



## **Gas sensor GSE 507 for detection of Carbon Monoxide CO**



### **Mode of operation**

The principle of the measurement cell used is based on the electro-chemical oxidation of carbon monoxide CO to carbon dioxide CO<sub>2</sub>. The CO 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:                   | at least 1 ppm                                 |
| Measuring range:               | max. 1000 ppm / linear                         |
| Standard calibration:          | 0...100 / 0...250 ppm                          |
| Response time t 90:            | ≤ 30 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:        | < 5% / year                                    |
| Life span at 20 °C:            | at least 3 years<br>depends on the application |

## Cross sensitivity to other gases

| Test gas                                 | concentration of the test gas | display on the CO-Sensor |
|--|-------------------------------|--------------------------|
| Chlorine Cl <sub>2</sub>                 | 1 ppm                         | 0 ppm                    |
| Hydrogen Chloride HCl                    | 5 ppm                         | 0 ppm                    |
| Hydrogen Cyanide HCN                     | 10 ppm                        | < 2 ppm                  |
| Ethylene C <sub>2</sub> H <sub>4</sub>   | 100 ppm                       | ≤ 100 ppm                |
| Ethanol C <sub>2</sub> H <sub>5</sub> OH | 200 ppm                       | 0 ppm                    |
| Carbon Monoxide CO                       | 250 ppm                       | 250 ppm                  |
| Sulphur Dioxide SO <sub>2</sub>          | 5 ppm                         | 0 ppm                    |
| Hydrogen Sulphide H <sub>2</sub> S       | 15 ppm                        | < 0.3 ppm                |
| Nitric Oxide NO                          | 35 ppm                        | ≤ 7 ppm                  |
| Hydrogen H <sub>2</sub>                  | 100 ppm                       | < 60 ppm                 |

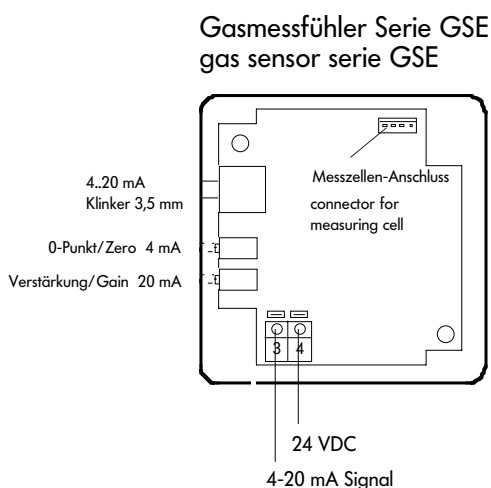
## Sensor electronic specification

|                        |                        |
|------------------------|------------------------|
| 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

