

# MODEL 536

## MAGNETOMETER SENSOR

### FEATURES

- Complete 3-axis system
- Compact size, rugged construction
- Operates from  $\pm 15$  VDC
- Low noise level
- Measures up to  $\pm 1$  Gauss

### APPLICATIONS

- Fluxgate compass systems
- Magnetic anomaly detection
- Measurement of the Earth's magnetic field

The Applied Physics Systems Model 536 is a small, low cost magnetometer designed to measure small magnetic fields ( $3 \times 10^{-7}$  to 1 Gauss).

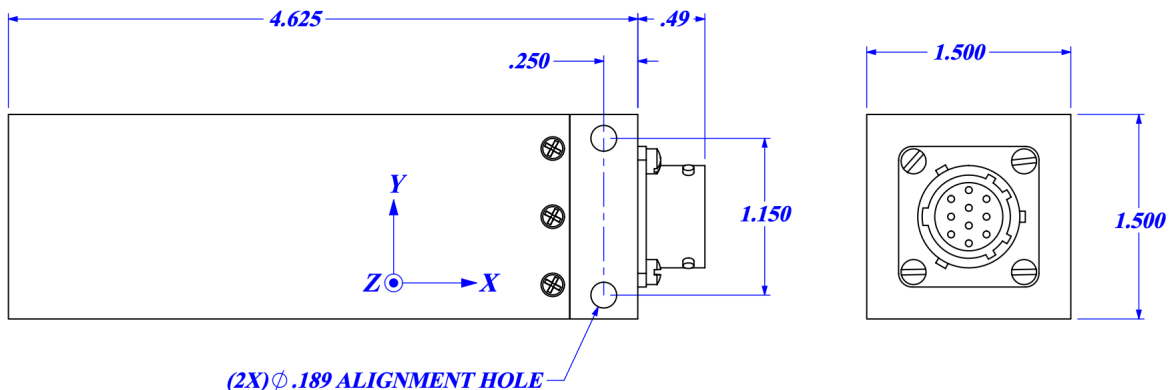
Output from the sensor is 3 analog voltages, proportional to the magnetic field in three orthogonal directions. Full scale output is  $\pm 10$  volts.

An optional temperature sensor can be added to the Model 536. This sensor is implemented by using an Analog Devices AD592. The temperature output is represented by an analog voltage present on pin A of the system Bendix connector. The temperature output signal is proportional to the absolute temperature; scale factor is  $5 \text{ mV}/^\circ\text{K}$ . At room temperature ( $20^\circ\text{C}$  or  $293^\circ\text{K}$ ) the temperature output voltage is 1.465V.



The Model 536 is powered from bipolar  $\pm 15$ VDC supplies. Two internal regulators are present in the Model 536, which produce  $\pm 12$ VDC for internal use. Connection to the Model 536 is accomplished by means of a 10 pin Bendix connector.

For sensor alignment, the X axis is aligned parallel to the package long dimension. The Z axis is aligned with the two through holes in the aluminum connector mounts. The system's Y axis is orthogonal to the X and Z directions. The output polarity sense of the axes is such that a field increase in the direction of the arrows produces an increase in the voltage output for that axis. In general, the magnetic axis of the Model 536 is orthogonal and aligned to within  $\pm 0.2^\circ$  of the coordinate system specified by the outer package alignment surface and alignment holes.



**ELECTRICAL**

Power Input	±15 V
Current Draw	60 mA @ ±15 VDC
Total Power Consumption	900 mW

**ENVIRONMENTAL**

Operating Temperature Range	-25°C to +70°C
Storage Temperature Range	-55°C to +160°C

**PERFORMANCE**

Dynamic range	± 1.0x10 <sup>5</sup> nT (1.0 Gauss)
Noise Level	0.03 nT RMS/√Hz 0,3 μG RMS/√Hz
Sensitivity	10 V/G
Linearity @ full-scale	± 0.2%
Frequency Response	DC to 400 Hz (-3 db)
Initial Offset	<± 0.010 V
Temp. Coefficient Zero Output	<± 3 nT/°C (<± 30 μG /°C)
Temperature Scale Factor	<± 0.1% Full Scale/°C
Temperature Sensor Scale Factor	5 mv/ °K
Orthogonality of Axes	± 0.2°
Alignment of Axes with Package	± 0.2°

**PHYSICAL**

Width/Height	1.5" (38.1 mm)
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Length (excluding connector)	4.625" (117.475 mm)
Weight	145 g
Connector	Bendix P/N PT02A-12-10S
Mating Connector	Bendix P/N PT06A-12-10P (SR)

WIRE COLOR	FUNCTION	PIN
RED	+15 VDC	H
BLUE	-15 VDC	K
GREEN	Temperature	A
ORANGE/WHITE	Y output	D
YELLOW/WHITE	Z output	F
RED/WHITE	X output	E
BLACK	Ground	B, G



*Specifications are subject to change without notice.*