


	<h1>RGline DCP4.0</h1>												
indicator	Total chlorine (= free chlorine + bound chlorine) Reduced dependence on pH												
Application	Swimming pool water, drinking water, sea water Surfactants (tensides) are partially tolerated.												
Chlorination agents	inorganic chlorine compounds: NaOCl (=sodium hypochlorite), Ca(OCl) ₂ , chlorine gas, electrolytically generated chlorine												
Measuring system	Membrane covered, amperometric potentiostatic 3-electrode system with electronic inside												
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 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>-> 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 -> recommended sensor with a measuring range of 5 ppm</p>												
Accuracy after calibration at repeatability conditions (25°C, pH 7.2 in drinking water) of the upper full scale	<table border="0"> <tr> <td>- Measuring range 2 mg/l:</td> <td>at 0.4 mg/l</td> <td><2%</td> </tr> <tr> <td></td> <td>at 1.6 mg/l</td> <td><2%</td> </tr> <tr> <td>- Measuring range 20 mg/l:</td> <td>at 4 mg/l</td> <td><1%</td> </tr> <tr> <td></td> <td>at 16 mg/l</td> <td><3%</td> </tr> </table>	- Measuring range 2 mg/l:	at 0.4 mg/l	<2%		at 1.6 mg/l	<2%	- Measuring range 20 mg/l:	at 4 mg/l	<1%		at 16 mg/l	<3%
- Measuring range 2 mg/l:	at 0.4 mg/l	<2%											
	at 1.6 mg/l	<2%											
- Measuring range 20 mg/l:	at 4 mg/l	<1%											
	at 16 mg/l	<3%											
Slope drift At repeatability conditions (25 °C, pH 7,2 in drinking water)	approx. -1% per month												
Working temperature	<table border="0"> <tr> <td>Measuring water temperature:</td> <td>0 ... +45 °C (no ice crystals in the measuring water)</td> </tr> <tr> <td>Ambient temperature:</td> <td>0 ... +55 °C</td> </tr> </table>	Measuring water temperature:	0 ... +45 °C (no ice crystals in the measuring water)	Ambient temperature:	0 ... +55 °C								
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Ambient temperature:	0 ... +55 °C												
Temperature compensation	Automatically, by an integrated temperature sensor Sudden temperature changes must be avoided												



RGline DCP4.0

Max. allowed working pressure	Operation without retaining ring: 0.5 bar, no pressure impulses and/or vibrations Operation without retaining ring: 3 bar, no pressure impulses and/or vibrations
Flow rate	approx. 15-30 l/h in RGflow FLC, small flow rate dependence is given (see diagram last page of the data sheet "Slope of RGline DCP4 versus flow rate")
pH-range	pH 4 – pH 12, reduced dependence on pH-value (see diagram last page of the data sheet "Slope of RGline DCP4 versus pH")
Conductivity	10 μ S/cm – 50 mS/cm (sea water)
Run-in time	First start-up approx. 2 h
Response time	T ₉₀ : approx. 2 min.
Zero point adjustment	Not necessary
Slope calibration	At the device, by analytical determination, DPD-4-Method (DPD-1 + DPD-3)
Cross sensitivities/interferences	ClO ₂ : factor 1 O ₃ : factor 1.3 Corrosion inhibitors can lead to measuring errors. Stabilisers for water hardness can lead to measuring errors.
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	Microporous hydrophilic Membrane, PVC-U, PEEK, 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)

	<h1>RGLine DCP4.0</h1>	
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 the specified EXP-Date
	Membrane cap:	in original packing no limit at +5 ... +40 °C (used membrane caps can not be stored)
maintenance	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: once a year	
	EMC-Testing DIN EN 61326-1, 61326-2-3 RoHS compliant	

Option 1: Membrane cap M48.4S	especially for applications in sea water	
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Spare parts


Type	Membrane cap	Electrolyte	Emery	O-ring
All CP4.0	M48.4E Art. No. 11051-E	ECP1.4/GEL, 100 ml Art. No. 11006.1	S1 Art. No. 11908	14 x 1.8 NBR Art. No. 11806
	For sea water applications: M48.4S Art. No. 11051-S			

(Subject to technical changes!)

Technical Data**1. DCP4.0 (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 in ppm	Resolution in ppm	Output Output resistance	Nominal slope (at pH 7.2) in mV/ppm	Power supply	Connection
DCP4.0H	0.005...2.000	0.001	0...-2000 mV 1 kΩ	-1000	±5 - ±15 VDC 10 mA	4-pole screw connector
DCP4.0N	0.05...20.00	0.01		-100		
DCP4.0Up	0.05...20.00	0.01		+100		

(Subject to technical changes!)

2. DCP4.0 (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
DCP4.0H-An	0.005... 2.000	0.001	analog 0...-2 V (max. -2.5 V)	-1000	9-30 VDC approx. 56-20 mA	4-pole screw connector
DCP4.0N-An	0.05... 20.00	0.01	1 kΩ	-100		
DCP4.0H-Ap	0.005... 2.000	0.001	analog 0...+2 V (max. +2.5 V)	+1000		
DCP4.0N-Ap	0.05... 20.00	0.01	1 kΩ	+100		

(Subject to technical changes!)

3. DCP4.0 (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 in ppm	Resolution in ppm	Output Output resistance	Power supply	Connection
DCP4.0H-M0c	0.005... 2.000	0.001	Modbus RTU	9-30 VDC	5-pole M12 plug-on flange
DCP4.0N-M0c	0.05... 20.00	0.01	There are no terminating resistors in the sensor.	approx. 56-20 mA	


(Subject to technical changes!)

4. DCP4.0 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 in ppm	Resolution in ppm	Output Output resistance	Nominal slope (at pH 7.2) in mA/ppm	Power supply	Connection
DCP4.0MA0.5	0.005...0.500	0.001	4...20 mA uncalibrated	32.0	12...30 VDC R _L 50Ω...R _L 900Ω	2-pole terminal (2 x 1 mm ²) Recommended: Round cable ∅ 4 mm 2 x 0.34 mm ²
DCP4.0MA2	0.005...2.000	0.001		8.0		
DCP4.0MA5	0.05...5.00	0.01		3.2		
DCP4.0MA10	0.05...10.00	0.01		1.6		
DCP4.0MA20	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		
DCP4.0MA0.5-M12	0.005...0.500	0.001	4...20 mA uncalibrated	32.0	12...30 VDC R _L 50Ω...R _L 900Ω	5-pole M12 plug-on flange Function of wires: PIN2: +U PIN3: -U
DCP4.0MA2-M12	0.005...2.000	0.001		8.0		
DCP4.0MA5-M12	0.05...5.00	0.01		3.2		
DCP4.0MA10-M12	0.05...10.00	0.01		1.6		
DCP4.0MA20-M12	0.05...20.00	0.01		0.8		

(Subject to technical changes!)