

HI14 Series

High-performance, waterproof MEMS-IMU/VRU/AHRS

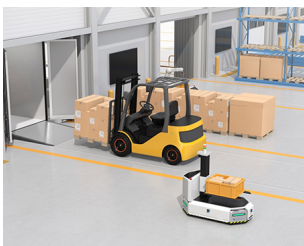


The HI14 series is an IMU/VRU/AHRS sensor system built with MEMS-IMU technology. It features independently developed adaptive extended Kalman filtering, IMU noise dynamic analysis algorithms, and carrier motion state analysis algorithms, providing users with precise IMU and attitude information.

FEATURES

- Compact size, high performance, IP68 waterproof
- Multiple communication interfaces including UART(TTL/232)/CAN/RS485/RS422/USB
- Temperature compensation and turntable calibration
- Extended Kalman Fusion - Precise IMU/VRU/AHRS
- Precise synchronization signal, supporting PPS and UTC time synchronization
- High accuracy maintained under high vibration conditions

APPLICATIONS



AGV/AMR



Inspection Robot



Humanoid Robot



Autonomous Delivery

PRODUCT

MODEL

HI14a-b-cde ¹					
Company	Product	a-Sensor	b-Interface	c-Synchronization	d-Connector e-OEM
HI	14	M0 6 DoF 3° /h 30ug	232 RS-232	0 None	0 M12 0 Default
		R2 6 DoF 1.6° /h 18ug	485 RS-485	1 Supported	1 PG X OEM
		R3 6DoF 1.6° /h 18ug+Magnetic	CAN CAN2.0		
		R5 6DoF 1.2° /h 18ug+Magnetic	USB USB		
		S2 6DoF 1.7° /h 12ug	MIO CAN+RS-232		
		S3 6DoF 1.7° /h 12ug+Magnetic			
		S5 6DoF 1.0° /h 7ug+Magnetic			

Model Examples:HI14S2-232-000

SPECIFICATIONS

Gyroscope

Range	HI14M0/HI14RX HI14SX	Up to ± 2000° /s Up to ± 4000° /s
Bias Instability	HI14M0	3° /h
	HI14R2/R3	1.6° /h
	HI14S2/S3	1.7° /h
	HI14R5	1.2° /h
	HI14S5	1.0° /h
Bias Stability	HI14M0	10° /h
	HI14R2/R3	4° /h
	HI14S2/S3	3.5° /h
	HI14R5	4° /h
	HI14S5	2.3° /h
Noise Density	HI14M0	0.015 ° /s/ √ Hz
	HI14R2/R3	0.008 ° /s/ √ Hz
	HI14S2/S3	0.004 ° /s/ √ Hz
	HI14R5	0.006 ° /s/ √ Hz
	HI14S5	0.0015° /s/ √ Hz
Bandwidth(3dB)	HI14MX/HI14RX HI14SX	Up to 250Hz Up to 400Hz

Interface

Communication	UART/RS485/RS422/USB
Protocols	Binary/Modbus/CANopen/J1939
Output Frequency	Up to 1000Hz
SYNC	SYNC_IN/PPS、 SYNC_OUT

Accelerometer

Range	HI14M0/HI14RX HI14SX	Up to ± 24g Up to ± 32g
Bias Instability	HI14M0	3° /h
	HI14R2/R3	1.6° /h
	HI14S2/S3	1.7° /h
	HI14R5	1.2° /h
	HI14S5	1.0° /h
Bias Stability	HI14M0	30ug
	HI14R2/R3	18ug
	HI14S2/S3	12ug
	HI14R5	14ug
	HI14S5	7ug
Noise Density	HI14M0	0.175 mg/ √ Hz
	HI14R2/R3	0.09 mg/ √ Hz
	HI14S2/S3	0.05 mg/ √ Hz
	HI14R5	0.06 mg/ √ Hz
	HI14S5	0.025 mg/ √ Hz
Bandwidth(3dB)	HI14MX/HI14RX HI14SX	Up to 250Hz Up to 400Hz

Magnetometer

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

Physical & Environmental

Input Voltage Up to 48V

Power Consumption <600mW

Certification Supports EMC Rohs CE

Dimension M12 58.5X40X20mm
PG 40X36X16mm

Weight <8g

Temperature Supports -40~85°C

QUICK START



The HI14 series can be connected to the 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 HI14 Series comes with a 2-year warranty for worry-free operation.

Contact Us

- 1.Email:overseas1@hipnuc.com
- 2.Web:www.hipnuc.com
- 3.Website qrcode

