smartGAS.

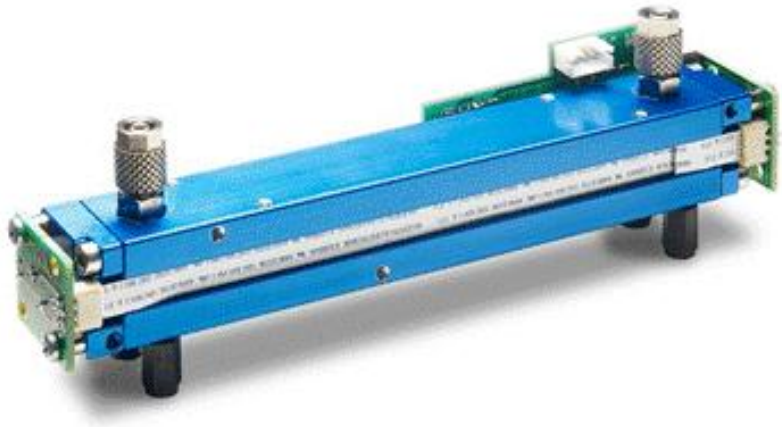
MADE IN GERMANY

FLOW^{EVO} PRO Broadband

Infrared gas Sensor
Anesthetic Gases
smartGAS item number:
F3-7A2205-108xx

Product features:

- "Ready to use" NDIR sensors
- Compact Design
- Low maintenance
- Low detection limits
- Selective against influencing gases
- Flexible interfaces
- Temperature and drift compensated
- Compact construction
- Measure 20 gases with one sensor
- Internal calibration curve for each gas
- Dual range 2000/1000 ppm select-able
- Maximal flexibility in installation
- Easy target gas selection
- Desfluran
- Sevofluran
- Isofluran



The **Flow**^{EVO} sensors have a large spectrum of measurable gases and are especially convincing where it is important to have the highest precision and reliability. Different versions can be very easily combined, also facilitating complex measuring tasks. All **smartGAS** sensors are designated by low detection limits, very small drift, a large temperature range and a fast response time and markedly low operating and maintenance costs. Our NDIR sensors in the **Flow**^{EVO} series combine measuring precision with compact design and simple handling.

Optional Accessories
- Case and thermal isolation
- Heater and heat controller
- USB Adapter
- CONNECT Interface
- Calibration/Data Logger software
- Calibration and test gases
- Gas Cooler, Filter, Pre-treatment

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

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FLOW^{EVO} Pro | Broadband Anesthetic Gases| F3-7A2205-108xx

General features

Release date: 07 Nov 2025

Measurement principle:		Non Dispersive Infra-Red (NDIR), dual wavelength
Measurement range:		0 … 2000 ppm (1000 ppm adjustable)
Gas supply:		by flow (nearly atmospheric pressure)
Mounting dimensions:		116 mm x 30 mm x 50 mm (L x W x H)
Flow Rate:		0.1 ... 1.0 l/min
Gas Path / Cuvette Material		80 mm / Alloy
Cuvette Volume		≈ 4,02 cm³
Gas Connections		5/3mm Rubber Tube Fitting (default)
Warm-up time:		< 2 minutes (start-up time) | < 30 minutes (full specification

Measuring response*

Digital resolution:		1 ppm	
Base Calibration:		R134a / $C_2H_2F_4$ / CAS No. 811-97-2	Other on Request
Response time (t90)	Standard	< 16 s (Standard Mode default)	
0 .. 90%[FS]@0.7 l/min:	Fast Mode	< 1.6 s (Fast Mode)**	
Detection limit (3 σ):	Standard	≤ 1 % [FS]	
	Fast Mode	≤ 2 % [FS]	
Repeatability:		≤ ±1 % [FS]	
Linearity error (straight line deviation):		≤ ±2 % [FS] @R134a | other see table on page 3	
Long term stability (zero):		≤ ± 2 % [FS] over 1000 h period	
Long term stability (span):		≤ ± 5 % [FS] over 1000 h period	

Influence of T,P,flow rate,other*

Temp. dependence (zero):	≤ ± 0.2 % [FS] per °C
Temp. dependence (span):	≤ ± 0.6 % [FS] per °C
Pressure dependence:	+ 0.1 % of actual reading / hPa
Flow rate dependence:	≤ ± 4 ppm per 0.1 l / min
Cross sensitivity (zero) other gases:	Consult manufacturer
Gas dew point requirement:	Not condensing, particle free and clean sample gas

Electrical parameters

Supply voltage:	3.3V .. 6.0 VDC
Supply current (peak):	< 400mA @ 3.3V, < 240mA @ 5.0V
Inrush current:	< 600mA
Average power consumption:	< 800mW
Digital output signal:	Modbus ASCII / RTU 1 Wire TTL autobaud, autoframe
Max read out data rate	2.5 Hz
Calibration:	zero and span by software

Climatic conditions

Operating temperature:	Operating : 0 .. + 50 °C | Storage : -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.

** Adjustable only via smartGAS Calibration-Tool Software.

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Broadband Gas Table : Article code F3-7A2205-10801

Gas type	CAS	Index:	Linearity error (3 σ) With R134a span calibration	Linearity error (3 σ) With target gas calibration
Desfluran $C_3H_2F_6O$	57041-67-5	0	≤ ± 20 % [FS]	≤ ± 2 % [FS]
Sevofluran $C_4H_3F_7O$	28523-86-6	1	≤ ± 10 % [FS]	≤ ± 2 % [FS]
Isofluran $C_3H_2ClF_5O$	26675-46-7	2	≤ ± 15 % [FS]	≤ ± 2 % [FS]

* gas table can vary

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