



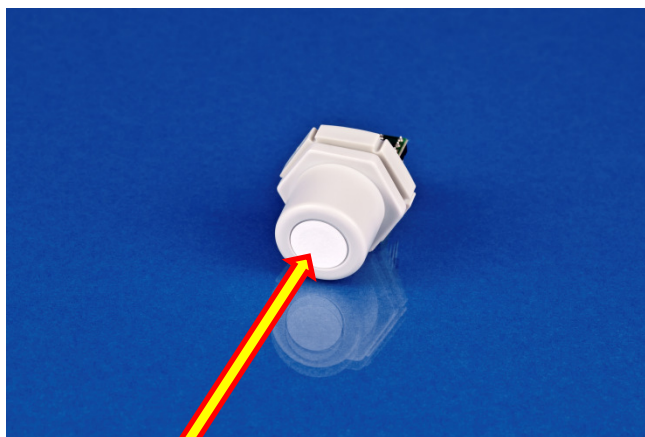
Oxygen (O₂) gas detector GO2 025 for wall mounting



Oxygen (O₂) gas sensor with PCB.

Normal life time is 24 months for Oxygen (O₂) gas sensor.

The Oxygen (O₂) gas sensor with PCB can easily be exchanged after 24 months years.



Special filter for IP65 protection of Oxygen (O₂) gas sensor

Features

- Output 4-20 mA or 2-10 Vdc
- Power supply 24 Vdc
- Measuring range 0-25 Vol %
- IP65 enclosure with quick locking screws
- Digital measurement value processing incl. temperature compensation
- Internal function control with integrated hardware watchdog
- Data / measured values in micro controller of sensor unit, therefore simple exchange uncalibrated <-> calibrated
- High accuracy, selectivity and reliability
- Low zero point drift
- Hardware & software according to SIL2 compliant development process
- Easy maintenance and calibration by exchange of the sensor unit or by comfortable on-site calibration
- Duct mounting set available for sensing Oxygen (O₂) gas in ventilation ducts.

Ordering

Type no.	Description
GO2 025	Oxygen (O ₂) gas detector for wall mounting 4-20 mA or 2-10 Vdc, 24 Vdc, 0-25 Vol%

Design features

Exchangeable Oxygen (O₂) gas sensor unit GO2 025 including digital value processing, temperature compensation and self control for the continuous monitoring of the ambient air.

The Oxygen (O₂) gas sensor unit GO2 025 houses a module with a micro controller, analog output and power supply in addition to the electrochemical sensor element including amplifier.

The micro controller calculates a linear 4-20 mA or 2-10 Vdc signal out of the measurement signal and also stores all relevant measured values and data of the sensor element.

Calibration is done either by simply replacing the sensor unit or by using the comfortable, integrated calibration routine directly at the system.

Applications

Oxygen (O₂) gas detectors are used for or the detection of oxygen in rooms where changes of the oxygen concentration are possible, such as laboratories, hospitals and food productions etc.



Laboratorie



Hospital

Duct Mounting

Duct mounting set for sensing Oxygen (O₂) gas in ventilation ducts.

The duct mounting set DMS 300G includes:

- 300 mm long duct probe with neoprane gasket on the duct flange for good sealing into the duct.
- 2 x 1 meter silicone hose
- Plug-connector to the Oxygen (O₂) gas sensor head.



Duct Mounting Set DMS 300G



Duct Mounting Set DMS 300G assembled with Oxygen (O₂) Gas Detector GO2 025

Technical Data

Gas type	Oxygen (O ₂)
Detector element	Electrochemical
Power supply	16 -29 Vdc, reverse-polarity protect
Power consumption	50 mA, max. (1.7VA for 24V)
Analog output signal	Proportional, overload and short-circuit proof, load ≤ 500 Ohm for current signal, ≥ 10kΩ for voltage signal 4-20 mA or 2-10V = measuring range 3.2 <4 mA or 1.6-2V = under range >20-21.6 mA or 10-10.8V = over range 2.5 mA or 1.25V = fault >21.8 mA or 10.9V = fault high
Detector coverage	One detector per each room
Measuring range	0-25 Vol%
Accuracy	±0.5 ppm
Resolution	0.05 ppm
t₉₀ Time (time allowed for sensor to detect 90% of existing gas conc.)	≤ 15 secs.
Drift (Gain)	<2 % signal/month
Temperature range	-10°C to +50°C
Humidity range, non-condensing	5 to 95% r.H.
Sensor life time	24 months
Mounting height	read sensor placement for monitoring oxygen page 4
Storage temperature	5°C to 30°C
Calibration interval*	12 months
Pressure range	Atmospheric ± 20 %
Storage time	6 months

Cont. Technical Data

Enclosure colour	White
Dimensions (W x H x D)	110 x 85 x 60 mm, excl. sensor unit and cable gland
Weight	Ca. 0.2 kg
Protection class	IP 65 incl. gas sensor unit
Pre-embossed entries for cable / sensor unit	PG 13.5
Conformity to	EN 50271 EN 601010-1 ANSI/UL 61010-1 CAN/CSA-C22.2 No.61010-1

* Manufacturer recommended calibration interval for normal environmental conditions.

Wiring

1	24 Vdc supply
2	0 Vdc
3	4-20 mA output

For output 2-10 Vdc connect the supplied 500 ohm resistors between terminal 2 and 3

Alarm limits for decreasing concentration of gas is set to 18-19%.

Other reasons why oxygen levels can fall are among others:

- Combustion of something which consumes oxygen
- Corrosion of something that reduces the oxygen concentration
- Oxygen consumption due to breathing in dense areas.

Problems usually arise in confined spaces such as tanks, tunnels, etc.

Oil- and gas industry

The normally closed spaces like tanks, containers, pontoons, etc.. corrosion may have contributed to making oxygen levels drop to low values.

A worker entering such an area may die immediately.

Therefore, it is important to first check the oxygen concentration in the compartment. In some cases, other gases may be present, both toxic and explosive. Therefore it may be necessary to use a portable instrument that measures several gases at the same time.

Before stepping into, for example, a tank you should check the oxygen concentration in the tank with a portable gas detector.**Underground**

In tunnels, such as sewers and other underground facilities the oxygen concentration may drop for various reasons. In addition, other, both explosive and toxic gases may have been formed as a result of biological reactions.

For example, Methane (CH₄), Hydrogen Sulfide (H₂S), Carbon Monoxide (CO).

An combustion engine underground may consume the oxygen and leave carbon monoxide behind.

Leakage of different gases that are lighter or heavier than air, may lead to accumulation in different cavities. When someone enters into such a cavity without first checking gas concentrations with an instrument it may lead to immediate death.

Sensor placement for monitoring oxygen

In cases where you want to monitor oxygen concentration in a room, It is important to bear in mind which gas that could displace the oxygen.

Examples of gases that can displace oxygen, thereby causing suffocation are the inert gases, such as Nitrogen (N), argon, helium, carbon dioxide, used in various industrial processes, hospitals, etc.

Important to mention here is that the fact that the carbon dioxide in addition to displacing the oxygen is also toxic itself.

If there is leakage of, for example, krypton, which has a higher density than air and will sink, the oxygen detector should be placed low. If a gas with lower density than air, such as helium, should leak, the oxygen sensor should be placed high.

If the oxygen in a room risks being consumed by any form of combustion, the oxygen concentration will be reduced across the room which means that the sensor placement here is not as critical as in the above examples.

High concentrations of oxygen

If the oxygen concentration in the air increases, the risk of fire dramatically increases. All combustible products will be much more flammable.

Alarm limit is set at 23% O₂.
Inhalation of high oxygen concentrations over time can be harmful.

We reserve the right to make changes in our products without any notice which may effect the accuracy of the information contained in this leaflet.
