

Gasmonitor ZRO2-25
Gasmonitor ZRO2-1



Data Sheet

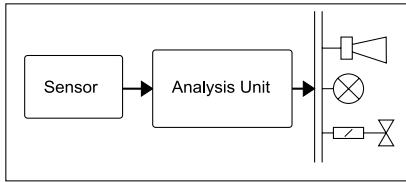
Gas Measuring and Alarm Systems

Gas Detector

Gasmonitor ZRO2-25 / ZRO2-1

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Installation/Set-up



The detector Gasmonitor ZRO2 used in combination with a suitable analysis unit has the following functions:

- Measuring and displaying the current concentration of oxygen.
- Supplying control outputs to counter a lack of oxygen

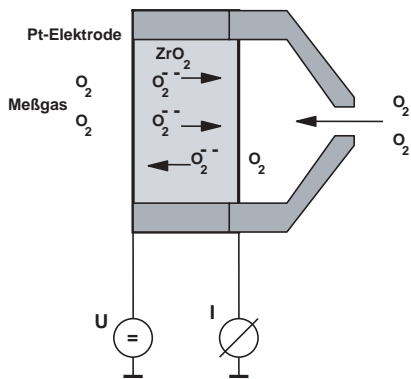
A gas alarm unit comprises the following components:

- Sensor
- Analysis unit
- Controllable units such as ventilators and warning lights.

Product Features

- Measuring principle: ZrO_2
- Linear measuring signal 4 - 20 mA
- One-man calibration
- No reference gas required
- Long sensor life (more than 3 years)
- High long-term stability

How It Works



The sensor element consists of a heating coil and a zirconium dioxide disc with electrodes on both sides. The characteristic of ZrO_2 is that it has high conductivity for oxygen ions and poor conductivity for electrons. Because ZrO_2 only exhibits this effect substantially at elevated temperatures, a heating coil is used to heat the substrate (heating voltage) to a working temperature of ca. $400^\circ C$.

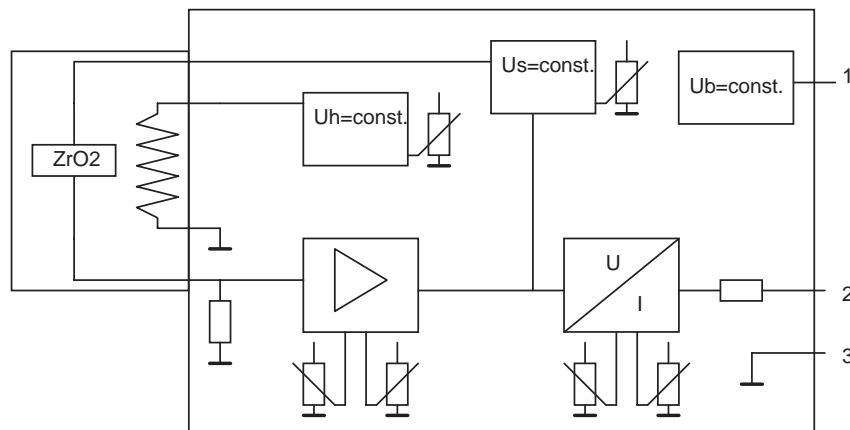
The platinum electrodes catalyse the oxygen to oxygen ions. One side of the ZrO_2 disc is exposed to the gas to be measured. On the other side, there is a small chamber which is exposed to the gas being measured via a diffusion opening. The result of this is that only a small quantity of oxygen can diffuse into the chamber per unit of time.

An external voltage ensures that all the oxygen molecules that have diffused into the chamber are pumped out through the ZrO_2 disc (ion pump).

The concentration in the chamber is reduced to zero (controlled diffusion). The consequence of this is that the electrons flowing away from the inner electrode (diffusion limit current) are proportional to the external oxygen concentration.

The electronics regulate the heating voltage to a sensor-specific level. The sensor current is amplified and converted by a transmitter into a 4-20 mA signal.

Block Diagram



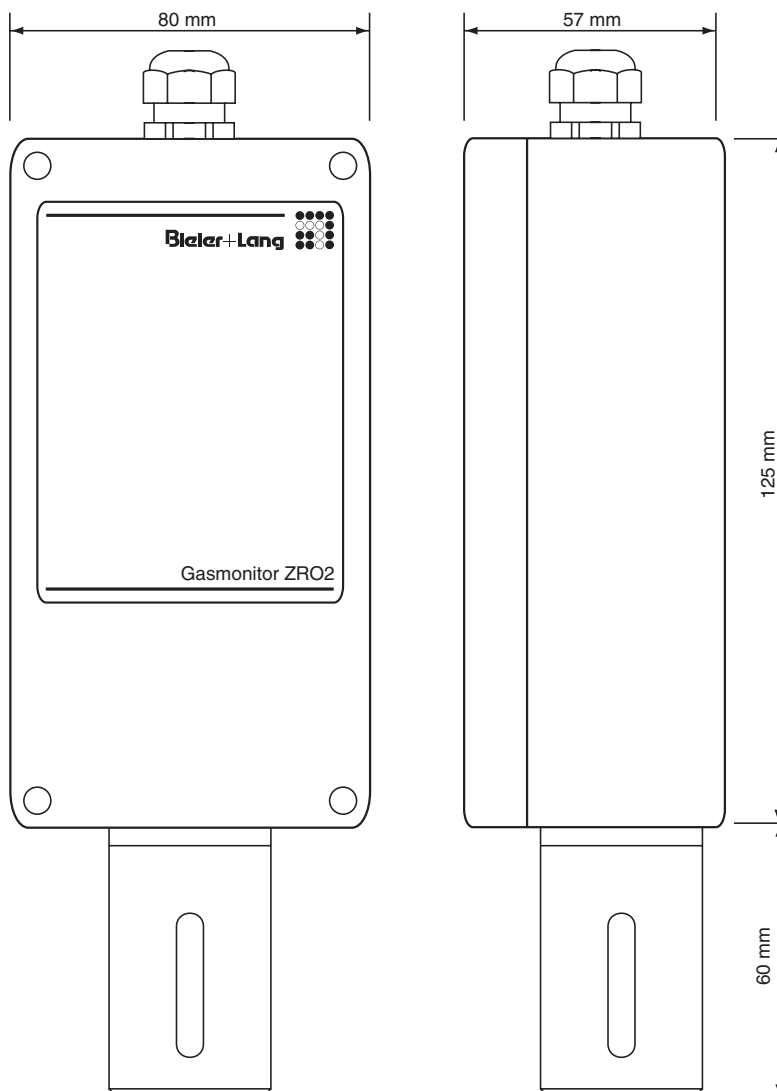
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Technical specifications

Type	Gasmonitor ZRO2-1: 0-1 Vol% O ₂ (Values in clips) Gasmonitor ZRO2-25: 0-25 Vol% O ₂
Detection gas	Oxygen
Measurement principle	ZrO ₂
Measurement range	0-25 Vol% (0-1 Vol%)
Measuring signal	4-20 mA
Measuring accuracy	<0,5 Vol% (<0,02 Vol%)
Repeatability	<0,1 Vol% (<0,01 Vol%)
Response time T ₉₀	10 sec
Supply voltage	24V DC
Supply current	< 200 mA
Temperature range	-10 to +50 °C
Humidity	10 to 90 % rel. humidity
Air-pressure range	900 to 1100 hPa
Enclosure material	aluminium
Dimensions	H x B x T: 190 x 80 x 57 mm
Weight	0,6 kg
Protection class	IP 53
Connecting cable	3-core conductor, shielded max. conductor resistance: 6 Ω per core
Suitable analysis units	GMC 8022E, Gasmesscomputer 8022 (only 1 sensor connectable) GMC 8364
Note	High concentrations of catalyst poisons (sulphur, lead, fluorine ...) can damage the sensor.



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Safety

Compliance with the following standards ensures the highest levels of safety and reliability:

- EN 50081-1 01/1992 EMC - Interference emissions
- EN 50270

Equipment

- Test gas set
- Calibration gases

Service

Everything from a single supplier - from system design to installation of your new gas warning system. The comprehensive coverage of our sales and service network ensures this. Call us for the address of your local contact partner. And after purchase our service technicians are available to help and advise.

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