

# Mag639

Three-Axis Magnetic Field Sensor





## Mag639 Three-Axis Wide Bandwidth Magnetic Field Sensor

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This wide bandwidth fluxgate sensor allows for measurements from DC to 12kHz of field strengths up to  $\pm 100\mu\text{T}$ .

Creation of eddy currents is prevented by a non-conductive, cylindrical enclosure. A 2.5m shielded cable removes the sensor connector from the immediate proximity of fluxgates. The three concurrent fluxgate elements minimise the effect of high magnetic field gradients.





## Features

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- Wide bandwidth – DC to 12kHz
- Noise level  $<20\text{pTrms}/\sqrt{\text{Hz}}$  at 1Hz
- $\pm 100\mu\text{T}$  measuring range
- Concurrent axes (single point of intersection)
- Environmentally sealed to IP65

## Typical Applications

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- Time-domain electromagnetics (TDEM)
- Magnetotellurics (MT)
- EMC Interferences measurement
- Unexploded ordnance (UXO) detection



## Specifications

Performance	
Number of Axes	Three
Polarity	+ve non-inverting output when pointing North
Measuring range	$\pm 100\mu\text{T}$
Bandwidth (-3dB)	0 to 12kHz ( $\pm 5\%$ ) (at 50% full scale)
Measurement noise floor	$< 20\text{pTrms}/\sqrt{\text{Hz}}$ at 1Hz
Scaling	100mV/ $\mu\text{T}$
Offset error	$< 50\text{nT}$
Scaling error	$\pm 0.5\%$
Orthogonality error	$< 0.5^\circ$
Roll off (-dB/Octave)	11dB
Frequency response	DC-5kHz ( $\pm 5\%$ )
Hysteresis	$< 5\text{nT}$ at $100\mu\text{T}$
Excitation breakthrough	$< 20\text{mV}$ pk-pk at 31.25kHz typical

Environmental	
Operating temperature	$-20^\circ\text{C}$ to $70^\circ\text{C}$
Environmental protection	IP65

Mechanical	
Dimensions (Ø x L) excluding cable	25.4 x 218mm
Integral cable length	2500mm (Ø 6mm)
Weight	270g
Enclosure	PPS GF TECATRON GF 40
Connector	Hirose RM15TRD10S
Mating connector	Hirose RM15TRD10P with 100mm long flying leads (supplied)

Electrical	
Supply Voltage	$\pm 15V$ to $\pm 17V$
Current Consumption	+59mA, -35mA
Analogue output	$\pm 10V$ (unbalanced, single ended ref. 0V)





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

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