

MADE IN GERMANY

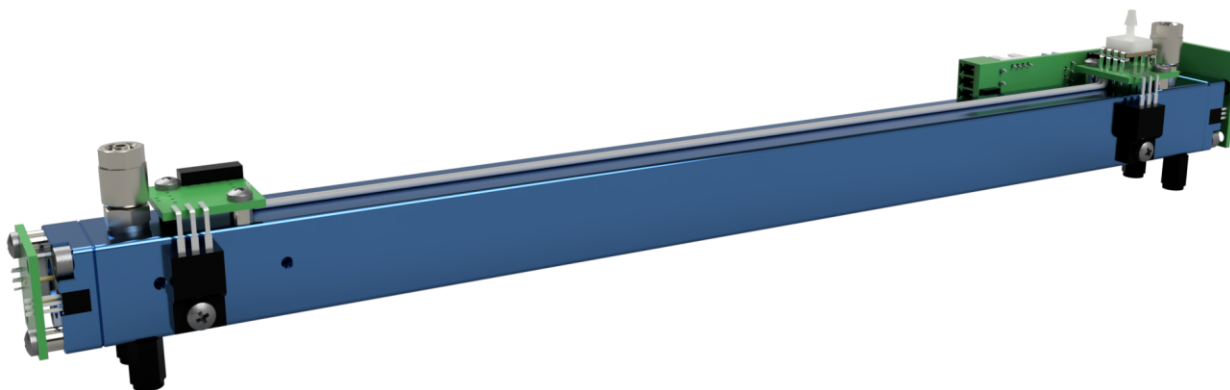


SILAREX

Infrared Gas Sensor
Channel 1: FS = 25 Vol.-% CO₂
Channel 2: FS = 15000 ppm CO
Channel 3:
smartGAS item number: SX-200016-00000

Product features:

- Measure up to 3 gases or different concentration ranges simultaneously
- Cross-sensitivity is calculated on-board
- Pressure compensation on board
- Temperature and drift compensated
- Ready to use calibrated



SILAREX gas sensors have been developed to enable parallel concentration measurement of up to three measuring gases or three detection ranges with one single NDIR gas sensor. The cross-sensitivities of the individual gases are compensated directly inside the SILAREX sensor, providing the user with fully prepared and corrected measuring values via Modbus ASCII / RTU for further processing. An on-board pressure compensation and heaters guarantee stable measurement results. Compared to measuring with three individual sensors, the advantages are obvious: **Only one sensor needs to be calibrated and maintained**; varying sample preparation, different accuracies or life cycles of the sensors do not need to be considered.

Application Examples for SILAREX series

- Gas analysis
- Environmental monitoring
- TOC
- CEMS
- Medical breath control
- ... and more

Available equipment

- Gas cooler
- Heater element
- Case
- Particle filter
- Gas pump
- Mounting equipment

Available design in support

- Mechanical installation
- Data communication
- Gas pre-treatment
- Operating conditions
- Customized ranges
- Customized gas type

smartGAS Mikrosensorik GmbH

Huenderstrasse 1
74080 Heilbronn
Germany
T +49 (0) 7131 797553-0
sales@smartgas.eu
www.smartgas.eu

smartGAS Sensor Technology Co., Ltd

Building 16, No. 59 Jiangnan Rd. CEDZ Changshu,
Jiangsu
China
T +86 (0) 512-83380880
info@smartgas-cn.com
www.smartgas-cn.com

smartGAS US-Office

150 North Michigan Avenue
60601 Chicago, IL
USA
T +1 (0) 312 585-8319
contact-usa@smartgas.eu
www.smartgas.eu/en

General features	Channel 1:	Channel 2:	Channel 3:
Measurement principle:	Non Dispersive Infra-Red (NDIR), dual wavelength		
Target gas:	CO ₂	CO	
Measurement range:	0 ... Full Scale(FS)	FS = 25 Vol.-%	FS = 15000 ppm
Gas supply:	by flow (nearly atmospheric pressure)		
Flow rate:	0.1 .. 1.0 l / min		
Mounting dimensions:	336 mm x 40 mm x 50 mm (L x W x H)		
Warm-up time(start up time):	< 2 minutes		
Warm-up time(full specification):	< 30 minutes		

Measuring response*

Response time (t ₉₀) @ 0.7 l / min:	< 4 s (fast), < 8 s (medium), < 60 s (slow)		
Digital resolution:	0.01 Vol.-%	1 ppm	
Detection limit (3 σ) fast mode:	0.12 Vol.-% /	15 ppm /	
Detection limit (3 σ) medium mode:	0.08 Vol.-% /	9 ppm /	
Detection limit (3 σ) slow mode:	0.04 Vol.-%	4 ppm	
Repeatability:	$\leq \pm 0.1$ Vol.-%	$\leq \pm 50$ ppm	
Linearity error (straight line deviation):	$\leq \pm 0.25$ Vol.-%	$\leq \pm 100$ ppm	
Long term stability (zero):	over 1000 h operating time	$\leq \pm 0.25$ Vol.-%	$\leq \pm 80$ ppm
Long term stability (span):	over 1000 h operating time	$\leq \pm 0.06$ Vol.-%	$\leq \pm 20$ ppm

Influence of T, P, flow rate, other*

Temp. dependence (zero):	with thermal isolation, heater on	$\leq \pm 0.01$ Vol.-% per °C	$\leq \pm 0.1$ ppm per °C
Temp. dependence (span):	with thermal isolation, heater on	$\leq \pm 0.02$ Vol.-% per °C	$\leq \pm 0.2$ ppm per °C
Pressure dependence:	pressure compensated, residual error in % of actual reading / hPa	$\leq \pm 0.02$	$\leq \pm 0.02$
Flow rate dependence:		$\leq \pm 0.02$ Vol.-%	$\leq \pm 10$ ppm
Cross sensitivity (zero) other gases:	@ 25 Vol.-% CO ₂ (compensated for 42 °C): - @ 15000 ppm CO (compensated for 42 °C): $\leq \pm 0.4$ Vol.-%		$\leq \pm 150$ ppm -

Electrical parameters

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

Climatic conditions

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

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

smartGAS Mikrosensorik GmbH

Huenderstrasse 1
74080 Heilbronn
Germany
T +49 (0) 7131 797553-0
sales@smartgas.eu
www.smartgas.eu

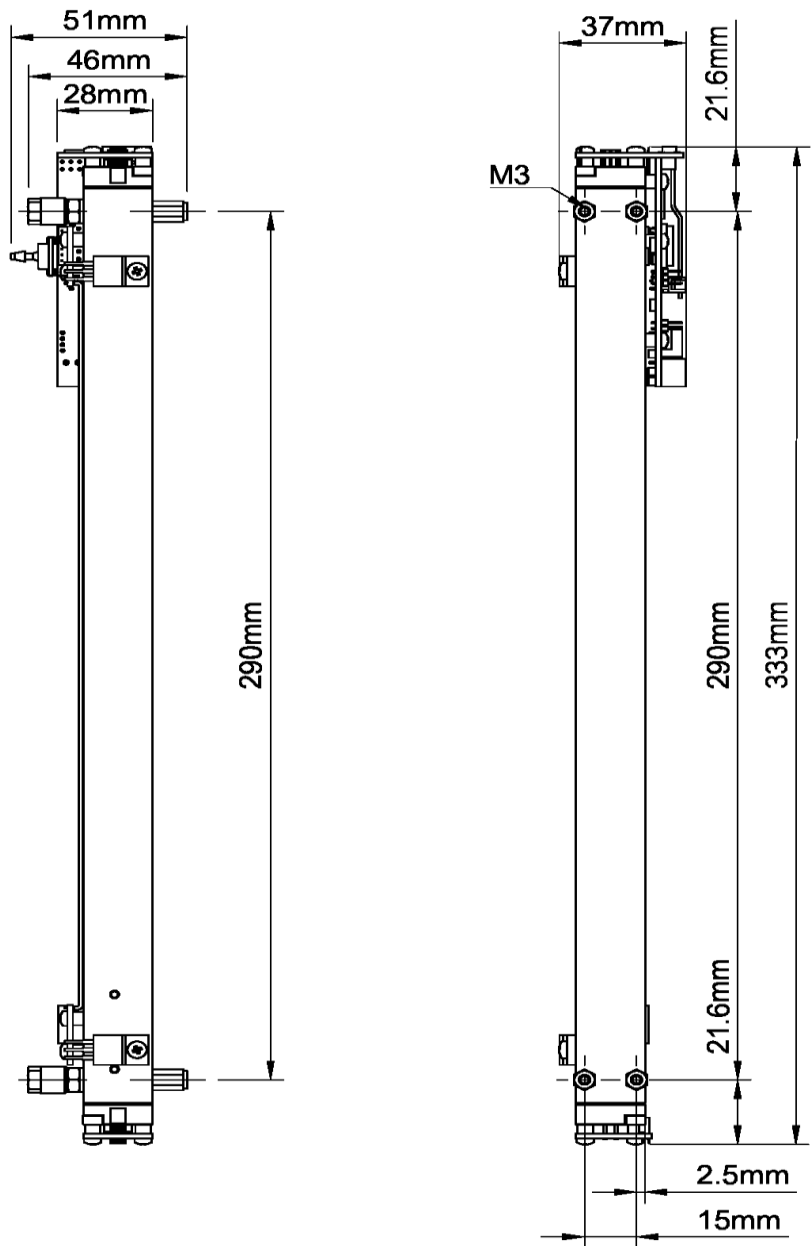
smartGAS Sensor Technology Co., Ltd

Building 16, No. 59 Jiangnan Rd. CEDZ Changshu,
Jiangsu
China
T +86 (0) 512-83380880
info@smartgas-cn.com
www.smartgas-cn.com

smartGAS US-Office

150 North Michigan Avenue
60601 Chicago, IL
USA
T +1 (0) 32 585-8319
contact-usa@smartgas.eu
www.smartgas.eu/en

Technical drawing



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. Please consult smartGAS sales engineers for any deviating requirement.

smartGAS Mikrosensorik GmbH
 Huenderstrasse 1
 74080 Heilbronn
 Germany
 T +49 (0) 7131 797553-0
 sales@smartgas.eu
 www.smartgas.eu

smartGAS Sensor Technology Co., Ltd
 Building 16, No. 59 Jiangnan Rd. CEDZ Changshu,
 Jiangsu
 China
 T +86 (0) 512-83380880
 info@smartgas-cn.com
 www.smartgas-cn.com

smartGAS US-Office
 150 North Michigan Avenue
 60601 Chicago, IL
 USA
 T +1 (0) 32 585-8319
 contact-usa@smartgas.eu
 www.smartgas.eu/en