BILLINGSLEY
AEROSPACE & DEFENSE

Comparison of BA&D Digital Flight Magnetometer vs. AMR Sensor Flight Magnetometer

Characteristics	AMR Sensor	BA&D DTFM100S	Conditions / Comments
Supply Volts	5 VDC	5 VDC	
Power consumption	~150mW	Active < 110 mW Idle < 60 mW	110 mW peak during 15 mS A/D conversion cycle
Operating Temperature Range	-40° to +85°C	-40° to +85°C	Storage -55 to +125
Orthogonality	No Specification	≤ 1°	
Range	±80μT	±80μT	
Resolution	7nT	3nT	Minimum Applied Field to Change Output
Accuracy	0.5%	0.3%	% Full Scale (FS)
Linearity Error % F.S.	0.5%	<.04%	Best Fit Straight Line @+25°C
Crossfield Effects 60 μT perpendicular	Estimated 2° Angular Error	< .015° Angular Error	Reference: Journal of ELECTRICAL ENGINEERING, VOL 61. NO 7/s, 2010
Hysteresis Error	~80 nT	None	± 0.8 Gauss change
Zero Shift Due To Magnetotorquers	No Specification - May require degaussing	<20 nT change after removal	Up to ± 10 Gauss
Recovery time, post 5 Gauss field applied	No Specification	<2 msec	
TID Radiation Tolerance	Unknown	>30 kRads	>50kRADs w/added internal shield
Gain/Scale factor	600 ppm	<200 ppm	Gain coefficient per °C
Weight	98 grams	100 grams	Moderate increase if additional radiation shield.
Serial interface	9600-19.2k Baud	115kBaud CAN buss/ RS485	9600 to 1Mbits CAN
Dimensions	10.16 x 3.81 x 2.82 cm	8.26 x 3.51 x 3.23cm	