

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.

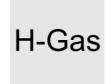
The device is a complete in-house development of Mems AG. Due to the complex knowledge of the physics, the individual components and their interaction, customer-specific applications can be flexibly implemented.







The gasQS measurement systems¹ 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 range²

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/m^3	32.0 43.0	±0.8%	±0.03%
Lower Wobbe Index	W_i	MJ/m^3	43.6 50.3	±1.0%	±0.04%
Higher calorific value	H_s	MJ/m^3	36.0 47.0	±0.8%	±0.03%
Upper Wobbe index	W_{s}	MJ/m^3	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 temperature⁶: -10 ... +55 °C

Ex device protection type: Ex II 2G Ex ib IIC T4 Gb

IECEx SEV 22.0007X 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 range⁷: -50 ... +200 mbar relative

Gas consumption: approx. 0.03 In/measurement interval, unchanged gas quality

Electrical

Output signal⁸: Modbus-RTU (EIA-485 2-wire)

M12-A, female, 5-pole

Supply voltage⁹: +12.0 VDC ±10 %

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

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

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