

# BACTcontrol



**Online monitor of total and specific bacteria activity (*E.coli* and coliform) in water.**

*Preliminary version*

The determination of microbial water quality is a key requirement of water safety management. Standard determination procedures still rely on cultivation-based methods which are labor-intensive and time-consuming and are not suitable for rapid water quality assessment. In contrast, online monitoring of chemo-physical and hydrological water quality parameters has been applied frequently over the last decade. Monitoring of enzymatic activity is a rapid measurement of total and specific bacteria (*E.coli* and coliform) in water.



The BACTcontrol from microLAN is anticipating / enables microLAN to anticipate an exciting future in which the realization of water safety plans is based on 'intelligent' systems with a high level of interdisciplinary interaction. The online bacteria activity monitoring is complementary to existing microbiological standard parameters; it is not designed to replace any of the proven surveillance practices.

High-resolution online information on microbial water quality aspects can be considered a type of 'process parameter' that continuously monitors a water source, a water-reuse process or a supply system's behavior for any subtle changes. Such continuous online information also offers the unique opportunity to include 'event-triggered' automated sampling activities. In the case of water quality changes detected by the microbial online monitor, samples are then automatically taken for further standard microbiological analysis in the laboratory.



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## Instrument Specifications:

Based on fluorescent measurement of specific enzymatic activity:

- $\beta$ -Glucuronidase-> indicates *E.coli* activity
- $\beta$ -Galactosidase-> indicates Coliform activity
- Alkaline Phosphatase -> Total Activity

## Communication Specifications:

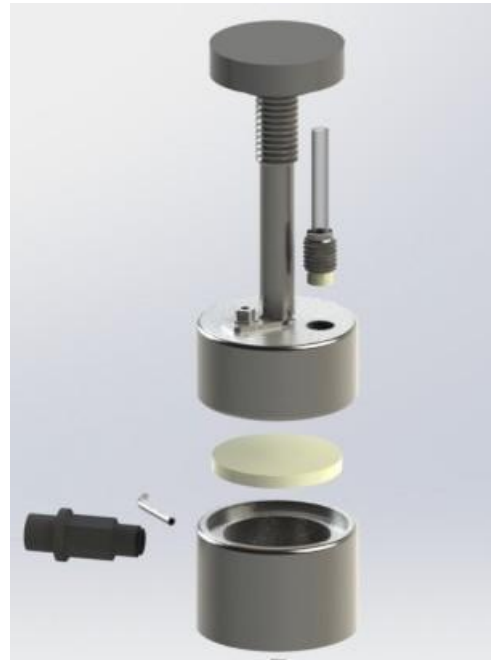
- Integrated PC with Windows
- Graphical user interface with touchscreen
- Full network capability via direct LAN
- 2 x USB 2.0 type A
- 2 x LAN 10/100/1000MB/s; RJ-45
- 1 x DB-9 RS-232/422/485 COM1; default RS-232
- 1 x DB-9 RS-232; COM2
- Protocols: Modbus TCP and Modbus serial, others on request
- 2 x 4 - 20mA outputs
- English operating system: German, French and Spanish, and others on request

## Specifications Options:

- Modem slot for UMTS, ISDN or analog (modem optional)
- Second sample inlet / extra rinsing
- Inputs: 4-20 mA, 2x digital in, leakage sensor
- Air-conditioning unit (if higher than 30°C / 86F)

## Automatic cleaning:

- User selectable cleaning cycles
- Cleaning solution (sodium hypochlorite solution < 0,05% active) prevents fouling and enables unattended deployment for several weeks.



## Technical Details:

- Protection classification: IP 54 (IP65 optional)
- Dimensions (h x b x d): 450 x 450 x 260 mm
- Cabinet material: aluminum
- Sample pressure: max 0.05 bar
- Sample connection: 4 mm ID
- Sample temperature: 10 - 35°C / 50F - 95F
- Sample flow rate: 3 l/h
- Ambient temperature: 15 - 30°C / 59F - 86F, > optional air-co necessary
- Power consumption (average): 45W. 220V - 50 Hz or 110V - 60Hz
- 1 programmable pump (sample).

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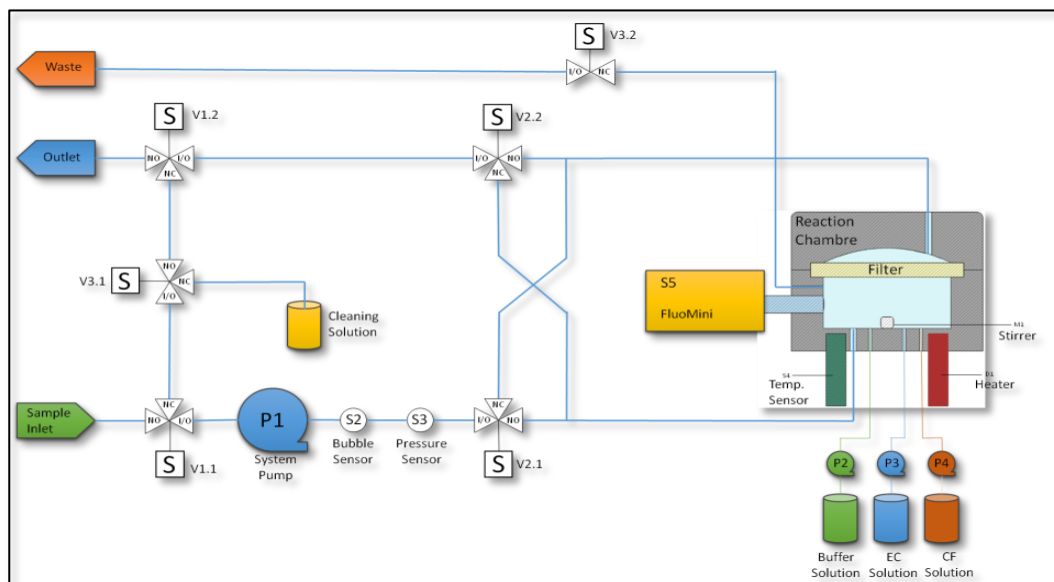


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The BACTcontrol is an “early warning system”, complementing the officially accepted methods for the detection of microbiological activity. The measurements are realized in a short period of time (1-3 hours, depending on the sampling volume). This is in contrast to classical microbiological methods, which are labor-intensive and in which cultivation of the organisms is required, taking several days before obtaining reliable results (24-48 hours).

The BACTcontrol is an online automated instrument for the detection of microbiological activity in water. It measures the specific enzymatic activities of  $\beta$ -galactosidase (coliforms),  $\beta$ -glucuronidase (*E.coli*) and alkaline phosphatase (total activity, biomass), as an indicator of the presence of bacterial contamination. The enzyme activity is detected by adding reagents (consumables) which contain a fluorescent indicator. The reagents are substrate-specific for the enzyme to be detected, meaning that there is an increase in fluorescence when the enzyme is present in the sample.



The BACTcontrol 2.0 is the new version based on the same patent (EU 08756847.3 (2 165 193) and US 8,518,246 B2) and already in use with renown water utilities and research institutes. Please contact us at [sales@microlan.nl](mailto:sales@microlan.nl) for references and applications.