# DrägerSensor® XS EC $O_2$-LS — Order no. 68 09 130
# DrägerSensor® XS 2 $O_2$ — 68 10 375
# DrägerSensor® XS R $O_2$ — 68 10 262

| Used in | Plug & Play | Replaceable | Guaranty* | Expected sensor life | Selective filter |
|---|---|---|---|---|---|
| Dräger X-am 7000 | yes | yes | XS EC: 3 years<br>XS 2: 2 years<br>XS R: 5 years | > 5 years<br>> 3 years<br>= 5 years<br>(limited operation time) | – |

## MARKET SEGMENTS

Sewage, mining and tunneling, fumigation, biogas, measuring hazmat, industrial gases.

## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| **Detection limit:** | 0.1 Vol. % |
| **Resolution:** | 0.1 Vol. % |
| **Measurement range:** | 0 to 25 Vol. % $O_2$ (oxygen) |
| **Response time:** | ≤ 25 seconds ($t_{90}$) – XS EC |
| | ≤ 20 seconds ($t_{90}$) – XS 2 / XS R |
| **Precision** | |
| Sensitivity: | ≤ ± 1% of measured value |
| **Long-term drift, at 20°C (68°F)** | |
| Zero point: | ≤ ± 0.5 Vol. %/year |
| Sensitivity: | ≤ ± 1% of measured value/month |
| **Warm-up time:** | ≤ 1 hour |
| **Ambient conditions** | |
| Temperature: | (–40 to 50)°C (–40 to 122)°F |
| Humidity: | (10 to 90)% RH |
| Pressure: | (700 to 1,300) hPa |
| **Influence of temperature** | |
| Zero point: | ≤ ± 0.4 Vol. % XS EC |
| | ≤ ± 0.2 Vol. % XS 2 / XS R |
| Sensitivity: | ≤ ± 2% of measured value XS EC |
| | ≤ ± 1% of measured value XS R / XS 2 |
| **Influence of humidity** | |
| Zero point: | ≤ ± 0.002 Vol. %/% RH – XS EC |
| | No effect – XS 2 / XS R |
| Sensitivity: | ≤ ± 0.1% of measured value/% RH |
| **Test gas:** | $N_2$ (zero gas) |
| | 11.5 to 23.0 Vol. % $O_2$ |

## SPECIAL CHARACTERISTICS

DrägerSensor® XS oxygen sensors are lead-free, thus complying with Directive 2002/95/EC (RoHS). Because they are non-consuming sensors, they have a much longer life spans than sensors that are consuming.

The values shown in the following table are standard and apply to new sensors. The values maybe fluctuate by ± 30%. The sensor may also be sensitive to additional gases (for more information, please contact Dräger). Gas mixtures may be displayed as the sum of all components. Gases with a negative cross sensitivity may displace an existing concentration of $O_2$. To be sure, please check if gas mixtures are present.

## RELEVANT CROSS-SENSITIVITIES DrägerSensor® XS EC $O_2$ LS

| Gas/vapor | Chem. symbol | Concentration | Display in Vol. % $O_2$ |
|---|---|---|---|
| Acetylene | $C_2H_2$ | 0.5 Vol. % | ≤ 0.2(–) |
| Chlorine | $Cl_2$ | 20 ppm | No effect |
| Carbon dioxide | $CO_2$ | 5 Vol. % | No effect |
| Carbon monoxide | CO | 0.5 Vol. % | ≤ 0.3(–) |
| Ethane | $C_2H_6$ | 5 Vol. % | No effect |
| Ethanol | $C_2H_5OH$ | 1 Vol. % | ≤ 0.2(–) |
| Ethene | $C_2H_4$ | 2 Vol. % | ≤ 0.5(–) |
| Hydrogen | $H_2$ | 1 Vol. % | ≤ 1.6(–) |
| Hydrogen chloride | HCl | 40 ppm | No effect |
| Hydrogen sulfide | $H_2S$ | 100 ppm | No effect |
| Methane | $CH_4$ | 10 Vol. % | No effect |
| Nitrogen dioxide | $NO_2$ | 50 ppm | No effect |
| Nitrogen monoxide | NO | 100 ppm | No effect |
| Propane | $C_3H_8$ | 2 Vol. % | No effect |
| Sulfur dioxide | $SO_2$ | 50 ppm | No effect |

(–) Indicates negative deviation

## RELEVANT CROSS-SENSITIVITIES DrägerSensor® XS 2 $O_2$

| Gas/vapor | Chem. symbol | Concentration | Display in Vol. % $O_2$ |
|---|---|---|---|
| Acetylene | $C_2H_2$ | 0.5 Vol. % | ≤ 0.2(–) |
| Chlorine | $Cl_2$ | 20 ppm | No effect |
| Carbon dioxide | $CO_2$ | 5 Vol. % | No effect |
| Carbon monoxide | CO | 0.5 Vol. % | ≤ 0.3(–) |
| Ethane | $C_2H_6$ | 5 Vol. % | No effect |
| Ethanol | $C_2H_5OH$ | 1 Vol. % | ≤ 0.2(–) |
| Ethene | $C_2H_4$ | 2 Vol. % | ≤ 0.5(–) |
| Hydrogen | $H_2$ | 1 Vol. % | ≤ 1.6(–) |
| Hydrogen chloride | HCl | 40 ppm | No effect |
| Hydrogen sulfide | $H_2S$ | 100 ppm | No effect |
| Methane | $CH_4$ | 10 Vol. % | No effect |
| Nitrogen dioxide | $NO_2$ | 50 ppm | No effect |
| Nitrogen monoxide | NO | 100 ppm | No effect |
| Propane | $C_3H_8$ | 2 Vol. % | No effect |
| Sulfur dioxide | $SO_2$ | 50 ppm | No effect |

## RELEVANT CROSS-SENSITIVITIES DrägerSensor® XS R $O_2$

| Gas/vapor | Chem. symbol | Concentration | Display in Vol. % $O_2$ |
|---|---|---|---|
| Acetylene | $C_2H_2$ | 0.5 Vol. % | ≤ 0.2(–) |
| Chlorine | $Cl_2$ | 20 ppm | No effect |
| Carbon dioxide | $CO_2$ | 5 Vol. % | No effect |
| Carbon monoxide | CO | 0.5 Vol. % | ≤ 0.3(–) |
| Ethane | $C_2H_6$ | 5 Vol. % | No effect |
| Ethanol | $C_2H_5OH$ | 1 Vol. % | ≤ 0.2(–) |
| Ethene | $C_2H_4$ | 2 Vol. % | ≤ 0.5(–) |
| Hydrogen chloride | HCl | 40 ppm | No effect |
| Hydrogen sulfide | $H_2S$ | 100 ppm | No effect |
| Methane | $CH_4$ | 10 Vol. % | No effect |
| Nitrogen dioxide | $NO_2$ | 50 ppm | No effect |
| Nitrogen monoxide | NO | 100 ppm | No effect |
| Propane | $C_3H_8$ | 2 Vol. % | No effect |
| Sulfur dioxide | $SO_2$ | 50 ppm | No effect |

(–) Indicates negative deviation