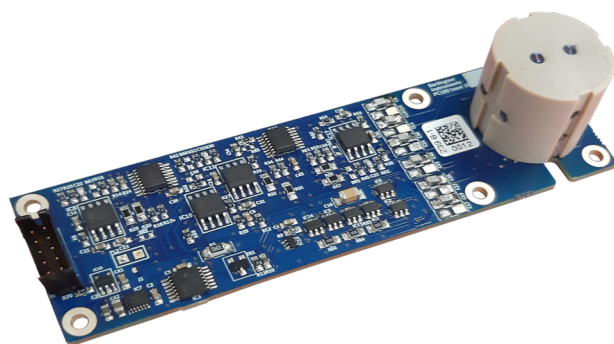


Mag900 & Mag901

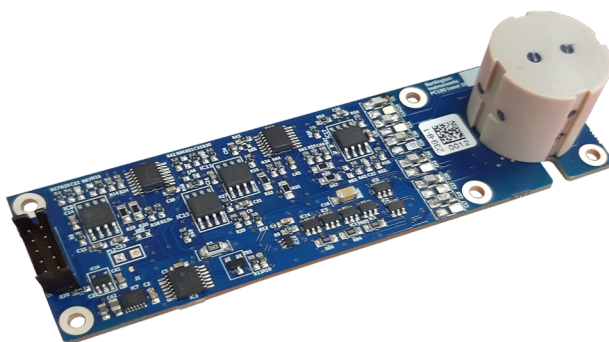
Low Power Three-Axis Magnetic Field Sensors





Mag900 & Mag901 Low Power 3-Axis Magnetic Field Sensors

These low power unpackaged 3-axis magnetic field sensors offer high sensitivity magnetic field measurements within a narrow noise band. Its exceptionally low power consumption makes it ideal for surveillance and perimeter security applications.



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Features

- Noise band of $\leq 10 \text{ pT}_{\text{rms}}/\text{Hz}$ @ 1 Hz (After magnetic settling time)
- Low power consumption
- Unpackaged for easy incorporation in multi-sensor systems
- Measuring range ± 60 and $\pm 100 \mu\text{T}$

Typical Applications

- Detection of vehicles
- Detection of personnel carrying metal equipment
- Magnetic field measurement in remote locations
- Multi-sensor magnetic signature ranges



Product Identification

Product name	Noise	Range
Mag900 & Mag901	No code = Standard noise L = Low noise	60 = $\pm 60\mu\text{T}$ 100 = $\pm 100\mu\text{T}$

Example: Mag900L-60 = Un-packaged Mag900, low-noise and $\pm 60\mu\text{T}$ range.

Specifications

Performance	Mag900	Mag901
Number of axes	Three (Right Hand XYZ co-ordinate system)	
Polarity	+ve non-inverting output when pointing North	
Range	$\pm 60\mu\text{T}$ $\pm 100\mu\text{T}$	
Scaling Calibration Error	$\pm 0.5\%$	
Scaling Temperature Coefficient	<135ppm/ $^{\circ}\text{C}$ ($60\mu\text{T}$) <200ppm/ $^{\circ}\text{C}$ ($100\mu\text{T}$)	
Linearity Error	<0.0033% (least squares fit)	
Frequency Response	DC to 10Hz <5% deviation from DC	DC to 500Hz <5% deviation from DC
Bandwidth at -3dB	>30Hz	>1kHz
Noise - Analog	Low ($60\mu\text{T}$ range): $\leq 10\text{pTrms}/\text{Hz}$ @ 1Hz Low ($100\mu\text{T}$ range): $\leq 12\text{pTrms}/\text{Hz}$ @ 1Hz Standard: $> 10\text{pT}$ to $\leq 25\text{pTrms}/\text{Hz}$ @ 1Hz	
Zero Field Offset	< $\pm 100\text{nT}$	
Offset Temperature Coefficient	<1.25nT/ $^{\circ}\text{C}$	
Perming (Magnetisation Hysteresis)	<2nT at 1 x full scale (powered)	
Orthogonality error between axes	<1 $^{\circ}$	
Excitation Breakthrough	<20mV pk-pk at 8.192kHz	<50mV pk-pk at 8.192kHz
Start-up time	150ms	
Magnetic settling time	30-60mins	

Environmental	
Operating temperature range - continuous	-40°C to +70°C
Storage temperature range	-40°C to +50°C (in max ambient field <300μT)
Compliance	EMC BS EN 61326:2013 & RoHS

Mechanical	
Dimensions	29 x 25 x 100mm
Weight	25g
Connector	Hirose DF11-10DP-2DSA(01)
Mating Connector	Hirose DF11-10DS-2DSA(06)
Mounting Arrangements	6 x 2.7mm dia holes

Electrical	
Supply Voltage	+4.5V to 15V
Current Consumption - Mag900 (Standard Noise) Zero-Field In-field	<6.5mA (typical) in zero field +1mA nominal in 50μT field
Current Consumption - Mag900 (Low Noise) Zero-Field In-field	<6.8mA (typical) in zero field +1mA nominal in 50μT field
Current Consumption - Mag901 (Standard Noise) Zero-Field In-field	<5.5mA (typical) in zero field +1mA nominal in 50μT field
Current Consumption - Mag901 (Low Noise) Zero-Field In-field	<6.8mA (typical) in zero field +1mA nominal in 50μT field
Power-on surge	400mA Max, 260mA typical
Analogue Output	±3V (balanced differential, each output 0.15V to 3.15V, 1.65V zero-field)
Output Impedance	20Ω typical
Excitation frequency	8.192kHz (<±0.1%)

The specifications of the products described in this brochure are subject to change without prior notice.

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