

MADE IN GERMANY

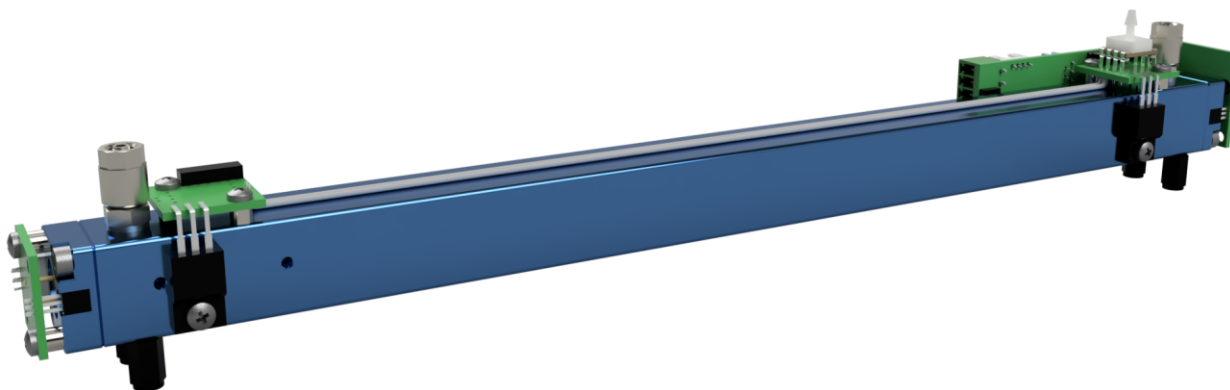


SILAREX

Infrared Gas Sensor
 Channel 1: FS = 25 Vol.-% CO2
 Channel 2: FS = 500 ppm CO
 Channel 3:
 smartGAS item number: SX-200021-00000

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

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| General features | Channel 1: | Channel 2: | Channel 3: |
|-----------------------------------|--|----------------|--------------|
| Measurement principle: | Non Dispersive Infra-Red (NDIR), dual wavelength | | |
| Target gas: | CO2 | CO | |
| Measurement range: | 0 ... Full Scale(FS) | FS = 25 Vol.-% | FS = 500 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 (t90) @ 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.-% | $\leq \pm 5$ ppm | |
| Linearity error (straight line deviation): | $\leq \pm 0.25$ Vol.-% | $\leq \pm 10$ ppm | |
| Long term stability (zero): | over 1000 h operating time | $\leq \pm 0.25$ Vol.-% | $\leq \pm 20$ ppm |
| Long term stability (span): | over 1000 h operating time | $\leq \pm 0.06$ Vol.-% | $\leq \pm 15$ 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.-% | $\leq \pm 2$ ppm |
| Cross sensitivity (zero) other gases: | @ 25 Vol.-% CO2 (compensated for 42 °C): - @ 500 ppm CO (compensated for 42 °C): | $\leq \pm 0.02$ Vol.-% | $\leq \pm 15$ 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, 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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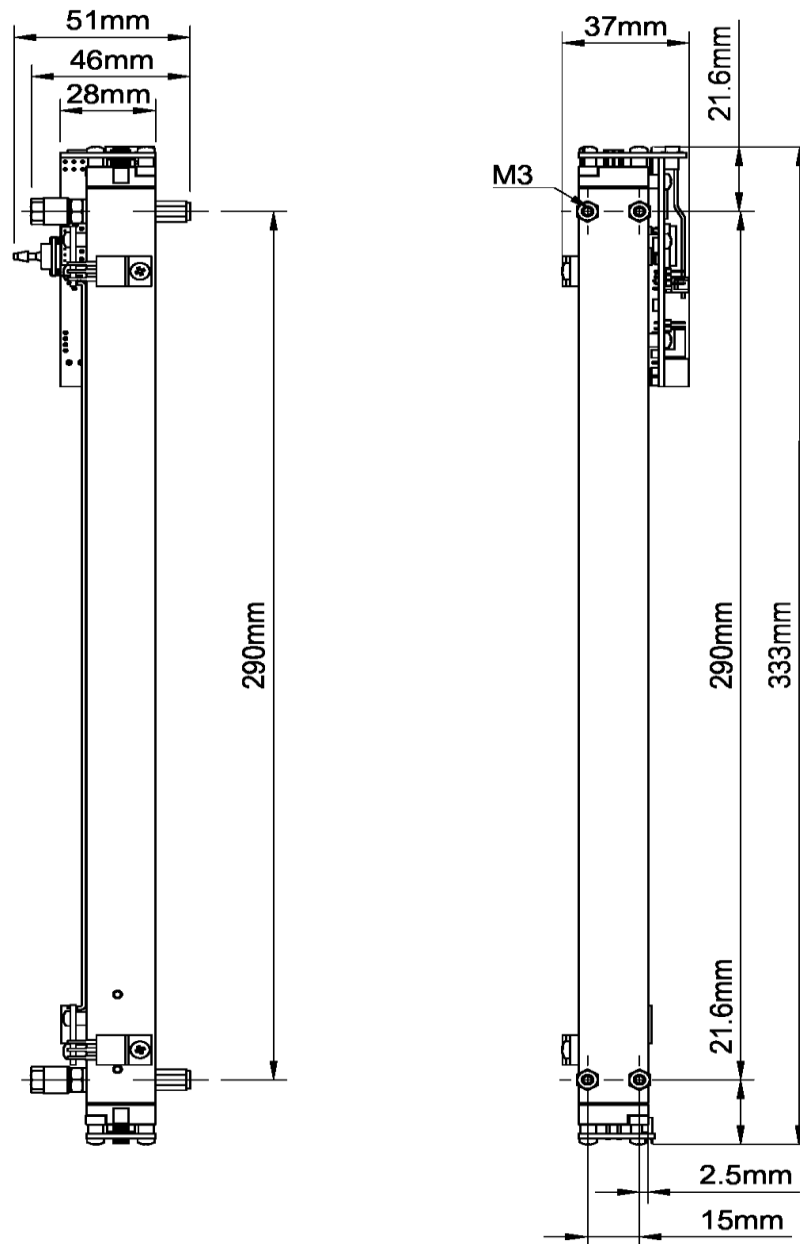
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Technical drawing



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