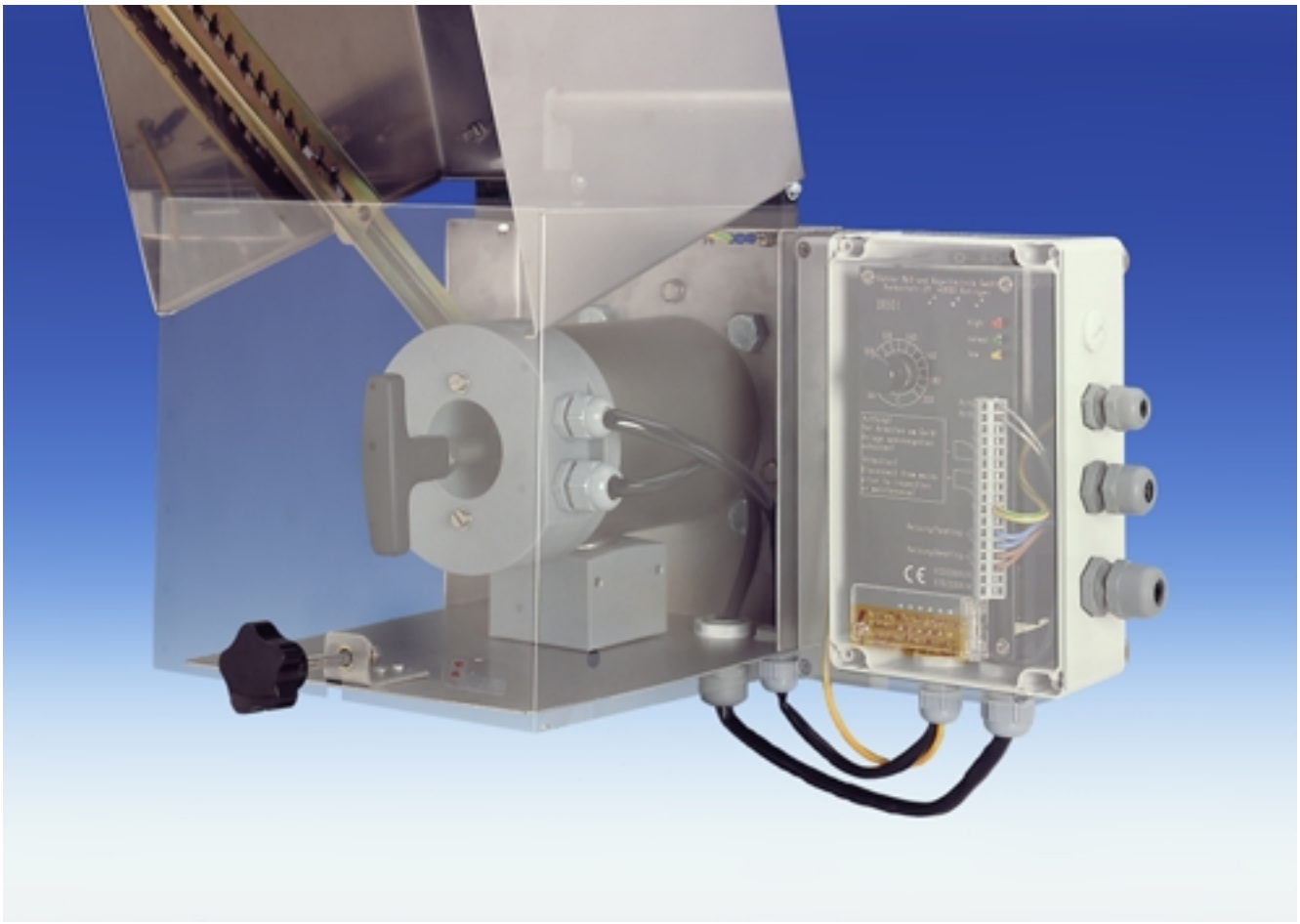
Gas Sample Probes
Series GAS 222



As being an important interface between the process and the analyse the gas sample probes represent a sensitive point in the system. Exposed to the sometimes harsh conditions of the process stream on one side and to the ambient on the other side, corrosion, moisture, dust and temperature variations are the parameters that determine the qualification of the probe design.

The GAS 222 series provides a modular design which still offers the opportunity to meet application specific requirements.

- **modular design**
- **combined insulation and protection shield**
- **down stream filter element can be changed without tools**
- **weather protection shield for one hand operation**
- **very effective blow back system**
- **steam or electrically heated**

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Please, study the following descriptions and drawings. We would be pleased to make you a special offer if the existing program does not meet your requirements.

Series 222 sample probes are based on a modular design but are manufactured according to order. The basic design principle allows the adaption to various application parameters without having the disadvantage of a standard component system.

GAS 222.10

Sample probe for gas streams with dust loads up to 2g/m³. With accomodation for a down stream filter element which can be changed without the need of tools.
Various filter elements are optional available including pleated elements which offer large filtration area and therefore reduced maintenance requirements.
The probe extension pipe is screwed into the flange of the basic unit and can be provided in different materials and lenghts.
The complete probe channel is free for inspection and/or cleaning if the filter element is removed from the housing.
Cal. gas port optional.

GAS 222.11

Sample probe similar to GAS 222.10 but with shut off valve between probe pipe and down stream filter. This configuration allows to separate the filter chamber from the process pressure.
The shut off valve can be equipped with an pneumatic actuator and the probe may have a cal. gas port (options).

GAS 222.15

Sample probe similar to GAS 222.10 but for applications requiring heated sample tubes. The filter chamber is completely covered with an insulation jacket. This probe must not be exposed to heavy weather.
The sample tube connector is also covered by the insulation to avoid cold spots. A self regulating heating element keeps the temperature at about 180 °C. A low temperature alarm provides operational control. ISO/DIN connectors. Cal gas port optional.

GAS 222.17

Sample probe similar to GAS 222.15 but with additional weather shield.

GAS 222.20

Basic components similar to GAS 222.10 but for applications requiring heated sample tubes. The filter chamber is completely covered with an insulation jacket as well as the sample tube connector. The cartridge heaters are regulated up to 200 °C by an electronic controller with high and low temperature alarm outputs. The entire unit is covered by a weather protection shield.

GAS 222.20 DH

Sample probe similar to GAS 222.20 but with insulated coil for steam heating and with weather shield.

GAS 222.21

Sample probe similar to GAS 222.20 but with shut off valve between probe pipe and down stream filter. This configuration allows to separate the filter chamber from the

process pressure. The shut off value is also completely covered by the insulating jacket and can be optional equipped with a pneumatic actuator. A calibration gas port is also optional.

GAS 222.30

This sample probe is equipped with an upstream filter penetrating into the process stream and can handle dust loads up to 10 g/m³. If dust loads exceed 10 g/m³ use the extension 04 with larger filter element.
The upstream filter is made of sintered stainless steel and fits on the flange or to an extension pipe which can be varied in length according to the application parameter. A displacer is optional available if the dead volume of the probe must be minimised. Optionally the extension pipe can be heated.
The filter can be back washed by blowing pressurized air through the element backwards. A shut off valve separates the filter from the sample gas line during this operation. To make the back wash very effective and to provide the best life time of the filter element we recommend to attach an air reservoir to the probe. This reservoir has a volume of approx. 5 l of at 4 - 6 bar pressurized air. If the valve between reservoir and filter element is opened the whole volume of air is released into the filter element expanding to atmospheric (or process) pressure thus achiving a very effective cleaning effect.
Even in applications with a non heated sample gas stream we recommend to insulate and heat the air reservoir to avoid any condensate forming during the blow back process. Cal. gas port optional.

GAS 222.31

Sample probe similar to GAS 222.30 but with heat jacket and insulation. The cartridge heaters are regulated by an electronic controller with high and low temperature alarm outputs. The entire unit is covered by a weather protection shield.
The optional air reservoir can be heated and insulated. We recommend the pneumatic actuator for operating the shut off valve to control the functions remotely.

GAS 222.20 Ex

Sample probe similar to GAS 222.20, but with self regulated explosion proofed heater, explosion proofed terminal box and weather protection shield.
EEx de IIC T2

GAS 222.21 Ex

Sample probe similar to GAS 222.21, but with self regulated explosion proofed heater, explosion proofed terminal box and weather protection shield.
EEx de IIC T4

GAS 222.31 Ex

Sample probe similar to GAS 222.31, but with self regulated explosion proofed heater and explosion proofed terminal box.
EEx de IIC T4

Options:

Auxiliary cal gas port

To enable a very realistic calibration procedure the calibration gas should be injected directly into the sample probe (preferrably upstream the filter).
Such a cal gas port is available as an option and is provided as a tube with 6 mm diameter or as a check valve with fitting for a tube 6 mm diameter.

Probe extensions

See attached drawings for available various probe extensions.

See attached drawings for individual technical data of probes.

Our comprehensive range of sample probes comprises more then the GAS 222 series.

Basic standard	part-no.:	46 22 210	46 22 211	46 22 215	46 22 217	46 22 220	46 22 222	46 22 220 DH	46 22 221	46 22 225	46 22 220 EX	46 22 221 EX	46 22 230	46 22 231	46 22 232	46 22 231 EX	part-no.:
		GAS 222.10	GAS 222.11	GAS 222.15	GAS 222.17	GAS 222.20 (230V)	GAS 222.20 (115V)	GAS 222.20DH	GAS 222.21 (230V)	GAS 222.21 (115V)	GAS 222.20 Ex	GAS 222.21 Ex	GAS 222.30	GAS 222.31 (230V)	GAS 222.31 (115V)	GAS 222.31 Ex	type
flange gasket and screws		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
manual shut off valve			x						x	x		x	x	x	x	x	
self regulating heater element 115-230V AC, 50/60Hz				x	x												
cartridge heater 230 V AC, 50/60 Hz, reg. by electronic controller						x			x					x			
cartridge heater 115 V AC, 50/60 Hz, reg. by electronic controller							x			x					x		
explosion proof heating belt 230 V AC, 50/60 Hz, ca. 90°C											x	x				x	
steamheated								x									
weather protection shield					x	x	x	x	x	x	x	x		x	x	x	
press. air connection for back flush													x	x	x	x	
explosion proofed terminal box											x	x				x	
Variant	**part-no.:**																
Extension																	
extension 01 Ø12x2 L-1000 mm, 1.4571 up to 600°C	**46 22 2001**	x	x	x	x	x	x	x	x	x	x	x					
adder for extension 01 Ø12x2 L 1000-2000 mm, 1.4571 up to 600°C	**46 22 20011**	x	x	x	x	x	x	x	x	x	x	x					
extension 02 Ø24x2,5 L-1000 mm, ceramic/1.4571 up to 1600°C	**46 22 2002**	x	x	x	x	x	x	x	x	x	x	x					
adder for extension 02 Ø24x2,5 L 1000-1500 mm, ceramic/1.4571 up to 1600°C	**46 22 20021**	x	x	x	x	x	x	x	x	x	x	x					
extension 06 Ø12x1 L-1000 mm, hastelloy C4/1.4571 up to 400°C	**46 22 2006**	x	x	x	x	x	x	x	x	x	x	x					
extension 08 Ø21,3x2,77 L-1000 mm, inconel 600/1.4571 up to 1050°C	**46 22 2004**	x	x	x	x	x	x	x	x	x	x	x					
extension 12 Ø20x1,5 L-1000 mm, 1.4571 up to 600°C	**46 22 2016**	x	x	x	x	x	x	x	x	x	x	x					
extension 13 Ø15x1,3 L-1000 mm, kanthal/1.4571 up to 1400°C	**46 22 2017**	x	x	x	x	x	x	x	x	x	x	x					
extension 14 Ø18x4 L-1000 mm, kanthal-super/1.4571 up to 1700°C	**46 22 2018**	x	x	x	x	x	x	x	x	x	x	x					
extension 03 upstream filter made of stainless steel L=237 mm up to 600°C	**46 22 2303**												x	x	x	x	
extension 031 with displacer, upstream filter made of stainless steel L=237 mm up to 600°C	**46 22 23031**												x	x	x	x	
extension 04 upstream filter made of stainless steel L=538 mm up to 600°C	**46 22 2304**												x	x	x	x	
extension 041 with displacer, upstream filter made of stainless steel L=538 mm up to 600°C	**46 22 23041**												x	x	x	x	
adder for extension 04 / 041, unheated	**46 22 23032**												x	x	x	x	
adder for extension 04 / 041, heated	**46 22 23033**												x	x	x	x	
extension 07 upstream filter made of sintered ceramic Ø60 L=500 mm up to 1000°C	**46 22 2307**												x	x	x	x	
Down stream filter																	
sintered ceramic element, retention rate 3µm	**46 22 2026**	x	x	x	x	x	x	x	x	x	x	x					
sintered stainless steel element, retention rate 5µm	**46 22 2010**	x	x	x	x	x	x	x	x	x	x	x					
pleated stainless steel element, retention rate 10µm	**46 22 2011**	x	x	x	x	x	x	x	x	x	x	x					
Air-reserviors																	
PAV01-M; with manual ball valve	**46 22 2312**												x	x	x	x	
PAV01-MH; with manual ball valve, self regulating heater element 115-230V AC, 50/60Hz	**46 22 2315**												x	x	x	x	
PAV01-E; with solenoid valve 230 V AC, 50/60 Hz	**46 22 2316**												x	x	x	x	
PAV01-EH; with solenoid valve 230 V AC, 50/60 Hz, self regulating heater element 115 – 230 V AC, 50/60 Hz	**46 22 2310**												x	x	x	x	
clamping fixture for air-reservior	**46 22 23002**												x				
Further options																	
ANSI flange 3“ 150 lbs	**46 22 2014**	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
calibration gas port tube Ø6	**46 22 2309**	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
calibration gas port tube Ø6 with check valve	**46 22 2311**	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
pneumatic actuator spring loaded	**46 22 2008**		x						x	x		x	x	x	x	x	
pneumatic actuator doubleacting	**46 22 2009**		x						x	x		x	x	x	x	x	
Back flushing control unit																	
RSS24; 24 V DC, IP 65	**46 22 2199**												x	x	x	x	
RSS230; 230 V AC, 50 Hz, IP 65	**46 22 2299**												x	x	x	x	

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