DrägerSensor® XS EC H_2S
DrägerSensor® XS 2 H_2S
DrägerSensor® XS R H_2S

Order no. 68 09 110
68 10 370
68 10 260

Used in	Plug & Play	Replaceable	Guaranty	Expected sensor life	Selective filter
Dräger X-am 7000	yes	yes	XS EC: 3 years XS 2: 2 years XS R: 5 years	> 5 years > 3 years = 5 years (limited operation time)	–

MARKET SEGMENTS

Waste disposal, petrochemical, fertilizer production, sewage, mining and tunneling, shipping, inorganic chemicals, steel industry, pulp and paper, organic chemicals, oil and gas, hazmat, biogas.

TECHNICAL SPECIFICATIONS

Detection limit:	1 ppm for XS EC/XS /XS R
Resolution:	0.1 ppm for XS EC/XS 2/XS R
Measurement range:	0 to 100 ppm H_2S (hydrogen sulfide)
Response time:	≤ 20 seconds (t_{90}) - XS R
	≤ 25 seconds (t_{90}) - XS EC
	≤ 30 seconds (t_{90}) - XS 2
Precision	
Sensitivity:	≤ ± 2% of measured value - XS EC/XS R
	≤ ± 1% of measured value - XS 2
Long-term drift, at 20°C (68°F)	
Zero point:	≤ ± 1 ppm/year - XS EC/XS R
	≤ ± 1 ppm/month - XS 2
Sensitivity:	≤ ± 1% of measured value/month
Warm-up time:	≤ 12 hours - XS EC / XS 2 / XS R
Ambient conditions	
Temperature*:	(–20 to 50)°C (–4 to 122)°F - XS EC
	(–40 to 50)°C (–40 to 122)°F - XS 2/XS R
Humidity*:	(10 to 90)% RH
Pressure:	(700 to 1,300) hPa
Influence of temperature	
Zero point:	≤ ± 5 ppm - XS EC/XS microPac, ≤ ± 2 ppm - XS 2/XS R
Sensitivity:	≤ ± 5% of measured value - XS EC/XS 2/XS R
Influence of humidity	
Zero point:	≤ ± 0.02 ppm/% RH - XS EC/XS 2, no effect - XS R
Sensitivity:	≤ ± 0.05% of measured value/% RH - XS EC/XS 2/XS R
Test gas:	approx. 5 to 100 ppm H_2S test gas

*Sudden temperature or humidity changes lead to dynamic effects (fluctuations). These dynamic effects decrease within 2 to 3 minutes.

SPECIAL CHARACTERISTICS

These sensor's advantages include fast response times and excellent linearity. At concentrations up to 20 ppm, sulfur dioxide only has a minor effect on hydrogen sulfide readings. This, therefore, enables the selective measurement of hydrogen sulfide alongside sulfur dioxide.

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 H_2S. To be sure, please check if gas mixtures are present.

RELEVANT CROSS-SENSITIVITIES DrägerSensor® XS EC H_2S

Gas/vapor	Chem. symbol	Concentration	Display in ppm H_2S
Acetone	CH_3COCH_3	1,000 ppm	≤ 4
Acetylene	C_2H_2	0.6 Vol. %	≤ 10
Ammonia	NH_3	500 ppm	No effect
Benzene	C_6H_6	0.6 Vol. %	No effect
Carbon dioxide	CO_2	1.5 Vol. %	≤ 1(–)
Carbon disulfide	CS_2	15 ppm	No effect
Carbon monoxide	CO	125 ppm	≤ 3
Chlorine	Cl_2	20 ppm	≤ 2(–)
Dimethyldisulfide	CH_3SSCH_3	20 ppm	≤ 13
Dimethylsulfide	$(CH_3)_2S$	20 ppm	≤ 6
Ethanol	C_2H_5OH	200 ppm	≤ 2
Ethanethiol	C_2H_5SH	20 ppm	≤ 5
Ethene	C_2H_4	1,000 ppm	≤ 10
Gasoline	–	0.55 Vol. %	No effect
Hexane	C_6H_{14}	0.6 Vol. %	No effect
Hydrogen	H_2	1 Vol. %	≤ 10
Hydrogen chloride	HCl	40 ppm	No effect
Hydrogen cyanide	HCN	50 ppm	No effect
Methane	CH_4	5 Vol. %	No effect
Methanol	CH_3OH	200 ppm	≤ 10
Methylmercaptane	CH_3SH	20 ppm	≤ 15
Nitrogen dioxide	NO_2	20 ppm	No effect
Nitrogen monoxide	NO	20 ppm	≤ 10
Octane	C_8H_{18}	0.4 Vol. %	No effect
Phosphine	PH_3	5 ppm	≤ 5
Propane	C_3H_8	1 Vol. %	No effect
Propene	C_3H_6	0.5 Vol. %	No effect
Sulfur dioxide	SO_2	20 ppm	≤ 4
sec-Butylmercaptan	$C_4H_{10}SH$	20 ppm	≤ 7
Tetrahydrothiophene	C_4H_5S	20 ppm	≤ 4
Toluene	$C_2H_5CH_3$	0.6 Vol. %	No effect
tert-Butylmercaptane	$(CH_3)_3CSH$	20 ppm	≤ 10
Trichloroethylene	$CHClCCl_2$	1,000 ppm	No effect
Xylol	$C_6H_4(CH_3)_2$	0.5 Vol. %	≤ 4

(–) Indicates negative deviation

RELEVANT CROSS-SENSITIVITIES DrägerSensor® XS 2 H_2S

Gas/vapor	Chem. symbol	Concentration	Display in ppm H_2S
Acetone	CH_3COCH_3	1,000 ppm	≤4
Acetylene	C_2H_2	0.6 Vol. %	≤10
Ammonia	NH_3	500 ppm	No effect
Carbon dioxide	CO_2	1.5 Vol. %	No effect
Carbon disulfide	CS_2	15 ppm	No effect
Carbon monoxide	CO	125 ppm	≤3
Chlorine	Cl_2	20 ppm	≤2(–)
Ethane	C_2H_6	0.2 Vol. %	No effect
Ethanol	C_2H_5OH	200 ppm	≤2
Ethanethiol	C_2H_5SH	10 ppm	≤5
Ethene	C_2H_4	1,000 ppm	≤10
Hexane	C_6H_{14}	0.6 Vol. %	No effect
Hydrogen	H_2	1 Vol. %	≤10
Hydrogen chloride	HCl	40 ppm	No effect
Hydrogen cyanide	HCN	50 ppm	No effect
Methane	CH_4	5 Vol. %	No effect
Methanol	CH_3OH	200 ppm	≤10
Nitrogen dioxide	NO_2	20 ppm	No effect
Nitrogen monoxide	NO	20 ppm	≤10
Phosgene	$COCl_2$	50 ppm	No effect
Phosphine	PH_3	5 ppm	≤5
Propane	C_3H_8	1 Vol. %	No effect
Sulfur dioxide	SO_2	20 ppm	≤4
Tetrahydrothiophene	C_4H_5S	10 ppm	≤4
Toluene	$C_2H_5CH_3$	0.6 Vol. %	No effect
Xylene	$C_6H_4(CH_3)_2$	0.5 Vol. %	≤4

(–) Indicates negative deviation

RELEVANT CROSS-SENSITIVITIES DrägerSensor® XS R H_2S

Gas/vapor	Chem. symbol	Concentration	Display in ppm H_2S
Acetone	CH_3COCH_3	1,000 ppm	≤ 4
Acetylene	C_2H_2	0.6 Vol. %	≤ 10
Ammonia	NH_3	500 ppm	No effect
Benzene	C_6H_6	0.6 Vol. %	No effect
Carbon dioxide	CO_2	1.5 Vol. %	No effect
Carbon disulfide	CS_2	15 ppm	No effect
Carbon monoxide	CO	125 ppm	≤ 3
Chlorine	Cl_2	8 ppm	≤ 2(–)
Ethanol	C_2H_5OH	200 ppm	≤ 2
Ethanethiol	C_2H_5SH	10 ppm	≤ 5
Ethene	C_2H_4	1,000 ppm	≤ 10
Gasoline	–	0.55 Vol. %	No effect
Hexane	C_6H_{14}	0.6 Vol. %	No effect
Hydrogen	H_2	1 Vol. %	≤ 10
Hydrogen chloride	HCl	40 ppm	No effect
Hydrogen cyanide	HCN	50 ppm	No effect
Methane	CH_4	5 Vol. %	No effect
Methanol	CH_3OH	200 ppm	≤ 10
Nitrogen dioxide	NO_2	20 ppm	No effect
Nitrogen monoxide	NO	20 ppm	≤ 10
Octane	C_8H_{18}	0.4 Vol. %	No effect
Phosgene	$COCl_2$	50 ppm	No effect
Phosphine	PH_3	5 ppm	≤ 5
Propane	C_3H_8	1 Vol. %	No effect
Propene	C_3H_6	0.5 Vol. %	No effect
Sulfur dioxide	SO_2	20 ppm	≤ 4
Tetrahydrothiophene	C_4H_5S	10 ppm	≤ 4
Toluene	$C_2H_5CH_3$	0.6 Vol. %	No effect
Xylene	$C_6H_4(CH_3)_2$	0.5 Vol. %	≤ 4

(–) Indicates negative deviation