# SeaSPY

The most reliable magnetometer you'll ever meet. Unfailing data, durable hardware, and an easy going disposition make SeaSPY a marine magnetometer you can count on. SeaSPY Marine Magnetometer sensors are orders of magnitude more accurate than any other magnetometer: 0.1nT ensuring that you are always getting the best possible data.

The SeaSPY Marine Magnetometer is the lightest magnetometer available at only 27kgs. Producing a very high absolute accuracy, it is entirely omni directional. The amount of signal produced by the sensor is completely independent of magnetic field direction. It never needs orientation as it is already optimized to work around the world.

## Specifications

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| **Product** | SeaSPY |
| **Country of origin** | Canada |
| **Manufacturer** | Marine magnetometer |

## Gradiometer configurations

Our sensors are highly accurate and repeatable, making them ideal for gradiometers

A gradiometer measures magnetic gradient in one dimension by subtracting the difference between two independent sensors. Since the Earth's magnetic field is three dimensional, up to three independent gradient directions can be measured. For information on how to collect data in all 3 gradients simultaneously, see our SeaQuest Gradiometer.

All SeaSPY magnetometers are compatible, enabling existing SeaSPY customers to upgrade their mag to the gradiometer configuration of their choice, as they need to.

## Features include

- World Wide Operation with no restrictions
- Works instantly on power-Up
- Eliminate shifts in your data
- Radio licence exempt in UK, enquire for other options)
- Maintenance free sensors
- Highest absolute accuracy
- Targets will not be missed because they fall between mismatched survey lines.

## Horizontal or vertical transverse gradiometer

Only one tow cable is used to tow this gradiometer. This saves our clients' money and valuable deck space. The readings from both mags are also taken simultaneously, improving the accuracy of the gradient calculation. These gradiometers are well suited for close-in precision surveys, for small ferrous targets where short sensor separation is needed.

## Applications

UXO Detection of Small Ferrous Targets – Short baseline gradient measurement in any direction (longitudinal, horizontal, or vertical) is useful for eliminating geological interference and diurnal variation.

Cable and Pipeline Survey – A horizontal transverse gradiometer can be used to track cables or pipelines in real time from relatively high towing altitudes.

## Longitudinal Gradiometer

Longitudinal gradiometers provide the largest variation in available baselines, from 1.5m to 500m+. Long baselines provide superior gradient measurement sensitivity and increased detection range. They are also extremely hydrodynamically stable when deployed.

## Applications

Shipwreck, Search and Salvage – Medium baseline measurement with a longitudinal gradiometer eliminates interference by geological bodies, while highlighting massive magnetic sources like steel hulls, boilers or engines. Smaller sources such as anchors or cannons will require a shorter baseline, and lower towing altitude.

Environmental Survey – Medium baseline measurement with a longitudinal gradiometer can highlight shallow magnetic sediments, while eliminating deeper geological influences. The baseline should be on the order of magnitude of the expected towing altitude.

Exploration Geophysics – Long-baseline measurement with a longitudinal gradiometer is ideal since the bodies of interest are often far from the sensor, and produce very small gradients. The baseline should be on the order of magnitude of expected depth-to-source.

## A SeaSPY Magnetometer system consists of

- Overhauser Sensor
  Omnidirectional sensor that does not contain any consumable parts.
- Electronics Module
  Contains all of the driving electronics and Larmour counter
- Leak Detector
  Visual queue, alarm sound when a drop of water gets inside the mag.
- Depths Available
  1000m (1500psi), 3000m (5000psi), 6000m (9000psi)



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## Tow cable

The cable is made up of one twisted pair of conductors, a Vectran strength member, water block and yellow poly-urethane jacket. Length determined by customer.

## Isolation transceiver

Provides the complete interface between the PC and the mag. It provides two-way digital communication along the same conductors that power the mag. It also conditions the mag's power supply. Dims: 11 x 6 x 3 cm (4 x 2 x 1") Weight: 130g (0.28 lbs)

## Power supply

Accepts any AC line 48V power, from 100-240VAC and 50/60Hz to provide conditioned and clean 24V DC power. Dims: 11x 6 x 3.5cm (4 x 2 x 1") Weight: 165g (0.36 lbs)

## Battery clip cable

Use this cable instead of the power supply. The mag's total power consumption is only 3W. A single 12V car battery can power it for days.

## RS232 Cable

Connects the mag and PC.

## BOB

Data acquisition and visualization software.

## Reusable aluminum shipping case

Holds all accessories listed above

## Options

- Pressure Sensor
- Altimeter
- Transponder
- Side Scan , ROV & AUV Integrations
- Deck cable
- Tow cable termination kit
- FreeWheel wireless cable spool



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## Performance

| | |
|---|---|
| **Operating Zones** | NO RESTRICTIONS SeaSPY will perform exactly according to spec. throughout the entire range |
| **Absolute accuracy** | 0.1nT |
| **Sensor sensitivity** | 0.01nT |
| **Counter sensitivity** | 0.001nT |
| **Resolution** | 0.001nT |
| **Dead zone** | NONE |
| **Heading error** | NONE |
| **Temperature drift** | NONE |
| **Power consumption** | 1W standby, 3W maximum |
| **Range** | 18,000nT to 120,000nT |
| **Gradient tolerance** | Over 10,000nT/m |
| **Sampling range** | 4Hz – 0.1Hz |
| **Communications** | RS-232, 9600bps |
| **Power Supply** | 9V-30V or 100-240 VAC |

## Towfish

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|---|---|
| **Towfish Length** | 119 cm (47 inches) |
| **Towfish Diameter** | 7.6 cm (3 inches) |
| **Towfish weight in air** | 12kg (27 lbs) |
| **Towfish weight in water** | 4kg (9 lbs) |

## Tow Cable

| | |
|---|---|
| **Conductors** | Twisted pair |
| **Breaking strength** | 2,500 kg (5,500 lbs) |
| **Outer diameter** | 1 cm (0.4 inches) |
| **Weight in air** | 125 g/m (84 lb/1000 ft) |
| **Weight in water** | 44 g/m (29.5 lb/1000 ft) |
| **Cable termination** | Field Replaceable |

## Floatation cable

| | |
|---|---|
| **Outer diameter** | 1.9 cm (0.74 inches) |
| **Weight in air** | 125 g/m (0.084 lbs/ft) |
| **Weight in water** | -20 g/m (0.03 lbs/ft) |