

DrägerSensor® XS EC Hydride

Order no. 68 09 135

Used in	Plug & Play	Replaceable	Guaranty	Expected sensor life	Selective filter
Dräger X-am 7000	yes	yes	1 year	> 3 years > 1 year for B ₂ H ₆ and GeH ₄	–

MARKET SEGMENTS

Inorganic chemicals, industry, fumigation, pre entry measurement.

TECHNICAL SPECIFICATIONS

Detection limit:	0.02 ppm	
Resolution:	0.01 ppm	
Measurement range:	0 to 20 ppm PH ₃ (hydrogen phosphide)	1.00
	0 to 20 ppm AsH ₃ (arsine)	0.85
	0 to 1 ppm B ₂ H ₆ (diborane)	0.40
	0 to 20 ppm GeH ₄ (germanium tetrahydride)	0.95
	0 to 50 ppm SiH ₄ (silane)	0.95
	0 to 10 ppm H ₂ Se (hydrogen selenide)*	0.40
Response time:	≤ 10 seconds (t ₉₀) for PH ₃ , B ₂ H ₆ , SiH ₄	
	≤ 20 seconds (t ₉₀) for AsH ₃ , GeH ₄ , H ₂ Se	
Precision		
Sensitivity:	≤ ± 2% of measured value	
Long-term drift, at 20°C (68°F)		
Zero point:	≤ ± 0.02 ppm/month	
Sensitivity:	≤ ± 2% of measured value/month for PH ₃ , AsH ₃	
	≤ ± 3% of measured value/month for SiH ₄	
	≤ ± 5% of measured value/month for B ₂ H ₆ , GeH ₄ , H ₂ Se	
Warm-up time:	≤ 15 minutes	
Ambient conditions		
Temperature:	(–20 to 50)°C (–4 to 122)°F	
	(0 to 40)°C (32 to 104)°F for H ₂ Se	
Humidity:	(10 to 90)% RH	
Pressure:	(700 to 1,300) hPa	
Influence of temperature		
Zero point:	≤ ± 0.02 ppm	
Sensitivity:	≤ ± 5% of measured value	
Influence of humidity		
Zero point:	≤ ± 0.02 ppm	
Sensitivity:	≤ ± 0.05% of measured value/% RH	
Test gas:	0.2 to 10 ppm H ₂ Se	
	0.2 to 20 ppm PH ₃ , AsH ₃ or GeH ₄	
	0.2 to 50 ppm SiH ₄	
	0.1 to 1 ppm B ₂ H ₆	

*with limited temperature range: 0 to 40°C dry test gas

SPECIAL CHARACTERISTICS

This sensor can be used to monitor the concentration of PH₃ (hydrogen phosphide), AsH₃ (arsine), B₂H₆ (diborane), GeH₄ (germanium tetrahydride) or SiH₄ (silane) in the ambient air. It is sufficient to calibrate the sensor using a PH₃ 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 hydride. To be sure, please check if gas mixtures are present.

RELEVANT CROSS-SENSITIVITIES

Gas/vapor	Chem. symbol	Concentration	Display in ppm PH ₃
Acetone	CH ₃ COCH ₃	1,000 ppm	No effect
Acetylene	C ₂ H ₂	200 ppm	≤ 12
Ammonia	NH ₃	250 ppm	No effect
Carbon dioxide	CO ₂	1.5 Vol. %	No effect
Carbon monoxide	CO	150 ppm	≤ 0.1
Chlorine	Cl ₂	10 ppm	≤ 2 ⁽⁻⁾
Ethene	C ₂ H ₄	1,000 ppm	≤ 0.2
Formaldehyde	HCHO	50 ppm	≤ 0.15
Hydrogen	H ₂	1,000 ppm	≤ 0.25
Hydrogen cyanide	HCN	50 ppm	≤ 2
Hydrogen sulfide	H ₂ S	20 ppm	≤ 20
i-propanol	(CH ₃) ₂ CHOH	1 Vol. %	No effect
Methane	CH ₄	4 Vol. %	No effect
Methanol	CH ₃ OH	200 ppm	No effect
Nitrogen dioxide	NO ₂	20 ppm	≤ 5 ⁽⁻⁾
Nitrogen monoxide	NO	20 ppm	No effect
Sulfur dioxide	SO ₂	10 ppm	≤ 2