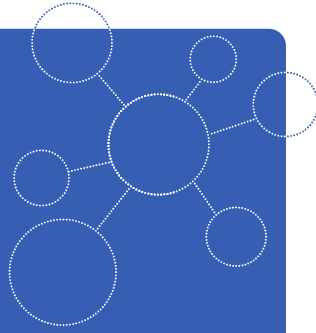


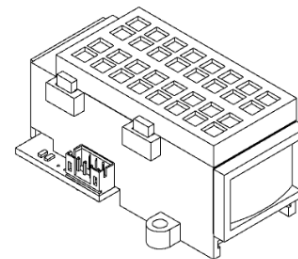
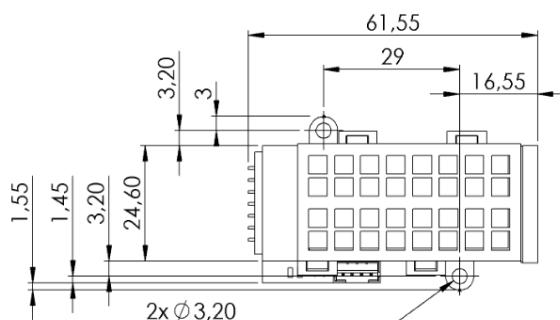
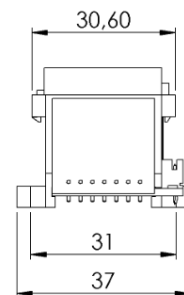
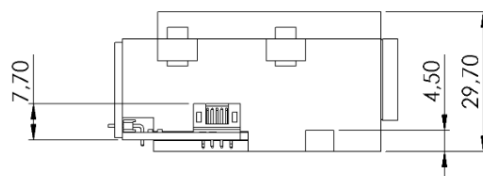
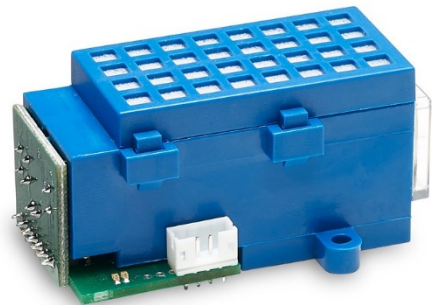
MADE IN GERMANY



BASIC^{EVO}

Infrared gas Sensor
Broadband (R134a)
2000 ppm
smartGAS item number: B3-712205-03800

- Pre calibrated
- Low drift
- Gas entry by diffusion
- 3.3 - 6 V DC supply voltage
- Modbus ASCII or RTU
- Status indication by LED
- Multiple refrigerants detectable



Application examples

Hotel air conditioning
Food storage rooms
Industrial refrigeration
Supermarkets
Research

Available equipment

Connect Interface
Wall mount enclosure
Calibration software
Mounting equipment

Available design in support

Mechanical installation
Data communication
also, as complete Transmitter

General features

Measurement principle:	Non Dispersive Infra-Red (NDIR), dual wavelength
Measurement range:	0 ... 2000 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)
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:	1 ppm
Detection limit (3 σ):	≤ 10 ppm
Repeatability:	$\leq \pm 20$ ppm
Linearity error (straight line deviation):	$\leq \pm 30$ ppm
Long term stability (zero):	$\leq \pm 50$ ppm over 12 month period
Long term stability (span):	$\leq \pm 60$ ppm over 12 month period

Influence of T, P, flow rate, other*

Temp. dependence (zero):	$\leq \pm 3$ ppm per °C
Temp. dependence (span):	$\leq \pm 6$ ppm per °C
Pressure dependence:	+ 0.100 % of actual reading / hPa

Electrical parameters

Supply voltage	3.3 V ... 6.0 VDC
Supply current (peak):	< 400 mA @ 3.3 V, < 240 mA @ 5.0 V
Inrush current:	< 450 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, $T_a = 22$ °C, flow = 0.7 l / min for dry (not condensing) and clean sample gas.
Stated values exclude calibration gas tolerance.

Broadband features cross-sensitivity		
Gas :	Scaling factor at FS (other than R134a):	Scaling error (3 σ) at FS (other than R134a):
R11	2,958	$\leq \pm 110$ ppm
R123	0,999	$\leq \pm 50$ ppm
R1233zd	0,909	$\leq \pm 80$ ppm
R1234yf	0,682	$\leq \pm 300$ ppm
R1234ze	0,632	$\leq \pm 30$ ppm
R125	0,675	$\leq \pm 20$ ppm
R22	1,586	$\leq \pm 250$ ppm
R23	1,292	$\leq \pm 226$ ppm
R32	1,701	$\leq \pm 73$ ppm
R404a	0,773	$\leq \pm 94$ ppm
R407a	0,852	$\leq \pm 50$ ppm
R407c	0,964	$\leq \pm 100$ ppm
R407f	0,950	$\leq \pm 220$ ppm
R410a	1,017	$\leq \pm 83$ ppm
R448a	0,860	$\leq \pm 269$ ppm
R449a	0,851	$\leq \pm 190$ ppm
R452a	0,614	$\leq \pm 176$ ppm
R455a	2,681	$\leq \pm 107$ ppm
R507	1,000	$\leq \pm 20$ ppm
R513a	0,735	$\leq \pm 56$ ppm

Use of scaling factors:

$$\text{Actual gas conc. (target gas)} = \text{Scaling factor} \times \text{Conc. reading}$$

Actual gas conc. (target gas):

Real gas concentration of the target gas

Scaling factor:

Multiplication factor to correct the sensor readings

Concentration reading (R134a):

Actual sensor output reading

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.

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.