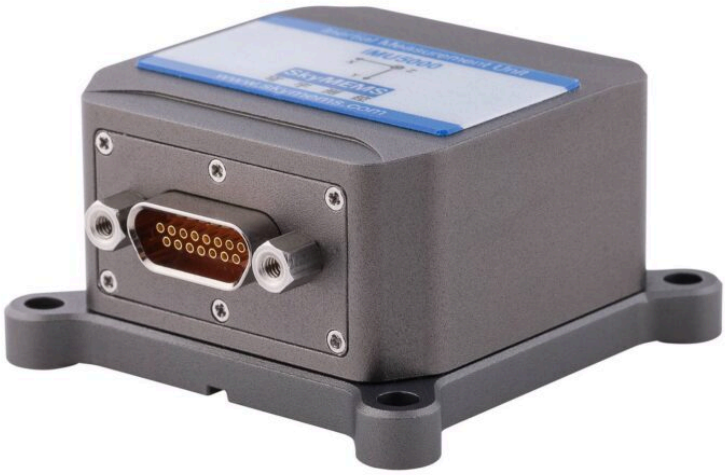

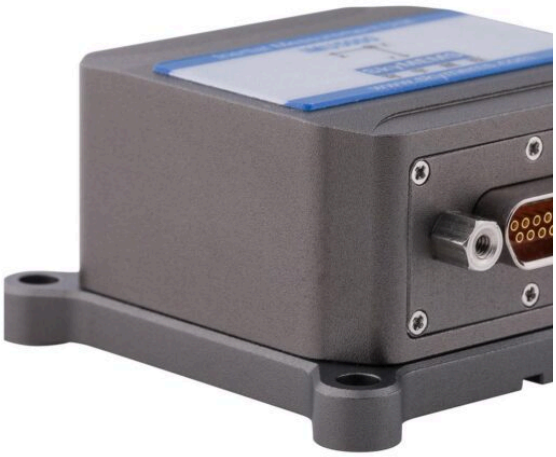

IMU5000 Robust Precision 10DoF Inertial Measurement Unit

- Robust Precision 10DoF Inertial Measurement Unit
- Range (Typical) : Gyro ±4000°/s, Accel ±30g (X, Y), ±150g (Z)
- Bias Instability: Gyro: 1°/h, Accel: 30μg (X, Y: ±30g), 120μg (Z: ±150g) (Allan)
- Full Temperature Range Accuracy Assured
- High Bandwidth (Typical) : 200Hz
- Working Temperature: -40~+85°C

Product Categories

Brief Introduction

IMU5000 Robust Precision 10DoF Inertial Measurement Unit is a high performance tactical grade MEMS Inertial Measurement Unit, which MEMS gyroscope enjoys 1°/h (Allan) bias instability and MEMS accelerometer enjoys 30μg (Allan) bias instability, and it can output precise 3 axis outputs of angular rate, 3 axis acceleration data, 3 axis magnetometer data, and barometer data, etc.

IMU5000 IMU sensor is with a rugged housing featuring excellent protection against environmental influences. It is designed for easy integration and seamless interfacing with other equipment. And it enjoys excellent measurement performance, small size, light weight, and high reliability and robustness, and it has been widely applied in tactical applications such as unmanned aerial vehicles, unmanned surface vessel, gimbal stabilization, platform stabilization, etc.

Technical Specifications

Parameter	Test Condition	Min.	Typical	Max.	Unit
Gyroscopes					

Range①			±4000		°/s
Bias Instability	Allan variance		1		°/h
	10s average(-40~+85°C, fixed temp.)	6	10	15	°/h
Bias Repeatability			10		°/h
Random Walk			0.1		°/√h
Bais	Bias change at full temp. range②		±0.2		°/s
	Bias change in vibration conditions③		20		°/h
Non-linearity			500		ppm
Bandwidth			200		Hz
Accelerometers(X/Y)					
Range①			±30		g
Bias Instability	Allan variance		50		ug
	10s average(-40~+85°C, fixed temp.)		100		ug
Bias Repeatability			100		ug
Random Walk			0.01		m/s/√h
Non-linearity			100		ppm
Bandwidth			200		Hz
Accelerometers(Z)					
Range①			±150		g

Bias Instability	Allan variance		120	150	ug
	10s average(-40~+85°C, fixed temp.)		500		ug
Bias Repetition			500		ug
Random Walk			0.05		m/s/√h
Non-linearity			1000		ppm
Bandwidth			200		Hz
Magnetometer					
Dynamic Range		±2			Gauss
Resolution			120		uGauss
Noise RMS	10Hz		50		uGauss
Bandwidth			200		Hz
Barometer					
Pressure Range		450		1100	mbar
Resolution			0.1		mbar
Absolute Accuracy			1.5		mbar
Interface④ (RS422)					
Baud Rate			460800		bps
Output Rate			500		Hz
Reliability					
MTBF	20000 h				

Continuous Working Time	120 h
Electrical Features	
Supply Voltage	6 ~ 30 V
Power Consumption	< 0.5W
Ripple Wave	100mV (P-P)
Environment Conditions	
Operating Temperature	-40°C ~ 85°C
Storage Temperature	-55°C ~ 105°C
Vibration Resistance	20-2000Hz, 6.06g
Shock Resistance	1000g, 0.5ms
Physical Parameter	
Size	46×46×24 mm
Weight	100grams
Interface Model	15pins J30J

Note:
①: The range of Gyroscopes and Accelerometers can be configured in our factory.
②: The bias value is calculated based on the whole temperature change period, the temperature changing rate<=2°C/minute, temperature range:-40~+85°C;
③: (before vibration average value +after vibration average value) /2-during vibration average value, the vibration conditions are 6.06g, 20~2000Hz
④: The baud rate and output rate can be configured in our factory.

Typical Application

– Unmanned Aerial Vehicles

– Unmanned Surface Vessel

– Gimbal Stabilization

– Platform Stabilization

Product Advantages

FAQ

Related Products

IMU80 6DoF Mini IMU (https://www.skymems.com/products/imu80-6dof-mini-imu/)

Read more (https://www.skymems.com/products/imu80-6dof-mini-imu/)

IMU90 High Precision 6DoF Mini IMU (https://www.skymems.com/products/imu90-high-precision-6dof-mini-imu/)

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measurement-unit/)

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CateGories

- Inertial Measurement Unit(/product-category/imu/)
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- Fiber Optic Gyro(/product-category/fiber-optic-gyro/)
- MEMS Accelerometer(/product-category/mems-accelerometer/)
- Tilt Sensor(/product-category/inclinometer/)
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