

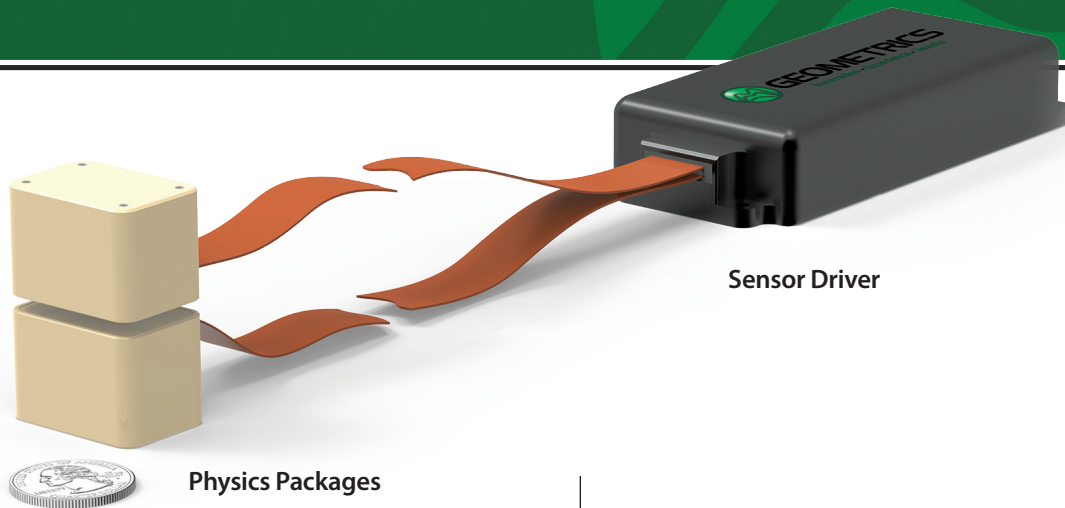
MFAM Module

Laser Pumped Cesium Magnetometer



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Physics Packages

Sensor Driver

The Geometrics MFAM Module is a laser pumped, total field cesium magnetometer and has a digital interface for easy integration with modular sensing platforms. Choose between four different MFAM models for the features you need to meet your application requirements. This lightweight and highly sensitive magnetometer is versatile enough for airborne applications with either a manned or unmanned aircraft, land applications, or marine applications when integrated into a pressurized housing. Dead Zone Free operation is possible with proper sensor orientation.

For applications where a precise stationary magnetometer is required, the Low Noise MFAM (LCS050G) is recommended. The Low Heading Error MFAM (LCS100H) is ideal for all applications measuring the spatial variation of the magnetic field. The Supermag MFAM (LCS100S) is just that, SUPER! It can do what the Low Noise and Low Heading Error MFAMs can do. The MFAM-SX (LCS100X) model is specifically for export to countries where the lower noise sensors are export restricted.

FEATURES & BENEFITS

- **Modular Architecture** – Integrate the MFAM module into your existing instruments and expand your service line.
- **High Performance** – Fast sampling and low noise!
- **Low Power Operation** – Decrease downtime by operating longer on a smaller battery.
- **Dead-zone free*** – Operate anywhere in the world without drop outs!

APPLICATIONS

- **Autonomous Geophysical Surveys**
- **Non-destructive Evaluation**
- **Magnetocardiography**
- **Structural Health Monitoring**

*Dead-zone free is only for combined mode with proper sensor orientations.



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SPECIFICATIONS | MFAM Module

Laser Pumped Cesium Magnetometer

PERFORMANCE

All Optical, NO RF Contamination or Interference

Field Range: Fullscale, 20,000 nT to 100,000 nT.

Digital Resolution: 32-bit magnetometer output, digital resolution is 50fT/LSB.

Output Data Rate: Continuous measurement; 1,000 Hz.

Noise: See Table

PHYSICAL

Weight: 0.5 lbs (0.23 kg).

Sensor Dimensions: 1.3 x 1 x 0.9 inches (33 x 25 x 32 mm).

Cable Length: 20 inches (508 mm).

Electronics Dimensions: 5 x 2 x 1 inch (120 x 52 x 22 mm).

POWER SUPPLY

Supply Voltage: Vin referenced to GND; Minimum: 9.5V; Typical: 12V; Maximum: 16V.

Average Current Draw:

Vin=12V, 25 °C ambient temperature; Typical: 0.4A; Maximum: 0.6A;

Vin=12V, -35 °C ambient temperature; Typical: 0.65A; Maximum: 0.85A.

Average Power Draw:

25°C ambient temperature; Typical: 5W; Maximum: 7W;

-35°C ambient temperature; Typical: 8W; Maximum: 10W.

ENVIRONMENTAL

Operating Temperature: Ambient; -35°C to +50°C (-30°F to +122°F)

ACCESSORIES

AC Power Adapter

USB Drive with Manual and Software

JIS Screw Driver and Drill Bit

One Set of Suspension Cords

Optional Development Kit - Not Included

MFAM Features by Model

	MFAM LCS050G	MFAM-LHE LCS100H	MFAM-SM LCS100S	MFAM-SX LCS100X
Low Noise Dual Reading	✓		✓	
Low HE Dual Reading		✓	✓	
Low Noise Single Reading			✓	
Low HE Single Reading		✓	✓	
SX Dual Reading				✓
SX Single Reading				✓

MFAM Specifications

	Low Noise Dual Reading	Low HE Dual Reading	Low Noise Single Reading	Low HE Single Reading	SX Dual Reading	SX Single Reading
Number of Outputs	2	2	1	1	2	1
Noise (pT/rt-Hz)	2 (2)	5 (7)	2 (3)	5 (7)	20 (25)	20 (25)
Heading Error (nT)	±25 (40)	±5 (7.5)	± 10 (20)	± 5 (7.5)	± 5 (7.5)	± 5 (7.5)
Dead Zone (degrees)	±25 (30)	±25 (30)	Dead-zone-free *	Dead-zone-free*	±25 (30)	Dead-zone-free*

Numbers shown are typical values, while those in parenthesis are guaranteed values

Specifications subject to change without notice.

MFAM Module (0420)



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