

BioTector® Series 4 Plus On-Line Organic Analyser

TOC, TC, VOC, TIC (COD, BOD)

PRODUCT OVERVIEW

- Self Cleaning Technology
- Uptime > 99%
- Results < 6 minutes
- Multi-range
- Single and Multi-Stream Option
- Nitrate & Phosphate Modules Available

GENERAL INFORMATION

The **BioTector® Series 4 Plus** has been designed to analyse the most difficult samples. It makes extensive use of Hastelloy and Fluorocarbon materials to handle even the most demanding application. The **BioTector® Series 4 Plus** will provide off-the-shelf reliable and trouble-free service, regardless of the application or range.

FEATURES

- Automatic Range Selection (ARS) Valve which selects the correct range anywhere between 0-5mg/l and 0-25,000mg/l with no requirement for mechanical changes, recalibration or dilution.
- Full Exceedance Recording from the lowest range to as high as 25,000mg/l.
- Maintenance Free Hastelloy Reaction Vessel with PFA Fittings.
- Self-Draining PFA Cooler.
- High Stability CO₂ Analyser with Hastelloy Wetted Parts.

The BioTector® Series 4 Plus On-Line Organic Analyser retains all of the benefits of the original BioTector®

- Patented 2 Stage Advanced Oxidation Process.
- High Availability - Greater than 99% Uptime.
- 100% Representative Sample - no filtering necessary.
- Lowest cost of ownership in the industry.
- The **BioTector® Series 4 Plus On-Line Organic Analyser** does not allow TIC carry over into the TOC measurement.
- Dual compartment FRP Enclosure, which separates the electronics from the 'wet' or analysis components.

FUNCTIONS

A sample from the stream is pumped into the **BioTector's** reaction chamber. A patented Two-Stage Advanced Oxidation process oxidises the organic material in the sample. The carbon dioxide formed in the oxidation process is then sparged and monitored by the patented IR-detector.



"The Oxidation Process that totally Self-Cleans"

The measurement process can be described in four stages:

- 1. SAMPLING:** A representative unfiltered sample from the stream to be measured is pumped into the analyser. The sample injection valve automatically selects the appropriate sample volume for the optimum measuring range.
- 2. TIC DETECTION:** Acid is added to lower the pH so that inorganic carbon may be sparged off as CO₂. As the **BioTector® Series 4 Plus On-Line Organic Analyser** actually measures the level of TIC in the sample, it will not allow TIC to carry over into the TOC measurements.
- 3. OXIDATION:** The ozone generator is switched on to generate ozone used in the reaction. Sodium hydroxide is added to raise the pH of the sample to the point where the production of hydroxyl radicals is optimised. Under these conditions, total and effective oxidation takes place.
- 4. TOC CALCULATION:** To remove the CO₂ from the oxidised sample, the pH of the sample is lowered again. The CO₂ is sparged and measured by the IR-detector. The result is calculated and presented on screen. All data is stored in the system's archive. Data output is available on 4-20mA or other common industrial interfaces.

MAINTENANCE

Normal service frequency is 6 months. Separate service kits are available for the 6-month and 12-month service.

For technical information, please check overleaf >>>

TECHNICAL SPECIFICATIONS



GENERAL TECHNICAL DATA

Enclosure:	Fibreglass Reinforced Polyester
Dimensions (HxWxD):	1250 x 750 x 320mm
Weight:	90 kg
Power Consumption:	300 W
Mains Connection:	230V or 115V AC

FEATURES IN DETAIL

Display:	High Contrast 40 Character x 16 Line Backlit LCD with CFL Backlight
Data Storage:	Previous 5000 Reaction Data Previous 50 Fault Signals
Operation:	Microcontroller with Membrane Keyboard
Language Options:	English German French Norwegian Swedish Dutch <i>Other languages on request</i>

INPUT & OUTPUT SIGNALS

Standard Output:	4 - 20mA for TOC
Digital Output:	2 Potential Free Alarm Contacts, Programmable 1 Potential Free Fault Contact, Programmable
Serial Port:	RS232 Output for Printer or Data Logger

OPTIONAL FEATURES

Output:	TIC, TC, VOC, BOD, COD
Remote Pause Signal:	Input for Remote Pause
Industrial Interface:	Modbus, Profibus, Ethernet
Valves:	Automatic Calibration and Sample Line Cleaning
Multi-stream:	Up to 6 Streams with Independent 4-20mA Signals
Manual Sample:	Up to 8 Manual Sample Input Points
EExp:	Certified and Available on Request

CONSUMABLES

Acid & Base:	Replacement Frequency - Application Dependant (Typically 4 - 8 weeks)
Oxygen:	Option of Integrated Oxygen Generator available
Service:	6 Monthly Intervals

ANALYSIS PARAMETERS

Monitoring:	Patented Two-Stage Advanced Oxidation Process using Hydroxyl Radicals	
Measured Components:	Standard Mode	VOC Mode
	TOC (NPOC)	VOC / POC
	TIC	TOC / NPOC
	TC	TIC
		TC
	After Correlation Tests:	
	COD	
	BOD	
Monitoring Frequency:	Batch Samples Minimum < 6 minutes	
Monitoring Range:	Standard:	0-10mg/l to 0-10,000mg/l
	High Range:	0-10mg/l to 0-25,000mg/l
	Low Range:	0-5mg/l to 0-1,000mg/l
Exceedence Tracking:	Records Full Tracking to Maximum Range	
Repeatability:	± 3% of reading or ± 0.5mg/l	
Sample Volume:	0.1 - 8.0ml	
Particle Size:	Up to 2 mm Ø, soft particulates	
Filtration Requirements:	Not required	
Signal Drift:	< 5% per year	
Ambient Temperature:	5 - 40°C	
Humidity:	5 - 85%, non-condensing	
Chloride Interference:	None	

APPLICATIONS

- Waste Minimisation from Process Plants
- Control of Industrial Waste Treatment Plants
- Cooling Water Monitoring
- Monitoring of Final Effluent
- Municipal Waste Treatment - Influent & Effluent
- River Water Monitoring

The BioTector® Series 4 Plus On-Line Organic Analyser comes with up to 12 months warranty against manufacturing errors.



For more information on any of our products, please visit our website or contact us at:

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