MODEL AP235
MAGNETOMETER SENSOR

FEATURES

- Complete 3-axis fluxgate system
- Low noise level
- Measures up to ±2.0 G
- Piccolo™ compatible
- Compact size, rugged construction
- Noise Level: 3.0 µG RMS/√HZ

APPLICATIONS

- Compassing and Navigation
- Attitude Reference
- Anomaly Detection

AP235 is an all-in-one 3-axis fluxgate magnetometer with high accuracy. Unlike other fluxgate magnetometers, AP235 does not require any external Data Acquisition Unit (DAQ) or analog circuitry.

AP235 delivers up to 30 samples per second from all three axes placing it among the fastest fluxgate magnetometers. AP235 and fluxgate magnetometers, in general, do not experience hysteresis error as much as other types of magnetometers. As a result, they provide more accurate and reliable measurements.

AP235 has a measuring range of ±2.0 G (± 200 µT) well above the earth's total magnetic field. In most vehicles this provide the highest sensitivity possible without saturating. ±0.65 gauss versions available for even higher sensitivity. AP235 has a very low offset and noise level while offering exceptionally high linearity and temperature stability, making it suitable for a wide range of applications. AP235 supports a voltage range of 8VDC to 36VDC, and its specified operating temperature is -25°C to 70°C (for wider operating temperatures, please contact Applied Physics Systems).

The AP235 simplifies and reduces the cost of the magnetic data acquisition system by eliminating the cumbersome A to D board. The system uses three separate 24-bit DAQ converters to achieve high throughput.

Piccolo™ compatible command set is a subset of the AP235 commands. Piccolo is a trademark of Collins Aerospace.

PIN	FUNCTION
1	Not used
2	RS232 TXD
3	RS232 RXD
4	Not used
5	Ground
6	Reserved - Must be Floating
7	Reserved - Must be Floating
8	Configure - Must be Floating
9	+Voltage In

APPLIED PHYSICS DEFENSE

HEADQUARTERS
425 Clyde Avenue Mountain View, CA 94043

OFFICE 650.965.0500
EMAIL service@appliedphysics.com

ELECTRICAL

Input Voltage Range	+8 to +36 VDC
Current Consumption	under 90 mA
Digital Output Protocols	RS232
Baud Rate (User Selectable)	300, 1200, 2400, 4800, 9600 (default), 19200, 38400
Maximum Output Sample Rate at 38400 Baud (in 'Auto-Send' mode)	30 transmissions/sec
Analog to Digital	24-bit

ENVIRONMENTAL

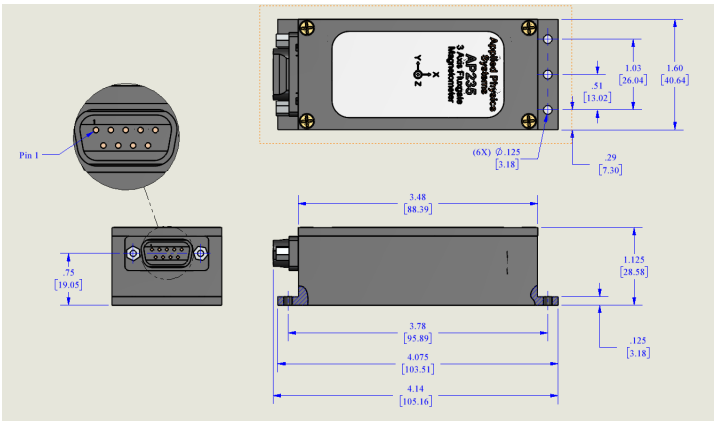
Operating Temperature Range	-25°C to +70°C

PERFORMANCE

Range	± 2.0 G (± 200 µT)
Resolution	6 nT (60 µG)
Accuracy @ full scale	± 1 %
Linearity @ full-scale	± 200 µG
Offset Error (at 0mG)	± 2 mG
Offset Drift versus Temperature	< 50 µG/°C
Noise Level	3.0 µG RMS/√Hz
Orthogonality between axis	Better than ±0.5°
Alignment of sensor package with sensor reference surfaces	Better than ±0.5°

PHYSICAL

Width	1.60" (40.64 mm)
Height	1.125" (28.58 mm)
Length	4.14" (105.16 mm)
Weight	150 g
Connector on the Sensor	9-pin D-sub Male/Plug Connector
Mating Connector	9-pin D-sub Female/Receptacle Connector (Non-Magnetic)



Specifications are subject to change without notice.