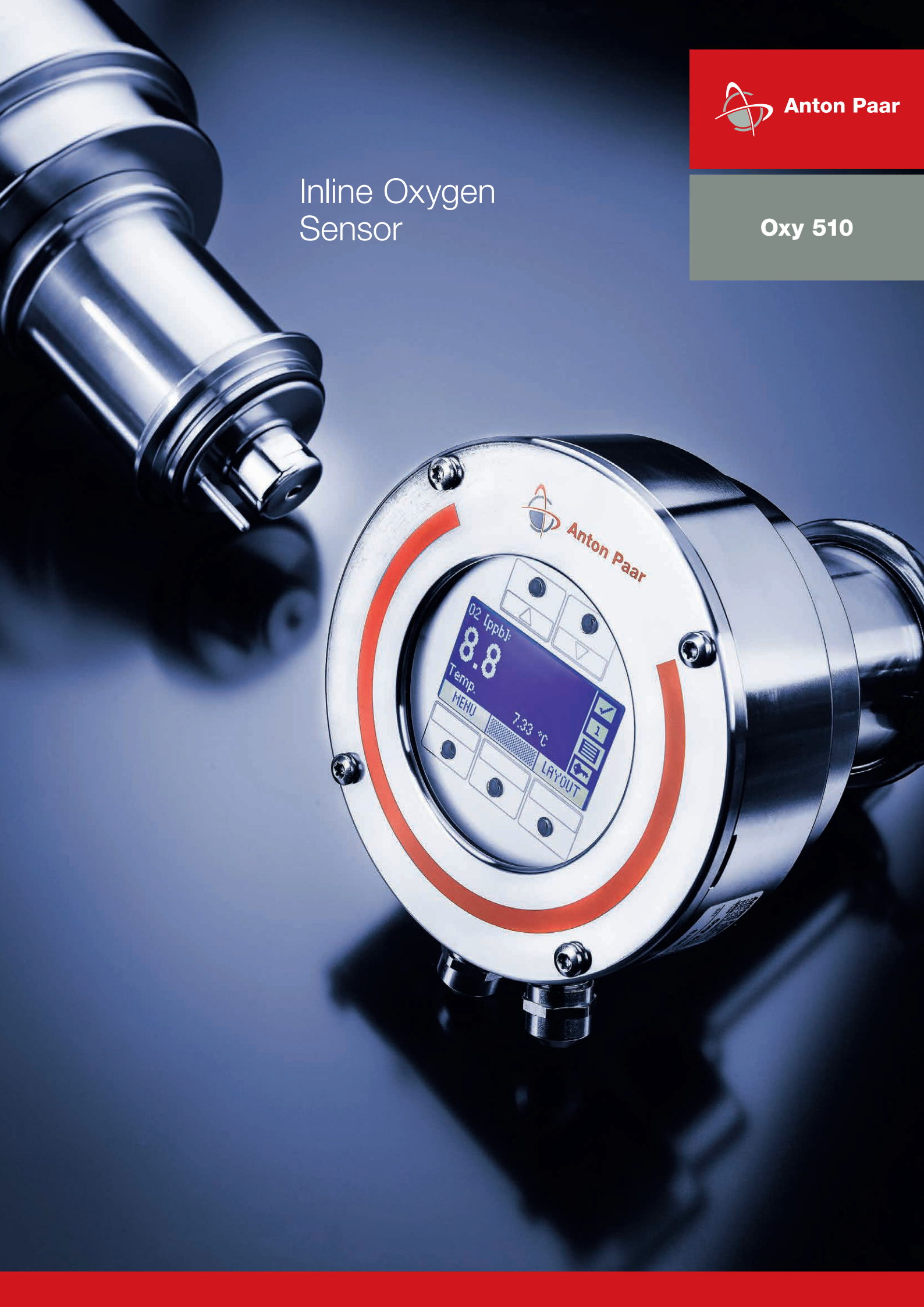
Anton Paar

Inline Oxygen Sensor

Oxy 510



The Oxygenius: Oxy 510 inline sensor

Oxygen content is crucial for the taste and shelf life of beverages. Measuring the dissolved oxygen (DO) level during production ensures your products' quality and helps to minimize the potential of corrosion occurring in cans and storage containers.

With the Oxy 510 inline sensor you benefit from real-time and accurate, drift-free inline measurements throughout the entire production process.

Oxy 510 extends the Anton Paar portfolio for multiple-parameter inline analysis of beverages. As Anton Paar uses the same technology for process and laboratory equipment you can directly compare inline and offline measurements for production and quality control purposes.

One sensor for two measuring ranges

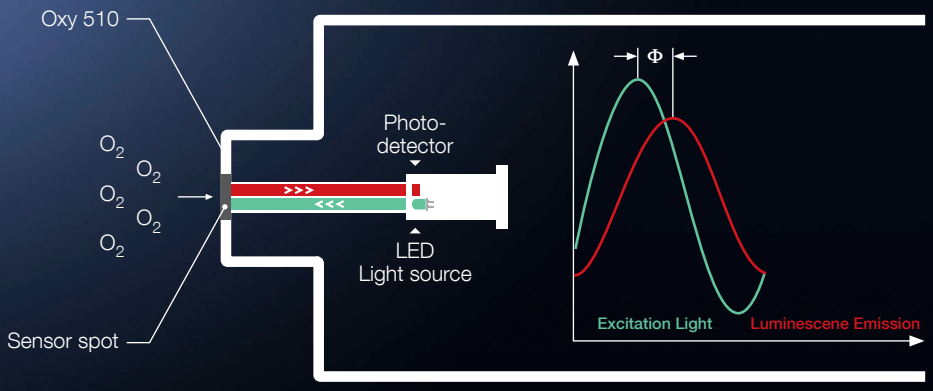
The Oxy 510 inline sensor enables highly accurate measurements in the trace range (0 ppb to 2000 ppb) and in the wide range (0 ppm to 22.5 ppm). The change in production from the trace range to the wide range requires no additional sensor. Simply choose the corresponding Oxy 510 sensor cap for your application.

Clever sensor caps with Toolmaster™

Sensor caps with Toolmaster™ technology are detected by the sensor. All required configuration and calibration parameters are automatically transferred and no manual intervention via a HDI is necessary. This reduces downtimes and human errors and results in a quick and easy cap exchange.

An outstanding optical measurement principle

The determination of dissolved oxygen (DO) concentration is based on the fluorescence phase-shift principle. An oxygen-sensitive luminophore is excited by absorbing light of a defined wavelength. A part of this absorbed light is released by emitting fluorescent light at a higher wavelength. In the presence of oxygen as the quencher molecule, a phase-shift between excitation of the luminophore and fluorescence emission occurs. The Oxy 510 inline sensor detects this fluorescence quenching, and the resulting phase shift is a direct measure of the dissolved oxygen content.



Specifications

	Trace range	Wide range
Measuring range	0 ppb to 2000 ppb	0 ppm to 22.5 ppm
Resolution	0 ppb to 1 ppb ±0.4 ppb 1 ppb to 10 ppb ±0.4 ppb 10 ppb to 100 ppb ±0.5 ppb 100 ppb to 1000 ppb ±3.5 ppb 1000 ppb to 2000 ppb ±10.0 ppb	0 % to 1 % ±0.05 % O_2 1 % to 21 % ±0.2 % O_2 21 % to 50 % ±0.5 % O_2
Accuracy (the larger value is valid)	≤±1 ppb or ±3 %	≤±0.1 % O_2 or ±3 %
Repeatability (the larger value is valid)	≤0.5 ppb or 1 %	≤0.05 % O_2 or 1 %
Reproducibility (the larger value is valid)	≤0.8 ppb or 2 %	≤0.08 % O_2 or 2 %
Sample temperature	-5 °C to 40 °C non-freezing	
Max. cleaning temperature	99 °C	
Line pressure	0 bar to 12 bar	
Ambient temperature	-5 °C to 50 °C non-freezing	
Response time @ Interval 1 s	t_{90} < 15 s t_{99} < 20 s $t_{99.9}$ < 40 s	
Measuring interval	1 s to 60 s	
Power	SELV DC 24 V (DC 20 V to 30 V), max. 1.5 W	
Dimensions (WxHxD)	174 mm x 174 mm x 230 mm	

Easily added to your system

Oxy 510 is compatible with all existing Anton Paar Smart Sensors, evaluation units and data acquisition software. Additional Anton Paar sensors can easily be added to this installation to fulfill future requirements. Vice versa the Oxy 510 inline sensor is quickly integrated into already established Anton Paar installations without the need for additional equipment. Oxy 510 delivers immediate and reliable results at any location and fully provides connectivity by fieldbus communication such as PROFIBUS, ModBus TCP, PROFINET and EtherNet/IP.

Fit and forget

Easy installation guarantees a fast startup procedure of Oxy 510 in your production line. Due to its robust and hygienic design the sensor requires minimum maintenance throughout its lifetime and helps to keep costs and downtimes low.

Statemaster: Easy planning of sensor cap exchange

To ensure the proper functioning of the sensor during production and to provide confidence in the measured values, Oxy 510 informs you about the current state of the sensor and the corresponding remaining service life of the sensor cap. You receive a warning when it is time to replace the sensor cap. That makes the exchange of the sensor cap a predictable work step that can be planned for scheduled downtimes.

Hygienic design

Oxy 510 is designed to meet all requirements of the EHEDG guidelines. All seals and O-rings are compliant with the FDA. It is quickly back to work after CIP and suitable for hygienic applications in the beverage, pharmaceutical and water treatment industries.

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