

Transmitter ZD22

for oxygen (O₂)



- More than 5 years sensor life
- Extremely fast response time: $t_{90} < 5$ sec.
- No pressure, humidity, or temperature influence
- No damage due to CO₂
- Simple on-site adjustment
- Low running costs

Transmitter ZD22 for oxygen (O₂)

Superior technology

The Transmitter ZD22 is specifically designed for long-term monitoring of oxygen concentrations. The integrated amperometric oxygen sensor is based on an electrochemical oxygen pumping cell made of zirconium dioxide. It is characterized by its robustness, a very high life expectancy and its outstanding long-term stability. The integrated thermostatic control of the sensor element achieves accurate measuring results in the entire temperature range, regardless of the operating temperature. The sensor selectively detects the oxygen and is sensitive to many sensor poisons known at the electrochemical sensors. It can be also permanently used in environment with high concentrations of CO₂ or in dry atmosphere. A special equipment is available to protect the transmitter when used in very difficult.

Principle of operation

The electrolytic cell consists of a zirconium dioxide-based ceramic (ZrO₂), coated on both sides with porous platinum electrodes. The platinum reduces the gaseous oxygen O₂ to O₂ ions. By applying a voltage to

the two platinum electrodes, a ion based current is created in the oxygen

ion conductive ZrO. The necessary high temperature of the ceramics is generated in the heating element integrated in the sensor. The gas diffusion current is limited by a cap with integrated capillary, so that all its diffused oxygen molecules are ionized. This diffusion current generates a signal proportional to the oxygen concentration signal.

Signal processing

The spill-proof (IP54) transmitter contains the complete signal processing electronics and the failsafe routing of the measurement signal for the measuring computer, with extensive self-monitoring. The embedded software of the ZD22 linearises the measuring signal and compensates for the temperature impacts. As a result, correct readings are transmitted even with weather-related variations in temperature. In addition, the transmitter can be connected to a gas measurement computer for transmitting service, maintenance and error messages. The ZD22 Transmitter transmits the signals either via an analogue (0.2 1 mA / 4 - 20 mA) current interface or a digital (RS485) Modbus interface. This permits the universal use of the transmitters in combination with GfG gas measurement computers and thus connection

to a safety system, so that you and your systems will benefit from the best possible protection.

Variants for every ZD22 application with sensor, status LEDs and optional analogue or digital interface, "Zero" key to calibrate the zero point, test socket and a potentiometer for the calibration of the sensor.

ZD22 optional with backlit graphic display showing the current gas concentration and the visualization of a large range of service functions, with operation via a membrane keyboard, and optical and acoustic alarms.

The benefits at a glance

- Gas concentration is shown on the backlit graphic display
- Less wiring required (RS485/BUS)
- Long-term stable sensors
- Low maintenance effort
- Status and function display, directly on the transmitter
- Settings via keyboard, potentiometer or via the zero key
- optical and acoustic signal generator

Transmitter ZD22

Measurement gas:

Oxygen

Measurement principle:

Power Limited sensor based on zirconium dioxide

Standard measuring range:

0 .. 2 Vol.-%
0 .. 25 Vol.-%
other ranges on request

Measuring accuracy:

+/- 0,1 Vol.-% (reproducibility)

Gas supply measurement:

Diffusion
(flow rate with adaptor)

Response time (t₉₀):

< 5 sec. *
(0 at 25 Vol.-% O)

Ambient temperature:

-20°C .. +50°C

Humidity:

5 ... 90 % rel. humidity

Ambient pressure:

80 .. 120 kPa

Sensor life:

> 5 years
(Depending on the sensor and environmental conditions)

Output signal:

0.2 .. 1 mA / 4 .. 20 mA /RS485
Modbus

Power supply:

15 .. 30 Volts DC

Casing:

Plastic (IP54)

Weight:

175g or 220g (with display version)

Size:

96 x 140 x 49 mm



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