# Gas sensor KSS 526 for detection of Ammonia $NH_3$

**Mode of Operation**

The gas/vapour/air mixture that occurs diffuses through the membrane to the active metal oxide surface. A temporary shortage of oxygen electrons arises on the indirectly heated surface during the presence of a gas concentration. This shortage of electrons produces a change in the conductivity, and thereby changes the voltage, which is evaluated as a signal. If the gas concentration reduces, the missing oxygen electrons will be replaced from the ambient air once again.

The measurement reacts by oxidizing/reduction with oxygen. This characteristic leads to other gases being measured as well and triggering an alarm. By linearization of the initial signal this effect is minimized. The suitable application is to be implemented in "still" rooms; i.e. rooms in which no other gases are normally expected.

The potentiometers and the 3.5 mm jack connection for the calibration are accessible from the outside, and permits a “one-man” calibration.

The optical calibration unit type “Calibration Remote Control CRC" is as accessory available, which permits calibration even if the gas-sensors are difficult to reach (or placed very high).

## Calibration

The gas measurement probe requires a longer stabilisation time when the gas measurement probe is first switched on. If the gas measurement probe has been put out of operation for more than 2 weeks, even after several years of use, the gas measurement element will require at least 48 hours to stabilise. If a calibration is carried out before the end of this stabilisation time, while the sensitivity of the measurement element is still increasing, faulty alarms could result. The **calibration gas** should be 75% of the measurement range, and must contain synthetic air as the carrier gas

## Maintenance

The measurement element with its associated electronics must be checked at least once or twice a year. The gas measurement probe must also be checked if the measurement element has been exposed to a gas concentration (gas alarm).

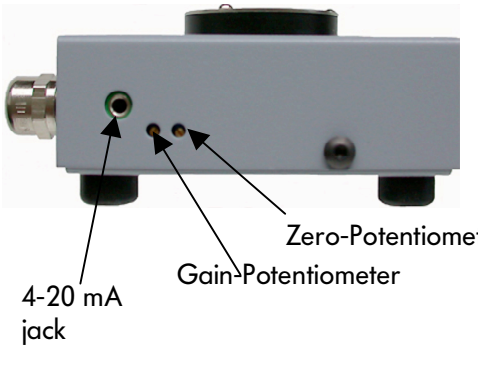
### $NH_3$-Sensing element specification

| | |
|---|---|
| Measuring range: | 30…300 ppm |
| Linearity: | linearised |
| Response time t 90: | max. 60 sec |
| Operating temperature: | -30 °C ... +50 °C |
| Start up after reconditioning: | maximal 1 hour |
| Air humidity: | 25 – 95 % rh |
| Position sensitivity: | none |
| Life span by 20 °C: | at least 1 year<br>from experience 5-8 year |

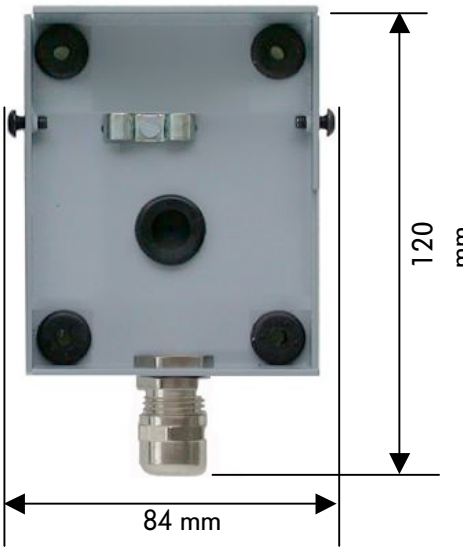
### Sensor electronic specification

| | |
|---|---|
| Cable: | 3-core cable, shielded |
| Power supply: | 15...35 VDC |
| Sensor current: | max. 110 mA |
| Output signal: | 4...20 mA/ max. 60 mA |
| Operating temperature: | -40 °C ... +85 °C |

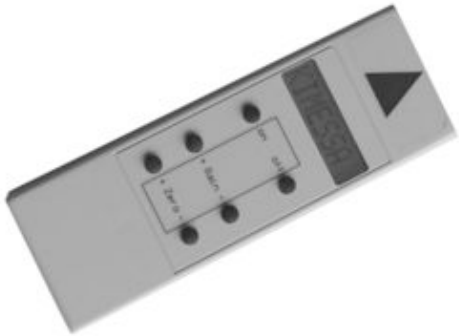
### Electronic








### Accessory: Calibration Remote Control CRC



Calibration unit "CRC"
for „one-man" calibration for a
gas sensor type KSS/KSP