VG700MB

Fiber Optic Vertical Gyro

MOOG CROSSBOW

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Moog Crossbow's VG700MB is a mil-qualified vertical gyro for measuring roll, pitch and relative heading angles in highly dynamic environments. Moog Crossbow has fielded thousands of systems worldwide for use in U.S. DOD and Coalition Forces programs.

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DESCRIPTION

The VG700MB incorporates Moog Crossbow's third generation three-axis Fiber Optic Rate Gyros and MEMS accelerometers providing superior performance, reliability and long term stability. The VG700MB has been qualified to perform in the toughest airborne, ground, and marine environments without GPS aiding. Military operators know that GPS jamming and spoofing can render a GPS-Aided IMU too unstable for continued operations.

VG700MB applications include avionics, platform stabilization, land vehicle guidance, and control of sophisticated robotic systems. The VG700MB calculates stabilized roll, pitch and heading angles by integrating the angular rate sensor outputs. An adaptive algorithm compensates for gyro bias-induced errors using the long term gravity reference provided by the accelerometers.

The VG700MB measures acceleration and rotation rate about three orthogonal axes. The VG700MB employs on-board digital processing to provide a factory calibrated unit with internal compensation for deterministic error sources.

KEY FEATURES

- **MIL Qualified vertical gyro**
- **Fiber optic gyro stability of <20 deg/hr**
- **Stabilized roll and pitch angle outputs**
- **Optional relative heading output**
- **Environmentlly sealed enclosure**
- **Tested to MIL-STD-810E and MIL-STD-461D**

SPECIFICATIONS

Environment

Operating Temperature	-40° to +71°C
Non-operating Vibration	6 g rms (20 Hz - 2 Khz random)
Non-operating Shock	100 g (1 ms half sine wave)

Electrical

Input Voltage	16 to 32 VDC
Power Consumption	< 9 W
Digital Interface	RS-422

Physical

Size	6.0"w x 5.0"l x 4.33"h
Weight	<4.4 lbs (<2kg)
Interface Connector	Mil-C 38999, Series II 22 Pin

PERFORMANCE

Relative Heading

Resolution	<0.1°

Attitude

Range: Roll, Pitch	±180°, ±90°
Static/Dynamic Accuracy	<1.5° / 2.5°

Angular Rate

Range: Roll, Pitch, Yaw	±200°
Bias Stability	<20°/hr (constant temp)
Scale Factor Accuracy	<1.5%
Bandwidth	>40Hz -3dB point
Random Walk	<0.4°/√hr

Acceleration

Input Range: X/Y/Z	±4 g
Bias Stability	<24 mg (peak to peak)
Scale Factor Accuracy	<1%
Bandwidth	>15Hz -3dB point
Random Walk	<1.0° m/s/√hrt

Data Rate

Update rate	>100 Hz
Start-up Time Valid Data	<1 sec

ORDERING INFORMATION

Model	Description
VG700MB-200	Fiber Optic Vertical Gyro
VG700MB-206	Fiber Optic Vertical Gyro (with Relative Heading)
VG700MB-208	Fiber Optic Vertical Gyro (Marine Configuration)

For more information

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