SEAFLO®
Make Water Work For You



SEAFLO®

FUJIAN AIDI ELECTRIC CO.,LTD.

Office Add: No.520 Hengtian Road, Business Operation Center in North Station,
Jimei District, Xiamen, Fujian, China
Factory Add: F2-4 Block, Industrial Park, Liancheng County, Longyan City, Fujian, China
Web: www.seaflo.com E-mail: business@seaflo.com

Official Website

Installation Video

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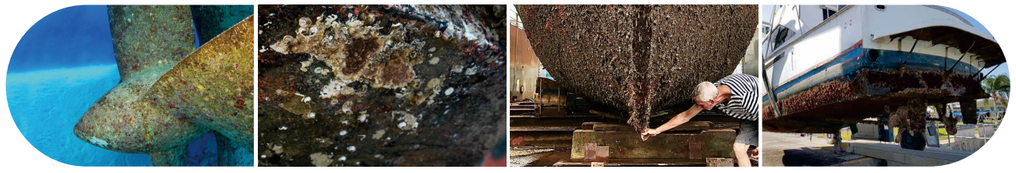

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www.seaflo.com



Color Box

Model	Volts	Number of Transducers	Frequency Range	Power Consumption	Wire Length
SFUAS1-01	12V	1	20kHz to 45kHz	0.15kWh/d	15ft

Model	Volts	Number of Transducers	Frequency Range	Power Consumption	Wire Length
SFUAS1-02	12V	2	20kHz to 45kHz	0.29kWh/d	15ft

Model	Volts	Number of Transducers	Frequency Range	Power Consumption	Wire Length
SFUAS1-03	12V	4	20kHz to 45kHz	0.59kWh/d	15ft

Ultrasonic Defense System

The SEAFLO Ultrasonic Defense System provides comprehensive, adaptable, and dependable protection against marine fouling for hulls, drives, and other vulnerable parts of a boat.

12.7V-18.0V
Full Power Output Range

12.0V-12.6V
Reduced Power Range

BELOW 12.0V
Sleep/idle Range

15Ft (4.6m)
Wire Length

Continuous Protection
Ultrasonic Defense System operate around the clock, efficiently repelling most types of marine fouling.

Simple Installation
Installation is simple and straight forward and does not require specialist knowledge.

Save Time & Money
Reduce costs and time spent on haul-outs, bottom painting, and abrasive cleaning.

Boost Performance
A clean hull reduces drag, enhances fuel efficiency, and increases top-end speed.

Eco-Friendly
Environmentally friendly and safe for the ocean, preventing ocean pollution.

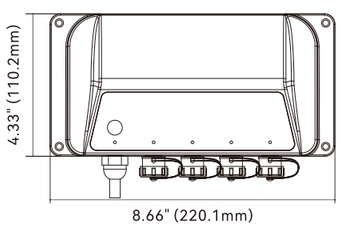
Enhance Resale Value
Boats equipped with automated antifouling systems tend to have a higher resale value.

Using the SEAFLO Ultrasonic Defense System, enjoy around-the-clock antifouling protection. This system harnesses the power of ultrasound to keep the hull and propulsion system clean. Our fully automated solution provides continuous protection 24/7, giving you peace of mind.

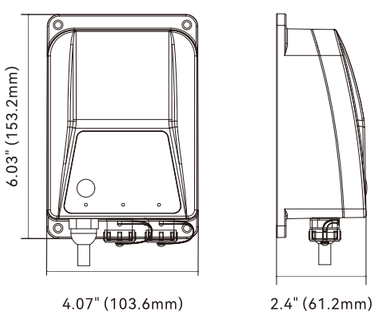
The SEAFLO Ultrasonic Defense System consists of a control unit that operates at 12V, equipped with one, two, or four transducers that transmit ultrasound to the hull and its protected surfaces. The controller has an IP67 protection rating, while the transducers have an IP68 protection rating.

Operating settings

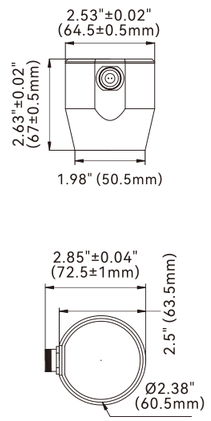
Full power output range: 12.7V to 18.0V
Reduced power range: 12.0V to 12.6V
Sleep/idle range: below 12.0V



SFUAS1-03

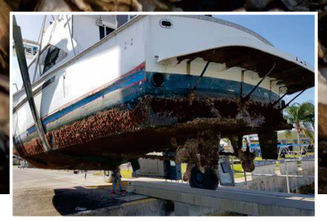


SFUAS1-01 / SFUAS1-02









The Problem

Marine biofouling has multiple impacts on vessels, including:

Reduced Fuel Efficiency:

The accumulation of fouling increases the hull's hydrodynamic resistance, causing the engine to consume more fuel to maintain speed, thereby reducing fuel efficiency.

Frequent Maintenance and Cleaning Costs:

Regularly cleaning the hull to remove fouling requires significant manpower and resources, increasing maintenance costs.

Wear on Bottom Paint and Coatings:

Fouling can lead to excessive wear on bottom paint and coatings, shortening their lifespan and necessitating more frequent repainting, which raises maintenance costs.

Increased Transportation Costs:

Frequent hauling and cleaning are required, which increases transportation and docking costs.

Environmental Impact:

The paint and fouling removed during abrasive cleaning processes can pollute waterways, negatively affecting marine ecosystems.

Hull Structural Damage:

Long-term fouling can cause corrosion or damage to hull materials, compromising the safety and longevity of the vessel.

Legal and Compliance Issues:

Toxic bottom paints and abrasive cleaning can harm the environment, and stricter environmental regulations are emerging in many areas. The maritime industry is seeking more effective methods to prevent marine biofouling on vessels and equipment.



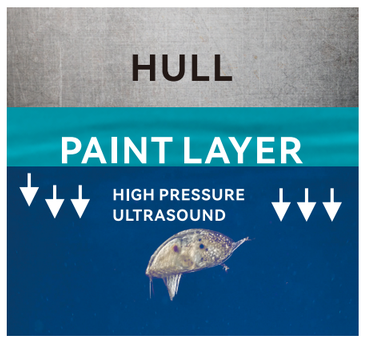
The Solution

The SEAFLO Ultrasonic Defense System actively removes marine fouling before it attaches, providing 24/7 protection. By continuously emitting sound wave pulses, it reduces the attachment of marine fouling, enhancing vessel performance and fuel efficiency.

Additionally, the ultrasonic technology extends the lifespan of bottom paint, prolongs the cleaning intervals for the hull, and decreases the frequency of diver cleaning, significantly reducing maintenance costs. At the same time, it effectively minimizes the impact of abrasive paints and other chemicals on marine ecosystems.

How It Works

The SEAFLO Ultrasonic Defense System emits sound wave pulses at frequencies ranging from 20 kHz to 45 kHz, physically repelling aquatic organisms, such as algae and barnacles. The vibrations and pressure changes generated by these sound waves affect the organisms in the water, preventing them from stabilizing and adhering to the hull or other surfaces. This effectively reduces biofouling and disrupts the breeding and spreading abilities of the fouling organisms on the protected surfaces, thereby minimizing the accumulation of fouling and maintaining surface cleanliness.











Cost Effect

The Ultrasonic Defense System can remove fouling before it attaches, reducing the frequency of cleaning by divers, protecting the antifouling paint, and extending the lifespan of the coatings. Therefore, this system not only saves costs associated with divers but also reduces additional expenses related to the application of new antifouling paint, including shipping fees, shipyard charges, paint materials costs, hazardous waste disposal fees, and labor costs.

Cost Reduction:

The Ultrasonic Defense System extends the cleaning cycle of the hull, reducing the frequency of cleaning and maintenance, which significantly lowers expenses.

Savings on Transportation:

By decreasing the frequency of towing and cleaning, it further reduces transportation and docking costs.

Coating Protection:

Effectively prevents fouling, extends the lifespan of the antifouling paint and coatings, and reduces the need for reapplication.

Hull Protection:

Minimizes fouling, lowers the risk of corrosion and damage, and extends the lifespan of the vessel.

Improved Fuel Efficiency:

By reducing fouling attachment, it decreases water resistance, enhances fuel efficiency, and saves fuel.

By adopting the Ultrasonic Defense System, the economic and performance efficiency of the vessel can be significantly enhanced, ensuring excellent performance in various environments.

The Ultrasonic Defense System for the 50-foot cruiser pays for itself within a year and is expected to save approximately $5,000 in maintenance costs each year.

Eco-friendly

Traditional antifouling coatings often contain biocides, which are designed to slowly release into the ocean to prevent the attachment of organisms. However, this release can potentially pollute the environment, impacting both target organisms and other marine life.

Ultrasonic Antifouling Technology - Chemical-Free, Pollution-Free

(1) The Ultrasonic Defense System physically prevents the formation of fouling and biofilms by utilizing ultrasound. It disrupts the growth environment of target microorganisms without the need for chemical biocides or toxins, thus avoiding marine pollution.

(2) This system effectively prevents hull fouling, extends the lifespan of the underlying paint, and reduces the frequency of abrasive cleaning and repainting, further mitigating the risk of environmental pollution. Additionally, it can be used in conjunction with biocide-free coatings, significantly enhancing both environmental protection and antifouling efficacy.

(3) Through precise control of sound wave frequencies, the ultrasonic system minimizes its impact on water bodies and organisms, reducing harm to non-target species.

(4) The ultrasonic antifouling equipment is designed for high efficiency, operating at low energy consumption, thereby reducing overall carbon emissions.



Protected Area

Each transducer provides coverage for approximately 200 square feet (18.58 square meters) of protected underwater surface area.



Catamaran

34ft
Up to 34'
6x Transducers

50ft
34' to 50'
8x Transducers

65ft
50' to 65'
10x Transducers

Easy Installation

The SEAFLO Ultrasonic Defense System is user-friendly and designed for quick installation, typically completed within a day without the need for specialized skills. The installation process only requires securing the transducer with epoxy resin and connecting it to the controller via a signal cable. SEAFLO cables are equipped with waterproof connectors on both ends, compact and flexible, making them suitable for wiring in tight spaces.







Marine Epoxy is recommended

The transducer has an IP68 waterproof rating, making it suitable for both wet and submerged environments. Under specific conditions, the transducer can also be placed externally, such as on floating docks and external connections, including in restricted areas like bilge passages.

Mono hull

20ft
Less than 20'
1x transducer

30ft
20' to 30'
2x transducers

40ft
30' to 40'
3x transducers

50ft
40' to 50'
4x transducers

65ft
50' to 65'
6x transducer



Hull Protection

Ultrasound will repel fouling on any type of hull and are compatible with most materials, regardless of the hull's shape or geometric features. As long as the hull material is dense, sound waves can propagate across the entire surface.

Hull Types



Marine



Catamarans



Sailing



Keel

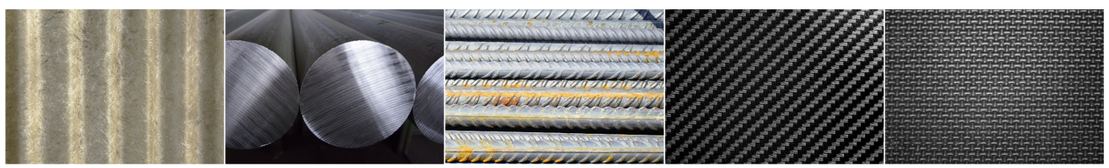


Pontoon



Barge

Hull Materials

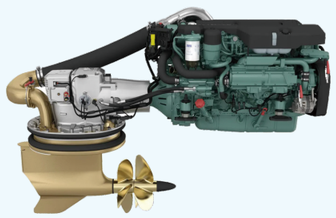


Fiberglass | Aluminum | Steel | Carbon fiber | Kevlar

Please note: The SEAFLO Ultrasonic Defense System will not work on boats with wooden or plastic hulls.

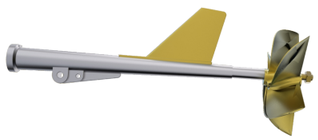
Drive Protection

The SEAFLO Ultrasonic Defense System not only targets the hull but also effectively protects your drive system. The drive system is isolated from the hull by materials such as motor mounts, gaskets, and seals, which can impede the transmission of ultrasonic signals to the shaft and propeller. Therefore, specialized transducers are needed to ensure effective protection of the drive system. Regardless of whether it is an inboard engine, outboard drive, stern drive, or sailboat drive, corresponding transducers can be installed for comprehensive protection. Additionally, the isolation of the rudder from the hull is similar, so specialized transducers are also required to ensure effective antifouling.



Pods

One transducer per drive



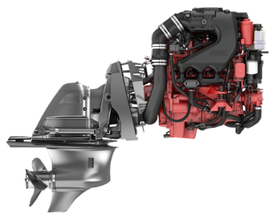
Inboards

Two transducers per drive
(one for each propeller and one for each rudder)



Sail-Drives

Two transducers per drive
(one for each propeller and one for each rudder)



Sterndrive

One transducer per drive

Comprehensive Protection

No matter if your vessel uses shaft drive, pod design, or features a keel structure on a catamaran, made from fiberglass, steel, or aluminum alloy, the SEAFLO Ultrasonic Defense System can meet your diverse needs. By choosing the SEAFLO Ultrasonic Defense System, you will achieve comprehensive protection, helping ensure your vessel maintains optimal performance in various water conditions.

This includes protection for inboards, pods, sail drives, rudders, trim tabs, parts, and more, providing all-around defense for your entire vessel.

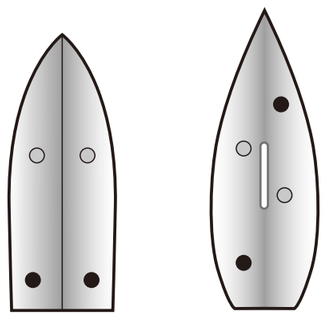


Hull Installation Location

The SEAFLO ultrasonic transducers are typically installed inside the hull below the waterline, with the placement chosen to maximize efficiency and ensure uniform coverage. With proper installation, the system can deliver outstanding antifouling results. The specific location of the transducers should be adjusted based on the shape, size, and required number of transducers of the hull to achieve optimal performance.

These images provide basic guidance for transducer placement. Your final choice of location will depend on the available space in these areas.

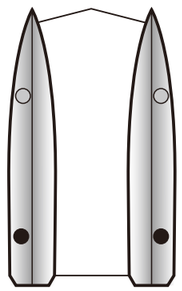
● Installation of Two (2) Transducers



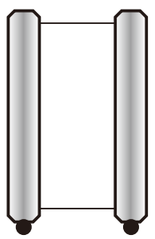
Monohull

Sailing

● ● Installation of Four (4) Transducers



Catamaran



Pontoon

Optional External transom and pontoon attachment

The Ultrasonic Defense System transducers can be submerged underwater and installed on the external surfaces of the hull. This is required for pontoon boats. Exterior attachment can also be an ideal location for cored-hull boats under 32 feet.

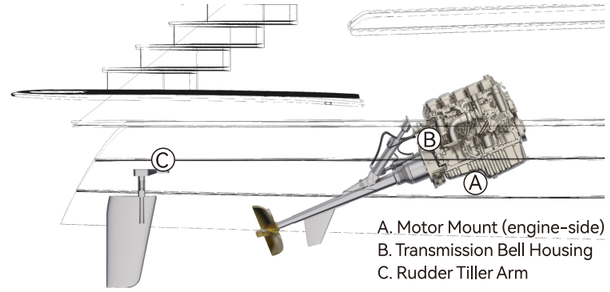
For exterior attachment on monohull transoms, two transducers are attached to the transom below the water – one per side.

For exterior attachment on pontoons, one transducer is attached to the rear face of each pontoon below the water.

Drive & Accessory Attachment Locations

The drive system and other peripheral components (such as rudders, swim platforms, and trim tabs) are isolated from the hull using sound-dampening materials. Due to this isolation, each component requires a dedicated ultrasonic transducer for protection.

For straight drive shafts and props, transducers can be installed on the engine side of the engine mount (Position A) or directly on the transmission bell housing (Position B). The rudder is also isolated from the hull and requires a specialized transducer. A transducer can be directly connected to the tiller arm/quadrant (Position C). Ensure that the transducer does not interfere with the rotation of the tiller/quadrant.



A. Motor Mount (engine-side)
B. Transmission Bell Housing
C. Rudder Tiller Arm







Get more product information by scanning the QR code below

Installation Video

Product Manual