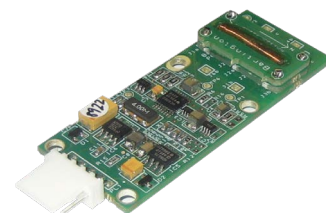
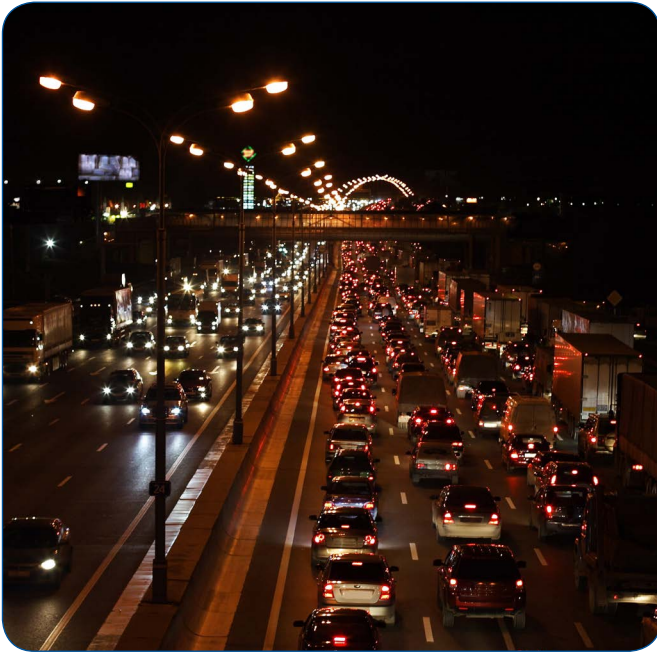


Mag646 & Mag710

Low Cost Single Axis Unpackaged
Magnetic Field Sensors



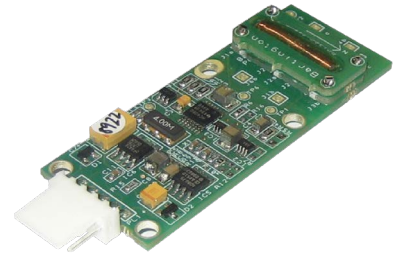


Mag646 & Mag710 Low Cost Unpackaged Single Axis Magnetic Field Sensors

These compact and versatile fluxgate sensors provide measurements of static and alternating fields up to 1mT.

These sensors are specially designed for OEM integration, and have three options for orientation of the fluxgate element.

The Mag710 also features a low pass filter, which makes it ideal detecting slow-moving objects, such as a weapon carried by a person.



Features

- Noise 10-20pTrms/ $\sqrt{\text{Hz}}$ at 1Hz
- Frequency response from DC to 1kHz
- Measuring ranges: $\pm 100\mu\text{T}$, $\pm 500\mu\text{T}$ or $\pm 1000\mu\text{T}$
- Three fluxgate element orientations: In-line, Diagonal or Right-angle

Typical Applications

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



Product Identification

| Product name | Orientation | Range in μT |
|--------------|--|-------------------------|
| Mag646 | I = In-line R = Right-angle D = Diagonal | ± 100 |
| Mag710 | | ± 500 ± 1000 |

Example: Mag646-I-1000 is a $\pm 1000\mu\text{T}$ sensor with an in-line orientation.

Mag646 & Mag710 Specifications

| Performance | | | |
|-------------------------------------|--|----------------------|-----------------------|
| Number of axes | One | | |
| Polarity | +ve output when pointing North | | |
| Measuring range | $\pm 100\mu\text{T}$ | $\pm 500\mu\text{T}$ | $\pm 1000\mu\text{T}$ |
| Bandwidth at -3dB | >1kHz | | |
| Measurement noise floor | >10 to $\leq 20\text{pTrms}/\sqrt{\text{Hz}}$ at 1Hz | | |
| Scaling | 100mV/ μT | 20mV/ μT | 10mV/ μT |
| Scaling temperature coefficient | $\pm 200\text{ppm}/^\circ\text{C}$ | | |
| Start-up time | 150ms | | |
| Warm-up time | 15mins | | |
| Offset (in zero field) | $\pm 100\text{nT}$ | | |
| Offset temperature coefficient | <2nT/ $^\circ\text{C}$ | | |
| Scaling error | $\pm 5\%$ | | |
| Alignment error (to reference face) | <2 $^\circ$ | | |
| 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 $^\circ\text{C}$ to +70 $^\circ\text{C}$ |
| Storage temperature range | -40 $^\circ\text{C}$ to +85 $^\circ\text{C}$ |
| Environmental protection | Conformal coating |

| Mechanical | |
|----------------------------------|---|
| Dimensions (W x H x L) | 7 x 25 x 76mm |
| Weight | 10g |
| Connector | Molex 22-05-7058 0.1" connector 5 pins |
| Mating connector | Molex 22-01-1052 + Crimps 08-70-0069 (not supplied) |
| Mounting | 4 x 3.3mm holes |
| Angle between axis and reference | I -0°, D -45° 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 |

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