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UNISENSE OX-10 Oxygen Sensors User Guide

UNISENSE

**GettinG started Guide
and unisense standard
specifications for
OXYGEN SENSORS**

OX-10 Oxygen Sensors

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.
See the demonstration video for standard oxygen sensors by scanning this QR code:
For OX-MR and other special sensors, please refer to the manual.

http://www.youtube.com/watch?v=I5LDfrotPkw

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 equip- ment.

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 must be expected.
Signal amplification
Unisense oxygen 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 (in 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).

1. **Unpacking**
   • Remove the grey shock-absorbing plastic net and inspect the microelectrode visually.
   Leave the microelectrode in the protection tube for testing.
2. **Connect the o2 sensor to the amplifier**
   • The amplifir 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.
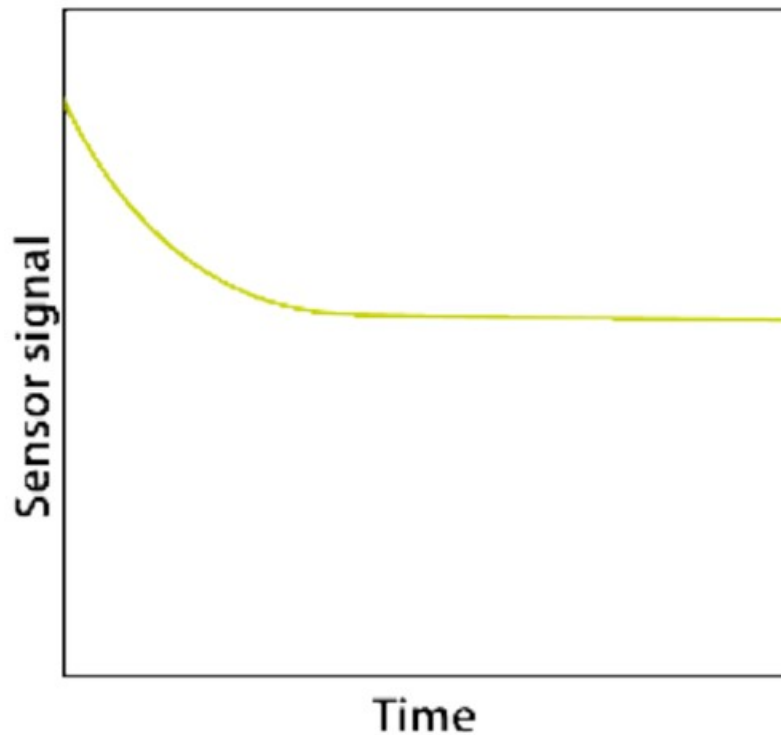
Time

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

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 O2 solution as the second calibration point. Inject the zero O2 solution into the calibration cap (incl. in calibration kit) and wait for the sensor to respond.

• For alternative calibration method, see the O2 Microsensor manual.

CAL300 with microsensors and bubbling with air.
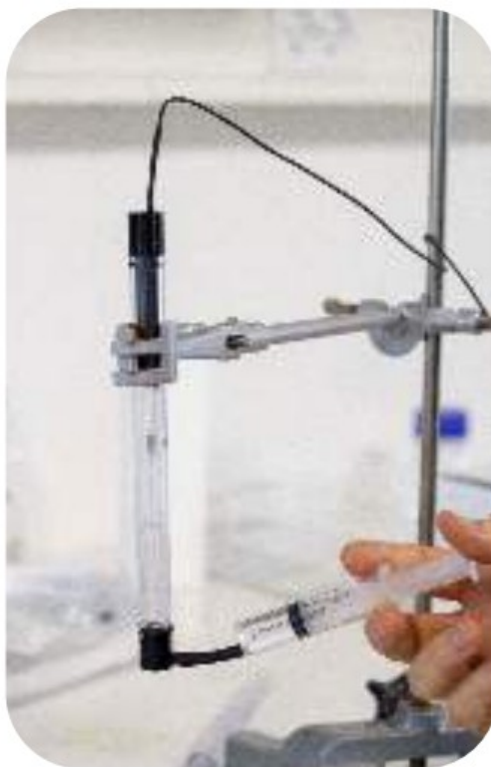
Injecting calibration liquid into protection tube using the calibration cap.

5. **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.

Useful tools

For support go to **www.unisense.com/suppor**t or contact **sales@unisense.com**

Get the full manuals for all sensors, equipment & software at **www.unisense.com/manuals**

  O₂ Microsensor Manual	
https://www.unisense.com/files/PDF/Manualer/Oxygen%20Sensor%20Manual.pdf	**https://www.unisens**
  SensorTrace Suite Manual	
https://www.unisense.com/files/PDF/Manualer/SensorTrace%20Suite%20Manual.pdf	**https://www.unisens**
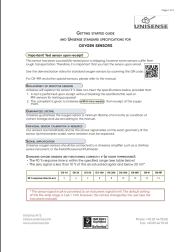
Documents / Resources

	UNISENSE OX-10 Oxygen Sensors [pdf] User Guide OX-10 Oxygen Sensors, OX-10, Oxygen Sensors, Sensors

References

- ☞ **Microsensors, instruments, and meters for microscale measurements**
- ☞ **Manuals - Unisense**
- **User Manual**