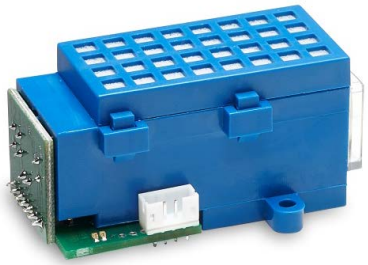
smartGAS MIKROSENSORIK

blue performance®

smartMODUL BASIC^{EVO}

Infrared gas sensor R1234ze // REFRIGERANT // 1000 ppm
smartGAS item number: B3-812105-03000



- **Pre calibrated**
- **Gas entry by diffusion**
- **3.3 - 6 V DC supply voltage**
- **Modbus ASCII or RTU**
- **Status indication by LED**

Non Dispersive Infrared (NDIR) gas sensor for ambient air monitoring using dual wavelength technology. Although designed especially for refrigeration leak detection in small concentration ranges (ppm range) for wall mount detectors and room air monitoring devices the BASIC^{EVO} can also be applied in food storage facilities, air conditioning systems and various areas of scientific research.

The BASIC^{EVO} R1234ze sensor can easily be integrated into OEM systems, where long term stability, repeatability and reliable performance are required. It can be utilised as a refrigerant detector in industrial refrigeration facilities but can also be used for ambient air monitoring in the field of air conditioning devices. Other scopes of applications comprise continuous gas monitoring in controlled environment chambers and food storage rooms as well as usage for various areas of scientific research. Special build-in solutions to provide IP54 protection and easy field gas-calibration are available.

Modbus ASCII or RTU data communication offer a variety of options to connect the BASIC^{EVO} gas sensor to a controller.

APPLICATION EXAMPLE
HOTEL AIR CONDITIONING
FOOD STORAGE ROOMS
INDUSTRIAL REFRIGERATION
FOOD TRANSPORT
RESEARCH

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General features	
Measurement principle:	Non Dispersive Infra-Red (NDIR), dual wavelength
Measurement range:	0 .. 1000 ppm Full Scale (FS)
Gas supply:	by diffusion (atmospheric pressure)
Dimensions:	62 mm x 37 mm x 30 mm (L x W x H)
Warm-up time:	< 2 minutes (start up time)
	< 11 minutes (fade in finished)
	< 30 minutes (full specification)
Measuring response*	
Response time (t_{90}):	appr. 60 s
Digital resolution (@ zero):	1 ppm
Detection limit (3 σ):	≤ 7 ppm
Repeatability:	≤ ± 10 ppm
Linearity error (straight line deviation):	≤ ± 20 ppm
Long term stability (span):	≤ ± 20 ppm over 12 month period
Long term stability (zero):	≤ ± 20 ppm over 12 month period
Influence of T and P*	
Temp. dependence (zero):	≤ ± 1.5 ppm per °C
Temp. dependence (span):	≤ ± 3 ppm per °C
Pressure dependence:	± 0.100 % of measurement value / hPa
Electrical inputs and outputs	
Supply voltage:	3.3 V .. 6.0 V DC
Supply current (peak):	< 400 mA @ 3.3 V, < 240 mA @ 5.0 V
Inrush current:	< 600 mA
Average power consumption:	< 800 mW
Digital output signal:	Modbus ASCII / RTU via UART, autobaud, autoframe
Calibration:	zero and span by SW
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 and 22 °C 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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