

# DrägerSensor® XXS OV-A

Order no. 68 11 535

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, paintshops, chemical industry.

## TECHNICAL SPECIFICATIONS

<b>Detection limit:</b>	1 ppm		
<b>Resolution:</b>	1 ppm		
<b>Measurement range/ relative sensitivity</b>		Resolution/ Detection- limit	Relative sensitivity to EO <sup>1)</sup>
	0 bis 200 ppm C <sub>2</sub> H <sub>4</sub> O (ethylene oxide)	1	1.00
	0 bis 100 ppm H <sub>2</sub> CCHCN (acrylonitrile)	1	≈ 0.15
	0 bis 300 ppm (CH <sub>3</sub> ) <sub>2</sub> CCH <sub>2</sub> (isobutylene)	2	≈ 0.90
	0 bis 100 ppm CH <sub>3</sub> COOC <sub>2</sub> H <sub>3</sub> (vinyl acetate)	1	≈ 0.85
	0 bis 300 ppm C <sub>2</sub> H <sub>5</sub> OH (ethanol)	2	≈ 0.55
	0 bis 200 ppm CH <sub>3</sub> CHO (acetaldehyde)	1	≈ 0.35
	0 bis 200 ppm (C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> O (diethyl ether)	1	≈ 0.75
	0 bis 100 ppm C <sub>2</sub> H <sub>2</sub> (acetylene)	1	≈ 1.40
<b>Response time:</b>	≤ 40 seconds (t <sub>50</sub> )		
<b>Precision</b>			
Sensitivity:	≤ ± 20% of measured value		
<b>Long-term drift, at 20°C (68°F)</b>			
Zero point:	≤ ± 5 ppm/year		
Sensitivity:	≤ ± 3% of measured value/month		
<b>Warm-up time:</b>	≤ 18 hours		
<b>Ambient conditions</b>			
Temperature:	(-20 to 50)°C (-4 to 122)°F		
Humidity: <sup>2)</sup>	(30 to 90)% RH		
Pressure:	(700 to 1,300) hPa		
<b>Influence of temperature</b>			
Zero point:	(-20 to 40)°C (-4 to 104)°F = ± 2 ppm		
Zero point:	(40 to 60)°C (104 to 140)°F = ± 0.5 ppm/K		
Sensitivity:	≤ ± 1% of measured value/K		
<b>Influence of humidity</b>			
Zero point:	No effect		
Sensitivity:	≤ ± 0.5% of measured value/% RH		

## TECHNICAL SPECIFICATIONS

### Test gas:

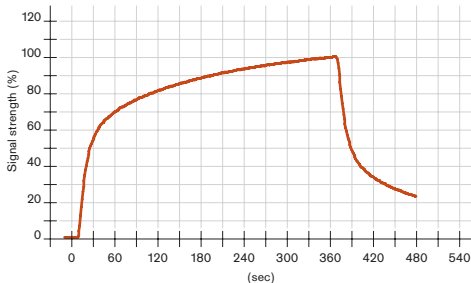
approx. 3 to 12 ppm EO

The DrägerSensor XXS OV-A has a defined cross-sensitivity to ethylene oxide (EO) and carbon monoxide (CO), see supplement 90 33 549. 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 %<sup>3)</sup>. Dräger recommends calibrating gas detection devices with the gas which has to be 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.

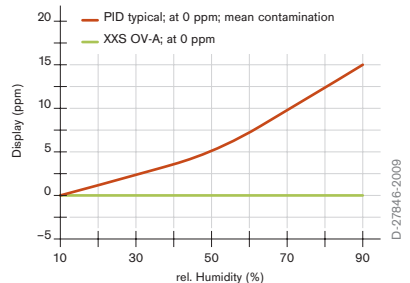
## SPECIAL CHARACTERISTICS

The DrägerSensor® XXS OV-A has the same excellent characteristics as the DrägerSensor® XXS OV, but it has also been optimized for other organic gases and vapors. Just like the DrägerSensor® XXS OV, the DrägerSensor® XXS OV-A can be calibrated with EO as a replacement, this may produce an additional measuring error of 30%. For more accurate measurements, we recommend calibrating using the target gas – i.e. the gas that you intend to detect in actual operation.

Sensor reaction to C<sub>2</sub>H<sub>4</sub>O at 20 °C/68 °F  
Flow = 0.5 l/min, with 20 ppm C<sub>2</sub>H<sub>4</sub>O



Influence of humidity on XXS OV-A sensors  
and PID sensors



- 1) Factors depend on serial numbers and are mentioned in the supplement to the sensor instructions for use (90 33 549).
- 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 may fluctuate by  $\pm 30\%$ . 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 <sub>2</sub> H <sub>4</sub> O
1-chloro-2, 3 epoxypropane	C <sub>2</sub> H <sub>3</sub> OCH <sub>2</sub> Cl	25 ppm	≤ 10
Acetic acid	CH <sub>3</sub> COOH	100 ppm	No effect
Ammonia	NH <sub>3</sub>	100 ppm	No effect
Benzene	C <sub>6</sub> H <sub>6</sub>	2,000 ppm	No effect
Butadiene	CH <sub>2</sub> CHCHCH <sub>2</sub>	50 ppm	≤ 75
Carbon dioxide	CO <sub>2</sub>	30 Vol.-%	No effect
Carbon monoxide	CO	100 ppm	≤ 45
Chlorine	Cl <sub>2</sub>	10 ppm	No effect
Chlorobenzene	C <sub>6</sub> H <sub>5</sub> Cl	200 ppm	No effect
Dichloromethane	CH <sub>2</sub> Cl <sub>2</sub>	1,000 ppm	No effect
Dimethylformamide	HCON(CH <sub>3</sub> ) <sub>2</sub>	100 ppm	No effect
Ethene	C <sub>2</sub> H <sub>4</sub>	50 ppm	≤ 45
Ethyl acetate	CH <sub>3</sub> COOC <sub>2</sub> H <sub>5</sub>	100 ppm	No effect
Formaldehyde	HCOH	40 ppm	≤ 25
Hydrogen	H <sub>2</sub>	1,000 ppm	≤ 5
Hydrogen chloride	HCl	20 ppm	≤ 3
Hydrogen cyanide	HCN	20 ppm	≤ 8
Hydrogen sulfide	H <sub>2</sub> S	20 ppm	≤ 40
Isobutylene	(CH <sub>3</sub> ) <sub>2</sub> CCH <sub>2</sub>	100 ppm	≤ 75
Isopropanol	(H <sub>3</sub> C) <sub>2</sub> CHOH	250 ppm	≤ 110
Methane	CH <sub>4</sub>	2 Vol.-%	No effect
Methanol	CH <sub>3</sub> OH	100 ppm	≤ 160
Methyl methacrylate	H <sub>2</sub> CC(CH <sub>3</sub> )COOCH <sub>3</sub>	60 ppm	≤ 25
Methyl isobutyl ketone	(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> COCH <sub>3</sub>	500 ppm	No effect
Nitrogen dioxide	NO <sub>2</sub>	20 ppm	≤ 1
Nitrogen monoxide	NO	20 ppm	≤ 15
Phosgene	COCl <sub>2</sub>	50 ppm	No effect
Propene	C <sub>3</sub> H <sub>6</sub>	50 ppm	≤ 35
Propylene oxide	C <sub>3</sub> H <sub>6</sub> O	50 ppm	≤ 45
Sulfur dioxide	SO <sub>2</sub>	20 ppm	≤ 9
Styrene	C <sub>6</sub> H <sub>5</sub> CHCH <sub>2</sub>	35 ppm	≤ 35
Tetrahydrofuran	C <sub>4</sub> H <sub>8</sub> O	60 ppm	≤ 55
Trichloroethylene	CHClCCl <sub>2</sub>	1,000 ppm	No effect
Vinyl chloride	C <sub>2</sub> H <sub>3</sub> Cl	50 ppm	≤ 40

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