

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 NFEN 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 cell 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 Output	SOL-81.420.010
	Ethernet Interface (TCP/IP)	Mention at order: automatic or fixed IP-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	SOL-83.520.010
	COD indication on display by correlation	Consult Sales
	2 <sup>nd</sup> -channel setup (similar range)	SOL-83.590.010
Options	1-Year Spare Part Package "Basis" (Analyzer + 1 <sup>st</sup> 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-89.610.010



## TOC Measurement

**UV/VUV + Persulfate advanced oxidation process;** By purging the sample after adding acid, the IC is converted to CO<sub>2</sub> and completely extracted from the sample. The sample is injected into the oxidation reactor. UV directly oxidizes the organic matter which turns into CO<sub>2</sub>. The CO<sub>2</sub> 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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<b>Low-range configuration</b>	<b>0-2 ppm</b>
Limit of Detection	0.01 ppm
Repeatability	± 2 % FS
Accuracy	± 3 % FS

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

<b>High-range configuration</b>	<b>0-100 ppm</b>
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 (configuration) or 230 VAC  
 Frequency: 50 /60 Hz  
 Power consumption: max. 300 VA

### Operation

Display: Color LCD, 7", touch-screen

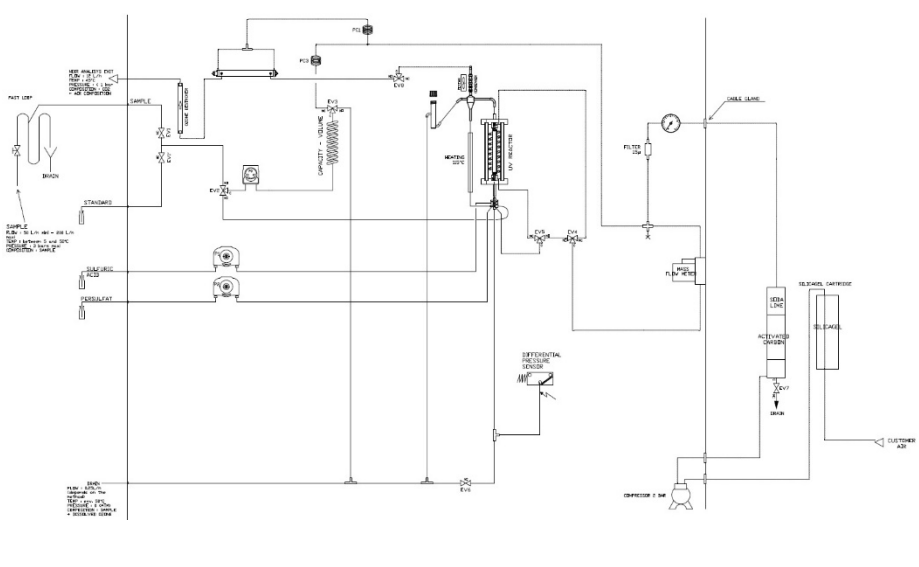
Display of process value, alarm status and time during operation.

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<sub>Abs.</sub> (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)

### 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 <sub>2</sub> SO <sub>4</sub> 2N)	R0x159
Reagent Consumption	1.5l/month

