

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 (H₂S) and sulfur dioxide (SO₂) 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 H₂S 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

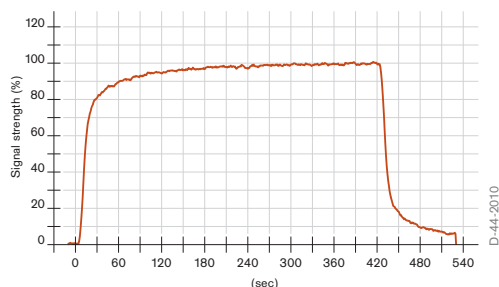
| | |
|--|---|
| Detection limit: | 1 ppm |
| Resolution: | 0.5 ppm |
| Measurement range/ relative sensitivity | 0 - 40 ppm THT (tetrahydrothiophene) 1.00 0 - 40 ppm (CH ₃) ₃ CSH (tert.-butyl mercaptane) 2.50 0 - 40 ppm C ₂ H ₅ CH(CH ₃)SH (sec.-butyl mercaptane) 2.00 0 - 40 ppm CH ₃ SH (methyl mercaptane) 4.00 0 - 40 ppm C ₂ H ₅ SH (ethyl mercaptane) 3.00 0 - 100 ppm (CH ₃) ₂ S (dimethyl sulfide) 1.80 0 - 40 ppm CH ₃ SSCH ₃ (dimethyl disulfide) 4.00 |
| Response time: | ≤ 90 seconds (T ₉₀) |
| Measurement accuracy | |
| 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 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. 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 gas like H₂S and SO₂.

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 NH₃. 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 | NH ₃ | 200 ppm | No effect | No effect |
| Carbon dioxide | CO ₂ | 1.5 Vol.-% | No effect | No effect |
| Carbon monoxide | CO | 125 ppm | No effect | No effect |
| Chlorine | Cl ₂ | 8 ppm | ≤ 3 ppm ⁽⁻⁾ | No effect |
| Ethene | C ₂ H ₄ | 50 ppm | No effect | No effect |
| Hydrogen | H ₂ | 1000 ppm | No effect | No effect |
| Hydrogen cyanide | HCN | 50 ppm | No effect | No effect |
| Hydrogen sulfide | H ₂ S | 10 ppm | ≤ 30 ppm | No effect |
| Isobutylene | (CH ₃) ₂ CCH ₂ | 100 ppm | ≤ 3.5 ppm | ≤ 3.5 ppm |
| Methane | CH ₄ | 100 Vol.-% | No effect | No effect |
| Methanol | CH ₃ OH | 200 ppm | ≤ 5 ppm | ≤ 5 ppm |
| Nitrogen dioxide | NO ₂ | 10 ppm | No effect | No effect |
| Nitrogen monoxide | NO | 20 ppm | ≤ 30 ppm | ≤ 30 ppm |
| n-propyl mercaptan | C ₃ H ₇ SH | 6 ppm | ≤ 4 ppm | ≤ 4 ppm |
| Phosphine | PH ₃ | 5 ppm | ≤ 15 ppm | ≤ 15 ppm |
| Sulfur dioxide | SO ₂ | 20 ppm | ≤ 15 ppm | No effect |

(-) Indicates negative deviation