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 (H_2S, SO_2) 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 H_2S 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 relative sensitivity	0 to 40 ppm C_4H_8S (tetrahydrothiophene)	1.00
	0 to 40 ppm $(CH_3)_3CSH$ (t-butyl mercaptan)	1.60
	0 to 40 ppm $C_2H_5CH(CH_3)SH$ (sec-butyl mercaptan)	1.60
	0 to 40 ppm CH_3SH (methyl mercaptan)	2.00
	0 to 40 ppm C_2H_5SH (ethyl mercaptan)	1.50
	0 to 100 ppm $(CH_3)_2S$ (dimethyl sulfide)	1.20
	0 to 40 ppm CH_3SSCH_3 (dimethyl disulfide)	0.33
Response time:	≤ 90 seconds (t_{90})	
Precision		
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: $(CH_3)_3CSH$, $C_2H_5CH(CH_3)SH$, CH_3SH, C_2H_5SH, $(CH_3)_2S$, CH_3SSCH_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 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 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_3COCH_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_2H_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_2S	10 ppm	≤ 30	No effect
Methane	CH_4	100 Vol. %	No effect	No effect
Methanol	CH_3OH	175 ppm	≤ 8	≤ 8
Nitrogen dioxide	NO_2	20 ppm	≤ 2	≤ 2
Nitrogen monoxide	NO	20 ppm	≤ 30	≤ 30
n-propyl mercaptan	C_3H_7SH	6 ppm	≤ 4	≤ 4
Phosphine	PH_3	5 ppm	≤ 15	≤ 15
Sulfur dioxide	SO_2	20 ppm	≤ 15	No effect

(–) Indicates negative deviation