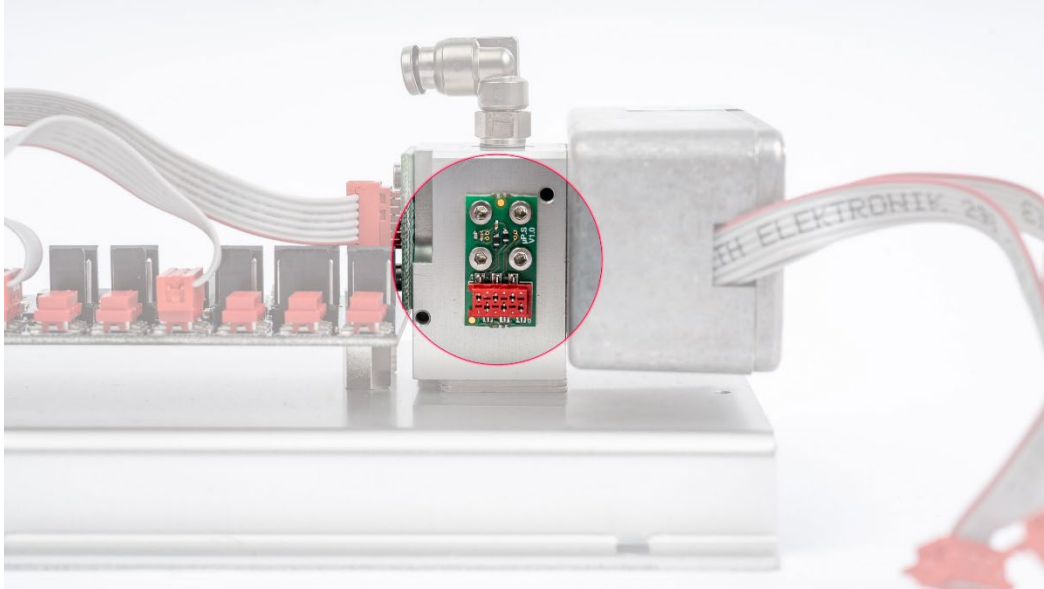


Pressure Sensor



Overview

A change in the gas and/or atmospheric pressure causes a change in the number of molecules per volume and thus a change in gas density. This density change in turn has a significant influence on the result of the concentration measurement by the sensor. By measuring the gas pressure inside of the sample cell (cuvette), the value of the concentration measurement is compensated / corrected.

The pressure sensor enables an increase in the accuracy of the gas analysis measurement by a factor of 15:

- Without pressure sensor: $\pm 1.5\%$ per pressure difference of 10 hPa
- With pressure sensor: $\pm 0.1\%$ per pressure difference of 10 hPa

The pressure sensor is a sensor module available as option in addition to a RITTER MultiGas NDIR or NDUV sensor. The sensor is built into the casing of the RITTER MultiGas sensors. The measured pressure value is displayed in the provided software.

Specifications

For non-aggressive gases:

- Pressure compensation of measured gas concentrations
- Measuring range: 800 – 1,200 mbar abs.
- Measurement accuracy: $\pm 1\%$ of span (full scale)
- Resolution: <1 mbar
- Response time (t90): 1 s
- Incl. temperature compensation

For H₂S and similar acid gases:

- Pressure compensation of measured gas concentrations
- Measuring range: 0.2 – 3.5 bar abs.
- Measurement accuracy: $\pm 1\%$ of span (full scale)
- Resolution: 2 mbar
- Response time (t90): 1 s
- Incl. temperature compensation