



heavy duty

ultrasonic anti fouling

in the best Dutch maritime engineering tradition

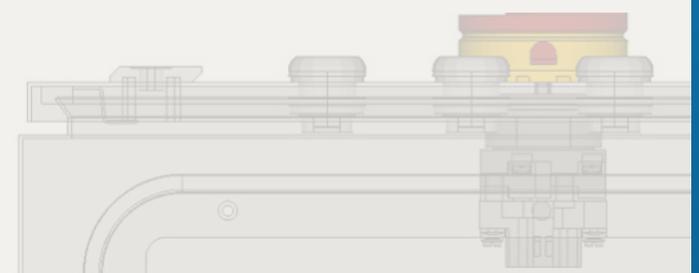
SHIPS  NIC

Ultrasonic antifouling keeps your hull, pipework or box-coolers clean with zero impact on the environment.

The working of ultrasonic marine growth prevention is very simple: any object, immersed in sea water, that vibrates in the ultrasonic frequency range, and with enough sound pressure, will not be fouled. Larvae of fouling organisms do not settle on objects in ultrasonic vibration.

Shipsonic develops, tests and installs ultrasonic antifouling systems for commercial marine, offshore, fishery and industry. Our track record proves that our systems are highly effective.

- One time, simple installation without glue
- Plug and play commissioning
- Dry installation; no dry docking needed
- Easy to replace
- Maintenance free
- Reduce fouling costs
- Less down time
- Environmentally friendly



Products

CONTROL UNITS

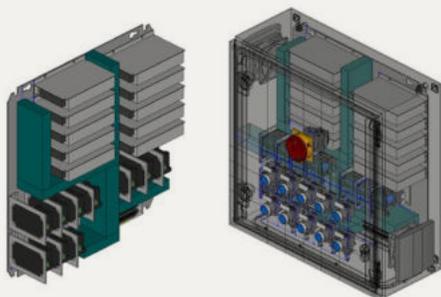
A system consists of a control unit with connections for 2, 4, 6, 8 or 10 transducers.

All systems can be delivered functioning on 240 VAC or 24 VDC. Or auto-switching combinations of these. The systems for 10 transducers can function on 240 VAC or 400 VAC upon request.

Systems can be equipped with a voltage monitoring relay, so the system's functioning can be monitored from the control room.

Shipsonic or one of our agents will help you with the optimal configuration of your system. This configuration depends on the type and size of the object (sea-chest, box-cooler, bucket-strainer, hull, etc). Proper system design (number and location of transducers) is conditional for effectiveness!

Control units and transducers are sold separately, according to individual system design. Our Power Circuit Boards (PCB's) can also be supplied independently.



TRANSDUCERS

Shipsonic has gone a long way to develop the ideal, multipurpose transducer. We arrived at a relatively small, yet high powered, low frequency model. That makes it especially apt for installation on box-coolers, where installation space is often confined.

The sound pressure of this model is so high, that it cannot be glued! Shipsonic had to develop an alternative installation method.

If needed (GRP installations), the transducer can be adapted with a surface extender, so that it still can be glued.

All transducers can be installed on both flat and curved surfaces.

All transducers can be furnished in IP67 or IP68 versions.



Shipsonic applications



BOX-COOLERS



STRAINERS



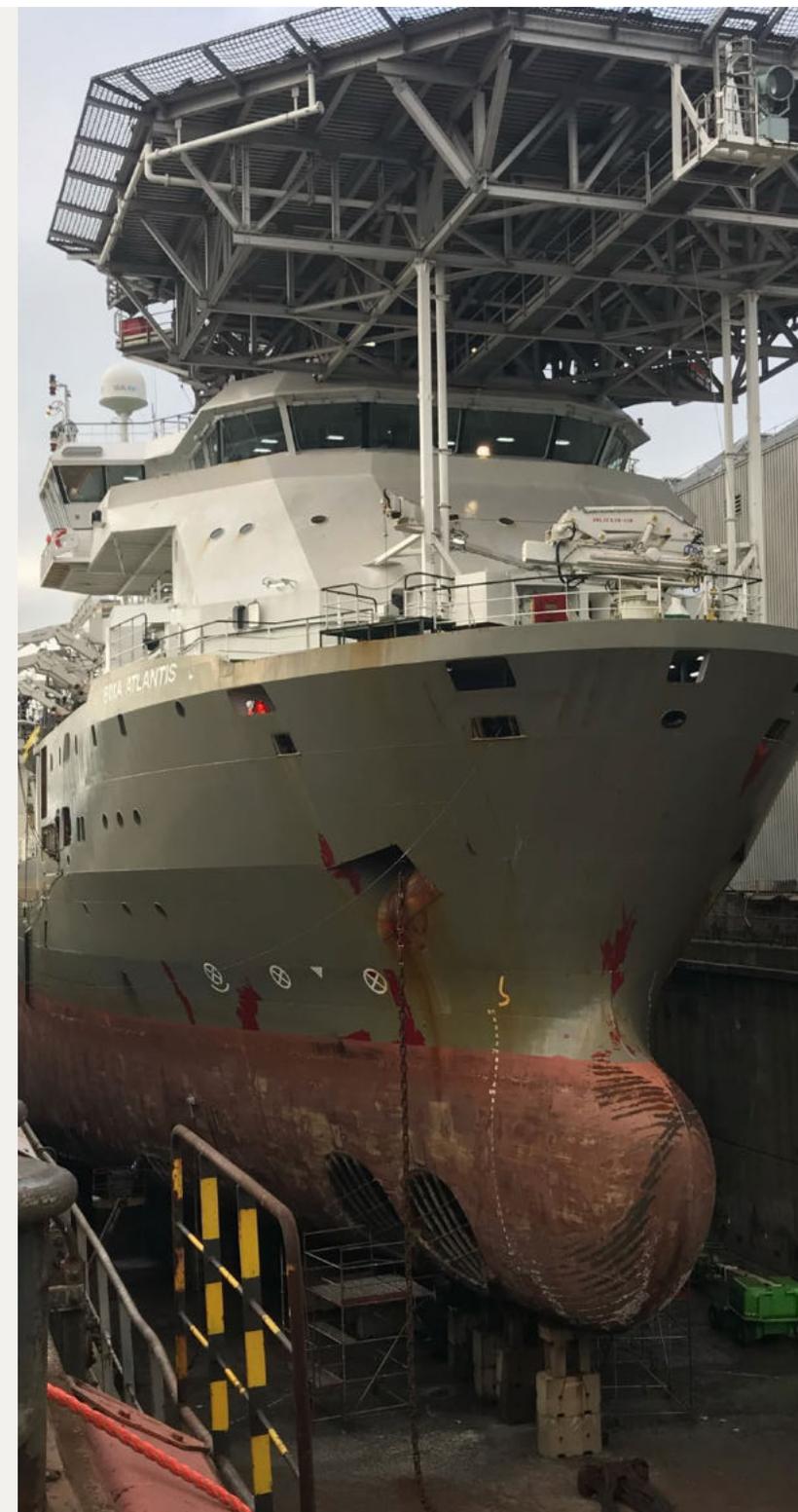
HULLS



SEA-CHEST/
INTAKE PIPE

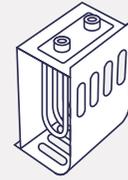


INDUSTRY



Projects

Shipsonic delivers tailor made solutions for your fouling problems. Installation of the system is straightforward, but system design; where to install which transducer type, is where we make the difference. Shipsonic always sends an engineer or helps you on-line in to optimize the design of your system.



BOX-COOLERS

VESSEL NAME
BKM 104

INSTALLATION DATE
March 2021

VESSEL AREA
World wide

SYSTEM
24 transducers

APPLICATION
Box-coolers

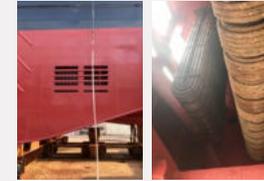
High temperature (HT) box-coolers normally need not be protected, the tube bundle of these coolers becomes so hot that there is hardly any fouling. Low temperature (LT) or LT/HT box-coolers do need protection, especially against blue mussel and barnacles.

For the ultrasonic system to function properly, you need to start with clean box-coolers. The ultrasonic system stops fouling organisms from settling, it does not kill off settled fouling. Hence, the system must be switched on permanently.

Shipsonic control units



Workboat BKM 104



Seachest and box cooler bundle



Shipsonic transducers



HULLS

VESSEL NAME
Polarlys

INSTALLATION DATE
August 2019

VESSEL AREA
North Sea/Barents Sea

SYSTEM
28 transducers

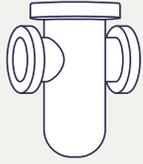
APPLICATION
Hull

The Polarlys was our first large scale hull testing project. With hull applications, proper access to install transducers often is a challenge. Still, after 2 years testing with different transducer types and combinations, management of

Hurtigruten decided to scale up and protect the Polarlys completely with Shipsonic ultrasonic antifouling. Our Norwegian agent inspects effectiveness regularly with a small ROV.



The Polarlys is Shipsonic's long term research project for hull applications



STRAINERS

VESSEL NAME

Wes Gesa

INSTALLATION DATE

February 2022

VESSEL AREA

World wide

SYSTEM

18 transducers

APPLICATION

Strainers/cross over/
sea-chests

Ships equipped with so-called dry plate-coolers need a permanent minimal flow of clean seawater. Flotsam and fouling would obstruct this flow through the coolers, with engines overheating. Ultrasonic antifouling is used to protect

this cooling system, with transducers installed on intake pipes, strainers and cross-overs. Shipsonic transducers can be installed equally on flat and curved surfaces.

Vessel Wes Gesa



Installed transducer



Measuring ultrasonic sound pressure



Installing transducer



INDUSTRY

PROJECT

Kraanspoor building

INSTALLATION DATE

April 2020

LOCATION

Amsterdam

SYSTEM

2 transducers

APPLICATION

Industrial airconditioning
intake pipe

Also on shore fouling can be a problem. The iconic Kraanspoor building in Amsterdam, built on a crane rails of a former shipyard, is designed to have zero energy consumption. Heating and cooling are done using the brackish water of the Amsterdam North Sea

Canal. The water intake pipes of this system are protected by Shipsonic against blockages caused by marine fouling! Other on shore applications involve combating bacterial growth or sedimentation in paper plants and chemical industry.



Water intake pipe must be clean before installation



Water intake pipe before Shipsonic fouling protection was installed



Transducer installed



SEA-CHEST/ INTAKE PIPE

VESSEL NAME

Iguazu

INSTALLATION DATE

January 2022

VESSEL AREA

Port of Liverpool

SYSTEM

18 transducers

APPLICATION

Sea chests/coolers

The Iguazu is a water injection dredger. It is permanently employed to keep the port of Liverpool accessible for large ocean going vessels. Hence the importance of reliable, nonstop

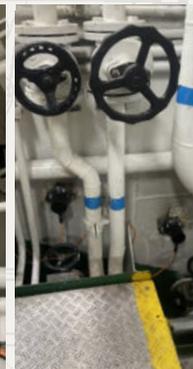
functioning engines. Shipsonic keeps the cooling system of these engines free of fouling. No small feat, given the fouling intensity in the mouth of the river Mersey!



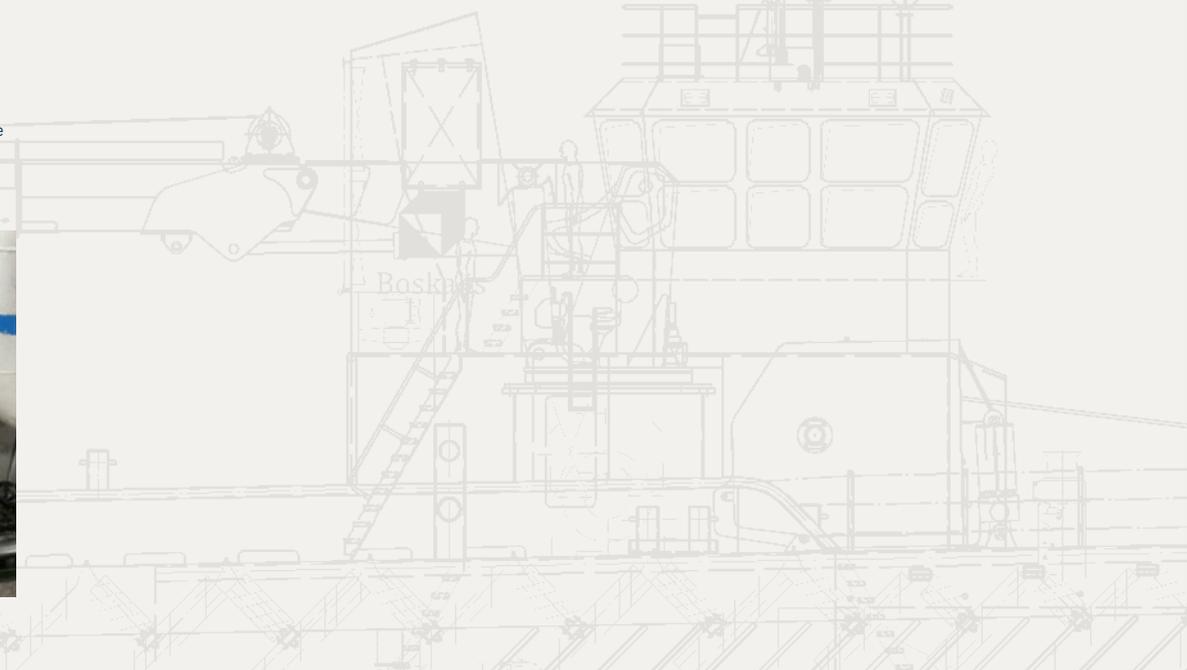
Vessel Iguazu



Control unit installed



Transducers installed



Research and Development

Shipsonic spends a lot of effort on Research and Development. Our research method is: first: biology, second: acoustics, then electronics.

We have spent a lot of time and effort with different renowned Dutch marine research stations, to get proper insight in fouling species behavior.

Secondly, we really looked at the acoustic behavior of the different types of ultrasonic loudspeakers and the different ways in which these can be installed. These insights then form the design parameters for our electronics design unit.

The latest innovation that we have introduced, is constant transducer monitoring. Thus, when for some reason the transducer has come loose, or corrosion has formed under the foot of the transducer, the system will give an alert. Now, the issue can be fixed before fouling starts developing.

We also are involved in R&D with different industries (paper, chemical). We were invited to do so, based on the exceptional high ultrasonic sound level pressures that we achieve. These results are also fed into our electronics design program. Thus, research and innovation are a truly continuous process at Shipsonic.

Research setup box-cooler protection



Shipsonic permanent transducer monitoring:



OK: System working OK



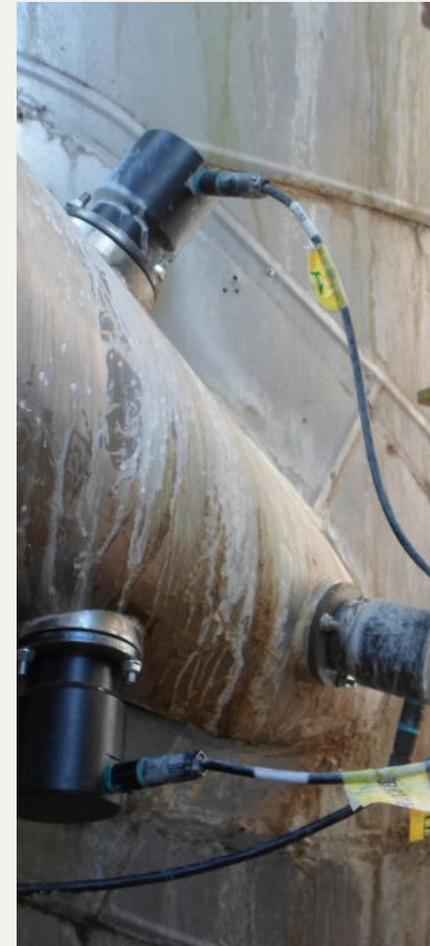
Open: No transducer connected



Short: short circuit in transducer connection



Check: transducer loose or corrosion



Trial installation at citric acid factory

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heavy duty ultrasonic anti fouling

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