



MicroMac TOC

Online Analyser for Water and Wastewater Monitoring

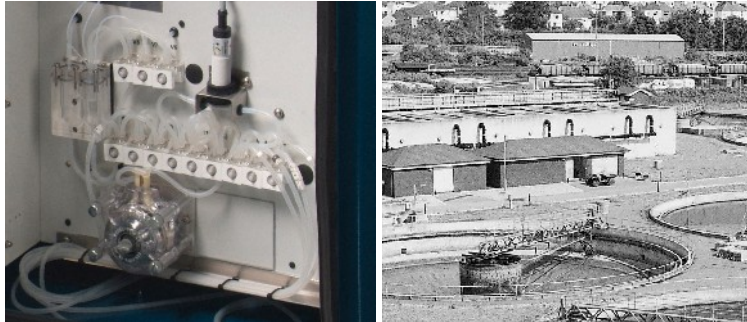
PRODUCT DATASHEET

APPLICATIONS

Industrial Process Water
Wastewater Treatment
Industrial Effluent
Laboratory Measurement
Influent Monitoring
Boiler Feedwater
Condensate and Cooling Water
Drinking Water
Surface Water

FEATURES

Compact Enclosure
Easy Installation
Fast Response
Accurate and Repeatable
Highly Stable NDIR Detector
Batch Analysis
Long Autonomy
Low Reagent Consumption
12VDC Power Supply



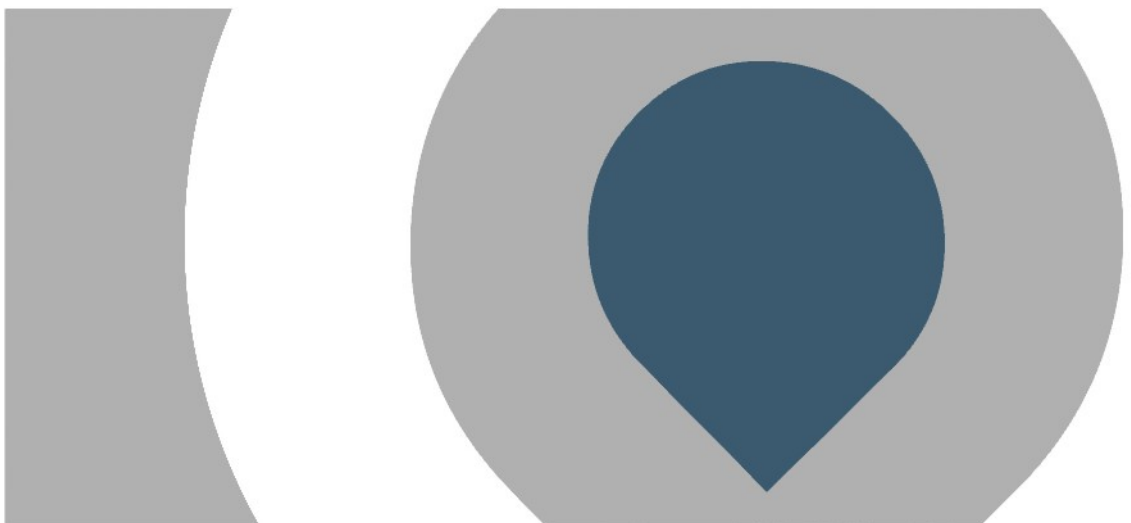
The **MicroMac TOC** analyser has been designed for the automatic measurement of Total Organic Carbon in water and other process solutions. The analyser uses the EPA approved method based on UV persulphate oxidation and detection of the generated carbon dioxide using a Non Dispersive Infrared Detector (NDIR). This method meets requirements of European ISO/CEN guidelines; the analyser conforms to EPA, DIN, CE, ASTM, NAMUR regulations.

Designed for industrial and environmental on-line applications with the highest level of electronic, mechanical and hydraulic robustness. Separation of the electronics and hydraulics plus a simple and robust Loop Flow Analysis (LFA) chemistry module which allows easy maintenance and long term reliable operation.

An internal air compressor produces the carrier gas for oxidation and detection stages. The air is purified with an internal soda lime filter. Use of this mechanism, removes the need for an external air treatment system and compressor which is required by other analysers.

The carrier gas flow is controlled by a digital flowmeter. The flowrate is displayed and controlled by the analyser. In the case of incorrect values (leakage or blockage) the analyser stops automatically and displays a fault alarm "gas reactor fail".

An auto-clean function is performed at the end of each analysis cycle, to clean the hydraulic and chemistry loop.



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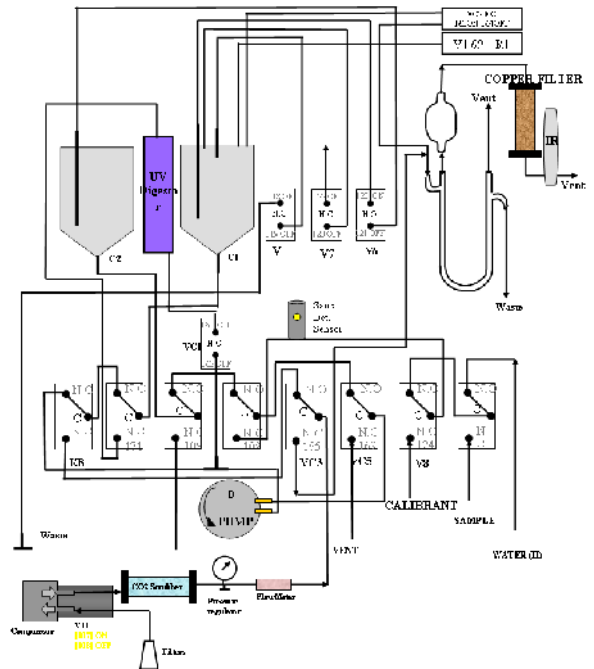
Measuring Principle and Hydraulic Diagram

The filtered sample is pumped into the reactor; the addition of an acidic reagent converts the inorganic carbon to carbon dioxide, which is removed by sparging.

The sparged sample is then mixed with a strong oxidant and submitted to UV radiation to oxidize all organic forms of organic carbon into carbon dioxide. The Carbon Dioxide is removed from the liquid by a second sparging stage.

Carbon dioxide in the gas phase passes through a phase separator, a glass condenser and an halogen filter and it is measured by a NDIR detector. The halogen filter is used to prevent corrosion and condensation inside the stainless steel NDIR flow cell.

Compressed air is scrubbed in a soda lime filter, to have a carbon dioxide free carrier gas available. Carrier flow is controlled by a pressure regulator and flow regulator; the flow rate is measured and displayed by a digital flowmeter.



Measurement Principle

Total Organic Carbon measurement after TIC conversion by acidification and sparging, with Sodium Persulphate UV promoted oxidation

Measurement Type

CO₂ detection by Non Dispersive Infrared Detector (NDIR)

Measuring Time

Batch analysis, programmable frequency

Measuring Range

13-15 minutes depending on range

Detection Limit

from 0-20 to 0-1000 mg/l, other ranges on request

Repeatability

better than 3% of FSD, calculated per EPA p.136 appendix B

Output signal

better than 3%

Input signals

4-20mA

Alarms

Digital contacts to activate analysis and calibration

Sample and Waste Delivery

High limit, General Fault and Calibration Error

Reagent Replacement

Pressure Free

Sample Temperature

3 to 4 weeks depending on operating temperature

Protection

10 to 30°C

Power Supply

IP55

Weight

12VDC, system supplied with Mains Power Supply

Dimensions

33 kg

800 x 450 x 300 mm (hwxwd)

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The company reserves the right to alter the specification without prior notice. E&OE

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