




# UNISENSE OPTO-SERIES Oxygen Optodes User Guide

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## UNISENSE OPTO-SERIES Oxygen Optodes User Guide



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## Introduction

### **Important: Test sensor upon receipt.**

This sensor has been successfully tested prior to shipping, however some sensors suffer from rough transportation. Therefore, it is important that you test the sensor upon arrival.

### **Replacement of defective sensors**

Unisons will replace the sensor if it does not meet the specifications below, provided that:

1. A test is performed upon receipt without breaking the seal (Note: No seal on MR-sensors for testing purposes)
2. The complaint is given to Unisons within two weeks from receipt of the equipment

## Guaranteed lifetime

Unisons guarantees the opt ode sensor a minimum lifetime of 1 year or a 1 million data points, whichever comes first, on condition of correct storage and use according to the manual.

### **individual sensor calibration is Required**

Our sensors are handmade and as the sensor signal relies on the exact geometry of the sensor tip (micrometer scale), some variation must be expected.

## Signal amplification

Unisons oxygen opcodes should be connected to a Opto-series or Uni Amp-series amplifier

### **Standard oxygen opcodes are functioning correctly if (at Room temperature):**

- The 90 % response time is within the specified range (see table below)
- The uncalibrated phase is within the specified range (see table below)

	<b>OPTO-430</b>	<b>OPTO-430 F AST</b>	<b>OPTO-MR</b>	<b>OPTO-50</b>	<b>OPTO-3000</b>
<b>90 % response time (in sec )</b>	< 3 sec	< 0.3 sec	< 3 sec	< 5 sec	< 15 sec
<b>100 % air saturation – phase</b>	< 22	< 22	< 22	< 22	< 22
<b>0 % oxygen – phase</b>	> 46	> 46	> 46	> 40	> 46
<b>Minimum data points (millions)</b>	1.5	1	1.5	1	3

## Unpacking

- Remove the grey shock-absorbing plastic net and inspect the sensor visually.  
Leave the sensor in the protection tube for testing.

### Connect the opt ode to the opto- or uni amp-series amplifier

- Remove the cap from the Micro Optode connector and from the amplifier connector.
- Insert the opt ode plug into the connector on the amplifier and turn gently clockwise until the plug is locked firmly.
- Insert the E2PROM connector on the opt ode into the E2PROM connector on the amplifier (no E2PROM on OPTO-Field sensors).

### Unisense Micro Optode



## Calibrate The Sensor

- Use air saturated water as one calibration point. This is easily done using the CAL300 calibration chamber. The sensor may be dipped directly into the calibration chamber or the air saturated water may be injected into the

protection tube using the calibration cap (see picture).

- Use the Unisons zero O<sub>2</sub> solution as the second calibration point.

Inject the zero O<sub>2</sub> solution into the calibration cap and wait for the sensor to respond.

- For alternative calibration method, see the Oxygen Micro OptodeOpto Series User Manual.

**CAL300 with microsensors and bubbling with air.**



**Injecting calibration liquid into protection tube using the calibration cap.**



### **Approve The Sensor**

- Compare the calibration values to the specifications given on the previous page. If necessary, see

Troubleshooting in the optode manual or contact support (see below)

### **Adjusting the measurement frequency.**

- The lifespan of the optodes is determined by the amount of measurements. In order to prolong the lifespan of the optode, adjust the measuring frequency as required for your application.
- The frequency can be adjusted in the Sensor Trace software

### **Storage**

- When not in use unplug the optode and store it with the protection tube mounted at room temperature (preferable in low light or darkness).

### **Useful Tools**

#### **O2 Micro Optode Manual**

*Scan Me*



#### **Calkit-O2 Manual**

*Scan Me*



#### **Sensor Trace Suite Manual**

*Scan Me*



**Find SDS for Calibration Kit here**

*Scan Me*



Customer Support

For support go to [www.unisense.com/support](http://www.unisense.com/support) or contact [sales@unisense.com](mailto:sales@unisense.com)  
Get the full manuals for all  
sensors, equipment & software at [www.unisense.com/manuals](http://www.unisense.com/manuals)



Documents / Resources

	<p><a href="#">UNISENSE OPTO-SERIES Oxygen Optodes</a> [pdf] User Guide OPTO-SERIES Oxygen Optodes, OPTO-SERIES Optodes, Oxygen Optodes, Optodes</p>
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References

- [!\[\]\(fd4127b9e2af37bd6ea0fa06afa8e6d8\_img.jpg\) Microsensors, instruments, and meters for microscale measurements](#)
- [!\[\]\(3278d6283d12f18012b5aa7d40747611\_img.jpg\) Manuals - Unisense](#)

Manuals+.