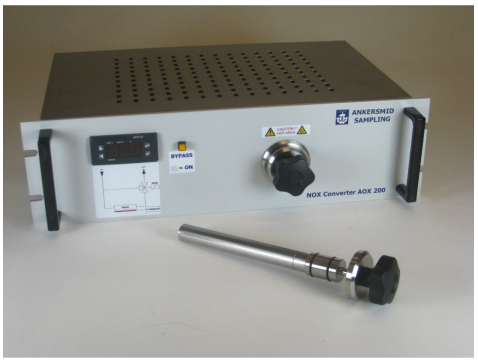
Ankersmid NO_2 – NO Converter Type AOX 100/200



Application

The NO_2/NO converters series AOX are to be coupled with a NOx gas analyzer or NH3 gas analyzer for flue exhaust. It is converter using a special catalyst which efficiently converts NO_2 in sample gas to NO.

Description

- **High flow rate at long operating time and high conversion efficiency (98% with new cartridge)**
- **No CO emission**
- **Operating temperature at 225°C**
- **Compact 19"-rack housing**
- **Catalyst cartridge easy to change without any tools**
- **Safe handling for easy maintenance**
- **Bypass solenoid valve**

In the high temperature combustion processes, the nitrogen contained in the air reacts with the oxygen producing oxides of nitrogen in the forms of monoxide (NO) and dioxide (NO_2). The item NOx shows the total amount of the two components.
For provisions laid down by law and regulatory instructions in terms of environmental protection or for process needs, the monitoring of the NOx content in the air or in the waste gases flows is sometimes necessary.
The reference method of the NOx content definition in a gas mixture is based on the phenomenon of chemiluminescence's that can be, however, only applied to the nitric oxide. The dioxide determination requires the preventive chemical reduction to NO.
By carrying out detections of nitric oxide in the gas mixture before and after putting it under the dioxide reduction procedure, it is possible to understand the incidence of each component involved.
The NO_2/NO converter carries out the conversion of the nitrogen dioxide into monoxide through reaction inside the heating catalytic chamber.
It is inserted upstream the analysis instrument for NOx along the flow line of the gas mixture examined.
The molybdenum catalyst and the temperature electronic regulation guarantee an efficiency of conversion at 98%, optimizing the performances and the duration of the cartridges of the catalytic material.
The item is composed of a stainless steel cylindrical chamber furnace heated by an electrical resistance that wraps it for all its length and is covered by a thick layer of thermal insulated material. Thanks to this, it is possible to get a stable temperature uniformly distributed and a low loss of heat.
Inside the furnace there is the molybdenum catalytic cartridge crossed by the flow of the gas mixture to be treated.
An electronic PID control thermo-regulator permits to set up and keep the temperature constant, detected through thermocouple with the most appropriate value.
On the thermo-regulator display the current temperature is visualized while luminous LED's give indications on the functionality status.
There is also a contact in the exchange as alarm status cumulative signalling for low and high temperature. The values of the intervention thresholds can be independently set up on the thermo-regulator. An electro-valve allows the catalyst chamber bypass.
The converter is available with (AOX 2xx) or without bypass valve (AOX 1xx). For test purposes, with the bypass valve the catalyst can be bypassed via a valve.
The catalyst cartridge is filled and formatted ex works factory and is ready for use immediately.

Technical data

Model	AOX 100	AOX 200
Part number	AOX 100	AOX 200
Housing version	19”-rack	
Housing color front panel	RAL 7035 (light-grey)	
Weight	Approx. 5 kg	
Gas inlet & outlet	Unheated	
Gas inlet temperature	Max. +250°C	
Operating temperature	+225°C for standard molybdenum composition filling (+600°C for optional metal filling)	
Max. temperature	+ 650°C	
Gas flow rate	Standard 60Nl/h (max. 90Nl/h)	
Operating pressure	Max. 2 bar abs.	
Sample gas inlet	1/4” NPT f	
Sample gas outlet	1/4” NPT f	
Conversion rate NO2 in NO	Effectiveness > 96% with a new catalyst	
Life time of the catalyst	Approx. 6 months, depending on gas conditions	
Relative air humidity	< 80%	
Ambient temperature	+5°C to 50°C	
Materials of gas wetted parts	Stainless Steel SS316, PTFE, FKM, Viton©	
Electrical data		
Mains connection	Mains power plug connector incl. 1 fine fuse 5x20m (T3A/H250V) , incl. 2,5m cable with plug. Alarm- and control signals via 9-pin Sub D-connector	
Alarm contact	Free programmable contact 1NO/1NC, rating: 250V, 5A AC	
Alarm set points	+/- 10°C of set-point (others on request)	
Protection class	IP20 EN 60529 / EN 61010 / EN 60519-1	
Power supply	230V/50Hz (Standard, others on request)	
Power consumption	Approx. 450W	

Dimensions