

DrägerSensor CO LH

Preliminary Technical Data Sheet

Intended Use

The DrägerSensor CO LH is an electrochemical three electrode sensor for the continuous real-time monitoring of CO (carbon monoxide) in ambient air under ambient conditions. LH stands for "low hydrogen sensitivity". Off the factory the sensor is equipped with a selective filter to reduce the interference to hydrocarbons and other gases.

The sensor is designed to be used only in conjunction with appropriate Dräger transmitters. Some specifications might vary due to different signal processing of the respective transmitters.

The sensor is factory-calibrated with carbon monoxide CO.

Technical Data

Electrode reactions	Measuring electrode: $\text{CO} + \text{H}_2\text{O} \rightarrow \text{CO}_2 + 2 \text{H}^+ + 2\text{e}^-$ Counter electrode: $\text{O}_2 + 4 \text{H}^+ + 4\text{e}^- \rightarrow 2 \text{H}_2\text{O}$	
Measuring range (only for digital transmitter. Not applied during calibration.)	min	0 .. 50 ppm
	default	0 .. 300 ppm
	maximum	0 .. 300 ppm
Lower detection limit	15 ppm	
Repeatability / accuracy *	zero sensitivity	± 15 ppm ± 10 % of measured value
Temperature conditions	intermittent	-40 °C to 50 °C (-40 °F to 122 °F)
	continuous	-40 °C to 50 °C (-40 °F to 122 °F)
Humidity conditions	intermittent	0% to 100 % relative humidity
	continuous	10% to 95% r.h. none condensing
Pressure conditions	differential pressure ⁴	no limitation ± 30 mbar (± 0.4 PSI)
Response time T _{0...90} * (based on three minutes exposure time)	< 60 seconds	
Recovery time T _{100...10} *	same as rise time	
Gas doses limitation	none	
Warm-up time*:		for operation ² for calibration ³
	Polytron 2, Polytron XP Tox	< 120 minutes < 24 hours
	Polytron 7000	< 30 minutes < 90 minutes
	SensorReady	< 3 minutes < 5 minutes
Zero clamping: capture range (only for digital transmitter. Not applied during calibration.)	± 15 ppm	
Sensor Self Test in	Polytron XP Tox, Polytron 7000 Dongle	
Sensor design	electrochemical, 3-electrodes, amperometric	
Electrolyte	sealed aqueous acid	
Material	sensor housing	polypropylene (PP)
	blue gasket	polyethylene (PE)
	membrane	polytetrafluoroethylene (PTFE)
Filter	Sensor is equipped with Selective Filter D3F 6812435.	
Special considerations	none	

* All performance data are typical values, apply to new sensors and for CO and ambient conditions at 20°C (68°F), 50% r.h., 1013 hPa (14.7 PSI).

¹ Sudden changes in humidity can cause fading output signal changes.

² At this time, the actual zero point error of the sensor is less than 4 times the stated accuracy in this data sheet.

³ At this time, the sensor has reached its specific accuracy.

⁴ The differential pressure between the sensor aperture and the main body of the sensor. A functional limitation due to the patented Pressure Release System.

Cross Sensitivities

This sensor is designed for very low Hydrogen cross-sensitivity.

The table shows the response of the sensor to other gases besides the target gas (cross sensitivities). The tested gas concentrations are as displayed. The values are typical and apply to new sensors at 20 °C (68 °F), 1013 hPa (29 .2" Hg at

32 °F), 50 % r.h. The values have a uncertainty of ± 30% due to statistical variances.

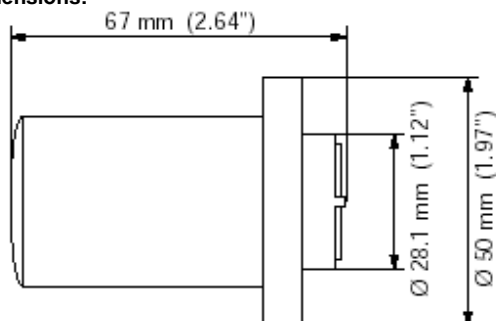
The table does not claim to be complete. Gas mixtures can be displayed as the sum of all components. Gases with negative cross sensitivity may displace a positive reading of the sensor.



Gas / Vapor	Chemical Symbol	CAS number	Applied gas concentration	Displayed value in ppm CO with selective filter D3F
Hydrogen	H₂	1333-74-0	1000 ppm	≤ 15
Arsine	AsH ₃	7784-42-1	5 ppm	no effect
Ammonia	NH ₃	7664-41-7	60 ppm	no effect
Boron trifluoride	BF ₃	7637-07-2	15 ppm	no effect
Carbon dioxide	CO ₂	124-38-9	1.5 % by vol	no effect
Chlorine	Cl ₂	7782-50-5	5 ppm	no effect
Disilane	Si ₂ H ₆	1590-87-0	10 ppm	no effect
Hydrogen chloride	HCl	7647-01-0	40 ppm	no effect
Hydrogen cyanide	HCN	74-90-8	25 ppm	no effect
Hydrogen fluoride	HF	7664-39-3	15 ppm	no effect
Hydrogen selenide	SeH ₂	7783-07-5	5 ppm	no effect
Hydrogen sulfide	H ₂ S	7783-06-4	20 ppm	no effect
Nitrogen dioxide	NO ₂	10102-44-0	20 ppm	no effect
Nitrogen monoxide	NO	10102-43-9	20 ppm	no effect
Phosgene	COCl ₂	75-44-5	5 ppm	no effect
Phosphine	PH ₃	7803-51-2	10 ppm	no effect
Silane	SiH ₄	7803-62-5	5 ppm	no effect
Sulfur dioxide	SO ₂	7446-09-5	20 ppm	no effect
Acetaldehyde	CH ₃ CHO	75-07-0	50 ppm	no effect
Acetone	CH ₃ COCH ₃	67-64-1	1000 ppm	no effect
Benzene	C ₆ H ₆	71-43-2	50 ppm	no effect
Butadiene	CH ₂ CHCHCH ₂	106-99-0	50 ppm	no effect
Dichlormethane	CH ₂ Cl ₂	75-09-2	1000 ppm	no effect
Ethane	C ₂ H ₆	74-84-0	2000 ppm	no effect
Ethanol	C ₂ H ₅ OH	64-17-5	200 ppm	no effect
Ethyl acetate	CH ₃ COOC ₂ H ₅	141-78-6	1000 ppm	no effect
Ethylene oxide	C ₂ H ₄ O	75-21-8	20 ppm	no effect
Formaldehyde	HCHO	50-00-0	20 ppm	no effect
Methane	CH ₄	74-82-8	2 % by vol	no effect
Methanol	CH ₃ OH	67-56-1	200 ppm	no effect
Methyl bromide	CH ₃ Br	74-83-9	5000 ppm	no effect
Methylmethacrylate	CH ₂ C(CH ₃)COOCH ₃	80-62-6	60 ppm	no effect
Propane	C ₃ H ₈	74-98-6	1 % by Vol	no effect
i-Propanol	(CH ₃) ₂ CHOH	67-63-0	500 ppm	no effect
Styrene	C ₆ H ₅ CH ₃	100-42-5	30 ppm	no effect
Tetrahydrofurane	C ₄ H ₈ O	109-99-9	60 ppm	no effect
Tetrahydrothiophene	C ₄ H ₈ S	110-01-0	10 ppm	no effect
Toluene	C ₆ H ₅ CH ₃	108-88-3	1000 ppm	no effect
Vinyl chloride	C ₂ H ₃ Cl	75-01-4	50 ppm	no effect

CAS Registry Number®: a unique numerical identifier created and assigned to a chemical substance by CAS: www.cas.org

Outline dimensions:



This specification is given for guidance only. Dräger Safety reserves the right to amend the design and specification of the sensor without prior notification

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