



The SIL O2 Safety Integrity Level oxygen analyzer is highly reliable for the measurement of oxygen for safety critical applications.

This device is designed to measure oxygen concentration on safety critical applications within the chemical, pharmaceutical and additive manufacturing industries.

Applications

- » Gas generation (oxygen / nitrogen)
- » Additive manufacturing
- » Pharmaceutical industries
- » Industrial gas applications

Features

- » SIL2 rated unit - Analyzer and galvanic isolation barrier in one device
- » Measurement range: 0 to 25% O₂
- » Push button calibration
- » 3 configurable alarm outputs
- » Compact for easy integration.

SIL2 Rated

A Company of

RST
PROCESS SENSING
TECHNOLOGIES

Issue No: SILO2_01_V2_EN_0819



Electrochemical sensor

The key elements of the electrochemical sensors are a membrane, cathode, anode, electrolyte and measurement circuit. The sensing membrane (covering the cathode) is made of PTFE and is mounted over a metal perforated electrode. The space between the membrane and the electrode is filled either with an aqueous alkaline or an acid electrolyte. In normal operation, all portions of the anode and cathode are immersed in the electrolyte. As oxygen diffuses through the membrane into the electrolyte it causes a reaction between the cathode and anode generating an EMF. This current is proportional to the amount of oxygen present in the sample gas. In the absence of oxygen there is no output from the electrochemical sensor, meaning only one calibration is required.

Sensor construction

The main body of the sensor is fabricated from high density PVDF. The supporting ring at the face of the sensor is constructed of stainless steel. This results in an oxygen sensor that is chemically resistant to most sampling atmospheres and can be used with trace solvents and hydrocarbons present in the sample gas, unlike zirconia (due to the high temperature of the sensor).

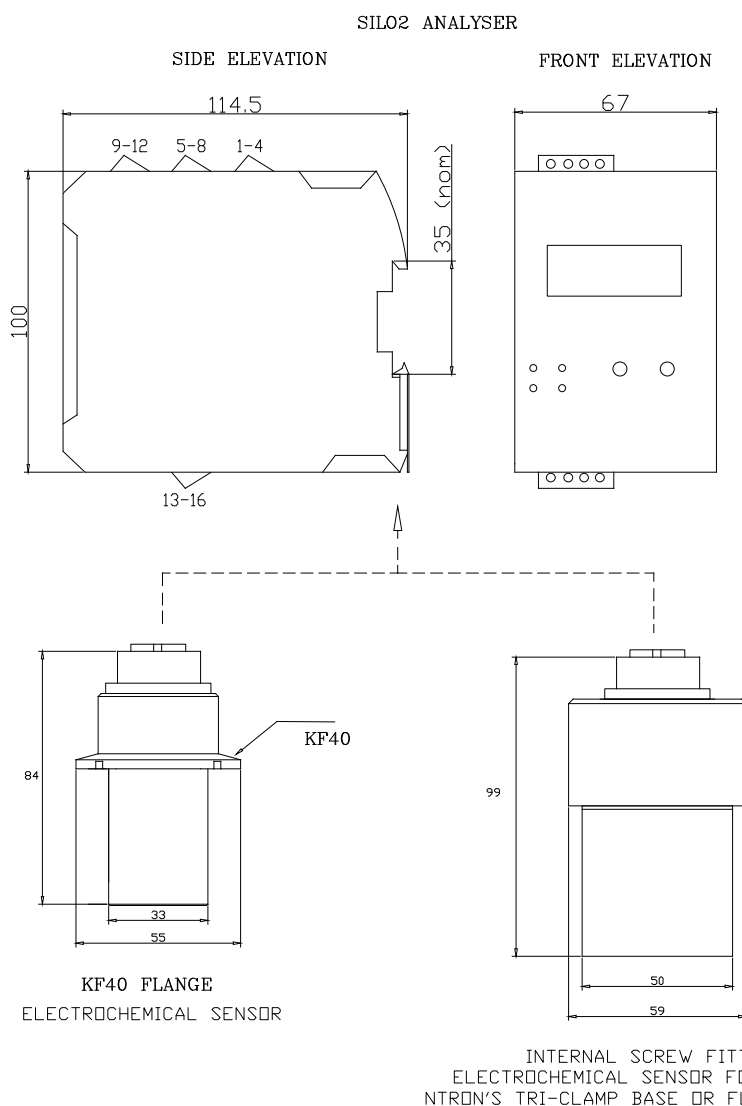
Low maintenance and cost of ownership

Due to the highly stable nature of the sensor, a calibration interval of once per year is required, allowing for significant cost savings.

Installation flexibility

Designed for the ambient detection of low Oxygen concentration with ease of installation.

Technical Drawings



| Performance | |
|--|---|
| Transmitter Model | SIL 02 |
| Measurement technology | Electrochemical (EC) |
| Measurement range | 0 to 25% |
| Output resolution (for %) | 0.01% |
| Accuracy | ±1% of range |
| Response time (T90) | <20 seconds, typical 12 seconds |
| LDL (Sensitivity) | 0.01% |
| Temperature range | -35°C to +50°C |
| Pressure range | 900 to 1100 mBar _{abs} |
| Linearity | 1% of range |
| Life expectation | 1 year |
| Humidity | 0-95% RH non-condensing |
| Shelf life | Up to 6 months |
| Electrical Input / Output | |
| Power supply | 18-28 VAC / 19-30 VDC |
| Power consumption | Maximum load 160mA |
| Electrical connection | Screw terminals - quick disconnect. 2.5mm CSA Max |
| Signal output | 4-20mA active |
| Digital communications | RS232 |
| Digital output options | 2 configurable alarm relays, 1 x transistor |
| Display format | % O ₂ |
| Visual indicators | LCD and LED alerts on device |
| Mechanical Specifications | |
| Dimensions | 114.5mm (h) x 67mm (w) x 99mm (d) |
| Weight | Approx 300g |
| Mounting | DIn Rail |
| Ingress protection | IP20 enclosure |
| Housing material | PBT |
| Certification | |
| Complies with EMC Directive 2004 / 108 / EC. UL/ETL Certification Number: UL-61010-1 | |

Related Products



SENZTX
Oxygen
Transmitter



SF82
Dew Point
Transmitter



Minox i
ATEX Rated
O₂ Transmitter



Microx-OL
Online Oxygen
Analyzer



Microx
Oxygen
Analyzer



Yellow Box
Portable O₂
Analyzer



GazTrak
Portable oxygen &
moisture measurement