gasQS™ static H_2

Reliable determination of hydrogen concentrations and H_2-purity – compact, precise, and maintenance-free

Metrology Swiss Made

Analog 4–20 mA

The gasQS static continuously and accurately measures the thermal conductivity of gases using an integrated microthermal sensor. This allows for reliable determination of both hydrogen purity – for example, by detecting impurities such as nitrogen, oxygen, or methane – and the hydrogen concentration in gas mixtures such as natural gas or methane.

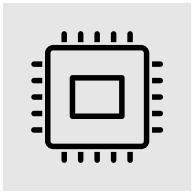
Unlike many conventional methods on the market, the device does not require calibration with reference gases and contains no moving parts – ensuring maintenance-free, long-term stable measurement.

Its compact design and simple two-wire connection enable fast integration into existing control systems, without the need for additional gateways or knowledge of bus topologies. Thanks to its screw-in mounting, the device can be installed directly into the pipeline.

Very sensitive

Fast measurement cycles

No complex bus integration



No moving parts

Pressure compensated

Possible applications

Output value std.[1]		Range [mol%]	Accuracy[2]	Repeatability[3]
Purity measurement	*H_2 in N_2, O_2, Ar, Air*[4]	0 – 5	±500ppm	±100ppm
Purity measurement	*H_2 in N_2, O_2, Ar, Air*	95 – 100	±500ppm	±100ppm
Percentage of gas	*H_2 in CH_4*	0 – 100[5]	±0.1%	±0.02%
Percentage of gas	*H_2 in natural gas*[6]	0 – 100[5]	±0.5%	±0.02%

[1] Standard conditions 0 °C, 25 °C, 1013.25 mbar absolute.
[2] Absolut
[3] Statistical scatter value with 2 sigma of moving average with 8 values.
[4] Nitrogen, oxygen or air may be present as a mixture or individually.
[5] Range customisable according to customer requirements.
[6] The average expected natural gas composition must be known. Fluctuations can affect measurement accuracy.

Specifications

Measuring time:	0.1 seconds
Measuring interval:	1 second
Response time:	T90 typically 2 seconds[7]
Meas. range temp. compensated[8]:	-20 … +65 °C
Operating/storage temperature:	-25 … +80 °C
Maximum installation height:	3,760 meters above sea level
Ex device protection type and certificate number:	Ⓔx II 1 G Ex ia IIC T4 Ga IECEx SEV 22.0008X SEV 15 ATEX 0191 X

Media

Media:	dry, neutral gases (10 µm filtering)
Load limit supply line:	+30 bar gauge
Supply line pressure range:	standard: -0.5 ... +9.0 bar gauge extended: -0.5 ... +15.0 bar gauge (on request)[9]

Electrical

Connector:	M12-B, male, 5-pole
Output signal:	Analog 4 – 20mA
Supply voltage:	+16.0 … +28.0 VDC
Maximum load:	R < (V_s – 16 VDC)/0.02 A

Mechanical

Gas connection:	G 3/8 male thread
Dimensions (Diameter x Height):	51 x 54 mm
Weight:	0.40 kg
Protection class:	IP54

Accessories (optional)

EX Package	1x SMART transmitter power supply unit 1x 10 m cable PVC assembled, shielded, RAL 5015 blue
Tee piece	Fitting optimised for fast measurements, G1/4 – G3/8 – G1/4

[7] Depending on distance between device and gas line.
[8] Medium and ambient temperature.
[9] Maximum supply line pressure for gases with high O2 concentrations: +10.0 bar gauge.