

# BILLINGSLEY AEROSPACE & DEFENSE

## HFM500

### HIGH FIELD TRIAXIAL FLUXGATE MAGNETOMETER

#### FEBRUARY 2008 SPECIFICATIONS

Description:	Triaxial Fluxgate Magnetometer used for measurement of large magnetic fields, has low noise and excellent linearity, and can be configured to measure field up to $\pm 15$ Gauss.
Axial Alignment:	Orthogonality better than $\pm 1^\circ$
Input Voltage Options:	Unipolar + 18 to 35 V; Protected against reverse voltage; Surge protected with clamps in 1 picosecond with pulse power to 600 Watts; Galvanically isolated power converter.
Input Current:	28mA t Zero Field = 1.5 mA/Gauss/Axis
Feedback Ripple Current:	5 mA Peak to Peak (Minimizes crosstalk between magnetometers when used in arrays.)
Field Measurement Range:	$\pm 500 \mu\text{T}$ (Other Ranges Available)
Accuracy:	$\pm 0.75\%$ of Full Scale (0.5% Typical)
Linearity:	$\pm 0.007\%$ of Full Scale
Sensitivity:	20 $\mu\text{V/nT}$
Scale Factor Temperature Shift:	0.01% Full Scale/ $^\circ\text{C}$
Noise:	$\leq 20 \text{ pT RMS/ Hz @1 Hz}$ ( $\leq 10 \text{ pT}$ Option Available)
Output Ripple:	3 mV Peak to Peak @ 2nd Harmonic
Analog Output @ Zero Field:	$\pm 0.020 \text{ V}$
Zero Shift with Temperature:	$< 1 \text{ nT}/^\circ\text{C}$
Susceptibility to Perming:	$\pm 8 \text{ nT}$ Shift with $\pm 5$ Gauss Applied $\pm 30 \text{ nT}$ Shift with $\pm 15$ Gauss Applied
Output Impedance:	332 $\Omega \pm 5\%$
Frequency Response:	-3 dB @ $> 500 \text{ kHz/ } > 4 \text{ kHz}$ Available with increased Output Ripple
Overload Recovery:	Unconditional stability with any load capacitance; Will drive any length cable.
E M I:	Minimizes conducted/radiation emissions and susceptibility
Random Vibration:	20G RMS 20 Hz to 2 KHz
Temperature Range:	- 40 $^\circ$ to + 85 $^\circ\text{C}$
Acceleration:	60G
Weight:	182 g
Size:	3.51 cm x 3.51 cm x 15.37cm
Chasis:	Aluminium with ground jumper option for optimum EMI shielding
Connector:	9 PIN MALE "D" TYPE; Female Mating Connector Supplied