


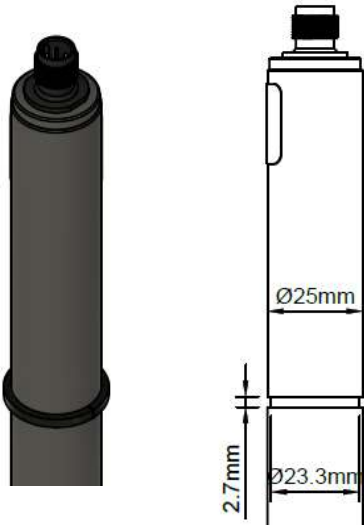
	<h1>TARAtec P9.3</h1>				
Indicator	Peracetic acid				
Application	All kinds of water treatment Tensides and conductivity acids are tolerated (e. g. bottle washing machine, CIP-plants)				
Measuring system	Membrane covered, amperometric 2-electrode system				
Electronic	<p>Analog version:</p> <ul style="list-style-type: none"> - voltage output - not galvanically isolated electronics - analog internal data processing - output signal: analog (analog-out/analog) <p>Digital version:</p> <ul style="list-style-type: none"> - electronic is completely galvanically isolated - digital internal data processing - output signal: analog (analog-out/digital) or digital (digital-out/digital) <p>mA-version:</p> <ul style="list-style-type: none"> - current output analog - not galvanically isolated electronics - output signal: analog (analog-out/analog) 				
Information about the measuring range	<p>The actual slope of a sensor can vary production-related between 65% and 150% of the nominal slope</p> <p>Note: With a slope > 100% the measuring range is reduced accordingly. (Ex.: 150% slope → 67% of the specified measuring range)</p>				
Accuracy After calibration at repeat conditions (25 °C, in drinking water) from full scale value	<p>Measuring range 2000 mg/L:</p> <table style="margin-left: 40px;"> <tr> <td>at 400 mg/l</td> <td><2%</td> </tr> <tr> <td>at 1600 mg/l</td> <td><3%</td> </tr> </table>	at 400 mg/l	<2%	at 1600 mg/l	<3%
at 400 mg/l	<2%				
at 1600 mg/l	<3%				
Working temperature	<p>Measuring water temperature: 0 ... +60 °C (no ice crystals in the measuring water)</p>				
	<p>Ambient temperature: 0 ... +55 °C</p>				
Temperature compensation	<p>Automatically, by an integrated temperature sensor sudden temperature changes must be avoided T₉₀: approx. 3.5 min.</p>				
Max. allowed working pressure	<p>Operation without retaining ring:</p> <ul style="list-style-type: none"> - 0.5 bar - no pressure impulses and/or vibrations 				
	<p>Operation with retaining ring in TARAtec FLC:</p> <ul style="list-style-type: none"> - 1.0 bar, - no pressure impulses and/or vibrations (see option 1) 				
Flow rate (Incoming flow velocity)	approx. 15-30L/h (33 – 66 cm/s) in TARAtec FLC, small flow rate dependence is given				
pH-range	pH 1 – pH 8 (see Diagram „Slope of TARAtec P9.3 and P10.1 versus pH“, p. 8)				


	<h1>TARAtec P9.3</h1>	
Run-in time	Measuring range 200 mg/L: First start-up approx. 3 h Measuring range 2000 mg/L: First start-up approx. 1 h Measuring range 20000 mg/L: First start-up approx. 30 min.	
Response time	T_{90} : approx. 3.5 min. at 10 °C approx. 45 sec. at 50 °C	
Zero point adjustment	Not necessary	
Calibration	At the device, by analytical determination	
Interferences	O_3 : high increase of the measuring value ClO_2 : increases the measuring value H_2O_2 : very low influence on the measuring value (reduce of the PAA-signal)	
Influence of conductivity acids	1 % sulfuric acid, 1 % nitric acid or 1 % phosphoric acid in the water have no influence to the measuring behaviour	
Absence of the disinfectant	Max. 24 h	
Connection	mV version: 5-pole M12, plug-on flange Modbus version: 5-pole M12, plug-on flange 4-20 mA version: 2-pole terminal or 5-pole M12, plug-on flange	
Max. length of sensor cable (depending on internal signal processing)	analog	< 30 m
	digital	> 30 m are permissible Maximum cable length depends on application
Protection type	5-pole M12 plug-on flange: IP68 2-pole terminal with mA-hood: IP65	
Material	Elastomer membrane, PEEK, stainless steel 1.4571	
Size	diameter: approx. 25 mm Length: mV version approx. 190 mm (analog signal processing) approx.. 205 mm (digital signal processing) Modbus version approx. 205 mm 4-20 mA version approx. 220 mm (2-pole-terminal) approx. 190 mm (5-pole-M12)	
Transport	+5 ... +50 °C (Sensor, electrolyte, membrane cap)	

	<h1>TARAtec P9.3</h1>
<p>Storage</p>	<p>Sensor: dry and without electrolyte no limit at +5 ... +40 °C</p> <p>Electrolyte: in original bottle protected from sunlight at +5 ... +35 °C min. 1 year or until specified EXP-Date</p> <p>Membrane cap: in original packing no limit at +5 ... +40 °C (used membrane caps cannot be stored)</p>
<p>Maintenance</p>	<p>Regularly control of the measuring signal, min. once a week The following specifications depend on the water quality: Change of the membrane cap: once a year Change of the electrolyte: every 3 - 6 months</p>
	<p>EMC tested RoHS compliant</p>

<p>Option 1: Retaining ring</p>	<ul style="list-style-type: none"> - When operating with pressures >0.5 bar in TARAtflow FLC - Dimensions retaining ring 29 x 23.4 x 2.5 mm, slitted, PETP - Different positions for groove selectable (on request) 	
--	---	--

Technical Data
1. P9.3 (Analog output, analog internal signal processing)

A potential-free electrical connection is necessary as the sensor electronic is not equipped with a galvanic.


	Measuring range	Resolution	Output Output resistance	Nominal slope	Voltage supply	Connection
P9.3H-M12	0...200 ppm	0.1 ppm	0...-2000 mV 1 kΩ	-10 mV/ppm	±5 - ±15 VDC 10 mA	5-pole M12 plug-on flange Function of wires: PIN1: measuring signal PIN2: +U PIN3: -U PIN4: signal GND PIN5: n. c.
P9.3N-M12	5...2000 ppm	1 ppm		-1 mV/ppm		
P9.3L-M12	0.005...2 % (20000 ppm)	0.001 % (10 ppm)		-1000mV/% (-0.1 mV/ppm)		
P9.3Up2000-M12	5...2000 ppm	1 ppm	0...+2000 mV 1 kΩ	+1 mV/ppm	10 - 30 VDC 10 mA	5-pole M12 plug-on flange Function of wires: PIN1: measuring signal PIN2: +U PIN3: power GND PIN4: signal GND PIN5: n. c.
P9.3Up5000-M12	50...5000 ppm	1 ppm		+0.4 mV/ppm		

(Subject to technical changes.)

2. P9.3 (analog output, digital internal signal processing)

analog-out / digital


- The power supply is galvanically isolated inside of the sensor.
- The output signal is galvanically isolated too, that means potential-free.

	Measuring range	Resolution	Output Output resistance	Nominal slope	Voltage supply	Connection
P9.3H-An-M12	0 ... 200 ppm	0.1 ppm	analog 0...-2 V (max. -2.5 V) 1 kΩ	-10 mV/ppm	9-30 VDC approx. 20-56 mA	5-pole M12 plug-on flange Function of wires: PIN1: measuring signal PIN2: +U PIN3: power GND PIN4: signal GND PIN5: n. c.
P9.3N-An-M12	5 ... 2000 ppm	1 ppm		-1 mV/ppm		
P9.3L-An-M12	0.005 ... 2 % (20000 pm)	0.001 % (10 ppm)		-1000mV/% (-0.1 mV/ppm)		
P9.3H-Ap-M12	0 ... 200 ppm	0.1 ppm	analog 0...+2 V (max. +2.5 V) 1 kΩ	+10 mV/ppm		
P9.3N-Ap-M12	5 ... 2000 ppm	1 ppm		+1 mV/ppm		
P9.3L-Ap-M12	0.005 ... 2 % (20000 pm)	0.001 % (10 ppm)		+1000mV/% (+0.1 mV/ppm)		

(Subject to technical changes.)

3. P9.3 (digital output, digital internal signal processing)

- The power supply is galvanically isolated inside of the sensor.
- The output signal is galvanically isolated too, that means potential-free.


	Measuring range	Resolution	Output Output resistance	Voltage supply	Connection
P9.3H-M0c	0 ... 200 ppm	0.1 ppm	Modbus RTU There are no terminating resistors in the sensor.	9-30 VDC approx. 20-56 mA	5-pole M12 plug-on flange Function of wires: PIN1: reserved PIN2: +U PIN3: power GND PIN4: RS485B PIN5: RS485A
P9.3N-M0c	5 ... 2000 ppm	1 ppm			
P9.3L-M0c	0.005 ... 2 % (20000 pm)	0.001 % (10 ppm)			

(Subject to technical changes.)

4. P9.3 4-20 mA (analog output, analog internal signal processing)


A potential-free electrical connection is necessary as the sensor electronic is not equipped with a galvanic.

4.1 Electrical connection: 2 pole terminal clamp

	Measuring range	Resolution	Output Output resistance	Nominal slope	Voltage supply	Connection
P9.3MA-200	0 ... 200 ppm	0.1 ppm	4...20 mA uncalibrated	0.08 mA/ppm	12...30 VDC $R_L = 50\Omega$ (12V)... 900 Ω (30V)	2-pole terminal (2 x 1 mm ²)
P9.3MA-2000	5 ... 2000 ppm	1 ppm		0.008 mA/ppm		Recommended: Round cable Ø 4 mm 2 x 0.34 mm ²
P9.3MA-2%	0.005 ... 2 % (20000 ppm)	0.001 % (10 ppm)		8.0 mA/% (0.0008 mA/ppm)		

(Subject to technical changes.)

4.2 Electrical connection: 5 pole M12 plug-on flange

	Measuring range	Resolution	Output Output resistance	Nominal slope	Voltage supply	Connection
P9.3MA-200-M12	0 ... 200 ppm	0.1 ppm	4...20 mA uncalibrated	0.08 mA/ppm	12...30 VDC $R_L = 50\Omega$ (12V)... 900 Ω (30V)	5-pole M12 plug-on flange
P9.3MA-2000-M12	5 ... 2000 ppm	1 ppm		0.008 mA/ppm		Function of wires: PIN1: n. c. PIN2: +U PIN3: -U PIN4: n. c. PIN5: n. c.
P9.3MA-2%-M12	0.005 ... 2 % (20000 ppm)	0.001 % (10 ppm)		8.0 mA/% (0.0008 mA/ppm)		

(Subject to technical changes.)

Spare Parts

Type	Membrane cap	Electrolyte	Emery	O-ring
P9.3 not P9.3L and P9.3MA-2%	M9.3N Art. no. 11058	EPS9H/W, 100 ml Art. no. 11025	S2 Art. no. 11906	20 x 1.5 silicone Art. no.. 11803
P9.3L P9.3MA-2%		EPS9L/W, 100 ml Art. no. 11024		

(Subject to technical changes.)

Slope of TARAtec P9.3 and P10.1 versus pH

Temperature: 25°C / Flow rate: 30 L/h

