



## FLUXGATE MAGNETOMETER:

FGM-301

### **Description:**

Watson Industries has been producing fluxgate magnetometers since 1983. They are compact magnetic sensing devices suitable for a variety of magnetic field measurement applications.



Watson fluxgate magnetometers are 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. The FGM can be used as an excellent reference for heading gyro systems.

This sensor provides accurate analog outputs that can be read using a voltmeter or a digital data acquisition system. This device features:

- High Accuracy
- 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 reference, vertical reference, traffic control, and magnetic mass measurement..

### **Options:**

Custom Voltage inputs and/or outputs, calibration and remote (electronics separated from sensor).



### **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 Specifications

### Magnetic

Range: X, Y, Z	±700 mGauss	±70,000 nTesla
Scale Factor:	±200 mGauss/V	
Scale Factor Accuracy:	2%	
Scale Factor Matching between Axes:	< ±0.2%	
Scale Factor Temperature Coefficient:	±100 ppm per °C	Typical
Bias:	< ±5 mGauss	
Non-Linearity:	< ±0.01%	
Bandwidth:	30 Hz	
Noise:	< 0.3 mGauss rms (Typical)	< 10 uGauss in 1 Hz Bandwidth
Output Ripple:	< 0.2 mGauss P-P	

### Environmental

Temperature: Operating	-50°C to +80°C	
Temperature: Storage	-50°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

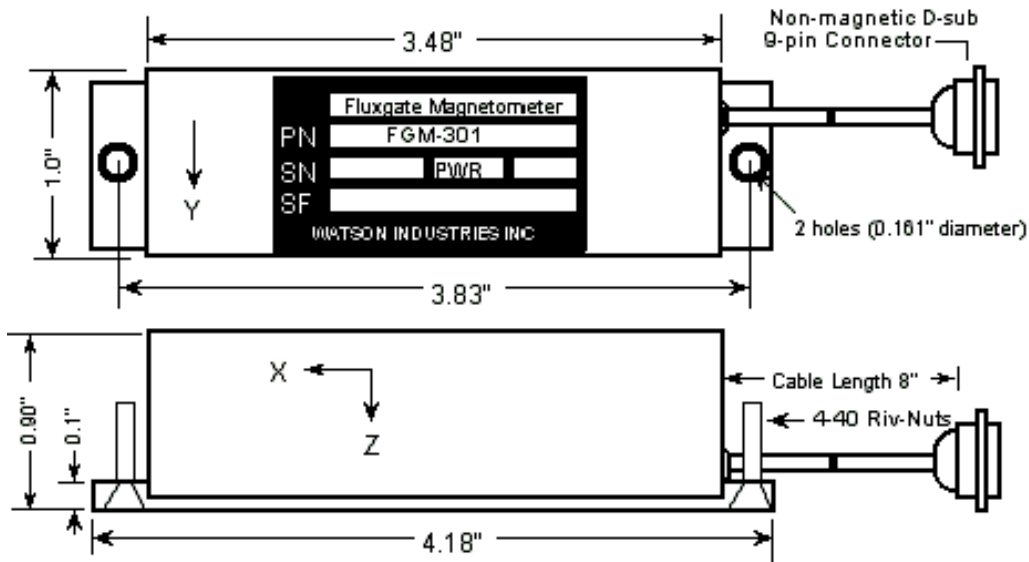
Input Power:	6 to 16 VDC	0.4W
Input Current:	35mA	
Analog Output	±3.5VDC	
Output Impedance	1000 Ohm	

### Physical

Axis Alignment:	< 0.3°	
Size: Including Mounting Flanges	1.0"W x 4.18"L x 1.0"H	2.54 x 10.62 x 2.54 (cm)
Weight:	3.1oz (0.2lb)	90g (0.1kg)
Connection:	9 pin male "D" subminiature	
Life:	> 50,000 Hours MTBF	

- 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