

gasQS™ flonic

ATEX Zone 1

Install, configure, forget

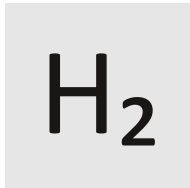
Based on a microthermal CMOS sensor, in combination with a critical nozzle and two valves, heat conductivity, heat capacity and relative density of natural gas can be measured. From these quantities, the device correlates various measured quantities. It requires no carrier gases, is robust, compact, and inexpensive.

The device is a complete in-house development of Mems AG. Due to the complex knowledge of physics, individual components and their interaction, customer-specific applications can be flexibly implemented.

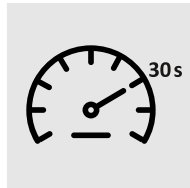
The gasQS measurement systems¹ based on a flonic offer a complete ready-to-use solution that is tailored to the customer application.



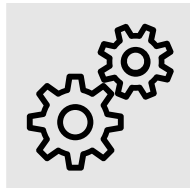
Modbus
RTU/ASCII



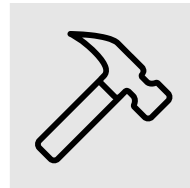
Suitable for high H₂ concentrations



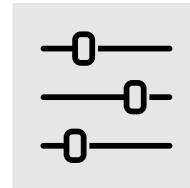
Fast measurement



Easy to integrate



Reliable



Individually adaptable

Measurement range

| Output value std. ² | | Unit | Range | Accuracy | Repeatability ³ |
|--------------------------------|--------|-------------------|-----------------|----------|----------------------------|
| Density | d_n | kg/m ³ | 0.711 ... 0.970 | ±0.007 | ±0.003 |
| Heating value | H_i | MJ/m ³ | 27.0 ... 43.0 | ±1.0 | ±0.5 |
| Calorific value | H_s | MJ/m ³ | 30.2 ... 47.2 | ±1.0 | ±0.5 |
| Wobbe index | W_s | kg/m ³ | 39.6 ... 56.5 | ±1.0 | ±0.5 |
| Methane number AVL | MN AVL | - | 60 ... 100 | ±3 | ±2 |
| Hydrogen content | H_2 | mol% | 0 ... 100 | ±1.0 | ±0.5 |

This table shows only a selection of possible output values.

¹ Further information on request

² The standard scope of delivery includes density plus one selectable value; up to 10 additional values are currently programmable, additional output values can be found in the order code or on request
 Standard conditions 0 °C, 25 °C, 1013.25 mbar absolute

Factory settings: MJ/m³, kg/m³ at standard conditions, further reference conditions and units are stored

³ Statistical scatter value with 2 sigma of 48 measuring points

Specifications

| | |
|--|---|
| Measuring time: | ≤30 seconds |
| Measuring interval: | continuous, programmable in seconds |
| Response time: | T90 within 3 measurement intervals |
| Operating/storage temperature ⁴ : | -10 ... +55 °C |
| Ex device protection type: | Ex II 2G Ex ib IIC T4 Gb (SEV 18 ATEX 0111 X) |

Media

| | |
|---|--|
| Media: | dry, neutral gases (10 µm filtering) |
| Load limit supply line: | +8.0 bar relative |
| Supply line pressure range: | standard: +3.5 ... +5.0 bar relative lowered: +2.5 ... +5.0 bar relative (on request) |
| Outlet line pressure range ⁵ : | standard: +0 ... +200 mbar relative lowered: -50 ... +100 mbar relative |
| Gas consumption: | approx. 0.1 l _n /measurement interval, unchanged gas quality |

Electrical

| | |
|-------------------------------|--|
| Output signal ⁶ : | Modbus-RTU (EIA-485 2-wire) M12-A, female, 5-pole |
| Supply voltage ⁷ : | +12.0 VDC ±10 % M12-A, male, 4-pole |
| Power consumption: | 0.5 W |

Mechanical

| | |
|--------------------------|---------------------|
| Gas connection: | G 1/8 female thread |
| Dimensions (L x W x H) : | 213 x 80 x 137 mm |
| Weight: | 2.25 kg |
| Protection class: | IP42 |

Accessories (optional)

| | |
|-------------------|--|
| EX Package | 1x Mems AG MINI-PS-12-24DC/5-15DC/2-X, +10.5 ... +36 VDC 2x Zener barriers, communication, and power supply 2x 10 m cable PVC assembled, shielded, RAL 5015 blue |
| Bus converter | Modbus RTU to customised bus profile |
| Maintenance cable | USB-RS485-M12, 5 m |

⁴ Medium and ambient temperature

⁵ Feed into free-flowing exhaust or low-pressure line, tolerant of weather fluctuations

⁶ Factory settings Modbus: 19200 bps, even parity bit + 1 stop bit, slave address: 0x01

⁷ When designing the power supply, the voltage drops of the Zener barriers used must be compensated