

# Free Chlorine

90S210001



The chlorine measuring cell is an electrochemical sensor for measuring the concentration of chlorine in water. The measuring cell captures free chlorine from inorganic chlorine products (hypochlorite, chlorine gas, etc.). The measuring method has a reduced

pH dependency, so that pH fluctuations only have a limited impact on the measurement signal. pH value increases only lead to an approximately 10 % reduction of the measuring signal per pH unit.

## Benefits

- Stable signals even with fluctuating pH values
- Abrasive particles are tolerated
- Surfactants are partially tolerated

## Applications

- Swimming pools, drinking water, seawater
- Surfactants are partially tolerated

## Technical Specifications

### OPERATION AND SYSTEM CONFIGURATION

<b>Measurement principle</b>	Membrane-covered, potentiostatic amperometric 3-electrode system
<b>Measuring method</b>	Amperometry

### AUXILIARY POWER

<b>Electrical connection</b>	8-pin M12 plug
<b>Power supply</b>	12-24 V (± 10 %)

### INPUT PARAMETERS

<b>Measured variables</b>	Free chlorine with reduced pH dependency
<b>Measuring ranges</b>	0...2 mg/L, 0...20 mg/L
<b>Cable specification</b>	black PUR (halogen free), shielded, M12 plug
<b>Temperature compensation</b>	Automatic through integrated temperature sensor Pt100

### OUTPUT SIZES

<b>Output signal</b>	RS-485, Modbus RTU
<b>Accuracy</b>	Measuring range 2 mg/L: at 0.4 mg/L & 1.6 ppm < 1 % Measuring range 20 mg/L: at 4 mg/L < 1 % at 16 mg/L W37 < 3 %
<b>Data interface</b>	RS-485, Modbus RTU

### PERFORMANCE CHARACTERISTICS

<b>Response time</b>	T90: approx. 2 min
<b>Running-in period</b>	Approx. 2 h prior to initial operation
<b>Drift</b>	Approx. -1 % per month
<b>Cross influences</b>	Combined chlorine increases measured value
<b>Calibration method</b>	Determination of chlorine with DPD-1 method
<b>Maintenance interval</b>	typically once per week

### PROCESS CONDITIONS

<b>Process temperature</b>	0...+45 °C (no ice crystals in the test water)
<b>Process pressure</b>	3 bar, no pressure shocks or vibrations
<b>Flow rate</b>	Approx. 15...30 L/h in FLC-3, minimum flow dependence exists
<b>pH range</b>	pH 4... pH 9, reduced pH dependence
<b>Conductivity</b>	10 µS/cm...50 mS/cm (sea water)

### STRUCTURAL DESIGN

<b>Dimensions</b>	205 mm x 25 mm (L x Ø)
<b>Materials</b>	Micro-porous hydrophilic membrane, UPVC, stainless steel 1.4571

### CERTIFICATES AND APPROVALS

<b>CE Manufacturer's Declaration</b>	2014/30/EC EMC Directive (EN 61326-1:2013)
<b>Work certificates</b>	Yes

### SCOPE OF DELIVERY

<b>value only lead Manual</b>	Yes
<b>CE Manufacturer's Declaration</b>	Yes
<b>Test certificate</b>	Yes

### ACCESSORIES

<b>Fittings</b>	Flow unit
<b>Cables</b>	Extension cables: 0.3 m, 2 m, 10 m, 25 m
<b>Measuring transducer</b>	TriBox3, TriBox Mini, HS100, TriBox flex
<b>Validation/calibration</b>	DPD method