

# DrägerSensor® XXS Odorant

Order no. 68 12 535

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

## Selective filter

B2X (68 12 424) – replaceable.

Cross sensitivities to hydrogen sulfide (H<sub>2</sub>S) and sulfur dioxide (SO<sub>2</sub>) are eliminated.

The filter's service life can be calculated as follows: 1,000 ppm x hours of contaminant gas. Example: Given constant concentration of 10 ppm H<sub>2</sub>S will be: Service life = 1,000 ppm x hours / 10 ppm = 100 hours. Due to the change of sensitivity, a calibration is necessary after installation. The measurement value response time increases after the installation of the filter.

## MARKET SEGMENTS

Gas supply companies

## TECHNICAL SPECIFICATIONS

Detection limit:	1 ppm	
Resolution:	0.5 ppm	
Measurement range/ relative sensitivity	0 - 40 ppm THT (tetrahydrothiophene)	1.00
	0 - 40 ppm (CH <sub>3</sub> ) <sub>3</sub> CSH (tert.-butyl mercaptane)	2.50
	0 - 40 ppm C <sub>2</sub> H <sub>5</sub> CH(CH <sub>3</sub> )SH (sec.-butyl mercaptane)	2.00
	0 - 40 ppm CH <sub>3</sub> SH (methyl mercaptane)	4.00
	0 - 40 ppm C <sub>2</sub> H <sub>5</sub> SH (ethyl mercaptane)	3.00
	0 - 100 ppm (CH <sub>3</sub> ) <sub>2</sub> S (dimethyl sulfide)	1.80
	0 - 40 ppm CH <sub>3</sub> SSCH <sub>3</sub> (dimethyl disulfide)	4.00
Response time:	≤ 90 seconds (t <sub>90</sub> )	
Precision		
Sensitivity:	≤ ± 3 % measured value/month	
Long-term drift, at 20°C (68°F)		
Zero point:	≤ ± 2 ppm/year	
Sensitivity:	≤ ± 2% measured value/month	
Warm-up time:	≤ 12 hours	
Ambient conditions		
Temperature*:	(-20 to 50)°C (-4 to 122) °F for THT, TBM, SBM (5 to 40)°C (32 to 104) °F for MeM, EtM, DMS, DMDS	
Humidity*:	(10 to 90) % RH	
Pressure:	(700 to 1300) hPa	
Influence of temperature		
Zero point:	≤ ± 2 ppm	
Sensitivity:	≤ ± 10 % of measured value	
Influence of humidity		
Zero point:	≤ ± 0,1 ppm / % RH	
Sensitivity:	≤ ± 0,2 % of measured value/ RH	
Test gas:	THT test gas of approx. 2 to 18 ppm or an other of the target gases: (CH <sub>3</sub> ) <sub>3</sub> CSH, C <sub>2</sub> H <sub>5</sub> CH(CH <sub>3</sub> )SH, CH <sub>3</sub> SH, C <sub>2</sub> H <sub>5</sub> SH, (CH <sub>3</sub> ) <sub>2</sub> S, CH <sub>3</sub> SSCH <sub>3</sub>	

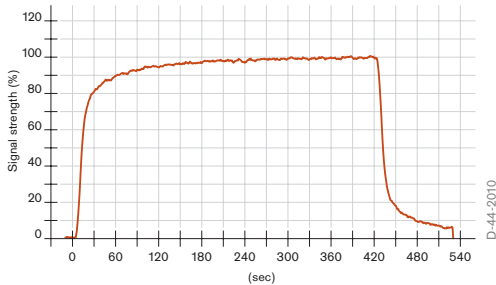
\*Sudden temperature or humidity changes lead to dynamic effects (fluctuations).

These dynamic effects decrease within 2 to 3 minutes.

## SPECIAL CHARACTERISTICS

This sensor can be used to monitor seven different odorants in the ambient air or (for short periods) in natural gas. It is sufficient to calibrate the sensor using a THT test gas. By doing so, all of the other target gases are then automatically calibrated. In addition to a quick response time this Odorant sensor are highly selective. An internal, replaceable selective filter filters out most associated gases in natural gases like  $\text{H}_2\text{S}$  and  $\text{SO}_2$ .

Typical gas response of Odorant at 20 °C  
flow = 0,5 l/min, purged with 10 ppm THT



The values shown in the following table are standard and apply to new sensors. The values maybe 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  $\text{NH}_3$ . To be sure, please check if gas mixtures are present.

## RELEVANT CROSS-SENSITIVITIES

Gas/vapor	Chem. symbol	Concentration	Display in ppm THT without selective filter	Display in ppm THT with selective filter
Ammonia	$\text{NH}_3$	200 ppm	No effect	No effect
Carbon dioxide	$\text{CO}_2$	1.5 Vol.-%	No effect	No effect
Carbon monoxide	$\text{CO}$	125 ppm	No effect	No effect
Chlorine	$\text{Cl}_2$	8 ppm	$\leq 3 \text{ ppm}^{(-)}$	No effect
Ethene	$\text{C}_2\text{H}_4$	50 ppm	No effect	No effect
Hydrogen	$\text{H}_2$	1000 ppm	No effect	No effect
Hydrogen cyanide	$\text{HCN}$	50 ppm	No effect	No effect
Hydrogen sulfide	$\text{H}_2\text{S}$	10 ppm	$\leq 30 \text{ ppm}$	No effect
Isobutylene	$(\text{CH}_3)_2\text{CCH}_2$	100 ppm	$\leq 3.5 \text{ ppm}$	$\leq 3.5 \text{ ppm}$
Methane	$\text{CH}_4$	100 Vol.-%	No effect	No effect
Methanol	$\text{CH}_3\text{OH}$	200 ppm	$\leq 5 \text{ ppm}$	$\leq 5 \text{ ppm}$
Nitrogen dioxide	$\text{NO}_2$	10 ppm	No effect	No effect
Nitrogen monoxide	$\text{NO}$	20 ppm	$\leq 30 \text{ ppm}$	$\leq 30 \text{ ppm}$
n-propyl mercaptan	$\text{C}_3\text{H}_7\text{SH}$	6 ppm	$\leq 4 \text{ ppm}$	$\leq 4 \text{ ppm}$
Phosphine	$\text{PH}_3$	5 ppm	$\leq 15 \text{ ppm}$	$\leq 15 \text{ ppm}$
Sulfur dioxide	$\text{SO}_2$	20 ppm	$\leq 15 \text{ ppm}$	No effect

(-) Indicates negative deviation