

GearSenz

DATA SHEET

Derive more **accurate fishing effort data** than ever before.

GearSenz is a wireless sensor attached directly to the fishing gear winch. It detects its rotation and decides whether this activity represents a deployment of a fishing net or it is just a minor manoeuvre of a ship in a stormy sea. An equally smart detection of the gear-up procedure marks the finishing moment of the activity called "Gear Immersion".

A number of other data is acquired by the GearSenz as well: the latitude and longitude of the position where the fishing gear went down and where it went up, the number of winch revolutions, the registration number of the net being deployed, exact times of those moments, the temperature of the environment at the time of gear deployment, and more.

GearSenz requires an operational BlueTraker VMS system in order to convey all that information to the Fisheries Monitoring Centre (FMC).

FEATURES:

Precise net or longline soak times and their locations.

FMCs are able to view when and where a net is deployed into the sea allowing them to determine that a vessel is fishing.

Device tamper protection and encrypted data communication.

Communication used is designed according to the advanced encryption standards. Data is protected and cannot be spoofed or jammed.

Accurate winch operation data.

GearSenz monitors winch activity and when a winch is active the BlueSenz system sends alerts to the FMC.

No wires or cables required.

The data are collected wirelessly with a Wireless gate (BlueSenz WG) and transferred to FMC by the BlueTraker terminal.

Up to three years autonomous lifetime.

Very compact and flat design - less than 10 mm thick.



GearSenz is a part of
BlueSenz family.

GearSenz removes the guesswork out of defining the exact whereabouts of the fishing operation in terms of its spatial and temporal parameters. The result is an unprecedented insight into the fishing effort exercised by the vessel and consequently the whole fleet of fishing vessels.

GearSenz

Technical Specification

Part dimensions

GearSenz (L x W x H): 123 x 10 x 150 mm

Weight

GearSenz: 210 g

Environmental

Operating temp. range: -20°C -> +60°C

Storage temp. range: -25°C -> +70°C

Humidity range: 10% RH -> 100% RH

Dust and Water Ingress: IP68

Lifetime is limited to: 2 years

RF

RF band: 868 MHz ISM

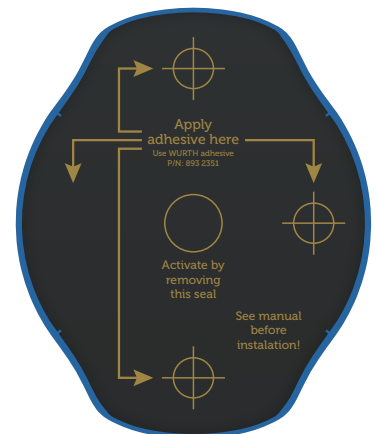
Max. Transmit. Power: 0,025 W

Installation

On the side flange of the winch with special heavy-duty adhesive



GearSenz rear view:



KEY BENEFITS:

INCREASE FISHERMEN ACCOUNTABILITY

GearSenz provides irrefutable evidence of when and where a winch was active: revolutions and rotation direction. This allows an FMC to impose penalties on unscrupulous fishermen if they fish in prohibited areas.

REMOVE FMC GUESSWORK

FMCs are now able to see precisely when and where a vessel deployed their net into the water: length of net deployed and length of time it was deployed for. FMC no longer have to estimate when they believed a vessel was fishing.

PROVIDES FMC SPECIFIC GEAR INFO

FMCs are able to see which gear was used and where. GearSenz allows remote monitoring of the specific equipment on board a vessel ensuring that only authorized gear is used.

ALWAYS ON: CONTINUOUS REPORTING

GearSenz continually monitors the status of a winch and alerts the FMC if a winch is active. This ensures that no fishing activity goes unseen. If your fishermen are working then so is GearSenz!

READY FOR MACHINE LEARNING

GearSenz was developed with a vision of being able to validate or completely replace human observers on fishing vessels. GearSenz therefore from a data science perspective which gives us a way to automatically label voyages that fishing boats make as whether fishing or non-fishing. Giving unprecedented ability to create huge labelled datasets ready for machine learning tasks (i.e.: detecting anomalies, like whether the vessel is using it's registered gear or not).