

# MEMSENSE

Customer Focused Inertial Solutions

## MS-IMU3020



**LEADING PERFORMANCE FEATURES VALUE**

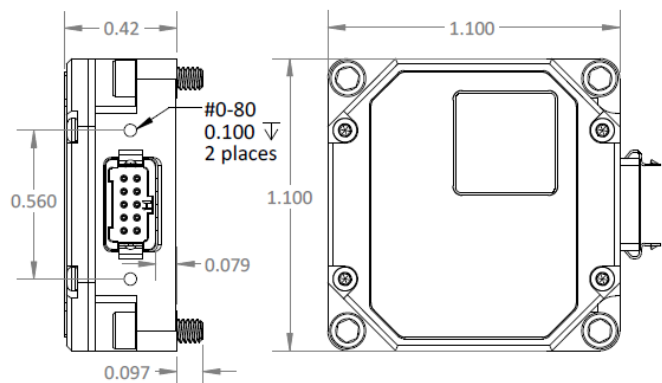
The MS-IMU3020 inertial measurement unit delivers market leading price to performance in an ultra-compact aluminum package that measures 1.1 x 1.1 x 0.4 inches. The gyro bias instability of 1.06 °/h and accel bias instability of 14.8  $\mu$ g supply ample inertial performance to support a range of applications from UAS navigation and control to platform stabilization. User configurable options allow the IMU to be tuned to your application with configurable bandwidth, sample rate, gyro ranges, 1 PPS input and other measurement parameters. The MS-IMU3020's combination of inertial performance, features, and value surpasses all IMUs in the market.

### Applications

- Platform Stabilization
- UAS Navigation & Control
- Gimbal Pointing

### Key Features

Accel Dynamic Range	$\pm 15$ g
Accel Bias Instability	14.8 $\mu$ g
Velocity Random Walk	0.078 m/s/h <sup>-1/2</sup>
Gyro Dynamic Range	$\pm 120$ °/s to $\pm 1920$ °/s
Gyro Bias Instability	1.06 °/h
Angle Random Walk	0.22 °/h <sup>-1/2</sup>
Export Control	No License Required



ACCELERATION		UNITS	NOTES	
Dynamic Range	± 15	g	Minimum	
Bias Instability	14.8	μg	Typical	
Offset	± 1.5	mg	Typical	
Nonlinearity	± 0.3	% of FS	Typical	
Velocity Random Walk	0.078	m/s/h <sup>-1/2</sup>	Typical	
Noise Density	160	μg/Hz <sup>-1/2</sup>	Typical	
Bandwidth	50	Hz	-3dB point	
ANGULAR RATE		UNITS	NOTES	
Dynamic Range	± 480	°/s	Minimum, Note 1	
Bias Instability	1.06	°/h	Typical	
Offset	± 12	°/h	Typical	
Nonlinearity	± 0.05	% of FS	Typical	
Angle Random Walk	0.22	°/h <sup>-1/2</sup>	Typical	
Noise Density	0.006	°/s / Hz <sup>-1/2</sup>	Typical	
Bandwidth	50	Hz	-3dB point	
MAGNETIC FIELD		NOTE 2	UNITS	NOTES
Dynamic Range	± 1.9	gauss	gauss	Minimum
Offset	± 0.005	gauss	gauss	Typical
Nonlinearity	± 0.5	% of FS	% of FS	Typical
Noise Density	79.2	μgauss / Hz <sup>-1/2</sup>	μgauss / Hz <sup>-1/2</sup>	Typical
Bandwidth	50	Hz	Hz	-3dB point
PHYSICAL		UNITS	NOTES	
Dimensions	1.10 x 1.10 x 0.41	in.	(L x W x H)	
Mass	20	grams		
Supply Voltage	4.9 – 30	VDC		
Supply Power	0.5	W		
Operating Temperature	-40 to 85	C		
Interface Connector	Harwin Gecko		10 pin	

1. Ranges are software configurable to 120, 240, 480, 960, and 1920 see User Guide for detailed specifications.
2. Magnetometer only available in MS-IMU3020M and MS-IMU3020MP, see product specification for details.

**MS-IMU3020 ALLAN VARIANCE CURVES**

