
	<h1>TARAtec P10</h1>
indicator	Peracetic acid
Application	<p>All kinds of water treatment, also sea water Conductivity acids are tolerated. (e. g. bottle washing machine, CIP-plants) The membrane system is mechanical resistant. The membrane system is highly resistant to surfactants (tensides).</p>
Measuring system	Membrane covered, amperometric 2-electrode system
Electronic	<p>Analog version:</p> <ul style="list-style-type: none"> <li>- voltage output</li> <li>- not galvanically isolated electronics</li> <li>- analog internal data processing</li> <li>- output signal: analog (analog-out/analog)</li> </ul> <p>Digital version:</p> <ul style="list-style-type: none"> <li>- electronic is completely galvanically isolated</li> <li>- digital internal data processing</li> <li>- output signal: analog (analog-out/digital) or digital (digital-out/digital)</li> </ul> <p>mA-version:</p> <ul style="list-style-type: none"> <li>- current output analog</li> <li>- not galvanically isolated electronics</li> <li>- output signal: analog (analog-out/analog)</li> </ul>
Information about the measuring range of sensors with 4-20 mA	<p>Slope of a sensor can vary production-related or application-related between 65% and 150% of the nominal slope</p> <p>-&gt; Recommendation to determine the suitable measuring range or the suitable sensor: Concentration to be measured x factor 1.5 = measuring range of the sensor</p> <p>Example: Concentration to be measured 1.6 ppm x 1.5 = 2.4 -&gt; recommended sensor with a measuring range of 5 ppm</p>
Working temperature	<p>Measuring water temperature: 0 ... +45 °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 Response time <math>t_{90}</math> = approx. 8 min.</p>
Max. allowed working pressure	<p>Operation without retaining ring: 0.5 bar, no pressure impulses and/or vibrations</p>
	<p>Operation with retaining ring: 1.0 bar, no pressure impulses and/or vibrations</p>
Flow rate	approx. 15-30L/h in TARAflow FLC, small flow rate dependence is given
pH-range	pH 1 – pH 6



# TARAtec P10


Run-in time	P10H: First start-up approx. 3 h P10N: First start-up approx. 1 h P10L: First start-up approx. 30 min.
Response time	T <sub>90</sub> : approx. 5 min. at 10 °C T <sub>90</sub> : approx. 1.5 min. at 45 °C
Zero point adjustment	Not necessary
Slope calibration	At the device, by analytical determination
interferences	O <sub>3</sub> : factor 2500 ClO <sub>2</sub> : factor 1 H <sub>2</sub> O <sub>2</sub> : very low influence on the measuring value (reduction 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	analog-out/analog version: 4-pole plug adapter analog-out/digital version: 4-pole plug adapter digital-out/digital version: 5-pole M12, plug-on flange 4-20 mA version: 2-pole terminal or 5-pole M12, plug-on flange
material	PVC-U, stainless steel 1.4571
Size	diameter: approx. 25 mm Length: analog-out/analog version approx. 175 mm analog-out/digital version approx. 195 mm digital-out/digital 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)
storage	Sensor: dry and without electrolyte no limit at +5 ... +40 °C
	Electrolyte: in original bottle protected from sunlight at +5 ... +35 °C min. 1 year or until specified EXP-Date
	Membrane cap: in original packing no limit at +5 ... +40 °C (used membrane caps can not be stored)
maintenance	Regular 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
	EMC-Testing DIN EN 61326-1, 61326-2-3 RoHS compliant

## Technical Data

### 1. P10 (Analog output, analog internal signal processing)

analog-out / analog

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


	Measuring range	resolution	Output Output resistance	Nominal slope	Voltage supply	Connection
P10H	0.5...200 ppm	0.1 ppm	0...-2000 mV	-10 mV/ppm	±5 - ±15 VDC	4-pole screw connector
P10N	5...2000 ppm	1 ppm	1 kΩ	-1 mV/ppm	10 mA	
P10L	0.005...2 % (20000 ppm)	0.001 % (10 ppm)		-1000mV/% (-0.1 mV/ppm)		
P10Up2000	5...2000	1 ppm	0...+2000 mV	+1 mV/ppm	10 - 30 VDC	
P10Up5000	50...5000	1 ppm	1 kΩ	+0.4 mV/ppm	10 mA	

(Subject to technical changes.)

### 2. P10 (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	Power supply	Connection
P10H-An	0.5...200 ppm	0.1 ppm	analog 0...-2 V (max. -2.5 V)	-10 mV/ppm	9-30 VDC approx. 56-20 mA	4-pole screw connector
P10N-An	5...2000 ppm	1 ppm		-1 mV/ppm		
P10L-An	0.005...2% (20000 ppm)	0.001% (10 ppm)		1 kΩ		
P10H-Ap	0.5...200 ppm	0.1 ppm	analog 0...+2 V (max. +2.5 V)	+10 mV/ppm		
P10N-Ap	5...2000 ppm	1 ppm		+1 mV/ppm		
P10L-Ap	0.005...2% (20000 ppm)	0.001% (10 ppm)		1 kΩ		

(Subject to technical changes.)

### 3. P10 (digital output, digital internal signal processing)

digital-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	Power supply	Connection
P10H-M0c	0.5...200 ppm	0.1 ppm	Modbus RTU  There are no terminating resistors in the sensor.	9-30 VDC approx. 56-20 mA	5-pole M12 connector
P10N-M0c	5...2000 ppm	1 ppm			
P10L-M0c	0.005...2% (20000 ppm)	0.001% (10 ppm)			


(Subject to technical changes.)

### 4. P10 4-20 mA (analog output, analog internal signal processing)

Analog-out / analog


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

#### 4.1 Electrical connection: 2 pole terminal clamp

	Measuring range	resolution	Output Output resistance	Nominal slope	Voltage supply	Connection
P10MA-200	0.5...200 ppm	0.1 ppm	4...20 mA uncalibrated	0.08 mA/ppm	12...30 VDC  $R_L = 50\Omega$ (12V) ... $R_L = 900\Omega$ (30V)	2-pole terminal (2 x 1 mm <sup>2</sup> )  Recommended: Round cable Ø 4 mm 2 x 0.34 mm <sup>2</sup>
P10MA-2000	5...2000 ppm	1 ppm		0.008 mA/ppm		
P10MA-5000	50...5000 ppm	1 ppm		0.0032 mA/ppm		
P10MA-2%	0.005...2 % (20000 ppm)	0.001 % (10 ppm)		8.0 mA/% (0.0008 mA/ppm)		
P10MA-5%	0.05...5 % (50000 ppm)	0.01 % (100 ppm)		3.2 mA/% (0.00032 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
P10MA-200-M12	0.5...200 ppm	0.1 ppm	4...20 mA uncalibrated	0.08 mA/ppm	12...30 VDC R <sub>L</sub> = 50Ω (12V) ... R <sub>L</sub> 900Ω (30V)	5-pole M12 plug-on flange  Function of wires: PIN2: +U PIN3: -U
P10MA-2000-M12	5...2000 ppm	1 ppm		0.008 mA/ppm		
P10MA-5000-M12	50...5000 ppm	1 ppm		0.0032 mA/ppm		
P10MA-2%-M12	0.005...2 % (20000 ppm)	0.001 % (10 ppm)		8.0 mA/% (0.0008 mA/ppm)		
P10MA-5%-M12	0.05...5 % (50000 ppm)	0.01 % (100 ppm)		3.2 mA/% (0.00032 mA/ppm)		

(Subject to technical changes.)

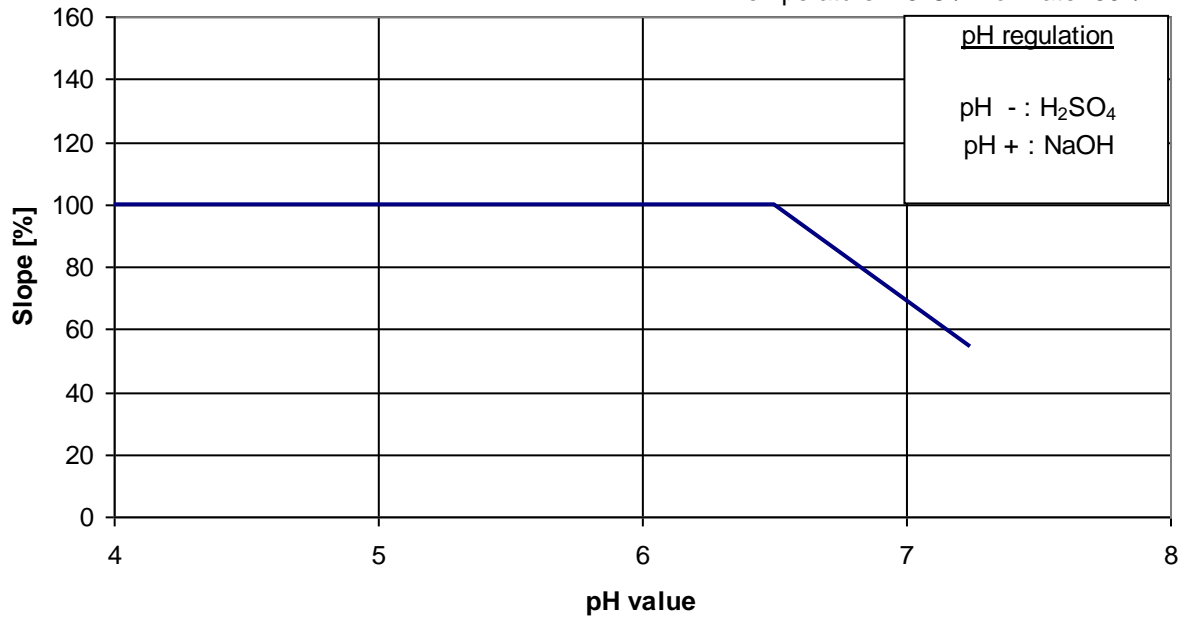
#### Spare Parts

Type	Membrane cap	Electrolyte	Emery	O-ring
For all P10H	M10.1N with G-holder Art. No. 11046.1	EPS9H/W, 100 ml Art. No. 11025	S2 Art. No. 11906	20 x 1.5 silicone Art. No. 11803
For all P10N				
P10Up2000				
P10Up5000		EPS9L/W, 100 ml Art. Nr. 11024		
For all P10L				
For all P10MA-200		EPS9H/W, 100 ml Art. No. 11025		
For all P10MA-2000				
For all P10MA-5000				
For all P10MA-2%		EPS9L/W, 100 ml Art. No. 11024		
For all P10MA-5%	EPS7/W, 100 ml Art. No. 11020			

(Subject to technical changes.)

### Slope of P9 and P10 versus pH

Temperature: 25°C / Flow rate: 30 l/h



Stichtag: des\_P9\_Sensors\_n\_abhängig\_vom\_pH-Wert.xls