# gasQS™ flonic

## Standard version H-gas

**Install, configure, forget**

Metrology Swiss Made

**Modbus RTU/ASCII**

Based on a microthermal CMOS sensor, in combination with a critical nozzle and two valves, the thermal conductivity, heat capacity and relative density of natural gas (H-gases) can be measured. From these quantities, the unit correlates the calorific value, heating value, density and methane number.

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

**The gasQS measurement systems[1] based on a flonic offer a complete ready-to-use solution that is tailored to the customer application.**


Designed for H-gases | Fast measurement | Easy to integrate | Reliable | Individually adaptable

## Measurement range[2]

| Output value std.[3] | | Unit | Range | Accuracy[4] | Repeatability[5] |
|---|---|---|---|---|---|
| Norm Density | *d* | *kg/m³* | 0.711 … 0.970 | ±0.3% | ±0.04% |
| Relative density to air | *SG* | - | 0.55 … 0.75 | ±0.3% | ±0.04% |
| Lower calorific value | $H_i$ | *MJ/m³* | 32.0 … 43.0 | ±0.8% | ±0.03% |
| Lower Wobbe Index | $W_i$ | *MJ/m³* | 43.6 … 50.3 | ±1.0% | ±0.04% |
| Higher calorific value | $H_s$ | *MJ/m³* | 36.0 … 47.0 | ±0.8% | ±0.03% |
| Upper Wobbe index | $W_s$ | *MJ/m³* | 49.0 … 56.5 | ±1.0% | ±0.04% |
| Methane number AVL | *MN AVL* | - | 60 … 100 | ±1.5% | ±0.06% |

[1] Further information on request
[2] Further measurands and ranges for customized productions (see separate data sheet)
[3] 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 adjustable
[4] %-values refer to the measured value
[5] Statistical scatter value with 2 sigma of moving average with 8 values

## Specifications

| | |
|---|---|
| Measuring time: | ≤30 seconds |
| Measuring interval: | continuous, programmable in seconds |
| Response time: | T90 within 3 measurement intervals |
| Operating/storage temperature[6]: | -10 … +55 °C |
| Ex device protection type: | Ex II 2G Ex ib IIC T4 Gb<br>IECEx SEV 22.0007X<br>SEV 18 ATEX 0111 X |

## Medium

| | |
|---|---|
| Media: | dry, neutral gases (10 µm filtering) |
| Load limit supply line: | +8.0 bar relative |
| Supply line pressure range: | +2.5 ... +5.0 bar relative |
| Outlet line pressure range[7]: | -50 … +200 mbar relative |
| Gas consumption: | approx. 0.03 $l_n$/measurement interval, unchanged gas quality |

## Electrical

| | |
|---|---|
| Output signal[8]: | Modbus-RTU (EIA-485 2-wire)<br>M12-A, female, 5-pole |
| Supply voltage[9]: | +12.0 VDC ±10 %<br>M12-A, male, 4-pole |
| Power consumption: | 0.5 W |

## Mechanical

| | |
|---|---|
| Gas connection: | Swagelok 6 mm tube fitting (SS-6M0-1-2RS) |
| 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<br>2x Zener barriers, communication, and power supply<br>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 |

[6] Medium and ambient temperature
[7] Feed into free-flowing exhaust or low-pressure line, tolerant of weather fluctuations
[8] Factory settings Modbus: 19200 bps, even parity bit + 1 stop bit, slave address: 0x01
[9] When designing the power supply, the voltage drops of the Zener barriers used must be compensated