

Housing for Absorption Filters

ADF-170 / ADF-300

(Ammonia Filter)



Absorption filters can remove interfering components (like NH_3) from the sample gas. In many cases, correct analysis of the sample gas and proper sample gas conditioning is only possible after removing these interfering substances. For different interfering substances appropriate absorption materials are available which eliminate the substance reliable and most selective from the sample gas.

The ADF filter housings provide an optimized filter platform for these applications. They are designed to be filled with all common absorption materials.

The ADF filter housings are available in two sizes and two materials (PVDF and Teflon). This guarantees durability and maximum flexibility for the filter. We will be pleased to assist you with the selection of the suitable absorption material and filter size for your application.

- **Different sizes for universal applications**
- **Highly effective NH_3 -absorption material available**
- **Up to 38.000 hours life time for NH_3 -absorber**
- **Quick and easy maintenance (no tools required)**
- **Chemical and temperature resistant materials**
- **Condensate outlet available (option)**

Absorption granulate

1. NH₃-Absorber

Identification of exhaust gases in DeNOX systems (catalytic reduction of nitrogen oxides) leaves the problem of notable amounts of ammonia gas which makes reliable gas analysis difficult. At temperatures below 230 °C ammonia salts may form and result in irreversible clogging of the sample gas tubing or the analyser. Ammonia promotes the formation of acidic aerosols in general. These substances may cause irreversible damage to the gas conditioning system as well as to the gas analyser. Only selective removal of ammonia from the sample gas guarantees long lifetime of the measuring system and reduction of maintenance costs.

The NH₃-absorber allows reliable and selective removal of interfering ammonia components from the sample gas in an easy and cost-efficient way. While other gas components like SO₂, NO, NO₂, CO₂, and CO are not affected in any way.

- Reliable and selective removal of NH₃ from the sample gas
- High lifetime of up to 38.000 hours possible
- NH₃ absorber refill pack

- Lifetime of the filter material in hours(h) per ppm per volume flow (l/min):

$$\text{Lifetime ADF 170} = \frac{20.000 \text{ h}}{1 \text{ ppm} * 1 \text{ l/min}} \quad \text{for filter with length of filter housing 170 mm}$$

$$\text{Lifetime ADF 300} = \frac{38.000 \text{ h}}{1 \text{ ppm} * 1 \text{ l/min}} \quad \text{for filter with length of filter housing 300 mm}$$

Maintenance intervals can be influenced by changing the size of the filter housing and the volume flow.

- Example

The measuring gas contains 2 ppm NH₃ at a flow of 2 l/min. Using a filter of 300 mm length, this results in:

$$\text{Lifetime ADF 300} = \frac{38.000}{2 \text{ ppm} * 2 \text{ l/min}} = 9.500 \text{ h}$$

Lifetime of the filter is:

- 9.500 h (approx. 13 months) for ADF 300
- 5.000 h (approx. 7 months) for ADF 170

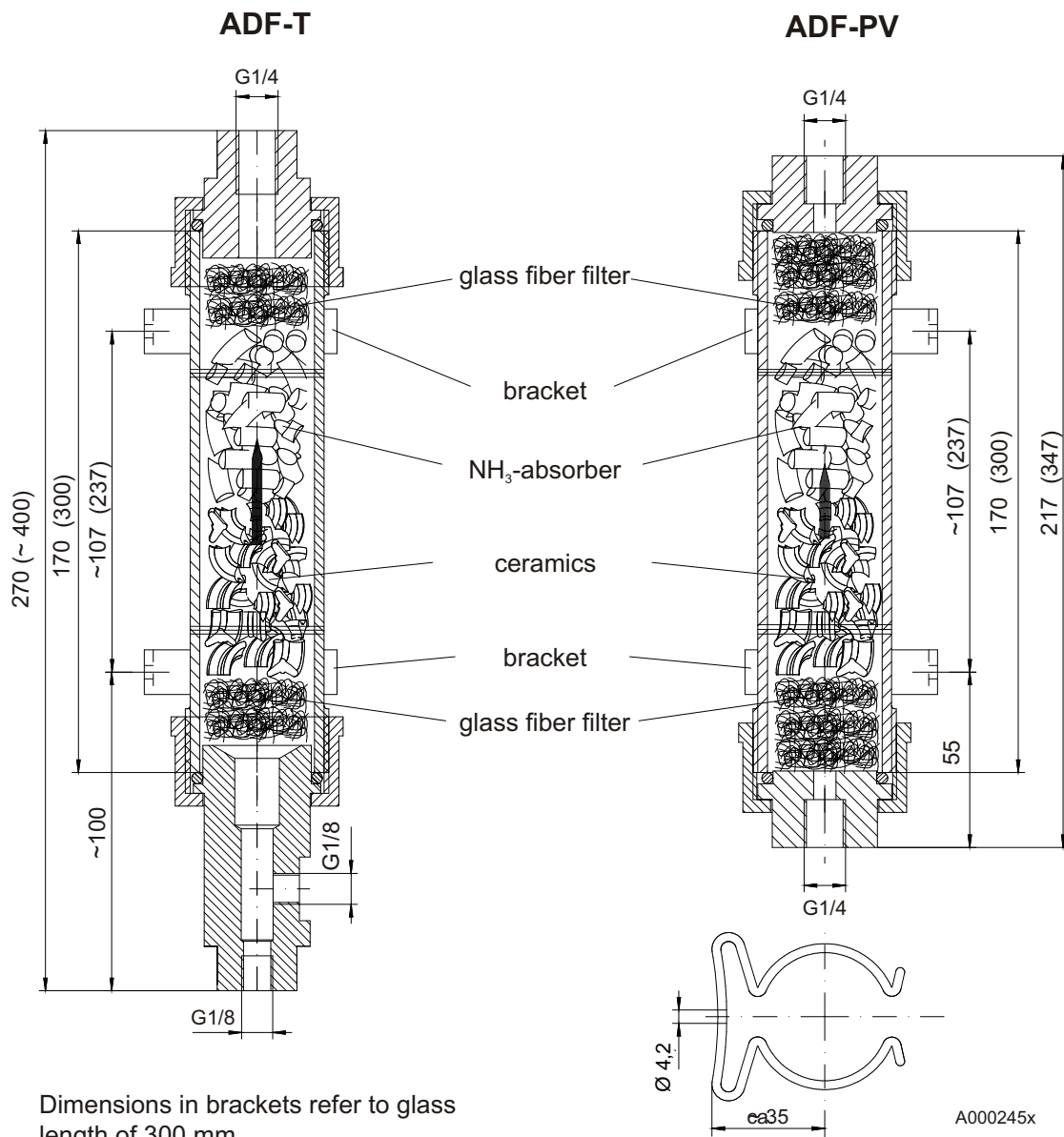
2. Other absorption materials on request

Technical Data

Filter gas inlets:	PTFE - body (ADF-T-...), gas inlet: G1/8, gas outlet G1/4, condensate outlet G1/8
	PVDF-body (ADF-PV-...), gas inlet and outlet G1/4
Filter glass:	Duran-glass
Material gasket:	Viton
Temperature max.:	150°C (gas) / 100 °C (ambient temperature)
Pressure max.:	2 bar abs. at 150°C
Filling volume:	approx. 125 ml for ADF-...-170 approx. 250 ml for ADF-...-300
Weight (without filling):	approx. 0,3 kg for ADF-...-170 approx. 0,4 kg for ADF-...-300

Filling for NH ₃ -filter:	for filter housing	ceramics	NH ₃ -absorber material
	ADF-...-170-...KG	approx. 50 g	approx. 50 g
	ADF-...-300-...KG	approx. 100 g	approx. 100 g

Dimensions



Please indicate with order

Absorption filter with NH₃-absorber material

(The filter housing is supplied with absorber material)

<i>Part No.</i>	<i>Type</i>	<i>Length</i>	<i>Material</i>	<i>Miscellaneous</i>
41 57 599 KG	ADF-PV-170 KG	170 mm	PVDF	
41 57 699 KG	ADF-PV-300 KG	300 mm	PVDF	
41 57 799 KG	ADF-T-170-A KG	170 mm	Teflon	with condensate outlet
41 57 899 KG	ADF-T-300-A KG	300 mm	Teflon	with condensate outlet
46 222 167	glass fibre filter, package with 100 g			
41 57 299 12	NH ₃ -ceramics granulate, refill package			
	1 piece required for filter length 170 mm			
	2 pieces required for filter length 300 mm			

Filter housing without absorber material

<i>Part No.</i>	<i>Type</i>	<i>Length</i>	<i>Material</i>	<i>Miscellaneous</i>
41 57 599	ADF-PV-170	170 mm	PVDF	
41 57 699	ADF-PV-300	300 mm	PVDF	
41 57 799	ADF-T-170-A	170 mm	Teflon	with condensate outlet
41 57 899	ADF-T-300-A	300 mm	Teflon	with condensate outlet
46 222 167	glass fibre filter, package with 100 g			

Other absorber material on request!