

## ANKERSMID Sample probe

### ASP 320 DeNox heated with separator

#### Application

The **ASP** gas sample probe type ASP 320 is designed for continuous gas sampling especially at DeNOx-processes (SCR) where NH<sub>3</sub> is added to the flue gas in order to reduce the NOx content.

This new sampling technique has also proved to be suitable for processes with very high pollutant concentrations.

In these applications, a significant problem is the measurement of NOx, SO<sub>2</sub> and O<sub>2</sub>-concentrations.

With temperatures of <300°C, ammonium salts are produced due to the chemical reaction of NH<sub>3</sub> and SO<sub>2</sub>/SO<sub>3</sub> in the flue gas.

This salification blocks up filters and sample lines in a short time.

In order to prevent a blocking due to salification, the probe temperature is adjusted at 320°C.



\*Picture may vary

#### Description

The probe type ASP 320 is based on the standard Ankersmid sample probe. Due to its modular and innovative design the Ankersmid heated sample probe cover also meet the special requirements of above mentioned application.

With the heated filter body a filter element of 150mm length, suitable for most applications up to 1g dust/m<sup>3</sup>, is integrated.

When the integrated port is used for back-flush higher dust loads can be handled. Additional a pre-filter can be mounted on top of the sample probe.

The filter element can be replaced without any tools and in the shortest possible time. At the sample gas outlet of the probe a special non-heated condensate vessel of glass is mounted. It is filled with glass balls to extend the surface for the salification. The salt deposits and will be washed out with the condensate. A peristaltic pump type ASR25 continuously removes the condensate with the solved ammonium salts. The temperature of the vessel is higher than the ambient temperature because of the hot gas stream. Therefore a loss of measured components is negligible because of warm condensate. In case of a DeNOx application with a small content of NH<sub>3</sub> (normally only a few ppm) it is possible to analyse SO<sub>2</sub> and NOx without great losses (only some ppm which normally can be neglected).

To determine the loss, it is possible to give test gas via the probe to the analyser(s). A measuring fault can be found and calibrated. As an option the vessel can be heated as well to suppress chemical reactions of the measured component below a defined temperature.

At the sample outlet of the vessel a heated gas sample line series AHL can be connected.

- **Special probe behind DENOX (SCR)**
- **Heated up to +320°C**
- **No salt crystallization in the heated filter part**
- **Condensate vessel in the gas outlet with glass ball filling to extend the reaction surface**
- **Reduce operator exposure to safety risks**
- **Integrated peristaltic pump**
- **Easy mounting**
- **Easy maintenance**
- **Patented construction**



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**Technical data**

Version	ASP 30X
Integrated filter Length	150mm
Integrated back-flush	available
Protective cover	yes
Degree of protection	IP55 EN60529
Materials of gas wetted parts	Stainless steel 316
Sealing materials	Graphite/Kalrez®
In situ probe tube/pre-filter	Optional 180mm or 500mm, stainless steel, 5µm
Sample pressure max.	0,5-6 bar abs.
Ambient temperature	-20°C to +65°C
Filter chamber volume	300cm <sup>3</sup>
Filter element, porosity	Ceramic, 2µm
Separator vessel	Body: Duran® Glass, filling: glass balls
Separator vessel volume	500ml
Peristaltic pump	ASR25
Temperature control	0-320°C with thermo-couple
Electronic Controller	Digital programmable PID-controller, optional with RS485 Modbus
temperature alarm contact	Free programmable contact, rating: 250V, 3A~, Factory set at alarm point: ΔT 20°C
Sample gas outlet connection	1/4" f NPT
Test gas/back-flush connection	1/4" f NPT
Power supply	230VAC/1250W 115VAC/1250W
Electrical connections	Terminals max. 4mm <sup>2</sup> , 2x PG13,5 cable gland
Electrical equipment standard	EN 61010, EN 60519-1
Mounting flange	DN65 PN6b, SS316 other connections optional or on request
Weight	Approx. 20 kg

ΔP at flow of:	100	200	500	1000	1500	NI/h
ΔP with new filter element 2µ, 150mm	0,009	0,013	0,025	0,055	0,090	bar