

DrägerSensor® XS EC Odorant

Order no. 68 09 200

Used in	Plug & Play	Replaceable	Guaranty	Expected sensor life
Dräger X-am 7000	yes	yes	1 year	> 2 years

Selective filter

B2T, 68 09 198 – replaceable

Cross sensitivities from acidic gases (H₂S, SO₂) are largely eliminated.

The filter's service life can be calculated as follows: 40 ppm x hours of contaminant gas. Example: Given constant concentration of 1 ppm H₂S will be: Service life = 40 ppm x hours / 1 ppm = 40 hours. 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	0 to 40 ppm C ₄ H ₈ S (tetrahydrothiophene) 1.00
relative sensitivity	0 to 40 ppm (CH ₃) ₃ CSH (t-butyl mercaptan) 1.60
	0 to 40 ppm C ₂ H ₅ CH(CH ₃)SH (sec-butyl mercaptan) 1.60
	0 to 40 ppm CH ₃ SH (methyl mercaptan) 2.00
	0 to 40 ppm C ₂ H ₅ SH (ethyl mercaptan) 1.50
	0 to 100 ppm (CH ₃) ₂ S (dimethyl sulfide) 1.20
	0 to 40 ppm CH ₃ SSCH ₃ (dimethyl disulfide) 0.33
Response time:	≤ 90 seconds (T ₉₀)
Measurement accuracy	
Sensitivity:	≤ ± 5% of measured value
Long-term drift, at 20°C (68°F)	
Zero point:	≤ ± 1 ppm/month
Sensitivity:	≤ ± 3% of 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*:	(0 to 90)% RH
Pressure:	(700 to 1,300) hPa
Influence of temperature	
Zero point:	≤ ± 1 ppm
Sensitivity:	≤ ± 5% of measured value
Influence of humidity	
Zero point:	≤ ± 0.01 ppm/% RH
Sensitivity:	≤ ± 0.1% of measured value/% RH
Test gas:	2 to 20 ppm THT or of one of the other target gases: (CH ₃) ₃ CSH, C ₂ H ₅ CH(CH ₃)SH, CH ₃ SH, C ₂ H ₅ SH, (CH ₃) ₂ S, CH ₃ SSCH ₃

*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.

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 THT. 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
Acetone	CH ₃ COCH ₃	1,000 ppm	≤ 3	≤ 3
Ammonia	NH ₃	200 ppm	No effect	No effect
Carbon dioxide	CO ₂	1.5 Vol. %	No effect	No effect
Carbon monoxide	CO	125 ppm	≤ 3	≤ 3
Chlorine	Cl ₂	8 ppm	≤ 3 ⁽⁻⁾	No effect
Ethene	C ₂ H ₄	50 ppm	No effect	No effect
Hydrogen	H ₂	1,000 ppm	≤ 2	≤ 2
Hydrogen cyanide	HCN	50 ppm	No effect	No effect
Hydrogen sulfide	H ₂ S	10 ppm	≤ 30	No effect
Methane	CH ₄	100 Vol. %	No effect	No effect
Methanol	CH ₃ OH	175 ppm	≤ 8	≤ 8
Nitrogen dioxide	NO ₂	20 ppm	≤ 2	≤ 2
Nitrogen monoxide	NO	20 ppm	≤ 30	≤ 30
n-propyl mercaptan	C ₃ H ₇ SH	6 ppm	≤ 4	≤ 4
Phosphine	PH ₃	5 ppm	≤ 15	≤ 15
Sulfur dioxide	SO ₂	20 ppm	≤ 15	No effect