

	<h1>TARAtec CH10</h1>
indicator	Free chlorine, pH dependent
Application	especially for high chlorine concentrations, process water pH-value must be constant. The membrane system is mechanical resistant. The membrane system is highly resistant to surfactants (tensides).
Chlorination agents	inorganic chlorine compounds: NaOCl (=sodium hypochlorite), Ca(OCl) ₂ , chlorine gas, chlorine electrolysis with membrane cell
Measuring system	Membrane covered, amperometric 2-electrode system with integrated electronics
Electronic	<p>Analog version:</p> <ul style="list-style-type: none"> - voltage output - not galvanically isolated electronics - analog internal data processing <p>Digital version:</p> <ul style="list-style-type: none"> - output signal: analog (analog-out/analog) - 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>
Working temperature	Measuring water temperature: 0 ... +45 °C (no ice crystals in the measuring water)
	Ambient temperature: 0 ... +55 °C
Temperature compensation	Automatically, by an integrated temperature sensor Response time t_{90} = approx. 8 min. Max. change in temperature: 5 °C per hour, sudden temperature changes must be avoided
Max. allowed working pressure	Operation without retaining ring: 0.5 bar, no pressure impulses and/or vibrations
	Operation with retaining ring: 1.0 bar, no pressure impulses and/or vibrations



TARAtec CH10

Flow rate (Incoming flow velocity)	approx. 15-30 l/h (33 – 66 cm/s) in TARAflow FLC, small flow rate dependence is given	
pH-range	pH 5 – pH 8, pay attention to the dissociation equilibrium HOCL (see diagram "Slope of TARAtec CH10 versus pH, p. 7)	
Run-in time	First start-up approx. 11 h	
Response time	T ₉₀ : approx. 8 min.	
Zero point adjustment	Not necessary	
Slope calibration	At the device, by analytical chlorine determination <ul style="list-style-type: none"> - DPD-1 (up to 10 ppm) - iodometry (up to 200 ppm with photometer) - iodometry (up to 2000 ppm titration) 	
interferences	ClO ₂ O ₃ Peracetic acid	
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	
max. length of sensor cable (depending on internal signal processing)	analog	< 30 m
	digital	> 30 m are permissible Maximum cable length depends on application
material	Semipermeable membrane, PVC-U, PEEK	
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)


	<h1>TARAttec CH10</h1>
<p>maintenance</p>	<p>Regular control of the measuring signal, min. once a week The following specifications highly depend on the water quality: Change of the membrane cap: once a year Change of the electrolyte: approx. every 3 months</p>
	<p>EMC-Testing DIN EN 61326-1, 61326-2-3, 63000 RoHS compliant</p>

Technical Data

1. CH10 (Analog output, analog internal signal processing)

analog-out / analog

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

	Measuring range (at pH 7.2)	Resolution (at pH 7.2)	Output Output resistance	Nominal slope (at pH 7.2)	Voltage supply	Connection
CH10-2000	20...2000 ppm	1 ppm	0...-2000 mV	-1 mV/ppm	±5 - ±15 VDC	4-pole screw connector
CH10-20%	0.05%...0.2% * (500...2000 ppm *)	100 ppm	1 kΩ	-100 mV/% (- 0.01mV/ppm)	10 mA	


* concentration tested and approved up to 0.2% (2000 ppm)

(Subject to technical changes!)

2. CH10 (analog output, digital signal processing)

Analog-out / digital

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

	Measuring range (at pH 7.2)	Resolution (at pH 7.2)	Output Output resistance	Nominal Slope (at pH 7.2)	Power supply	Connection
CH10-2000-An	20... 2000 ppm	1 ppm	analog 0...-2 V (max. -2.5 V)	-1 mV/ppm	9-30 VDC	4-pole screw connector
CH10-20%-An	0.05... 0.2 % * (500... 2000 ppm *)	100 ppm	1 kΩ	-100 mV/% (-0.01 mV/ppm)		
CH10-2000-Ap	20... 2000 ppm	1 ppm	analog 0...+2 V (max. +2.5 V)	+1 mV/ppm	approx. 56-20 mA	
CH10-20%-Ap	0.05... 0.2 % * (500... 2000 ppm *)	100 ppm	1 kΩ	+100 mV/% (+0.01 mV/ppm)		


* concentration tested and approved up to 0.2% (2000 ppm)

(Subject to technical changes!)

3. CH10 (digital output, digital signal processing)

digital-out / digital

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

	Measuring range (at pH 7.2)	Resolution (at pH 7.2)	Output Output resistance	Power supply	Connection
CH10-2000-M0c	20... 2000 ppm	1 ppm	Modbus RTU There are no terminating resistors in the sensor.	9-30 VDC approx. 56-20 mA	5-pole M12 connector
CH10-20%-M0c	0.05... 0.2 % * (500... 2000 ppm *)	100 ppm			

* concentration tested and approved up to 0.2% (2000 ppm)


(Subject to technical changes!)

4. CH10 4-20 mA (analog output, analog internal signal processing)

Analog-out / analog

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


4.1 Electrical connection: 2 pole terminal clamp

	Measuring range (at pH 7.2)	Resolution (at pH 7.2)	Output Output resistance	Nominal slope (at pH 7.2)	Voltage supply	Connection
CH10MA-2000	20... 2000 ppm	1 ppm	4...20 mA	0.008 mA/ppm	12...30 VDC R _L 50Ω...R _L 900Ω	2-pole terminal (2 x 1 mm ²)
CH10MA-20%	0.05... 0.2% * (500... 2000 ppm *)	100 ppm	uncalibrated	0.8 mA/% (0.00008 mA/ppm)		Recommended: Round cable ∅ 4 mm 2 x 0.34 mm ²

* concentration tested and approved up to 0.2% (2000 ppm)

(Subject to technical changes!)

4.2 Electrical connection: 5 pole M12 plug-on flange

	Measuring range (at pH 7.2)	Resolution (at pH 7.2)	Output Output resistance	Nominal slope (at pH 7.2)	Voltage supply	Connection
CH10MA-2000-M12	20... 2000 ppm	1 ppm	4...20 mA	0.008 mA/ppm	12...30 VDC	5-pole M12 plug-on flange Function of wires: PIN2: +U PIN3: -U
CH10MA-20%-M12	0.05... 0.2% * (500... 2000 ppm *)	100 ppm	uncalibrated	0.8 mA/% (0.00008 mA/ppm)	R _L 50Ω...R _L 900Ω	

* concentration tested and approved up to 0.2% (2000 ppm)

(Subject to technical changes!)

Spare Parts

Type	Membrane cap	Electrolyte	Emery	O-ring
All CH10	M10.1D-S with G-holder Art. no. 11054	ECH10/W, 100 ml Art. no. 11055	S2 Art. no. 11906	20 x 1.5 silicone Art. no. 11803

(Subject to technical changes!)

