Mag670

Low Cost Single Axis Magnetic Field Sensor

Innovation in Magnetic Measuring Instruments

Bartington® Instruments

Mag670
Low Cost Single Axis Magnetic Field Sensor

This compact, versatile, fluxgate sensor is ideal for integration into large component systems where high performance is essential. It is also suitable for use in projects requiring large volumes where unit cost is critical.

Features and options

- Noise level of <20pTrms/√Hz at 1Hz
- Frequency response from DC to in excess of 1kHz
- Measuring ranges: ±100µT, ±500µT or ±1000 µT
- Three fluxgate element orientations: In-line, Diagonal or Right-angle
- Packaged and unpackaged versions

Typical applications

- Detection of magnetic materials
- Surveillance
- Navigation
- Traffic monitoring

Product identification

Product name	Package	Orientation	Range
Mag670	*No code* = Standard U = Unpackaged	I = In-line D = Diagonal R = Right-angle	100 = ±100µT 500 = ±500µT 1000 = ±1000µT

Example: Mag670-I-1000 is a ±1000µT sensor with an in-line orientation.

Mag670 Specifications

Performance	
Number of axes	One
Measuring range options	±100µT, ±500µT, ±1000µT (specify on order)
Bandwidth at -3dB	>1kHz
Internal noise	10–20pTrms/√Hz at 1Hz
Scaling	100mV/µT (±100µT), 20mV/µT (±500µT), 10mV/µT (±1000µT)
Start-up time	150ms
Warm-up time	15mins
Offset error	±100nT in zero field
Scaling error	±5%
Temperature coefficient of offset error	<2nT/°C
Temperature coefficient of scale factor	±200ppm/°C
Alignment error to datum	<2°
Linearity error	0.01% (across full scale)
Hysteresis	<100nT at full scale
Excitation breakthrough	<20mV pk-pk at 16kHz

Environmental	
Operating temperature range	-20°C to +70°C
Storage temperature range	-40°C to +85°C

Mechanical	
Dimensions: Mag670 Mag670U	80 x 35 x 15mm 71 x 28 x 8mm
Weight: Mag670 Mag670U	60g 10g
Connector	0.1" Molex connector 5 pins
Mounting: Mag670 Mag670U	4 x M2.5 threaded holes 4 x Ø3.3mm holes
Polarity	+ve output when pointing North
Angle between axis and reference	I -0°, D -45° or R -90° (specify on order)

Electrical	
Voltage input	±11V to ±17V
Supply current	-3mA, +18mA maximum
Power ON surge current	-8mA, +40mA (<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

Accessories

- Molex connector and crimps: free of charge

Product compatibility

- PSU1 Power Supply Unit
- Magmeter Power Supply and Display Unit
- Spectramag-6 Data Acquisition Unit
- SCU1 Signal Conditioning Unit
- Mag-03DAM Data Acquisition Module
- Decaport Analogue Interface Module
- DAS1 Data Acquisition System

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