

# Sensors for Oxygen Measurement



## SE 707 Memosens Oxygen Sensor

Reliable measurement of oxygen traces, also under sterile and hygienic conditions; signal-stable and robust, digital, with Memosens technology

High resolution of low oxygen concentrations, simple and cost-efficient sensor calibration in ambient air. No calibration gases. High signal stability, also in the presence of high CO<sub>2</sub> partial pressures. FDA-conforming material with extremely smooth polished surface. Simple maintenance due to modular design. Sterilizable, autoclavable, and CIP capable. Also suitable for hazardous locations.

### Applications

Beverage filling (e.g. milk, beer), measurement in boiler feed water (detection limit 1 ppb)

### Facts

– perfect galvanic isolation thanks to Memosens technology

- precalibration in the lab
- no influence of humidity in the connector
- digital data transfer
- integrated sensor diagnostics
- high level of process safety
- durable materials
- robust design
- easy to clean thanks to extremely smooth surface
- very simple calibration in air without calibration gases
- cost-efficient service due to easy-to-replace membrane module and interior body
- hygienic design
- very high resolution of 1 ppb in the trace range
- low cross-sensitivity to CO<sub>2</sub>
- operation also in hazardous locations

### Specifications

|   |  |
|---|--|
| Range:  | pO <sub>2</sub> < 1200 mbar  |
| Detection limit:                                | 1 ppb (3 ppb in liquids containing CO <sub>2</sub> )   |
| Accuracy:                                       | 1 % + 1 ppb (1 % + 3 ppb in liquids containing CO <sub>2</sub> )   |
| Response time at 25 °C (air → N <sub>2</sub> ): | 98 % full scale < 90 s   |
| Signal in ambient air:                          | 290 ... 500 nA   |
| Residual signal:                                | in oxygen-free medium: ≤ 0.01 % of signal in ambient air<br>in CO <sub>2</sub> : ≤ 0.03 % of signal in ambient air |
| Flow dependence:                                | ≤ 5 %  |
| Permissible pressure range (measurement):       | 2.9 ... 87 psi (0.2 ... 6 bar) absolute  |
| Mechanical pressure resistance:                 | max. 174 psi (12 bar) absolute   |
| Perm. temp range (measurement):                 | 32 ... 176 °F (0 ... 80 °C)  |
| Temp range (stability):                         | 23 ... 249 °F (-5 ... +121 °C)<br>steam sterilizable/autoclavable  |
| O-ring material:                                | silicone (FDA&USP Class VI tested)   |
| Membrane material:                              | PTFE/silicone/PTFE, FDA compliant (reinforced with steel mesh)   |
| Process-wetted sensor parts:                    | 1.4404 stainless steel (material certificate 3.1B)   |
| Surface roughness:                              | N 5 (RA < 0.4 μm)  |
| Temperature detector:                           | NTC 22 kohms   |
| Interior body incl. electrodes:                 | replaceable (ZU 0568)  |
| Sensor cap:                                     | Memosens   |
| ATEX Certificate:                               | II 1 G Ex ia IIC T3/T4/T6  |
| FM Approvals (US & C)                           | Cl. 1 Div. 1, GP ABCD T3/T4/T6   |
| Certificates:                                   | 3A, 3.1 (EN 10204)   |

**Product Line**

SE 707 X oxygen sensor

Length 120 mm  
Length 220 mm

Order No.

**SE 707X/1-NMSN**  
**SE 707X/2-NMSN**

**Cable**

Memosens cable

3 m  
5 m  
10 m  
20 m<sup>\*)</sup>

Order No.

**CA/MS-003NAA**  
**CA/MS-005NAA**  
**CA/MS-010NAA**  
**CA/MS-020NAA**

Memosens cable, Ex

3 m  
5 m  
10 m  
20 m<sup>\*)</sup>

**CA/MS-003XAA**  
**CA/MS-005XAA**  
**CA/MS-010XAA**  
**CA/MS-020XAA**

**Accessories**

O<sub>2</sub> membrane module

separate

Order No.

**ZU 0563**

O<sub>2</sub> membrane kit

membrane module (4 x), O-ring set (1 x), 25 ml electrolyte (1 x)

**ZU 0564**

O<sub>2</sub> electrolyte

25 ml

**ZU 0565**

Interior body for SE 707

**ZU 0567**

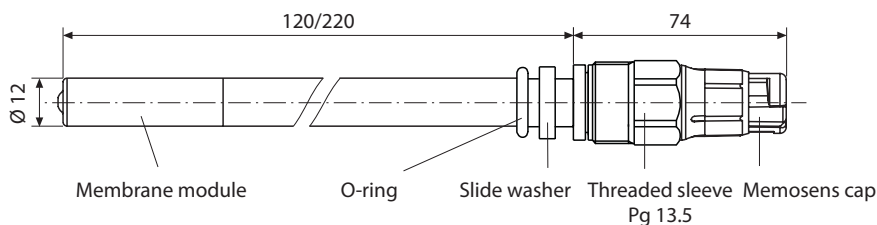
O-ring set

silicone

**ZU 0679**

<sup>\*)</sup> Greater lengths on request

**Dimension Drawing**



All dimensions in mm