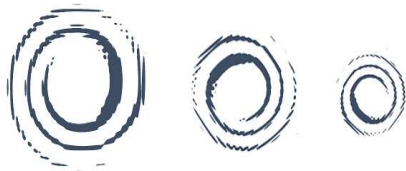


Heated or unheated gas sampling probes

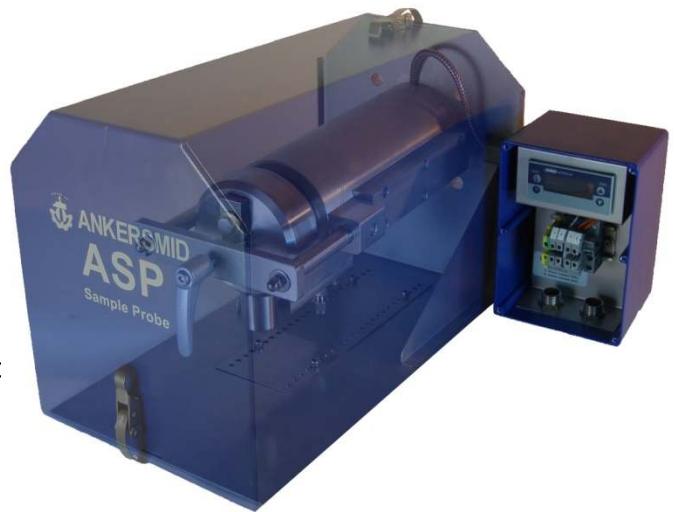


Gas Sample Probe Series ASP

Version ASP 300, ASP 400, ASP 500 Heated

Application

The **ASP** gas sample probes are designed for continuous gas sampling in difficult processes with gases of high or low dust content, different temperatures and extreme humidity. As the ASP is available in 3 different lengths, it is suitable for applications with low to very high dust loads. Depending on the acid dew point, the standard probe operates at 180°C or when necessary with a high temperature version at 320 °C (f.e. Denox measurements)



Description

Due to its modular design and various options, the Ankersmid heated sample probe filters cover the **widest** range of applications.

With a choice of 3 different lengths of heated filter body, a filter element of 150 mm length, suitable for most applications up to 1 g dust/m³ can be integrated. 250 mm filters are used for applications up to 4 g dust/m³; with the optional blow-back function dust loads of up to 10 g /m³ can be handled.

The 500mm model filter has a capacity for dust up to 10 g/m³

When this type is equipped with blow-back option, it handles up to 20 g/m³. For even higher dust loads, a primary filter is positioned on top of the first filter.

The big advantage is that both filters **are replaceable without dismantling the probe**. The benefit is that all filters can therefore be replaced with a minimum of tools and in the shortest possible time.

The cleaning of the sample tube or the preliminary filter can be effected by extracting the filter from the probe.

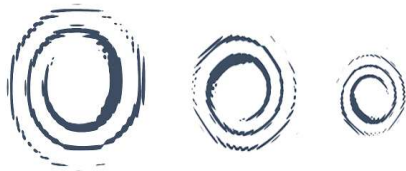
The probe temperature is controlled by a microprocessor based PID controller. Alarm or fault contacts can be programmed and the temperature can be changed only by user-code. The standard sensor is Pt100, FeCuNi is standard for the high temperature version.

We offer the option of 2-way Modbus/ RS485 communication that combines **all** Ankersmid controllers, so that digital communication with the control room is possible.

The following features are offered in all 3 lengths of probes:

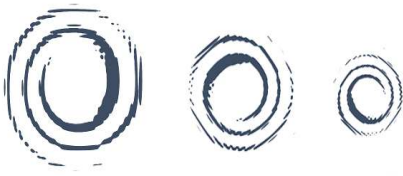
- Calibration gas can be injected into the probe through a check valve directly to the sample outlet. No calibration gas is lost into the stack.
- An isolation valve with pneumatic control shuts off the sample outlet from the internal filter area in case of blow-back.
- Through a high flow **back-flush** inlet we can clean the filter and the inlet sample tube so fewer maintenance is necessary in high dust load applications. This inlet can be controlled by a pneumatic or electric valve, and also in combination with a volume chamber for high pressure flow.

- **Retractable sample tube, change pre-filter or sample tube without dismantling the probe**
- **Optional back-flush possibility and closing the sample gas outlet**
- **Very universal applicability**
- **Compact and modular design suited for most applications**
- **Reduce operator exposure to safety risks**
- **Easy mounting**
- **Easy maintenance**
- **Digital communication**
- **Patented construction**

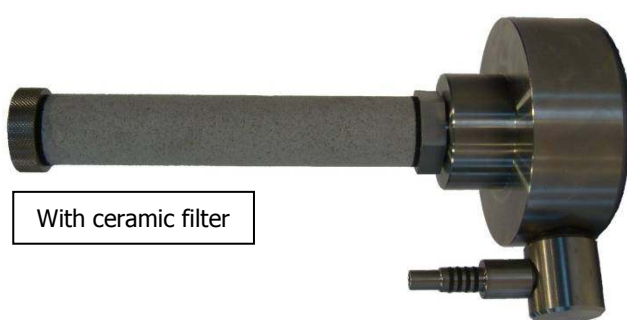
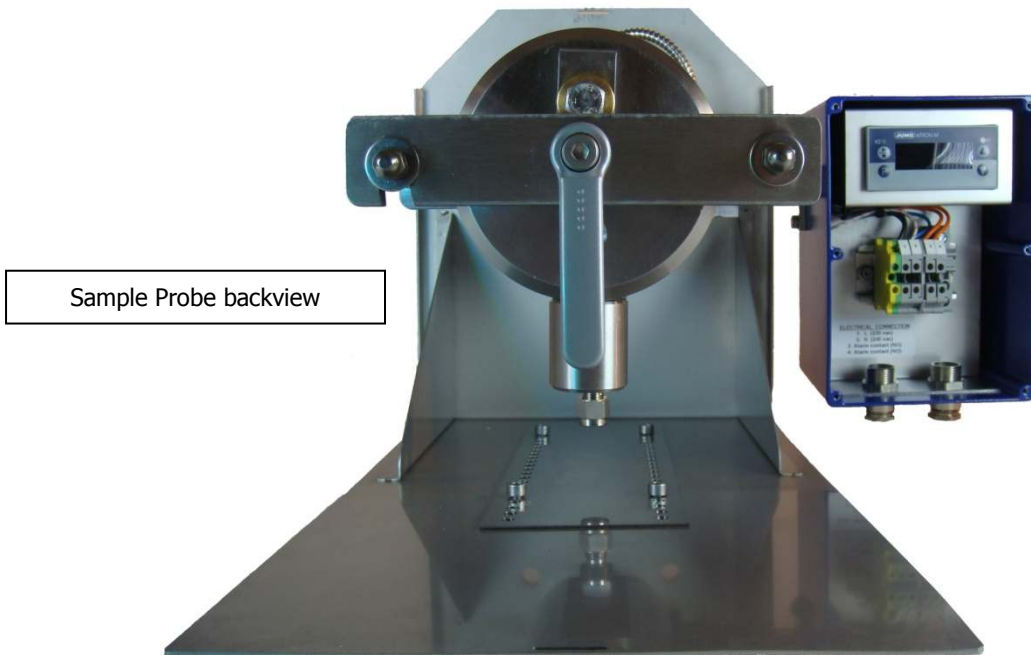
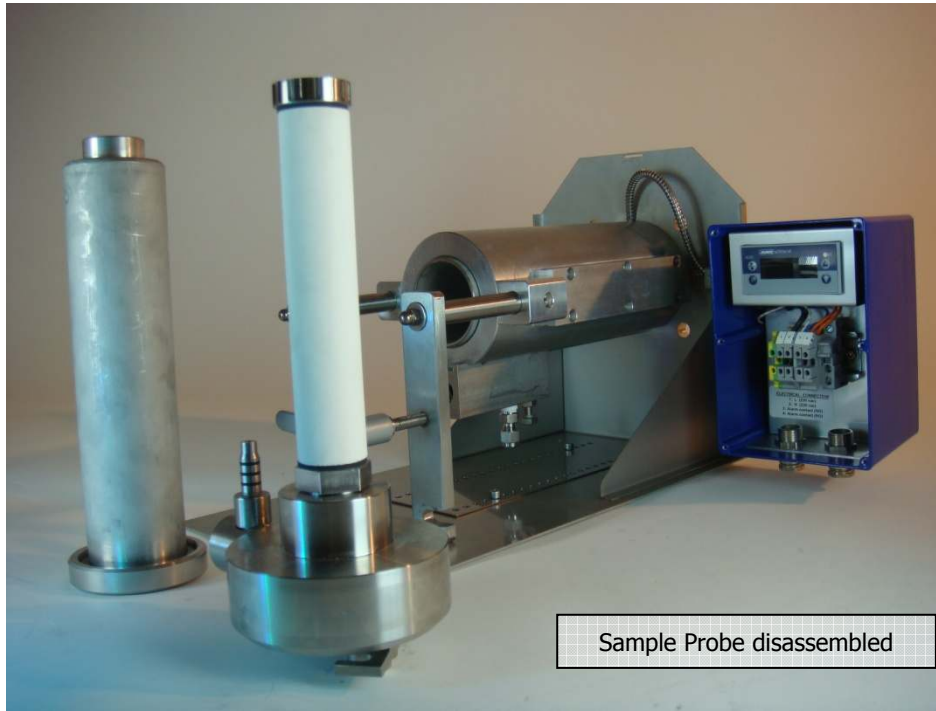


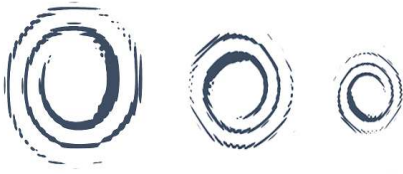
Technical data

Gas Sample Probe Version	ASP 30X		ASP 40X		ASP 50X	
Integrated filter Length	150mm		200mm		500mm	
Integrated back-flush	available		available		available	
Protective cover	yes					
Degree of protection	IP55 EN60529					
Wet Materials	Stainless steel 316L					
Sealing materials	FPM/ Viton [®] for 180°C and Graphite for 320°C					
Insitu probe tube/pre-filter	Optional 200 or 500mm, stainless steel, 2µm or 20µm					
Sample pressure max.	0,5-6 bar abs.					
Ambient temperature	-20°C to +65°C					
Filter chamber volume	300 cm ³		480 cm ³		760 cm ³	
Filter element, porosity	Ceramic, 2µm or 20 µm		stainless steel 316, 2µm		stainless steel 316, 2µm	
Thermostatic Control	0-180°C Pt 100 Option 0-320°C Fe-CuNi					
Electronic Controller	Digital programmable PID-controller with optional RS485 Modbus					
temperature alarm contact	Free programmable contact, rating: 250V, 3A~, Factory set at alarm point: ΔT 20°C					
Sample gas outlet connection	1x 1/4" NPTi					
Test gas connection	1/4" NPTi					
Back flush connection	1/4 "NPTi					
Power supply	180°C					
	230VAC/ 800W 115VAC/ 800W		230VAC/1200W 115VAC/1200W		230VAC/1500W 115VAC/1500W	
	320°C					
	230VAC/ 1100W 115VAC/ 1100W		230VAC/1500W 115VAC/1500W		230VAC/1800W 115VAC/1800W	
Electrical connections	Terminals max. 4mm ² , 2x PG 13,5 cable gland					
Electrical equipment standard	EN 61010, EN 60519-1					
Mounting flange	DN65 PN6-B, SS316L other connections optional or on request					
Weight	16 kg		19 kg		24 kg	
ΔP at flow of:	100	200	500	1000	1500	NI/hr
ΔP with new filter element 2µ 150mm	0,009	0,013	0,025	0,055	0,090	bar
ΔP with new filter element 2µ 250mm	0,005	0,010	0,018	0,030	0,050	bar
ΔP with new filter element 2µ 500mm	0,002	0,004	0,010	0,015	0,025	bar



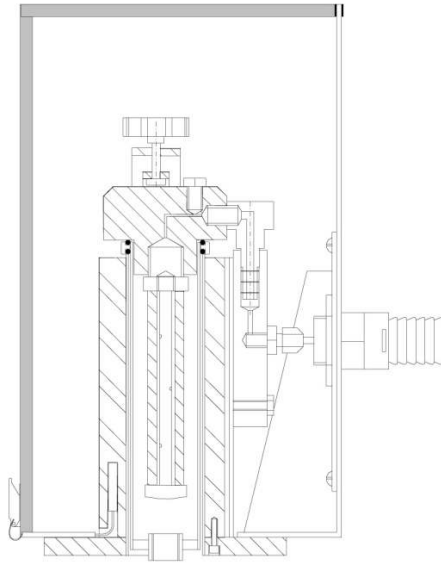
Pictures



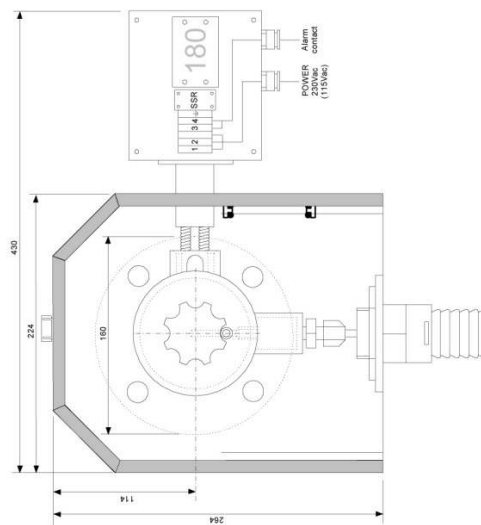


Technical drawing

SIDE VIEW

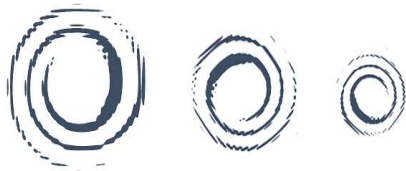


FRONT VIEW



REV	ECN NO.	REVISION DESCRIPTION	DATE	BY	CHKD	APP.
0		First Drawing	08/04/08	FL	KL	
DRAWN		DATE	08/04/08			
F. Leyskens		Ankersmid Sampling				
CHECKED		GAS SAMPLE PROBE				
K. Leyskens		ASP Series	11/04/08			
ENGINEER						
APPROVED		SCALE	SHEET 1 OF 1	FILE		REV 0
						DWG NO.

Ankersmid Sampling
 Neerlandweg 22
 2610 Wilrijk, Belgium
<http://www.ankersmid.com>



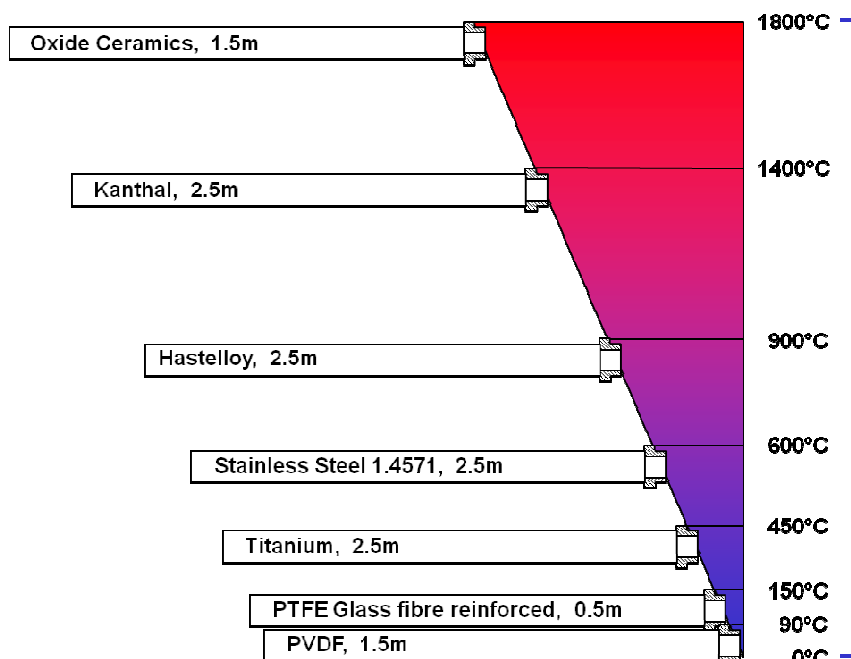
Sample Tubes AST for sample probes series ASP

Application

These sample tubes are used in combination with the **Ankersmid ASP** probes in order to sample the gas in the optimal section of the gas-stream. For a typical installation of the probe-tip, a position in the middle third of the gas stream is advised. For dust concentrations higher than $2g/m^3$, we advise fitting a pre-filter in combination with an extension tube.



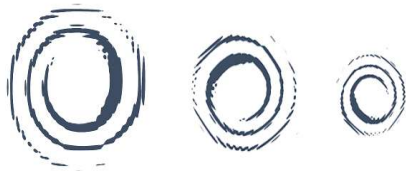
Different situations:



Maximum sample Tube temperature is depending of the horizontal length that is inside this temperature zone !

- Used for dust loading up to $2g/m^3$
- Sampling after wet scrubber up to $90^\circ C$
- Sampling gases up to max. $1400^\circ C$
- Different materials
- Available in lengths up to 2500mm, others in request

Situation	Type	Max.T° [°C]	Material	Connection	Outer diameter tube
After wet scrubber or high dew point	ADT 080 (Demister Tube)	90°C	PTFE	G 3/4"o	40-70
Temp < 150°C	AST 411-412- 413	150°C	PTFE	G 3/4"o	22
Temp < 600°C	AST 051- 404	600°C	SS316	G 3/4"o	22
Temp < 900°C	AST 431-432-433-434	900°C	Hastelloy C [®]	G 3/4"o	22
Temp < 1400°C	AST 435	1400°C	Kanthal [®]	G 3/4"o	20
HCl or high corrosive gas	AST 421-422-423-424	450°C	Titanium	G 3/4"o	22

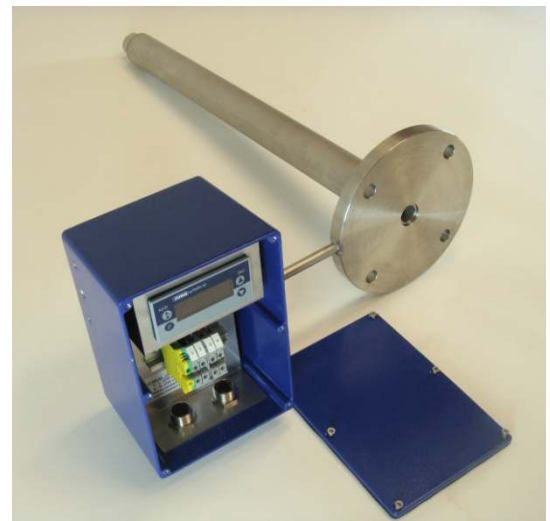


Electrically heated sample tube

AST 05x, AST 10x, AST 15x, AST 20x

Application

The electrically heated **Ankersmid** sample probe tube **AST 05x-10x-15x-20x** are used in extractive sampling systems to avoid cooling and condensation of the sample. Condensation, in combination with a high dust load, can result in blockage of the probe. This is to be strictly avoided as sample gases may be absorbed into the condensate after cooling and will be undetectable. An extra stainless filter can be mounted on the tip of the tube in case of very high dust levels (+ 10 g/m³)



Description

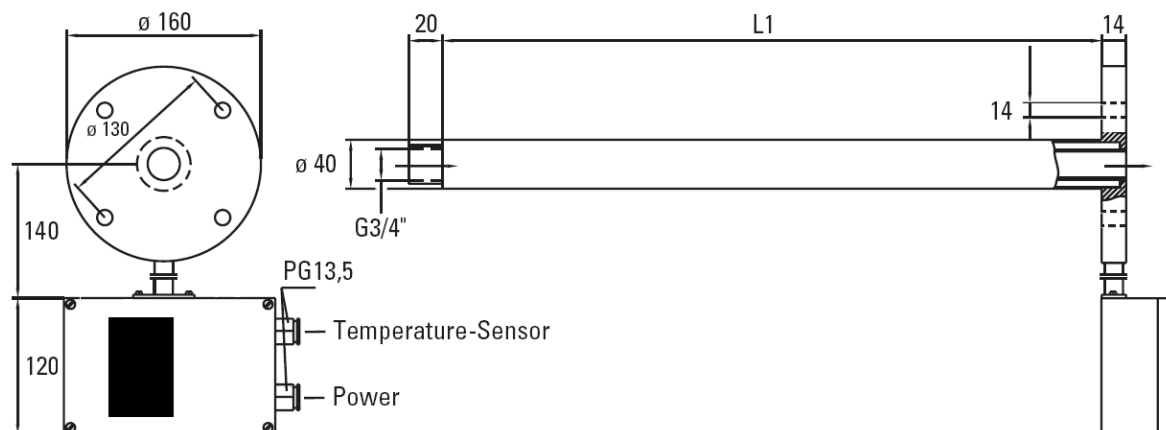
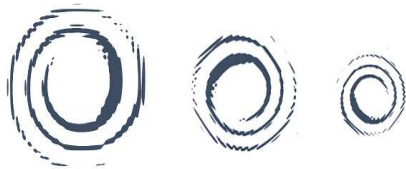
This **electrically heated sample tube** is available in 3 standard lengths: 0.5 , 1 and 1.5 meter (other lengths on request).

As for all Ankersmid probes, the standard flange is a DN65 PN6. Adapter flanges for most common process connections can be provided if required. If needed, it is possible to affix a non-heating sample probe or pre-filter to the tip of the heated tube.

Inside the sample tube a thermocouple Fe-CuNi is integrated. When installed in combination with the digital controller, the user has a freely programmable set point and alarm.

As an option we offer a 2-way Modbus/ RS485 communication, that combines signals from **all** installed Ankersmid controllers, so that digital communication with the control room is possible.

- **Different lengths available**
- **Completely heated sample tube**
- **Digital controller**
- **Easy mounting**
- **Optional: Modbus/RS485**



Series AST Type	AST05x	AST10x	AST15x	AST20x
Temperature sensor	TC Fe-CuNi	TC Fe-CuNi	TC Fe-CuNi	TC Fe-CuNi
Temperature controller	Microprocessor temperature controller with alarm (option: RS485 or Modbus)			
Probe tube length L1	500mm	1000mm	1500mm	2000mm
Sample temperature max.	500°C	500°C	450°C	400°C
Operating temperature max.	200°C	200°C	200°C	200°C
Pre filter: length 500 mm, ø60 mm, 2µm	Option			
Sample gas inlet connection	G3/4"i			
Dust loading	max. 2 g/m ³			
Probe tube volume	200ml/m			
Sample pressure max.	5 bar g			
Ambient temperature	-20 °C to +70 °C			
Storage temperature	-30 °C to +70 °C			
Ready for operation	After 1h			
Power supply	230VAC, 500W 115VAC, 500W	230VAC, 800W 115VAC, 800W	230VAC, 1200W 115VAC, 1200W	230VAC, 1500W 115VAC, 1500W
Electrical connection	2 x 2.5 mm ² + 2.5 mm ²			
Electrical standard	EN 61010, EN60519-1			
Degree of protection	IP54 EN 60529			
Mounting flange	DN65 PN6			
Material of parts in contact with the sample	Stainless steel 316			