

INDUSTRIAL AND SURFACE WATER MONITORING



TOC EVOLUTION Online TOC Analysers

Description

The **TOC Evolution** from SERES is designed for automatic and continuous monitoring of a **True Total Organic Carbon** in a wide range of applications including Environmental Monitoring and Industrial Process Control.

The **TOC Evolution** features an innovative, powerful and multifunctional UV oxidation reactor enabling accurate monitoring of **Volatile Organic Compounds (VOC)**, **Non-Purgeable Organic Carbons (NPOC)** and **Total Inorganic Carbons (TIC)** in any type of water.

Applications

Control of industrial process: Water Treatment Plant (urban and industrial), effluents and influents continuous monitoring, compliance with environmental regulations and guidelines.

Drinking and Surface water: Alert stations and environmental monitoring.

Water treatment: Pure water production, demineralised water plant, condensate water, steam production, etc....

Oil & Gas: refineries, oil exploration.

True TOC analyser



Key functions for enhanced monitoring

EXCLUSIVE FEATURES

- COMPACT ENCLOSURE EASY TO INSTALL, OPERATE AND MAINTAIN
- LOW OPERATION COST
- QUICK RESPONSE TIME AND HIGH ANALYTICAL PERFORMANCES
- USER PROGRAMMABLE SAMPLING SEQUENCES
- RELIABLE AND ACCURATE TOC MONITORING SOLUTIONS

TRUE TOC MONITORING

- Volatile Organic Compounds (VOC)
- Non-Purgeable Organic Carbons (NPOC)
- Total Inorganic Carbons (TIC)

OPTIONS

- Total Phosphorus (TP)
- Total Nitrogen (TN) and/or Dissolved Organic Carbon (DOC)

Fully automated online analyser

User interface smart & intuitive touchscreen interface allowing analyser controls and status reports.

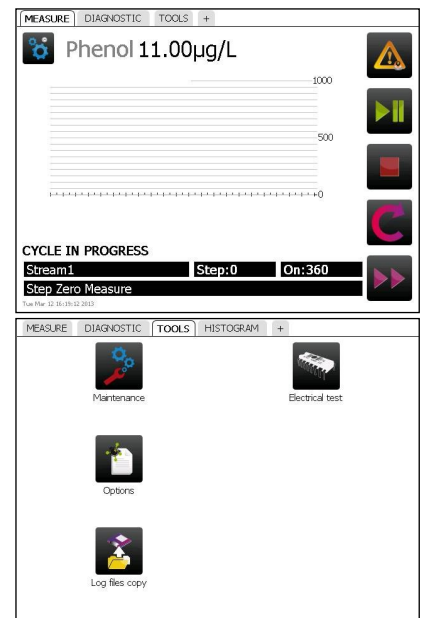
Measurement - Reactor New SERES patented high performance multifunctional reactor providing powerful and efficient oxidation. Its stripping function enables ultra-fast and optimal transfer of CO₂.

Enhanced NDIR detection Integral optical system for accurate, continuous and online IR measurement.

JBus/ModBus module retrieval data / steering

Low Operating cost Minimum reagents' consumption

Multi-stream 1 to 6 channels multiplexer



Technical Specifications

CONSTRUCTION & ENVIRONMENT

| | |
|------------------------------|--|
| Dimensions | Wall cabinet stainless steel: 900 x 600 x 300 mm (W x H x D) - ATEX version available. |
| Weight & Material | 60 kg approx. |
| Environment | Installation in safe and sheltered area, away from corrosive atmosphere. IP55. |
| & Protection | |
| Ambient T° | 5 to 40°C and less than 25°C for the reagents |

Relative humidity 5 to 85% without condensation

ELECTRICAL UTILITIES

| | |
|---------------------|---------------------------------|
| Power supply | 110 - 240 VAC 50 / 60 Hz |
| Consumption | Typical 150 VA - Maximum 330 VA |

ANALYSIS

| | |
|----------------------------|---|
| Parameters | TOC (NPOC), optional VOC (for True TOC) and TIC |
| Range | From 0-10mg/l to 0-5g/l (user selectable) |
| Optional parameters | TN, TP and correlation of DCO. |
| Method | Oxidation UV reactor combined with NDIR |
| LOD | 0.1 < LOD < 0.5mg/l |
| Precision | +/- 3% |
| Repeatability | +/- 3% |
| Cycle duration | Less than 6 min |
| Analysis interval | User programmable |

CONNECTIVITY, ALARMS & COMMUNICATION

| | |
|---|---|
| User interface | Colour LCD display, 5.7", 160 x 230 mm, touch-screen |
| | Windows interface |
| Data storage | Data storage in analyser memory |
| and retrieval | Transfer via USB port |
| Input / Output & Communication | 4 - 20 mA, dry contact - JBus/Modbus RS232/Profibus/Profibus Hart |
| | 3 digital inputs |

On option : support converter RS485

| | |
|-----------------------|--|
| Alarms | Thresholds per stream (HI-LO), sample & analyser failure |
| Remote control | JBus/ModBus protocol or dry contact: end of cycle stop, |

SAMPLING

| | |
|---------------------|---|
| Preparation | Filtration if needed / Dilution, depending on application |
| Sample inlet | Flow : min 30 l/h - optimum 46 l/h (4 l/h with water saver) |
| | Pressure : 0.1 to 3 bar maximum |
| | Temperature : 5 to 45°C |
| Hydraulic | Sample : Inlet 1/4" BSP F / Outlet soft tubing D INT 9 |
| connections | Waste : soft tubing D INT 12 |
| Sample feed | Peristaltic Pump |

OPERATION

| | |
|--------------------|---|
| Zero | Automatic at end of each measurement cycle - Built-in Zero Air filtration unit. |
| Calibration | 6 monthly calibration required |
| Cleaning | Mechanical wiper on option, if needed |



PROCESS CONTROL

Manufacturing industries

Drinking water

ONLINE Water Quality Monitoring Solutions for upstream and downstream purification processes.

Ensure the optimal quality all along the manufacturing and distribution network.

Process water

Integrated solutions for real-time water quality measurements suited to industrial processes.

ENVIRONMENT

Environmental protection and pollution control.

Surface water

REALTIME Monitoring stations or mobile laboratories, for the protection of surface water, spring water, rivers and groundwater.

Sea water

Prevention of sea water by hydrocarbon wastes: Oil tankers, Oil Rigs, Refinery wastes.



References

SERES Environnement (FRANCE) is one of the major actors in the field of online analysis dedicated to **Water Quality Monitoring** in the industry and the environment. Outstanding experience, attentiveness, innovative and effective solutions are the strengths of SERES while meeting everyday challenges with Environment Organizations, Water production & treatment, Oil & Gas, Petrochemical industry, Refineries, Power stations, Paper mills, Metal, food and other industries, Oil rigs, Tankers, Etc. ...



Environmental Compliance & Online Process Analysis



AquaGas Pty Ltd is supporting the global industrial community with high performance **Environmental & Process Monitoring Systems** (Continuous Emissions Monitoring Systems, Air Quality Monitoring Systems, Online process analysers, **Water Quality Monitoring Systems**) specifically designed and built to meet your application requirements.

With extensive expertise and diverse technical skills acquired around the globe, AquaGas Pty Ltd designs, installs, and supports innovative technical solutions, which respond to the requirements of environmental regulations in terms of pollution monitoring and environmental impact assessment. AquaGas Pty Ltd Systems and Services are available in **Australia, New-Zealand and New Caledonia.**



1300 850 862 | www.aquagas.com.au | info@aquagas.com.au



VALIDATED OVER THE YEARS
IN A LARGE FIELD OF
APPLICATION

Solvay

Rhodia

Ineos

FPG Taiwan

Ciba Geigy

Sanofi

Aventis

PPG

Arkema

Asahi Glass

De Nora

Total

Samsung

Coca Cola

Lafarge

Mitsubishi

Petro Bras

Alstom...



APPLICATIONS

Drinking water

Quality control at all stages :
treatment, storage, distribution

Surface water

Study and design of surface
water monitoring stations

Waste water

Monitoring of industrial
or urban waste water

Process water

Quality control of
process water

Oil & Water

Oil in Water Detection &
Water in Oil storage tanks

PARAMETERS

TOTAL CHLORINE
FREE CHLORINE
MORPHOLINE
PHOSPHATES
AMMONIA
HYDRAZINE
COLOUR
PHENOLS
SILICA...

HARDNESS
THT
TA
TAC ...

CHROMIUM VI
MANGANESE
ALUMINIUM
COPPER
NICKEL
IRON
LEAD
ZINC...

CHLORIDES
CYANIDES
FLUORIDES
SULFIDES
ARSENIC
SULFATES ...

CERTIFICATIONS



L C I E