



Gas sensor GSE 307 for detection of Hydrogen H₂



Mode of operation

The principle of the measurement cell used is based on the electro-chemical oxidation of hydrogen H₂ on the working electrode. The H₂ in the measurement air reaches the working electrode via a gas-permeable diaphragm, and is oxidised. The oxygen molecule used for this is replaced from the ambient air. This results in the very long service life of the measurement cell, which, from experience, can operate for several years.

The measured gas concentration is linear to the electrical output signal of the gas measurement probe. The potentiometers and the 3.5 mm jack connection for the calibration are accessible from the outside, and permits a "one-man" calibration.

When used in a pump system, the service life can be heavily reduced, as the electrolyte evaporates more quickly through the porous diaphragm. The measurement cell is sensitive to solvent vapours.

The **calibration gas** should be 75% of the measurement range, and must contain synthetic air as the carrier gas.

Performance Characteristics

| | |
|--------------------------------|--|
| Sensitivity: | 10 ppm |
| Measuring range: | max. 40'000 ppm / linear |
| Standard calibration: | 0...10'000 ppm/ 0...4 Vol. % |
| Response time t 90: | ≤ 110 sec |
| Operating temperature: | -20 °C ... +50 °C |
| Start up after reconditioning: | max. 1 h |
| Pressure range: | atmospheric ± 10% |
| Air humidity: | 15...90% non condensing |
| Position sensitivity: | none |
| Long term output drift: | < 2% / month |
| Life span at 20 °C: | at least 2 years depends on the application |

Cross sensitivity to other gases

| Test gas | concentration of the test gas | display on the CO-Sensor |
|--|-------------------------------|--------------------------|
| Chlorine Cl ₂ | 1 ppm | 0 ppm |
| Hydrogen Chloride HCl | 5 ppm | 0 ppm |
| Hydrogen Cyanide HCN | 10 ppm | ~ 10 ppm |
| Ethylene C ₂ H ₄ | 100 ppm | ~ 40 ppm |
| Carbon Monoxide CO | 300 ppm | < 120 ppm |
| Sulphur Dioxide SO ₂ | 5 ppm | 0 ppm |
| Hydrogen Sulphide H ₂ S | 15 ppm | ~ 10 ppm |
| Nitric Dioxide NO ₂ | 5 ppm | 0 ppm |
| Nitric Oxide NO | 35 ppm | < 10 ppm |
| Hydrogen H ₂ | 20'000 ppm | 20'000 ppm |

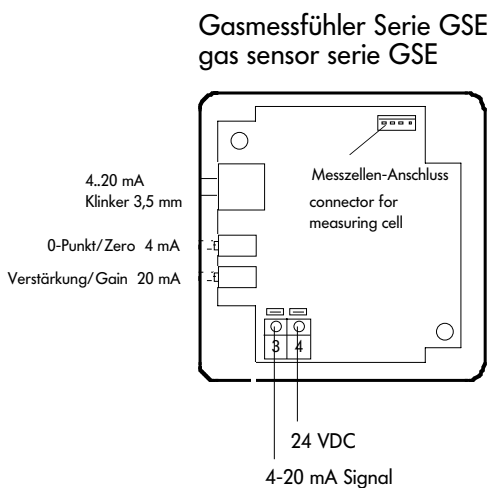
Sensor electronic specification

| | |
|------------------------|------------------------|
| Cable: | 2-core cable, shielded |
| Power supply: | 13.5...30 VDC |
| Sensor current: | max. 60 mA |
| Output signal: | 4...20 mA/max. 60 mA |
| Operating temperature: | -40 °C ... +85 °C |

Inspection (Maintenance)

The sensor and the electronic require an inspection. Routine calibration is recommended once or twice a year.

Electronic



Dimensions

