



Water Quality Analysers

BioSense - Biofilm Monitor

The BioSense range of qualitative biofouling monitors provide a relative measure of how much biofilm is building up in your process, allowing you to dose your biocide accordingly or take other appropriate remedial action.

- Legionella control**
- Automatic Biocide control**
- Can be combined with other sensors**
- No maintenance**
- Monitor the development of Biofilm**
- Shows cleanliness**
- Reduced chemical costs**



"Using the BioSense allows us to monitor for biofilm development and then to dose the appropriate biocide"
Dr Craig Stracey, UK

The BioSense sensors are available with different controllers to give you the same great performance with different communication, display, and control options. With the BioSense range of biofilm analyzers, you get everything that you need - and nothing that you don't.

CRONOS® BioSense



- High Quality and Multilingual
- Lowest Purchase Cost
- Up to 3 sensors
- Options include:
 - optical isolation for I/O
 - up to 3 4-20mA outputs
 - up to 4 relays (solid state or mechanical)
 - modbus TCP
 - modbus ASCII/RTU
 - profibus
 - HART
 - PID control

CRIUS® BioSense



- High Quality and Multilingual
- Low Cost
- Colour Display and Keypad
- Sophisticated Comms and Control
- Datalogging
- Up to 6 sensors
- All CRONOS® options plus:
 - texting alarms
 - remote internet access
 - automatic cleaning
 - automatic calibration
 - integrated flow control

CRATOS BioSense



- High Quality and Multilingual
- Medium Cost
- Colour Touchscreen
- Up to 12 sensors
- Datalogging
- All CRONOS® and CRIUS® options plus:
 - lowest cost per point

For more information please see the individual brochure - CRONOS®, CRIUS® and CRATOS

Legionella Risk Management

Cooling systems and heating systems in e.g. hospitals, airports, government buildings, hotels and very large office blocks can be a source of the Legionella bacterium. The bacteria often grow in biofilms that adhere to the walls of a pipe or other vessel. The BioSense allows you to monitor for the development of this buildup and dose the appropriate chemical to reduce and disperse the biofilm prior to building up a dangerous level of Legionella.

Automatic Biocide Control

Measuring the residual biocide in a body of water only tells half the story. It tells you that there is little or no biological activity in the bulk water. This doesn't necessarily mean that biofilm isn't building up on the walls of pipes and vessels with the possibility of the development of harmful bacterial colonies. The BioSense allows you to monitor the build up of that biofilm and in turn take the appropriate action AUTOMATICALLY to return the system to a clean condition. This could be as simple as triggering an alarm for a manual intervention or as complex as increasing biocide levels or shock dosing, all controlled by the BioSense. The BioSense gives you:

- **Control of system surface biological activity**
- **Treatment effectiveness monitoring**
- **Biocide program optimisation**
- **Indication of a "clean" state**

Biofilm - The solution

The BioSense sensor was developed to provide on-line and real-time indication of biofilm activity on typical metallic surfaces. The probe is designed and operated so that microorganisms in the environment will settle on probe surfaces before they settle on vessel walls or piping. This gives an early warning of potentially dangerous biological activity in the process. By closely tracking biofilm activity on the probe, the BioSense can take remedial action such as increasing the dosing of a biocide or dispersant. The BioSense biofilm controller can also be used to assess the effectiveness of a treatment, or to schedule maintenance activities. By monitoring biofilm activity on surfaces very precisely, costly over-treatment can be avoided and chemical treatments can be optimised, therefore BioSense can:

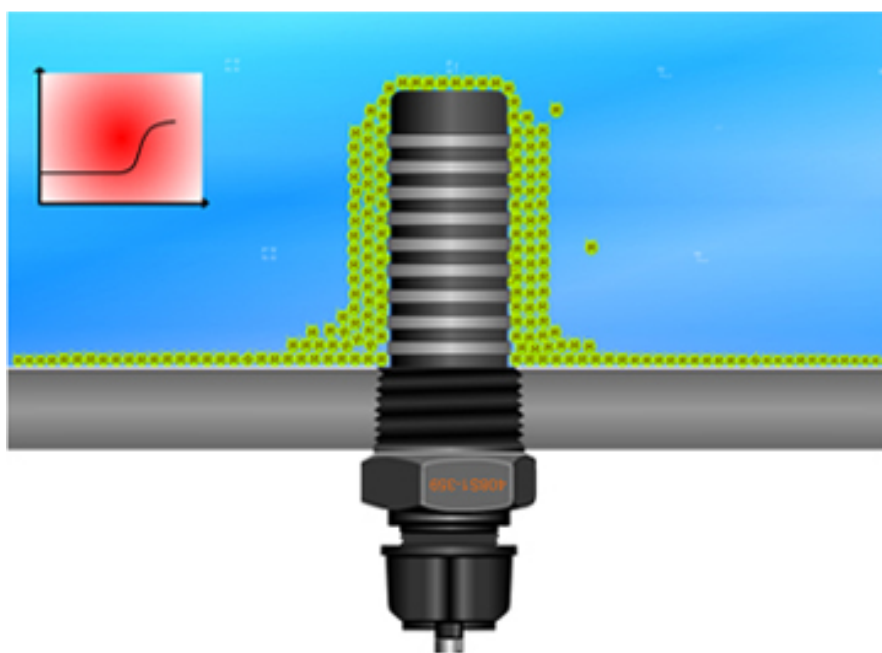
- **Reduce the risk of Legionella growth**
- **Reduce the cost of chemical treatment**
- **Reduce maintenance**
- **Increase the efficiency of process equipment**

Principle of Operation

The controller applies a potential between the probe electrodes that causes microorganisms to settle on the surface of the probe before they would settle on the surfaces of a pipe or a vessel. The biological activity of the biofilm creates a signal.

A BioSense controller collects and monitors that signal continually. An increasing trend in the signal indicates the onset of biofilm activity on the probe. The controller can then take remedial action automatically by, for example, increasing or decreasing the biocide levels.

The CRONOS BioSense is a simple controller capable of automatically changing, dosing regimes etc. With the more sophisticated CRIUS® and CRATOS controllers providing, data logging, remote access and control via GSM.



everything you need, and nothing you don't
find your local supplier at www.processinstruments.net

