DrägerSensor® CatEx 125 PR

Order no. 68 12 950

Used in	Plug & Play	Replaceable	Guaranty	Expected sensor life	Selective filter
Dräger X-am 1/2/5000	–	yes	3 years	> 4 years	–

MARKET SEGMENTS

Telecommunications, shipping, sewage, gas supply companies, refineries, chemical industry, mining, landfills, biogas plants, sewage treatment plants, tunneling.

TECHNICAL SPECIFICATIONS

Detection limit:	2% LEL
Resolution:	1.0% LEL for measuring range 0 to 100% LEL, 1.0 Vol.-% for measuring range 0 to 100 Vol.-% CH_4 (methane)
Measurement range:	0 to 100% LEL in Dräger X-am 2500/5000 or 0 to 100 Vol.% CH_4 (methane) in Dräger X-am 5000
General technical specifications	
Ambient conditions	
Temperature:	(–20 to 55)°C (–4 to 131)°F
Humidity:	(10 to 95)% RH
Pressure:	(700 to 1,300) hPa
Warm-up time:	≤ 3 minutes

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

Response time:	≤ 17 seconds (T_{90}) ≤ 7 seconds (T_{50}) typical values for X-am 2500 T_{90} at 25 °C (77 °F) ≤ 12 seconds typical values for X-am 5000 T_{90} at 25 °C (77 °F) ≤ 10 seconds
Measurement accuracy:	≤ ± 1% LEL
Long-term drift	
Zero point:	≤ ± 2% LEL/month typical value in X-am 2500/5000 ≤ 1 % LEL/month
Sensitivity:	≤ ± 2% LEL/month typical value in X-am 2500/5000 ≤ 1 % LEL/month
Influence of temperature	
Zero point:	≤ ± 0.1% LEL/K at (–20 to 40)°C (–4 to 104)°F
Sensitivity:	≤ ± 0.1% of measured value/K at (–20 to 40)°C (–4 to 104)°F
Influence of humidity	
Zero point:	≤ ± 1% LEL
Sensitivity:	≤ ± 2% LEL (test gas 50% LEL), effect of humidity when calibrating at 0% relative humidity in the range of 10–90 % at 40°C
Effect of sensor poisons:	Hydrogen sulphide H_2S, 1000 ppmh ≤ ±2% of the measured value Hexamethyldisiloxane HMDS 10 ppmh ≤ ±5 % of the measured value Hexamethyldisiloxane HMDS 30 ppmh ≤ ±20 % of the measured value. After an exposure to HMDS of 10 ppm for 5 hours, the loss of sensitivity is less than 50%. Halogenated hydrocarbons, volatile substances containing sulphur, heavy metals and silicon, or substances capable of polymerisation: poisoning possible.

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

Response time:	≤ 10 seconds (T_{50}) ≤ 32 seconds (T_{90}) typical values for X-am 2500 T_{90} at 25 °C (77 °F) ≤ 24 seconds typical values for X-am 5000 T_{90} at 25 °C (77 °F) ≤ 14 seconds
Measurement accuracy:	1 % LEL
Long-term drift	
Zero point:	≤ ± 2% LEL/month
Sensitivity:	≤ ± 2% LEL/month
Influence of temperature	
Zero point:	≤ ± 0.1% LEL/K at (–20 to 40)°C (–4 to 104)°F
Sensitivity:	≤ ± 0.1% of measured value/K at (–20 to 40)°C (–4 to 104)°F
Influence of humidity	
Zero point:	≤ ± 1% LEL
Sensitivity:	≤ ± 2% LEL

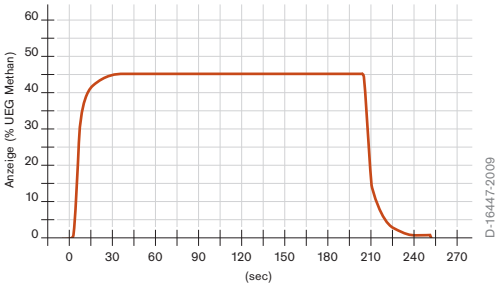
FOR THE MEASUREMENT RANGE 0 TO 100 VOL.-% CH_4:

Response time:	≤ 30 seconds at 5 to 100 Vol.-%
Measurement accuracy	≤ ± 1 % LEL
Linearity error:	
0 to 50 Vol.-%	≤ ± 5 Vol.-%
50 to 100 Vol.-%	≤ ± 10% of measured value
Long-term drift	
Zero point:	≤ ± 3 Vol.-%/month
Sensitivity:	≤ ± 3 Vol.-%/month
Influence of temperature:	≤ ± 0.15 Vol.-%/K at (–20 to 40)°C (–4 to 104)°F
Influence of humidity:	≤ ± 0.15 Vol.-%/ %RH at 40°C / 104°F
Test gas:	approx. 2 Vol.-% or 50 Vol.-% CH_4 test gas

SPECIAL CHARACTERISTICS

The DrägerSensor® CatEx 125 PR (Poison Resistant) is used to detect flammable gases and vapors. The detection of hydrocarbons from methane to nonane is certified by a measurement performance certificates for use in the Dräger X-am 1/2/5000 series in accordance with EN 60079-29-1 and EN 50271. It also has a small long-term drift, few influence of humidity and excellent poison resistance against hydrogen sulphide, siloxiane and other sensor poisons.

Ansprechzeit des DrägerSensor CatEx 125 PR
im X-am 5000 bei 45% UEG Methan



DETECTING OTHER GASES AND VAPORS

Through the use of cross sensitivities for the measurement range of 0 to 100% LEL. The figures given are typical readings when calibrated with methane (CH_4) and apply to new sensors without additional diffusion barriers. A LEL of 4.4 Vol.-% was used for methane. If a LEL of 5.0 Vol.-% is used, then the figures in the table must be multiplied by a factor of 0.88. The table does not claim to be complete. The sensor may also be sensitive to other gases and vapors.

Gas/vapor	Chem. symbol	Test gas concentration in Vol.-%	Displayed reading in % LEL
Acetone	CH_3COCH_3	1.25	31
Acetic acid	CH_3COOH	7.7	57
Ammonia	NH_3	6.16	48
Benzene	C_6H_6	0.6	25
Butadiene -1,3	$CH_2CHCHCH_2$	0.7	27
Butane	C_4H_{10}	0.7	26
n-butanol	C_4H_9OH	0.7	20
Butanone	$CH_3COC_2H_5$	0.75	22
n-butyl acetate	$CH_3COOC_4H_9$	0.6	18
Carbon monoxide	CO	5.45	32
Cyclohexane	C_6H_{12}	0.5	21
Cyclopentane	C_5H_{10}	0.7	27
Diethylamine	$(C_2H_5)_2NH$	0.85	28

Gas/vapor	Chem. symbol	Test gas concentration in Vol.-%	Displayed reading in % LEL
Diethyl ether	$(C_2H_5)_2O$	0.85	27
Ethane	C_2H_6	1.2	35
Ethanol	C_2H_5OH	1.55	33
Ethene	C_2H_4	1.2	36
Ethine	C_2H_2	1.15	36
Ethyl acetate	$CH_3COOC_2H_5$	1.0	25
Heptane	C_7H_{16}	0.4	17
Hexane	C_6H_{14}	0.5	21
Hydrogen	H_2	2.0	49
Methane	CH_4	2.2	50
Methanol	CH_3OH	3.0	42
Methyl tert-butyl ether (MTBE)	$CH_3OC(CH_3)_3$	0.8	27
Nonane	C_9H_{20}	0.35	15
1-Methoxy-Propanol-2-	$C_4H_{10}O_2$	0.9	23
Octane	C_8H_{18}	0.4	18
Pentane	C_5H_{12}	0.55	22
Pentanol	C_5H11OH	0.6	19
Propane	C_3H_8	0.85	29
Propanol	C_3H_7OH	1.00	27
Propene	C_3H_6	1.00	35
Propylene oxide	C_3H_6O	0.95	25
Styrene	$C_6H_5CHCH_2$	0.5	11
Toluene	$C_6H_5CH_3$	0.5	21
Xylene	$C_6H_4(CH_3)_2$	0.55	22