# DrägerSensor® XXS OV

**Order no. 68 11 530**

| Used in | Plug & Play | Replaceable | Guaranty | Expected sensor life | Selective filter |
|---|---|---|---|---|---|
| Dräger Pac 8000 | no | yes | 1 year | > 2 years | no |
| Dräger X-am 5000 | no | yes | 1 year | > 2 years | no |
| Dräger X-am 5600 | no | yes | 1 year | > 2 years | no |
| Dräger X-am 8000 | no | yes | 1 year | > 2 years | no |

## MARKET SEGMENTS

Production of plastics, disinfection, painter, chemical industry, pest control.

## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| **Detection limit:** | 0.5 ppm |
| **Resolution:** | 0.5 ppm |

| **Measurement range/ relative sensitivity** | Resolution/ Detection-limit | Relative sensitivity to EO[1)] |
|---|---|---|
| 0 bis 200 ppm $C_2H_4O$ (ethylene oxide) | 0.5 | 1.00 |
| 0 bis 200 ppm $C_3H_6O$ (propylene oxide) | 0.5 | ≈ 0.85 |
| 0 bis 100 ppm $C_2H_4$ (ethene) | 0.5 | ≈ 0.60 |
| 0 bis 100 ppm $C_3H_6$ (propene) | 2 | ≈ 0.65 |
| 0 bis 100 ppm $C_2H_3Cl$ (vinyl chloride) | 0.5 | ≈ 0.60 |
| 0 bis 200 ppm $CH_3OH$ (methanol) | 0.5 | ≈ 0.50 |
| 0 bis 100 ppm $CH_2CHCHCH_2$ (butadiene) | 1 | ≈ 1.40 |
| 0 bis 100 ppm HCHO (formaldehyde) | 2 | ≈ 0.80 |
| 0 bis 300 ppm $(H_3C)_2CHOH$ (isopropanol) | 2 | ≈ 0.35 |
| 0 bis 200 ppm $C_4H_8O$ (tetrahydrofuran) | 1 | ≈ 0.80 |
| 0 bis 100 ppm $C_2H_3OCH_2Cl$ (1-chloro-2,3 epoxypropane) | 1 | ≈ 0.35 |
| 0 bis 100 ppm $C_6H_5CHCH_2$ (styrene) | 1 | ≈ 0.70 |
| 0 bis 100 ppm $H_2CC(CH_3)COOCH_3$ (methyl methacrylate) | 1 | ≈ 0.40 |

| | |
|---|---|
| **Response time:** | |
| **Precision** | ≤ 20 seconds ($t_{50}$) |
| Sensitivity: | |
| **Long-term drift, at 20°C (68°F)** | ≤ ± 5% of measured value |
| Zero point: | |
| Sensitivity: | ≤ ± 5 ppm/year |
| **Warm-up time:** | ≤ ± 2% of measured value/month |
| **Ambient conditions** | ≤ 18 hours |
| Temperature: | |
| Humidity:[2)] | (–20 to 50)°C (–4 to 122)°F |
| Pressure: | (30 to 90)% RH |
| **Influence of temperature** | (700 to 1,300) hPa |
| Zero point: | ± 2 ppm at (–20 to 40)°C (–4 to 104)°F |
| Zero point: | ± 0.5 ppm/K at (40 to 50)°C (104 to 122)°F |
| Sensitivity: | ≤ ± 1% of measured value/K |

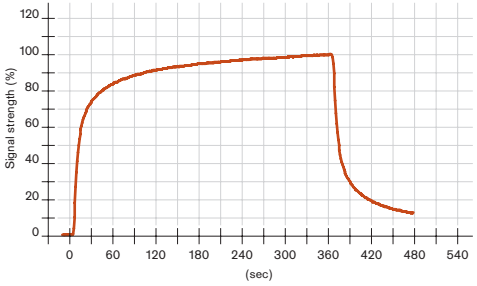
## TECHNICAL SPECIFICATIONS

| Influence of humidity | |
|---|---|
| Zero point: | No effect |
| Sensitivity: | ≤ ± 0.5% of measured value/% RH |
| **Test gas:** | approx. 3 to 12 ppm EO<br>The DrägerSensor XXS OV has a defined cross-sensitivity to ethylene oxide (EO) and carbon monoxide (CO), see supplement 90 33 548. The sensor can be calibrated with EO or CO as an alternative for all target gases. Surrogate calibration can lead to an additional measurement error of up to 30 %[3]). Dräger recommends calibrating gas detection devices with the gas which has to detected during operation. This method of target gas calibration is more accurate than calibration with a surrogate gas. A surrogate calibration and functional test with CO in consideration of the extended measurement tolerance must be given preference. Dräger also recommends using a test gas concentration in the range of the alarm thresholds to be monitored. |

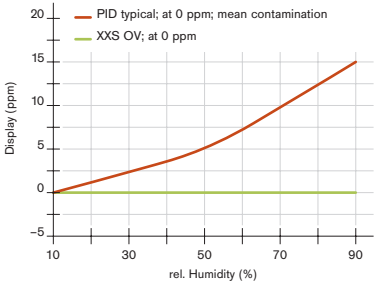
## SPECIAL CHARACTERISTICS

This sensor is especially suited for detecting leakages of numerous organic gases and vapors. Although it does not detect as broad a spectrum of gases as a PID sensor, it has the key advantage of being almost completely insensitive to moisture. It also does not need to be calibrated every day, having instead a six-month calibration interval typical of electrochemical sensors.

Sensor reaction to $C_2H_4O$ at 20 °C/68 °F
Flow = 0.5 l/min, with 20 ppm $C_2H_4O$




Influence of humidity on XXS OV sensors and PID sensors

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1) Factors depend on serial numbers and are mentioned in the supplement to the sensor instructions for use (90 33 548).
2) A use or storage over a longer period below the specified relative humidity may cause a change of sensor sensitivity due to dehydration. This effect is reversible once the relative humidity increases. Please consider the storage conditions stated on the packaging or in the instruction for use.
3) Only valid for use and storage in > 30 % r.h.

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 ethylene oxide. To be sure, please check if gas mixtures are present.

## RELEVANT CROSS-SENSITIVITIES

| Gas/vapor | Chem. symbol | Concentration | Display in ppm $C_2H_4O$ |
|---|---|---|---|
| Acetaldehyde | $CH_3CHO$ | 55 ppm | ≤ 15 |
| Acetic acid | $CH_3COOH$ | 100 ppm | No effect |
| Acetylene | $C_2H_2$ | 100 ppm | ≤ 150 |
| Acrylonitrile | $H_2CCHCN$ | 80 ppm | ≤ 5 |
| Ammonia | $NH_3$ | 100 ppm | No effect |
| Benzene | $C_6H_6$ | 2,000 ppm | No effect |
| Butyraldehyd | $C_3H_7CHO$ | 50 ppm | ≤ 17 ppm |
| Carbon dioxide | $CO_2$ | 30 Vol.-% | No effect |
| Carbon monoxide | CO | 100 ppm | ≤ 44 |
| Chlorine | $Cl_2$ | 10 ppm | No effect |
| Chlorobenzene | $C_6H_5Cl$ | 200 ppm | No effect |
| Dichloromethane | $CH_2Cl_2$ | 1,000 ppm | No effect |
| Diethyl ether | $(C_2H_5)_2O$ | 100 ppm | ≤ 60 |
| Dimethylformamide | $HCON(CH3_3)_2$ | 100 ppm | No effect |
| Ethane | $C_2H_6$ | 0.2 Vol.-% | No effect |
| Ethanol | $C_2H_5OH$ | 250 ppm | ≤ 150 |
| Ethyl acetate | $CH_3COOC_2H_5$ | 100 ppm | No effect |
| Ethylene glycol | $C_2H_6O_2$ | 50 ppm | ≤ 35 |
| Hydrogen | $H_2$ | 1,000 ppm | ≤ 5 |
| Hydrogen chloride | HCl | 20 ppm | ≤ 5 |
| Hydrogen cyanide | HCN | 20 ppm | ≤ 10 |
| Hydrogen sulfide | $H_2S$ | 20 ppm | ≤ 40 |
| Isobutylene | $(CH_3)_2CCH_2$ | 50 ppm | ≤ 45 |
| Nitrogen dioxide | $NO_2$ | 20 ppm | ≤ 2 |
| Nitrogen monoxide | NO | 20 ppm | ≤ 20 |
| Methane | $CH_4$ | 2 Vol.-% | No effect |
| Methyl isobutyl ketone | $(CH_3)_2CHCH_2COCH_3$ | 500 ppm | No effect |
| Phosgene | $COCl_2$ | 50 ppm | No effect |
| Sulfur dioxide | $SO_2$ | 20 ppm | ≤ 10 |
| Tetrachloroethylene | $CCl_2$ $CCl_2$ | 100 ppm | No effect |
| Toluene | $C_6H_5CH_3$ | 1,000 ppm | No effect |
| Trichloroethylene | $CHClCCl_2$ | 1,000 ppm | No effect |
| Vinyl acetate | $CH_3COOC_2H_3$ | 30 ppm | ≤ 30 |
| Xylene | $C_6H_4(CH_3)_2$ | 0.2 Vol.-% | No effect |

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D-10155-2009

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