

4 Installation and connection

4.1 Installation site requirements

Sample gas probes are intended for flange mounting.

- Installation site and installation position are determined based on requirements specific to the application.
- If necessary, the connection piece should be slightly tilted toward the centre of the channel.
- The installation site should be protected from the weather. Protect the device from dust, falling objects, and external blows.
- In addition, adequate and safe access for installation and future maintenance work should be provided. In particular, note the length required to uninstall the probe tube!

If the probe is transported to the installation site in pieces, it will first need to be assembled.

4.2 Installing the sampling tube (optional)

The sampling tube, if necessary with the fitting extension, must be screwed in. The probe is then attached to the mating flange using the included seal and nuts.

4.3 Installing the downstream filter (optional)

NOTICE



The downstream filter and the O-ring for the handle must be inserted prior to first start-up.

Operating without downstream filter prohibited!



Attach an O-ring suitable for the expected ambient temperature to the handle.

Attach the downstream filter to the handle. Then carefully insert the handle with filter in the gas probe and turn 90° to secure.

Verify the handle is seated correctly. When seated correctly it locks onto the filter housing.

4.4 Installing the upstream filter (Optional)

The upstream filter, if necessary with matching extension, must be screwed in. The probe is then attached to the mating flange using the included seals and screws.

4.5 Insulation

On heated probes completely insulate any exposed flange areas and, if applicable, the connection piece to absolutely prevent thermal bridges. The insulating material must meet the application requirements and be weatherproof.

4.6 Connecting the Gas Line

The sample gas line must be carefully and properly connected using a suitable fitting.

This table provides an overview of the sample gas probe connections:

	Probe GAS 222	Reservoir PAV01	Ball valve pneumatic drive	Control valve 3/2-way solenoid valve
Connecting flange ¹⁾	DN65/PN6/ DN3"-150 ²⁾			
Sample gas inlet	G3/4			
Sample gas outlet	NPT 1/4			
Blowback connection	G3/8			
Test gas connection ¹⁾	Tube Ø6 mm Tube Ø1/4 ²⁾			
Filling port		NPT 1/4		
Condensate		G1/2		
Bypass		NPT 1/4		
Control air			G1/8	G1/4 NPT 1/4

Tab. 1: Gas Probe Connections (Varies by Model)

¹⁾ Varies by version.

²⁾ Only GAS 222.xx ANSI and GAS 222.xx AMEX

WARNING



Gas emanation

Sample gas can be harmful to the health!

Check the lines for leaks.

4.6.1 Blowback Connection

Without accessories installed for the blowback device, the blowback connection comes with a sealed G3/8 screw-in connection. If you require blowback, you will need to undo this screw-in connection and ensure the blowback line is connected properly and tight.

DANGER



Toxic, corrosive gasses

Explosive or toxic gases can develop due to a leaking or open blowback connection.

4.6.2 Connecting the Gas Line

Please note the following items when connecting the sample gas line (NPT 1/4") on heated probes to prevent thermal bridges:

- Choose the shortest possible screw connection.
- Shorten the connection pipe for the sample gas line as much as possible. To do so, remove the insulation around the sample gas line. This is done by loosening the fixing bolts.

CAUTION



Fragile

The insulation is fragile. Handle with care, do not drop.

After connecting the sample gas line it must be braced and secured with the clamp.

Long sample gas lines may require additional support clamps along the way to the analysis system! Once all lines have been connected and checked for leaks, carefully reinstall and secure the insulation.

WARNING



Gas emanation

Sample gas can be harmful to the health!

Check the lines for leaks.

4.6.3 Connecting the calibrating gas line (optional)

Connecting the calibrating gas line requires a Ø6 mm or Ø1/4" pipe fitting.

If the calibrating gas connection was ordered with check valve, a Ø6 mm or Ø1/4" pipe can be connected directly to the check valve.

4.7 Connecting the Blowback and Pressure Vessel (Optional)

The air lines must be connected carefully and properly, using suitable fittings.

If the probe is equipped with pressure vessel for efficient blowback (optional), a manual shut-off valve (ball valve) must be installed in the air supply, immediately upstream from the pressure vessel.

NOTICE



The operating pressure of the compressed air (inert gas) required for blowback must always be higher than the process pressure.
Required pressure differential min. 3 bar (44 psi).

DANGER



Broken pressure vessel

Gas leak, danger due to flying parts.

Maximum operating pressure of the pressure vessel 10 bar (145 psi)!

The operating pressure reduces based on the operating voltage (see solenoid valve type plate).

4.8 Electrical connections

WARNING



Hazardous electrical voltage

The device must be installed by trained staff only.

CAUTION



Wrong mains voltage

Wrong mains voltage may damage the device.
Regard the correct mains voltage as given on the type plate.

The operator must install an external separator for the device which is clearly assigned to this device.

This separator must:

- be located near the device
- be easy to reach by the operator
- comply with IEC 60947-1 and IEC 60947-3

separate all live conductors of the supply connection and the status output, and must not be installed in the power cable

The mains supply of the device must be fused according to the specifications in the technical data.

4.8.1 Connection via Terminal Strip

The probe has regulated, adjustable heating. The supply voltage is 115 V AC, 50/60Hz or 230 V AC, 50/60 Hz (see type plate).

The device is already wired to the controller.

Inside the controller housing is a terminal block for connecting the mains supply and the alarm output. The connection to the included terminal blocks is shown in the attached connection diagram. For this purpose the plugs can be removed from their sockets and reinserted once wired. The pin assignment is also printed onto the board.

If the heat dissipation is very high near the probe due to the application, the customer must install a shield to protect the probe and regulator.

4.8.2 Heated Pressure Vessel (Optional)

A heated compressed air tank can optionally be used for blowback. Heated via self-regulating PTC heating cartridge to protect against frost.

If the heater was ordered with the probe, it is pre-wired.

When retrofitting with a heater, it can be powered by the probe control unit.

Connect the connecting cable for the heater (mains connection 115/230 V AC) per the enclosed wiring diagram.

4.8.3 Heated Extension (Optional)

The unit can optionally be ordered with heated extension. Heated via regulated heating tape with Pt100, preventing falling below the sample gas dew point at the sample point. The unit cannot be retrofit with a heated extension.

The connection cable for the heated extension (mains connection 115 or 230 V AC) must be connected per the enclosed connection diagram.