



IMU25™ MEMS INERTIAL MEASUREMENT UNIT (IMU)

COMPACT, LIGHTWEIGHT FOG PERFORMANCE

Next-gen, tactical-grade IMU for high-performance applications

The Collins Aerospace IMU25™ MEMS IMU is a best-in-class inertial measurement unit providing six degrees of freedom and precise, three-axis outputs of angular rate, acceleration and temperature.

The modular architecture of the IMU25 design readily enables the incorporation of specific customer requirements for a tailored approach to each application.

IMU25 has been designed specifically to meet the demand from high-end commercial and industrial market applications for a high-performance, non-licensable IMU.

Collins Aerospace is a world leader in inertial technology, leveraging our pedigree to provide integrated and calibrated solutions using our in-house, state-of-the-art test facility.

We have a long and respected heritage in the design and development of inertial sensors and today we specialize in MEMS products.



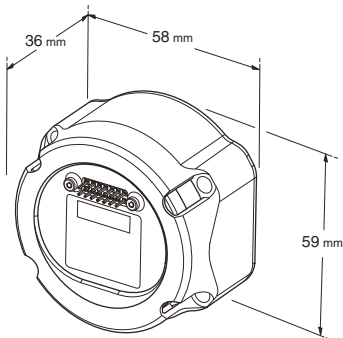
KEY FEATURES

- FOG performance 6-DOF MEMS inertial measurement unit
- Bias instability and random walk angular – $\leq 0.6^\circ/\text{hr}$, $0.05^\circ/\sqrt{\text{hr}}$ linear – $< 0.5\text{mg}$, $< 0.6\text{m/s}/\sqrt{\text{hr}}$
- Non-ITAR
- Non-licensable
- Compact and lightweight – 58.0 x 59.0 x 36.0 H (mm), 200 g
- Internal power conditioning to accept 4.75 V to 5.25 V input strike voltage
- RS422 interfaces
- -40°C to 75°C operating temperature range
- RoHS compliant
- In-house manufacture from MEMS fabrication to IMU calibration

Key Characteristics



IMU25



GYROSCOPE PROPERTIES

PARAMETER	SPECIFICATION
Dynamic range	$<\pm 498^\circ/s$
Scale factor over temp ($\pm 498^\circ/s$) (1σ)	± 330 ppm
SF non-linearity ($\pm 498^\circ/s$) (1σ)	± 250 ppm
Bias instability (1σ)	$\leq 0.6^\circ/hr$
Random walk	$0.05^\circ/\sqrt{hr}$
Bias over temp (1σ)	$10^\circ/hr$
Noise (rms to 85Hz)	$\pm 0.15^\circ/sec$

ACCELEROMETER PROPERTIES

Dynamic range	± 30 g
Scale factor over temp ($\pm 1g$) (1σ)	± 1400 ppm
SF non-linearity ($\pm 10g$) (1σ)	± 2533.3 ppm
Bias instability (1σ)	< 0.50 mg
Random walk	$< 0.6m/s/\sqrt{hr}$
Bias over temp (1σ)	± 3.3 mg
Noise (rms to 85Hz)	< 6.0 mg
Cross axis sensitivity	
Over temperature	$\pm 0.24\%$

IMU PROPERTIES

Operating temperature	-40 to $75^\circ C$
Start-up-time (full performance)	< 400 ms
SF non-linearity ($\pm 10g$) (1s)	± 2533.3 ppm
Power	nom 3.75 W
Supply voltage	4.75 V - 5.25 V
Mass	200 g
Further information available	Multiple interfaces available. Contact factory for further information.

Alternative Products

IMU15™



PERFORMANCE

- Compact six degrees of freedom IMU
- Small form factor
- Under 1 cubic inch volume

IMU20™



PERFORMANCE

- Medium performance
- Medium performance gyro
- Meeting demand from industrial and commercial markets

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