



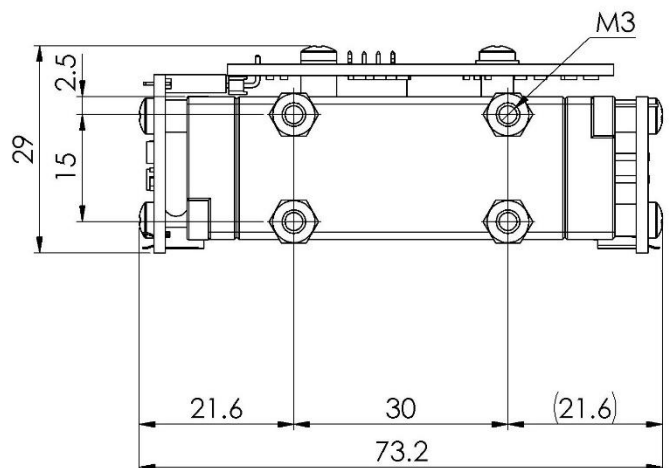
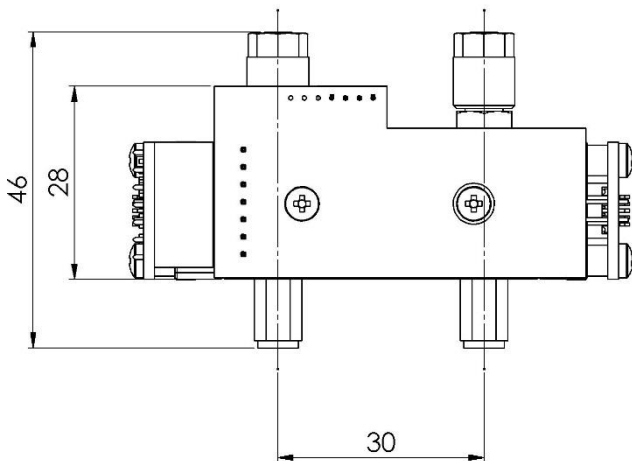
FLOW^{EVO} for Biogas application

Infrared gas sensor

CO₂ // Carbon dioxide // 100 Vol.-%

smartGAS item number: F3-214108-05000

- Pre calibrated
- Compact design
- 3/5 mm gas line connectors
- 3.3 – 6.0 V DC supply voltage
- Modbus ASCII or RTU
- Status indication by LED
- Low drift



APPLICATION EXAMPLE

GAS ANALYSING // PROCESS CONTROL // BIOGAS APPLICATION

F3-214108-05000 CO₂ // Carbon dioxide // 100 Vol.-% for Biogas application
General features

| | |
|------------------------|--|
| Measurement principle: | Non Dispersive Infra-Red (NDIR), dual wavelength |
| Measurement range: | 0 ... 100 Vol.-% Full Scale (FS) |
| Gas supply: | by flow (nearly atmospheric pressure) |
| Flow rate: | 0.1 ... 1.0 l / min |
| Mounting dimensions: | 76 mm x 30 mm x 50 mm (L x W x H) |
| Warm-up time: | < 2 minutes (start up time) < 30 minutes (full specification) |

Measuring response*

| | | |
|--|-----------------------------------|---------------|
| Digital resolution: | 0.01 Vol.-% | |
| Response time @ 0.7 l / min**: | <i>Standard:</i> | <i>Fast:</i> |
| t ₉₀ (10 to 90 % FS): | ≤ 9.9 s | ≤ 0.7 s |
| t _{on} (0 to 90 % FS): | ≤ 16.5 s | ≤ 1.8 s |
| Detection limit (3 σ): | ≤ 0.2 Vol.-% | ≤ 0.36 Vol.-% |
| Repeatability: | ≤ ± 0.6 Vol.-% | |
| Linearity error (straight line deviation): | ≤ ± 0.9 Vol.-% | |
| Long term stability (zero): | ≤ ± 1.0 Vol.-% over 1000 h period | |
| Long term stability (span): | ≤ ± 1.5 Vol.-% over 1000 h period | |

Influence of T, P, flow rate, other*

| | |
|---------------------------------------|-----------------------------------|
| Temp. dependence (zero): | ≤ ± 0.1 Vol.-% per °C |
| Temp. dependence (span): | ≤ ± 0.2 Vol.-% per °C |
| Pressure dependence: | + 0.156 % of actual reading / hPa |
| Flow rate dependence: | ≤ ± 0.1 Vol.-% per 0.1 l / min |
| Cross sensitivity (zero) other gases: | consult manufacturer |

Electrical inputs and outputs

| | |
|----------------------------|--|
| Supply voltage: | 3.3 V ... 6.0 VDC |
| 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, T_a = 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 SW.

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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.