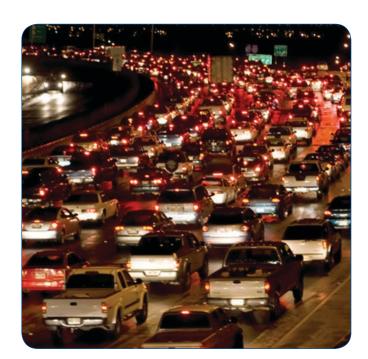
# Mag670

Low Cost Single Axis Magnetic Field Sensor







## Mag670 Low Cost Single Axis Magnetic Field Sensor

This compact, versatile, low cost fluxgate sensor provides measurements of static and alternating fields up to 1mT. It is a packaged single axis sensor with two options for orientation of the fluxgate element.



#### **Features**

- Noise <20pTrms/√Hz at 1Hz</li>
- Frequency response from DC to >1kHz
- Measuring ranges from ±100μT to ±1000 μT
- Two fluxgate element orientations

### **Typical Applications**

- Incorporation in security systems
- Detection of magnetic materials
- Traffic monitoring



#### **Product Identification**

Product name	Orientation	Range in µT
Mag670	I = In-line R = Right-angle	±100 ±500 ±1000

Example: Mag670-I-1000 is a  $\pm 1000 \mu T$  sensor with an in-line orientation.

## Mag670 Specifications

Performance	
Number of axes	One
Polarity	+ve output when pointing North
Measuring range	±100μT ±500μT ±1000μT
Bandwidth at -3dB	>1kHz
Measurement noise floor	>10 to ≤20pTrms/√Hz at 1Hz
Scaling	100mV/μT 20mV/μT 10mV/μT
Scaling temperature coefficient	±200ppm/°C
Start-up time	150ms
Warm-up time	15mins
Offset (in zero field)	±100nT
Offset temperature coefficient	<2nT/°C
Scaling error	±5%
Alignment error (to reference face)	<2°
Linearity error	0.01% (across full scale)
Hysteresis	<100nT at full scale
Excitation breakthrough	<20mV pk-pk at 15.625kHz typical

Environmental		
Operating temperature range	-20°C to +70°C	
Storage temperature range	-40°C to +85°C	
Environmental protection	N/A - Molex connector	

Mechanical		
Dimensions	80 x 35 x 15mm	
Weight	60g	
Enclosure material	Black acetal and polyurethane potting compound	
Connector	Molex 22-05-7058 0.1" connector 5 pins	
Mating connector	Molex 22-01-1052 + Crimps 08-70-0069	
Mounting	4 x M2.5 threaded holes	
Angle between axis and reference	I-0° or R-90° (specify on order)	

Electrical		
Supply voltage	±11V to ±17V DC	
Supply current	+18mA, -3mA maximum	
Power ON surge current	+40mA, -8mA (<150ms)	
Voltage protection	Polarity reversal to 40V	
Analogue voltage output	±10V (unbalanced, single ended ref. 0V)	
Output impedance	10Ω typical	
Output protection	Protected against short circuit to 0V	

### **Power Supplies**

The Mag670 range is compatible with the following data acquisition and power supply units from Bartington Instruments:

- PSU1 Power Supply Unit
- DecaPSU Power Supply Unit (adaptor cable required)
- Magmeter-2 Power Supply and Display Units
- Spectramag-6 Data Acquisition Unit
- SCU1 Signal Conditioning Unit
- Mag-03DAM Data Acquisition Module

#### Accessories

	Mag670
Cables	Optional extra
Mating connectors	Not supplied



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