



AIM-300R

HIGH PERFORMANCE INERTIAL SENSOR

The A&I AIM-300R is a 6-degree-of-freedom MEMS inertial sensor module. It comes standard with outputs for three-axis gyroscope and accelerometer data. Featuring high precision and high resolution, it is capable of capturing subtle vibrations and inclinations. Its wide dynamic range allows for motion sensing even in high dynamic environments. Each module is factory-configured with precise temperature compensation and independent calibration across an ultra-wide temperature range, ensuring stable performance under extreme conditions and consistent performance across all units.



- **Tactical Level MEMS Gyroscope**

- 0.35 °/hr zero bias instability
- 0.08 °/√ hr angle random walk
- 30 °/hr temperature drift
(-40~85°C, <=1°C/min @ 1 σ)

- **Tactical Level MEMS Accelerometer**

- 15ug zero bias instability
- 0.03m/s/√ hr speed random walk
- 1mg temperature drift
(-40~85°C, <=1°C/min @ 1 σ)

- **Large scale Fine Tuned Temperature Compensation**

- Temperature compensation from -40°C to 85°C
- Fine tuned temperature calibration

- **High Intensity Working Condition Tolerance**

- Ultra strong impact resistance: 2000g (0.5ms, half sine, 3-axis)
- Super strong vibration tolerance: 10g (10~2KHz, 3-axis) stable at full temperature
- Environment Fixed working temperature: -40°C ~85°C
- 100% magnetic shielding

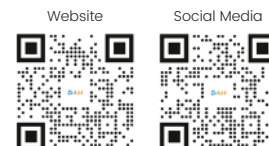
- **Real-time And Flexible Digital Interface, Compact Size**

- Configurable output sample rate up to 500 Hz
- Support serial port 422
- 38.6X44.8X21.5mm, weight about 74g

- **Independent Turntable Calibration**

- Independently calibrate each module: sensitivity, bias, non orthogonal error
- Provide user calibration installation error interface

AIM-300R



IMU

Dimensions	38.6*44.8*21.5mm
Weight	48.7g
Working Temperature	-40~85°C
Storage temperature	-55~90°C
power	1W
Interface	RS422 communication interface
Connector type	Aviation rectangular connector J30J-15TJL

Key Indicators of Gyroscope

Parameter	Test conditions/remarks	Minimum Value	Typical Value	Maximum Value	Company
Measuring Range			± 300		°/s
Zero Bias instability X-Axis	@25°C, 1 σ		0.35		°/hr
Zero Bias instability Y-Axis	@25°C, 1 σ		0.35		°/hr
Zero Bias instability Z-Axis	@25°C, 1 σ		0.35		°/hr
Non Orthogonal Between Axes			0.02		deg
Internal Low-Pass Cutoff Frequency	Software adjustable		75		Hz
ODR					Hz
Measurement Delay			7.2		ms
Zero Deviation Change Over The Full Temperature Range	-40~85°C <=1°C/min @1 σ		30		°/hr
Random Walk X-Axis	@25°C, 1 σ		0.08		°/√hr
Random Walk Y-Axis	@25°C, 1 σ		0.08		°/√hr
Random Walk Z-Axis	@25°C, 1 σ		0.08		°/√hr
Scale Factor error			1.0		‰
Scale Coefficient Nonlinearity			200		ppm

Key Indicators of Accelerometers

Parameter	Test conditions/remarks	Minimum Value	Typical Value	Maximum Value	Company
Measuring Range			± 6	Optional± 20	g
Zero Bias Instability	@25°C, ALLAN Variance,1 σ		15		μg
Non Orthogonal Between Axes			0.02		deg
Internal Low-Pass Cutoff Frequency	Software Adjustable		75		Hz
Sampling Rate			500		Hz
Measurement Delay					ms
Zero Deviation Change Over The Full Temperature Range	-40~85°C <=1°C/min @1 σ		1.0		mg
Random Walk	@25°C, ALLAN Variance,1 σ		0.03		m/s/√hr