



Fluxgate Magnetometer

FGM-301/99

Description:

The FGM-301/99 fluxgate magnetometer is a three-axis magnetic field sensing device qualified to the Army Missile Command specification MIS 40175. It is designed to provide quick response as well as accurate DC magnetic field measurements. With a bandwidth of 30 Hz, the unit allows the user to measure rapidly changing magnetic fields. This feature makes the FGM an excellent reference for heading gyro systems.



The unit provides accurate analog outputs that can be read using a voltmeter or a digital data acquisition system.

The magnetometer assembly is a rigidly mounted device that senses magnetic flux density in three orthogonal axes. The output signal is DC voltage proportional to the magnetic field strength along each axis.

This device features:

- MIS 40175 Qualified & Certified
- High Accuracy
- 2 Second Start-Up Time
- High Reliability
- Low Noise
- Low Power
- Small Size and Weight
- Low Cost
- Two Year Warranty
- Engineering Support

Applications:

Navigation Systems, Magnetic Field Measurements, Geological Mapping, Heading and Vertical References, Traffic Control and Magnetic Mass Indication.



Watson Industries, Inc.

3041 Melby Road Eau Claire, Wisconsin 54703 U.S.A
Phone: +1 (715) 839-0628 Fax: +1 (715) 839-8248
e-mail: support@watson-gyro.com Website: www.watson-gyro.com

FGM-301/99 Specifications

Magnetic

Range: X, Y, Z	±600 mGauss	±60,000 nTesla
Analog Scale Factor:	±60 mGauss	±10V Output
Scale Factor Accuracy:	2%	
Scale Factor Matching Between Axes:	< ±0.2%	
Scale Factor Temp Coefficient:	±100ppm per °C	Typical
Bias: X, Y, Z	< ±5 mGauss	
Non-Linearity:	< 0.01%	Full scale range
Bandwidth:	30 Hz	
Noise:	< 0.3 mGauss rms (Typical)	< 10 uGauss in 1 Hz bandwidth
Output Ripple:	< 0.2 mGauss P-P	
* Z Axis Horizontal Stability:	±3°	< 7.3 mGauss

Environmental

Temperature: Operating	-50°C to +71°C	
Temperature: Storage	-60°C to +80°C	
Vibration: Operating	3g rms	100 Hz to 1 kHz
Vibration: Survival	4g rms	100 Hz to 1 kHz
Shock: Survival	200g	10ms ½ sine wave

Electrical

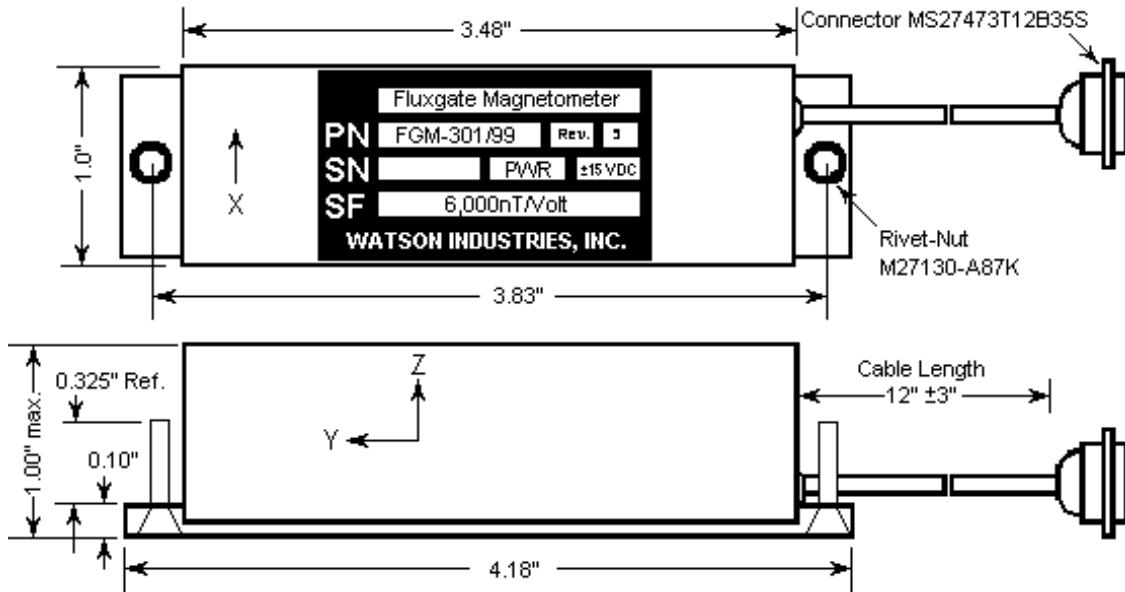
Input Power: Positive	12 to 16VDC	0.18W
Input Power: Negative	-12 to -16VDC	0.18W
Input Current:	15mA @ +12VDC	
Analog Output	±10VDC	
Output Impedance:	1000 Ohm	

Physical

Axis Alignment:	< 0.3°	
Size: Including Mounting Flanges	1.0"W x 4.18"L x 1.0"H	2.5 x 10.6 x 2.5 (cm)
Weight:	3.1oz (0.2lb)	90g (0.1kg)
Connection:	MS27473T12B35S	
Life:	> 50,000 Hrs MTBF	

- * Heading accuracy based on the arctangent of magnetic readings.
- Specifications are subject to change without notice.
- This product may be subject to export restrictions. Please consult the factory.

Dimensions:



03/10 DAO



Watson Industries, Inc.

3041 Melby Road Eau Claire, Wisconsin 54703 U.S.A
 Phone: +1 (715) 839-0628 Fax: +1 (715) 839-8248
 e-mail: support@watson-gyro.com Website: www.watson-gyro.com