UNISENSE & SCIENTIFIC

Getting started guide & Unisense standard specifications for

Oxygen Sensors

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

Unisense 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 Unisense ***within two weeks*** from receipt of the equipment.

Guaranteed Lifetime

Unisense guarantees the oxygen sensor a minimum lifetime of 6 months 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 between sensors must be expected.

Signal Amplification

Unisense nitrous oxide sensors should be connected to a Unisense amplifier such as a UniAmp series instrument or the Field Microsensor Multimeter.

Standard Oxygen Sensors are functioning correctly if (at room temperature):

- The 90 % response time is within the specified range (see table below).
- The zero signal is less than 10 % of the air saturated signal and below 20 mV*.

	OX-10	OX-25	OX-50	OX-100	OX-200	OX-500	OX-MR	OX-N	OX-NP
90% response time (sec.)	3	4	5	8	8	15	15	15	15

* The sensor signal in pA is converted to an instrument signal in mV. The default setting of this Pre-Amp range is 1 pA = 1 mV. However, this can be changed by the user (see the instrument manual).

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Getting started with Oxygen Sensors

1. Unpacking

- Remove the grey shock-absorbing plastic net and inspect the sensor visually. Leave the sensor in the protection tube for testing, and do not break the seal.

2. Connect the sensor to the amplifier

- The amplifier is automatically set up correctly when used with these instruments: UniAmp series, Multimeter, Monometer, OXY Meter, Field Microsensor Multimeter, and Unisense in situ amplifiers.
- For other amplifiers, set the polarization manually to -800 mV.
  NOTE: Incorrect polarization may destroy the sensor!

3. Wait for the sensor to stabilize

- The signal will be very high right after the sensor is connected and will decrease over time.
- The period of decreasing signal will normally be at least 2 hours.
- Once the signal is stable, calibration can be performed.

4. Calibrate the sensor

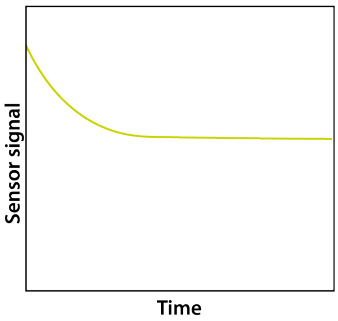
- Use air saturated water as one calibration point. This is easily done using the CAL300 calibration chamber. The sensor may be dipped directly into the calibration chamber or the air saturated water may be injected into the protection tube using the calibration cap.
- Use the Unisense zero O_2 solution as the second calibration point. '
- Inject the zero O_2 solution into the calibration cap (incl. in calibration kit) and wait for the sensor to respond.
- For alternative calibration method, see the O_2 Microsensor manual.

5. Approve the sensor

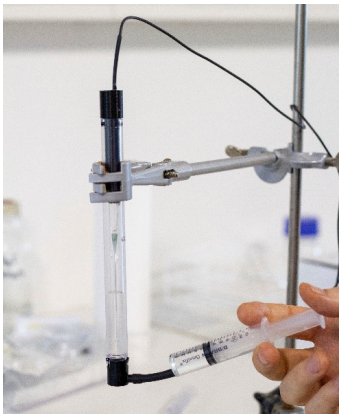
- Compare the zero O_2 signal to the specifications given on the previous page. If necessary, see Troubleshooting in the O_2 Microsensor manual or contact support.

6. Storage

- When not in use, store the sensor with the protection tube mounted at 10 - 30°C. If the sensor is used regularly, keep it polarized and connected to the amplifier.



A typical decrease in sensor signal over time for a sensor that has just been plugged in.



Injecting calibration liquid into protection tube using the calibration cap.

Useful tools

O_2 Microsensor Manual

Calkit-O_2 Manual

uSense Solutions Manual

Contact information for support

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ISO 9001 Certified