ZD22 Transmitter

Long-term monitoring of oxygen
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The ZD22 was developed especially for long-term monitoring of the oxygen concentration.

The ZD22 uses a sensor based on a zirconium dioxide (ZD) electrochemical oxygen pump cell. Selectively for oxygen, the ZD sensor is insensitive to ambient conditions as well as sensor poisons and convinces at the same time with very short response times.

The hardware of the ZD22 complies with the European Functional Safety Standard DIN EN 61508-2: 2011*. Thus, hardware SIL2 is possible in single-channel use (1oo1) and SIL3 in redundant use (1oo2).

* Not for 0.2-1 mA systems

Communication and service
Signal transmission is done according to the 4-20 mA industry standard (alternatively 0.2-1 mA) or digitally via the RS-485 interface (Modbus / RTU). Test gas for function control and adjustment of the sensor can be safely dispensed via calibration adapter. Moreover, all maintenance work can be carried out by a single technician.

Protection level and display elements
The compact housing for wall mounting is protected against splash water and dust (IP54). There are two status LEDs on the front of the ZD22, which indicate the operating status and faults as well as required service work.

Reliable measurement & low operating costs
The electronics of the transmitter take over the voltage stabilization, processing of the measured value output and detection of disturbances already at the measuring point. The built-in temperature compensation ensures highest measurement accuracy. Long-life sensors that are inexpensive in acquisition keep running costs low.

Overview of available measuring ranges and SIL:

<table>
<thead>
<tr>
<th>Oxygen (O₂)</th>
<th>Measuring range</th>
<th>Resolution</th>
<th>1oo1</th>
<th>1oo2</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 to 2 % by volume</td>
<td>0.01 % by volume</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>0.1 to 25 % by volume</td>
<td>0.1 % by volume</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>1.0 to 96 % by volume</td>
<td>0.2 % by volume</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>10 to 1000 ppm</td>
<td>5 ppm</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Temperature: -20 to +50 °C
Humidity: 5 to 90 % r. h.
Air pressure: 80 to 120 kPa
Output signal: Analog: 0.2-1 mA or 4-20 mA
Digital: RS-485
Power supply: 12 to 30 V DC
Housing: Plastic
Protection class: IP54
Dimensions: 96 x 141 x 49 mm (W x H x D)
Weight: 175 g

Variants for different requirements
The basic version of the ZD22 is sufficient for many applications. If a measured value display on site is desired, there is also a variant with display and acoustic alarm.

ZD22 Basic variant
ZD22 D with display to show the current measured value

In combination with GfG’s powerful controllers, both variants are the right choice for long-term oxygen monitoring.

ZD22 Technical Data:

Measuring principle: Zirconium dioxide (ZD)
Measuring range: Sensor dependent (see overview)
Gas supply: Diffusion or gassing per calibration adapter
Lifetime of the sensor: 4-5 years
Response time: t90 ≤ 5 s

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