

## S423 Amperometric Oxygen probe

**OXYSENS** are maintenance-free sensors to measure dissolved oxygen in aqueous samples in accordance with the *Technical Data* below.

### Technical Data

- Electrode type: silver-platinum combination
- Electrolyte: alkaline electrolyte solution
- Membrane: OPTIFLOW™
- Temperature sensor: NTC 22 kOhm OxySENS; NTC 30 kOhm OxySENS W
- Polarization voltage: -670 +/- 50 mV
- Sensitivity: 40 ... 80 nA at 25 °C in air
- Stabilizing time: typ. 15 min., max. 1 h
- Working temperature: 0 ... 60 °C
- Storage temperature: -10 ... 60 °C, with water containing watering cap
- Pressure: 0 ... 4 bar inserted; max. 0.5 bar totally immersed
- Shaft diameter: 12 mm
- Mounting: PG 13.5 thread
- Immersed materials on mounted sensor: stainless steel 1.4435, PEEK, Silicone, NBR
- Regeneration: not required
- Response time  $t_{98\%}$ : max. 60 s at 25 °C, from air to nitrogen
- Temperature response: ca. 3.1%/K
- Flow: min. 0.03 m/s
- Flow dependence: < 5% at 25°C
- Oxygen consumption: ca. 20 ng/h in air at 25°C
- Residual current: < 0.5% of current in air
- Zero shift: < 0.5% of current in air every 2 months at 25°C in water under stable conditions
- Sensitivity shift: < 10% every 2 months at 25°C in water under stable conditions

**Safety notes:** Keep sensor within specifications; see *Technical Data*. Mechanical damage may cause alkaline and caustic electrolyte release. Careful - there is glass behind the membrane (2)!

### Operating procedure:

1. Optical inspection for mechanical defects.
  2. Connect to a suitable amplifier. Follow operating instructions for the amplifier.
- Functions of OXYSENS cable cores:
- colorless/center: cathode
  - brown: anode
  - yellow and blue: temperature sensor
  - outer shield: connection to sample.
3. Remove watering cap (1). Keep sensor in air with membrane (2) pointing downwards. Pat membrane dry.
  4. Turn on amplifier and wait for about 15 min. until the measuring value is stabilized.
  5. Run calibration on the amplifier, e.g. adjust to 100%.
  6. Mount sensor, as required. A little grease on sealing facilitates assembly. Keep sensor membrane (2) pointing downwards. The sensor is now ready for measurement tasks.

**Testing:** OXYSENS sensors are maintenance-free. Replace the sensor if it can no longer be calibrated.

