

MMQ™ 50

Miniature MEMS Quartz IMU

Ideal for High-Precision Civil & Military Applications:

- General Aviation
- Unmanned Vehicles
- Land Navigation
- EO/IR Stabilization
- Antenna Pointing
- Tactical Missiles
- Smart Munitions
- Robotics

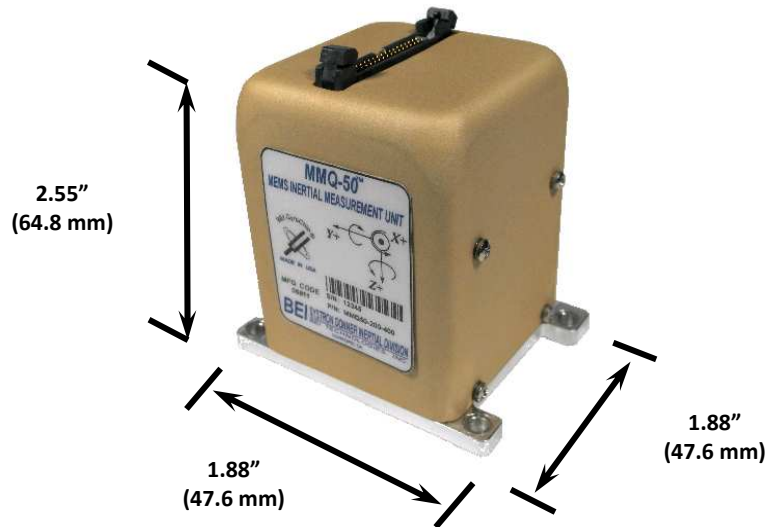


Key Performance Features:

- **Extremely Small Size**
- **Low Power Consumption**
- **Very Light Weight**
- **DC Voltage Input**
- **Designed for Embedded Applications**
- **RS-232 Digital Interface**
- **Suitable DO-160D Physical Environment**



The Miniature MEMS Quartz IMU (MMQ™50) is a small (less than 9 cubic inch) inertial measurement unit capable of providing bias instability values below 10 deg/hr and angle random walk typically below 0.15 deg/square root hour. The MMQ™50 combines tremendous performance and versatility with an extremely compact size, low power consumption and very low weight.



	MMQ50-200-400
Physical Characteristics	
Size (Vol.)	9.0 in ³
Weight	<0.50 lbs (<0.227 kg)
Power	+ & – 12Vdc at <5W total
I/O	RS-232 – 450Hz output
Rate Channels	
Range	200°/sec
Bias Turn-on to turn-on Stability (fixed temp)	≤100°/hr, 1σ
Bias In-run Stability (at any temperature)	100°/hr, 1σ
Bias Instability	<4-15°/hr
Angle Random Walk	0.3°/√hr (0.005°sec/√Hz)
Scale Factor error	≤5000 ppm (0.5%)
Alignment	≤5 mrad
Bandwidth (-90° Phase Shift)	50Hz, nominal
Acceleration Channels	
Range	±10g
Bias Turn-on to turn-on Stability (fixed temp)	≤2.5 mg, 1σ
Bias In-run Stability (at any temperature)	≤3 mg, 1σ
Velocity Random Walk	0.5 mg/√Hz
Scale Factor Error	≤5000 ppm (0.5%)
Alignment	≤5 mrad
Bandwidth (-90° Phase Shift)	50 Hz, nominal
Environmental	
Temperature Range	-54°C to +70°C (operating)
Vibration, Random	6.0g _{rms} , 20Hz – 2kHz, flat Meets DO-160D Curves C, C1
Shock, Operating	30g, powered Meets DO-160D Operational Shock & Crash Safety
Altitude	35,000 ft. Meets DO-160D Category C

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