



**Electro Optical Components, Inc.**

5464 Skylane Boulevard, Suite D, Santa Rosa, CA 95403

Toll Free: 855-EOC-6300

[www.eoc-inc.com](http://www.eoc-inc.com) | [info@eoc-inc.com](mailto:info@eoc-inc.com)



**smartGAS**  
MIKROSENSORIK

## smartMODUL FLOW<sup>EVO</sup>

CO // CARBON MONOXIDE // 100 Vol.-%

Infrared gas sensor CO 100 Vol.-% // F3-222108-05000



- 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<sup>EVO</sup> 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<sup>EVO</sup> sensor to a controller.

### CO // CARBON MONOXIDE SENSOR

EMISSION MONITORING  
 ENVIRONMENTAL MONITORING  
 PROCESS CONTROL  
 RESEARCH  
 GAS ANALYSING  
 BIO GAS

# smartMODUL FLOW <sup>EVO</sup>

CO // CARBON MONOXIDE // 100 Vol.-%  
Infrared gas sensor CO 100 Vol.-% // F3-222108-05000

<b>General features</b>	
Measurement principle:	Non Dispersive Infra-Red (NDIR), dual wavelength
Measurement range:	0..100 % Full Scale (FS)
Gas supply:	by flow (nearly atmospheric pressure)
Flow rate:	0.1 .. 1.0 l / min
Dimensions:	76 mm x 30 mm x 37 mm (L x W x H)
Warm-up time:	< 2 minutes (start up time) < 30 minutes (full specification)
<b>Measuring response</b>	
Response time ( $t_{90}$ ):	Apr. 12 s @ 0.7 l / min
Digital resolution (@ zero):	0.01 %
Detection limit ( $3 \sigma$ ):	$\leq 0.2 \%$
Repeatability:	$\leq \pm 0.6 \%$
Linearity error (straight line deviation):	$\leq \pm 0.9 \%$
Long term stability (span):	$\leq \pm 2.0 \%$ over 1000 h period
Long term stability (zero):	$\leq \pm 1.0 \%$ over 1000 h period
<b>Influence of T, P, flow rate, other</b>	
Temp. dependence (zero):	$\leq \pm 0.1 \%$ per °C
Temp. dependence (span):	$\leq \pm 0.2 \%$ per °C
Pressure dependence:	+ 0.134 % / hPa
Flow rate dependence:	$\leq \pm 0.1 \%$ per 0.1 l / min
Cross sensitivity (zero) other gases:	consult factory
<b>Electrical inputs and outputs</b>	
Supply voltage:	3.3V .. 6.0V DC
Supply current (peak):	< 400mA @ 3.3V, < 240mA @ 5.0V
Inrush current:	< 450mA
Average power consumption:	< 800 mW
Digital output signal:	Modbus ASCII / RTU via UART, autobaud, autoframe
Calibration:	zero and span by SW
<b>Climatic conditions</b>	
Operating temperature:	0 .. + 50 °C
Storage temperature:	-20 .. + 60 °C
Air pressure:	800 .. 1150 hPa
Ambient humidity:	0 .. 95 % relative humidity (not condensing)

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.