
	<h1>TARAline CC1</h1>
indicator	Free chlorine based on isocyanuric acid with reduced dependence on ph-value
Application	Swimming pool water, drinking water, sea water Surfactants (tensides) are partially tolerated.
Chlorination agents	inorganic chlorine compounds: NaOCl (=sodium hypochlorite), Ca(OCl) <sub>2</sub> , chlorine gas, electrolytically generated chlorine and chlorine compounds based on isocyanuric acid (checked until 500 mg/L isocyanuric acid)
Measuring system	Membrane covered, amperometric potentiostatic 3-electrode system with electronic inside
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> </ul> <p>Digital version:</p> <ul style="list-style-type: none"> <li>- output signal: analog (analog-out/analog)</li> <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	<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 &gt; 100% the measuring range is reduced accordingly. (Ex.: 150% slope → 67% of the specified measuring range)</p>
Slope drift At repeatability conditions (25 °C, pH 7,2 in drinking water)	approx. <-3% per month
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 Sudden temperature changes must be avoided


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<p>Max. allowed working pressure</p>	<p>Operation without retaining ring:</p> <ul style="list-style-type: none"> <li>- 0.5 bar</li> <li>- no pressure impulses and/or vibrations</li> </ul> <p>Operation with retaining ring in TARAflow FLC:</p> <ul style="list-style-type: none"> <li>- 3 bar,</li> <li>- no pressure impulses and/or vibrations (see option 1)</li> </ul>	
<p>Flow rate (Incoming flow velocity)</p>	<p>approx. 15-30L/h (33 – 66 cm/s) in TARAflow FLC, small flow rate dependence is given</p>	
<p>pH-range</p>	<p>pH 4 – pH 12, highly reduced dependence on pH-value</p>	
<p>Run-in time</p>	<p>First start-up approx. 2 h</p>	
<p>Response time</p>	<p>T<sub>90</sub>: approx. 2 min.</p>	
<p>Zero point adjustment</p>	<p>Not necessary</p>	
<p>calibration</p>	<p>At the device, by analytical determination, DPD-1-Method</p>	
<p>Cross sensitivities/ interferences</p>	<p>ClO<sub>2</sub>: factor 1 O<sub>3</sub>: is measured</p> <p>Corrosion inhibitors can lead to measuring errors. Stabilisers for water hardness can lead to measuring errors.</p>	
<p>Absence of the disinfectant</p>	<p>Max. 24 h</p>	
<p>Connection</p>	<p>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</p>	
<p>max. length of sensor cable (depending on internal signal processing)</p>	<p>analog</p>	<p>&lt; 30 m</p>
<p>Protection type</p>	<p>5-pole M12 plug-on flange: 2-pole terminal with mA-hood:</p>	<p>IP68 IP65</p>
<p>material</p>	<p>Microporous hydrophilic Membrane, PVC-U, PEEK, stainless steel 1.4571</p>	
<p>Transport</p>	<p>+5 ... +50 °C (Sensor, electrolyte, membrane cap)</p>	



## Technical Data

### 1. CC1 (analog output, analog internal signal processing)


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

	Measuring range in ppm	Resolution in ppm	Output Output resistance	Nominal slope (at pH 7.2) in mV/ppm	Voltage supply	Connection
CC1N-M12	0.05...20.00	0.01	0...-2000 mV 1 kΩ	-100	±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.
CC1H-M12	0.005...2.000	0.001		-1000		
CC1Up-M12	0.05...20.00	0.01	0...+2000 mV 1 kΩ	+100	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.

(Subject to technical changes!)

### 2. CC1 (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 in ppm	resolution in ppm	Output Output resistance	Nominal slope (at pH 7.2) in mV/ppm	Power supply	Connection
CC1N-An-M12	0.05... 20.00	0.01	analog 0...-2 V (max. -2.5 V)	-100	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.
CC1H-An-M12	0.005... 2.000	0.001	1 kΩ	-1000		
CC1N-Ap-M12	0.05... 20.00	0.01	analog 0...+2 V (max. +2.5 V)	+100		
CC1H-Ap-M12	0.005... 2.000	0.001	1 kΩ	+1000		

(Subject to technical changes!)

### 3. CC1 (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  in ppm	Resolution  in ppm	Output Output resistance	Power supply	Connection
CC1N-M0c	0.05... 20.00	0.01	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
CC1H-M0c	0.005... 2.000	0.001			

(Subject to technical changes!)

### 4. CC1 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 galvanical isolation.

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

	Measuring range  in ppm	Resolution  in ppm	Output Output resistance	Nominal slope (at pH 7.2)  in mA/ppm	Power supply	Connection
CC1MA2	0.005...2.000	0.001	4...20 mA  uncalibrated	8.0	12...30 VDC  R <sub>L</sub> 50Ω...R <sub>L</sub> 900Ω	2-pole terminal (2 x 1 mm <sup>2</sup> )  Recommended: Round cable ∅ 4 mm 2 x 0.34 mm <sup>2</sup>
CC1MA5	0.05...5.00	0.01		3.2		
CC1MA10	0.05...10.00	0.01		1.6		
CC1MA20	0.05...20.00	0.01		0.8		

(Subject to technical changes!)

#### 4.2 Electrical connection: 5 pole M12 plug-on flange

	Measuring range	Resolution	Output Output resistance	Nominal slope (at pH 7.2)	Power supply	Connection
	in ppm	in ppm		in mA/ppm		
CC1MA2-M12	0.005...2.000	0.001	4...20 mA uncalibrated	8.0	12...30 VDC R <sub>L</sub> 50Ω...R <sub>L</sub> 900Ω	5-pole M12 plug-on flange
CC1MA5-M12	0.05...5.00	0.01		3.2		Function of wires: PIN1: n. c. PIN2: +U PIN3: -U PIN4: n. c. PIN5: n. c.
CC1MA10-M12	0.05...10.00	0.01		1.6		
CC1MA20-M12	0.05...20.00	0.01		0.8		

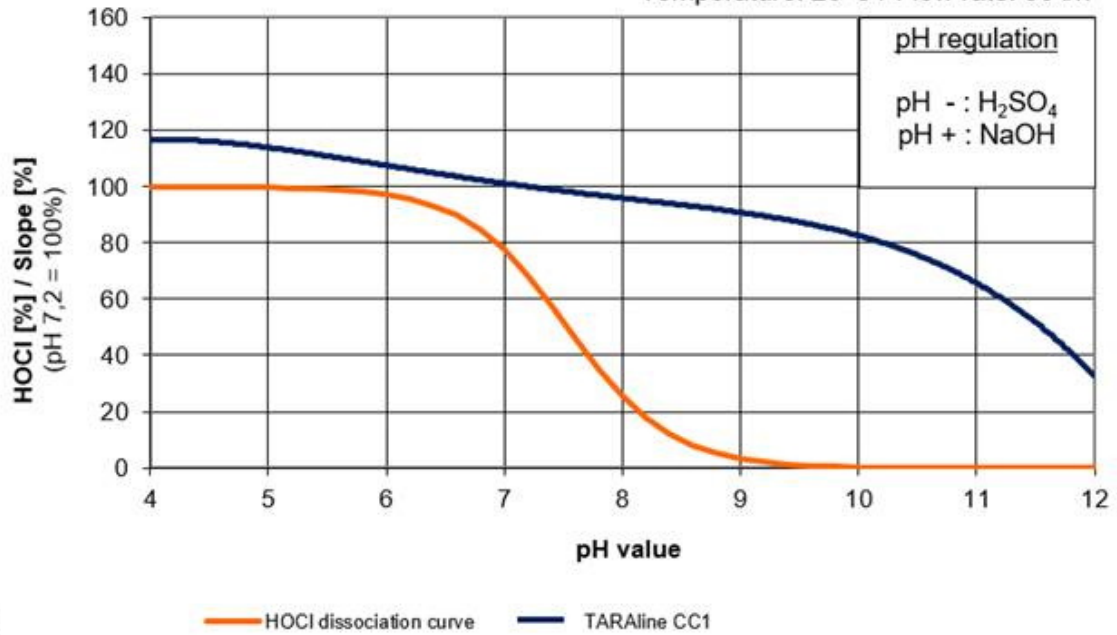
#### Spare Parts

Type	Membrane cap	Electrolyte	Emery	O-ring
For all CC1	M48.2 Art. no. 11047	ECC1.1/GEL, 100 ml Art. no. 11005.1	S1 Art. no. 11908	14 x 1.8 NBR Art. no. 11806

(Subject to technical changes!)

**Slope of TARAline CC1 versus pH**

Temperature: 25°C / Flow rate: 30 l/h



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