



IMU20™ MEMS INERTIAL MEASUREMENT UNIT (IMU)

MID-RANGE PRECISION

A high-performance IMU meeting demand from high-end industrial and commercial markets

The Collins IMU20™ micro electro-mechanical system (MEMS) IMU is a compact, six-degree-of-freedom inertial measurement unit providing precise, three-axis outputs of angular rate, acceleration and temperature.

It is designed specifically to meet the growing demand from high-end commercial and industrial marketer applications requiring a high-performance, non-ITAR IMU. The IMU20 uses Collins Aerospace industry-leading MEMS inertial sensors that are integrated and calibrated using our in-house, state-of-the-art test facility.

Collins Aerospace has a long and respected heritage in the design and development of inertial sensors. Today, we also specialize in MEMS products.

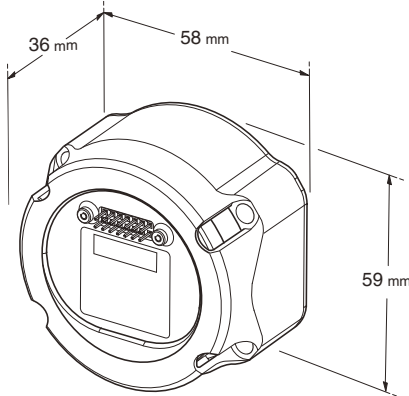


KEY FEATURES

- Precision 6-DOF MEMS IMU
- Bias instability and random walk angular – $1^\circ/\text{hr}$, $0.25^\circ/\sqrt{\text{hr}}$
linear – 0.2mg , $0.17\text{m/s}/\sqrt{\text{hr}}$
- Non-ITAR
- Non-licensable
- Compact and lightweight – $58.0 \times 59.0 \times 36.0\text{H}$ (mm), 200 g
- -45°C to 75°C operating temperature range
- RoHS compliant
- In-house manufacture from MEMS fabrication to IMU calibration
- First-class customer technical support



IMU20



PRODUCT APPLICATIONS

- Small satellite stability control
- Precision guidance and navigation
- High shock and vibration systems
- INS (inertial navigation systems)
- GPS/GNSS drop-out aiding
- Autonomous vehicle control, unmanned aerial vehicles and remotely operated vehicles

PERFORMANCE

Medium performance

- High-performance gyro
- Fully modular

PRODUCT BENEFITS

- Full 6-DoF inertial measurement unit
- Latest capacitive technology
- Low power and rapid start-up
- Modular architecture
- Non-licensable

KEY CHARACTERISTICS

Volume	65.5 cm ³ in typical housing
Mass	200 g in typical housing
Power consumption	≤3.75 W
Operating temperature range	-45° C to 75° C
Start-up time	345ms
Built-in-test	Start up, continuous
Gyro operating range	±498°/s
Accelerometer operating range	±30 g (all axes)
Supply voltage	+5 VDC
Electrical interface	SDLC (configurable)

TYPICAL PERFORMANCE

	GYRO	ACCELEROMETERS (±30G)
Bias repeatability (1σ)*	20°/hr	0.7 mg
Bias instability (max)	1°/hr	0.2 mg
Random walk (max)	0.25°/√hr	0.17 m/s/√hr
Scale factor error (1σ)*	600 ppm	250 ppm (±1g)
Bandwidth (-90°) (configurable up to)	135 Hz	130 Hz

Specifications subject to change without notice.

ALTERNATIVE PRODUCTS



IMU15™

PERFORMANCE

Low cost IMU

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



IMU25™

PERFORMANCE

High performance

- Best-in-class MEMS IMU
- Highly modular, tailored solution
- Non-licensable

*All axes, all temperatures, factory fresh
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