H2oBioSonic.com
Advanced Ultrasonic Bio Fouling Protection Systems

H2OB-2 System Specifications
The problem of bio-fouling & Algae formation

The purpose of the H2oBioSonic System is two fold. The prevention of algae formation through the destruction of micro-organisms and to also prevent blockages and to improve flow in seawater and fresh water cooling systems caused by various forms of marine growth and algae. Blockages can be expensive and time consuming to clear or remove, especially when entire sections of pipe work need to be cleaned or replaced or strainers, heat exchangers, chillers, etc need to be disassembled for cleaning. There is also risk that pumps, valves and other important ancillary devices may be affected jeopardising the operational capacity / capability of the system. Even minor reductions in flow caused by buildup inside the pipe work, strainer, heat exchanger, chiller or similar can cause serious reductions in efficiency of cooling and increases in energy consumption.

The key benefits of the H2oBioSonic System

H2oBioSonic utilises a proven environmentally friendly technology that generates effective long lasting protection for de scaling, cleaning, destroying algae and drastically reducing bio fouling within seawater and fresh water pipe work, strainers, cooling towers, heat exchangers, chillers and more.

- Based on the Ultrasonic cavitation principle, providing controlled microscopic blasts of cavitation bubbles generating protection without the use of chemicals, electrolysis or depleting parts.
- A dual effect system providing destruction of bacteria, algae, micro organisms while also providing a de scaling and cleaning effect.
- A range of installation options including enclosure mounting or wall mounting, indoor or outdoor systems.
- Each system is custom designed based on the requirements, utilising a modular layout we can specify the system. The control panel holds menu options to specify the devices to be protected allowing maximum effectiveness for the given application.
- Fully automated - requires minimal attention from the maintenance crew. On board LCD panel displays real time information and error states in clear English.
- Complete calibration function to enhance the protection.
- Internet Cloud and/or Control Room monitoring options
- Easy installation - Ultrasonic Transducers can be installed without shutting systems down, pipe mounting footprints are developed to mount perfectly to the outer diameter of pipes for simple transducer mounting.
- Non intrusive design - Does not interfere with existing systems, there is no modifications required.
- Environmentally friendly - Does not leach heavy metals into the system (Cathodic systems) or release any chemicals.
- Approved by classifications.
- Drastic savings in maintenance costs.
- Drastic savings in energy consumption with improved flow and heat transfer efficiency.
Versatile smart system for many applications

The H2oBioSonic system utilises an advanced program operating on individual modules. Each module has many options to configure and also an autocalibration function for each of the systems transducer channels for the given application. From fresh water storage tanks, chiller systems, algae control in cooling towers through to seawater intakes, sea chests and seawater piping in ships. The H2oBioSonic system is a smart and very versatile solution for Bio Fouling issues in fresh or saltwater and in industries including, power generation, desalination, air conditioning, shipping and more.

Cloud and Local Monitoring

Central Cloud Management, Alerting and control room access via LAN (Local Area Network) connection. The H2oBioSonic system has an optional upgrade to include network functionality. This allows the system to be incorporated into a local network to upload its running statistics to our servers for cloud monitoring and preventative maintenance notifications along with a local operating status of each module for control room monitoring.

Installation applications

H2oBioSonic Ultrasonic Bio Fouling technology by Globatech Australia has many benefits for industry to help combat the growth of algae and other marine fouling. Some applications include:
- Seawater piping (descaling, growth reduction)
- Freshwater piping (descaling, growth reduction)
- Pump systems
- Heat Exchangers
- Chiller systems & Towers
- Fresh and Seawater Pumping stations
- Valves
- Strainers
- Water Storage Tanks / Reservoirs
- Desalination systems
- Algal Control in:
  - Bodies of water
  - Storage Tanks
  - and more

Ultrasonic benefits

Ultrasonic Bio Fouling protection with H2oBioSonic combats the common problems associated with algae and Bio Fouling;
- Reduced maintenance requirements
- Improved Flow
- Improved Efficiency of Exchangers
- Reduces Chemical requirements
- Cleans internals of pipes
- Maintains Valves
- Descaling Effect
- Destroys Algal Bloom
How the H2oBioSonic Ultrasonic System Works

The H2oBioSonic systems incorporate the latest in digital electronics and the most advanced ultrasonic transducer technology available. The H2oBioSonic system produces bursts of alternating ultrasonic energy using thousands of specific frequencies. The energy output generates microscopic bubbles of varying sizes which implode generating microscopic points of cavitation. The cavitation implosion has a cleansing effect and provides a constant scrubbing of the water protected. During these implosions the cell wall of algae and other single cell bacteria and organisms is split preventing the continued growth. This cavitation also provides a scrubbing effect on the inside wall of pipe work and ancillary devices helping to prevent any settlement and improving flow.

H2oBioSonic also implements our advanced IBLAST! Function for added protection effectively supercharging the output for short blasts of energy that drastically improves the effectiveness of the scrubbing effects.

Installation

Installation of the H2oBioSonic system is simple and requires the strategic mounting of our Ultrasonic Transducers onto the objects where protection is desired, then the cabling from the transducers is run back to the control panel. The number of transducers depends on the pipe/object size, density and rate of flow. During installation there is no down time as there is no interfering with the active system. Additional transducers can easily be added where required for added protection.

Preventing Settlement

During the short settlement period of bio fouling the Ultrasonic energy destroys the spores, larvae, algae and bacteria while the scrubbing effect on the pipe work or object prevents a buildup. Without Anti foul protection, pipes and objects can quickly become encrusted or grown over with algae or growth leading to partial or total blockage and reduced flow and efficiency.

Dual Action System

The H2oBioSonic system operates on two fronts with dual action, while destroying algae, larvae and micro organisms with the microscopic cavitation bubbles we also generate an advanced ultrasonic cleaning function within the pipe work, objects or systems to help in maintaining pipes and objects free of obstruction and fouling.

Control panel options and configurations

The H2oBioSonic system comes with two mounting options, rack mount and wall mount. While there are also options for waterproof / weatherproof configurations. This custom configuration optioning allows for installation into any application without issues.

The circuit board module of the H2oBioSonic system (H2OB2) operates in modules, each module with up to 6 Transducer outputs allowing for systems to be specified and additional modules included to match the specifications.

Technical Specifications

- Modular DIN Rail design
- Compact and light weight control systems
- Individual Enclosure specifications from 6 to unlimited Transducer outputs
- Individual Modules for improved uptime
- Alarm relays for control room/deck/panel alerts/notifications
- Individual OLED panel for each module
- Smart monitoring with legible error messages
- Live monitoring, current, fuse state and more on the OLED panel
- LAN management from control room(s) for each individual module
- Cloud monitoring options, back to base via ethernet
- Low voltage Battery backed on-line solution
- 220 / 110 VAC Connection OR 12VDC Connection
Advanced Engineering Technology from

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