

MEMSENSE

Customer Focused Inertial Solutions

MS-IMU3050



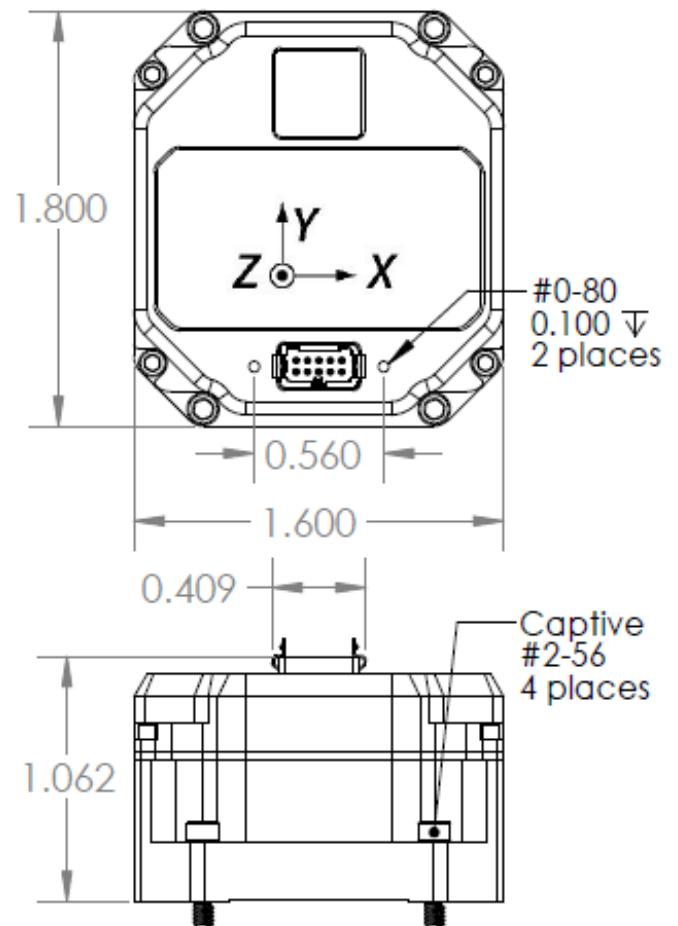
Extreme performance in the industry's most compact package, the MS-IMU3050 represents the next generation of cutting edge MEMS IMUs without export restrictions. With an ultra-durable and dimensionally stable MIC-6 alloy housing, MIL-A-8625 coating, and Mil-Standard interface connector, the MS-IMU3050 will endure the most demanding environments, giving long term stability and reliability in your application.

Key Features

Accel Dynamic Range	$\pm 8g$, configurable
Accel Bias Instability	$2.6 \mu g$
Velocity Random Walk	$0.006 \text{ m/s/h}^{-1/2}$
Gyro Dynamic Range	$\pm 480^\circ/\text{s}$, configurable
Gyro Bias Instability	$0.33^\circ/\text{h}$
Angle Random Walk	$0.05^\circ/\text{h}^{-1/2}$

Applications

- Pipeline Inspection
- Bend Finding & Up Detection
- Survey & Mapping



ACCELERATION		UNITS	NOTES
Dynamic Range	±8 (±2, ±4, or ±10, ±20, or ±40)	g	Min., Note 1
Bias Instability	2.6	μg	Typical
Offset	± 0.67	mg	Typical
Nonlinearity	± 0.3	% of FS	Typical
Velocity Random Walk	0.006	m/s/h ^{-1/2}	Typical
Noise Density	14	μg/Hz ^{-1/2}	Typical
Bandwidth	50	Hz	-3dB point
ANGULAR RATE		UNITS	NOTES
Dynamic Range	± 480 (±75, ±200, ±960, or ±1920)	°/s	Min., Note 2
Bias Instability	0.33	°/h	Typical
Offset	± 10	°/h	Typical
Nonlinearity	± 0.05	% of FS	Typical
Angle Random Walk	0.05	°/h ^{-1/2}	Typical
Noise Density	0.002	°/s /Hz ^{-1/2}	Typical
Bandwidth	50	Hz	-3dB point
MAGNETIC FIELD		UNITS	NOTES
Dynamic Range	± 1.9	gauss	Min.
Offset	± 0.005	gauss	Typical
Noise Density	79.2	μgauss /Hz ^{-1/2}	Typical
Bandwidth	50	Hz	-3dB point
PHYSICAL		UNITS	NOTES
Dimensions	1.80 x 1.65 x 0.98	in.	(L x W x H)
Mass	60	grams	
Supply Voltage	4.9 - 30	VDC	
Supply Current	600	mA	
Interface Connector	Harwin Gecko G125-MS11005L		10 pin

Note 1: Configurable ranges up to ±40 g, see Product Specification for details.

Note 2: Configurable ranges up to ±1920 °/s, see Product Specification for details.

MS-IMU3050 ALLAN VARIANCE CURVES

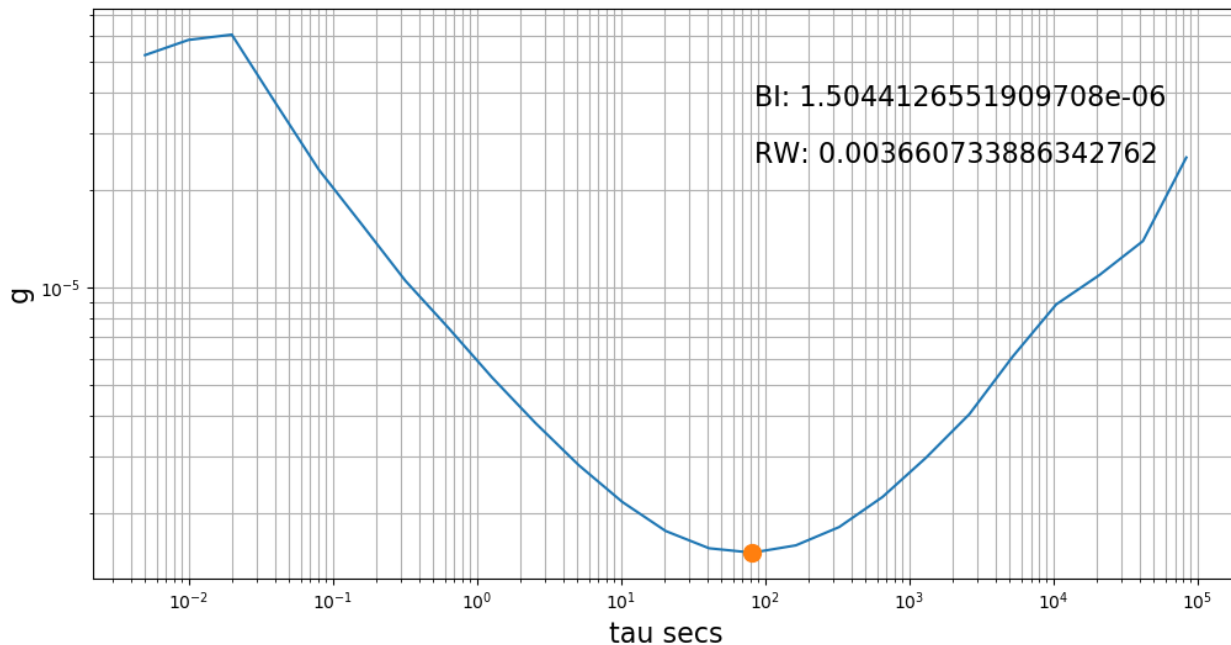


Figure 1 - Accelerometer Root Allan Variance

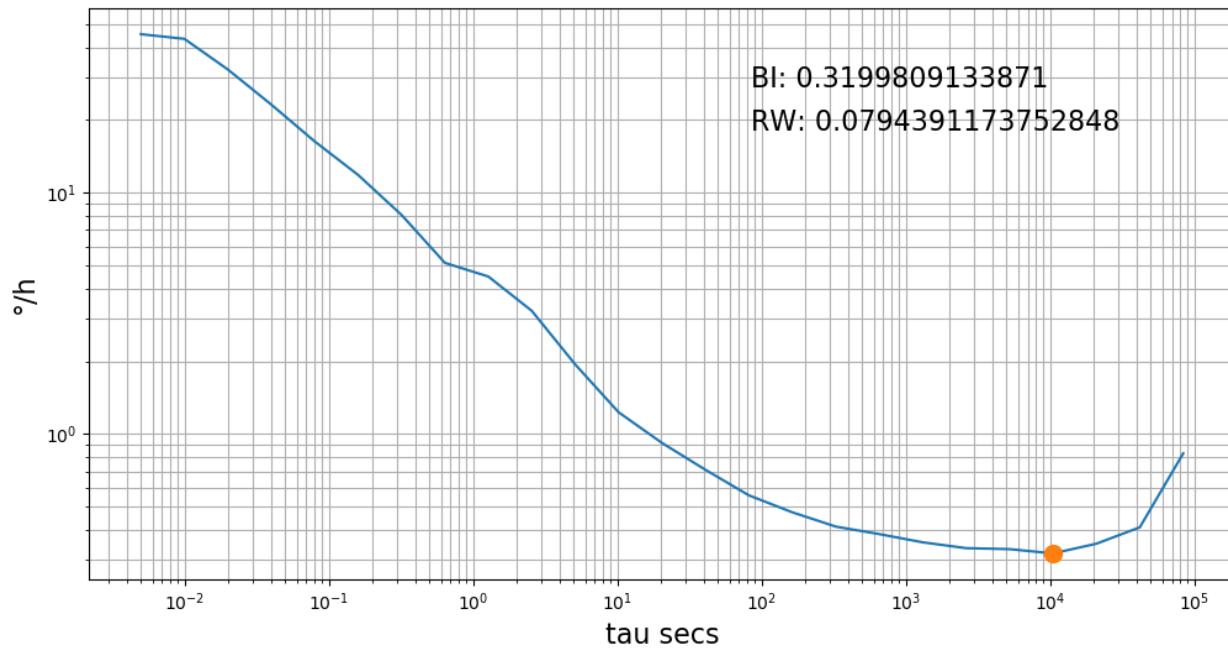


Figure 2 - Gyroscope Root Allan Variance