

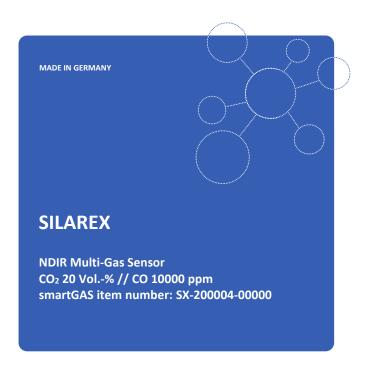
## Electro Optical Components, Inc.

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## smartGAS.



- 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 CO2 // CO I SX-200004-00000

General featurs		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 = 10000 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 $\sigma$ ) 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 (zero).			
Long term stability (span):	after 1000 h operating time	≤ ± 0.02 Vol%	≤±8 ppm
Long term stability (span):		≤ ± 0.02 Vol%	≤±8 ppm
Long term stability (span):  Influence of T, P, flow rate, othe	r*		
Long term stability (span):  Influence of T, P, flow rate, other  Temp. dependence (zero):	r* with thermal isolation, heater on	≤± 0.005 Vol% per °C	≤±0.1 ppm per °C
Long term stability (span):  Influence of T, P, flow rate, othe	with thermal isolation, heater on with thermal isolation, heater on pressure compensated, residual error in % of		
Long term stability (span):  Influence of T, P, flow rate, other  Temp. dependence (zero):  Temp. dependence (span):	with thermal isolation, heater on with thermal isolation, heater on	≤ ± 0.005 Vol% per °C ≤ ± 0.01 Vol% per °C	≤±0.1 ppm per °C ≤±0.2 ppm per °C
Long term stability (span):  Influence of T, P, flow rate, other  Temp. dependence (zero):  Temp. dependence (span):  Pressure dependence:	with thermal isolation, heater on with thermal isolation, heater on pressure compensated, residual error in % of	≤ ± 0.005 Vol% per °C ≤ ± 0.01 Vol% per °C ≤ ± 0.02	≤ ± 0.1 ppm per °C ≤ ± 0.2 ppm per °C ≤ ± 0.02
Long term stability (span):  Influence of T, P, flow rate, other Temp. dependence (zero): Temp. dependence (span): Pressure dependence: Flow rate dependence per 0.1 l / min: Cross sensitivity (zero) other gases:	with thermal isolation, heater on with thermal isolation, heater on pressure compensated, residual error in % of actual reading / hPa  @ 20 Vol% CO <sub>2</sub> (compensated for 42 °C):	$\leq \pm 0.005 \text{ Vol\% per °C}$ $\leq \pm 0.01 \text{ Vol\% per °C}$ $\leq \pm 0.02$ $\leq \pm 0.02 \text{ Vol\%}$	≤±0.1 ppm per °C ≤±0.2 ppm per °C ≤±0.02 ≤±2 ppm
Influence of T, P, flow rate, other Temp. dependence (zero): Temp. dependence (span): Pressure dependence: Flow rate dependence per 0.1 l / min: Cross sensitivity (zero) other gases:  Electrical inputs and outputs	with thermal isolation, heater on with thermal isolation, heater on pressure compensated, residual error in % of actual reading / hPa  @ 20 Vol% CO <sub>2</sub> (compensated for 42 °C):	$\leq \pm 0.005 \text{ Vol\% per °C}$ $\leq \pm 0.01 \text{ Vol\% per °C}$ $\leq \pm 0.02$ $\leq \pm 0.02 \text{ Vol\%}$	≤±0.1 ppm per °C ≤±0.2 ppm per °C ≤±0.02 ≤±2 ppm
Long term stability (span):  Influence of T, P, flow rate, other Temp. dependence (zero): Temp. dependence (span): Pressure dependence: Flow rate dependence per 0.11/ min: Cross sensitivity (zero) other gases:  Electrical inputs and outputs Supply voltage:	with thermal isolation, heater on with thermal isolation, heater on pressure compensated, residual error in % of actual reading / hPa  @ 20 Vol% CO <sub>2</sub> (compensated for 42 °C): @ 10000 ppm CO (compensated for 42 °C):	≤±0.005 Vol% per °C ≤±0.01 Vol% per °C ≤±0.02 ≤±0.02 Vol%	≤±0.1 ppm per °C ≤±0.2 ppm per °C ≤±0.02 ≤±2 ppm
Long term stability (span):  Influence of T, P, flow rate, other Temp. dependence (zero): Temp. dependence (span): Pressure dependence: Flow rate dependence per 0.11/ min:	with thermal isolation, heater on with thermal isolation, heater on pressure compensated, residual error in % of actual reading / hPa  @ 20 Vol% CO <sub>2</sub> (compensated for 42 °C): @ 10000 ppm CO (compensated for 42 °C):	≤±0.005 Vol% per °C ≤±0.01 Vol% per °C ≤±0.02 ≤±0.02 Vol%	≤±0.1 ppm per °C ≤±0.2 ppm per °C ≤±0.02 ≤±2 ppm
Influence of T, P, flow rate, other Temp. dependence (zero): Temp. dependence (span): Pressure dependence: Flow rate dependence per 0.11/ min: Cross sensitivity (zero) other gases:  Electrical inputs and outputs Supply voltage: Average power consumption	with thermal isolation, heater on with thermal isolation, heater on pressure compensated, residual error in % of actual reading / hPa  @ 20 Vol% CO <sub>2</sub> (compensated for 42 °C): @ 10000 ppm CO (compensated for 42 °C):  24 V DC ± 10 %  < 6 W (while heater on) // < 1 W (at stabilized to	≤ ± 0.005 Vol% per °C ≤ ± 0.01 Vol% per °C ≤ ± 0.02 ≤ ± 0.02 Vol% - ≤ ± 0.30 Vol%	≤±0.1 ppm per °C ≤±0.2 ppm per °C ≤±0.02 ≤±2 ppm
Influence of T, P, flow rate, other Temp. dependence (zero): Temp. dependence (span): Pressure dependence: Flow rate dependence per 0.1 l / min: Cross sensitivity (zero) other gases:  Electrical inputs and outputs Supply voltage: Average power consumption Inrush current:	with thermal isolation, heater on with thermal isolation, heater on pressure compensated, residual error in % of actual reading / hPa  @ 20 Vol% CO <sub>2</sub> (compensated for 42 °C): @ 10000 ppm CO (compensated for 42 °C):  24 V DC ± 10 %  < 6 W (while heater on) // < 1 W (at stabilized to the stabilized	≤ ± 0.005 Vol% per °C ≤ ± 0.01 Vol% per °C ≤ ± 0.02 ≤ ± 0.02 Vol% - ≤ ± 0.30 Vol%	≤±0.1 ppm per °C ≤±0.2 ppm per °C ≤±0.02 ≤±2 ppm
Influence of T, P, flow rate, other Temp. dependence (zero): Temp. dependence (span): Pressure dependence: Flow rate dependence per 0.11/ min: Cross sensitivity (zero) other gases:  Electrical inputs and outputs Supply voltage: Average power consumption Inrush current: Digital output signal	with thermal isolation, heater on with thermal isolation, heater on pressure compensated, residual error in % of actual reading / hPa  @ 20 Vol% CO <sub>2</sub> (compensated for 42 °C): @ 10000 ppm CO (compensated for 42 °C):  24 V DC ± 10 %  < 6 W (while heater on) // < 1 W (at stabilized to the compensated for 42 °C):  Modbus ASCII / RTU via RS485, autobaud, a	≤ ± 0.005 Vol% per °C ≤ ± 0.01 Vol% per °C ≤ ± 0.02 ≤ ± 0.02 Vol% - ≤ ± 0.30 Vol%	≤±0.1 ppm per °C ≤±0.2 ppm per °C ≤±0.02 ≤±2 ppm
Influence of T, P, flow rate, other Temp. dependence (zero): Temp. dependence (span): Pressure dependence: Flow rate dependence per 0.11/ min: Cross sensitivity (zero) other gases:  Electrical inputs and outputs Supply voltage: Average power consumption Inrush current: Digital output signal Calibration	with thermal isolation, heater on with thermal isolation, heater on pressure compensated, residual error in % of actual reading / hPa  @ 20 Vol% CO <sub>2</sub> (compensated for 42 °C): @ 10000 ppm CO (compensated for 42 °C):  24 V DC ± 10 %  < 6 W (while heater on) // < 1 W (at stabilized to the compensated for 42 °C):  Modbus ASCII / RTU via RS485, autobaud, a	≤ ± 0.005 Vol% per °C ≤ ± 0.01 Vol% per °C ≤ ± 0.02 ≤ ± 0.02 Vol% - ≤ ± 0.30 Vol%	≤±0.1 ppm per °C ≤±0.2 ppm per °C ≤±0.02 ≤±2 ppm
Influence of T, P, flow rate, other Temp. dependence (zero): Temp. dependence (span): Pressure dependence: Flow rate dependence per 0.11/ min: Cross sensitivity (zero) other gases:  Electrical inputs and outputs Supply voltage: Average power consumption Inrush current: Digital output signal Calibration  Climatic conditions	with thermal isolation, heater on with thermal isolation, heater on pressure compensated, residual error in % of actual reading / hPa  @ 20 Vol% CO <sub>2</sub> (compensated for 42 °C): @ 10000 ppm CO (compensated for 42 °C):  24 V DC ± 10 %  < 6 W (while heater on) // < 1 W (at stabilized to the compensated for 42 °C):  Modbus ASCII / RTU via RS485, autobaud, autobaud, autobaud Span via Modbus ASCII / RTU	≤±0.005 Vol% per °C ≤±0.01 Vol% per °C ≤±0.02 ≤±0.02 Vol% - ≤±0.30 Vol%	≤±0.1 ppm per °C ≤±0.2 ppm per °C ≤±0.02 ≤±2 ppm
Influence of T, P, flow rate, other Temp. dependence (zero): Temp. dependence (span): Pressure dependence: Flow rate dependence per 0.11/min: Cross sensitivity (zero) other gases:  Electrical inputs and outputs Supply voltage: Average power consumption Inrush current: Digital output signal Calibration  Climatic conditions  Sensor heating temperature	with thermal isolation, heater on with thermal isolation, heater on pressure compensated, residual error in % of actual reading / hPa  @ 20 Vol% CO <sub>2</sub> (compensated for 42 °C): @ 10000 ppm CO (compensated for 42 °C):  24 V DC ± 10 %  < 6 W (while heater on) // < 1 W (at stabilized to the compensated for 42 °C):  Modbus ASCII / RTU via RS485, autobaud, a	≤±0.005 Vol% per °C ≤±0.01 Vol% per °C ≤±0.02 ≤±0.02 Vol% - ≤±0.30 Vol%	≤±0.1 ppm per °C ≤±0.2 ppm per °C ≤±0.02 ≤±2 ppm

\* 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.

0 ... 95 % rel. H. (not condensing)

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For more information, please visit www.smartgas.eu or contact us at sales@smartgas.eu

Ambient humidity:

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.