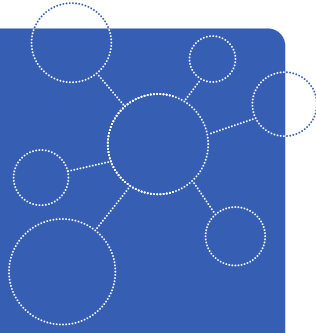


MADE IN GERMANY

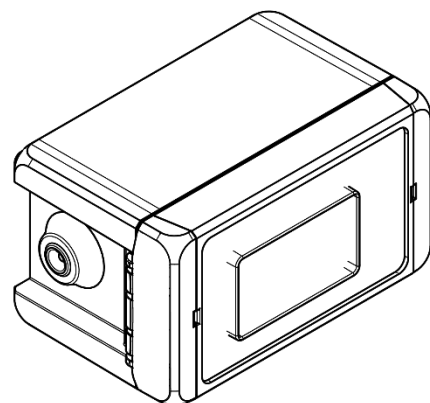
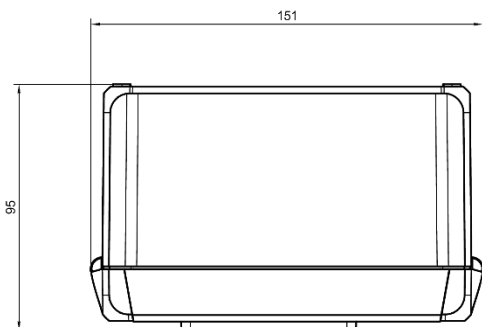
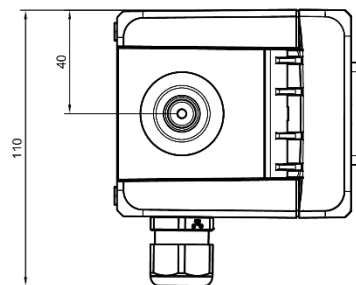
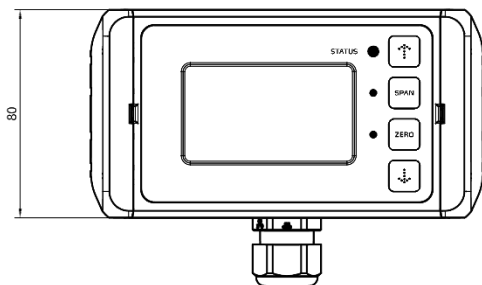


## TRANSMITTER<sup>EVO</sup>

Infrared gas detector  
Broadband (R134a)  
2000 ppm  
smartGAS item number: T4-712205-03800



- Ready to install
- IP54 protection
- 12 - 28V DC supply voltage



### Application examples

Hotel air conditions  
Laboratories  
Hospitals  
Research  
Food transport

### Available equipment

Calibration software  
Calibration adapter  
Calibration gas

### Available design in support

Mechanical installation  
Data communication

## 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:	151 mm x 80 mm x 95 mm (L x W x H)
Warm-up time:	< 2 minutes (start up time) < 11 minutes (fade in finished) < 30 minutes (full specification)
Protection class:	IP54
Electrical connection:	Cable diameter without adapter plug max. 1.5 mm <sup>2</sup> (single wire) or 1 mm <sup>2</sup> (strand). Cable diameter with adapter max. 2.5 mm <sup>2</sup>

## Measuring response\*

Response time (t <sub>90</sub> ):	appr. 60 s
Digital resolution:	1 ppm
Detection limit (3 $\sigma$ ):	$\leq 10$ 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, 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	12 V . . . 28 VDC
Supply current (peak):	< 85 mA @ 12 V, < 45 mA @ 28 V
Inrush current:	< 100 mA
Average power consumption:	< 1000 mW
Digital output signal:	Modbus ASCII / RTU via RS 485, autobaud, autoframe
Analogue output signal:	0(4) –20 mA, max 500 $\Omega$ / 0-2 V / 0-5 V / 0-10 V (DC)
Calibration:	zero and span by SW or push buttons

## 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<sub>a</sub> = 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 $\sigma$ ) 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
SF6 [200 ppm]	0,951	$\leq \pm 30$ ppm
SF6 [1000 ppm]	1,938	$\leq \pm 70$ ppm
SF6 [2000 ppm]	2,959	$\leq \pm 122$ 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

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For more information, please visit [www.smartgas.eu](http://www.smartgas.eu) or contact us at [sales@smartgas.eu](mailto: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.

