# 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.

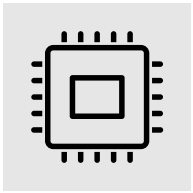
Unlike many conventional methods on the market, the device does not require calibration with reference gases and contains no moving parts – ensuring maintenance-free, long-term stable measurement.

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<br>IECEx SEV 22.0008X<br>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<br>extended: -0.5 ... +15.0 bar gauge (on request) |

## 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<br>1x 10 m cable PVC assembled, shielded, RAL 5015 blue |
| Tee piece | Fitting optimised for fast measurements,<br>G1/4 – G3/8 – G1/4 |

[7] Depending on distance between device and gas line.
[8] Medium and ambient temperature.