smartGAS MIKROSENSORIK

blue performance

FLOW^{EVO}

Infrared gas sensor CO // Carbon monoxide // 10 Vol.-%
smartGAS item number: F3-222107-05000

- **Pre calibrated**
- **Compact design**
- **3/5 mm gas line connectors**
- **3.3 - 6 V DC supply voltage**
- **Modbus ASCII or RTU**
- **Status indication by LED**
- **Low drift**

Non Dispersive Infrared (NDIR) gas sensor for process control and gas analysing using dual wavelength technology. Designed for emission monitoring, environmental analysing, process control and research in a wide range of gas measurement systems.

The FLOW^{EVO} CO sensor can easily be integrated into OEM systems, where long term stability, repeatability and reliable performance are required. It can be utilised in numerous fields of applications to provide vital data for efficiency enhancement, safety control and precise analysis measures. They are deployed as CO meters or flue gas analysers in incineration- and biogas-plants to monitor exhaust gas flows and ensure continuous process operation but also suit for various scientific applications.

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

APPLICATION EXAMPLES

EMISSION MONITORING
ENVIRONMENTAL MONITORING
PROCESS CONTROL
RESEARCH
GAS ANALYSING
BIO GAS

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General features	
Measurement principle:	Non Dispersive Infra-Red (NDIR), dual wavelength
Measurement range:	0..10 Vol.-% Full Scale (FS)
Gas supply:	by flow (nearly atmospheric pressure)
Flow rate:	0.1 .. 1.0 l / min
Dimensions:	73 mm x 30 mm x 36 mm (L x W x H)
Warm-up time:	< 2 minutes (start up time)
	< 30 minutes (full specification)
Measuring response*	
Response time (t_{90}):	Appr. 12 s @ 0.7 l / min
Digital resolution (@ zero):	0.001 Vol.-%
Detection limit (3 □):	≤ 0.05 Vol.-%
Repeatability:	≤ ± 0.05 Vol.-%
Linearity error (straight line deviation):	≤ ± 0.1 Vol.-%
Long term stability (span):	≤ ± 0.2 Vol.-% over 1000 h period
Long term stability (zero):	≤ ± 0.1 Vol.-% over 1000 h period
Influence of T, P, flow rate, other*	
Temp. dependence (zero):	≤ ± 0.02 Vol.-% per °C
Temp. dependence (span):	≤ ± 0.04 Vol.-% per °C
Pressure dependence:	+ 0.134 % of measurement value / hPa
Flow rate dependence:	≤ ± 0.02 Vol.-% per 0.1 l / min
Cross sensitivity (zero) other gases:	consult factory
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:	0 .. + 50 °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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