DrägerSensor® CatEx SR

Order no. 68 51 900

Used in	Plug & Play	Replaceable	Guaranty	Expected sensor life	Selective filter
Dräger X-am 2800	no	yes	3 years	> 4 years	no

MARKET SEGMENTS

Telecommunications, shipping, sewage, gas supply companies, refineries, fire services, chemical industry, mining, landfills, biogas plants, sewage treatment plants, tunneling, hydrogen production and storage

TECHNICAL SPECIFICATIONS

Detection limit:	2 % LEL (at calibration with methane)
Resolution:	1 % LEL for measurement range 0 to 100 % LEL, 0.05 Vol.-% for measurement range 0 to 5 Vol.-% CH_4 (methane)
Measurement range:	0 to 100 % LEL / 0 to 5 Vol.-% CH_4 (methane)
Ambient conditions	
Temperature*:	-20 to 55 °C (-4 to 131 °F)
Humidity:	0 to 95 % RH
Pressure:	700 to 1300 hPa
Warm-up time:	≤ 1 minute

TYPICAL MEASURING PROPERTIES FOR THE MEASUREMENT RANGE 0 TO 100 % LEL WHEN CALIBRATED WITH METHANE IN AIR:

Response time:	Diffusion mode (t_{50})	≤ 6 seconds
	Diffusion mode (t_{90})	≤ 11 seconds
	Pump mode (t_{50})	≤ 6 seconds
	Pump mode (t_{90})	≤ 9 seconds
Precision:		
Zero point:	≤ ± 1 % LEL	
Sensitivity:	≤ ± 1 % LEL at 50 % LEL	
Linearity:	≤ ± 10 % of mesaured value	
Influence of temperature		
Zero point:	≤ ± 0.05 % LEL/K	
Sensitivity:	≤ ± 0.05 % LEL/K at 50 % LEL	
Influence of humidity (at 40°C)		
Zero point:	≤ ± 0.03 % LEL/% RH	
Sensitivity:	≤ ± 0.03 % LEL/% RH at 50 % LEL	
Influence of pressure		
Zero point:	≤ ± 0.05 % LEL/kPa	
Sensitivity:	≤ ± 0.10 % LEL/kPa at 50 % LEL	
Long-term drift		
Zero point:	≤ ± 1 % LEL/month	
Sensitivity:	≤ ± 1 % LEL/month at 50 % LEL	

* If the Dräger gas warning device is set to hydrogen, measurements are only possible at temperatures > -10 °C.
For further information, please refer to the instructions for use of the sensor!

TYPICAL MEASURING PROPERTIES FOR THE MEASUREMENT RANGE 0 TO 100 % LEL WHEN CALIBRATED WITH PROPANE IN AIR:

Response time:	Diffusion mode (t_{50}) ≤ 6 seconds Diffusion mode (t_{90}) ≤ 17 seconds Pump mode (t_{50}) ≤ 7 seconds Pump mode (t_{90}) ≤ 9 seconds
Precision:	
Zero point:	≤ ± 1 % LEL
Sensitivity:	≤ ± 1 % LEL at 50 % LEL
Linearity:	≤ ± 10 % of mesaured value
Influence of temperature	
Zero point:	≤ ± 0.05 % LEL/K
Sensitivity:	≤ ± 0.05 % LEL/K at 50 % LEL
Influence of humidity (at 40°C)	
Zero point:	≤ ± 0.03 % LEL/% RH
Sensitivity:	≤ ± 0.03 % LEL/% RH at 50 % LEL
Influence of pressure	
Zero point:	≤ ± 0.10 % LEL/kPa
Sensitivity:	≤ ± 0.10 % LEL/kPa at 50 % LEL
Long-term drift	
Zero point:	≤ ± 1 % LEL/month
Sensitivity:	≤ ± 1 % LEL/month at 50 % LEL
Effect of sensor poisons:	Halogenated hydrocarbons or volatile silicon, sulphur, heavy metal compounds may damage the CatEx Sensor. Hydrogen sulfide H_2S 1000 ppmh ≤ ± 2 % of sensitivity Hexamethyldisiloxane HMDS 10 ppmh ≤ ± 5 % sensitivity Hexamethyldisiloxane HMDS 30 ppmh ≤ ± 15 % sensitivity After an exposure to 10 ppm HMDS in air for 6 hours the loss of sensitivity is less than 50%
Test gas:	approx. 2.5 Vol.-% CH_4 approx. 0.9 Vol.-% C_3H_8

SPECIAL CHARACTERISTICS

Due to its special design, the DrägerSensor® CatEx SR (Shock Resistant) is particularly insensitive to shock loads. The shock resistance significantly exceeds the general standard requirements. In addition to this shock protection, it shows a good vapor measurement capability and is therefore suitable for the detection of combustible gases and vapors. It is ready for use very quickly, since a zero point and sensitivity adjustment for the %LEL measuring range can be carried out after approx. 60 seconds. In addition, the sensor has a very good long-term stability, low moisture influence and excellent poisoning resistance to sensor poisons such as siloxanes and hydrogen sulfide.

THE DETECTION OF OTHER GASES AND VAPORS THROUGH THE USE OF CROSS SENSITIVITIES FOR THE MEASUREMENT RANGE OF 0 TO 100 % LEL.

The specified values are typical values when adjusting with propane (C_3H_8) or methane (CH_4) and apply to new sensors with an accuracy of ±15%. Aging and sensor poisons can affect sensitivity ratios. The LEL according to ISO/IEC 80079-20-1:2017 were used. The table does not claim to be complete. The sensor can also be sensitive to other gases and vapors.

RELEVANT CROSS SENSITIVITIES

Gas/vapor	Chemical symbol	CAS-No.	Test gas koncentration in Vol.-%	Reading displayed in %LEL when calibrated	
				CH_4	C_3H_8
n-Butane	C_4H_{10}	106-97-8	0.70	21	48
Ethane	C_2H_6	74-84-0	1.20	31	62
n-Heptane	C_7H_{16}	142-82-5	0.43	17	34
n-Hexane	C_6H_{14}	110-54-3	0.50	19	39
Hydrogen	H_2	1333-74-0	2.00	44	85
Methane	CH_4	74-82-8	2.20	50	100
n-Nonane	C_9H_{20}	111-84-2	0.35	14	14
n-Octane	C_8H_{18}	111-65-9	0.40	16	31
n-Pentane	C_5H_{12}	109-66-0	0.55	18	37
Propane	C_3H_8	74-98-6	0.85	24	50
Propene	C_3H_6	115-07-1	1.00	27	55

NOTICE

Do not dispose of sensors in household waste. Sensors must be disposed of in accordance with local regulations. The product safety information sheet contains information on constituent substances (www.draeger.com).