

gasQS™ flonic NG-H

Datasheet Zone 1



Modbus
RTU/ASCII

Based on a microthermal CMOS sensor, in combination with a critical nozzle and two valves, heat conductivity and a flow signal during an induced pressure discharge curve can be measured. From these quantities, the instrument correlates various gas property values of interest among which calorific value.

This stand-alone instrument requires no carrier gases, is robust, compact, and inexpensive. The instrument can be fully adjusted in the field with the use of methane only as calibration gas. The system is a complete in-house development of Mems AG.

Tests and evaluation have been conducted by NMI according to OIML R140 and certified according to WELMEC 8.8 for use in installations covered by the MID.



H₂

Ready for hydrogen



Fast measurements



Easy to integrate



Reliable



NMI Certified

Specifications

Type:	gasQS flonic	
Variant:	gasQS flonic NG-H	
Measuring range:	H _{s,n} ¹ = 36.3 ... 47.2 MJ/m ³	
Accuracy:	Calorific value (H _{s,n})	± 1 % Class B: CVDD (OIML R140 EN 12405-2)
Additional measurands:	Density ρ _n ¹ : 0.57 ... 0.88 kg/m ³	± 0.7 %
	Compressibility factors Z, Z _n ¹	± 0.3 %
Non-metrology-controlled measurand (optional)	Molar content of hydrogen 0 ... 23%	± 1 % absolute
Gas composition:	Natural gas, 2nd gas family H grade Hydrogen content	DVGW G 260 2013 ≤ 23%
Calibration gas for adjustment procedure:	Methane	Purity ≥4.5
Measuring time:	30 seconds	
Averaging of transmitted values:	Moving average of ≤ 8 values (steady state)	
Adjustment interval:	12 months	
Operating/storage temperature:	-10 ... +40 °C ²	
Humidity:	≤ 95 % no condensation	

¹ Base conditions t₁ = 25 °C, t_b = 0 °C, p_b = 1013.25 mbar

² Media and ambient temperature at the device

ATEX Certificate:	Ex II 2G Ex ib IIC T4 Gb (SEV 18 ATEX 0111 X)
IECEX Certificate:	IECEX SEV 22.0007X
Evaluation Certificate by NMI:	TC12470

Media

Media:	dry, neutral gases (10- μ m-filtering)
Inlet pressure range:	2.5 barg to 5.0 barg Higher pressures can be handled using a pressure regulator mounted upstream
Permissible overload pressure:	8.0 barg
Permissible pressure on outlet side:	0.9 bara to 1.1 bara
Gas consumption:	ca. 0.03 l _n /measurement cycle

Electrical

Output signal:	Modbus-RTU (EIA-485 2-wire) ^{3, 4}	
Supply voltage (Power supply AC in):	85 to 230 V _{AC} (R. STAHL: 9143/10-156-160-20s)	
Power requirement:	≤ 0.6 W	
Electromagnetic environmental class:	E2	
Supply circuit	U _i = 15.75 V I _i = 0.723 A P _i = 2.84 W C _i = 0.188 μ F L _i = 0.024 mH	
GPIO circuit	U _i = 28.0 V I _i = 0.1 A P _i = 0.7 W C _i = 0.003 μ F L _i = 0.01 mH	
RS485 circuit	U _i = 7.5 V I _i = 1.5 A P _i = 2.8 W C _i = 1.1 μ F L _i = 0.63 μ H	U _o = 4.1 V I _o = 0.091 A P _o = 0.094 W C _o = 7.9 μ F L _o = 0.2 mH C _i = 1.1 μ F (max. internal capacity) L _i = 0.63 μ H (max. internal inductance)

Mechanical

Gas connections:	6 mm Swagelok® Tube Fitting
Dimensions (l x b x h):	213 x 80 x 137 mm
Weight:	2.25 kg
Degree of protection:	IP42
Installation	I: Indoor
Class	M1

³ Factory settings Modbus: 19200 bps, even parity bit + 1 stop bit, Slave address: 0x01

⁴ Factory settings units and base conditions: MJ/m³, kg/m³, t₁ = 25 °C, t_b = 0 °C, p_b = 1013.25 mbar