

10 Attached Documents

- Type Examination Certificate IBExU17ATEXB007X
- Certificate IECEX IBE 17.0002X
- Declaration of Conformity KX460030
- Accessories Data Sheet 461099
- RMA - Decontamination Statement



[1] **TYPE EXAMINATION CERTIFICATE - Translation**

[2] Equipment
of equipment-groups I and II, equipment-categories M2 and 2 plus 3

[3] Type examination certificate number **IBExU17ATEXB007 X** | Issue 0

[4] Product: **Sample Gas Probe**
Type: GAS 222.xx Ex2

[5] Manufacturer: Bühler Technologies GmbH

[6] Address: Harkortstr. 29
40880 Ratingen
GERMANY

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] IBExU Institut für Sicherheitstechnik GmbH certifies that this product has been found to comply with the essential health and safety requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.

The examination and test results are recorded in the confidential test report IB-16-3-053.

[9] Compliance with the essential health and safety requirements has been assured by compliance with:
EN 60079-0:2012 + A11:2013 EN 60079-7:2015
except in respect of those requirements listed at item [18] of the schedule.

[10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the specific conditions of use specified in the schedule to this certificate.

[11] This type examination certificate relates only to the design of the specified equipment and not to specific items of equipment subsequently manufactured or supplied.

[12] The marking of the product shall include the following:

II 3G Ex ec ic mb IIC T3/T4 Gc

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7
09599 Freiberg, GERMANY

By order

Dipl.-Ing. [FH] A. Henker

IBExU
Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7
09599 Freiberg/Sachsen
Telefon (03731) 3805-0
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Certificates without signature and stamp are not valid. Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.

Freiberg, 2017-08-24

[14] **Certificate number IBExU17ATEXB007 X** | Issue 0

At the gas analysis the sampling point is a critical interface between the process and the analysis system. The probes are used to take gas samples from a sampling point. They can be unheated or heated. The probes are equipped with an in-situ filter or a downstream filter or with a combination of both. Some probes have an integrated shut off ball valve (manual or pneumatic) for the blowback of the filter. Optionally, the probes can be equipped with a calibration gas port, solenoid valves and a pressure vessel. The standard flanges for mounting are DN3" - 150 and DN65 PN6, other flanges are possible due to the maximum operating pressure.

Item number IECEx GAS 222 Ex2

FB106109 | 0

Intrinsically safe thermo alarm:

$U_i = 30 \text{ V}$

$I_i = 0.1 \text{ A}$

[16] Test report

The test results are recorded in the confidential test report IB-16-3-053 of 2017-08-24.

The test documents are part of the test report and they are listed there.

Summary of the test results

The Sample Gas Probe of the type GAS 222.xx Ex2 fulfils the requirements of the type of protection increased safety „e“ for explosion protected equipment of group II and category 3 G.

[17] Specific conditions of use

The plug connector is to be installed and operated corresponding to the low risk of mechanical danger in accordance with IEC 60079-0.

High charge producing processes and manual rubbing must be prevented.

The sample gas probe can be used in an ambient temperature range of -20 °C up to $+80 \text{ °C}$.

The plug connectors may only be used for fixed installation. The operating company must provide a suitable stress relief.

[18] Essential health and safety requirements

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item [9], the following are considered relevant to this product, and conformity is demonstrated in the test report: None

[19] Drawings and Documents

The documents are listed in the test report.

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7
09599 Freiberg, GERMANY

By order



Dipl.-Ing. [FH] A. Henker

Freiberg, 2017-08-24



[1] **TYPE EXAMINATION CERTIFICATE - Translation**

[2] Equipment
of equipment-groups I and II, equipment-categories M2 and 2 plus 3

[3] Type examination certificate number **IBExU17ATEXB007 X** | Issue 1

[4] Product: **Sample Gas Probe**
Type: GAS 222.xx Ex2

[5] Manufacturer: **Bühler Technologies GmbH**

[6] Address: **Harkortstr. 29
40880 Ratingen
GERMANY**

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] IBExU Institut für Sicherheitstechnik GmbH certifies that this product has been found to comply with the essential health and safety requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.

The examination and test results are recorded in the confidential test report IB-21-3-0003.

[9] Compliance with the essential health and safety requirements has been assured by compliance with:
EN 60079-0:2012 + A11:2013 EN IEC 60079-7:2015/A1:2018
except in respect of those requirements listed at item [18] of the schedule.

[10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the specific conditions of use specified in the schedule to this certificate.

[11] This type examination certificate relates only to the design of the specified equipment and not to specific items of equipment subsequently manufactured or supplied.

[12] The marking of the product shall include the following:

 **II 3G Ex ec ic mb IIC T3 or T4 Gc**

Different variants of the marking can be marked on the unit and result from the type code.

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Fuchsmühlenweg 7
09599 Freiberg, GERMANY

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Freiberg, 2021-03-09

Schedule

Certificate number IBExU17ATEXB007 X | Issue 1

Description of product

At the gas analysis the sampling point is a critical interface between the process and the analysis system. The probes are used to take gas samples from a sampling point. They can be unheated or heated. The probes are equipped with an in-situ filter or a downstream filter or with a combination of both. Some probes have an integrated shut off ball valve (manual or pneumatic) for the blowback of the filter. Optionally, the probes can be equipped with a calibration gas port, solenoid valves and a pressure vessel. The standard flanges for mounting are DN3" - 150 and DN65 PN6, other flanges are possible due to the maximum operating pressure.

Type code:

[illegible]

1		6mm
2		6mm + check valve
3		1/4
4		1/4 + check valve
pressure vessel		
0		no
1		yes
purge valve		
0		ball valve
1		solenoid valve 110V (marked with "mb")
2		solenoid valve 230V (marked with "mb")
3		solenoid valve 24V (marked with "mb")
9		without
pneumatic actuator for internal ball valve		
0		no
1		mono stable depressurized open (only for GAS 222.11/30/21/31)
2		mono stable depressurized closed (only for GAS 222.11/30/21/31)
limit switch for pneumatic actuator		
0		no
1		yes (only for GAS 222.11/30/21/31)
solenoid valve for pneumatic actuator		
0		no
1		110V (only for GAS 222.11/30/21/31) (marked with "mb")
2		230V (only for GAS 222.11/30/21/31) (marked with "mb")
3		24V (only for GAS 222.11/30/21/31) (marked with "mb")

Intrinsically safe thermo alarm:

$U_i = 30 \text{ V}$

$I_i = 0.1 \text{ A}$

Variation compared to issue 0 of this certificate:

Variation of type code

[16] Test report

The test results are recorded in the confidential test report IB-21-3-0003 of 2021-02-18.
The test documents are part of the test report and they are listed there.

Summary of the test results

The Sample Gas Probe of the type GAS 222.xx Ex2 fulfils the requirements of the type of protection increased safety „e“ for explosion protected equipment of group II and category 3G.

[17] Specific conditions of use

The plug connector is to be installed and operated corresponding to the low risk of mechanical danger in accordance with EN 60079-0.

High charge producing processes and manual rubbing must be prevented.

The sample gas probe can be used in an ambient temperature range of -20 °C up to +80 °C.

The plug connectors may only be used for fixed installation. The operating company must provide a suitable stress relief.

[18] Essential health and safety requirements

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item [9], the following are considered relevant to this product, and conformity is demonstrated in the test report: None

[19] Drawings and Documents

The documents are listed in the test report.

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7
09599 Freiberg, GERMANY

By order



Dipl.-Ing. [FH] A. Henker

Freiberg, 2021-03-09



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx IBE 17.0002X

Issue No: 0

Certificate history:

Issue No. 0 (2017-06-30)

Status: **Current**

Page 1 of 4

Date of Issue: **2017-06-30**

Applicant: **Bühler Technologies GmbH**
Harkortstr. 29
40880 Ratingen
Germany

Equipment: **Sample Gas Probes Serie 222.xx Ex 2**

Optional accessory:

Type of Protection: **Ex e, Ex m**

Marking:

Ex ec ic mb IIC T3/T4 Gc

For further information see typecode in annex..

*Approved for issue on behalf of the IECEx
Certification Body:*

Prof. Dr. Tammo Redeker

Position:

Head of Certification Body

*Signature:
(for printed version)*

Date:

2017-06-30

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:



IECEx Certificate of Conformity

Certificate No: IECEx IBE 17.0002X

Issue No: 0

Date of Issue: 2017-06-30

Page 2 of 4

Manufacturer: **Bühler Technologies GmbH**
Harkortstr. 29
40880 Ratingen
Germany

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements

Edition:6.0

IEC 60079-7 : 2015 Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

Edition:5.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

DE/IBE/ExTR16.0018/00

Quality Assessment Report:

DE/BVS/QAR16.0002/01



IECEx Certificate of Conformity

Certificate No: IECEx IBE 17.0002X

Issue No: 0

Date of Issue: 2017-06-30

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

In gas analysis the sample point is a critical interface between the process and the analysis system. Probes are used to take sample gas from the sample point, they can be unheated or heated. They are equipped with a downstream or an in-situ filter or with a combination of both.

Some probes have an integrated shut off ball valve (manual or pneumatic) for blowback the filter.

Optional they can be equipped with a calibration gas port, solenoid valves and a pressure vessel.

The standard flanges for mounting are DN3" - 150 and DN65 PN6, others a possible under regarding of the max. operating pressure.

Rated ambient temperature range: -20 °C up to +80 °C

Intrinsic safe thermos alert:

$$U_i = 30 \text{ V}$$

$$I_i = 0.1 \text{ A}$$

Typecode in Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

The plug connector is to be installed and operated in accordance with IEC 60079-0 in accordance with the risk of mechanical hazards "low".

High charge producing processes and manual rubbing must be prevented.

The Sample Gas Probe can be used in an ambient temperature range of -20 °C up to +80 °C.

The plug connectors may only be used for fixed installation. The operator must provide suitable stress relief.



IECEx Certificate of Conformity

Certificate No: IECEx IBE 17.0002X

Issue No: 0

Date of Issue: 2017-06-30

Page 4 of 4

Annex:

Annex IECExIBE17_0002X_0.pdf



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx IBE 17.0002X	Page 1 of 5	<u>Certificate history:</u>
Status:	Current	Issue No: 1	Issue 0 (2017-06-30)
Date of Issue:	2021-03-09		
Applicant:	Bühler Technologies GmbH Harkortstr. 29 40880 Ratingen Germany		
Equipment:	Sample Gas Probes Serie 222.xx Ex 2		
Optional accessory:			
Type of Protection:	Ex e, Ex m		
Marking:	Ex ec ic mb IIC T3 or T4 Gc		
	For further information see typecode in annex.		

Approved for issue on behalf of the IECEx
Certification Body:

Alexander Henker

Position:

Deputy Head of department Certification Body

Signature:
(for printed version)

Date:

2021-03-09

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7
09599 Freiberg
Germany





IECEx Certificate of Conformity

Certificate No.: **IECEx IBE 17.0002X**

Page 2 of 5

Date of issue: 2021-03-09

Issue No: 1

Manufacturer: **Bühler Technologies GmbH**
Harkortstr. 29
40880 Ratingen
Germany

Additional
manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[DE/IBE/ExTR16.0018/00](#)

[DE/IBE/ExTR16.0018/01](#)

Quality Assessment Report:

[DE/BVS/QAR16.0002/04](#)



IECEx Certificate of Conformity

Certificate No.: **IECEx IBE 17.0002X**

Page 3 of 5

Date of issue: 2021-03-09

Issue No: 1

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

In gas analysis the sample point is a critical interface between the process and the analysis system. Probes are used to take sample gas from the sample point, they can be unheated or heated. They are equipped with a downstream or an in-situ filter or with a combination of both.

Some probes have an integrated shut off ball valve (manual or pneumatic) for blowback the filter.

Optional they can be equipped with a calibration gas port, solenoid valves and a pressure vessel.

The standard flanges for mounting are DN3" - 150 and DN65 PN6, others a possible under regarding of the max. operating pressure.

Rated ambient temperature range: -20 °C up to +80 °C

Intrinsic safe thermos alert:

$U_i = 30 \text{ V}$

$I_i = 0.1 \text{ A}$

Typecode in Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

The plug connector is to be installed and operated in accordance with IEC 60079-0 in accordance with the risk of mechanical hazards "low".

High charge producing processes and manual rubbing must be prevented.

The Sample Gas Probe can be used in an ambient temperature range of -20 °C up to +80 °C.

The plug connectors may only be used for fixed installation. The operator must provide suitable stress relief.



IECEx Certificate of Conformity

Certificate No.: **IECEx IBE 17.0002X**

Page 4 of 5

Date of issue: 2021-03-09

Issue No: 1

Equipment (continued):

Change in type code



IECEx Certificate of Conformity

Certificate No.: **IECEx IBE 17.0002X**

Page 5 of 5

Date of issue: 2021-03-09

Issue No: 1

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Change in type code

Annex:

[Annex IECExIBE17_0002X_1.pdf](#)



IECEx Certificate of Conformity - Annex



Certificate No: IECEx IBE 17.0002X

Issue No: 1

Date of Issue: 2021-03-09

Page 2 of 2

pressure vessel	
0	no
1	yes
purge valve	
0	ball valve
1	solenoid valve 110V (marked with "mb")
2	solenoid valve 230V (marked with "mb")
3	solenoid valve 24V (marked with "mb")
9	without
pneumatic actuator for internal ball valve	
0	no
1	mono stable depressurized open (only for GAS 222.11/30/21/31)
2	mono stable depressurized closed (only for GAS 222.11/30/21/31)
limit switch for pneumatic actuator	
0	no
1	yes (only for GAS 222.11/30/21/31)
solenoid valve for pneumatic actuator	
0	no
1	110V (only for GAS 222.11/30/21/31) (marked with "mb")
2	230V (only for GAS 222.11/30/21/31) (marked with "mb")
3	24V (only for GAS 222.11/30/21/31) (marked with "mb")

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

**2014/34/EU
(Atex)**

in ihrer aktuellen Fassung entsprechen.

in its actual version.

Produkt / products: Gasentnahmesonde / *Sample gas probe*
Typ / type: GAS 222.20 Ex2, GAS 222.21 Ex2
GAS 222.31 Ex2, GAS 222.35 Ex2

Die Produkte werden entsprechend der derzeit gültigen Atex-Richtlinie innerhalb der internen Fertigungskontrolle folgendermaßen gekennzeichnet:

The products are marked according to the currently valid Atex directive during internal control of production:

Atex:  II 3G Ex ec ic mb¹ IIC T3/T4 Gc

IECEx: Ex ec ic mb¹ IIC T3/T4 Gc

¹ Nur bei Varianten mit Magnetventil/for versions with solenoid valve

Die Eignung dieses Produkts für die Zone 2 wurde durch eine Baumusterprüfbescheinigung mit der Nummer IBExU17ATEXB007 X festgestellt.

Die Betriebsanleitung zu diesem Produkt beinhaltet besondere Installations- und Betriebsbedingungen und sind für die sichere Anwendung zu beachten.

Gasentnahmesonden sind zum Einbau in Gasanalysesystemen bestimmt.

This product's suitability for Zone 2 was determined by type-examination certificate number IBExU17ATEXB007 X.

The operating instructions for this product contains special installation and operating conditions and must be observed to ensure safe operation.

Sample gas probes are intended for installation in gas-analysis systems.

Zur Beurteilung der Konformität wurden folgende harmonisierte Normen herangezogen:
For the assessment of conformity the following standards have been used:

EN 60079-0:2012 + A11:2013

EN IEC 60079-7 + A1:2018

Der Hersteller hat die Übereinstimmung des Gerätes mit aktuelleren Normenausgaben als in der Baumusterprüfbescheinigung aufgeführt geprüft und die Konformität festgestellt:

The manufacturer has checked the compliance of the device with more current standards than those listed in the type examination certificate and has established conformity:

EN IEC 60079-0:2018

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

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

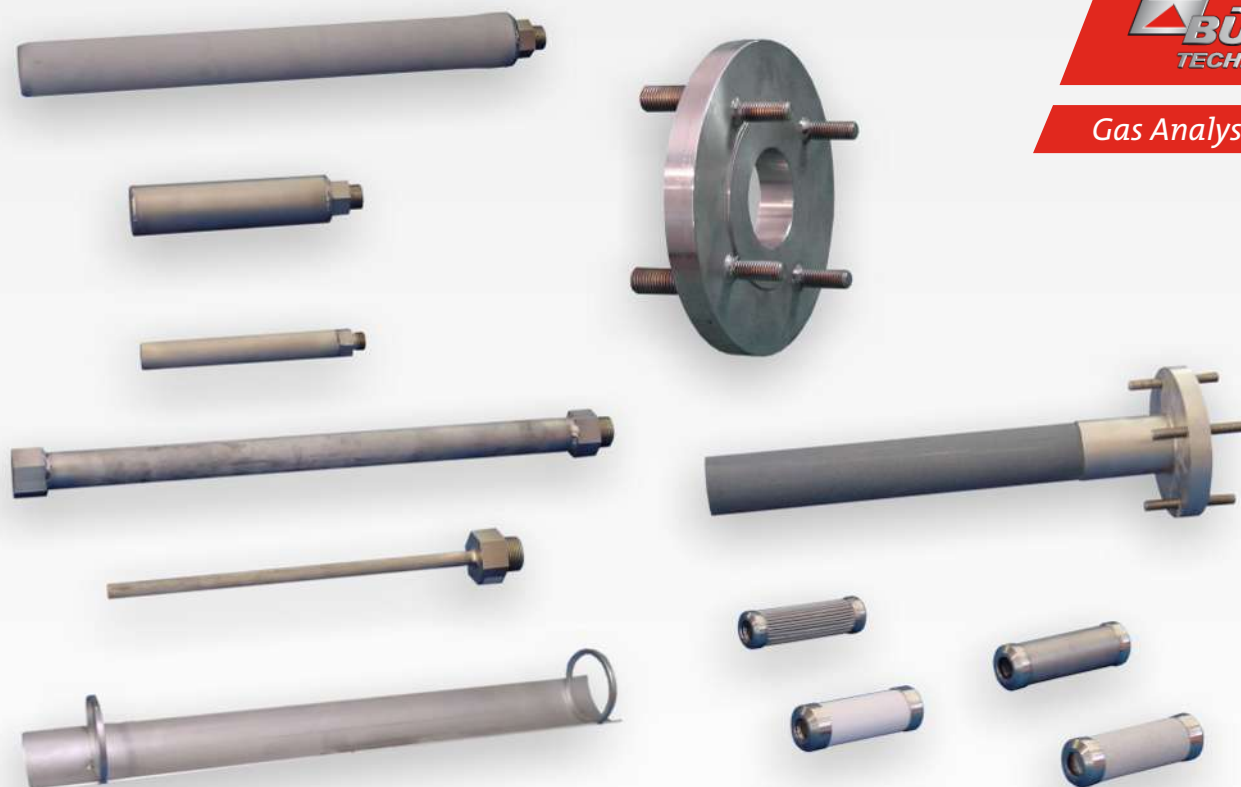
Ratingen, den 25.02.2021


Stefan Eschweiler
Geschäftsführer – Managing Director


Frank Pospiech
Geschäftsführer – Managing Director

KX 46 0030

Bühler Technologies GmbH, Harkortstr. 29, D-40880 Ratingen,
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Internet: www.buehler-technologies.com



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.

Extension

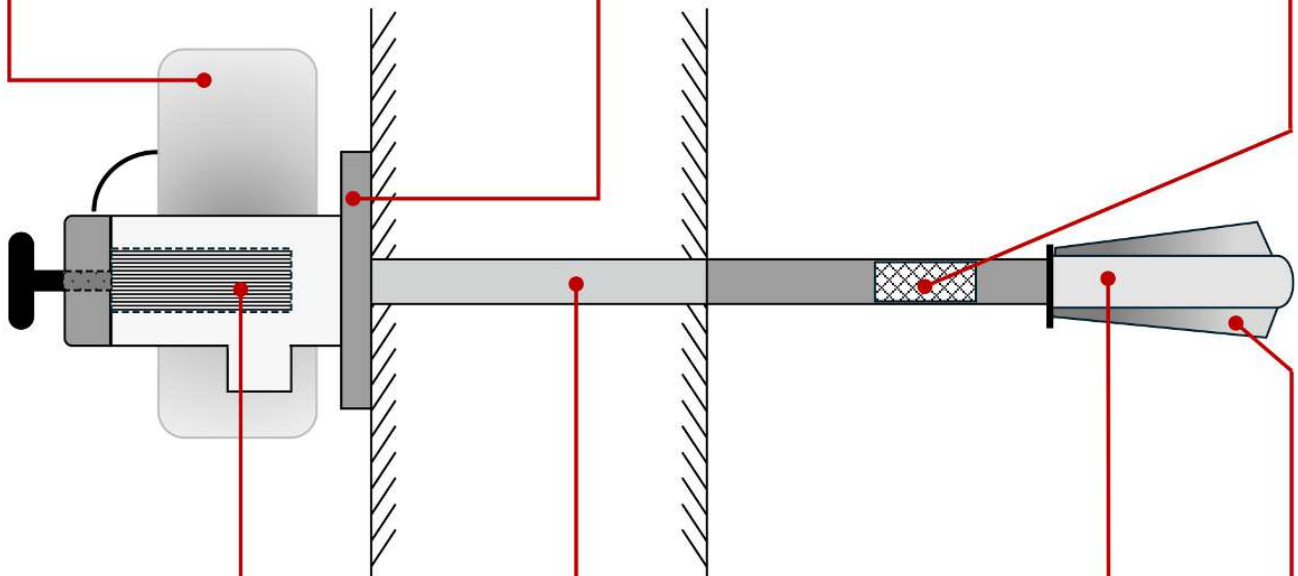
The extension is located between the probe and the sampling tube or upstream filter. It serves as a bridge between the process connection of the probe and the sampling point (e.g. through a chimney wall). The extension can also be heated to prevent condensate cold spots.

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.

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:											
Unheated/heated extension	Length [mm]	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.
 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:												
Sampling tubes		Length [mm]	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.
	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	•	•	•	•	•	•	46222010F ⁴⁾
	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	Item no.
	Accessories - fittings										
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

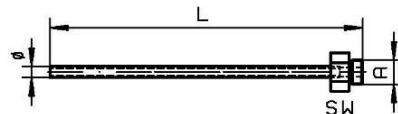
Probe models:	GAS 222.10	GAS 222.11	GAS 222.15	GAS 222.17	GAS 222.20	GAS 222.21	GAS 222.30	GAS 222.31	GAS 222.35	Item no.
 Downstream filter										
Filter wool	•	•	•	•	•	•				46222167
 O-ring set Viton incl. installation grease	•	•	•	•	•	•				46222012
 O-ring set LT 170 incl. installation grease	•	•	•	•	•	•				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.

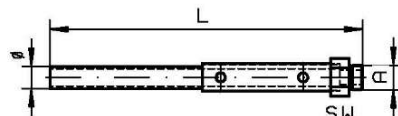
Tab. 6: Spare parts and accessories

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

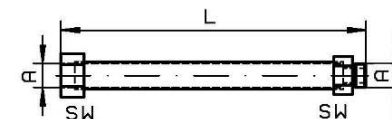


Typ	L	ø	A	SW
02-0,5	500	24	G3/4	36
02-1,0	1000	24	G3/4	36
02-1,5	1500	24	G3/4	36



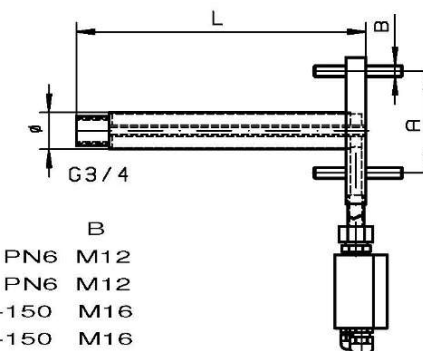
Verlängerungen / extensions

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



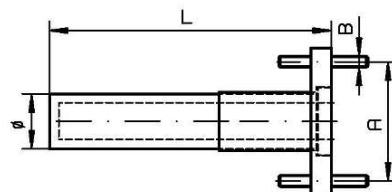
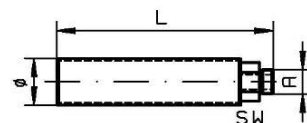
beheizt / heated

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

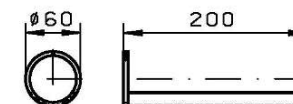
Typ	L	ø	A	SW
03	237	51	G3/4	36
031	237	51	G3/4	36
04	538	60	G3/4	36
041	538	60	G3/4	36
35	229	29	G1/2	27



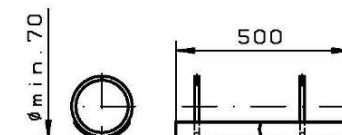
Typ	L	ø	A	B
07	500	60	DN65 PN6	M12
07 ANSI	500	60	DN3"-150	M16

Abweisblech / protection shield

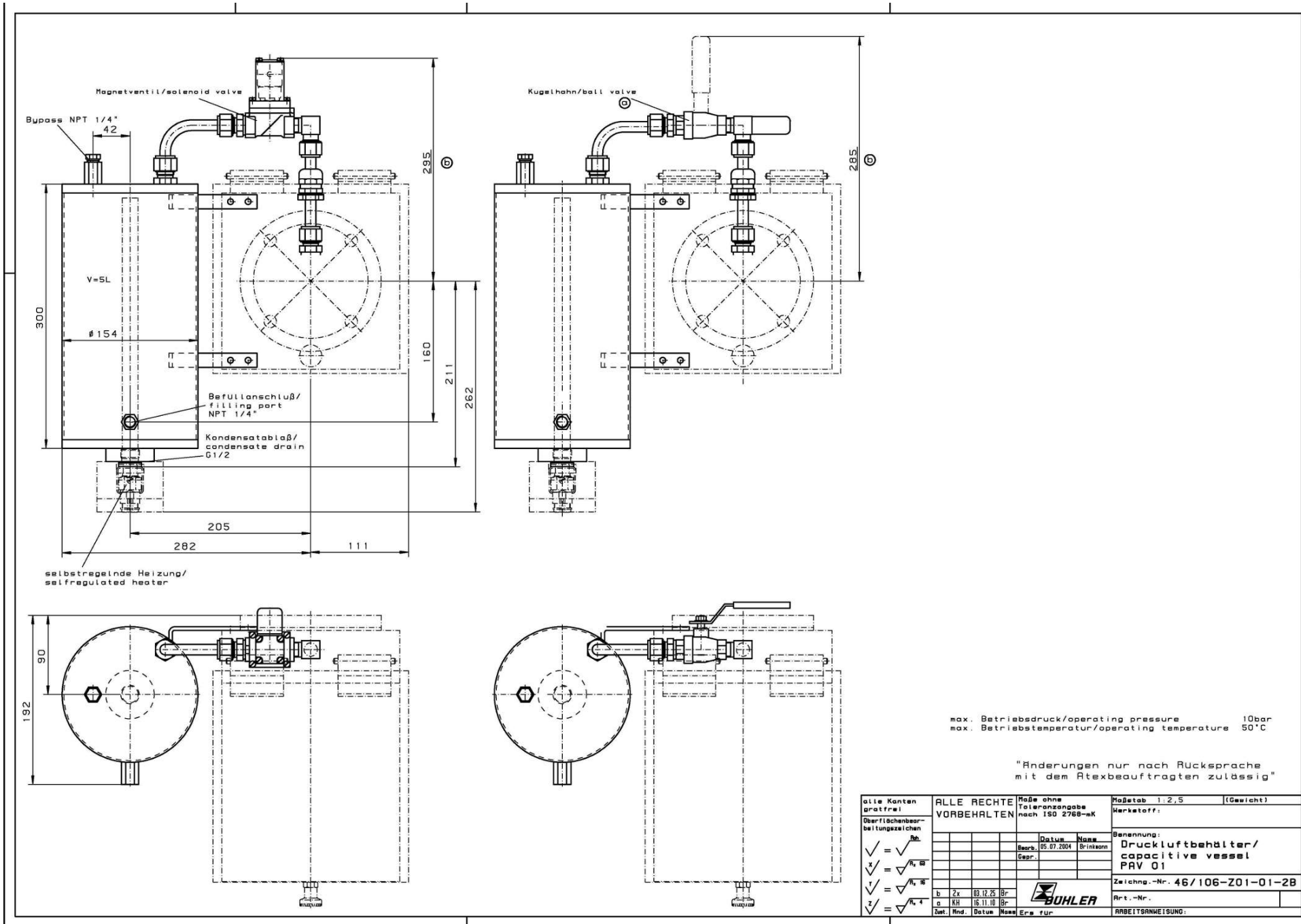
Eintrittsfilter / in-situ filter 03



Eintrittsfilter / in-situ filter 04



alle Kanten gratfrei	ALLE RECHTE VORBEHALTEN	Maße ohne Toleranzangabe nach ISO 2768-mK	Maßstab 1:5 (Gewicht)
Oberflächenbear- beitungszeichen		Datum Name	Werkstoff:
✓ = √ R _h		Bearb. 21.01.2004 Brinkmann	Benennung:
x = √ R _z 63		Gepr.	Rohre/Filter/Verlängerungen tubes/filter/extensions GAS 222
y = √ R _z 16			Zeichn.-Nr. 46/107-Z01-01-3A
z = √ R _z 4			Art.-Nr.
			ARBEITSANWEISUNG:



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

Straße/ Street

PLZ, Ort/ Zip, City

Land/ Country

Gerät/ Device

Anzahl/ Quantity

Auftragsnr./ Order No.

Ansprechpartner/ Person in charge

Name/ Name

Abt./ Dept.

Tel./ Phone

E-Mail

Serien-Nr./ Serial No.

Artikel-Nr./ Item No.

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. Verschießen 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.

