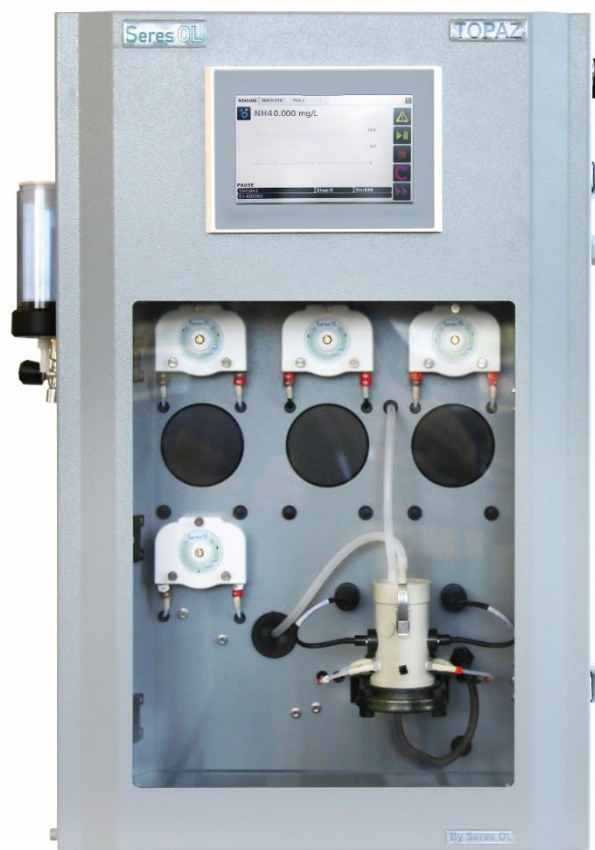


Complete monitoring system for the automatic, continuous measurement of ammonium NH<sub>4</sub><sup>+</sup> in potable water, surface water, wastewater and effluents.

- For the continuous, colorimetric online determination of ammonium per EN-ISO 7150/1:1984, DIN 38406-E5-1 and T90-015.
- Available in separate measuring ranges:
  - Seres OL Topaz Ammonium LR:** 0 to 500 ppb
  - Seres OL Topaz Ammonium HR:** 0 to 2 ppm
  - Seres OL Topaz Ammonium HRx25:** 0 to 50 ppm
- Complete system including measurement and control electronics, measuring unit, flow indicator, reaction chamber and reagent dosing system.
- Robust, high quality analyzer cabinet painted stainless steel, 316L.
- Automatic, electrical zero measurement prior to each measurement cycle.
- Automatic cell cleaning.
- 4 easily accessible peristaltic pump modules (5 for HRx25) for accurate, automatic dosing of chemical reagents.
- 2 analog and 7 digital outputs for alarms for process values and diagnostic alarms for each sample stream.
- RS485 Modbus/JBUS RTU interface.
- Large back-lit touchscreen color LCD display for the reading of all measured values and status information simultaneously.
- Easy menu-guided operation in English or French.



Seres OL Topaz Series Showcase

Analyzer	Seres OL Topaz Ammonium LR (0-500 ppb)	SOL-55.321.000	
Analyzer	Seres OL Topaz Ammonium HR (0-2 ppm)	SOL-55.321.100	
Configurations	Dilution (HRx25)	Range extension: 0-50 ppm for Topaz Ammonium HR)	SOL-82.350.010
	2-Channel Setup	(LR/HR only, similar range)	SOL-83.590.020
	4-Channel Setup	(LR/HR only, similar range)	SOL-83.590.040
	6-Channel Setup	(LR/HR only, similar range)	SOL-83.590.060
	Ethernet Interface (TCP/IP)		SOL-81.410.020
Options	1-Year Spare Part Package "Basis" (Analyzer + 1 <sup>st</sup> channel)		SOL-84.110.050
	1-Year Spare Part Package "Multi-Channel" (add once if multi-channel configuration was selected)		SOL-84.110.150
	Reagent shelf inf SS316L		SOL-89.610.010



## Ammonium Measurement

**Indophenol method;** colorimetric determination of ammonium ions after chemical reaction in an alkaline environment.

Reaction time LR/HR 15 min.  
Reaction time HRx25 17 min.

### Sensors/Measurement Equipment

Detection wavelength 660 nm  
Temperature controlled measuring chamber

### Analyzer Measuring range

**Topaz Ammonium LR 0-500 ppb**  
Limit of Detection 15 ppb  
Repeatability 2% FS  
Accuracy 3% FS

**Topaz Ammonium HR 0-2 ppm**  
Limit of Detection 0.1 ppm  
Repeatability  $\pm 2\%$  or  $\pm 0.06$  ppm (whichever is greater)  
Accuracy  $\pm 2\%$  or  $\pm 0.06$  ppm (whichever is greater)

**Topaz Ammonium HRx25 0-50 ppm**  
Limit of Detection < 0.5 ppm  
Repeatability <  $\pm 3\%$  FS  
Accuracy <  $\pm 3\%$  FS

Automatic baseline adjustment.  
Semi-automatic calibration function.  
Sample flow surveillance.

## Specifications and Functionality

Pump type peristaltic  
Pump quantity LR/HR 4  
Pump quantity HRx25 5

**Power supply**  
Voltage: 110 - 240 VAC  
Frequency: 50 /60 Hz  
Power consumption: Typical 150 VA, 300 max.

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

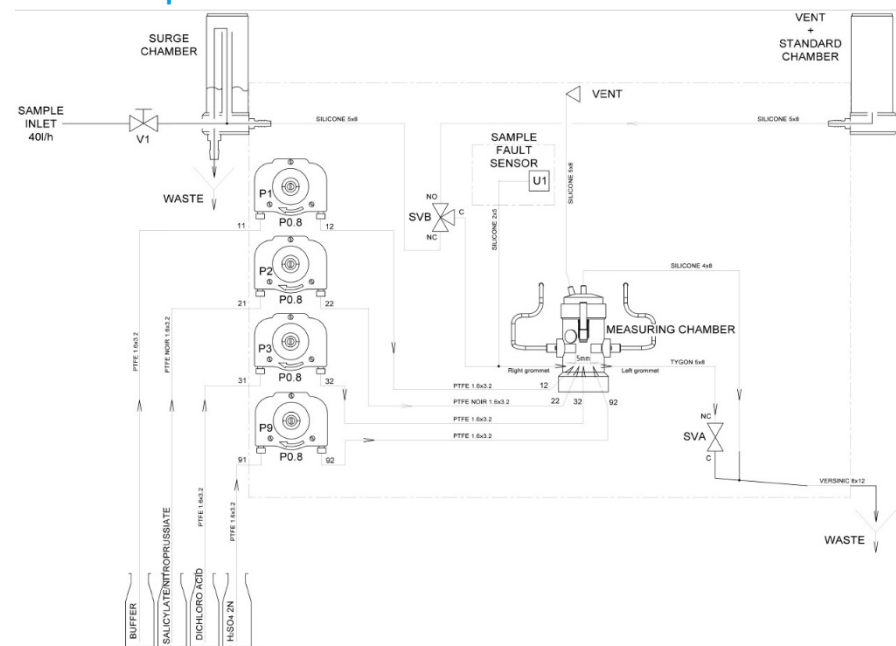
Display of process value, alarm status and time during operation.

Smart and intuitive interface based on separate menu sections: "Measurement", "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 Topaz Ammonium 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

1 output for indication of the active sample stream for each channel.

1 output for maintenance indication.

Rated load: 1A / 24 V

### 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 included in standard.

Ethernet interface (TCP/IP) optional.

## Analyzer Data

### Sample conditions

Flow rate for sample: min. 30 l/h  
opt. 40 l/h  
Flow rate for sample dilution: min 30 l/h  
opt. 40l/h  
Temperature: 5 to 40 °C  
Inlet pressure<sub>Abs.</sub> (25 °C): 0.1 up to 2.0 bar  
Outlet pressure: pressure-free  
Particle size: < 20 µm

### Ambient Conditions

Temperature: 5 to 40 °C  
Humidity 10 to 80% rel.

### Sample connections

Sample inlet: 1/4" BSP F  
Sample outlet: soft tubing D INT 9  
Sample outlet waste: soft tubing D INT 12  
Sample outlet multi-ch.: soft tubing D INT 19

### Wall cabinet

Dimensions: 780 x 570 x 370 mm  
Material: Stainless Steel 316L  
Total weight: 35 kg  
Protection degree: IP 55

## Reagent specifications

Type	Code
pH Buffer Solution (pH12)	RXX113
Salicylate / Nitroprussiate	RXX115
Dichloroisocyanuric acid	RXX111
Sulfuric acid 2N	RXX159
Reagent Consumption	1.1 l/month
Deionized Water (Dilution – Ammonium HRx25)	
Consumption	max. 130 l/day

