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ALVIM Biofilm Monitoring System - Catalog
Last update: 11 May 2020
The ALVIM Technology

The ALVIM real-time, on line, Biofilm Monitoring System is able to detect bacterial settlement since its first phases (down to 1% of surface covered by microorganisms).

Basing on ALVIM data it is possible to adjust and optimize water treatments / biocide treatments, verifying, at the same time, the efficacy of the sanitation. ALVIM Biofilm Sensors are used worldwide in many different fields, ranging from industrial cooling waters to Food and Beverage, Pulp and Paper, Oil and Gas and others, including many Fortune 500 Companies.

Among the users of the ALVIM Biofilm Monitoring System:

For more info:

www.alvim.it | info@alvim.it | +39 0108566345
A001S3 Biofilm Sensor

Connection to the process
1" BSPP threaded connector

Materials in contact with the process
Titanium (working electrode ❶), Zinc (counter electrode ❷), PVC (threaded connector ❸)

Sensitivity
1-100% of surface covered by biofilm (i.e. the first bacterial layer)

Measures (mm)

Operating conditions
Temperature: -10<T<+60°C
(to monitor biofilm growth: +2<T<+40°C)
Oxygen: >1 ppm
(at the maximum sensitivity level)
Pressure: <10 bar
Conductivity: >10 μS/cm

Power supply
12V DC ±20%, 150 mA

Data communication
4-20 mA and RS485/MODBUS RTU

Wiring
Standard 6-wire cable, FROR 6x0.5 suggested
(2 wires used for power supply, 2 for RS485/MODBUS communication, 2 for 4-20 mA data transmission)

Software - Minimum system requirements (RS485/MODBUS)
PC with Windows XP/7/8/10, 1 GHz CPU, 512 Mb Ram, 200 Mb of free space on hard drive, RS485 serial interface or USB port (for USB-RS485/MODBUS converter)

ALVIM standard sensor, suitable for most industrial applications. Given its corrosion resistance, it is particularly indicated for seawater applications.
A003S3 Biofilm Sensor

Connection to the process
1” BSPP threaded connector

Materials in contact with the process
Titanium (working electrode 🌋), Zinc (counter electrode ⚠️), PTFE, Stainless Steel (threaded connector 🛡️)

Sensitivity
1-100% of surface covered by biofilm (i.e. the first bacterial layer)

Measures (mm)

Operating conditions
Temperature: -10<T<+120°C
(to monitor biofilm growth: +2<T<+40°C)
Oxygen: >1 ppm
(at the maximum sensitivity level)
Pressure: <10 bar
Conductivity: >10 μS/cm

Power supply
12V DC ±20%, 150 mA

Data communication
4-20 mA and RS485/MODBUS RTU

Wiring
Standard 6-wire cable, FROR 6x0.5 suggested
(2 wires used for power supply, 2 for RS485/MODBUS communication, 2 for 4-20 mA data transmission)

Software - Minimum system requirements (RS485/MODBUS)
PC with Windows XP/7/8/10, 1 GHz CPU, 512 Mb Ram, 200 Mb of free space on hard drive, RS485 serial interface or USB port (for USB-RS485/MODBUS converter)

Suitable for most industrial applications. Compared to A001S3 sensor, this model can tolerate higher temperatures.

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AS01S3 Biofilm Sensor

Connection to the process
VARIVENT® Type N
(for pipes from DN 40 to DN 150)

Materials in contact with
the process
Stainless Steel (working electrode 1, VARIVENT®
connector 2), coated Titanium (counter electrode 3),
PEEK 4, EPDM (O-Ring)

Sensitivity
First bacterial layer

Measures (mm)

Operating conditions
Temperature: -10< T < 150°C
(to monitor biofilm growth: +2< T < 40°C)
Oxygen: >1 ppm
Pressure: <10 bar
Conductivity: >30 μS/cm

Power supply
12V DC ±20%, 150 mA

Data communication
4-20 mA and RS485/MODBUS RTU

Wiring
Standard 6-wire cable, FROR 6x0.5 suggested
(2 wires used for power supply, 2 for RS485/MODUS
communication, 2 for 4-20 mA data transmission)

Software - Minimum system
requirements (RS485/MODBUS)
PC with Windows XP/7/8/10, 1 GHz CPU, 512 Mb Ram,
200 Mb of free space on hard drive, RS485 serial interface
or USB port (for USB-RS485/MODBUS converter)

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AX03S3 Biofilm Sensor

Connection to the process 1" BSPP threaded connector
Materials in contact with the process Titanium (working electrode ❶), Zinc (counter electrode ❷), POM-C, Stainless Steel (threaded connector ❸)
Sensitivity 1-100% of surface covered by biofilm (i.e. the first bacterial layer)
ATEX string Ex II 2G Ex mb IIB T6 Gb
Measures (mm)

Operating conditions
Temperature: -10<T<+50°C (to monitor biofilm growth: +2<T<+40°C)
Oxygen: >1 ppm (at the maximum sensitivity level)
Pressure: <10 bar
Conductivity: >10 μS/cm
Power supply 12V DC ±20%, 500 mA
Data communication 4-20 mA and RS485/MODBUS RTU
Software - Minimum system requirements (RS485/MODBUS) PC with Windows XP/7/8/10, 1 GHz CPU, 512 Mb Ram, 200 Mb of free space on hard drive, RS485 serial interface or USB port (for USB-RS485/MODBUS converter)

ATEX certified, this model is indicated for classified areas and applications where there is a risk of explosion (e.g. Oil&Gas)

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Control Box

Size
150 x 110 x H70 mm

Operating conditions
Temperature: -10<T<+60°C
IP Rating: IP56 (excluding data communication card)

Power supply unit
Input: 100-240V AC, 50/60 Hz
Output: 12V DC, 1A

Available versions
CB-USB (with USB data communication card)
CB-USB420 (with USB data communication card and additional power unit for 4-20 mA)
CB-TCP (with Modbus TCP gateway) *
CB-WIFI (with Modbus TCP over Wi-Fi gateway) *

* Available on request

ALVIM Control Box includes power supply unit and data communication card. It can be used with A001S3, A003S3 and AS01S3 sensors.