

### 2-dimension 2XM12



P/N	Name	Specifications
HI50R1N-CAN-D22-V0	2-Dimension Dynamic Inclinometer	X ±180° Y ±85° 2XM12
HI50R1N-CAN-D22-H0	2-Dimension Dynamic Inclinometer	X ±180° Y ±85° 2XM12
HI50R1N-485-D22-V0	2-Dimension Dynamic Inclinometer	X ±180° Y ±85° 2XM12
HI50R1N-485-D22-H0	2-Dimension Dynamic Inclinometer	X ±180° Y ±85° 2XM12