

ANKERSMID NO₂ – NO Gas converter

AOX 1xx/2xx/3xx Series



Application

The NO₂-NO converters series AOX are to be coupled with a NO_x gas analyzer or NH₃ gas analyzer for flue exhaust. It is converter using a special catalyst which efficiently converts NO₂ in sample gas to NO.

Description

In the high temperature combustion processes, the nitrogen contained in the air reacts with the oxygen producing oxides of nitrogen in the forms of nitrogen monoxide (NO) and nitrogen dioxide (NO₂). The item NO_x 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 NO_x content in the air or in the waste gases flows is sometimes necessary.

The reference method of the NO_x 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 NO₂/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 NO_x 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-controlled 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/3xx).

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.

- **High flow rate at long operating time and high conversion efficiency (98% with new cartridge)**
- **No CO emission**
- **Operating temperature at 227°C**
- **Compact 19"-rack housing**
- **Catalyst cartridge easy to change without any tools**
- **Safe handling for easy maintenance**
- **Bypass solenoid valve**

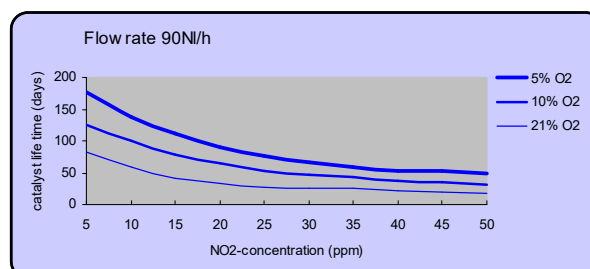
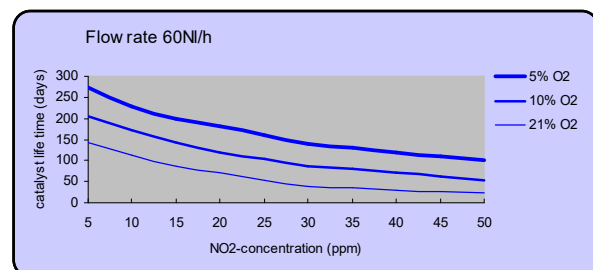
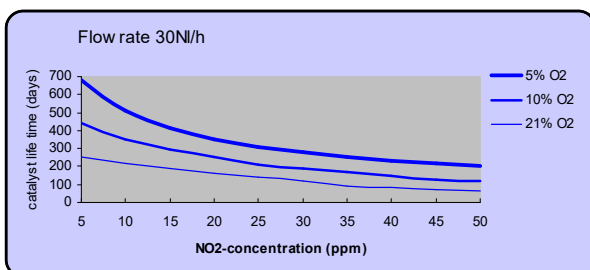


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AOX 1xx/2xx/3xx Series

Technical data

Model	AOX 100	AOX 200	AOX 300
Part number	AOX 100	AOX 200	AOX 300
Housing version	19"-rack		Bracket mounting
Housing color front panel	RAL 7035 (light-grey)		Steel grey
Weight	Approx. 5 kg		
Gas inlet temperature	Max. +250°C		
Operating temperature	+227°C for standard molybdenum composition filling		
Max. temperature	+ 650°C		
Gas flow rate	Standard 60 NI/h (max. 90 NI/h)		
Operating pressure	Max. 1,5 bar abs.		
Sample gas inlet	1/4" NPT f		
Sample gas outlet	1/4" NPT f		
Conversion rate NO ₂ in NO	Effectiveness > 96% with a new catalyst		
Life time of the catalyst	Approx. 6-12 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) With. 2,5m cable with plug. Alarm- and control signals via 9-pin Sub D-connector		8-pin socket for power supply and alarm signals
Alarm contact	Free programmable contact 1 NO, 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		

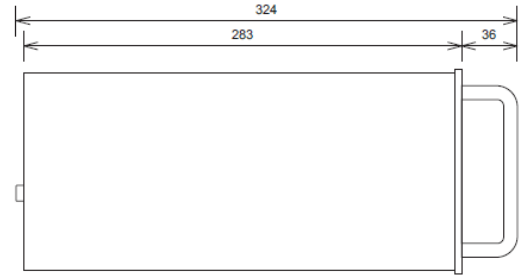
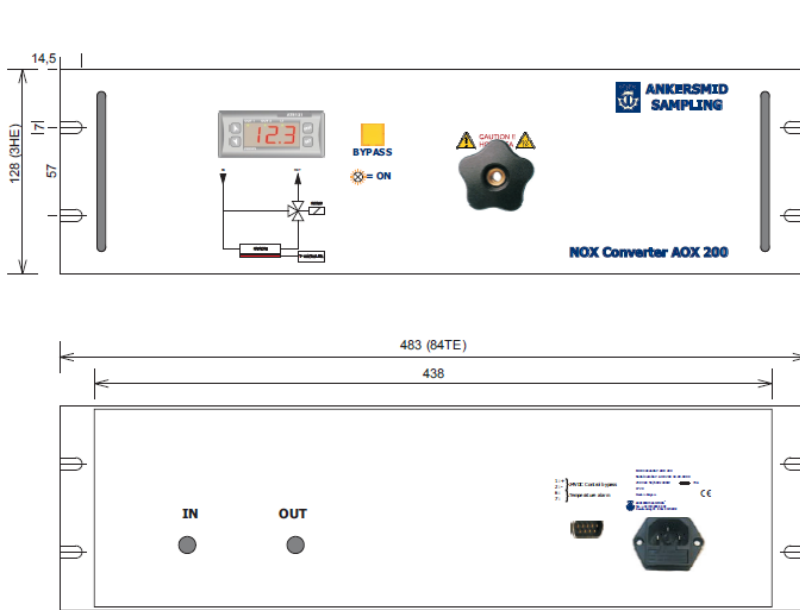
Catalyst life time according to the NO₂-concentration at various flow rates and Oxygen



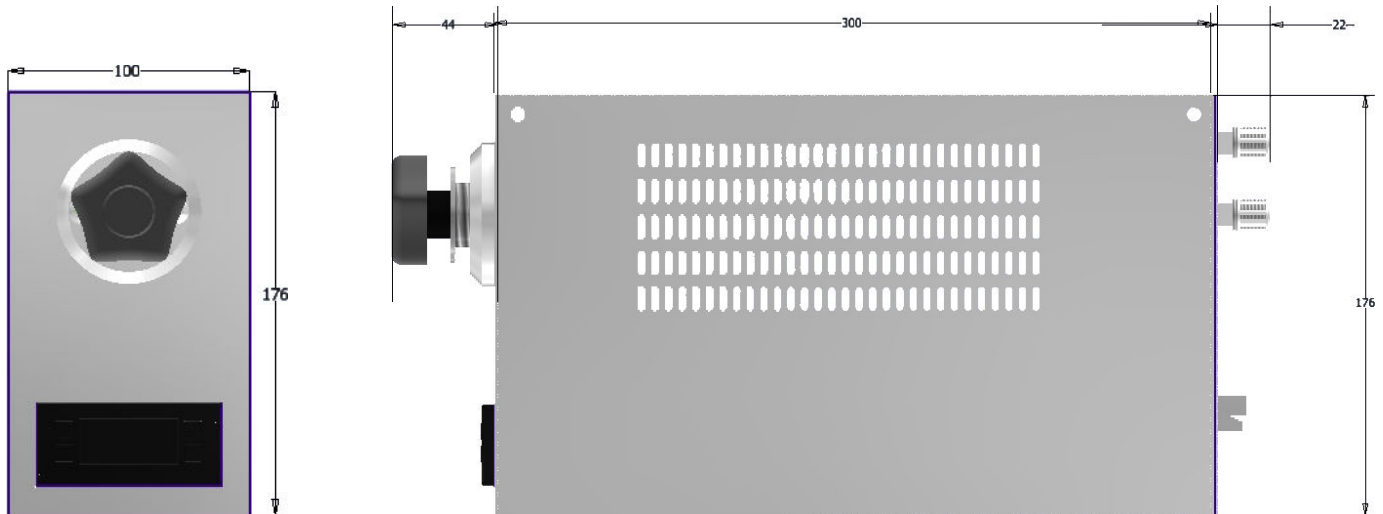


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Dimensions



AOX 3xx Series



Mounting brackets (can be mounted in 4 different positions)

