

Sentinel

2 in 1 Base Station Magnetometer



Sentinel incorporates advanced design with ease of use. Powerful features allow it to operate unattended for months at a time and only needs to be programmed once.

A complete self-contained long-term magnetic monitoring station, the Sentinel contains a battery pack and a low-power omnidirectional Overhauser magnetometer all sealed in a pressurized housing. It comes with accessories that allow it to be deployed on land on any terrain, above ground suspended from tree branches or overhangs, and underwater to depths of 1000m or more. It can be stationed virtually anywhere on the surface of the Earth.

Marine Magnetics' BaseLINK software for Windows (included) allows the user to easily set the clock and the sample rate with the touch of a key. Non-volatile memory ensures that Sentinel remembers its settings, and automatically places itself in low-power standby when not in use.

Deployment on Land

To deploy Sentinel on land, assemble the all-aluminum tripod base using the supplied thumbscrews (no tools required). Place the tripod in the desired location, and then insert Sentinel into the base. When you feel the click of the housing connecting, Sentinel will automatically perform a self-test. Note that Sentinel's sensor is omnidirectional and therefore requires no orientation.

Self-diagnostics

When Sentinel is turned on, it performs a 5 second test to determine whether the survey site is in a magnetically noisy area. If the area is unsuitable, the red LED located on the base will flash for a few seconds. Sentinel will then power itself down, and wait to be

moved to another location, or wait for the source of the noise or high gradient to be removed.

When the green LED flashes, you know the diagnostic tests have passed, and that Sentinel is located in a good area. The green LED will then flash briefly every time a reading is taken to assure the operator at a glance that Sentinel is operating. It's that simple. When your survey is completed, remove Sentinel from the tripod base. Sentinel will automatically stop acquiring data and power itself down until it is reactivated.

Although Sentinel is perfectly comfortable working alone, you can monitor its performance at any time by plugging your PC's COM port into the tripod base. Sentinel reports readings through its serial port in real time, in addition to automatically storing them in its nonvolatile memory. At the same time, Sentinel's battery can be recharged through the same connector on the base, without disturbing data acquisition.

If you would prefer to keep Sentinel off the ground, another option at your disposal is to suspend it from an overhanging structure like a tree branch. Sentinel comes with a detachable eyelet piece that screws into the top of its housing. Securely fasten a rope to the eyelet, pull the system up to the desired height, and Sentinel will do the rest. Remember that Sentinel is designed to survive the depths of the ocean, so it will not be affected by wind or rain.

High Performance

Sentinel's sensitivity is state-of-the-art (0.015nT), far superior to most traditional base station magnetometers, and its power requirement is orders of magnitude lower. Couple this with its enormous one million reading nonvolatile memory and you have an instrument that is capable of collecting months of high resolution total field magnetometer data on a single battery charge.

Interacting with Sentinel is easy with BaseLINK for Windows 95/98/NT. BaseLINK provides a fast and compact terminal interface that allows you to change Sentinel's settings with a few simple keystrokes, or lets you download your entire data set with a single mouse click. BaseLINK will remember where you keep your data files, and will automatically name them by date and revision number so you never have to worry about overwriting existing files, or misplacing data. It will even allow you to log, word-for-word, every command and parameter sent to Sentinel, so you can quality-control your operators' performance in the field, or prove to your boss that you configured the unit correctly. When downloading your data, BaseLINK will let you know how long the transfer will take and it will keep you informed of its progress. BaseLINK is included as standard equipment with every Sentinel system.

In all settings, [the Sentinel Base Station] has performed extremely well and yielded data of high value."

*Phil Van Den Bossche & Sven Coles
Council for Geoscience*

Marine Magnetics 

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Easy to use



plug it in



power it up



twist it tight



tie it up &
throw it over

Sub Sea Sentinel

Deploying Sentinel on the bottom of the ocean is just as easy as setting it up on land. Program Sentinel once in your office or lab, as you would if deploying on land. When you have reached your deployment spot, just flip the switch, attach the heavy-duty brass seal, and hook on an acoustic release with a concrete anchor.

Attach your buoy to the top of the Sentinel tube, and throw the whole assembly overboard. Sentinel will not start acquiring data while on the deck of the ship. It will know when conditions become quiet enough for measurement, and will automatically begin sampling when it is out of range of the ship.

Sentinel is built with premium materials that are designed to withstand years of exposure to the harshest environments. The main housing is high strength fibreglass coated with impact-absorbing polyurethane similar to our proven SeaSPY towed magnetometer system.

A Sentinel System Includes:

1. Sentinel housing complete with electronics module & Overhauser sensor
2. rugged aluminum base
3. aluminum legs for attachment to base
4. thumbscrews to secure the legs to base
5. Universal AC power supply
6. RS-232 cable
7. Cap to seal the housing for subsea deployment
8. Custom rotomolded Hardigg Case
9. BaseLINK software

The entire system only weighs 40kgs

Specifications

Performance

Sensitivity	0.015 nT
Resolution	0.001 nT
Gradient Tolerance	> 10,000 nT/m
Range	18,000 to 120,000 nT
External Trigger	by RS-232
Absolute Accuracy	0.2 nT
Temperature Drift	NONE
Dead Zone	NONE
Heading Error	NONE
Sampling Rates	1/Minute to 1Hz
Communications	RS-232, 9600bps

Operating Parameters

Magnetometer cylinder weight	14kgs
Magnetometer cylinder size	113cm x 13cm dia
Docking base weight	5kg
Maximum incline angle for deployment in docking base	40 degrees
Magnetometer cylinder depth rating, with brass seal installed	1000m
Operating temperature	-25C to +60C
Storage temperature	-60C to +70C
Communication	Full duplex, 3-wire RS232. 9600bps, 8 data bits, no parity, 1 stop bit
Storage capacity	one million readings
Battery pack	Gel cell 12V, 7Ah
Battery charge time	5 hours 80% charge. 10 hours full charge. Can charge while sampling.