

# DULCOTEST sensors for dissolved oxygen

Reliable online measurement of dissolved oxygen – with DULCOTEST sensors



Precise measurement of dissolved oxygen with DULCOTEST sensors – very wide range of applications, from the monitoring of water rich in oxygen, including surface water or potable water, to the reliable control of minimal oxygen concentrations when aerating aeration tanks in clarification plants.

## Technical Details

- Measuring accuracy: Type DO 2:  $\pm 0.05$  mg/l , type DO 3:  $\pm 0.1$  mg/l
- Temperature: 0 ... 50 °C
- Max. pressure: Type DO 2: 1 bar, type DO 3: 2 bar
- Degree of protection: IP 68
- Supply voltage: Type DO 2: 12 ... 30 V DC, type DO 3: 18...30 V DC



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### Dissolved oxygen sensor DO 3-mA

Widely used sensor for the measurement of oxygen dissolved in water above 0.1 ppm to oxygen saturation. For installation in standard immersion pipes or in the bypass line of the process flow. Use in aeration tanks of clarification plants, waterworks, in fish breeding or to monitor surface water. Minimal maintenance due to visual measuring principle.

#### Your Benefits

- Measured variable: Dissolved oxygen, minimal maintenance in contaminated water due to visual measuring principle
- Factory calibration stable for a long time. Calibration only needed following replacement of the visual sensor cap
- Rod-shaped construction for simple installation into standard immersion pipes and ProMinent bypass fittings
- No flow dependence and minimised faults due to ingredients in the water due to the visual measuring principle of quenching
- Long lifetime of fluorescence dye and simple replacement by replacement of the sensor cap

Measured variable	Dissolved oxygen
Calibration	On atmospheric oxygen or by reference measurement in the process water
Measuring accuracy	±0.1 mg/l
Response time sensor $t_{90}$	< 60 s at 25 °C from air to nitrogen
Temperature	0...50 °C
Temperature correction	integrated Pt1000, fed to the outside
Max. pressure	2.0 bar
Flow	Measurement even possible without flow
Supply voltage	18...30 V DC
Electrical Connection	Fixed lead, 10 m
Output signal	4... 20 mA assigned to the measuring range, temperature-corrected, calibrated and electrically isolated
Enclosure rating	IP 65
Process integration	<p>a) Immersion by immersion pipe (PVC, d40/DN 32, provided by the customer). The connection can be made using the immersion pipe adapter (reducing nipple, order no. 356924) and the 45° angle (order no. 356335). Both parts are included in the scope of delivery and can be ordered as an accessory (also see accessories).</p> <p>b) Installation into ProMinent bypass fittings, type DGMa with mounting kit G1" for 25 mm sensor (1113807), type DGMa with mounting kit 791818 and type DLG III with mounting kit 815079</p>
Controllers	<p><b>DACb from firmware 02.01.01.02</b> with complete calibration functionality and all correction variables (temperature, salinity, air pressure, height above sea level). Displayed units: [ppm] and [% oxygen saturation] <b>DACa, AEGIS II, D1C:</b> Calibration only possible if a reference concentration determined from the process water is input. Only temperature correction variable. Displayed unit: [ppm]</p>
Typical applications	Control of oxygen input into the aeration tank (clarification plant), control of oxygen input in water works, breeding of fish and shrimps, conditioning of the water of large aquaria in zoos, assessment of the biological condition of surface water.
Resistance to	Contaminated water and the following chemical compounds: carbon dioxide, hydrogen sulfide, sulfur dioxide, ethylene oxide and against gamma sterilisation.
Interference by	Oxidant (e.g. chlorine, chlorine dioxide, ozone) and many organic solvents (e.g. chloroform, toluene, acetone)
Measuring principle, technology	optical: Measurement of the relaxation time of a pulsed fluorescence beam

	Measuring range	Order no.
DO 3-mA-20 ppm	0.10...20.0 mg/l	1094609