

MINIM® MEMS INERTIAL MEASUREMENT UNIT (IMU)

COST-EFFECTIVE AND ULTRA-RELIABLE

A next-generation IMU that delivers high performance in a small size

The Collins MinIM® micro electro-mechanical system (MEMS) inertial measurement unit (IMU) is a small form factor, high-performance MEMS IMU that incorporates the latest capacitive technology and is less than one-quarter the size and weight of established production MEMS IMUs – at under 1 cubic inch in volume.

Its small form factor and low cost make MinIM ideal for applications such as guided weapons, flight control systems, anti-tank weapons, small UAVs and troop navigation units.

Collins Aerospace has a long and respected heritage in the design and development of inertial sensors and today specializes in MEMS products.

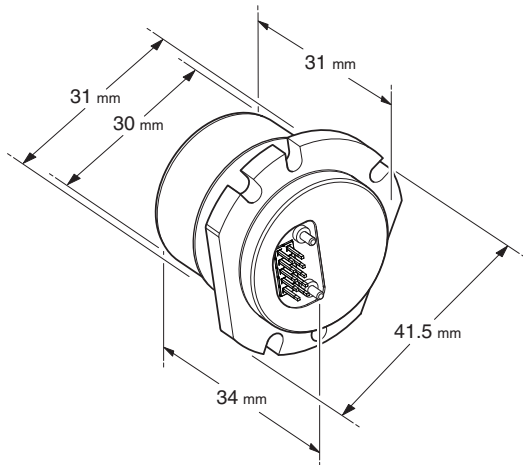


PEDIGREE

- First MEMS IMUs in military service
- Selected by over 60 customers worldwide – over 130,000 MEMS products delivered
- Used in missile and weapons navigation, platform stabilization and navigation
- Rigorous performance and simulated aging ensures conformance to specification throughout the life cycle



MinIM



PERFORMANCE

Low-cost IMU

- Small form factor

PRODUCT BENEFITS

- Full 6 DoF inertial measurement unit
- Latest capacitive technology
- Excellent performance in cubic inch form
- Gun-hard option, survivable to 16,000 g
- Modular architecture
- Low noise
- ITAR free

KEY CHARACTERISTICS

Volume	≤16.5 cm ³ (without mount)
Mass	≤65 g in typical housing
Power consumption	≤1.5 W
Operating temperature	-40° C to 65° C (extended -55° C to 85° C)
Start-up time	500 ms
Built-in-test	Continuous
Gyro operating range	Axis 1 ±1000°/s, Axis 2 ±500°/s
Accelerometer operating range	±30 g
Supply voltage	+5 VDC
Electrical interface	PC

TYPICAL PERFORMANCE

GYRO

ACCELEROMETERS (±30G)

Bias repeatability (1σ)*	240°/hr	14 mg
Bias instability (max)	12°/hr	6 mg
Random walk (max)	1°/√hr	0.6 m/s/√hr
Scale factor error (1σ)*	1,000 ppm	1,800 ppm (±1g)
Bandwidth (-90°)	Configurable	Configurable

*All axes, all temperatures, factory fresh

ALTERNATIVE PRODUCTS



IMU15™

PERFORMANCE

Low-cost IMU

- Small form factor
- Under 1 cubic inch volume
- Non-licensable



SiIMU02®

PERFORMANCE

Medium performance

- Gun-hard options available (20,000 g)

Specifications subject to change without notice.

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