# Digital optical oxygen sensor Memosens COS81E

## Memosens 2.0 hygienic sensor for the life sciences and food industries


More information and current pricing:
www.endress.com/COS81E

**Benefits:**

- Memosens COS81E is designed according to EHEDG and ASME BPE. It avoids cross-contamination and is fully compliant to USP class VI and FDA as well as all GMP and GLP requirements.
- High process up-time: Precalibrate the sensor in your lab and then swap it into your process with plug & play. It does not need polarization time and is immediately ready to measure.
- Reliable measurement: A built-in reference LED compensates the ageing of the measuring LED. This ensures precise measured values even after CIP/SIP and autoclaving.
- Reduce your maintenance effort: Memosens COS81E does not have a difficult-to-handle electrolyte or sensitive membrane. Just exchange the sensor cap, perform a calibration and you are done.
- The sensor can be used in process applications as well as benchtop fermenters. Providing you with 100% measuring consistency from the first lab trials to the final scaled-up process and your process lab.
- Perfectly suited for inertization processes thanks to its approvals for hazardous and dust-explosive areas.
- IIoT ready: Memosens 2.0 offers extended storage of calibration and process data, enabling better trend identification and providing a future-proof basis for predictive maintenance and enhanced IIoT services.

### Specs at a glance

- **Measurement range** 0.004 to 30 mg/l 0.05 to 330 %SAT 0.1 to 700 hPa
- **Process temperature** 1 to 140 °C (32 to 284 °F)
- **Process pressure** 0.02 to 13 bar abs (0 to 190 psi)

**Field of application:** Memosens COS81E is the ideal optical oxygen sensor for hygienic applications. Its well-tuned measuring system prevents ageing of the optical spot and offers precise, long-term stable measurements for high product quality. Thanks to its approvals for hazardous and dust-explosive areas, COS81E is perfectly suited for inertization applications. With Memosens 2.0 digital technology, COS81E offers extended data storage providing the perfect basis for predictive maintenance and efficient operation.

## Features and specifications

### Oxygen

**Measuring principle**

Optical oxygen measurement

**Application**

- Oxygen control in fermenters, e.g. in the pharmaceutical or biotechnology sectors
- Monitoring of explosive atmospheres with an oxygen concentration of ≥ 2% Vol
- Quality control in the food industry

**Installation**

Standard process connection Pg 13.5
Installation in standard pH assemblies possible

**Characteristic**

Hygienic, optical sensor for stable oxygen measurement over multiple sterilization cycles

**Measurement range**

0.004 to 30 mg/l
0.05 to 330 %SAT
0.1 to 700 hPa

**Measuring principle**

Principle of luminescence quenching

## Oxygen

**Design**
Optical system, stainless steel

**Material**
Sensor shaft: Stainless steel 1.4435 (AISI 316L)
Process seal: FKM (USP<87>, <88> Class VI and FDA)
Process seal for Ex versions: FKM (not FDA-compliant)
Seals/O-rings: EPDM, FFKM (USP<87>, <88> Class VI and FDA)
Spot cap: Stainless steel 1.4435 (AISI 316L), titanium or hastelloy
Spot layer: Silicone (USP<87>, <88> Class VI and FDA)

**Dimension**
Diameter: 12 mm (0.47 inch)
Shaft length: 120, 160, 220, 320 and 420 mm
(4.7 , 6.3 , 8.7 , 12.6 and 16.5 inch)

**Process temperature**
1 to 140 °C
(32 to 284 °F)

**Process pressure**
0.02 to 13 bar abs
(0 to 190 psi)

**Temperature sensor**
Pt1000

**Ex certification**
With ATEX, IECEx, NEPSI, Japan and INMETRO approvals for use in hazardous areas Zone 0, Zone 1 and Zone 2 and furthermore Zone 20, Zone 21 and Zone 22 in dust hazardous areas.
With CSA C/US approval for use in
hazardous areas Class I Division 1 and furthermore Class II Division 1 in dust hazardous areas.

**Connection**
Inductive, digital connection head with Memosens 2.0 technology

Oxygen

**Ingres protection**

IP68

IP69

**Additional certifications**

Additional certifications

More information **www.endress.com/COS81E**

Endress+Hauser AG
Switzerland

addresses.endress.com
info@endress.com