

DISSOLVED OXYGEN SENSOR COG-1B

COG-1B dissolved oxygen sensor is designed for measurements of oxygen dissolved in natural water, waste water, sewage and in water solutions it should be used with the immersible heads made by ELMETRON. Special connector with thread enables screwing the sensor in the heads.

The sensors are designed for cooperation with the on-line meters like **421** series or **801** and **804** controllers. They can be also used in multi-parameter head - **GXZ-3tk** for the portable instruments like **CX-401**, **CX-461** and **CX-601** or **CX-705** with cases for field work.

Characteristic features:

- The sensor is equipped with Teflon membrane with great chemical resistivity, high selectivity and good oxygen permeability. Membrane is placed in easy to replace cap.
- It is characterised by a high measurement accuracy and long term stable signal what makes working easier and lowers the costs.
- Negatively charged silver cathode has increased resistivity to sulphides contamination, what enables using the sensor in heavily polluted water like industrial or municipal waste water.
- The sensor is equipped with an internal temperature compensation system, which makes corrections dependent on the temperature and membrane permeability.
- May be calibrated in % of saturation in 1 or 2 points in 0% solution and than in the air - 100%.
- Gases like chlorine, sulphur dioxide, hydrogen sulphide, amines, ammonia or carbon dioxide may cause errors in measurements.
- The sensor may work for many years if simple periodical maintenance operations are made.



Cap with a membrane



The principle of operation:

The **COG-1B** sensor works on the galvanic cell principle. It consists in silver cathode and zinc anode placed in the electrolyte solution, separated from the measured solution by the membrane, which is permeable for oxygen. The dissolved oxygen diffuses through the membrane and is reduced on the cathode, what generates voltage proportional to the partial pressure of the oxygen at current temperature.

TECHNICAL DATA

Measuring range	0 ÷ 600% 0 ÷ 60 mg/l
Accuracy	at calibration temperature: ± 1 %*
Temperature. measurement accuracy	in range 0 ÷ 40 °C ±0.5 °C
Acceptable temperature of measured solution	0 ÷ 40 °C
Temperature compensation range	0 ÷ 40 °C (for mg/l measurement)
Signal of the probe for solutions (in 20 °C)	In 100 % O ₂ saturation: 20 ÷ 25 mV in 0 % O ₂ saturation: max 0.3 mV
Time of response T ₉₉	below 1 minute
Internal compensation	yes (thermistor)
Cathode material	silver
Anode material	zinc
Membrane material	Teflon foil
Body and membrane cap material	PVC
Electrolyte	KCl 0.5 mol/l
Body diameter	12 ± 0.5 mm
Body length (to handle)	120 mm ± 5 mm
Connector	Chinch, with M16 thread

* By the difference ±5 °C, accuracy: ± 3 %, by the difference ±10 °C, accuracy: ±5 %.