

products III

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Free Chlorine Measurement - CL 7685 Potentiostatic Controller for Free Chlorine, Chlorine Dioxide, D. Ozone



- **Applications:**
 - drinking water
 - bottling industry
- **Input from:**
 - potentiostatic sensor
 - Pt100 3 wires
- **Ranges:** 0/2 PPM and 0/20 PPM autoranging
- Dual 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:**
 - continuous/flashing
 - min/max and delay programmable
 - on set-points timing
- **Autoclean relay**
 - auto + manual/manual action
 - holding function for inputs & outputs
- EEPROM parameters storage
- Automatic overload protection & reset
- Extractable terminal block
- 96 x 96 (¼ DIN) housing

Specifications

Input Current

2 uA/PPM at 20°C

*** Scales**

0/2.000 PPM - 0/20.00 PPM
(Cl₂, ClO₂, D.O₃)

Zero adjustment: ± 0.3 uA

Cell sensitivity: 12.5/250 %

* Polarization: -200 mV (0/-1250 mV)

* Temperature coefficient: 0/4.0 %/°C

* Filter software 90%RT: 0.4/20.0 s for small/large variations

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

Option 091.4143

9/36 VDC power supply

The technical specifications may be changed without notice

Accessories

SZ 283 potentiostatic electrode

SZ 7231 flow cell

SZ 7233 flow cell for 3 sensors: SZ, pH, ORP

SZ 7251 autoclean flow cell

/// 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 the SZ 7251 cell 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:	110 x 12 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 and the Temperature sensor, while the SZ 7233 cell is also for additional pH and O.R.P. electrodes.

The package includes a 1/4" fitting, 2 meters of 4 x 6 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 C1=SZ283 °C=SP514

/// SZ 7251 Autoclean 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 ordered separately depending on the application

/// CL 7901 - OZ 7901 Flow Cells & Sensors for Free Chlorine/D.Ozone



The selective membrane polarographic sensor is inside a flow cell with overflow, for measurements with CL 7685.010, CL 7685.001 or CL 3630.

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

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.