

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.
- Installation site must be protected from the elements and should provide protection against sun and rain.
- In addition, adequate and safe access for installation and future maintenance work should be provided. Particularly follow the uninstalled size of the probe tube!
- Never over- or underrun the permissible ambient temperature range (T_{amb}) of -5 °C to +50 °C (without anti-freeze heater) or -20 °C to +50 °C (with anti-freeze heater). The ambient temperature upper limit varies by inlet dew point and gas composition.
- The dew point must always be at least 5 K above the ambient temperature.
- The device must be protected from shock and impact.

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, screws and nuts.

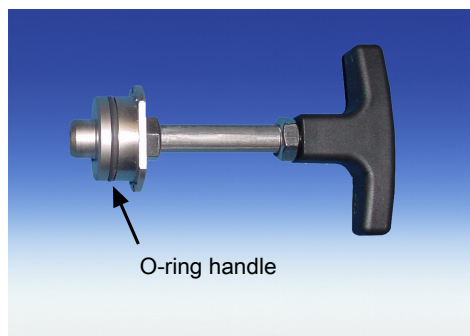
4.3 Installing the downstream filter

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 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.

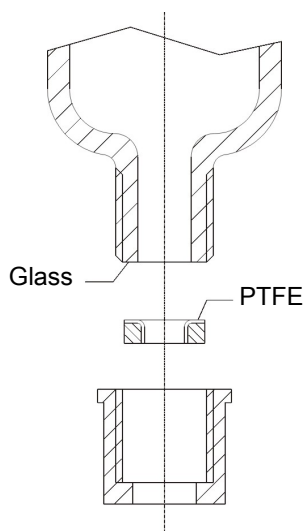
4.5 Connecting the gas line

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

Connecting flange	DN65 PN6 oder ASME DN3"-150
Sample gas input:	G3/4
Sample gas outlet:	GL14 (6 mm) 1)
Test gas connection (option):	Pipe Ø6 mm or 1/4"
Condensate outlet:	DN4/6

¹⁾ Gasket inside diameter

Carefully and properly connect the sample gas line to the gas outlet of the glass pearl receptacle. Please see the drawing below for the fundamental layout of the gas connection:



CAUTION



Fragile

The glass pearl receptacle can break. Handle with care, do not drop.

Please note the correct position of the seal when connecting the gas lines. The seal consists of a silicone ring with a PTFE sleeve. The PTFE side must face the glass thread.

The sample gas line 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.

4.5.1 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.

4.5.2 Connecting the condensate line

Carefully and properly connect the condensate line DN4/6 to the outlet of the condensate pump. Check the line for leaks. Avoid contact with the anti-freeze heating.

4.6 The glass pearl receptacle

The glass pearl receptacle must be filled with glass pearls before use. Follow the steps under [Replacing the glass pearl receptacle](#) [> page 16].

The condensate output is located at the lower position of the glass pearl receptacle. It features a factory installed peristaltic pump for removing condensate. The upper GL connection is for the core of the heated line. Avoid contact with the anti-freeze heating.

The glass pearls can be cleaned and replaced if necessary.

4.7 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.

WARNING



High voltage

Damage to the device in case of insulation testing
Do not proceed insulation tests with high voltage to the device as a whole!

CAUTION



Maximum power input

The power adapter must be suitable for the maximum power input of the device. It must be made of heat-resistant material and may not come into contact with hot surfaces.
The power adapter must comply with IEC60227 or IEC60245 or be approved by another recognised testing body.

Electric strength test

This unit is equipped with extensive EMC protection. Testing the electric strength will damage electronic filter components. The necessary tests of all assemblies required to be tested were carried out at the factory.

To check the electric strength again yourself, only do so on the respective individual components.

- Disconnect the individual components (see appendix for pin assignment).
- Now perform the electric strength test against earth at max. 1.25 kV.

These probes have controllable, adjustable heating. The controller is included. The probe is already wired to the controller.

Inside the controller housing is a terminal block for connecting the alarm output. It is connected according to the terminal diagram (see attached) with the included plug connectors. For this purpose the plugs can be removed from their sockets and reinserted once wired. The pin assignment is also printed onto the board.

The supply line and earthing cross-sections must be aligned with the power input of the device or of the entire system, respectively. External mains circuits must at a minimum have basic insulation the connection is specified for.

If the heat dissipation is very high near the probe due to the application, install an appropriate shield provided by the customer for protection.

The device must be incorporated into the protective conductor system of the operator.

The following separation facilities are to be provided for the current and voltage supply of the components:

RCD, main switch and circuit breaker or fuses

The following conditions must be met for use:

- The automatic disconnecting device must switch off the load within the prescribed time.
- It must be designed for the highest working voltage and, if applicable, for the highest operating current. Air and creepage distances between the terminals of the power or voltage-limiting device must meet the requirements for reinforced insulation.
- The device switches or circuit breakers used as a disconnecting device must comply with the applicable requirements of IEC60947-1 and IEC60947-3 and be suitable for the application. These may not be installed in the mains connection cable or interrupt the protective conductor and must disconnect all current-carrying conductors. It must be installed in the vicinity of the system, be easily accessible, and be marked as the disconnecting device.
- An overcurrent protection device must be fitted as a disconnecting device in all supply lines but must not interrupt the protective conductor. If fuses are used, all must have the same rated value and the same tripping characteristics and must be installed side by side. They are preferably to be placed before the power switch. Radio interference control equipment between the AC input and overcurrent protection device is allowed. Fuses and single-pole circuit breakers are not built into the neutral conductor of multi-phase devices.

If the above-cited isolating devices are already in the system, these no longer need to be provided by the operator for the system.

Please see the chapter 'Technical Data' for the applicable values of the isolating devices.