

# BILLINGSLEY AEROSPACE & DEFENSE

## DFM28G 28 BIT RESOLUTION SERIAL DIGITAL TRIAXIAL FLUXGATE MAGNETOMETER FEBRUARY 2008 SPECIFICATIONS

Description:	<p>Ultra reliable, all functions both digital and analog on a single miniature printed circuit board, housed in a compact chassis or underwater housing as required by user. This instrument offers the highest digital resolution of any fluxgate magnetometer in existence. It features automatic cancellation of Earth's Magnetic field under software control. Nulling parameters are stored in flash memory so that power outages do not upset the instrument's magnetic baseline. The instrument has a built in 16 bit accuracy calibrator to insure full confidence in instrument performance at all times.</p> <p>Serial interface 38.4K or 19.2K Baud, 8 Data, No Parity, 1 Stop Bit RS232C or RS485 serial interface. Instrument is capable of driving cable lengths &gt;1000 meter.</p>
Axial Alignment:	Orthogonality better than 1.0° (0.2 ° special)
Input Voltage:	16 to 34 VDC @ 750 mW constant power ideal for battery powered operation. AC mains operation option.
Field Measurement Range:	± 65 µT (Other Ranges on Request)
Accuracy:	± .02 % of Full Scale
Digital Output Resolution:	28 bits at 4096 sample averaging
Digital Linearity:	± .0015% of Full Scale
Scale Factor Temperature Shift:	≤ .002 % / °C typical.
Noise:	< 8 pT Rms/√Hz @ 1Hz ≤ 3.0 pT Rms/√Hz @ 1Hz (special)
Zero Shift with Temperature:	≤ 0.5 nT /°C
Susceptibility to Perming:	< ± 5 nT Shift with ± 5 Gauss applied
Digital sample rate:	> 125 conversions second / all 3 axes/ in binary mode ≈ 55 conversions second/ all 3 axes / second in ASCII mode
	<p>These data rates are with the A/D set to 128 samples/averaged. Faster data rates available if fewer averages are required. Software control allows the instrument to take averages from as little as two samples up to 4096 samples depending on the data acquisition speed requirement versus resolution requirement. The instrument has an internal 5<sup>th</sup> order inverted Chebyshev anti-aliasing filter built in. This filter is factory set at 20 Hz (other cutoffs on request to factory), The user can select the proper tradeoff for his particular application.</p>
Weight	≈ 909 g PVC Housing
Size:	30.5 cm L x 7.8cm D (PVC Housing)
Output Connector:	Brantner XSEE-12-BCR type