



# Electro Optical Components, Inc.

5464 Skylane Boulevard, Suite D, Santa Rosa, CA 95403

Toll Free: 855-EOC-6300

[www.eoc-inc.com](http://www.eoc-inc.com) | [info@eoc-inc.com](mailto:info@eoc-inc.com)



## smartGAS.

MADE IN GERMANY



**SILAREX**

NDIR Multi-Gas Sensor  
CO<sub>2</sub> 20 Vol.-% // CO 500 ppm  
smartGAS item number: SX-200009-00000

- 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 I CO<sub>2</sub> // CO I SX-200004-00000

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 = 500 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): @ 1000 ppm CO (compensated for 42 °C):	- ≤ ± 0.02 Vol.-%	< ± 12 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, autoframe
Calibration	Zero and Span via Modbus ASCII / RTU

### Climatic conditions

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, T<sub>a</sub> = 22 °C, flow = 0.7 l / min for dry (not condensing) and clean sample gas. Stated values exclude calibration gas tolerance.

All rights reserved. Any logos and/or product names are trademarks of smartGAS. The reproduction, transfer, distribution or storage of information contained in this brochure in any form without the prior written consent of smartGAS is strictly prohibited. All specifications – technical included – are subject to change without notice. Depending on the application, the target gas and the measurement range the technical data may differ. No liability is accepted for any consequential losses, injury or damage resulting from the use of this document or from any omissions or errors herein. The data is given for guidance only. It does not constitute a specification or an offer for sale.

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.