

# MEMSENSE

Customer Focused Inertial Solutions

# NANO

# IMU



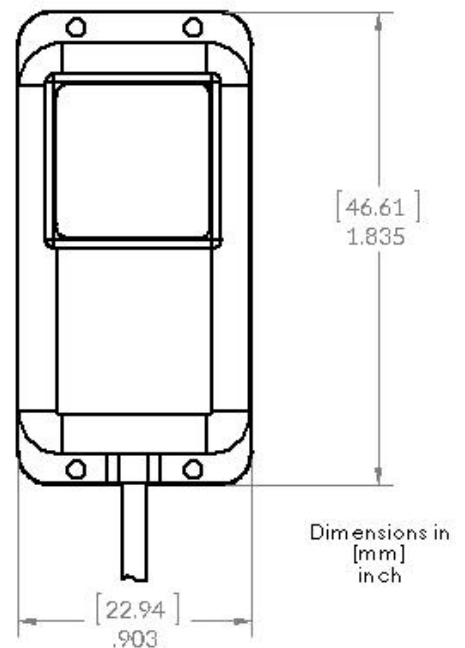
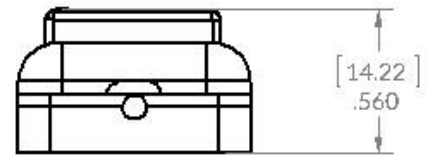
The *NANO IMU* is a miniature, light weight IMU featuring outputs of acceleration, angular rate, and magnetic field. Digital outputs are factory configured to the RS422 protocol and custom algorithms provide real-time data corrected over the operating temperature range.

## Key Features

Accel Dynamic Range	$\pm 5g$
Accel Bias Instability	$75 \mu g$
Accel Velocity Random Walk	$0.050 \text{ m/s/h}^{-1/2}$
Gyro Dynamic Range	$\pm 300^\circ/\text{s}$
Gyro Bias Instability	$20.0^\circ/\text{h}$
Gyro Angle Random Walk	$2.0^\circ/\text{h}^{-1/2}$

## Applications

- UAS Control
- Gimbal Pointing
- Antenna Pointing



ACCELERATION		UNITS	NOTES
Dynamic Range	± 5	g	Minimum
Bias Instability	75	µg	Typical
Offset	± 4.2	mg	Typical
Nonlinearity	± 0.4	% of FS	Typical
Velocity Random Walk	0.050	m/s/h <sup>-1/2</sup>	Typical
Noise Density	166	µg/Hz <sup>-1/2</sup>	Typical
Digital Scale Factor	2.2888E-04	g/bit	
Bandwidth	50	Hz	-3dB point

ANGULAR RATE		UNITS	NOTES
Dynamic Range	± 300	°/s	Minimum
Bias Instability	20	°/h	Typical
Offset	± 0.2	°/s	Typical
Nonlinearity	± 0.1	% of FS	Typical
Angle Random Walk	2.0	°/h <sup>-1/2</sup>	Typical
Noise Density	0.051	°/s /Hz <sup>-1/2</sup>	Typical
Digital Scale Factor	1.3733E-02	°/s /bit	
Bandwidth	50	Hz	-3dB point

MAGNETIC FIELD		UNITS	NOTES
Dynamic Range	± 1.9	gauss	Minimum
Offset	± 0.005	gauss	Typical
Nonlinearity	± 0.5	% of FS	Typical
Noise Density	79.2	µgauss /Hz <sup>-1/2</sup>	Typical
Digital Scale Factor	8.6975E-05	gauss /bit	
Bandwidth	50	Hz	-3dB point

PHYSICAL		UNITS	NOTES
Dimensions	1.84 x 0.90 x 0.56	in.	(L x W x H)
Mass	20	grams	
Supply Voltage	5.4 to 9.0	VDC	
Supply Current	140	mA	
Interface Connector	Hirose HR30		6 pin

For other configurations and further detailed specifications see the Nano IMU User Guide.