

ppm / Vol % Oxygen Analyser AMS 3126



available options:
sample gas pump
electronical flowmeter
auto-calibration
different housing

The application:

The Oxygen Analyser AMS 3126 has been developed for the measurement of PPM- and Vol %-concentrations of oxygen traces in gases with combustible components. Two separate electrochemical sensors, calibrated for the application, guarantee highly accurate measuring values in both ranges. The electrochemical sensors in the Oxygen Analyser AMS 3126 are interconnected electronically. This provision ensures to protect the sensor for the PPM-concentrations efficiently against high oxygen concentrations. The result is a high availability of the Oxygen Analyser AMS 3126 for process measurements.

The measuring principle:

The electrochemical sensors for the measurement of trace oxygen are mainly consisting of five components:

- Oxygen sensitive cathode
- Anode
- Electrolyte
- Diffusion membrane
- Housing with electrical connections

The measuring gas diffuses through a membrane to a thin layer of electrolyte. At the cathode the oxygen reduces. The free flowing electrons are drifting to the Anode. This generates a electrical current which is direct proportional to the oxygen concentration of the measuring gas. The use of electrochemical sensors allows in standard applications the measurement of trace oxygen in a number of complex and aggressive gas mixtures. The fitting sensor for a specific application has to be selected considering the different available electrolytes and electrodes. It is therefore essential to know the physical and chemical application parameters such as temperature, gas pressure, humidity content and the consistency of a specific measuring gas.

The Oxygen Analysers Model AMS 3110, AMS 3126, AMS 3160, AMS 3175 and AMS 3186 are operating on electrochemical sensors which are adapted to a specific customer application. The sensors are mounted on specially developed measuring chambers. To compensate temperature fluctuations during a measurement the sensor signal is temperature monitored. The entire sensor assembly is potted gas tight to avoid leakage. The operational life time of an electrochemical sensor is determined from the PPM-hours a sensor exposed to oxygen. Therefore the sensors have a shorter life expectancy in air than in low PPM-Oxygen concentrations. The life time in air is usually only a few months, but 3 years or longer in PPM-Oxygen concentrations.

The measuring system:

The Oxygen Analyser AMS 3126 is equipped with two interconnected electrochemical sensor for the PPM- and Vol-% measuring range. The analyser switches automatically between the two electrochemical sensors depending on the oxygen concentration.

For measurements of Oxygen concentrations in the Vol-% range, and during short in-breaks the PPM-range sensor is protected against the negative effects of high oxygen concentrations. This allows instantenous measurements below 25 ppm, and safes from long purge cycles of the PPM-oxygen sensor in the Oxygen Analyser AMS 3126.

Technical Data

Analyser	AMS 3126
Measuring principle	Electrochemical/ZrO ₂ - Oxygen Sensor
Application	Gases industries, Chemical Industries
Measuring range	4, automatically changing, with digital identification
Max. range	0 ... 25 Vol % or
Min. range	0 ... 10, 0 ... 100, 0 ... 1000 ppmv
Analogue signal port	(0) 4 ... 20mA, galvanically separated
Reproducibility	+/- 2 % of the measuring value
Resolution	0,01 ppm – C(O ₂) – 0,01 % depending on O ₂ concentration and application
T90-Time	< 40 seconds for measurement less than 10 ppm with previous measurement in ambient air
Display	2* 16 digit, illuminated LCD display
Messages	3 free adjustable isolated changeover relays
Gas connection	inlet / outlet 3 / 6 mm ferrule pack
Gas sampling	built-in inlet / outlet valve, measure-/calibration-valve flowmeter, pressure reducer
Sample flow	min. 20 NI/h, max. 40 NI/h / purge gas 3 NI/h
Sample pressure (inlet)	min. 1,01 bar abs., max. 10 bar abs.
Sample pressure	Integrated pressure reducer
Ambient operating temp.	- 5 °C up to + 45 °C
Relative humidity of the gas	0 ... 99 % not condensing
Power supply	110 or 230 VAC / 60 - 50 Hz or 24 VDC
Protection / Housing / Dimensions	IP20 / 19" rack 3 HU (other on request)
Weight	5-8 kg, depending on housing / options
Options	5-way valve, manual, for switching between the gases auto-calibration electronical flowmeter Sample gas pump different housing
Version: AMS 3126 E V-2021-07	

Specifications subject to change