

HI12 SERIES

Low-cost Heading-Enhanced MEMS-IMU/VRU/AHRS

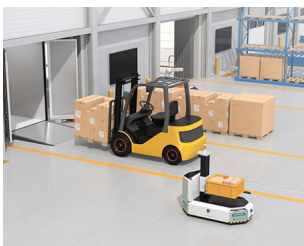


The HI12 series is an IMU/VRU/AHRS sensor based on MEMS-IMU technology, equipped with independently developed adaptive extended Kalman filtering, IMU noise dynamic analysis algorithm, and carrier motion state analysis algorithm, capable of providing users with precise IMU and attitude information

FEATURES

- Compact size, high performance
- UART/CAN interface
- Temperature compensation and turntable calibration
- Extended Kalman Fusion for precise IMU/VRU/AHRS
- Accurate synchronization signal, supports PPS and UTC/GPRMCtime sync
- Maintains high accuracy under high vibration conditions

APPLICATIONS



AGV/AMR



Inspection Robots



Humanoid Robots



Autonomous Delivery

PRODUCT

MODEL

HI12a-b-c-d ¹					
Company	Series	a-Sensor	b-Interface	c-Connector	d-OEM
HI	12	M0 6DoF 3° /h 30ug	MI0 2xUART	0 Molex 5015680807	00 Default
		H1 6DoF 2° /h 30ug	MI1 UART+CAN	1 BTB Connector	XX OEM
		H3 6DoF 2° /h 18ug			
		S2 6DoF 1.5° /h 10ug			
		S3 6DoF 1.5° /h 10ug+Magnetic			

Note1:Model Sample:HI12H3-MI1-000

The HI12HX series is equipped with a high vibration-resistant single-axis gyroscope.

SPECIFICATIONS

Gyroscope

Range	HI12M0	Up to $\pm 2000^{\circ} / s$
	HI12HX	$XY \pm 2000^{\circ} / s$ $Z \pm 400^{\circ} / s$
	HI12SX	Up to $\pm 4000^{\circ} / s$
Bias Instability	HI12M0	$3^{\circ} / h$
	HI12HX	$2^{\circ} / h$
	HI12SX	$1.5^{\circ} / h$
Bias Stability	HI12M0	$10^{\circ} / h$
	HI12HX	$4^{\circ} / h$
	HI12SX	$3.5^{\circ} / h$
Noise Density	HI12M0	$0.015^{\circ} / s / \sqrt{Hz}$
	HI12HX	$0.08^{\circ} / s / \sqrt{Hz}$
	HI12SX	$0.02^{\circ} / s / \sqrt{Hz}$
Bandwidth(3dB)		Up to 400Hz
Note1: HI12SX Support up to 400hz bandwidth		

Interface

Communication	2xUART/UART+CAN
Protocols	Binary/Modbus/CANopen/J1939
Output Frequency	Up to 1000Hz
SYNC	SYNC_IN、PPS、SYNC_OUT

Note1: The HI12 CAN communication for board-to-board connectors requires an external CAN transceiver, such as the TJA1044

Accelerometer

Range	HI12MX/HI12HX	\pm Up to 24g
	HI12SX	\pm Up to 32g
Bias Instability	HI12M0/HI12H1	0.03mg
	HI12H3	0.018mg
	HI12SX	0.01mg
Bias Stability	HI12M0/HI12H1	0.07mg
	HI12H3	0.035mg
	HI12SX	0.012mg
Noise Density	HI12M0/HI12H1	$0.175mg \sqrt{Hz}$
	HI12H3	$0.09mg \sqrt{Hz}$
	HI12SX	$0.04mg \sqrt{Hz}$
Bandwidth(3dB)		Up to 400Hz

Magnetometer

Range	Up to ± 20 Gauss
Total RMS noise	450nT
Nonlinearity	20uT

Physical & Environmental

Input Voltage		5V
Power Consumption		<300mW
Dimension	Molex	22X22X10mm
	BTB	22X22X9mm
Weight		<8g
Certification		Supports Rohs CE
Temperature		Supports -40-85°C

QUICK START



The HI12 Molex interface and board-to-board series with evaluation boards can be connected to PC GUI via USB cable, and the GUI helps users quickly evaluate the product

HiPNUC SERVICE

Warranty

We provide free technical support and lifetime firmware upgrades. The HI12 Series comes with a 2-year warranty for worry-free operation.

Contact Us

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