

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

Analyzer TOC Evolution VUV

- 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.



TOC Evolution VUV

Analyzer	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
Configuration	110 VAC		SOL-89.820.030
Configuration	RS485 Modbus/JBUS Output		SOL-81.420.010
Configuration	Ethernet Interface (TCP/IP) Mention at order: automatic or fixed IP-address		SOL-81.420.020
Configuration	Tangential filtration	Setup: single-channel Requirements: Air supply: 7 bar, clean and dry air Sample flow: 200-500l/h, 0.5 to 1 bar	SOL-82.830.020 Consult Sales
Configuration	Auto-calibration		SOL-83.520.010
Configuration	COD indication on display by correlation		Consult Sales
Configuration	2 nd -channel setup (similar range)		SOL-83.590.010
Option	1-Year Spare Part Package "Basis" (Analyzer + 1 st channel)		SOL-84.110.010
Option	1-Year Spare Part Package "Multi-Channel" (add once if multi-channel config. was selected)		SOL-84.110.020
Option	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 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

Low-range configuration 0-2 ppm
Limit of Detection 0.01 ppm
Repeatability $\pm 2\%$ FS
Accuracy $\pm 3\%$ FS

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

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

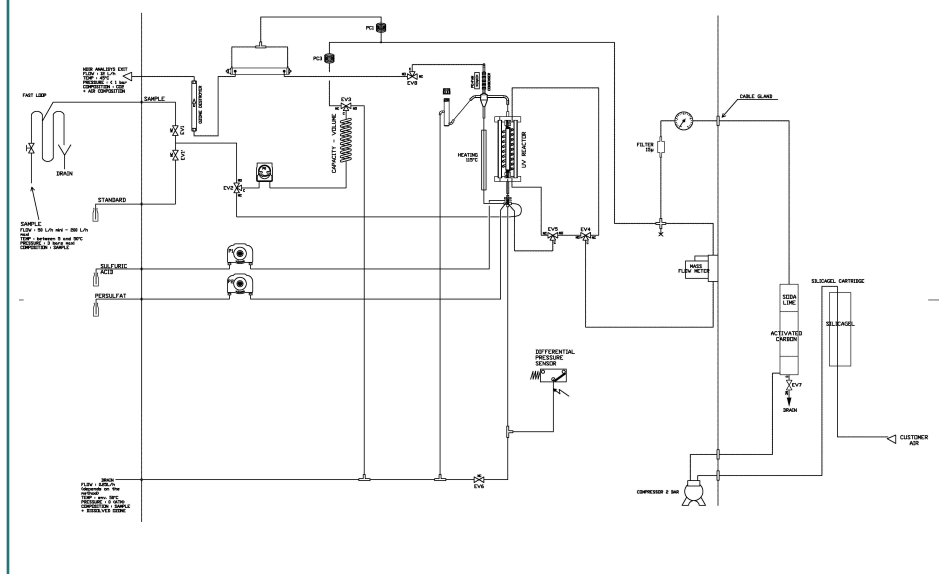
Display of process value, alarm status and time during operation.

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.

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)

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	3 l/month
Sulfuric Acid 2N (H ₂ SO ₄ 2N)	R0x159
Reagent Consumption	1.5 l/month