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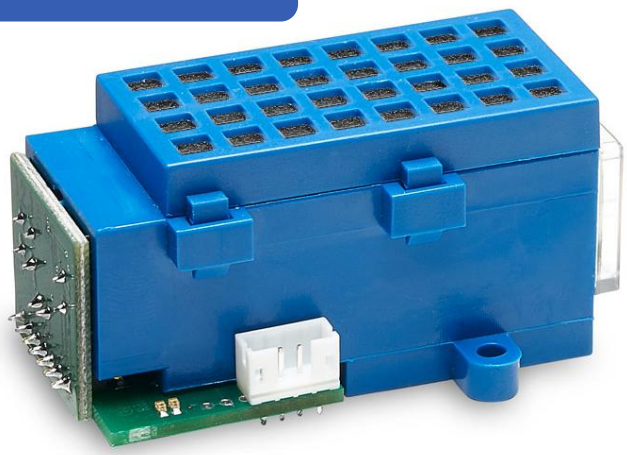
MADE IN GERMANY

BASIC^{EVO}

Infrared gas Sensor
Carbon Dioxide CO_2 5000 ppm
ASHRAE Standard R-744
smartGAS item number: B3-212505

Product features:

- Non Dispersive Infra-Red (NDIR)
- Dual beam / Reference channel
- Low Power Consumption
- Small Size
- Low Maintenance



The **BASIC^{EVO}** NDIR gas sensor is used for **ambient air monitoring** using **dual wavelength technology.** It is designed for leak detection in small concentration ranges (ppm range) for wall mount detectors and room air monitoring devices. **BASIC^{EVO}** diffusion sensors advantages are a **long lifetime, low detection limits, very slight drift, a large temperature range, a fast response time and low maintenance costs.** The **BASIC^{EVO}** series is therefore the optimal solution for all applications in which an ambient air sensor should be **reliable** and at the same time **simple in its handling.**

Options

- Modulbox
- Ready to use transmitter version
- Connect Interface
- Calibration software
- Data Logger software
- Calibration and test gases
- USB adapter

Support

- Design-In support
- Customization:
  - Software
  - Protocols
  - Measuring ranges
  - Background gas optimizing
  - Interfaces

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BASIC^{EVO} I Carbon Dioxide CO_2 I ASHRAE Standard R-744 |B3-212505

General features	Release date: 09 Jan 2026
Measurement principle:	Non Dispersive Infra-Red (NDIR), dual wavelength
Measurement range:	0 … 5000 ppm Full Scale (FS)
Gas supply:	by diffusion (atmospheric pressure)
Mounting dimensions:	62 mm x 37 mm x 30 mm (L x W x H) Other Dimensions : see Technical Drawing
Warm-up time:	< 2 minutes (start up time) < 11 minutes (fade in finished) < 30 minutes (full specification)

Measuring response*	
Response time (t_{90}):	appr. 30 s
Digital resolution:	1 ppm
Detection limit (3 σ):	≤ 0.7 % [FS]
Repeatability:	≤ ± 0.5 % [FS]
Linearity error (straight line deviation):	≤ ± 1 % [FS]
Long term stability (zero):	≤ ± 1 % [FS] over 12 month period
Long term stability (span):	≤ ± 1 % [FS] over 12 month period

Influence of T, P, flow rate, other*	
Temp. dependence (zero):	≤ ± 0.15 % [FS] per °C
Temp. dependence (span):	≤ ± 0.15 % [FS] per °C
Pressure dependence:	+ 0.156 % of actual reading / hPa

Electrical parameters	
Supply voltage	3.3V .. 6.0V DC
Supply current (peak):	< 400mA @ 3.3V, < 240mA @ 5.0V
Inrush current:	< 600mA
Average power consumption:	< 800mW
Digital output signal:	Modbus ASCII / RTU via UART, autobaud, autoframe
Calibration:	zero and span by software

Climatic conditions	
Operating temperature:	-20 … + 40 °C
Storage temperature:	-20 … + 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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For more information, please visit www.smartgas.eu or contact us at 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.

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