



Sample gas probes

GAS 222.20-HT, GAS 222.20-HT-OW-OR

Installation and Operation Instructions

Original instructions





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Read this instruction carefully prior to installation and/or use. Pay attention particularly to all advises and safety instructions to prevent injuries. Bühler Technologies can not be held responsible for misusing the product or unreliable function due to unauthorised modifications.

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Document information

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1 Introduction

1.1 Intended Use

The sample gas probe is intended for installation into gas analysis systems in commercial applications.

Sample gas probes are among the main components in a gas conditioning system.

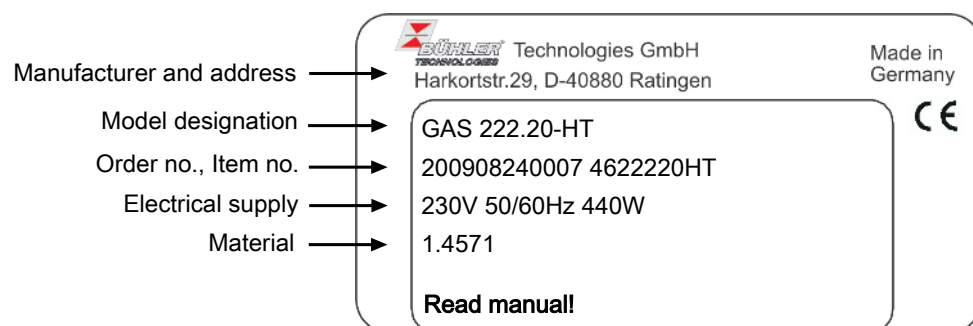
- Therefore also note the related drawing in the data sheet in the appendix.
- Before installing the device, verify the listed technical data meet the application parameters.
- Further verify all contents are complete.

Please refer to the type plate to identify your model. In addition to the job number/ID number, this also contains the article number and model designation.

Please note the specific values of the device when connecting, and the correct versions when ordering spare parts.

1.2 Type Plate

Example:



1.3 Scope of Delivery

- 1 x Sample gas probe
- 1 x Flange gasket and screws
- Product documentation
- Connection and mounting accessories (only optional)

1.4 Ordering instructions

Item no.	Base unit
4622220HT	GAS 222.20-HT, 230 V, DIN DN65 PN6
4622222HT	GAS 222.20-HT, 115 V, DIN DN65 PN6
4622220HT009	GAS 222.20-HT, 230 V, ANSI 3"-150 lbs
4622220HT010	GAS 222.20-HT, 115 V, ANSI 3"-150 lbs

1.5 Product Description

Brief summary of probe models:

Upstream filter (filter inside the process), downstream filter (filter inside the probe)

Probe	Description
GAS 222.20-HT	Probe with downstream filter, with weather hood, electronic control up to 280 °C
GAS 222.20-HT-OW-OR	Probe with downstream filter, no weather hood, no electronic control
Accessories	Sample gas probes can – depending on order – be delivered with accessories factory installed. This accessory, as well as separate accessories included, are listed as separate line items in the order. Please refer to the data sheet at the end of this manual for additional accessories.

2 Safety instructions

2.1 Important advice

The device may only be operated if:

- the product is used under the conditions described in the operating and installation manual, in accordance with the type label, and for the intended applications; Any unauthorised modifications to the device will void the warranty provided by Bühler Technologies GmbH,
- the information and markings on the type plates are observed,
- the limit values specified in the data sheet and in this operating and installation manual are observed,
- the device is not operated outside its specification,
- monitoring/protective devices are correctly connected,
- Service and repairs not described in these instructions is performed by Bühler Technologies GmbH,
- Using genuine replacement parts.

These operation instructions are a part of the equipment. The manufacturer reserves the right to change performance, specification or design data without prior notice. Keep this manual for future reference.

Signal words for warnings

DANGER	Signal word for an imminent danger with high risk, resulting in severe injuries or death if not avoided.
WARNING	Signal word for a hazardous situation with medium risk, possibly resulting in severe injuries or death if not avoided.
CAUTION	Signal word for a hazardous situation with low risk, resulting in damaged to the device or the property or minor or medium injuries if not avoided.
NOTICE	Signal word for important information to the product.

Warning signs

These instructions include the following warnings:

	General warning sign		General mandatory sign
	Voltage warning		Unplug from mains
	Warning not to inhale toxic gases		Wear respiratory equipment
	Warning of corrosive substances		Wear a safety mask
	Warning of explosion hazard		Wear gloves
	Warning of hot surfaces		

2.2 General hazard warnings

The device may only be installed by qualified specialist personnel who are familiar with the safety requirements and associated risks. In addition, through their professional training, they possess knowledge of the relevant standards and regulations.

Be sure to observe the safety regulations relevant to the installation location and the generally accepted rules of technology. Prevent malfunctions and thereby avoid personal injury and damage to property.

The operator of the system must ensure that:









- Safety instructions and operating manuals are available and observed,
- the respective national accident prevention regulations are observed,
- the permissible data and operational conditions are maintained,
- protective devices are used and the required maintenance is performed,
- the device is disposed of according to the law,
- valid national installation regulations are observed,

Maintenance, Repair

Please note during maintenance and repairs:

- Repairs to the unit must be performed by Bühler authorised personnel.
- Only perform conversion-, maintenance or installation work described in these operating and installation instructions.
- Always use genuine spare parts.
- Do not install damaged or defective spare part. If necessary, visually inspect prior to installation to determine any obvious damage to the spare parts.

Always observe the applicable safety and operating regulations in the respective country of use when performing any type of maintenance.

DANGER	<p>Electrical voltage</p> <p>Electrocution hazard.</p> <ol style="list-style-type: none"> a) Disconnect the device from power supply. b) Make sure that the equipment cannot be reconnected to mains unintentionally. c) The device must be opened by trained staff only. d) Regard correct mains voltage. 	 
DANGER	<p>Toxic, corrosive gases</p> <p>The measuring gas led through the equipment can be hazardous when breathing or touching it.</p> <ol style="list-style-type: none"> a) Check tightness of the measuring system before putting it into operation. b) Take care that harmful gases are exhausted to a safe place. c) Before maintenance turn off the gas supply and make sure that it cannot be turned on unintentionally. d) Protect yourself during maintenance against toxic / corrosive gases. Use suitable protective equipment. 	    
DANGER	<p>Use in potentially explosive atmospheres</p> <p>Explosion hazard if used in hazardous areas. The device is not suitable for operation in hazardous areas with potentially explosive atmospheres. Do not expose the device to combustible or explosive gas mixtures.</p>	

3 Transport and storage

Only transport the product inside the original packaging or a suitable alternative.

The equipment must be protected from moisture and heat when not in use. They must be stored in a covered, dry and dust-free room at a temperature between -20 °C to 50 °C (-4 °F to 122 °F).

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.

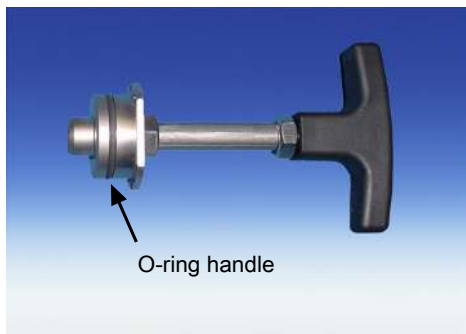
4.3 Installing the downstream filter

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 lines

4.5.1 Connecting the Gas Line

The sample gas line must be carefully and properly connected using a suitable fitting. This also applies to the test gas connection. If the latter is not being used, seal it with a plug.

Please note the following points on connecting the sample gas line (Ø6 mm) 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.

4.5.2 Connecting the calibrating gas line (optional)

Connecting the calibrating gas line requires a Ø 6 mm or Ø 1/4" pipe fitting.

If the calibrating gas connection was ordered with check valve, a Ø 6 mm or Ø 1/4" pipe can be connected directly to the check valve.

4.6 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!

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 (test voltage 1 kV or 1.5 kV depending on component).

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

- Disconnect / unplug all components (see pin assignment in the appendix).
- Now perform the electric strength test against earth.

WARNING



Fire hazard / gas emanation

Device damage when heating probe to > 280 °C

Heating the probe > 280 °C can damage the seals, cables and the heat insulation. This can cause gas leaks or a fire.

Never heat the probe to temperatures > 280 °C.

The probe may be heated to max. 280 °C via the probe regulator at a maximum ambient temperature of 45 °C. When exceeding a probe temperature of 300°C, the attached regulator will shut off the probe (= > no heat output). The display will read "Error". In this case, disconnect the power supply for the probe and send the unit to the manufacturer for service.

Model GAS 222.20-HT-OW-OR:

These probes have controllable, adjustable heating. The controller is not included. The supply voltage is 115 V AC, 50/60 Hz or 230 V AC, 50/60 Hz (see type plate).

When setting the external regulator, be sure not to exceed the maximum operating temperature of 280 °C.

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

5 Operation and controls

NOTICE



The device must not be started or operated outside the specifications!

5.1 Basic function of the probe controller

5.1.1 Regulator Functions

After switching on the combination the probe is heated up. The display with the current temperature will light up on the controller. As long as the set operating range is has not yet been reached, the display will flash and the status contact is in Alarm position. Once the working range has been reached, the status contact switches and the display is steady.

The target temperature, the working range of the probe and the temperature unit (°C/°F) are set using the three control buttons on the controller. This is described in chapter "Operation and use".




The factory settings are: Unit: °C; target temperature: 260 °C; working range: ±15 °C

5.2 Use of menu functions

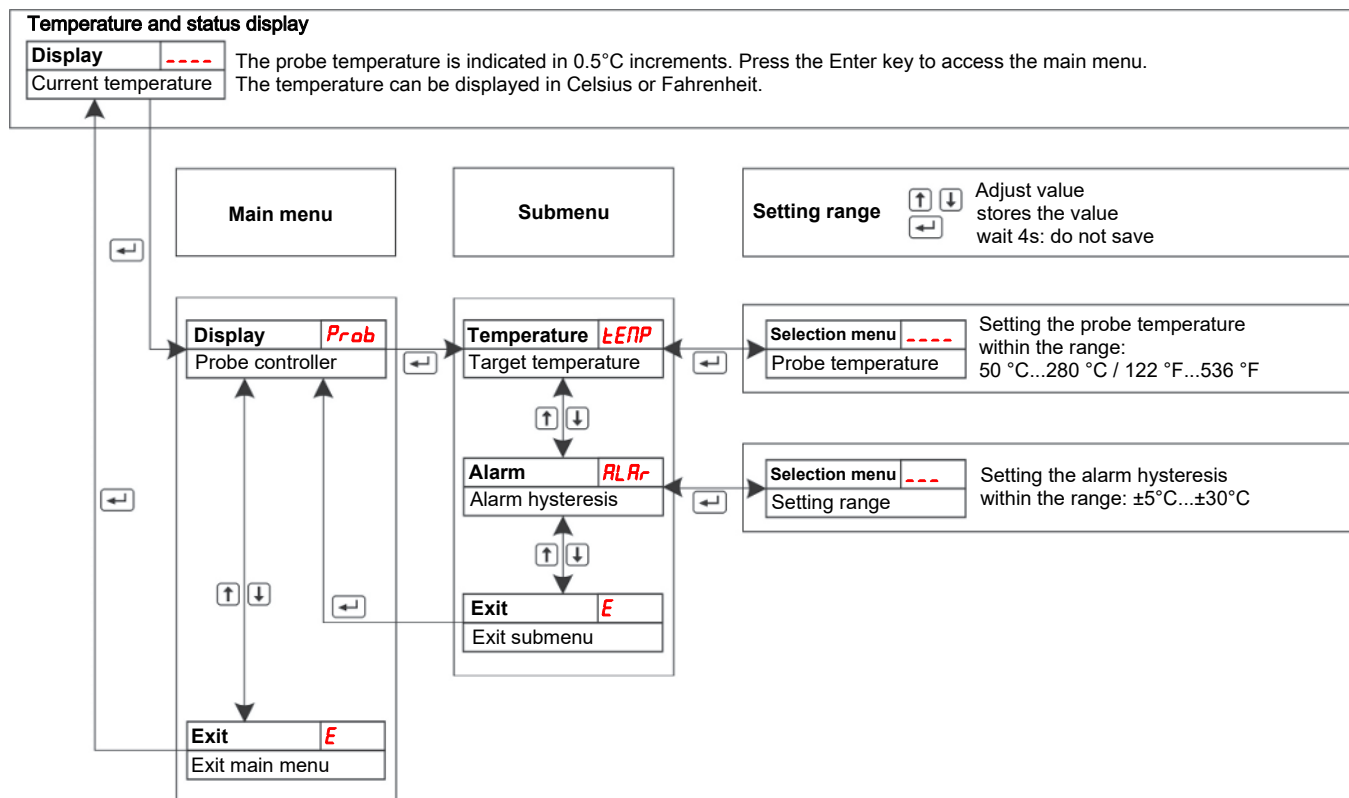
Overview of the operational principal:

Use this short description if you have experience with the device.

Operation is carried out by only the keys with the following functions:

Key	Function
	<ul style="list-style-type: none"> – Switch from measurement display to main menu – Selection of the display menu item – Accepting the changed value or selection
	<ul style="list-style-type: none"> – Switch to the upper menu item – Increase of the value of switching the selection – Temporary display of the alternative measurement display (if option is installed)
	<ul style="list-style-type: none"> – Switch to lower menu item – Decrease of the value of switching the selection – Temporary display of the alternative measurement display (if option is installed)

5.2.1 Menu Navigation Overview



5.2.2 Detailed description of the operational principle

The detailed description will guide you through the menu step by step.

Connect the unit to the power supply and wait for the startup procedure to complete. At first the software version implemented on the unit will be displayed for a brief period. The unit will then switch directly into measured value display.

- Pressing the button will take you from display mode to the main menu. (The control will continue running whilst in menu mode.)
- Use these buttons to navigate the main menu.
- After confirming a main menu item the associated submenu will open

Here you can configure operating parameters:

- Cycle through the submenu to configure the parameters,
- then confirm the menu item to be changed.

- You can now set values within specific limits.

- After confirming the value the system will save it. This will automatically return you to the submenu.

If no button is pushed for approx. 5 s, the unit will automatically return to the submenu. Changes to values will not be saved.

The same applies to the sub- and main menu. The system will automatically return to display mode without saving the (last) value changed. Parameters which were previously changed and saved will be retained and not reset.

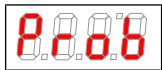
NOTICE! After saving values with the Enter key they will be applied to the control.

- E* To exit the main or submenu, select menu item E (Exit).

5.3 Description of menu functions

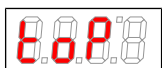
5.3.1 Main Menu

Regulator (probe)



From here you will be able to access all relevant temperature controller settings. The related sub-menu allows you to select the target temperature and alarm thresholds.

Globale settings (ToP Settings)



Selection of the global temperature unit, either degree Celsius (C) or degree Fahrenheit (F).

Note:

This menu item has no sub-item. The temperature unit is directly selected.

Exit main menu

Display → ϵ



Selecting this will return you to display mode.

5.3.2 Probe Controller Submenu [Display: Prob]

Controller -> Nominal temperature (Temperature)



This item allows setting of the nominal temperature of the device. The value can be set within a range from 50 °C (122 °F) to 280 °C (536 °F).

Note:

Default value at delivery is 180 °C (356 °F).

Controller -> Alarm range



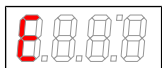
This item allows setting of the alarm range threshold for the optical alarm as well as for the alarm relay. The alarm threshold may be set in the range from ± 5 °C (± 9 °F) to ± 30 °C (± 54 °F) with respect to the nominal value.

Note:

Default value at delivery is ± 15 °C (± 27 °F).

Exit submenu 1

Display → Submenu → ϵ



Selecting this will return you to the main menu.

6 Maintenance

During maintenance, remember:

- The equipment must be maintained by a professional familiar with the safety requirements and risks.
- Only perform maintenance work described in these operating and installation instructions.
- Observe the respective safety regulations and operating specifications when performing any type of maintenance.
- Always use genuine spare parts.

DANGER



Electrical voltage

Electrocution hazard.

- Disconnect the device from power supply.
- Make sure that the equipment cannot be reconnected to mains unintentionally.
- The device must be opened by trained staff only.
- Regard correct mains voltage.



DANGER



The gas inside the filter, condensate and used filter elements may be caustic or corrosive.

Sample gas can be harmful.

- Before maintenance turn off the gas supply and surge with air if necessary.
- Exhaust sample gas to a safe place.
- Protect yourself against toxic / corrosive gas during maintenance. Wear appropriate personal protection equipment.



CAUTION



Hot surface

Risk of burns

Depending on the operating parameters, the housing temperature may reach over 100 °C during operation.

Allow the unit to cool down before performing maintenance.

CAUTION



Excess pressure

The unit mustn't be pressurised or energised when opened.

If necessary, close the gas supply and ensure a safe pressure on the process end before opening.

6.1 Maintaining the filter element

The probes feature a particle filter which needs to be changed as it becomes dirty.

To do so, disconnect the voltage supply and if applicable close the shut-off valve to the process or switch off the process.

CAUTION! Do not damage the rear filter seat.

NOTICE



Ceramic filter elements are very brittle by nature. Handle them with care, don't let them fall.

Filter elements made out of sintered stainless steel can be cleaned in an ultrasonic bath and be used several times as long as both seals are still in proper conditions.

6.1.1 Replacing the downstream filter - GAS 222.20-HT-OW-OR

- Turn the handle at the back end of the probe by 90° (handle must then be horizontal), pushing in slightly, and remove.
- Remove the dirty filter element and check the sealing surfaces.
- Before installing the new filter element, replace the seal on the handle plug (seal included with the filter element).
- Then carefully insert the handle with new filter, push in slightly and turn 90° (handle must then be vertical). Pull on the handle to verify the filter element is firmly seated.
- With the filter removed, if necessary also need clean the inside of the sampling tube by blowing it out or using a cleaning wand.

6.1.2 Replacing the downstream filter - GAS 222.20-HT

- Unlock and lift up the weather hood.
- Turn the handle at the back end of the probe by 90° (handle must then be horizontal), pushing in slightly, and remove.
- Remove the dirty filter element and check the sealing surfaces.
- Before installing the new filter element, replace the seal on the handle plug (seal included with the filter element).
- Then carefully insert the handle with new filter, push in slightly and turn 90° (handle must then be vertical). Pull on the handle to verify the filter element is firmly seated.
- With the filter removed, if necessary also need clean the inside of the sampling tube by blowing it out or using a cleaning wand.

NOTICE



The weather hood can only be closed again when the handle is completely vertical. In order to do so, loosen the hood from the locking supports by lifting slightly and then fold down. Ensure that the hood lock clicks into place correctly.

7 Service and repair

If an error occurs during operation, you will find troubleshooting and corrective information in this chapter.

Repairs to the equipment may only be performed by Bühler authorised personnel.

If you have any questions, please contact our service department:

Tel.: +49-(0)2102-498955 or your local representative.

Further information about our individual service solutions for repair, modification and commissioning can be found at <https://www.buehler-technologies.com/service>.

If, after rectifying any faults and switching on the mains voltage, the device does not function correctly, it must be checked by the manufacturer. Please send the equipment inside suitable packaging to:

Bühler Technologies GmbH – BZL
Halle A1 – Aircompark
Halskestr. 24
40880 Ratingen
Germany

In addition, please attach the completed and signed RMA decontamination declaration to the packaging. Otherwise, your repair order cannot be processed. You can find the form in the appendix of these instructions, or simply request it by e-mailing:

service@buehler-technologies.com

7.1 Troubleshooting

CAUTION





Risk due to defective device

Personal injury or damage to property

- a) Switch off the device and disconnect it from the mains.
- b) Repair the fault immediately. The device should not be turned on again before elimination of the failure.



Problem / Malfunction	Possible cause	Action
No or reduced gas flow	– Filter element clogged	– Clean or replace filter element, clean sampling tube
Temperature alarm	– Heat-up not yet completed – Pt100 failure – Heater / controller failure	– Wait for heat-up to complete – Send in probe for repair – Send in probe for repair
No heat output / no display	– No / incorrect voltage – Controller failure	– Power supply – Send in probe for repair
Condensation forming	– Heater failure – Thermal bridges at the sampling point	– Send in probe for repair – Insulate to eliminate thermal bridges
Error messages on the display		
 Error 01	– Probe temperature too high, line Pt100 disconnected	– Check Pt100 connection inside the controller or send probe in for repair
 Error 02	– Probe temperature too low, Pt100 short-circuit	– Send in probe for repair

Tab. 1: Troubleshooting

7.2 Spare Parts

Please also specify the model and serial number when ordering parts.

Upgrade and expansion parts can be found in our catalog.

Available spare parts:

Item no.	Description
9110000001	Fuse 115 V/230 V: 800 mA delayed action
9009105	Measuring outlet seal
9009079	Flange seal DN65 PN6
9009068	Flange seal FD 40 WS
9009393	Cover piece O-ring
9009394	Filter element O-ring kit (2 required), material: Kalrez
46222024	O-ring kit for filter element and probe, material: Perfluoroelastomer
46222026HT	Sintered ceramic filter elements

8 Disposal

The applicable national laws must be observed when disposing of the products. Disposal must not result in a danger to health and environment.

The crossed out wheeie bin symbol on Bühler Technologies GmbH electrical and electronic products indicates special disposal notices within the European Union (EU).



The crossed out wheeie bin symbol indicates the electric and electronic products bearing the symbol must be disposed of separate from household waste. They must be properly disposed of as waste electrical and electronic equipment.

Bühler Technologies GmbH will gladly dispose of your device bearing this mark. Please send your device to the address below for this purpose.

We are obligated by law to protect our employees from hazards posed by contaminated devices. Therefore please understand that we can only dispose of your waste equipment if the device is free from any aggressive, corrosive or other operating fluids dangerous to health or environment. **Please complete the "RMA Form and Decontamination Statement", available on our website, for every waste electrical and electronic equipment. The form must be applied to the packaging so it is visible from the outside.**

Please return waste electrical and electronic equipment to the following address:

Bühler Technologies GmbH – BZL
WEEE
Halle A1 – Aircompark
Halskestr. 24
40880 Ratingen
Germany

Please also observe data protection regulations and remember you are personally responsible for the returned waste equipment not bearing any personal data. Therefore please be sure to delete your personal data before returning your waste equipment.

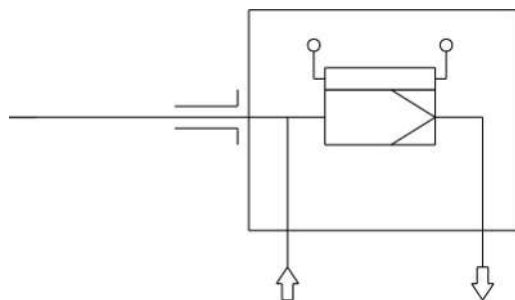
9 Appendices

9.1 Technical Data

Gas Probe Technical Data

Probe operating temperature:	max. 280 °C
Controller temperature range:	+50 to +280 °C
Ambient temperature:	-20 to +70 °C (can be limited by optional add-ons)
Low/high temperature alarm:	Alarm adjustable $\pm 5 \dots 30$ K from setpoint, factory preset 15 K Switching current max. 1 A
Electrical data:	230 V, 2.0 A, 50/60 Hz 115 V, 3.8 A, 50/60 Hz
IP rating:	IP54
Max. operating pressure:	6 bar
Material:	1.4571
Parts in contact with media:	Seals: Graphit/1.4404 and see filter

9.2 Flow chart

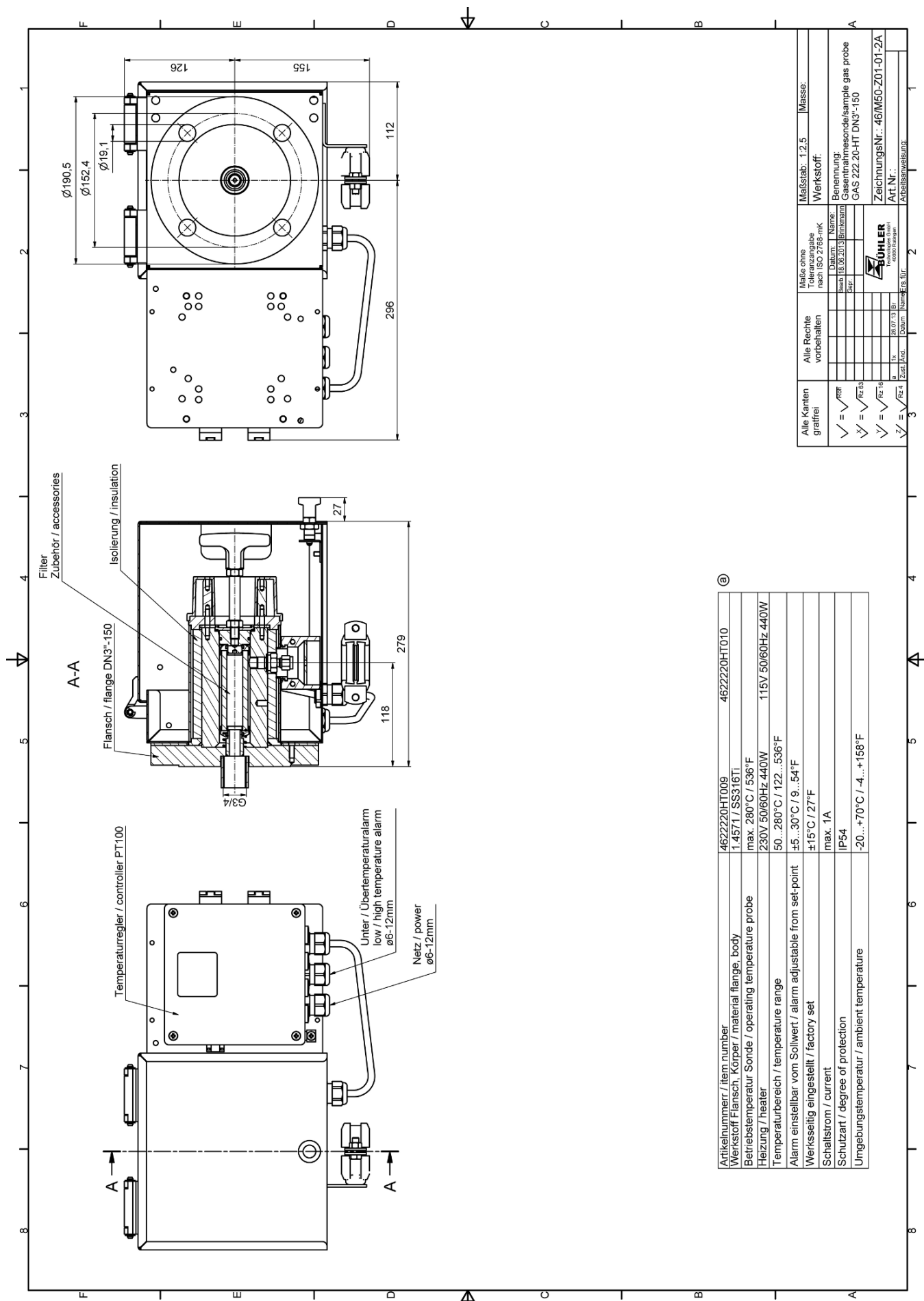


9.3 Dimensions 222.20 HT

alle Konten gereinigt bei Ingezeichnet	ALLE RECHTE VORBEHALTEN	Maßstab 1:2 Merkstoff: Benennung: Gesamtmaßnahme/ sample gas probe GAS 222.20-HT Zeichnung-Nr. 46/126-Z01-01-28 Art.-Nr. ARBEITSZEICHNUNG
✓ = Ja ✓ = Nein ✓ = √ ✓ = √ ✓ = √ ✓ = √	Nachtrag Teilenummer nach ISO 2768-MK Datum 14.01.2009 Br./Monat	BÜHLER Werkstoff: Datum 07.05.08 05.12.08 Br./

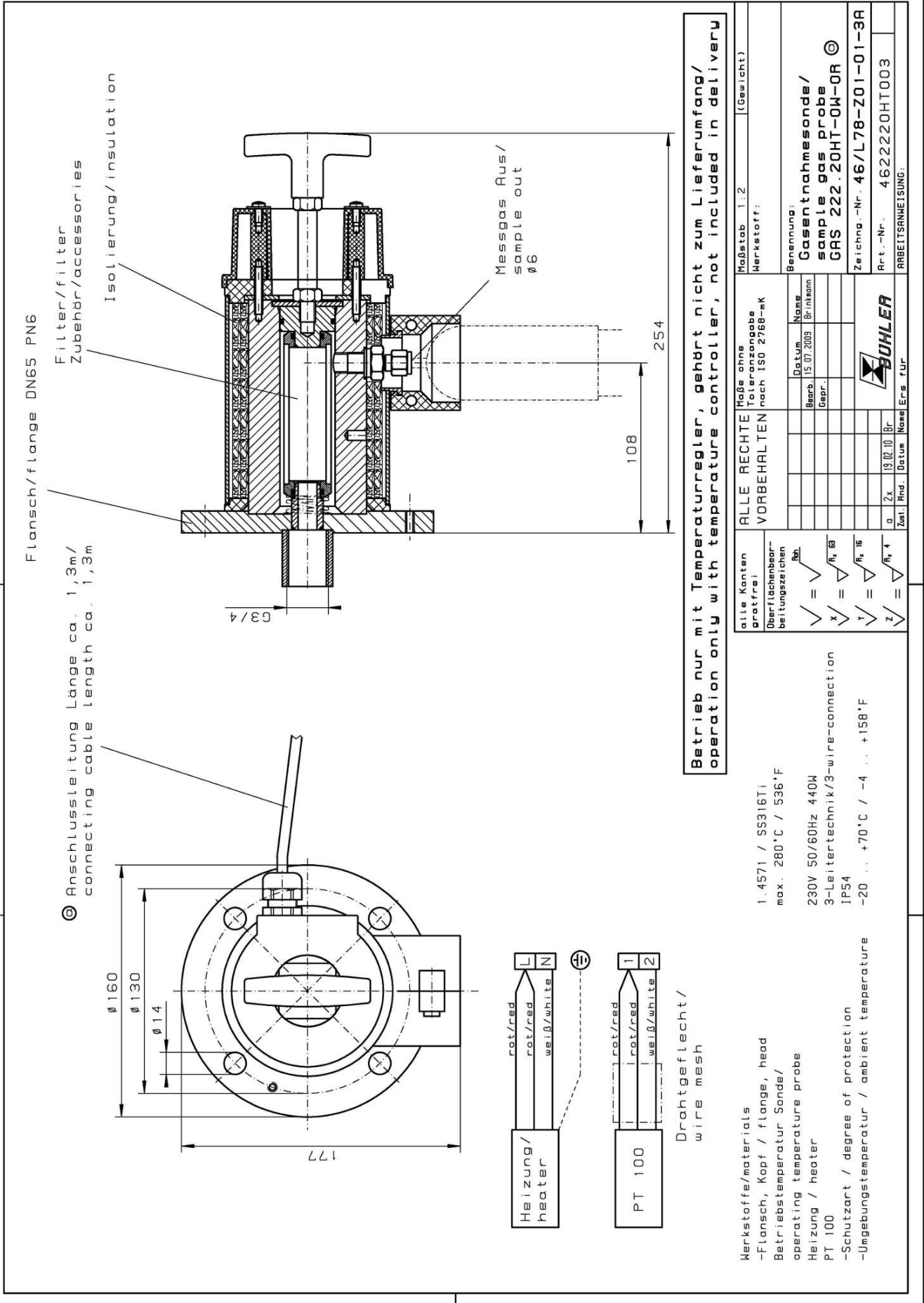
Art. Nr./part-no. 4622220HT 4622222HT	1.4571 / SS316Ti max. 280°C / 536°F 230V 50/60Hz 440W 115 50/60Hz 440W Ⓟ 50 ... 280°C / 122 ... 536°F ±5 ... 30°C / ±9 ... 54°F vom Sollwert / from set-point ±15°C / ±27°F 1A IP54 -20 ... +70°C / -4 ... +158°F	Werkstoffe/materials -Flansch, Kopf / flange, head Betriebstemperatur Sonde/ operating temperature probe Heizung / heater -Temperaturbereich / temperature range -Alarm einstellbar / alarm adjustable werkseitig eingestellt / factory set max. Schaltstrom / max. current -Schutzart / degree of protection -Umgebungstemperatur / ambient temperature
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9.4 Dimensions 222.20-HT DN3"-150



Artikelnummer / Item number	4622220HT009	4622220HT010
Werkstoff Flansch, Körper / material flange, body	T.4571 / SS316 Ti	
Betriebstemperatur Sonde / operating temperature probe	max. 280°C / 536°F	
Heizung / heater	230V 50/60Hz 440W	115V 50/60Hz 440W
Temperaturbereich / temperature range	50...280°C / 122...536°F	
Alarm einstellbar vom Sollwert / alarm adjustable from set-point	±5...30°C / 9...54°F	
Werkseitig eingestellt / factory set	±15°C / 27°F	
Schaltstrom / current	max. 1A	
Schutzart / degree of protection	IP54	
Umgebungstemperatur / ambient temperature	-20...+70°C / -4...+158°F	

9.5 Dimensions 222.20 HT-OW-OR



9.6 Connection Diagram

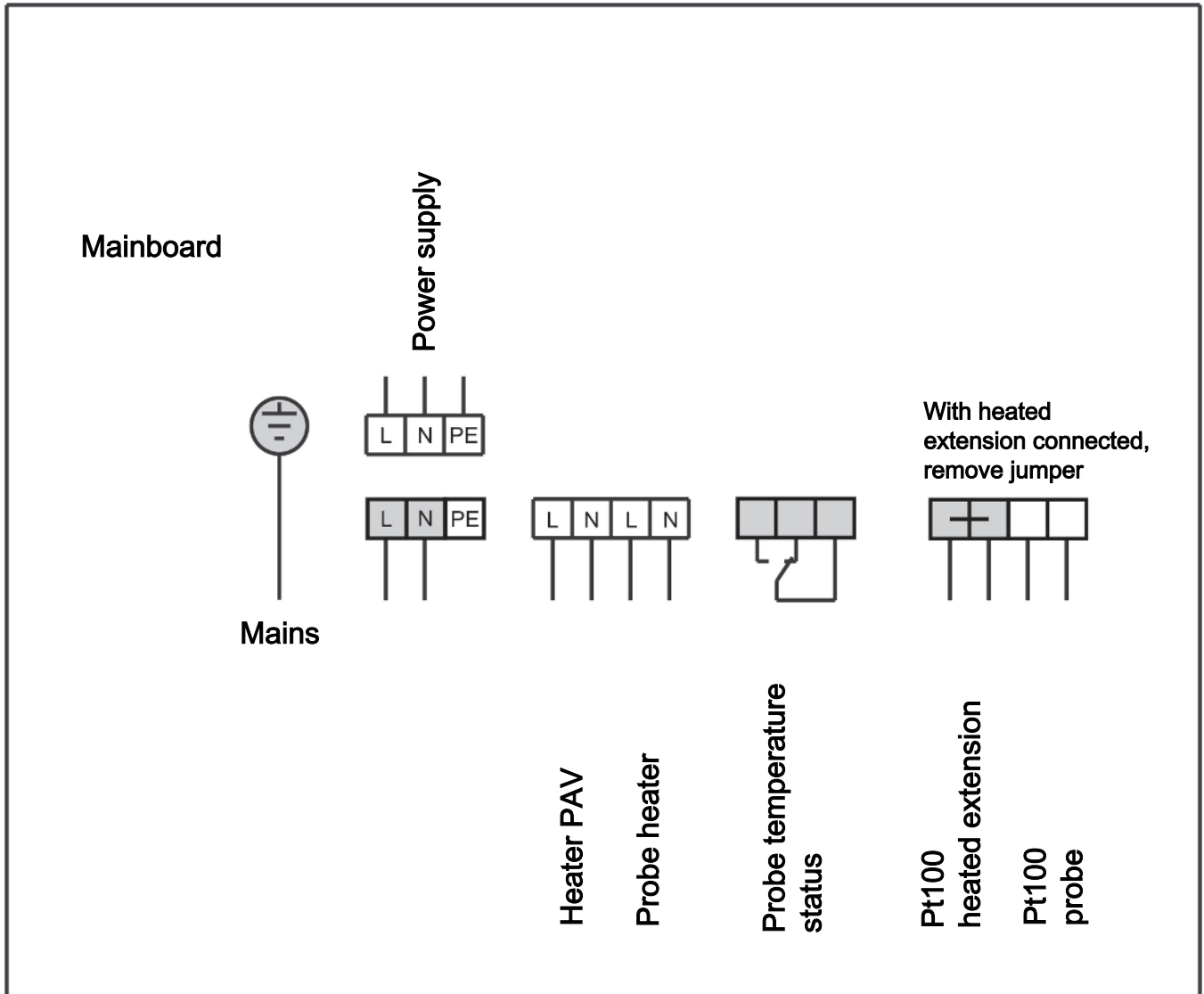


Fig. 1: Connection Diagram

9.7 User book (Please make copies)

Maintained on	Unit no.	Operating hours	Remarks	Signature

10 Attached Documents

- Declaration of Conformity KX460019
- Resistance table
- Accessories Data Sheet 461099
- RMA - Decontamination Statement

EU-Konformitätserklärung
EU-declaration of conformity



Hiermit erklärt Bühler Technologies GmbH,
dass die nachfolgenden Produkte den
wesentlichen Anforderungen der Richtlinie

*Herewith declares Bühler Technologies GmbH
that the following products correspond to the
essential requirements of Directive*

2014/35/EU
(Niederspannungsrichtlinie / low voltage directive)

in ihrer aktuellen Fassung entsprechen.

in its actual version.

Folgende Richtlinie wurde berücksichtigt:

The following directive was regarded:

2014/30/EU (EMV/EMC)

Produkt / products: Beheizte Gasentnahmesonde / Heated sample Gas Probe
Typ / type: GAS 222.20 HT
GAS 222.20 HT-OW-OR

Die Betriebsmittel sind zur Gasentnahme aus dem Abgasstrom oder einem laufenden Prozess
bestimmt.

The equipment is intended for gas sampling from flue gas or from a running process.

Das oben beschriebene Produkt der Erklärung erfüllt die einschlägigen
Harmonisierungsrechtsvorschriften der Union:
*The object of the declaration described above is in conformity with the relevant Union harmonisation
legislation:*

EN 61326-1:2013

EN 61010-1:2010/A1:2019/AC:2019-04

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.
This declaration of conformity is issued under the sole responsibility of the manufacturer.

Dokumentationsverantwortlicher für diese Konformitätserklärung ist Herr Stefan Eschweiler mit
Anschrift am Firmensitz.

*The person authorized to compile the technical file is Mr. Stefan Eschweiler located at the company's
address.*

Ratingen, den 17.02.2023

Stefan Eschweiler
Geschäftsführer – *Managing Director*

Frank Pospiech
Geschäftsführer – *Managing Director*

UK Declaration of Conformity



The manufacturer Bühler Technologies GmbH declares, under the sole responsibility, that the product complies with the requirements of the following UK legislation:

Electrical Equipment Safety Regulations 2016

The following legislation were regarded:

Electromagnetic Compatibility Regulations 2016

Product: Heated sample Gas Probe
Types: GAS 222.20 HT
GAS 222.20 HT-OW-OR

The equipment is intended for gas sampling from flue gas or from a running process.

The object of the declaration described above is in conformity with the relevant designated standards:

EN 61010-1:2010/A1:2019/AC:2019-04

EN 61326-1:2013

Ratingen in Germany, 17.02.2023



Stefan Eschweiler
Managing Director



Frank Pospiech
Managing Director

Resistance table

Gas Analysis

Formula	Medium	Concentration	Teflon® PTFE	PCTFE	PEEK	PVDF	FEP	FFKM	Viton® FPM	V4A	Glass
CH ₃ COCH ₃	Acetone		1/1	1/3	1/1	3/4	(1)	1/1	4/4	1/1	1/1
C ₆ H ₆	Benzol		1/1	1/3	1/1	1/3	1/1	1/1	3/3	1/1	1/1
Cl ₂	Chlorine	10% wet	1/1	0/0	4/4	2/2	1/1	1/1	3/0	4/4	1/1
Cl ₂	Chlorine	97%	1/0	1/3	4/4	1/1	1/1	1/0	1/1	1/1	1/0
C ₂ H ₆	Ethane		1/0	0/0	1/0	2/0	-	1/0	1/0	2/0	1/0
C ₂ H ₅ OH	Ethanol	50%	1/1	1/3	1/1	1/1	1/1	1/1	2/2	1/0	1/1
C ₂ H ₄	Ethylene		1/0	0/0	0/0	1/0	1/1	1/0	1/0	1/0	1/0
C ₂ H ₂	Ethyne		1/0	0/0	0/0	1/0	1/1	1/0	2/0	1/0	1/0
C ₆ H ₅ C ₂ H ₅	Ethylbenzene		1/0	0/0	0/0	1/1	1/1	1/0	2/0	1/0	1/0
HF	Hydrofluoric acid		1/0	0/0	0/0	2/2	(1)	2/0	4/0	3/4	1/0
CO ₂	Carbon dioxide		1/1	0/0	1/0	1/1	(1)	1/0	1/1	1/1	1/1
CO	Carbon monoxide		1/0	0/0	1/1	1/1	-	1/0	1/0	1/1	1/0
CH ₄	Methane	technically pure	1/1	0/0	1/1	1/0	1/1	1/0	1/1	1/1	1/1
CH ₃ OH	Methanol		1/1	1/1	1/1	1/1	1/1	1/1	3/4	1/1	1/1
CH ₂ Cl ₂	Methylene chloride		1/0	2/0	1/0	1/0	1/1	1/0	3/0	1/1	1/0
H ₃ PO ₄	Phosphoric acid	1–5%	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
H ₃ PO ₄	Phosphoric acid	30%	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
C ₃ H ₈	Propane	gaseous	1/1	0/0	1/0	1/1	1/1	1/0	1/0	1/0	1/1
C ₃ H ₆ O	Propylene oxide		1/0	0/0	0/0	2/4	1/1	2/0	4/0	1/0	1/0
HNO ₃	Nitric acid	1–10%	1/1	1/0	1/1	1/1	1/1	1/0	1/1	1/1	1/1
HNO ₃	Nitric acid	50%	1/1	1/0	3/3	1/1	1/1	1/0	1/0	1/2	1/1
HCl	Hydrochloric acid	1–5%	1/1	1/1	1/0	1/1	1/1	1/1	1/1	2/4	1/1
HCl	Hydrochloric acid	35%	1/1	1/1	1/0	1/1	1/1	1/1	1/2	2/4	1/1
O ₂	Oxygen		1/1	0/0	1/0	1/1	1/1	1/1	1/2	1/1	1/1
SF ₆	Sulphur hexafluoride		1/0	0/0	1/0	0/0	0/0	1/0	2/0	0/0	1/0
H ₂ SO ₄	Sulfuric acid	1–6%	1/1	1/1	2/2	1/1	1/1	1/1	1/1	1/2	1/1
H ₂ S	Hydrogen sulphide		1/1	1/1	0/0	1/1	1/0	1/1	4/4	1/1	1/1
N ₂	Nitrogen		1/1	0/0	1/0	1/1	1/1	1/0	1/1	1/0	1/1
C ₆ H ₅ C ₂ H ₃	Styrene		1/1	0/0	1/0	1/0	1/0	1/0	3/0	1/0	1/1
C ₆ H ₅ CH ₃	Toluol (methylbenzene)		1/1	0/0	1/0	1/1	1/1	1/1	3/3	1/1	1/1
H ₂ O	Water		1/1	0/0	1/1	1/1	1/1	1/1	1/1	1/1	1/1
H ₂	Hydrogen		1/0	1/0	1/0	1/0	(1)	1/0	1/0	1/0	1/0

0 – no information available

1 – durability/suitability very good

2 – durability/suitability good

3 – limited suitability

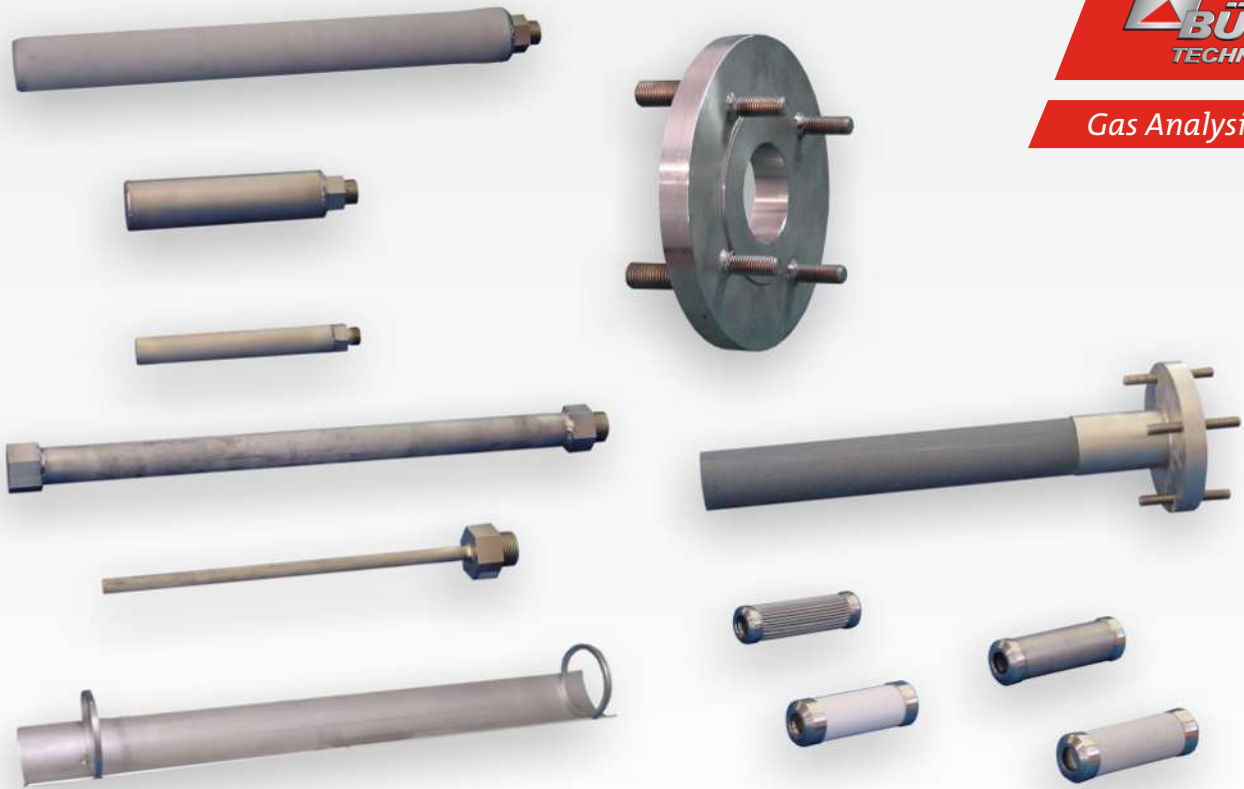
4 – not suitable

() – estimate

Two values are specified per medium. Left number = value at 20 °C, right number = value at 50 °C.

Source: Bürkle GmbH: List of chemical resistances, <https://www.buerkle.de> [accessed on 12.02.2026].





Accessories for Sample Gas Probe GAS 222

In many applications gas analysis is key for safe and efficient control of process flows, environmental protection, and quality assurance. In extractive gas analysis the selection of the gas sampling point is crucial for the reproducibility and accuracy of the analysis results.

The specific filter capacity, corrosion resistance and functional equipment requirements for the probe are determined by the composition of the sample gas. To meet these requirements, there is a wide range of accessories available for the GAS probe series.

Sampling tubes

Upstream filters

Extensions

Downstream filters

Adapter flanges

Blowback controls



Overview and functionality of the accessories

Blowback (optionally heated)

If the sample gas has a high dust content, particles will settle in the filter over time. To prevent clogging, the upstream filter can be fitted with a blowback device that flushes it with compressed air either at fixed intervals or manually, ensuring effective cleaning.

Gas connection

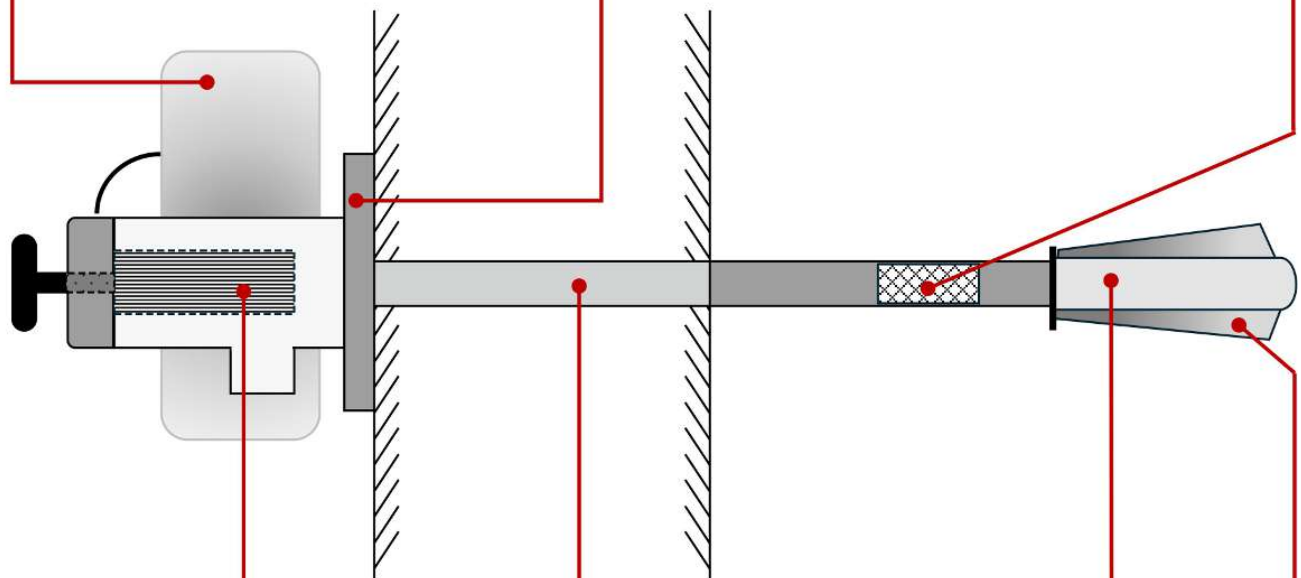
A purge gas connection is provided on the probes for purging the probe with inert gas or instrument air.

Demister

A demister or droplet separator is always recommended if the process gas has a high water content or aerosols. It consists of a wire mesh on which liquid droplets condense due to their higher inertia, while the gas flows through unhindered, and the condensate flows back into the process.

Adapter flanges

The probe can be fitted with a DIN or ANSI flange. Numerous adapter flanges are available to ensure adaptation to the process connection.



Downstream filter

The downstream filter is located in the probe head and is suitable for dust loads up to 2 g/m^3 . It can be used in combination with an upstream filter, thereby increasing operational reliability. The filter can be exchanged easily and without tools, using the handle.

Sampling tube (opt. upstream filter)

The sampling tube extends into the process stream and is available for various temperature and media resistance levels. An upstream filter can be connected here to remove particles from the process gas. In the case of very high dust concentrations, a blowback system can be used to clean the upstream filter.

Extension

The extension is located between the probe and the sampling tube or upstream filter. It serves as a bridge between the process connection of the probe and the sampling point (e.g. through a chimney wall). The extension can also be heated to prevent condensate cold spots.

Deflector

To protect the upstream filter from abrasion and deposits caused by particles, a deflector can be attached to the filter to divert the flow.

Ordering instructions

The following pages list the accessories that, together with the basic probe type, result in a functional probe. The basic probe type determines which options are available for a probe. The options for the blowback control are already defined by the item number. Further accessories are listed in the corresponding tables:

Table 1: Blowback control and extensions

Table 2: Sampling tubes

Table 3: Downstream filter

Table 4: Upstream filters

Table 5: Accessories - adapter flanges, fittings

Table 6: Spare parts and accessories

An overview of the individual accessories and their functions is shown in the diagram on the previous page.

Restrictions and notes

Blowback control integrated in the probe controller

A blowback control integrated in the probe controller is standard. Parameters such as the time and duration of the blowback are set once on the probe, after which the process is carried out automatically. The status of the controller and the condition of the blowback can be read electrically. If required, a separate RSS blowback control can also be connected to the probe, which facilitates manual blowback and is separate from the probe.

Limitations categories/zones due to accessories

For safe operation of our Ex probes for use in potentially explosive areas, we strongly recommend the accessories marked with the Ex symbol. These have been subjected to thorough safety testing in combination with our Ex probes. Bühler assumes no responsibility for explosion protection, function or conformity if accessories or components not approved by Bühler are used. The use of accessories not listed may compromise safety and is at your own risk. Statutory liability provisions remain unaffected by this.



GAS 222 models	with accessories:	Gas	Dust	Gas and dust (separate zones)
Sampling zone/operating zone				
11 Ex1, 21 Ex1, 30 Ex1, 31 Ex1, 35 Ex1, 35-U Ex1	Pressure vessel PAV 01 (item no. 46222PAV and accessories)	Zone1 ^{***} /Zone 1	Zone 20/Zone 21	Zone 20/Zone 1
11 Ex1, 21 Ex1, 30 Ex1, 31 Ex1	Deflectors for upstream filters	Zone 1/Zone 1	Zone 21/Zone 21	Zone 1/Zone 21
11 Ex1, 21 Ex1, 30 Ex1, 31 Ex1	Ceramic upstream filters* (item no.: 46222307, 46222307F, 46222307C, 46222330, 46222330C)	Zone 2/Zone 1	Zone 20/Zone 21	Zone 20/Zone 1 or Zone 2 / Zone 21
11 Ex1, 20 Ex1, 21 Ex1	Ceramic downstream filters* (item no.: 46222026 / 46222026P)	Zone 2/Zone 1	Zone 20/Zone 21	Zone 20/Zone 1 or Zone 2 / Zone 21
11 Ex1, 20 Ex1, 21 Ex1	Sampling tubes (item no.: 46222001XXXX, 46222006XXXX, 46222004XXXX, 46222016XXXX)	Zone 0/Zone 1	No zone/Zone 21	Zone 0/Zone 21
11 Ex1, 20 Ex1, 21 Ex1	Ceramic sampling tubes** (item no.: 46222002XXXX)	Zone 2/Zone 1	No zone/Zone 21	Zone 2/Zone 21

* Accessories are not suitable for sampling highly ignitable dusts with a minimum ignition energy (MIE) of < 3 mJ.

** When extracting gas from Zone 2, ceramic sampling tubes may only be used if application- and process-related electrostatic charging can be ruled out.








*** Blowback of explosive atmosphere/gases is prohibited.

General accessories

Probe models:		GAS 222.10	GAS 222.11	GAS 222.15	GAS 222.17	GAS 222.20	GAS 222.21	GAS 222.30	GAS 222.31	GAS 222.35	Item no.
Unheated/heated extension	Length [mm]										
 G 3/4 Unheated Stainless steel (1.4571)	200	●	●	●	●	●	●	●	●		4622230320200
	400	●	●	●	●	●	●	●	●		4622230320400
	500	●	●	●	●	●	●	●	●		4622230320500
	700	●	●	●	●	●	●	●	●		4622230320700
	1000	●	●	●	●	●	●	●	●		4622230321000
	1200	●	●	●	●	●	●	●	●		4622230321200
	1500	●	●	●	●	●	●	●	●		4622230321500
	2000	●	●	●	●	●	●	●	●		4622230322000
 G 1/2 Unheated Stainless steel (1.4571)	250									●	4622235910250
	500									●	4622235910500
	700									●	4622235910700
	1500									●	4622235911500
GF heated, 230 V Stainless steel (1.4571)	500					●	●		●		462223036
	1000					●	●		●		462223033
GF heated, 115 V Stainless steel (1.4571)	500					●	●		●		462223136
	1000					●	●		●		462223133
GF ANSI heated, 115 V Stainless steel (1.4571)	500					●	●		●		462223036C1
	1000					●	●		●		462223033C1
GF heated, 230 V Hastelloy	1000					●	●		●		462223033H
Blowback control											
Blowback control 24 V			●				●	●	●	●	46222199
Blowback control 115/230 V			●				●	●	●	●	46222299

 Recommended accessories for use in hazardous areas.

Tab. 1: Blowback control and extensions






Probe models:		GAS 222.10	GAS 222.11	GAS 222.15	GAS 222.17	GAS 222.20	GAS 222.21	GAS 222.30	GAS 222.31	GAS 222.35	Item no.
Sampling tubes	Length [mm]										
 Hastelloy/1.4571 ¹⁾ ø12 mm T _{max} : 400 °C	500	●	●	●	●	●	●	●	●		462220060500
	1000	●	●	●	●	●	●	●	●		462220061000
	1500	●	●	●	●	●	●	●	●		462220061500
	2000	●	●	●	●	●	●	●	●		462220062000
 Stainless steel ¹⁾ ø12 mm T _{max} : 600 °C	300	●	●	●	●	●	●	●	●		462220010300
	500	●	●	●	●	●	●	●	●		462220010500
	1000	●	●	●	●	●	●	●	●		462220011000
	1500	●	●	●	●	●	●	●	●		462220011500
	2000	●	●	●	●	●	●	●	●		462220012000
 Stainless steel ¹⁾ ø20 mm T _{max} : 600 °C	500	●	●	●	●	●	●	●	●		462220160500
	1000	●	●	●	●	●	●	●	●		462220161000
	1500	●	●	●	●	●	●	●	●		462220161500
	2000	●	●	●	●	●	●	●	●		462220162000
 Inconel/1.4571 ¹⁾ ø21 mm T _{max} : 1050 °C	500	●	●	●	●	●	●	●	●		462220040500
	1000	●	●	●	●	●	●	●	●		462220041000
	1500	●	●	●	●	●	●	●	●		462220041500
	2000	●	●	●	●	●	●	●	●		462220042000
Kanthal/1.4571 ø15 mm T _{max} : 1400 °C	500	●	●	●	●	●	●	●	●		462220170500
	1000	●	●	●	●	●	●	●	●		462220171000
	2000	●	●	●	●	●	●	●	●		462220172000
 Ceramic/1.4571 ¹⁾ ø24 mm T _{max} : 1600 °C	500	●	●	●	●	●	●	●	●		4622200205
	1000	●	●	●	●	●	●	●	●		4622200210
	1500	●	●	●	●	●	●	●	●		4622200215
 Sampling tube with demister Material: 1.4571 T _{max} : 400 °C	100	●	●	●	●	●	●	●	●		4622204201
	300	●	●	●	●	●	●	●	●		4622204203
	500	●	●	●	●	●	●	●	●		4622204205
	600	●	●	●	●	●	●	●	●		4622204206
	800	●	●	●	●	●	●	●	●		4622204208
	1000	●	●	●	●	●	●	●	●		4622204210
 Sampling tube with demister Material: Hastelloy T _{max} : 400 °C	500	●	●	●	●	●	●	●	●		4622201290500
	750	●	●	●	●	●	●	●	●		4622201290750
	1000	●	●	●	●	●	●	●	●		4622201291000
Sampling tube with demister Material: PVDF/ETFE T _{max} : 120 °C	200	●	●	●	●	●	●	●	●		462220400200
	650	●	●	●	●	●	●	●	●		462220400650
	800	●	●	●	●	●	●	●	●		46222040

1) Restrictions for the approved Ex zones for sampling and operation apply. Details can be found in the table at the beginning of the data sheet.

 Recommended accessories for use in hazardous areas.

Tab. 2: Sampling tubes

Accessories for probes with downstream filter

Probe models:								
 Downstream filter	average pore size [µm]	GAS 222.10	GAS 222.11	GAS 222.15	GAS 222.17	GAS 222.20	GAS 222.21	Item no.
	 Sintered stainless steel O-ring: Viton	0,5	•	•	•	•	•	•
5		•	•	•	•	•	•	46222010
 Sintered stainless steel O-ring: FFKM	0,5	•	•	•	•	•	•	46222010FP ⁴⁾
	5	•	•	•	•	•	•	46222010P
 Ceramic ¹⁾ O-ring: Viton	3	•	•	•	•	•	•	46222026
 Ceramic ¹⁾ O-ring: FFKM	3	•	•	•	•	•	•	46222026P
Sintered stainless steel O-ring: Viton	15	•	•	•	•	•	•	462220139
Sintered stainless steel O-ring: FFKM	15	•	•	•	•	•	•	462220139P
Micro-strand glass fibre with silicate binder O-ring: Viton (matching handle)		•	•	•	•	•	•	462220671 (46222067)
Micro-strand glass fibre with silicate binder O-ring: FFKM (matching handle)		•	•	•	•	•	•	462220671P (46222067)
Cover piece incl. tube, filter wool O-ring: Viton		•	•	•	•	•	•	46222163
Cover piece incl. tube, filter wool O-ring: FFKM		•	•	•	•	•	•	46222163P
Cover piece incl. tube, steel wool O-ring: Viton		•	•	•	•	•	•	46222163001



1) Restrictions for the approved Ex zones for sampling and operation apply. Details can be found in the table at the beginning of the data sheet.

4) Upon request.

 Recommended accessories for use in hazardous areas.

Tab. 3: Downstream filter

Accessories for probes with upstream filter

Probe models:		GAS 222.11	GAS 222.21	GAS 222.30	GAS 222.31	GAS 222.35	Item no.
 Upstream filters	average pore size [µm]						
Stainless steel/1.4404/1.4571 Length: 229 mm T _{max} : 600 °C	0,5					●	46222359F ⁴⁾
	5					●	46222359
Stainless steel/1.4571 Length: 237 mm T _{max} : 600 °C	0,5	●	●	●	●		46222303F ⁴⁾
	5	●	●	●	●		46222303
Stainless steel with displacer Length: 237 mm T _{max} : 600 °C	0,5	●	●	●	●		462223031F ⁴⁾
	5	●	●	●	●		462223031
Stainless steel/1.4571 Length: 538 mm T _{max} : 600 °C	0,5	●	●	●	●		46222304F ⁴⁾
	5	●	●	●	●		46222304
Stainless steel with displacer Length: 538 mm T _{max} : 600 °C	0,5	●	●	●	●		462223041F ⁴⁾
	5	●	●	●	●		462223041
Hastelloy Length: 237 mm T _{max} : 400 °C	0,5	●	●	●	●		46222303HF ⁴⁾
	5	●	●	●	●		46222303H
Hastelloy Length: 538 mm T _{max} : 400 °C	0,5	●	●	●	●		46222304HF ⁴⁾
	5	●	●	●	●		46222304H
Hastelloy with displacer Length: 237 mm T _{max} : 400 °C	0,5	●	●	●	●		462223031HF ⁴⁾
	5	●	●	●	●		462223031H
Hastelloy with displacer Length: 538 mm T _{max} : 400 °C	0,5	●	●	●	●		462223041HF ⁴⁾
	5	●	●	●	●		462223041H
Ceramic/1.4571 ¹⁾ Length: 478 mm T _{max} : 1000 °C	0,3	●	●	●	●		46222307F ²⁾
	2	●	●	●	●		46222307 ²⁾
	2	●	●	●	●		46222307C ^{2), 3)}
Ceramic/1.4571 ¹⁾ Length: 978 mm T _{max} : 1000 °C	2	●	●	●	●		46222330 ²⁾
	2	●	●	●	●		46222330C ^{2), 3)}
 Deflectors							
For upstream filters 03 ¹⁾		●	●	●	●		462223034
For upstream filters 04 ¹⁾		●	●	●	●		462223044

1) Restrictions for the approved Ex zones for sampling and operation apply. Details can be found in the table at the beginning of the data sheet.


2) Furnace gas filtration: oxidising atmosphere max. 750 °C, reducing atmosphere max. 600 °C;
Not suitable for extracting ignition-sensitive dusts with minimum ignition energy < 3 mJ.


3) For probes with ANSI flanges

4) Upon request.

 Recommended accessories for use in hazardous areas.

Tab. 4: Upstream filters




Probe models:	GAS 222.10	GAS 222.11	GAS 222.15	GAS 222.17	GAS 222.20	GAS 222.21	GAS 222.30	GAS 222.31	GAS 222.35	
 Accessories - fittings										Item no.
Sample gas connection for Ø 6 mm pipe	•	•	•	•	•	•	•	•	•	9029000
Sample gas connection for Ø 8 mm pipe	•	•	•	•	•	•	•	•	•	9029001
Purge gas connection Ø 12 mm pipe		•				•	•	•	•	9029002
Sample gas connection for Ø 1/4" pipe	•	•	•	•	•	•	•	•	•	9008584
Sample gas connection for Ø 3/8" pipe	•	•	•	•	•	•	•	•	•	9029011
Purge gas connection Ø 1/2" pipe		•				•	•	•	•	9008582

 Accessories – adapter flanges - selection - others upon request										
Probe► Process									
DIN DN 65 PN 6	ANSI DN 1 1/4" 150 lb.	•	•	•	•	•	•	•	•	46222501
DIN DN 65 PN 6	ANSI DN 2" 150 lb.	•	•	•	•	•	•	•	•	46222314
DIN DN 65 PN 6	ANSI DN 2" 300 lb.	•	•	•	•	•	•	•	•	46222502
DIN DN 65 PN 6	ANSI DN 2 1/2" 150 lb.	•	•	•	•	•	•	•	•	46222068
DIN DN 65 PN 6	ANSI DN 3" 150 lb.	•	•	•	•	•	•	•	•	46222014
DIN DN 65 PN 6	ANSI DN 3" 300 lb.	•	•	•	•	•	•	•	•	46222034
DIN DN 65 PN 6	ANSI DN 4" 150 lb.	•	•	•	•	•	•	•	•	46222035
DIN DN 65 PN 6	DIN DN150 PN 6	•	•	•	•	•	•	•	•	462220140
DIN DN 65 PN 6	ANSI DN 6"-150 lb.	•	•	•	•	•	•	•	•	462220127
ANSI DN 3"-150 lb.	ANSI DN 4" 150 lb.	•	•	•	•	•	•	•	•	46222058

 Recommended accessories for use in hazardous areas.

Tab. 5: Accessories - adapter flanges, fittings

Spare parts and accessories

Probe models:	GAS 222.10	GAS 222.11	GAS 222.15	GAS 222.17	GAS 222.20	GAS 222.21	GAS 222.30	GAS 222.31	GAS 222.35	Item no.
 Downstream filter										
Filter wool	•	•	•	•	•	•				46222167
 O-ring set Viton incl. installation grease	•	•	•	•	•	•				46222012
 O-ring set LT 170 incl. installation grease	•	•	•	•	•	•				462220100011
 O-ring set FFKM incl. installation grease	•	•	•	•	•	•				46222024
Sampling tubes										
Demister ETFE T _{max} : 120 °C (matching safety pin)	•	•	•	•	•	•	•	•		462220402 (462220403)
 Demister stainless steel T _{max} : 400 °C (matching safety pin)	•	•	•	•	•	•	•	•		4611004 (462220421)
 Demister Hastelloy T _{max} : 400 °C (matching safety pin)	•	•	•	•	•	•	•	•		4622201291 (4622201292)

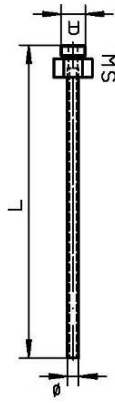
 Recommended accessories for use in hazardous areas.

Tab. 6: Spare parts and accessories

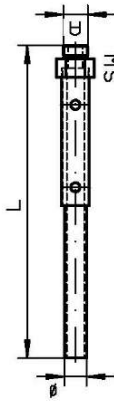
Dimensions

Entnahmerohre / tubes

Typ	L	ø	A	SW
01	var.	12	G3/4	36
06	var.	12	G3/4	36
08	var.	21,3	G3/4	36
12	var.	20	G3/4	36
13	var.	15	G3/4	36
14	var.	18	G3/4	36

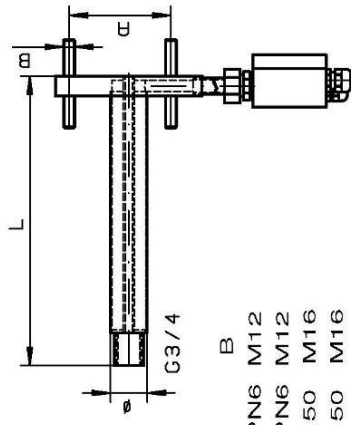


Typ	L	ø	A	SW
02-0,5	500	24	G3/4	36
02-1,0	1000	24	G3/4	36
02-1,5	1500	24	G3/4	36



Verlängerungen / extensions

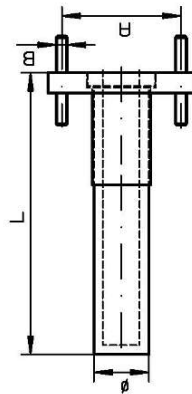
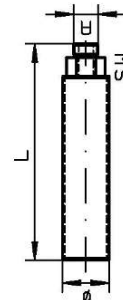
unbeheizt / unheated
 Typ L A SW
 G3/4 var. G3/4 36
 G1/2 var. G1/2 27



beheizt / heated
 Typ L ø A B
 GF 500 40 DN65 PN6 M12
 GF 1000 40 DN65 PN6 M12
 GF ANSI/CSA 500 40 DN3"-150 M16
 GF ANSI/CSA 1000 40 DN3"-150 M16

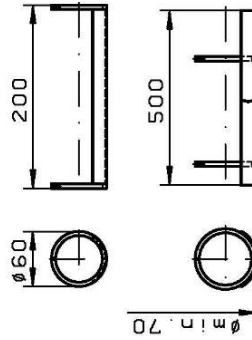
Eintrittsfilter / in-situ filters

Typ	L	ø	A	SW
03	237	51	G3/4	36
031	237	51	G3/4	36
04	538	60	G3/4	36
041	538	60	G3/4	36
35	229	29	G1/2	27



Typ	L	ø	A	B
07	500	60	DN65 PN6	M12
07 ANSI	500	60	DN3"-150	M16

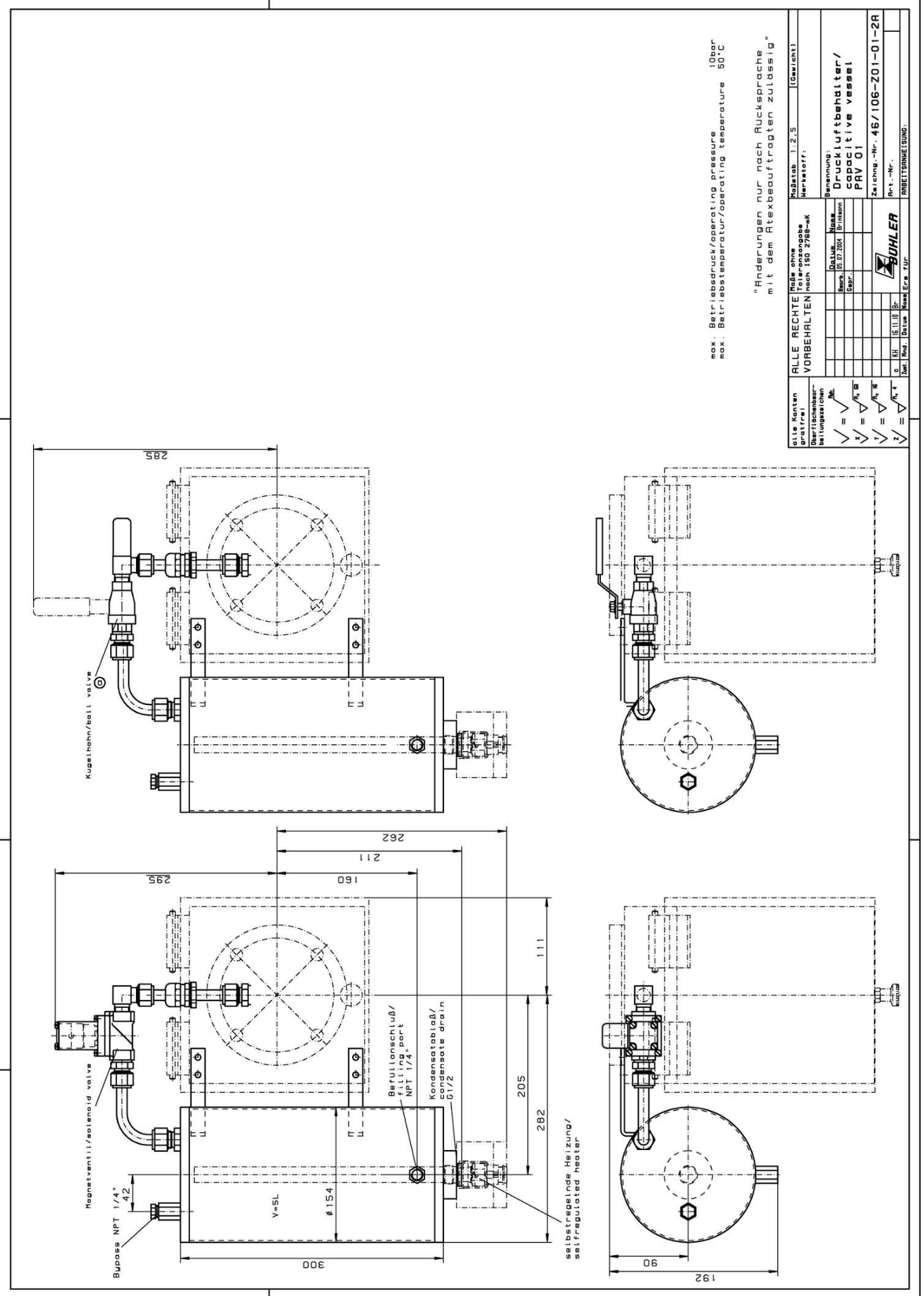
Abweisblech / protection shield



Eintrittsfilter / in-situ filter 03

Eintrittsfilter / in-situ filter 04

ALLE RECHTE VORBEHALTEN Maße ohne Toleranzangabe nach ISO 2768-mk		Maßstab 1:5 (Gewicht) Werkstoff:	
alle Konten prüfen!	Oberfläche bearbeitungszeichen	Name Datum Bearb. / Grp.	Name Datum Br./Inw.
✓ = <input checked="" type="checkbox"/>	✓ = <input checked="" type="checkbox"/>	✓ = <input checked="" type="checkbox"/>	✓ = <input checked="" type="checkbox"/>
x = <input type="checkbox"/>	x = <input type="checkbox"/>	x = <input type="checkbox"/>	x = <input type="checkbox"/>
y = <input type="checkbox"/>	y = <input type="checkbox"/>	y = <input type="checkbox"/>	y = <input type="checkbox"/>
z = <input type="checkbox"/>	z = <input type="checkbox"/>	z = <input type="checkbox"/>	z = <input type="checkbox"/>
a neu 23.03.05 Br.		Zukt. Rnd. Datum Name Ers. für.	
BOEHLER		Benennung: Rohre/Filter/Verlängerungen tubes/filter/extensions GAS 222 Zeichn.-Nr. 46/107-Z01-01-3A Art.-Nr.	
ARBEITSSAMENSUNG:			



RMA-Formular und Erklärung über Dekontaminierung

RMA-Form and explanation for decontamination



RMA-Nr./ RMA-No.

Die RMA-Nr. bekommen Sie von Ihrem Ansprechpartner im Vertrieb oder Service. Bei Rücksendung eines Altgeräts zur Entsorgung tragen Sie bitte in das Feld der RMA-Nr. "WEEE" ein./ You may obtain the RMA number from your sales or service representative. When returning an old appliance for disposal, please enter "WEEE" in the RMA number box.

Zu diesem Rücksendeschein gehört eine Dekontaminierungserklärung. Die gesetzlichen Vorschriften schreiben vor, dass Sie uns diese Dekontaminierungserklärung ausgefüllt und unterschrieben zurücksenden müssen. Bitte füllen Sie auch diese im Sinne der Gesundheit unserer Mitarbeiter vollständig aus./ This return form includes a decontamination statement. The law requires you to submit this completed and signed decontamination statement to us. Please complete the entire form, also in the interest of our employee health.

Firma/ Company

Firma/ Company	<input type="text"/>
Straße/ Street	<input type="text"/>
PLZ, Ort/ Zip, City	<input type="text"/>
Land/ Country	<input type="text"/>

Gerät/ Device	<input type="text"/>
Anzahl/ Quantity	<input type="text"/>
Auftragsnr./ Order No.	<input type="text"/>

Ansprechpartner/ Person in charge

Name/ Name	<input type="text"/>
Abt./ Dept.	<input type="text"/>
Tel./ Phone	<input type="text"/>
E-Mail	<input type="text"/>
Serien-Nr./ Serial No.	<input type="text"/>
Artikel-Nr./ Item No.	<input type="text"/>

Grund der Rücksendung/ Reason for return

- Kalibrierung/ Calibration Modifikation/ Modification
 Reklamation/ Claim Reparatur/ Repair
 Elektroaltgerät/ Waste Electrical & Electronic Equipment (WEEE)
 andere/ other

bitte spezifizieren/ please specify

Handelt es sich bei dem Gerät um ein sogenanntes Bühler O2-Ready Produkt (Artikelnummer endet mit „-O2“)?/ Is the device a Bühler O2-Ready product (item number ending with "-O2")?

- Nein/ No Ja/ Yes

Ist das Gerät möglicherweise kontaminiert?/ Could the equipment be contaminated?

- Nein, da das Gerät nicht mit gesundheitsgefährdenden Stoffen betrieben wurde./ No, because the device was not operated with hazardous substances.
 Nein, da das Gerät ordnungsgemäß gereinigt und dekontaminiert wurde./ No, because the device has been properly cleaned and decontaminated.
 Ja, kontaminiert mit:/ Yes, contaminated with:



explosiv/
explosive



entzündlich/
flammable



brandfördernd/
oxidizing



komprimierte
Gase/
compressed
gases



ätzend/
caustic



giftig, Lebensge-
fahr/
poisonous, risk of
death



gesundheitsge-
fährdend/
harmful to health



gesund-
heitsschädlich/
health hazard



umweltge-
fährdend/
environmental
hazard

Bitte Sicherheitsdatenblatt beilegen!/ Please enclose safety data sheet!

Das Gerät wurde gespült mit:/ The equipment was purged with:

Diese Erklärung wurde korrekt und vollständig ausgefüllt und von einer dazu befugten Person unterschrieben. Der Versand der (dekontaminierten) Geräte und Komponenten erfolgt gemäß den gesetzlichen Bestimmungen.

Falls die Ware nicht gereinigt, also kontaminiert bei uns eintrifft, muss die Firma Bühler sich vorbehalten, diese durch einen externen Dienstleister reinigen zu lassen und Ihnen dies in Rechnung zu stellen.

Firmenstempel/ Company Sign

This declaration has been filled out correctly and completely, and signed by an authorized person. The dispatch of the (decontaminated) devices and components takes place according to the legal regulations.

Should the goods not arrive clean, but contaminated, Bühler reserves the right, to commission an external service provider to clean the goods and invoice it to your account.

Datum/ Date

rechtsverbindliche Unterschrift/ Legally binding signature



Vermeiden von Veränderung und Beschädigung der einzusendenden Baugruppe

Die Analyse defekter Baugruppen ist ein wesentlicher Bestandteil der Qualitätssicherung der Firma Bühler Technologies GmbH. Um eine aussagekräftige Analyse zu gewährleisten muss die Ware möglichst unverändert untersucht werden. Es dürfen keine Veränderungen oder weitere Beschädigungen auftreten, die Ursachen verdecken oder eine Analyse unmöglich machen.

Vermeidung von Kontaminationen bei Produkten für hochreine Sauerstoffapplikationen (O2-Ready)

Handelt es sich bei dem Gerät um ein sogenanntes Bühler O2-Ready Produkt (Artikelnummer endet mit „-O2“), so ist dafür zu sorgen, dass es vom Ausbau des Artikels bis zur Anlieferung bei Firma Bühler zu keiner Kontamination medienberührender Teile kommt. Verschließen Sie Öffnungen und verpacken Sie das Gerät in ein luftdichtes Behältnis. Kennzeichnen Sie die Ware deutlich, insbesondere durch Angabe der vollständigen Artikelnummer (.....-O2) auf der ersten Seite dieses Formulars. Hierdurch wird sichergestellt, dass es auch unsererseits zu keiner unnötigen Kontamination kommt.

Umgang mit elektrostatisch sensiblen Baugruppen

Bei elektronischen Baugruppen kann es sich um elektrostatisch sensible Baugruppen handeln. Es ist darauf zu achten, diese Baugruppen ESD-gerecht zu behandeln. Nach Möglichkeit sollten die Baugruppen an einem ESD-gerechten Arbeitsplatz getauscht werden. Ist dies nicht möglich sollten ESD-gerechte Maßnahmen beim Austausch getroffen werden. Der Transport darf nur in ESD-gerechten Behältnissen durchgeführt werden. Die Verpackung der Baugruppen muss ESD-konform sein. Verwenden Sie nach Möglichkeit die Verpackung des Ersatzteils oder wählen Sie selber eine ESD-gerechte Verpackung.

Einbau von Ersatzteilen

Beachten Sie beim Einbau des Ersatzteils die gleichen Vorgaben wie oben beschrieben. Achten Sie auf die ordnungsgemäße Montage des Bauteils und aller Komponenten. Versetzen Sie vor der Inbetriebnahme die Verkabelung wieder in den ursprünglichen Zustand. Fragen Sie im Zweifel beim Hersteller nach weiteren Informationen.

Einsenden von Elektroaltgeräten zur Entsorgung

Wollen Sie ein von Bühler Technologies GmbH stammendes Elektroprodukt zur fachgerechten Entsorgung einsenden, dann tragen Sie bitte in das Feld der RMA-Nr. „WEEE“ ein. Legen Sie dem Altgerät die vollständig ausgefüllte Dekontaminierungserklärung für den Transport von außen sichtbar bei. Weitere Informationen zur Entsorgung von Elektroaltgeräten finden Sie auf der Webseite unseres Unternehmens.

Avoiding alterations and damage to the components to be returned

Analysing defective assemblies is an essential part of quality assurance at Bühler Technologies GmbH. To ensure conclusive analysis the goods must be inspected unaltered, if possible. Modifications or other damages which may hide the cause or render it impossible to analyse are prohibited.

Avoidance of contamination in products for high-purity oxygen applications (O2-Ready)

If the device is a Bühler O2-Ready product (item number ending with “-O2”), it must be ensured that there is no contamination of parts in contact with the medium from the time the item is removed until it is delivered to Bühler. Seal openings and pack the device in an airtight container. Mark the goods clearly, in particular by stating the full item number (.....-O2) on the first page of this form. This ensures that there is no unnecessary contamination on our part either.

Handling electrostatically conductive components

Electronic assemblies may be sensitive to static electricity. Be sure to handle these assemblies in an ESD-safe manner. Where possible, the assemblies should be replaced in an ESD-safe location. If unable to do so, take ESD-safe precautions when replacing these. Must be transported in ESD-safe containers. The packaging of the assemblies must be ESD-safe. If possible, use the packaging of the spare part or use ESD-safe packaging.

Fitting of spare parts

Observe the above specifications when installing the spare part. Ensure the part and all components are properly installed. Return the cables to the original state before putting into service. When in doubt, contact the manufacturer for additional information.

Returning old electrical appliances for disposal

If you wish to return an electrical product from Bühler Technologies GmbH for proper disposal, please enter "WEEE" in the RMA number box. Please attach the fully completed decontamination declaration form for transport to the old appliance so that it is visible from the outside. You can find more information on the disposal of old electrical appliances on our company's website.

