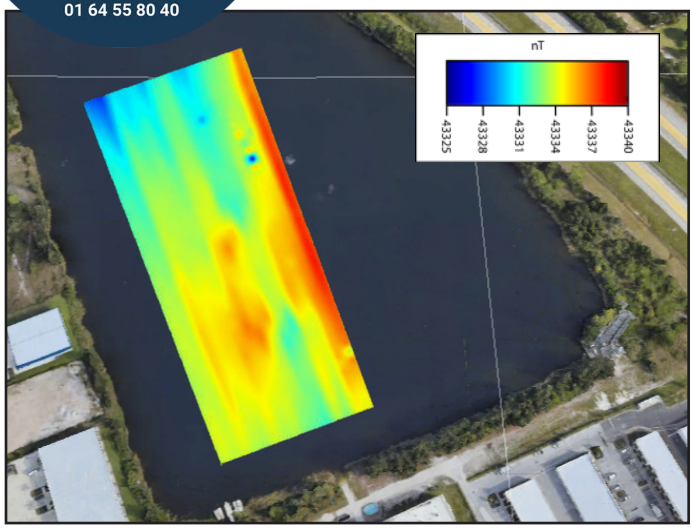
MagElement
Marine Magnetometer

GEOMETRICS
Simplify your search



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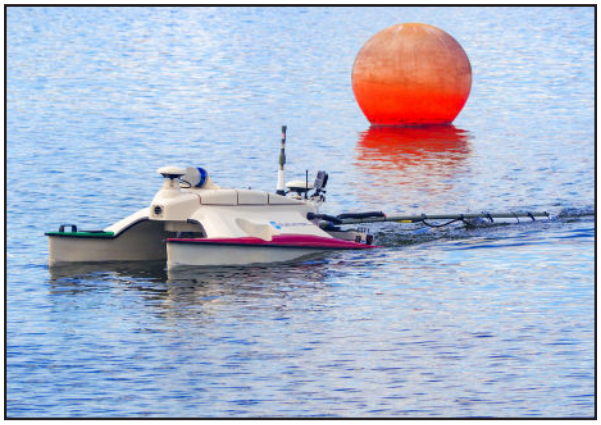
Data collected on ASV in 5-15m water depth

The MagElement is the latest addition to the long list of reliable Geometrics magnetometers. For over 50 years, our name and instruments have been trusted by geophysical professionals worldwide. Our latest magnetometer, the MagElement, brings our powerful sensor to an instrument compatible with autonomous platforms. Our new magnetometer utilizes the lightweight, low power MFAM sensor which is already proven itself through the Geometrics MagArrow. It combines the features our customers use the most, as well as new capabilities to more easily interface and integrate with autonomous platforms. The MagElement is ideal for any marine magnetic survey, particularly UXO, pipeline and cable investigations, which proves why our marine magnetometers are so respected in the industry.

Since 1969, Geometrics has been designing magnetometers to meet a wide range of industry needs. This very high resolution Cesium vapor marine magnetometer is low in cost, small in size, and offers maximum flexibility for your professional survey.

FEATURES & BENEFITS

- **Easily Scalable** – Tow an array of up to 16 MagElements with a single tow cable.
- **Sample at up to 1000Hz** – Unparalleled data density while optimizing survey efficiency.
- **Designed for AUV and ASVs** – low power, small size and standardized data connections allow for deployment on almost any platform.
- **Cesium Sensor Sensitivity** – High sensitivity and low noise allow you to detect objects at a greater distance - improving your survey productivity.
- **Global Version Available** – Use anywhere in the world without need for an export license. See specifications.
- **Flexible Interfaces** – Standard Ethernet communications, ability to add external sensors, and a wide input power range allow fast and easy integration.



Here MagElement is integrated with the SeaRobotics Surveyor 1.8 ASV platform

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SPECIFICATIONS | **MagElement** Marine Magnetometer



MAGNETOMETER / ELECTRONICS

Operating Principle: Laser pumped cesium vapor (non-radioactive) total field scalar magnetometer

Operating Range: 20,000 to 100,000 nT

Operating Zones: Configurable for operation anywhere in the world with a single dead zone along the polar axis

Noise: 2pT/ √Hzrms (Global Version 20 pT/ √Hzrms)

Gradient Tolerance: 10,000 nT/m

Sample Rate: Configurable up to 1,000 Hz

Heading Effect: Typical ± 0.5nT*

Connectors: SubConn 8-pin

Data Output: Ethernet

External Sensor Input: RS-232, Analog

Voltage Input: 12 - 48 VDC

Operating Power: 7W

*Along individual survey lines

MECHANICAL

Diameter: 2.375 inches (6 cm)

Length: ~31 inches (78 cm)

Weight: 4.25 pounds (~2 kg) in air

ENVIRONMENTAL

Operating Temperature: -20°C to +50°C (-4°F to +122°F)

Storage Temperature: -45°C to +70°C (-48°F to +158°F)

Depth Rating: 750m (2,460ft); 1,100 psi

Typical Detection Range for Common Objects

1.	Ship: 1,000 tons	0.5 to 1 nT at 800 ft (244 m)
2.	Anchor: 20 tons	0.8 to 1.25 nT at 400 ft (120 m)
3.	Automobile	1 to 2 nT at 100 ft (30 m)
4.	Light Aircraft	0.5 to 2 nT at 40 ft (12 m)
5.	12 inch Pipeline	1 to 2 nT at 200 ft (60 m)
6.	6 inch Pipeline	1 to 2 nT at 100 ft (30 m)
7.	Iron: 100 kg	1 to 2 nT at 50 ft (15 m)
8.	Iron: 100 lb	0.5 to 1 nT at 30 ft (9 m)
9.	Iron: 10 lb	0.5 to 1 nT at 20 ft (6 m)
10.	Iron: 1 lb	0.5 to 1 nT at 10 ft (3 m)
11.	Screwdriver: 5-inch	0.5 to 2 nT at 12 ft (4 m)
12.	Bomb: 1,000 lb	1 to 5 nT at 100 ft (30 m)
13.	Bomb: 500 lb	0.5 to 5 nT at 50 ft (16 m)
14.	Grenade	0.5 to 2 nT at 10 ft (3 m)
15.	Shell: 20 mm	0.5 to 2 nT at 5 ft (1.8 m)

ACCESSORIES

Standard: 3-meter Jumper Cable, Topside Adapter Cable, Product Manual, Pelican Storage Container

Optional: Tow Package including Nose Cone, Fins, Tow Cable



Multi-sensor Configuration

Specifications subject to change without notice. (ME0825)

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