DrägerSensor® CatEx 125 PR-Gas

Order no. 68 13 080

Used in	Plug & Play	Replaceable	Guaranty	Expected sensor life	Selective filter
Dräger X-am 2500	–	yes	3 years	> 3 years	–
Dräger X-am 5000	–	yes	3 years	> 3 years	–
Dräger X-am 8000	–	yes	3 years	> 3 years	–

MARKET SEGMENTS

Mining, telecommunications, shipping, sewage, gas supply companies, refineries, chemical industry, landfills, biogas plants, sewage treatment plants, tunneling.

TECHNICAL SPECIFICATIONS

Detection limit:	2% LEL
Resolution:	1.0% LEL for measuring range 0 to 100% LEL or 1.0 Vol.-% for measuring range 0 to 100 Vol.-% CH_4 (methane)
Measurement range:	0 to 100% LEL or 0 to 100 Vol.-% CH_4 (methane)
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:	≤ 5 minutes

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

Response time:	≤ 7 seconds (T_{50}) at 25 °C (77 °F) ≤ 10 seconds (T_{90}) at 25 °C (77 °F)
Measurement accuracy:	≤ ± 1% LEL
Long-term drift	
Zero point:	≤ ± 3% LEL/month
Sensitivity:	≤ ± 3% LEL/month
Influence of temperature	
Zero point:	≤ ± 0.1% LEL/K
Sensitivity:	≤ ± 0.2% of measured value/K
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 to 90 % at 40°C.

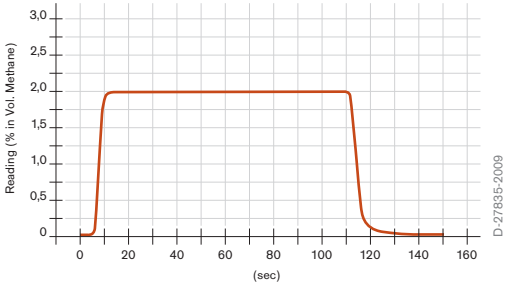
FOR THE MEASUREMENT RANGE 0 TO 100 VOL.-% CH_4:

Response time:	≤ 35 seconds (T_{90}) at 0 to 100 Vol.-% at 25 °C (77 °F)
Measurement accuracy:	≤ ± 1 Vol.-%
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 to 50 Vol.-%	≤ ± 0.15 Vol.-%/K at (–20 to 40)°C (–4 to 104)°F
50 to 100 Vol.-%	≤ ± 0.3% of measured value/K at (–20 to 40)°C (–4 to 104)°F
Influence of humidity	
0 to 50 Vol.-%	≤ ± 0.1 Vol.-%/RH.
50 to 100 Vol.-%	≤ ± 0.2% of measured value/% RH
Test gas:	approx. 2 Vol.-% or 50 Vol.-% CH_4 test gas
Effect of sensor contaminants:	Hydrogen sulfide 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

SPECIAL CHARACTERISTICS

This sensor is optimized for the detection of methane. It has a response time (T_{90}) of less than 10 seconds. The pellistors are impact-protected, which makes the sensor especially shock-proof. In conjunction with this sensor, the Dräger X-am 5000 is approved for Zone 0/T4 worldwide. The LEL and the Vol.-% measuring range can be used in the Dräger X-am 5000.

Response time of DrägerSensor CatEx 125 Mining PR in X-am 5000



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
Acetylene	C_2H_2	1.15	32
Butane	C_4H_{10}	0.70	27
Butene	C_4H_8	0.75	33
Ethane	C_2H_6	1.20	33
Ethene	C_2H_4	1.20	30
Hydrogen	H_2	2.00	44
Methane	CH_4	2.20	50
Propane	C_3H_8	0.85	28
Propene	C_3H_6	1.00	32

The given values may fluctuate by ±30 %.

The table does not claim to be complete. The sensor may also be sensitive to other gases and vapours. Poisoning of the sensor may also alter the relative sensitivities for certain gases and vapours. After exceeding the measuring range there could be increased readings in the measuring range 0 to 100 % LEL. If necessary the sensor should be adjusted. The specified test gas concentrations correspond to 50 % of the lower explosion limit of each test gas. Database GESTIS material database contains information for the safe handling of chemical substances at work. Important physico-chemical data on approx. 8,000 substances. The data is maintained in close temporal proximity to the publication of regulations and rules or when new scientific evidence has come to light: www.dguv.de → Medien/Datenbanken → Datenbanken.