

3DM-GX1 Detailed Specifications

	Parameter	Specification	Comments
Attitude	Range: Pitch, Roll, Yaw (°)	360, all axes +/-90,+/-180,+/-180	Matrix & Quaternion Modes Euler Angles Mode
	Static Accuracy (°)	+/- 0.5	Typical, application dependent
	Dynamic Accuracy (° rms)	+/- 2.0	
	Repeatability (°)	+/- 0.2	
	Resolution (°)	0.1	
General Performance	A/D converter resolution (bits)	16	4 channels, user configurable Orientation outputs
	Turn on time (sec)	0.8	
	Analog output (Optional)	0-5V	
	Update Rate (Hz maximum)	100	
Physical	Size (mm)	65 x 90 x 25 42 x 40 x 15	With enclosure Without enclosure
	Weight (grams)	75 30	With enclosure Without enclosure
Electrical	Supply Voltage (V)	5.2 to 12 DC	
	Supply Current (mA)	65	
Environmental	Operating temperature (°C)	-40°C to +70 -40°C to +85	With enclosure Without enclosure
	Vibration (g rms)	4	20-700 Hz, white
	Operational Shock (g)	20	10 msec halfsine
	Survival Shock (g)	500	
Communications	Serial Interface	RS-232, RS-485	RS-485 networking optional
	Serial Communications speed (kBaud)	19.2, 38.4, 115.2	User selectable
Angular Rate	Range (°/sec)	+/- 300	Custom ranges available
	Bias		
	Turn-on to turn-on repeatability (°/sec)	TBD	25°C fixed temperature
	In-Run stability, fixed temp. (°/sec)	0.1	After 15 minute warm up
	In-Run stability, over temp. (°/sec)	0.7	Over -40°C to +70°C range
	Short term stability (°/sec)	0.02	15 second Allan variance floor
	Angle random walk, noise (°/√hour)	3.5	Allan variance method
	Scale Factor Error (%)	0.5	Over -40°C to +70°C range
	Nonlinearity (% FS)	0.2	
	Resolution (°/sec)	0.01	
	G-sensitivity (°/sec/g)	0.01	Std w/ g-sensitivity compensation
	Alignment (°)	0.2	Std w/ alignment compensation
	Bandwidth (Hz)	30	-3dB Nominal
Acceleration	Range (g)	+/- 5	Custom ranges available
	Bias		
	Turn-on to turn-on repeatability (mg)	TBD	25°C fixed temperature
	In-Run stability, over temp. (mg)	10	Over -40°C to +70°C range
	Short term stability (mg)	0.2	15 second Allan variance floor
	Noise (mg/√Hz rms)	0.4	
	Scale Factor Error (%)	0.5	Over -40°C to +70°C range
	Nonlinearity (% FS)	0.2	
	Resolution (mg)	0.2	
	Alignment (°)	0.2	Std w/ alignment compensation
	Bandwidth (Hz)	50	-3dB Nominal
Magnetic Field	Range (Gauss)	+/- 1.2	Over -40°C to +70°C range
	Bias		
	Turn-on to Turn-on repeatability (mGauss)	TBD	
	In-Run stability, over temp. (mGauss)	15	
	Noise (mGauss/√Hz)	TBD	
	Scale Factor (%)	0.7%	Std w/ alignment compensation Nominal
	Nonlinearity (% FS)	0.4	
	Resolution (mGauss)	0.2	
	Alignment (°)	0.2	
	Bandwidth (Hz)	50	