

### Measurement of Chlorine Dioxide and pH

#### RANGE S200

## Water Control System – WCS for Chlorine dioxide and pH

### Complete set of measure and control



- Accurate measurement of chlorine dioxide.
- Measured parameters :
  - Chlorine Dioxide : 0.00-5.00 mg/L
  - pH : -2.00 to +16.00 pH
  - Temperature ; -30.00 to +140.00 °C
- Complete system plug and play
- Self-cleaning of the system

#### *Main application areas*

- Chemical and process technology
- Water and Waste water treatment
- Cooling water treatment
- Drinking water and beverage.

#### *Advantages of the measuring system*

The principle of measure is based on a potentiostatic probe, without reagent or consumable, on a closed-loop so reducing the costs of functioning and avoiding the loss of online water.

The whole WCS for the Chlorine dioxide included all necessary for the measure of concentration in Chlorine dioxide : electrode potentiostatic indestructible for the measure of Chlorine Dioxyde, electrode pH, measure and compensation in flow, room of opaque mesasure, closed-loop..

Function of automatic auto-cleaning by electrolysis allowing to dissolve the firm deposits: limestone or fats.

#### *Advantages of the controller*

Access to the menus of programming secured via password (3 user's levels).

Controller possessing numerous possibilities of piloting : 2 digital output for the control of the frequency of functioning of dosing pump. 3 relay output potential free NO contacts, 2 analog output 0/4-20 mA, 2 separately adjustable PI..

Temperature compensation manually or by using a Pt100 or Pt1000

Calibration of the pH with automatic detection of the value of the buffer solution..

Single-point calibration for chlorine dioxide (DPD method).

**Measurement of Chlorine Dioxide and pH**

*Technical characteristics sensor*

<b>Measured parameter</b>	
Measuring principle Chlorine Dioxide	Potentiostatic with one gold ring Reference used on the pH probe
Measuring principle pH	Combined electrode reference / measure
Measuring range	Chlorine dioxide : 0.00 to 5.00 mg/L pH : -2.00 to +16.00 Temperature : -30.00 to +140.00 °C
Resolution	Chlorine Dioxide : 0.01 mg/L pH : 0.01 mV Resistor > 5x10 <sup>11</sup> Ω Temperature : 0.1 °C/Pt100/Pt1000
Accuracy	+/- 2 % Full Scale
Response time	30 s
<b>Chlorine dioxyde sensor</b>	
Material in contact with the middle	Glass/gold
Water temperature max.	70 °C
Pressure max	8 bars at 20 °C
Flow	Between 40 and 120 l/h Fluctuations Compensated and checked
Temperature	Pt1000
<b>pH sensor</b>	
Water temperature max.	70 °C
Pressure max	8 bars at 20 °C
Flow	Between 40 and 120 l/h Fluctuations Compensated and checked

**Measurement of Chlorine Dioxide and pH**

*Technical characteristics S200*

<b>Software and functionality</b>	
<b>2 Digital input</b>	Controller stop by external contact Pulse input of measuring water turbine (flow measurement)
<b>2 Analog outputs</b>	0/4-20 mA electrically isolated, freely configurable Load max. 500Ω, resolution < 0.01 mA
<b>3 Relay outputs</b>	2 digital output, freely assignable to control outputs - 1 as permanent alarm relay - 1 potential-free NO contact Max. 250 V, 6A, 1000 VA
<b>Digital relay outputs</b>	2 digital output, freely assignable to control outputs Per control output 1 potential-free make contact Max. 12 V, 200 mA
<b>Controller</b>	2 separately adjustable controllers On-Off control (with hysteresis), P or PI control
<b>Control behavior</b>	On-Off controller with adjustable hysteresis Pulse – pause controller Pulse frequency controller Continuous controller (analog output)
<b>Limit value</b>	Minimum and maximum limit value per controller Adjustable time delay (0 .....9999 s)
<b>Digital interface 1</b>	Modbus RTU Slave

<b>Constructional design wall-mounted casing S200</b>	
<b>Mains power</b>	230 V/AC, +/- 10 % (50/60 Hz) 110 V/AC, +/- 10 % (50/60 Hz) Consumption 16 VA
<b>Display</b>	LCD display, 4x20 characters, alphanumeric, backlight Easy operation by means of 5 keys
<b>Dimensions (WxHxD)</b>	160 x 165 x 85 mm
<b>Weight</b>	1,1 Kg
<b>Protection class</b>	IP 65
<b>Operating temperature</b>	-20 to + 55 °C Max 90 % relative humidity at 40 °C non-condensing
<b>Storage temperature</b>	-20 to +65 °C

All components required for measurements are mounted on a plastic plate, dimensions 495 x 580 x 80 mm.