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Let's Solve Water

Data sheet
D385

Oxygen optode

The Oxygen Optode 4835 is a compact fully integrated sensor for measuring O_2 concentration and temperature in shallow water.

Dissolved oxygen is a key parameter in aquatic environments, influencing most biological and chemical processes, and is widely used as a tracer in oceanographic studies. Since launching the oxygen optode in 2002, Aanderaa has supported oxygen monitoring and research from shallow creeks to deep ocean trenches, and from tropical waters to in-ice and in-sediment environments. More than 200 scientific papers have used Aanderaa Optodes.

Optical measurement

Delivers accurate and reliable oxygen measurements using a proven optical sensing method

Low maintenance

Requires minimal maintenance and provides stable measurements without being affected by water movement

Flexible integration

Supports flexible deployment as a stand-alone sensor or as part of SeaGuard and SmartGuard systems

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Oxygen Optode 4835 specifications

Oxygen	*Concentration*	*Air Saturation*
Measurement range	0–1000 µM[1] or 0–32 mg/L	0–300%
Calibration method	40-point automatic calibration, 20-point verification, 3 fully Winkler calibrated optodes for referencing	
Sensing foils	Stable and rugged FDO701 sensing foil	
Calibration range[2]	0–500 µM or 0–16 mg/L	0–120%
Resolution	< 0.1 µM or 0.0032 mg/L	0.05%
Accuracy	< 4 µM or 0.128 mg/L[3]	<3%[4]
Response time (63%)	<30 sec	
Typical field drift	FDO701 foil: <0.3% per year	
Foil Lifetime	+10 years, do not change foil unless mechanically damaged	

Temperature

Range	-5 to +40°C (23–104°F)
Resolution	0.01°C (0.018°F)
Accuracy	±0.05°C (0.090°F)[5]
Typical field drift	< 0.03°C per year
Response time (63%)	< 10 sec

Output format

AiCaP CANbus, RS-232

Output parameters

RS-232	O_2 concentration in µM and mg/L, Air Saturation in %, Temperature in °C, Oxygen raw data and Temperature raw data

Sampling interval

1 sec–255 min

Supply voltage

5 to 14VDC

Current drain

Average	0.16 + 48 mA/S where S is sampling interval in seconds
Maximum	100 mA
Quiescent	0.16 mA

Operating depth

0–300 m (0–984.3 ft)

Electrical connection

10-pin receptacle mating plug SP

Dimensions (W x D x H)

Ø36 x 86 mm (Ø1.4”x 3.4”)

Weight

118 g (4.16 oz)

Materials

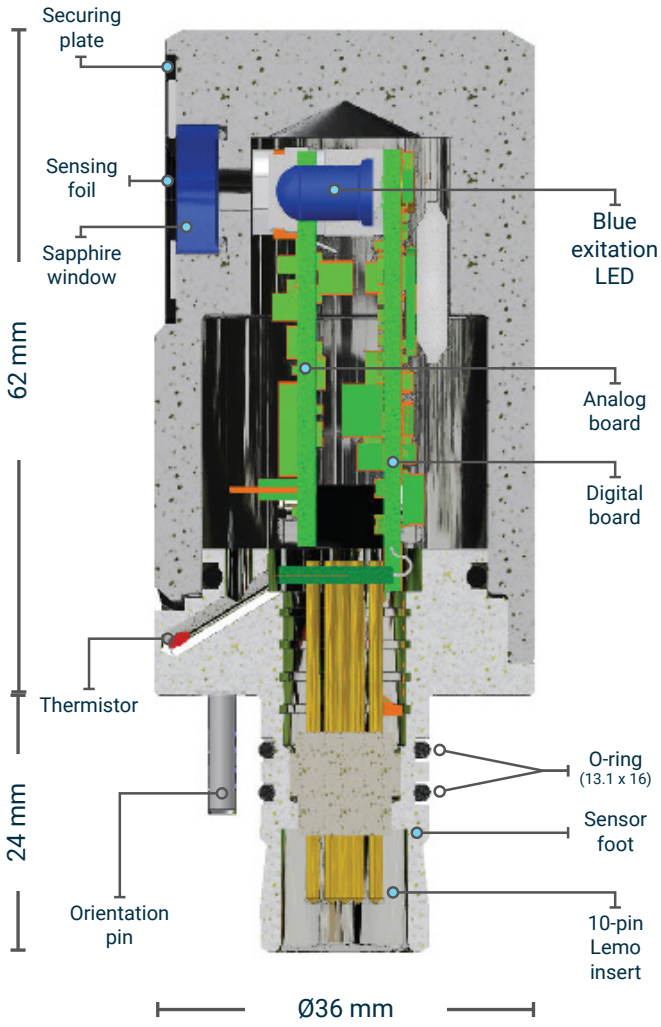
Titanium, Polyacetal (POM)

Accessories (not included)

Foil Service Kit 5551

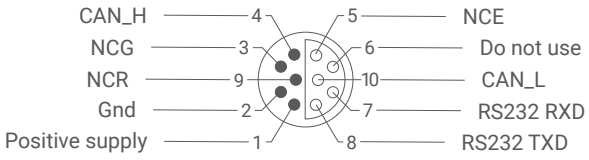
Cable from sensor

PC with waterproof SP, RS-232 (4865); Seaguard as sixth sensor on top-end plate (4999); Seaguard with waterproof top end plate connection (4793), SmartGuard single sensor with SP (5236); User furnished data logger, SP to free end (6475); Set-up and config cable (3855[6]/3855A[6])



PIN CONFIGURATION

Receptacle, exterior view; pin = • bushing = ◦



[1] O_2 concentration in µM = µmol/l. To obtain mg/l, divide by 31.25.

[2] Other ranges available on request.

[3] Requires salinity compensation for salinity variation > 1 mS/cm.

[4] Within calibrated range 0–120% / 0–30°C

[5] Within calibrated range 0–36°C.

[6] Only for laboratory use

Misleading specifications – When Aanderaa states an absolute accuracy of e.g (±1.5% or ±2 µM) we mean the accuracy of the sensor in the field over the entire range of oxygen concentrations and temperatures, others might refer to accuracy in the laboratory just after the sensor was calibrated. When Aanderaa give response time in water others refer to response time in air which is much faster. For more information read our Best Practice document on Oxygen Optodes.

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