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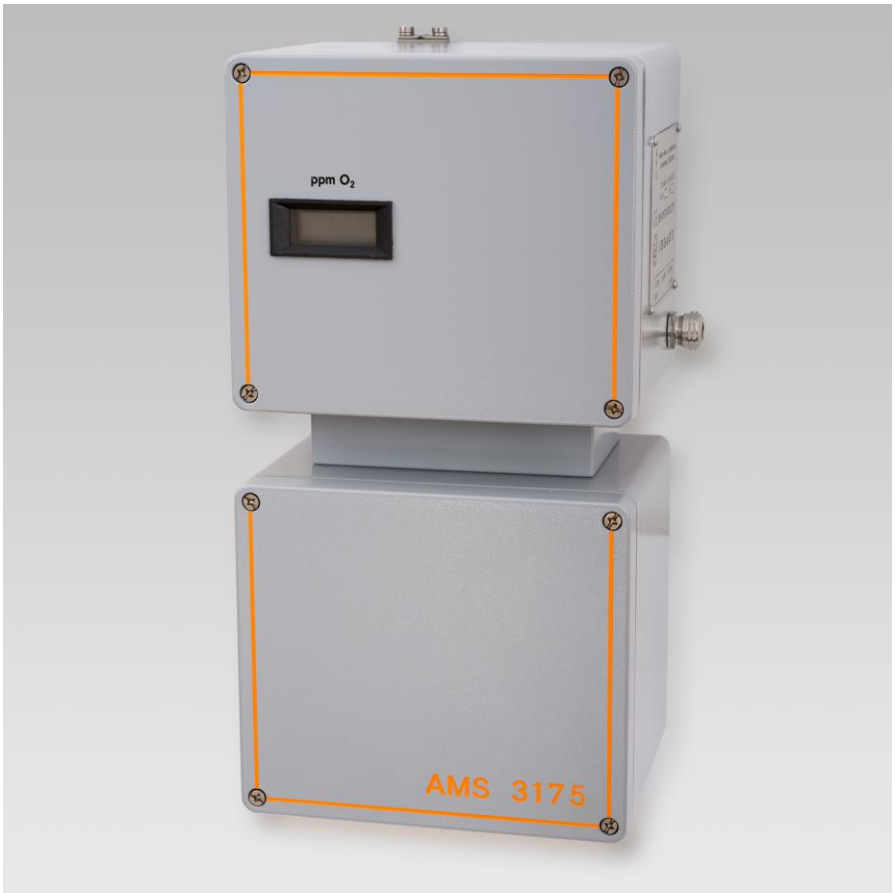
Trace Oxygen Analyser
AMS 3175 Ex



The Application:

The Trace Oxygen Analyser AMS 3175 is an easy to operate system for the measurement of oxygen traces in hazardous areas classified as Zone 1 and Zone 2. Typical applications are the measurement of oxygen traces in noble gases, inert gas and gases with oxidising content.

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

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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 an 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 Trace 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 Trace Oxygen Analyser AMS 3175 is certified as 2-Wire-Transmitter for use in hazardous areas classified as Zone 1. The transmitter is, if powered by an intrinsically safe power circuit, certified according ATEX II 2G Ex ia IIC T6. The electronics and the analytical components are mounted, separated gas tight, in Aluminium die cast housings for wall mounting. The pneumatic components are consisting of the valves to control and adjust the gas flow in the instrument and a mechanical flow indicator. As option the gas connections can be equipped with flame barriers for gas group IIC.

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Technical Data

Analyser	**AMS 3175 Ex**
Ex-classification	ATEX 2 G, II 2G Ex ia IIC T6 Gb
	BVS 07 ATEX E 077 X
Measuring principle	Electrochemical oxygen sensor
Application	Gases Industries, Chemical Industries, Petrochemical Industries
Measuring range	max. 4 manual selection 0 … 10, 0 … 100, 0 … 1000, 0 … 10000 ppm, (/25 Vol%) depends on measuring sensor
Analogue signal port	4 … 20mA two-wire transmitter
Reproducability	+/- 2 % of F.S.
Resolution	0,01 ppm – C(O2) – 1 ppm depending on the O2 concentration
T90-Time	appr. 40 seconds
Display	4 ½ digit LCD display
Messages	2 free adjustable isolated changeover relays
Gas connection	inlet / outlet 6 / 6 mm ferrule pack
Gas sampling	built-in inlet / outlet valve flowmeter
Sample flow	min. 20 Nl/h, max. 40 Nl/h
Sample pressure (inlet)	min. 1,01 bar abs., max. 2 bar abs.
Sample pressure (measuring cell)	max. 50 mbar pressure
Ambient operating temp.	-5 °C up to + 40 °C
Relative humidity of the gas	0 … 99 % not condensing
Power supply	24 VDC intrinsically safe
Protection / Housing / Dimensions	IP 65 / wall mounting housing off Aluminium die-casting, separated for electronic and gas analytics / 446 x 232 x 180 mm (hxbxt)
Weight	9 kg
Options	intrinsically safe power supply with signal separator Flame arrester ATEX II G IIC
Version: AMS 3175 E V-2021-07	

Specifications subject to change.

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