Oxygen Sensor

Overview

- Overview
- Electrochemical sensor
- Measuring ranges:
- Standard version 0 – 25 % or 0 – 100 %
- H2S resistant version 0.5 – 35 %
- Measurement accuracy: ±2 % of span (full scale)
- Resolution: < 0.5 % of span (full scale)
- Response time (t90): 5 – 10 s; automotive version < 3.5 s
- Lifetime: approx. 5 years

The oxygen sensor is a sensor module available as option in addition to a RITTER MultiGas NDIR or NDUV sensor. The measured oxygen concentration is displayed in the provided software. The sensor is built into the casing of the RITTER MultiGas sensors.

The following versions are available:

- Standard version suitable for non-aggressive gases
- H2S and similar acidic gases resistant version

General Features			
Version	**Standard version**		**H2S Resistant Version**
Measurement Range	0 – 25 Vol.% O2	0 – 100 Vol.% O2	0.5 – 35 Vol.% O2
Application:	Biogas, Automotive exhaust gas analyser	Industrial, fully CO2 resistant	Industrial, fully CO2 resistant, shows high resistance to acid gases
Medium contact materials	ABS, FKM, PPS, PTFE, stainless steel	ABS, PVC, PPS, PTFE, stainless steel	ABS, PVC, PPS, PTFE, stainless steel
Expected operating life	1,000,000 Vol.% O2 h	~ 1,200,000 Vol.% O2 h	~ 1,200,000 Vol.% O2 h
Sensor lifetime	4 years at ambient air,	Sensor lifetime	4 years at ambient air,
Dimensions (H x W x L)	65.4 mm × 31.7 mm × 56.6 mm		
Weight	70 g		
Tube connector	4/6 mm tube		

Measuring response*			
Version	**Standard version**		**H2S Resistant Version**
Measurement range	0 – 25 Vol.% O2	0 – 100 Vol.% O2	0.5 – 35 Vol.% O2
Resolution	0.1 Vol.%	0.1 Vol.%	0.1 Vol.%
Response time (t90)	< 3.5 s	< 10 s	< 5 s
Drift **	< 1% per month	< 1% per month	< 3% per month
Linearity Error		0 – 2 Vol.% O2: ± 0.1 abs.	
2.1 – 100 Vol.% O2: ± 0.05 rel.		0 – 2 Vol.% O2: ± 0.1 abs. 2.1 – 100 Vol.% O2: ± 0.05 rel.	0 – 2 Vol.% O2: ± 0.1 abs. 2.1 – 35 Vol.% O2: ± 0.05 rel
2.1 – 35 Vol.% O2: ± 0.05 rel.			
Repeatability ***		± 1 Vol.% O2	± 1 Vol.% O2
Influence of Humidity	–0.03 % rel. O2 reading / % RH	–0.03 % rel. O2 reading / % RH	–0.03 % rel. O2 reading / % RH

Interferences	CO2: up to 20 Vol.% CO: up to 2000 ppm NOx: up to 5000 ppm HC: up to 5000 ppm N2O: up to 500 ppm	< 20 ppm O2 response to: 100 Vol.% CO 100 Vol.% CO2 100 Vol.% C3H8 3000 ppm NO in N2 1000 ppm C6H6 in N2 500 ppm SO2 in N2 < 100 ppm O2 response to: 3000 ppm C2H6O 3000 ppm C4H10S < 200 ppm O2 response to: 3000 ppm C2H6S2 < 400 ppm O2 response to: 100 Vol.% H2 < 500 ppm O2 response to: 2000 ppm H2S in N2	< 20 ppm O2 response to: 100 Vol.% CO 100 Vol.% CO2 100 Vol.% C3H8 1000 ppm C6H6 in N2 2000 ppm H2S in N2 < 20000 ppm O2 response to: 3000 ppm NO in N2 1000 ppm H2 in N2 500 ppm SO2 in N2

(*) related to Pa = 1013 hPa, Ta = 25 °C, RH = 50%, flow = 2.5l/min

(**) averaged across 12 months.

(***) @ 100 Vol.% O2 applied for 5 min.

Climatic conditions			
Measurement range	0 – 25 Vol.% O2	0 – 100 Vol.% O2	0.5 – 35 Vol.% O2
Operating temperature	0 – 40 °C		
intermittent 40 – 50 °C	0 – 45 °C	0 – 50 °C	
Storage temperature	-20 – 40 °C		