AQUALABO

Smart water solutions

BACTcontrol

ONLINE MONITORING OF SPECIFIC (E-COLI, COLIFORMS, ENTEROCOCCI) AND TOTAL BACTERIAL ACTIVITY IN WATER

APPLICATIONS

Wastewater treatment plant
(follow-up disinfection process, final control, …)

Drinking water station
(pumping station, monitoring process, final control, ...)

Agro-food, pharmaceutical industry: securing water resources

Re-use: monitoring bacterial activity before reuse

ADVANTAGES +

- Enzyme activity monitoring and concentration up to 2 parameters: E-coli, Coliforms, Total bacterial activity, Enterococci.
- Up to 2 sample measurement channels.
- Automatic cleaning function.
- Optimal measurement frequencies: 1 hour.
- Analog output (4-20 mA), Modbus TCP/ Serial, 2 relay outputs.

BACTCONTROL: MEASURING PRINCIPLE

The measurement principle is based on fluorescence measurement of specific enzyme activity.

BACTcontrol is an automated on-line instrument for the detection of microbiological activity in water. It measures the specific enzymatic activities of β-galactosidase (coliforms), β-glucoronidase (E.coli), ß-glucosidase (enterococci) and alkaline phosphatase (total activity, biomass) as indicators of bacterial contamination. Enzymatic activity is detected by adding reagents (consumables) that contain a fluorescent indicator. The reagents are specific to the substrate of the enzyme to be detected, meaning that fluorescence will increase when the corresponding enzyme is present in the sample.

BACTcontrol is an "early warning system" that complements officially accepted methods for detecting microbiological activity. Measurements are carried out in a short period of time (1-2 hours), unlike conventional microbiological methods, which are labour intensive and in which culture of organisms is necessary, taking several hours before obtaining reliable results (24-48h).

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TECHNICAL FEATURES

Measurement specification		
Measuring principle	Fluorescence of specific enzyme activity	
Parameters	Possibility to measure 2 parameters: E-coli -> β -Glucuronidase Coliforms -> β-Galactosidases Enterococci -> ß-glucosidase Total bacterial activity -> alkaline phosphatase	
Results expression	picoMole/MUF min/100 ml = cells/100ml	
Measuring channels	1 standard, 2nd optional or additional rinse	
Versions	Reaction chamber 10 ml	Reaction chamber 2 ml
Sample volume	100-1000 ml	2-100 ml
Bacterial ranges	10- 100 cells	>100 cells
Sample temperature	15-35 °C	
Max Pressure	0.05 bar	
Volume mini	3 l/h	
Autonatic cleaning	Programmable, Sodium hypochlorite (<0.05% active)	

Technical details	
Room temperature	Between 15-30°C Cooling unit option if outside temp between 30-40°C Heating unit option if outside time between 10 and 20°C
Humidity	20-80 %
Protection class	IP54
Dimensions	(hxwxd) : 460x450x321 mm
Weight	25 kg
Enclosure	Stainless steel 316 L
Sample connexion	Tube 4 mm (internal diam)
Power supply	220 V-50 Hz ou 110 – 60 Hz
Average power consumption	Nominal power consumption: <50W (without cooling unit) Peak power: <700W (with cooling unit)

Communication specification	
Embedded computer	Integrated PC with professional Windows SP1 operating system Graphical user interface with touch screen DC12V/5A touch screen power supply
Outputs for data recovery	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 & serial Modbus 1 analog 4 - 20mA 2 relay

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