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Sievers 900 Series Total Organic Carbon Analyzer Performance Specifications

System Overview

The Sievers 900 Series TOC Analyzers consist of six major subsystems:

1. Sample inlet system and sample pump, including the Integrated On-Line Sampling (IOS) System for the *900 On-Line and Portable TOC Analyzers* and the vial port for the *900 Laboratory TOC Analyzer*
2. Chemical reagent subsystem, including reagent reservoirs and syringe pumps
3. Oxidation reactor
4. Measurement module, comprising:
 - CO₂ transfer modules
 - Conductivity cells
5. DI water loop, comprising:
 - DI water reservoir
 - Ion exchange resin (resin bed)
 - DI water pump
6. Electronics subsystems, comprising:
 - Microprocessors and circuit boards
 - Data outputs

Sievers On-line TOC Analyzer	
Linear range	0.03 ppb – 50 ppm TOC
Precision	<1% of RSD
Accuracy	±2% or ±0.5 ppb, whichever is greater
Analysis Time	4 minutes
Sample Flow Rate (nominal)	Analysis mode: 0.5 mL/min
	Fast Flush (between samples): 1.0 mL/min
	Turbo mode (optional): 1.1 mL/min
Required Sample Line Flow Rate:	50 mL - 300 mL/min (for On-Line Mode)

Power requirements	100-240 \pm 10% VAC, 100 watts, 50/60 Hz
Fuses	No user-replaceable fuses; built-in circuit breaker
Sample Temperature	1 °C to 95 °C via iOS(3*) (withstands short-term steam exposure)
Ambient Temperature	10 °C to 40 °C
Sample Pressure (in IOS System)	Up to 250 psig
Normal Operating Environment	Intended for indoor use only
Maximum Relative Humidity	Up to 95%, noncondensing
Maximum Altitude	3,000 m (9,843 ft)
Calibration Stability	Typically stable for 12 months
Chemical Reagents	(prepackaged) 300 mL acid; 300 mL or 150 mL oxidizer
Outputs	Serial (RS-232), USB, parallel printer port, 4–20 mA, two alarms, binary output, Ethernet port
Installation/Overtoltage Category	II
Safety Certifications	CE, ETL listed. Conforms to UL Std. 61010-1 Certified to CSA C22.2 No. 61010-1.
Pollution Degree	2
Display	Color, touch-sensitive LCD
Size	62.4 cm height x 45.2 cm width x 26.4 cm depth (24.6 in x 17.8 in x 10.4 in)
Weight	16.9 kg (37.2 lbs)
IP Rating	IP 45

Sievers Laboratory TOC Analyzer	
Linear range	0.03 ppb – 50 ppm TOC
Precision	<1% of RSD
Accuracy	\pm 2% or \pm 0.5 ppb, whichever is greater
Analysis Time	4 minutes
Sample Flow Rate (nominal)	Analysis mode: 0.5 mL/min Fast Flush (between samples): 1.0 mL/min
Power requirements	100-240 \pm 10% VAC, 100 watts, 50/60 Hz
Fuses	T1.6 A, 250 VAC (SloBlo), size 5 x 20 mm(appliance inlet)

Ambient Temperature	10 °C to 40 °C
Normal Operating Environment	Intended for indoor use only
Maximum Relative Humidity	Up to 95%, non-condensing
Maximum Altitude	3,000 m (9,843 ft)
Calibration Stability	Typically stable for 12 months
Chemical Reagents (prepackaged)	300 mL acid; 300 mL or 150 mL oxidizer
Outputs	Serial (RS-232), USB, parallel printer port, Ethernet port
Installation/Overvoltage Category	II
Safety Certifications	CE, ETL listed. Conforms to UL Std. 61010-1 Certified to CSA C22.2 No. 61010-1.
Pollution Degree	2
Display	Color, touch-sensitive LCD
Size	48.3 cm height x 19.2 cm width x 48.0 cm depth (19.0 in x 7.6 in x 18.9 in)
Weight	14.3 kg (31.5 lbs)

Sievers Portable TOC Analyzer	
Linear range	0.03 ppb – 50 ppm TOC
Precision	<1% of RSD
Accuracy	±2% or ±0.5 ppb, whichever is greater
Analysis Time	4 minutes
Sample Flow Rate (nominal)	Analysis mode: 0.5 mL/min
Fast Flush (between samples):	1.0 mL/min
Turbo mode (optional):	1.1 mL/min
Required Sample Line Flow Rate:	50 mL - 300 mL/min (for On-Line Mode)
Power requirements	100-240 ±10% VAC, 100 watts, 50/60 Hz
Sample Temperature	1 °C to 95 °C via iOS(4*) (withstands short-term steam exposure)
Ambient Temperature	10 °C to 40 °C
Normal Operating Environment	Intended for indoor use only
Maximum Relative Humidity	Up to 95%, non-condensing
Maximum Altitude	3,000 m (9,843 ft)

Calibration Stability	Typically stable for 12 months
Chemical Reagents (prepackaged)	300 mL acid; 300 mL or 150 mL oxidizer
Outputs	Serial (RS-232), USB, parallel printer port,
	4–20 mA, Ethernet port
Installation/Overvoltage Category	II
Safety Certifications	CE, ETL listed. Conforms to UL Std. 61010-1
	Certified to CSA C22.2 No. 61010-1.
(4*)If the sample temperature and pressure are above 60° C and 100 psi, the Sievers 900 Portable TOC Analyzer with the stainless steel iOS is required.	

Sievers On-Line TOC Analyzer

The Sievers 900 On-Line TOC Analyzer is designed to be mounted on a wall or support stand. Allow a minimum of 5 cm clearance between the back of the Analyzer and the wall for heat dissipation; allow 30.5 cm of clearance on the sides, top, and bottom of the analyzer for the plumbing and electrical connections. Additionally, this clearance provides for the proper circulation for temperature and humidity control. When selecting the location, mount the Analyzer so that the display screen is approximately at eye-level. Hardware for mounting the Analyzer on a wall or instrument rack is not included in the accessories kit. Hardware should be selected based on site-specific circumstances. Mounting hardware must be able to support four times the weight of the unit; thus you should install mounting bolts capable of supporting 64.20 kg (141.50 lbs). The 900 On-Line Analyzer withstands the hazards of industrial process environments, and the Analyzer enclosure is rated IP 45.

Sievers Laboratory and Portable TOC Analyzers

Place the Analyzer on a clean, unobstructed surface that can accommodate the Analyzer's dimensions and weight. For details, refer to the specifications listed for your specific Analyzer model in Chapter 2, "System Description." For proper heat dissipation, ensure that 16 cm is available at the rear and on both sides of the Analyzer. For Online mode sampling in the Sievers 900 Portable TOC Analyzer, you should place the Analyzer within 3 m of the port or beaker to be tested. If you will be using the Analyzer with a GE Autosampler system, be certain there is adequate space to the left of the Analyzer for the GE Autosampler. Consult the *DataPro 900 +DataGuard Software with GE Autosampler Operation and Maintenance Manual* for details.

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