

# Oxygen Optode 4831/4831F



**The Oxygen Optode 4831/4831F is a compact fully integrated sensor for measuring the O<sub>2</sub> concentration and temperature. Fast Response Foil (4831F, refer overleaf)**

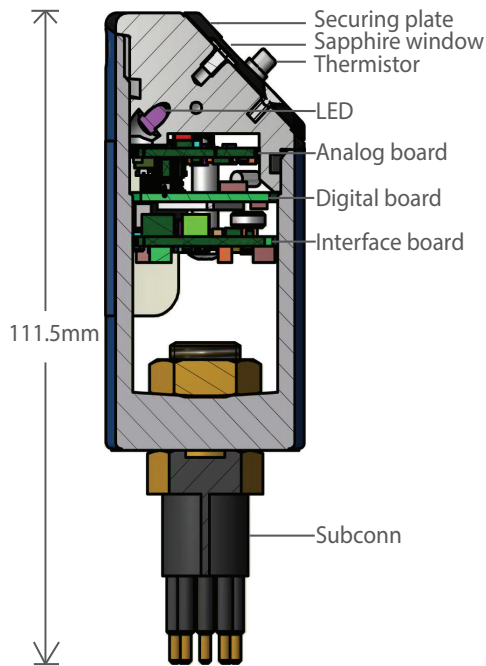
- Optical lifetime-based luminescence quenching measurement principle
- Multipoint calibrated in 40 points
- Long time stability with pre-burned foil and red reference LED
- Low maintenance needs
- Not stirring sensitive (it consumes no oxygen)
- User friendly
- Small size and weight
- Stand-alone sensor
- Output format: RS232, 0-5V
- Four depth ranges maximum 12000 meter

The Aanderaa Oxygen Sensor was the first and only to measure dissolved oxygen for years without drift. Now it is one of the fastest! Aanderaa Oxygen Sensor is designed to measure absolute oxygen concentration and % saturation. The oxygen optode can be used from streams to deep sea, from Aquaculture to Waste water and from Polar ice areas to Hydrothermal vents. The lifetime-based luminescence quenching principle offers a list of benefits. More than 150 scientific papers have so far been published using these optodes.

**AANDERAA**

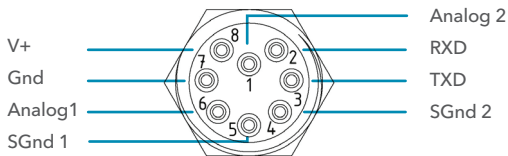
a xylem brand

# Specifications OXYGEN SENSOR 4831/4831F



## PIN CONFIGURATION SUBCONN MCBH8

Male Face View



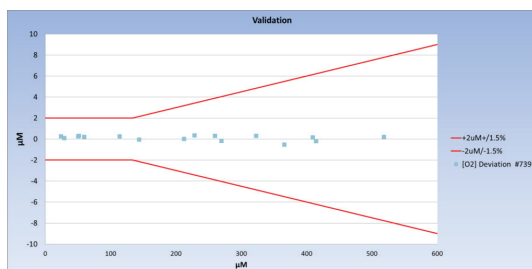
## PIN CONFIGURATION SUBCONN MCBH6

Male Face View



## Sensing Foil Considerations

The standard sensing foil is protected by an optical isolation layer which makes the foil extra rugged and insensitive to direct sunlight. The fast response sensing foil is not equipped with this layer; ambient light intensity higher than 15000 lux may cause erroneous readings. We recommend the standard foil in applications where fast response time is not needed.



## Technical Details

<b>Oxygen:</b>	O <sub>2</sub> - Concentration	Air Saturation
Measurement Range:	0 - 1000 µM <sup>(1)</sup>	0 - 300%
Calibration method:	40-point automatic calibration, 20-point verification, 3 fully Winkler calibrated optodes for referencing	
Foils:	Pre-burned PreSens Pst3 foils	
Calibration Range <sup>(2)</sup> :	0 - 500 µM	0 - 150%
Resolution:	< 0.1 µM	0.05 %
Accuracy:	< 2 µM or 1.5% <sup>(3)</sup>	< 1.5 % <sup>(4)</sup>
Response Time (63%):	4831F (with fast response foil)	< 8 sec
	4831 (with standard foil)	< 25 sec
Typical field drift:	< 0.5 % per year	
<b>Temperature:</b>		
Range:	-5 to +40°C (23-104°F)	
Resolution:	0.01°C (0.018°F)	
Accuracy:	±0.03°C (0.054°F) <sup>(5)</sup>	
Response Time (63%):	< 2 sec	
<b>Output format:</b>	RS-232, 0-5V	
<b>Output Parameters:</b>	RS-232	
	O <sub>2</sub> Concentration in µM, Air Saturation in %, Temperature in °C, Oxygen raw data and Temperature raw data	
Analog channel 1:	O <sub>2</sub> Concentration in µM, or Air Saturation in %	
Analog channel 2:	Temperature in °C	
<b>Sampling interval:</b>	2 sec - 255 min	
<b>Supply voltage:</b>	5 to 14VDC, 7 to 14VDC for analog output	
<b>Current drain:</b>		
Average:	0.16 + 48mA/S where S is sampling interval in seconds	
Maximum:	100mA	
Quiescent:	0.16mA	
<b>Operating depth:</b>		
Shallow Water (SW):	0-300m (0-984.3ft)	
Intermediate Water (IW):	0-3000m (0-9843ft)	
Deep Water (DW):	0-6000m (0-19690ft)	
Hadal <sup>(6)</sup> :	0-12000m (0-39,380ft)	
<b>Electrical connection:</b>	8 pin Subconn MCBH8M	
4831U:	6 pin Subconn MCBH6M	
<b>Dimension (WxDxH):</b>	Ø36 x 111.5mm (Ø1.4" x 4.4")	
<b>Weight:</b>	217g (7.65oz)	
<b>Materials:</b>	Epoxy coated titanium, PA	
<b>Accessories, not included:</b>	Foil Service Kit 4733/47330 (standard) / 4794 (fast)	

<sup>(1)</sup> O<sub>2</sub> concentration in µM = µmol/l. To obtain mg/l, divide by 31.25

<sup>(2)</sup> Other ranges available on request.

<sup>(3)</sup> Requires salinity compensation for salinity variations > 1mS/cm, and pressure compensation for pressure > 100meter

<sup>(4)</sup> Within calibrated range 0 - 120% / 0 - 30°C

<sup>(5)</sup> Within calibrated range 0 - 30°C

<sup>(6)</sup> Product number 5331

**Specifications subject to change without prior notice.**

The above specifications are for the stand-alone sensor only, not the installation it is utilized with.

## 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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