

## www.mems.ch

Version 11/2024

2023-10-04\_gasQSflonic\_Datasheet\_gasQSflonic\_Ex\_Zone1\_NGL\_V18

## gasQS™ flonic NG-L

**Datasheet** 

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.



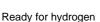
**Modbus** RTU/ASCII













Fast measurements



Easy to integrate



Reliable



NMi Certified

## **Specifications**

Type: gasQS flonic

Variant: gasQS flonic NG-L

Measuring range:  $H_{S,n}^1 = 30.2 \dots 40.6 \text{ MJ/m}^3$ 

Calorific value (Hs,n) Accuracy:

Class B: CVDD (OIML R140 EN 12405-2)

±1%

Additional measurands: Density  $\rho_n^1$ : 0.68 ... 1.03 kg/m<sup>3</sup> ±1%

> Compressibility factors Z, Z<sub>n</sub><sup>1</sup> ±1%

Non-metrology-controlled measurand (optional) Molar content of hydrogen 0 ... 5% ± 1 % absolute

DVGW G 260 2013 Gas composition: Natural gas, 2nd gas family L grade

> ≤ 5% Hydrogen content

Methane Calibration gas for adjustment procedure: Purity ≥4.5

Measuring time: 30 seconds

Averaging of transmitted values: Moving average of ≤ 8 values (steady state)

12 months Adjustment interval: -10 ... +40 °C <sup>2</sup> Operating/storage temperature:

Humidity: ≤ 95 % no condensation

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 $<sup>^{1}</sup>$  Base conditions  $t_{1}$  = 25 °C,  $t_{b}$  = 0 °C,  $p_{b}$  = 1013.25 mbar

 $<sup>^{\</sup>rm 2}$  Media and ambient temperature at the device



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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-µm-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<sub>n</sub>/measurement cycle

**Electrical** 

Output signal: Modbus-RTU (EIA-485 2-wire) 3, 4

Supply voltage (Power supply AC in): 85 to 230 V<sub>AC</sub> (R. STAHL: 9143/10-156-160-20s)

Power requirement: ≤ 0.6 W Electromagnetic environmental class: E2

Supply circuit Ui = 15.75 V

$$\begin{split} &Ii = 0.723 \; A \\ &Pi = 2.84 \; W \\ &Ci = 0.188 \; \mu F \\ &Li = 0.024 \; mH \\ &Ui = 28.0 \; V \end{split}$$

GPIO circuit Ui = 28.0 V

$$\begin{split} &\text{Ii} = 0.1 \text{ A} \\ &\text{Pi} = 0.7 \text{ W} \\ &\text{Ci} = 0.003 \text{ } \mu\text{F} \\ &\text{Li} = 0.01 \text{ mH} \end{split}$$

RS485 circuit Ui = 7.5 V Uo = 4.1 V

 $\begin{array}{lll} \text{li} = 0.75 \text{ A} & \text{lo} = 0.091 \text{ A} \\ \text{Pi} = 1.4 \text{ W} & \text{Po} = 0.094 \text{ W} \\ \text{Ci} = 1.1 \text{ } \mu\text{F} & \text{Co} = 7.9 \text{ } \mu\text{F} \\ \text{Li} = 0.052 \text{ mH} & \text{Lo} = 0.2 \text{ mH} \end{array}$ 

 $Ci = 1.1 \mu F$  (max. internal capacity) Li = 0.052 mH (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

<sup>&</sup>lt;sup>3</sup> Factory settings Modbus: 19200 bps, even parity bit + 1 stop bit, Slave address: 0x01

 $<sup>^4</sup>$  Factory settings units and base conditions: MJ/m $_n$  $^3$ , kg/m $_n$  $^3$ , t $_1$  = 25 °C, t $_b$  = 0 °C, p $_b$  = 1013.25 mbar