gasQS™ flonic

ATEX Zone 1

Install, configure, forget

Metrology Swiss Made

Modbus RTU/ASCII

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.

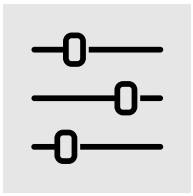
The gasQS measurement systems[1] based on a flonic offer a complete ready-to-use solution that is tailored to the customer application.

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

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)

ATEX 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