



# Electro Optical Components, Inc.

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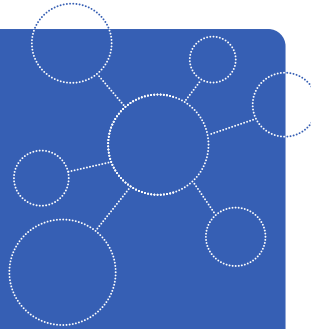
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## smartGAS.

MADE IN GERMANY



### SILAREX

NDIR Multi-Gas Sensor

CO<sub>2</sub> 20 Vol.-% // CO 1000 ppm

smartGAS item number: SX-200002-00000

- 2 active measurement channels
- Ready to use calibrated
- On board cross compensation
- On board pressure compensation
- Modbus ASCII/RTU, autobaud, autoframe
- Status indicated by LED



#### Application Examples

Emission monitoring CEMS  
 Biogas  
 Process measurement  
 Fruit ripening  
 High voltage

#### Available as

2-Channel  
 3-Channel

#### Accessories

Insulation housing  
 Gas cooler  
 Particle filter  
 Gas pump  
 Mounting equipment

#### Available design in support

Mechanical Installation  
 Data communication  
 Gas pre-treatment

## SILAREX | CO<sub>2</sub> // CO | SX-200002-00000

General features		Channel 1:	Channel 2:
Measurement principle:	Non Dispersive Infra-Red (NDIR), dual wavelength		
Target gas:		CO <sub>2</sub>	CO
Measurement range:	0 ... Full Scale (FS)	FS = 20 Vol.-%	FS = 1000 ppm
Gas supply:	by flow (nearly atmospheric pressure)		
Flow rate:	0.1 ... 1.0 l / min		
Mounting dimensions:	336 mm x 30 mm x 50 mm (L x W x H)		
Warm-up time:	< 2 minutes (start up time) < 30 minutes (full specification)		

### Measuring response\*

Response time (t <sub>90</sub> ) @ 0.7 l / min:	< 4 s (fast), < 8 s (medium), < 60 s (slow)		
Digital resolution:		0.01 Vol.-%	1 ppm
Detection limit (3 σ) max.:	in fast / medium / slow mode:	0.03 Vol.-% / 0.02 Vol.-% / 0.01 Vol.-%	6 ppm / 4 ppm / 2 ppm
Repeatability:		≤ ± 0.06 Vol.-%	≤ ± 6 ppm
Linearity error (straight line deviation):		≤ ± 0.1 Vol.-%	≤ ± 10 ppm
Long term stability (zero):	after 1000 h operating time	≤ ± 0.01 Vol.-%	≤ ± 5 ppm
Long term stability (span):	after 1000 h operating time	≤ ± 0.02 Vol.-%	≤ ± 8 ppm

### Influence of T, P, flow rate, other\*

Temp. dependence (zero):	with thermal isolation, heater on	≤ ± 0.005 Vol.-% per °C	≤ ± 0.1 ppm per °C
Temp. dependence (span):	with thermal isolation, heater on	≤ ± 0.01 Vol.-% per °C	≤ ± 0.2 ppm per °C
Pressure dependence:	pressure compensated, residual error in % of actual reading / hPa	≤ ± 0.02	≤ ± 0.02
Flow rate dependence per 0.1 l / min:		≤ ± 0.02 Vol.-%	≤ ± 2 ppm
Cross sensitivity (zero) other gases:	@ 20 Vol.-% CO <sub>2</sub> (compensated for 42 °C):	-	< ± 12 ppm
	@ 1000 ppm CO (compensated for 42 °C):	≤ ± 0.02 Vol.-%	-
	@ 2000 ppm NO (uncompensated at 42 °C):	≤ ± 0.02 Vol.-%	< ± 40 ppm
	@ 2000 ppm SO <sub>2</sub> (uncompensated at 42 °C):	≤ ± 0.02 Vol.-%	< ± 100 ppm
	@ 200 ppm NO <sub>2</sub> (uncompensated at 42 °C):	≤ ± 0.02 Vol.-%	< ± 20 ppm
	@ 6 Vol.-% CH <sub>4</sub> (uncompensated at 42 °C):	≤ ± 0.02 Vol.-%	< ± 200 ppm

### Electrical inputs and outputs

Supply voltage:	24 V DC ± 10 %
Average power consumption	< 6 W (while heater on) // < 1 W (at stabilized temperature)
Inrush current:	< 400 mA
Digital output signal	Modbus ASCII / RTU via RS485, autobaud, autframe
Calibration	Zero and Span via Modbus ASCII / RTU

## Climatic conditions

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Sensor heating temperature	42 °C
Operating ambient temperature:	appr. + 10 ... + 40 °C (thermal isolation required)
Storage temperature:	-20 °C ... + 60 °C
Air pressure:	800 ... 1150 hPa
Ambient humidity:	0 ... 95 % rel. H. (not condensing)

\* Typical values related to 1013 hPa, Ta = 22 °C, flow = 0.7 l / min for dry (not condensing) and clean sample gas. Stated values exclude calibration gas tolerance.

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For more information, please visit [www.smartgas.eu](http://www.smartgas.eu) or contact us at [sales@smartgas.eu](mailto:sales@smartgas.eu)

Please consult smartGAS sales for parts specified with other temperature and measurement ranges. At first initiation and depending on application and ambient conditions recalibration is recommended. Recurring cycles of recalibration are recommended.