

Strong gas quality fluctuations – high measurement precision: MemS gasQS™

The booming gas production sector is much affected by considerable fluctuations in gas quality. In the research project «[GasQualityGlas](#)» 3 calorimetric sensors, 2 gas chromatographs and 4 correlative gas quality sensors (incl. MemS gasQS™ flonic) have been extensively probed. Gas G222 with below shown measuring results contains 23 mol% hydrogen (rest methane), and with its high stake of hydrogen, can be considered a benchmark for expected higher proportions of hydrogen from power-to-gas processes in the gas grids in future.

The measured data of our gasQS™ flonic are marked with blue arrows in below graphs.

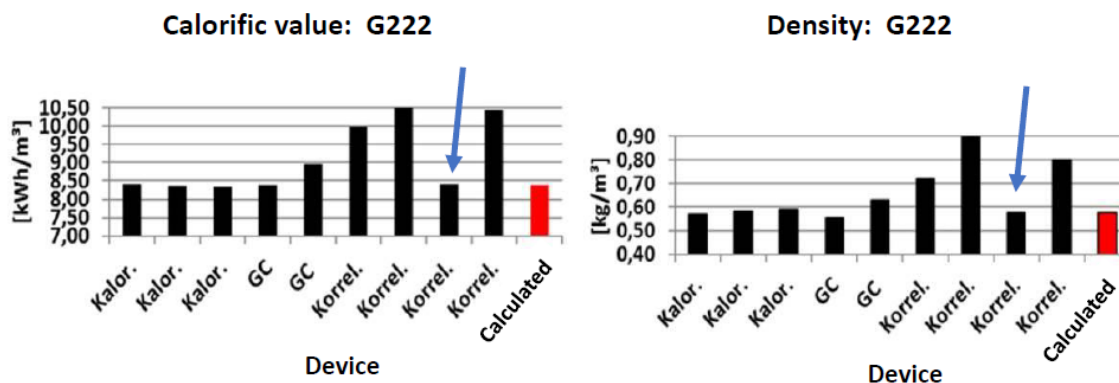
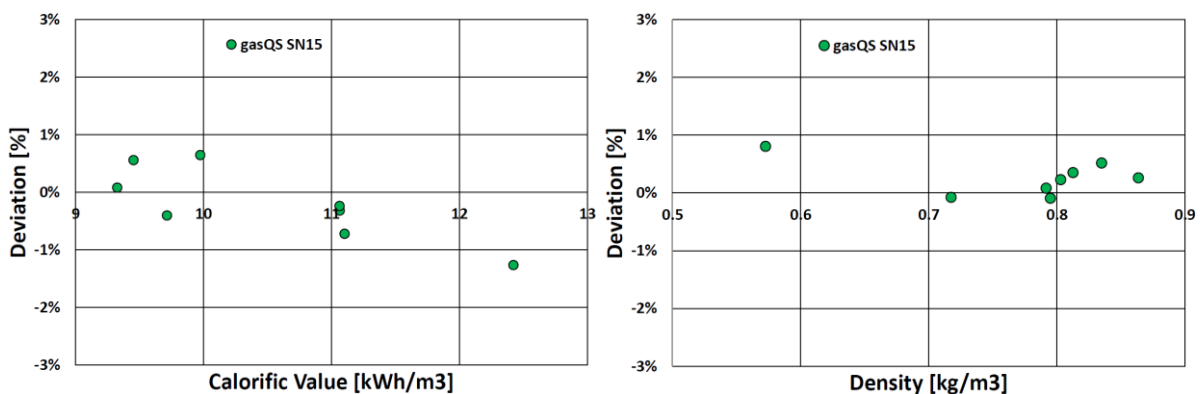


Fig. 3.11: Measurement results for test gas G222, parameter calorific value (left) and norm density (right), all data in line with German Reference System 25°C / 0°C (source: GWI)

Source: Joint final report of the research project gas quality fluctuations – work out of compensation strategies for the gas production sector to optimize energy efficiency, December 2018, [GasQualityGlas](#)

Measurement accuracy of the MemS gasQS™ flonic for all nine tested gases



Conclusion: MemS' correlative gas quality sensor gasQS™ flonic determined calorific value and density of all tested gases well within our indicated accuracy ranges. The calorific value for G222 (with 23% H₂) was measured by our sensor with an absolute deviation of +0.08%. All other correlative devices came up with higher measurement deviations. One gas chromatograph deviated by 7%. One calorimeter performed well, the other two showed slightly too low values.

Measurement, analysis, control and steering of the **gas quality** (characteristics like calorific value, methane number, Wobbe index, air requirement, density, etc.) will be a **key success factor** for future gas projects and applications; both **economically** (cost, price, efficiency, profitability) and **ecologically** (achieve emission goals).

We can contribute to the success of your projects and business activities.

With our state-of-the-art gas quality sensing technology; products, experience, expertise.



gasQS™ static



gasQS™ flonic V1



gasQS™ flonic V2



gasQS™ goffredic (mobile device)

Mems AG

Bruggerstrasse 30
5413 Birmenstorf
Switzerland

+41 (0)56 470 92 00
info@mems.ch
www.mems.ch



Fast response
Robustness **Compact size**

Ease of integration into control system

No reference gas Low maintenance
No re-calibration