

SZ 283

Potentiostatic electrode



This sensor is made for the measurement of Free Chlorine, Chlorine dioxide and D.Ozone in water.

The potentiostatic method is an "amperometric" measure with constant potential, made through 2 metal electrodes and a reference electrode dipped in a cell.

The current running through the cell consumes Chlorine or Ozone contents, therefore they must be renewed through a constant liquid flow.

In the traditional amperometric measurement it results difficult to maintain a constant relation between cell current and Chlorine (Ozone) concentration, especially near the zero, because of the ORP and liquid resistance effects. As result frequent zero and sensitivity calibration are needed.

In the potentiostatic measuring, the electrodes potential is electronically controlled in relation to the liquid, providing a linear relationship current/concentration and a very stable zero value in oxidative absence.

The sensor is shaped so that it is easy to clean and replace.

It is suggested to place the sensor in a measurement cell SZ 7231 or SZ 7233 provided with overflow in order to maintain the sample flow constant.

If placed in different types of cells or in a pipe-line, in order to avoid an instable measurement, it is necessary for the flow to be constant.

Specifications

Electrodes: 2 Platinum rings
Reference: gel with annular junction
Body: glass
Cable: 3 m
Max pressure: 10 bar at 20°C
Dimensions: 110x12 mm

SZ 7231 – SZ 7233

Flow cells



This series of cells is made for the measurement of Residual Chlorine with a potentiostatic method.

The cell's manufacturing characteristics allow the sample to run through the potentiostatic electrode site with a constant velocity. The in-flow can be regulated through a check valve.

The SZ 7231 cell is for the potentiostatic electrode only, while the SZ 7233 cell is also for additional pH and O.R.P. electrodes and for a temperature sensor.

The package includes a 1/4" fitting, 2 meters of 4x6 plastic tubing for the sample drawing and 2 screws for wall fastening.

Specifications

Material: clear acrylic resin
Inlet: 1/4" fitting
Outlet: fitting for 10x14 mm tubing
Connection tubing: 2 m 4x6 tubing
Flow: about 10/30 litre/hour approx
Temperature: 0/50°C
SZ 7233 dimensions: 150 x 120 x 40 mm
SZ 7231 dimensions: 150 x 90 x 40 mm
Sensors site: diameter 12 mm for pH/ORP/Cl
diameter 5 mm for temperature
Suggested sensors: pH = SZ 165
ORP = SZ 275
Cl = SZ 283
°C = SP 514

SENSORES DE CLORO Y OZONO

libre en agua

DPF
sensors

SZ 7251

Auto clean flow cells
for Residual Chlorine/D.Ozone



This cell is designed for the in-line or in-flow continuous measurement of Residual Chlorine or Dissolved Ozone in solution.

The measuring sensor is inserted in the holder of the cell, which protects the body and places the sensing part in the right position into the cell.

The sample inlet flow will create a continuous movement of the internal balls whose contact with the sensing part of the sensor will perform a self cleaning action.

The package includes:

- plastic tube for the connection to the sample
- fixing clamp
- spare balls.

The sample inlet pressure must be constant in order to get a continuous flow necessary to obtain stable and reliable measuring.

Specifications

Transparent body: acrylic
Holder: PVC
O Ring: NBR and fluoridated elastomer
Fittings: polypropylene
Tubing: polythene
Balls: N° 20 into the body
Inlet/outlet: 1/8" fittings
Diameter: 40 mm max.
Length: 150 mm max.
Flow: 15/40 liter/hour constant
Temperature: 0/50 °C
Connecting tubing: Diameter 4X6 mm. L=5 m
Sensor: to be order separately depending on the application

CL 7901 – OZ 7901

Flow cells and sensors
for Free Chlorine/D.Ozone



The selective membrane polarographic sensor is inside a flow cell with overflow, for measurements with CL 7685.010 or CL 7685.001.

CL 7901

For Free Chlorine measurement.

The package contains:

- 0012.000066 Free Chlorine sensor
- 0012.030029 a 7 m cable
- 0012.000043 flow cell
- 0012.090011 electrolyte 125 cc
- 0012.050005 kit of 10 membranes
- 0012.050004 kit of screws and OR

OZ 7901

For D.Ozone measurement.

The package contains

- 0012.000042 D. Ozone sensor
- 0012.030029 a 7 m cable
- 0012.000043 flow cell
- 0012.090008 electrolyte 125 cc
- 0012.050002 kit of 10 membranes
- 0012.050004 kit of screws and OR

Specifications

Response time: 90% in 60 s
Temperature sensor: RTD Pt100 built in the sensor
Temperature limits: 5/+55 °C
Material: Noryl and stainless steel

Type of cell: overflow system

Material: clear acrylic
Inlet: 25/110 litre/hour
Inlet fitting: 1/4"
Outlet fitting: 1/2"

Sensors for combined Chlorine and in-line measurements are available.

CL 7685

Potentiostatic controller for
Free Chlorine, Chlorine dioxide, D. Ozone



Add the following to the common Features/Specifications of the 7685 Series shown overleaf

- Applications:
 - drinking water
 - bottling industry
- Input from:
 - potentiostatic sensor
 - Pt100 3 wires
- Ranges: 0/2 PPM and 0/20 PPM autoranging
- Filter software
- Calibration mode: immediate or postponed
- Calibration parameters display
- Dual set-point and alarm conditions display
- Automatic or manual temperature compensation
- Isolated output:
 - 0/20 mA or 4/20 mA selectable
 - programmable input on the span
- Automatic, manual or simulated operation
- Dual set-point:
- Selectable actions
 - ON/OFF
 - PFM Pulse frequency modulation
 - PWM Pulse width modulation
 - hysteresis, delay, and min/max programmable functions
- Alarm:
 - min/max and delay programmable
 - on Set-points timing
- Autoclean relay
 - auto + manual/manual action
 - holding function for input and outputs
- Automatic overload protection and reset
- Extractable terminal block
- 96x96 (1/4 DIN) housing

Specifications

Input Current
2 μ A/PPM at 20 °C

* Scales
0/2.000 PPM - 0/20.00 PPM
(Cl₂, ClO₂, D.O₃)
Zero adjustment: \pm 2 μ A
Cell sensitivity: 12.5/250 %
* Polarization: -200 mV (0/-1250 mV)
* Temperature coefficient: 0/4.0 %/°C
* Filter software: 0.6/99.9 s

Temperature
Input: Pt100 3 wires
Measuring and compensation range: -2/52 °C
Resolution: 0.1 °C
Zero adjustment: \pm 1 °C

Set-point A and B
* Selectable action: ON/OFF - PFM - PWM

PFM/PWM action
Proportional band: 0/10 % of the scale
Pulse frequency: 0/120 pulse/min
Pulse width: 0/99.9 s

Option 091.3711
Dual analog output
The user may select the temperature output

The technical specifications may be changed without notice

Accessories

SZ 283
Potentiostatic electrode

SZ 7231
Flow cell for SZ283

SZ 7233
Flow cell for 3 sensors: SZ283, pH, ORP

SZ 7251
Autoclean flow cell

CL 7685.010

Residual Chlorine - D.Ozone controller
for selective membraned sensors



Add the following to the common Features/Specifications of the 7685 Series shown overleaf

- Applications:
 - drinking water
 - water treatment
 - bottling industry
 - OEM
- Input from selective membraned sensors:
 - Free Chlorine, Chlorine dioxide, Combined Chlorine, D.Ozone
 - Total Chlorine gas sensing method
- Input from Pt100 3 wires
- Ranges: 0/2 PPM - 0/20 PPM - 0/200 PPM autoranging
- Filter software
- Calibration mode: immediate or postponed
- Calibration parameters display
- Dual set-point and alarm conditions display
- Temperature display
- Automatic or manual Temperature compensation
- Isolated output:
 - 0/20 mA or 4/20 mA selectable
 - PPM or °C programmable input on the span
- Automatic, manual or simulated operation
- Dual Set-point:
 - Selectable actions
 - ON/OFF
 - PFM pulse frequency modulation
 - PWM pulse width modulation
 - hysteresis, delay, and min/max programmable functions
- Automatic overload protection and reset
- Extractable terminal block
- 96x96 (1/4 DIN) housing

Specifications

Input current
160 nA/PPM at 20 °C

* Scales
0/2.000 PPM - 0/20.00 PPM -0/200.0 PPM
(Cl₂, ClO₂, D.O₃, SO₃²⁻)
Zero adjustment: ± 200 nA
Cell sensitivity: 12.5/250 %
* Polarization: -200 mV (0/-1250 mV)
* Temperature coefficient: 0/4.0 %/°C
* Filter software: 0.6/99.9 s

Temperature
Input: Pt100 3 wires
Measuring and compensation range: -2/52 °C
Resolution: 0.1 °C
Zero adjustment: ± 1 °C

Set-point A and B
* Selectable action: ON/OFF - PFM - PWM

PFM/PWM action
Proportional band: 0/10 % of the scale
Pulse frequency: 0/120 pulse/min
Pulse width: 0/99.9 s

Option 091.3711
Dual analog output
The user may select the temperature output

The technical specifications may be changed without notice

Accessories

CL 7901
Flow cell and sensor for Free Chlorine

OZ 7901
Flow cell and sensor for D. Ozone

Sensors available
For Combined Chlorine, Sulfite.
For Total Chlorine gas sensing method.

CL 7685.001

PID controller for
D.Ozone, Residual Chlorine



Add the following to the common Features/Specifications of the 7685 Series shown overleaf

- Applications:
 - Ozone generators
 - drinking water
 - water treatment
 - bottling industry
 - OEM
- Input from
 - Potentiostatic sensor
 - Polarographic selective membraned sensors:
 - Total Chlorine gas sensing method
- Input from Pt100 3 wires
- Ranges: 0/2 PPM - 0/20 PPM - 0/200 PPM autoranging
- Filter software (2 levels)
- Calibration mode: immediate or postponed
- Calibration parameters display
- Dual set-point and alarm conditions display
- Temperature display
- Automatic or manual temperature compensation
- Isolated output:
 - 0/20 mA or 4/20 mA selectable
 - programmable input on the span
- PID output:
 - 0/20 mA or 4/20 mA isolated output
 - dual relay for stepping motor
- Automatic or manual operation
- Alarm on set-point deviation
- Automatic overload protection and reset
- Extractable terminal block
- 96x96 (1/4 DIN) housing

Specifications

- * Measuring: D.Ozone/Residual Chlorine
- * Measuring cell: Potentiostatic/Polarographic

Polarographic cell
Current: 160 nA/PPM at 20 °C
* Scales: 0/2.000 PPM - 0/20.00 PPM -0/200.0 PPM
Zero adjustment: ± 200 nA
Cell sensitivity: 12.5/250 %

-
- Potentiostatic cell
* Scales: 0/2.000 PPM - 0/20.00 PPM
Zero adjustment: ± 2 μ A
Cell sensitivity: 12.5/250 %

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- * Polarization: -200 mV (0/-1250 mV)
 - * Filter software: 0.6/99.9 s (large/small)

Temperature
Input: Pt100 3 wires
Measuring and compensation range: -2/52 °C
Manual temperature: -2/52 °C
Resolution: 0.1 °C
Zero adjustment: ± 1 °C
* Temperature coefficient: 0/4.0 %/°C

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- Regulation:
* 4/20 mA or 0/20 mA/Stepping motor
* Motor time: 10/120.0 s
* Dead time: 0/20.0 s
Manual starting position: 0/100.0 %

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- Set-point: any value in the measuring range
* Dead band: 0.2/20.0 % (stepping motor)
Proportional band: 0.1/400.0 %
* Derivative: 0/1200 s
* Integral: 0/3600 s

The technical specifications may be changed without notice

Compatible accessories

SZ 283
Potentiostatic measuring sensor

SZ 7231
Flow cell for Chlorine and D. Ozone

SZ 7233
Flow cell for Chlorine / D. Ozone, pH, ORP sensors

SZ 7251
Autoclean flow cell

CL 7901
Flow cell and sensor for Free Chlorine

OZ 7901
Flow cell and sensor for D. Ozone

CL 7615

Potentiostatic Chlorine controller



This unit, together with the flow cell and the potentiostatic electrode, is the best and most advanced system for chlorine measurement. Because of the potentiostatic measuring method, it is not necessary to recalibrate the zero, the measuring is very accurate and direct chlorine readout appears on the display. Also this accurate method prevents the fluctuation of the chlorine levels as on the amperometric and ORP methods.

This potentiostatic system represents the state of the art in the drinking water, swimming pool industry and others.

Specifications

Input: from potentiostatic electrode SZ 283
 Scale: 0/5.00 PPM (others as requested)
 Hysteresis: ±0.03 PPM

Accessories

- SZ 283
Potentiostatic electrode
- SZ 7231
Flow cell for chlorine sensor
- SZ 7233
Flow cell for 3 sensors:
Chlorine, pH, ORP
- SZ 7251
Autocleaning flow cell for chlorine sensor



CL 3655.012

Residual Chlorine controller



Scale: 0/1.999 PPM (others on request)
 Temperature compensation: automatic with Pt100
 Chlorine sensor: CL 7901
 D. Ozone sensor: OZ 7901

3630 SERIES

Two-wire transmitters



CL 3630
 Residual Chlorine transmitter
 Dissolved Ozone transmitter

7635 SERIES

Microprocessor-based



- CL 7635 Residual Chlorine - Dissolved Ozone

CL 125.2

Free Chlorine - Dissolved Ozone meter



This instrument is designed for a reliable Free Chlorine and D. Ozone measuring in swimming pools, drinking water and in field applications.

The PPM measuring is displayed by means of a potentiostatic sensor directly immersed into the water.

The measuring method requires a constant pH value and a stirring of the sensor into the water in order to replace the consumed Chlorine/Ozone by the sensor.

The calibration is performed by a comparison with an external meter (example a photometer).

By pressing any key the instrument will switch on or will extend the operation for about 5 minutes.

The temperature compensation on the readout is automatic or manual.

The zero and sensitivity adjustment allows a very accurate calibration of the meter.

The plastic case with the polycarbonate membrane provides a corrosion resistance in field applications.

Accessories and sensors

to be ordered separately

BC 921: carrying case

SP 651: potentiostatic sensor with built-in Pt1000

Specifications

Display: LCD 3 1/2 digit

Input: from potentiostatic sensor, BNC connectors
from Pt1000, jack connector

Scales: 0/1.999 PPM - 0/19.99 PPM - -20.0/120.0 °C

Power: 9 Vdc battery

Battery life: 100 hours operation

Dimensions: 92 x 155 x 33 mm

Weight: 300 g