

Complete monitoring system for the automatic, continuous measurement of Total Organic Carbon (TOC) and in potable water and return condensate*.

- Available configurations for specific measuring ranges:
 - Low-range** 0 to 2 ppm LOD: 0.01 ppm
 - Mid-range** 0 to 10 ppm LOD: 0.1 ppm
 - High-range** 0 to 100 ppm LOD: 0.5 ppm
- Complete system including measurement and control electronics, measuring unit, flow indicator, oxidation reactor and reagent dosing system.
- For the continuous online determination of TOC per **ISO 8245** and **NF EN 1484**
- Robust, high quality analyzer cabinet painted stainless steel, 316.
- Analysis time 5 to 10 minutes, programmable interval
- Determination of Chemical Oxygen Demand (COD) by correlation.
- Automatic, electrical zero measurement prior to each measurement cycle.
- Automatic UV reactor cleaning.
- 2 analog and 4 digital outputs for alarms for process values and diagnostic alarms for each sample stream.



Seres OL TOC Evolution VUV

Analyzer	Seres OL TOC Evolution VUV (select range below)		SOL-59.110.000
Range Configuration	0-2 ppm	Limit of Detection (LOD): 0.01 ppm	SOL-97.022.010
Range Configuration	0-10 ppm	Limit of Detection (LOD): 0.1 ppm	SOL-97.022.020
Range Configuration	0-100 ppm	Limit of Detection (LOD): 0.5 ppm	SOL-97.022.030
Configurations	110 VAC		SOL-89.820.030
	RS485 Modbus/JBUS RTU Output		SOL-81.420.010
	Ethernet Interface (TCP/IP)	Please, inform SERES about automatic or fixed IP-address (give address)	SOL-81.420.020
	Tangential filtration	Requirements: <i>Setup: single-channel</i> <i>Air supply: 7 bar, clean and dry air</i> <i>Sample flow: 200-500l/h, 0.5 to 1 bar</i>	SOL-82.830.020 Consult Sales
	Auto-calibration (only for 1 channel)		SOL-83.520.010
	COD indication on display by correlation (indicate the correlation coefficient)		Consult Sales
	2 nd -channel setup (similar range)		SOL-83.590.010
Options	1-Year Spare Part Package "Basis" (Analyzer + 1 st channel)		SOL-84.110.010
	1-Year Spare Part Package "Multi-Channel" (add once if multi-channel config. was selected)		SOL-84.110.020
	SS316L reagent shelf		SOL-89.610.020

* unsuitable for sea water



TOC Measurement

UV/VUV + Persulfate advanced oxidation process; By purging the sample after adding acid, the IC is converted to CO₂ and completely extracted from the sample. The sample is injected into the oxidation reactor. UV directly oxidizes the organic matter which turns into CO₂. The CO₂ produced is then detected by an NDIR detector (non-dispersive infra-red).

Reaction time 5-10 min.

Sensors/Measurement Equipment

Oxidation reactor with VUV lamp
 NDIR detector

Analyzer	Measuring range
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Low-range configuration	0-2 ppm
Limit of Detection	0.01 ppm
Repeatability	± 2 % FS
Accuracy	± 3 % FS

Mid-range configuration	0-10 ppm
Limit of Detection	0.1 ppm
Repeatability	± 2 % FS
Accuracy	± 3 % FS

High-range configuration	0-100 ppm
Limit of Detection	0.5 ppm
Repeatability	± 2.5 % FS
Accuracy	± 3 % FS

Automatic baseline adjustment.
 Sample flow surveillance.

Specifications and Functionality

Pump type peristaltic
 Pump quantity 2

Power supply
 Voltage: 110-240 VAC
 Frequency: 50/60 Hz
 Power consumption: max. 300 VA

Operation
 Display: Color LCD, 7", touch-screen

Display of process value, alarm status and time during operation.

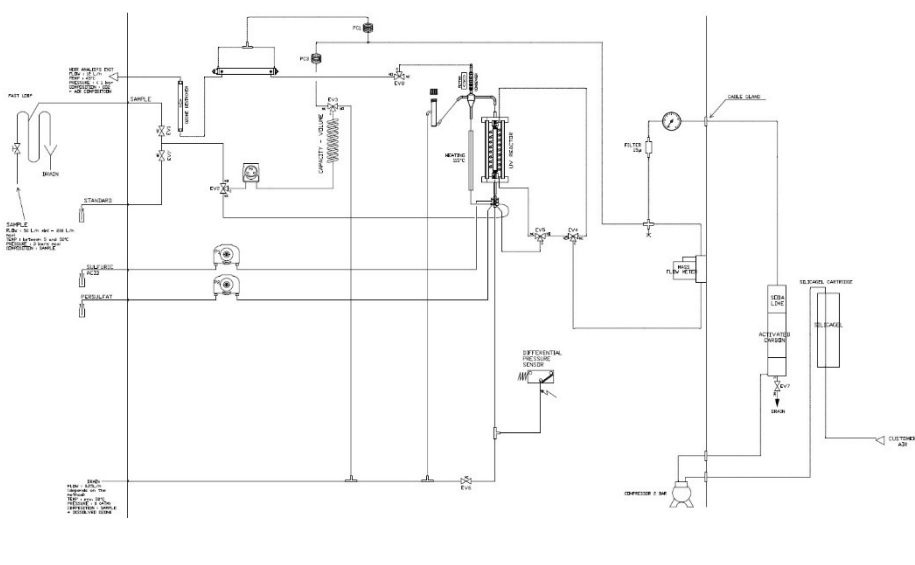
Smart and intuitive interface based on separate menu sections: "Measure", "Diagnostic" and "Tools".

User menus in English and French.

Password protection and storage of data records.

Storage and graphical display of measurement history.

Seres OL TOC Evolution VUV Measurement Scheme



Alarm Relays

1 summary alarm for "analyzer failure"

Maximum load: 1A / 24 V

Relay Outputs

2 potential-free contacts for each channel programmable as limit switches for measuring values (high/low thresholds)
 1 sample flow alarm for each channel

On request only:

1 output "End of cycle indication" of the active sample stream for each channel. Replaces output "Threshold No. 2".

On request only:

1 output for maintenance/calibration indication. For auto-calibration [SOL-83.520.010] only. Replaces output "Threshold No. 2".

Rated load: 1A / 24 V

Signal inputs (on request only)

1 input for "Command of stopping at end of cycle".

Signal outputs

2 programmable signal outputs for measured values (freely scalable, linear).

Current loop: 4 - 20 mA

Communication interface

RS485 interface (galvanically separated) with Modbus/JBUS RTU protocol.

Ethernet interface (TCP/IP) optional.

Analyzer Data

Sample conditions (standard configuration)

Flow rate: min 40 l/h
 optimum 50 l/h
 Temperature: 5 to 50 °C
 Inlet pressure_{Abs.} (25 °C): 0.1 up to 3.0 bar
 Outlet pressure: pressure-free
 Particle size: < 100 µm

Ambient Conditions

Temperature: 5 to 40°C
 Humidity 5 to 95% rel. (without condensation)
 Installation in a closed, protected, tempered room is recommended

Sample connections

Sample inlet: 1/4" BSP F
 Sample inlet with tangential filtration D 12 pipe
 Sample outlet: soft tubing D INT 9
 Sample outlet (fast loop): soft tubing D INT 18
 Sample outlet waste: soft tubing D INT 12
 Sample outlet (Multi-channel) soft tubing D INT 19

Wall cabinet

Dimensions: 993 x 600 x 422 mm
 Material: Stainless Steel 316
 Total weight: 80 kg
 Protection degree: IP 55

Reagent specifications*

Type	Code
Sodium Peroxodisulfate 250g/l	R0x208G250
Reagent Consumption:	
Low-Mid Range	1.5 l/month
High Range	3l/month
Sulfuric Acid 2N (H ₂ SO ₄ 2N)	R0x159
Reagent Consumption	1.5l/month

*storage : dry, cool, well ventilated

