BÜHLER TECHNOLOGIES

Gas Analysis

Peristaltic pumps

CPsingle X2, CPdouble X2

Installation and Operation Instructions

Original instructions

BE450027
01/2022

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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.

Document information
Document No..... BE450027
Version..... 01/2022

Contents

1 Introduction

1.1 Intended use

This unit is intended to discharge condensate from cooled process fluids. The temperature of these mediums is approx. 5 °C.

This unit is suitable for use in Class I, Division 2 (US & Canada), Zone 2 (ATEX & IECEx).

Pump models for the USA and Canada 4492***2*** in explosive areas

The peristaltic pumps must be installed inside a housing which requires a tool to open and meets the requirements of the overall installation with respect to the housing, layout, space requirement and condensate separation.

Select a housing which meets the requirements of the pump's intended use with respect to mounting, spacing and creepage paths. The housing must be suitable for operating temperature ranges of -20 °C to min. 52 °C (US) and 0 °C to min. 52 °C (Canada).

It must be fully wired inside the housing. The cables and terminals used must be US-listed or (if applicable) CSA certified. They must be designed for the nominal voltage, the nominal current and operating temperature ranges of -20 °C to min. 52 °C (US) and 0 °C to min. 52 °C (Canada).

Water and contaminants must be prevented from entering the unit.

ATEX and IECEx certified pump models 4492**22**

The equipment must be installed in a lockable housing. The housing must have a minimum degree of protection of IP54 and meet the requirements under EN 60079-0 (IEC 60079-0) or be Ex e certified. The housing must require a tool to open. Install according to the installation requirements of IEC/EN 60079-14.

The housing must further meet the requirements of the overall installation with respect to the housing, layout, space requirement and condensate separation. The housing must be suitable for operating temperatures of 0 °C to min. 52 °C.

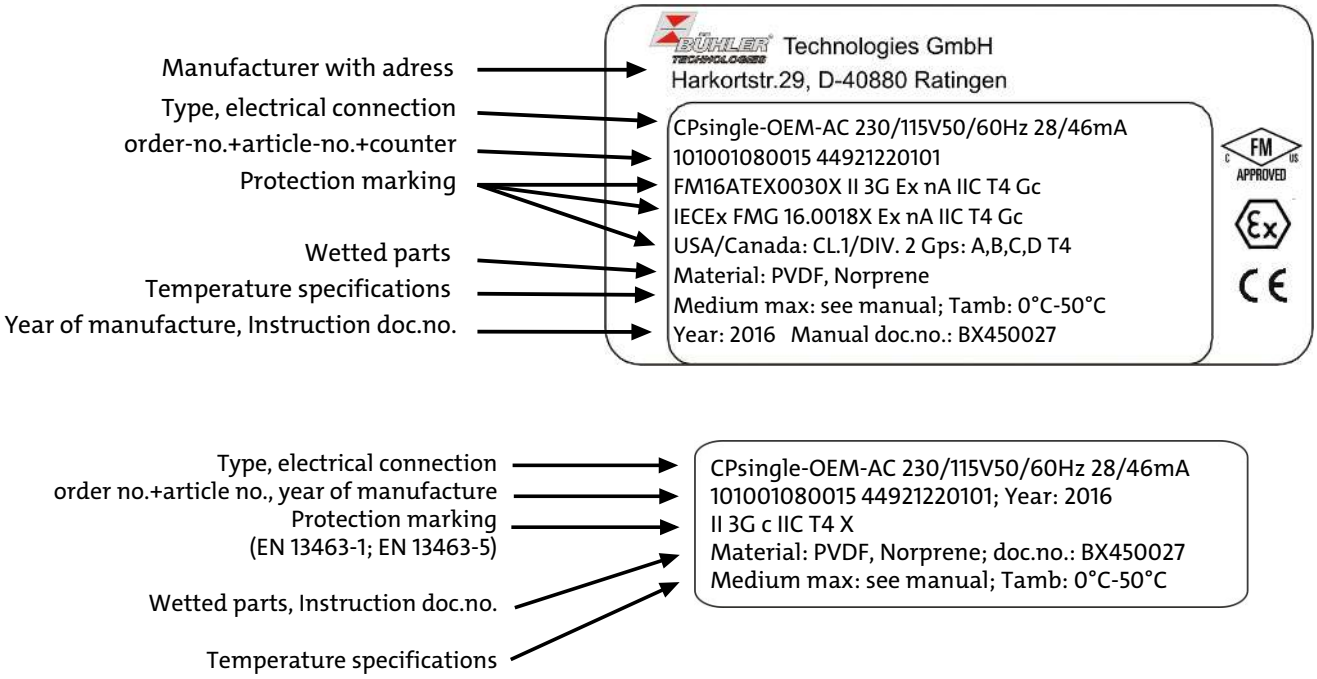
Water and contaminants must be prevented from entering the unit.

1.2 Scope of delivery

- 1 x Peristaltic pump
- Product documentation
- Connection- and mounting accessories (only optional)

1.3 Type plates

Examples:



1.4 Peristaltic pump ordering information

The item number is a code for the configuration of your unit. Please use the following model code:

4492	X	X	2	2	X	X	X	Product Characteristic
								Gas path
	1							Single gas path
	2							Double gas path
								Version
		1						Housing version
		2						Built-in version
								Supply voltage
			2					115/230 V AC
								Area of application
				2				for explosive areas
								Hose material [1) 2)]
					1			Tygon (Norprene)
					2			Fluran
					3			Marprene
								Flow rate/hour
						0		0.3 L/h
						2		13 ml/h (only 115/230 V AC, single gas path)
						3		61 ml/h (only 115/230 V AC, single gas path)
								Hose connection [3)]
							1	straight hose nipple
							2	angled hose nipple
							3	straight and angled hose nipple
							4	Screw connection (metric) DN 4/6
							5	Screw connection (US) 1/6"-1/4"
							6	angled hose nipple and screw connection (metric)
							7	angled hose nipple and screw connection (US)
							8	straight hose nipple and screw connection (metric)
							9	straight hose nipple and screw connection (US)

[1)] Please note hose material information during selection.

[2)] For 13 ml/h and 61 ml/h metering pumps the only hose material option is Tygon (Norprene).

[3)] For 13 ml/h and 61 ml/h metering pumps the only hose connections choices are "Option 4 and 5".

2 Safety instructions

2.1 Important advice

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 use the following warning signs:

	Warns of a general hazard		General information
	Warns of voltage		Unplug from mains
	Warns not to inhale toxic gasses		Wear respiratory equipment
	Warns of corrosive liquids		Wear a safety mask
	Warns of explosive areas		Wear gloves

This unit may only be used if:

- The product is being used under the conditions described in the operating- and installation instructions, used according to the nameplate and for applications for which it is intended. Any unauthorized modifications to the unit will void the warranty provided by Bühler Technologies GmbH,
- The specifications and markings in the type plate must be observed,
- The threshold values in the data sheet and the instructions must be observed,
- Monitoring equipment / protection devices must be connected correctly,
- Service and repair work not described in these instructions are performed by Bühler Technologies GmbH,
- Genuine replacement parts must be used.

Erecting electrical systems in explosive areas requires compliance with the following national regulations:

- EN 60079-14
- IEC 60079-14
- National electric code (NEC)
- Canadian electric code (CEC)

Additional national regulations pertaining to initial operation, operation, maintenance, repairs and disposal must be observed.

These operating instructions are a part of the equipment. The manufacturer reserves the right to change performance-, specification- or technical data without prior notice. Please keep these instructions for future reference.

2.2 General hazard warnings

The equipment must be installed by a professional familiar with the safety requirements and risks.

Be sure to observe the safety regulations and generally applicable rules of technology relevant for the installation site. Prevent malfunctions and avoid personal injuries and property damage.

The operator of the system must ensure:

- Safety notices and operating instructions are available and observed,
- The respective national accident prevention regulations are observed,
- The permissible data and operational conditions are maintained,
- Safety guards are used and mandatory maintenance is performed,
- Legal regulations are observed during disposal,
- compliance with national installation regulations.

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 **Electrical voltage**

Electrocution hazard.

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 **Toxic, corrosive condensate**

a) Protect yourself from toxic, corrosive condensate when performing any type of work.

b) Wear appropriate protective equipment.

c) Please note the national safety rules!

3 Transport and storage

The products should be transported only in its original packaging or a suitable replacement.

When not in use, protect the equipment against moisture and heat. Keep it in a covered, dry and dust-free room.

4 Installation and connection

4.1 Installation site requirements

Be sure to maintain the approved ambient temperature. Please also note the technical data of the attached cooler.

When mounting to a subframe, it is screwed directly to the cooler housing.

The unit is intended for use in enclosed areas. Adequate protection from the weather must be provided when used outdoors.

Pump models for the USA and Canada 4492***2*** in explosive areas

The peristaltic pumps must be installed inside a housing which requires a tool to open and meets the requirements of the overall installation with respect to the housing, layout, space requirement and condensate separation.

Select a housing which meets the requirements of the pump's intended use with respect to mounting, spacing and creepage paths. The housing must be suitable for operating temperature ranges of -20 °C to min. 52 °C (US) and 0 °C to min. 52 °C (Canada).

It must be fully wired inside the housing. The cables and terminals used must be US-listed or (if applicable) CSA certified. They must be designed for the nominal voltage, the nominal current and operating temperature ranges of -20 °C to min. 52 °C (US) and 0 °C to min. 52 °C (Canada).

Water and contaminants must be prevented from entering the unit.

ATEX and IECEx certified pump models 4492**22**

Wiring incl. earth conductor must be carried out using connection terminals and inside a housing which meets the requirements under EN/IEC 60947-7-1, 60947-7-2, or 60999-1 (if applicable) or is approved for the nominal voltage, nominal current and the operating temperature of 0 °C to at least 52 °C and is Ex e certified.

The earth conductor wiring must meet the earth conductor requirements per EN 60079-0 /IEC 60079-0.

The equipment must be installed in a lockable housing. The housing must have a minimum degree of protection of IP54 and meet the requirements under EN 60079-0 (IEC 60079-0) or be Ex e certified. The housing must require a tool to open. Install according to the installation requirements of IEC/EN 60079-14.

The housing must further meet the requirements of the overall installation with respect to the housing, layout, space requirement and condensate separation. The housing must be suitable for operating temperatures of 0 °C to min. 52 °C.

Water and contaminants must be prevented from entering the unit.

4.2 Mounting

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.

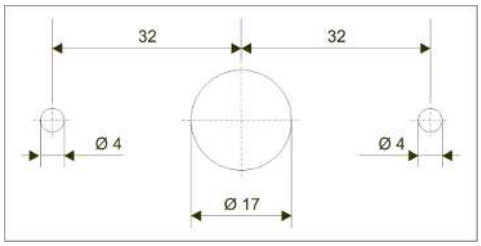
There are two holes at the bottom of the mounting bracket. These can be used for screws.

Connect the tubes to the connectors and assure they are tight. The pump direction is given on the cover.

4.2.1 Installing the built-in version

The built-in version (without housing) of the CPsingle is delivered pre-assembled. Proceed as follows to install:

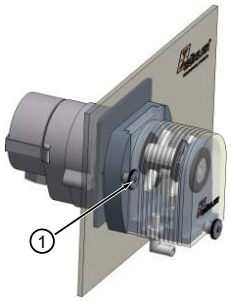
Prepare the mounting plate for the pump. The locations of the bores are indicated in the adjacent drawing. The mounting plate must not be thicker than 3 mm.



Remove the knurled nuts M3 (1) at both ends.

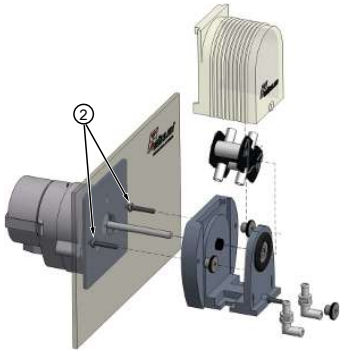
Pull the entire pump head off the gear axle with a slight back and forth motion.

You will see two hex nuts M3 (2).



Remove the two hex nuts and insert the drive motor including retaining plate and pressfit stubs into the prepared coupler from the back.

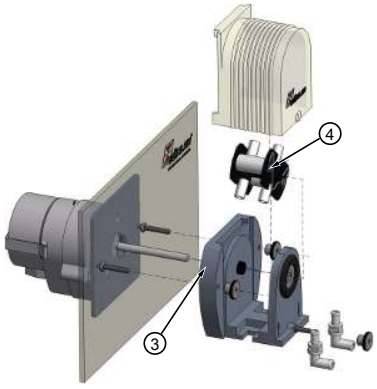
Tighten the hex nuts M3.



Attach the pump head bracket (3) to the gear axle.

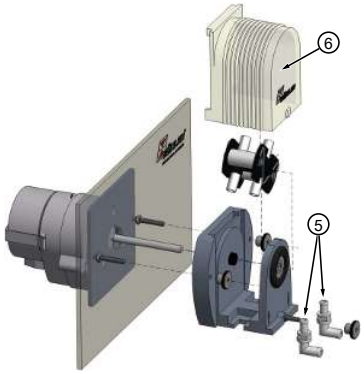
Insert the rotor (4) – cylindrical neck forward - into the pump head bracket, now slide the entire assembly onto the gear axle and the retaining bolts.

Tighten (1) knurled nuts.



Insert the hose fitting (5) with hose into the square breakouts.

Finally, attach the hood (6) and secure with the knurled nut.



4.3 Electrical connections

4.3.1 Electrical Connections (housing version / 115 V or 230 V)

Make sure that mains voltage and frequency meet the specifications of the motor (voltage tolerance ± 5 % and frequency tolerance ± 2%.)

Peristaltic pumps of housing version type SA-AC (230/115 V) are delivered as standard with a 2 m connecting cable.

The fixed connection cable for the housing version has three numbered braids and one PE connection.

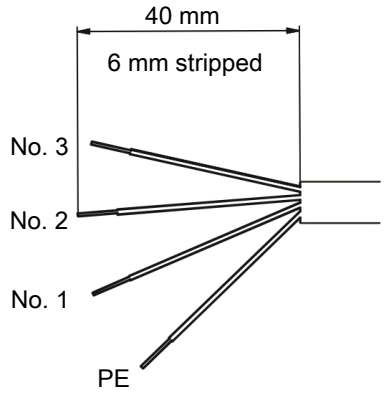
⏚ The protective earth conductor must be connected to the yellow/green wire of the connection cable.

Select mains and protective earthing cross-sections according to the rated current.

For the electrical connections especially for the protective conductor use a cable cross-section from minimum 0,5 mm^2.

Obey differing specifications on the type plate. The conditions at the installation site must meet all specifications on the type plate.

When connecting to a 115 V or 230 V supply, connect the following braids:



Power supply	Connection		Remark
115 V	Braid 2; 3 and PE	DANGER	Braid 1 is live and must be professionally insulated!
230 V	Braids 1; 3 and PE	DANGER	Braid 2 is live and must be professionally insulated!

4.3.2 Electrical Connections (built-in version / 115 V or 230 V)

The three strands (500 mm long) moulded to the motor are white, yellow and blue.

When connecting to a 115 V or 230 V supply, connect the following braids:

Power supply	Connection		Remark
115 V	white and blue	DANGER	The yellow strand is live and must be professionally insulated!
230 V	yellow and blue	DANGER	The white strand is live and must be professionally insulated!

5 Operation and control

NOTICE

The device must not be operated beyond its specifications.

The pump does not have a power switch. It starts running as soon as the power supply is turned on.

NOTICE

Installing peristaltic **pumps** CPsingle / CPdouble limits the maximum permissible **operating pressure** in the system!
Operating pressure ≤ 1 bar

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.
- When performing maintenance of any type, observe the respective safety and operation regulations.

DANGER

Electrical voltage

Electrocution hazard.

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

Toxic, corrosive condensate

Protect yourself from toxic, corrosive condensate when performing any type of work. Wear appropriate protective equipment.

The hose inside the pumps is a wear item and must regularly be checked for leaks. Replace as described in chapter "Replacing the hose".

7 Service and repair

This chapter contains information on troubleshooting and correction should an error occur during operation.

Repairs to the unit must be performed by Bühler authorised personnel.

Please contact our Service Department with any questions:

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

If the equipment is not functioning properly after correcting any malfunctions and switching on the power, it must be inspected by the manufacturer. Please send the equipment inside suitable packaging to:

Bühler Technologies GmbH

- Reparatur/Service -

Harkortstraße 29

40880 Ratingen

Germany

Please also attach the completed and signed RMA decontamination statement to the packaging. We will otherwise be unable to process your repair order.

You will find the form in the appendix of these instructions, or simply request it by e-mail:

service@buehler-technologies.com.

7.1 Safety instructions

- The device must be operated within its specifications.
- All repairs must be carried out by Bühler authorised personnel only.
- Only perform modifications, servicing or mounting described in this manual.
- Only use original spare parts.

DANGER	**Electrical voltage**	
	Electrocution hazard. 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	**Toxic, corrosive condensate**	
 	Protect yourself from toxic, corrosive condensate when performing any type of work. Wear appropriate protective equipment.	 

7.2 Replacing the hose

NOTICE	**Never grease the pump hose!**
	Check all parts for contamination prior to assembly and clean with a damp cloth as necessary.

- Close gas supply.
- Switch off device and disconnect all plugs (e.g. connector plug alarm output, supply input, etc.).
- Disconnect supply and discharge tube on peristaltic pump (**observe safety notes!**).
- Loosen but do not remove centre knurled nut. Flip down the screw.
- Pull cover up and off.
- Unplug external connections and remove hose.
- Replace hose (Bühler spare part) and install peristaltic pump in reverse order.
- Restore the power and gas supply.

7.3 Spare parts and accessories

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

Upgrade and expansion parts can be found in our catalog.

Available spare parts:

7.3.1 Replacement Tubes Ordering Instructions

4492	0	0	3	5	X	X	X	Product Characteristic
								Output per litre*
					0			0.3 L/h
					2			13 ml/h or 61 ml/h
								Hose material
						1		Tygon (Norprene)
						2		Fluran
						3		Marprene
								Hose connection
							1	straight hose nipple
							2	angled hose nipple
							3	straight and angled hose nipple
							4	Screw connection (metric)
							5	Screw-in connection (US)
							6	angled hose nipple and screw connection (metric)
							7	angled hose nipple and screw connection (US)
							8	straight hose nipple and screw connection (metric)
							9	straight hose nipple and screw connection (US)

*see technical data for required power output.

Information about hose materials

The standard hose in Norprene has excellent mechanical properties with high chemical resistance to many substances.

Marprene offers a long life for many applications with high chemical resistance, particularly when oxidation agents are present. This is therefore the first alternative to the standard Norprene hose.

Fluran is particularly beneficial if the condensate contains oils, petrols and other solvents. The mechanical properties should rather be assessed weaker, so we only recommend this hose material for the specified chemicals.

The flow capacity of Fluran and Marprene hoses is slightly lower.

Other materials are available on request.

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

The crossed out wheelie 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
WEEE
Harkortstr. 29
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

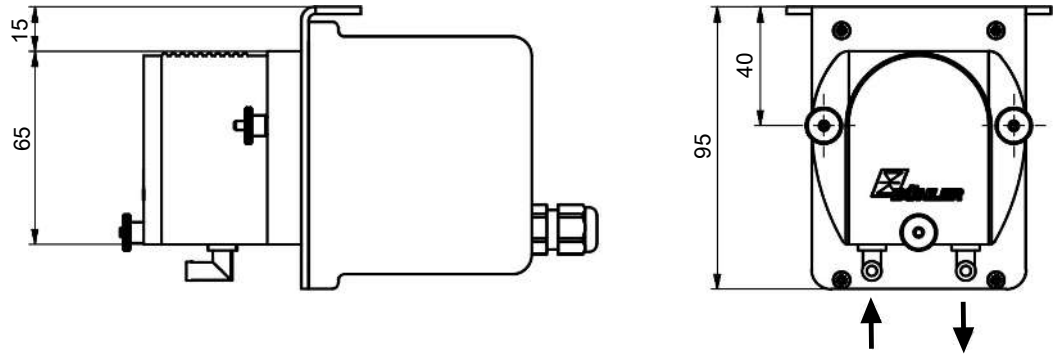
9.1 Technical data

Technical data peristaltic pumps CPsingle X2/CPdouble X2

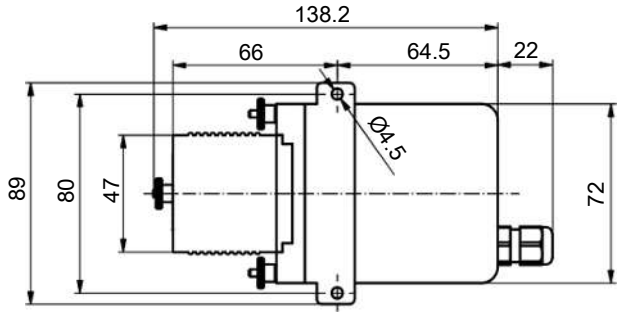
Supply voltage/power input: at T_{amb} = 20 °C and under load	230 V 50/60 Hz, 0.028 A 115 V 50/60 Hz, 0.046 A	
Flow rate:	0.3 L/h (50 Hz)/0.36 L/h (60 Hz) with standard hose 13 ml/h (50 Hz)/15 ml/h (60 Hz) 61 ml/h (50 Hz)/73 ml/h (60 Hz)	
Inlet vacuum:	max. 0.8 bar	
Inlet pressure:	max. 1 bar	
Outlet pressure:	1 bar	
Weight:	CPsingle-SA: 0.7 kg CPsingle-OEM: 0.47 kg	CPdouble-SA: 0.74 kg CPdouble-OEM: 0.51 kg
Protection class:	IP 44 (housing version) IP 40 (built-in version)	
Ambient temperatures:	T_{amb} = 0 ... 50 °C	
Cable lengths:	2 m (housing version 115/230 V) 500 mm (Built-in version 115/230 V)	
Parts in Contact with Mediums Hose: Connections:	 Tygon (Norprene) (Standard), Marprene, Fluran PVDF	
Markings:	FM16ATEX0030X II 3G Ex nA IIC T4 Gc IECEx FMG 16.0018X Ex nA IIC T4 Gc USA/Canada: CL.1/Div. 2 Gps: A,B,C,D T4	

9.2 Dimensions 115 / 230 V

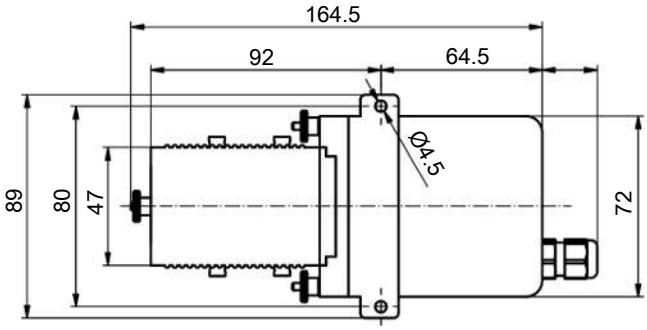
Housing version



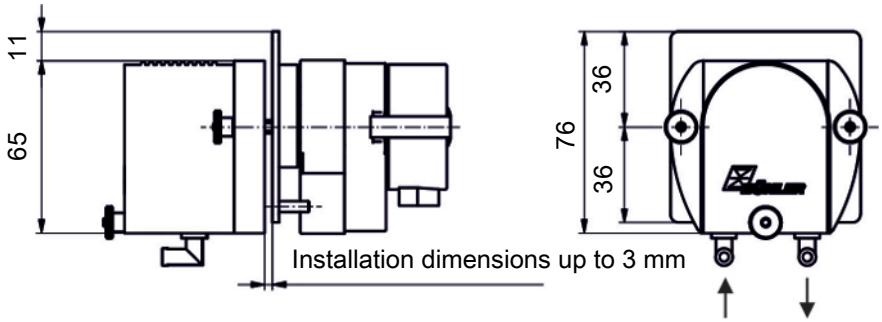
Housing version with 1 gas path



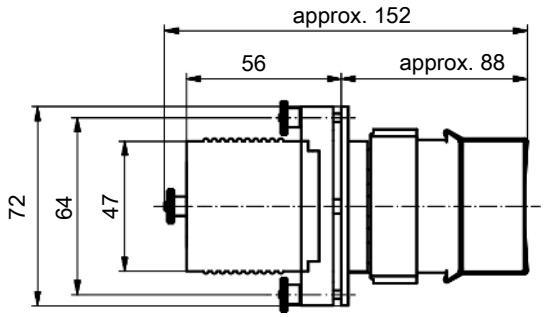
Housing version with 2 gas paths



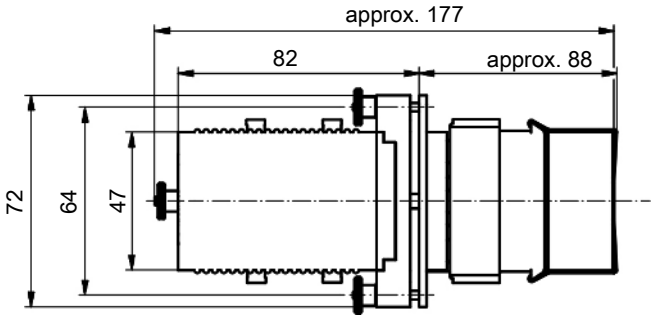
Built-in versions



Built-in version with 1 gas path



Built-in version with 2 gas paths



(All dimensions in mm)

10 Attached documents

- Declaration of Conformity KX 450015
- Certificates: FM16ATEX0030X; FM16CA0040X; FM16US0070X
- RMA - Decontamination Statement

EU-Konformitätserklärung
EU-declaration of conformity

Hiermit erklärt Bühler Technologies GmbH, dass die nachfolgenden Produkte „Geräte" im Sinne der Richtlinie

Herewith declares Bühler Technologies GmbH that the following products are "equipment" according to Directive

2014/34/EU
(ATEX)

In ihrer aktuellen Fassung sind.

in its actual version.

Folgende Richtlinien wurden berücksichtigt:

The following directives were regarded:

2014/35/EU (NSR/LVD)
2014/30/EU (EMV/EMC)

Produkt / products:	Peristaltikpumpe / Peristaltic pump
Typ / type:	CPsingle, CPdouble
Seriennummer / serial number:	4492XXX2X (X = 0-9)

Die Produkte werden entsprechend der derzeitig 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:

Ⓔx II 3G Ex h IIC T4 Gc X	Kennzeichnung unter Berücksichtigung des nicht-elektrischen Explosionsschutzes *Marking, taking into account non-electrical explosion protection*
Ⓔx II 3 G Ex nA IIC T4 Gc	Kennzeichnung unter Berücksichtigung des elektrischen Explosionsschutzes *Marking, taking into account electrical explosion protection*

Zur Beurteilung der Konformität gemäß Atex-Richtlinie wurden folgende harmonisierte Normen herangezogen:
For the assessment of conformity according to the Atex directive the following standards have been used:

EN IEC 60079-0:2018 **EN 60079-15:2010** **EN ISO 80079-36:2016**

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

Ratingen, den 23.02.2022

Stefan Eschweiler
Geschäftsführer – *Managing Director*

Frank Pospiech
Geschäftsführer – *Managing Director*

Bühler Technologies GmbH, Harkortstr. 29, D-40880 Ratingen,
Tel. +49 (0) 21 02 / 49 89-0, Fax. +49 (0) 21 02 / 49 89-20
Internet: www.buehler-technologies.com

1 TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3	**Type Examination Certificate No:**	**FM16ATEX0030X**
4	**Equipment or protective system: (Type Reference and Name)**	**Model 4492 CPsingle and CPdouble Condensate Pumps**
5	**Name of Applicant:**	**Bühler Technologies GmbH**
6	**Address of Applicant:**	**Harkortstrasse 29, Ratingen, DE-40880, Germany**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Ltd. certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3058168 dated 24th August 2016

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0: 2012 + A11: 2013, EN 60079-15: 2010

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

11 This Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:

II 3 G Ex nA IIC T4 Ta = 0°C to 50°C Gc

cn=Mick Gower, o=FM Approvals, ou, email=mick.gower@fmapprovals.com, c=GB
2016.09.01 14:44:01 +01'00'

Mick Gower
Certification Manager, FM Approvals Ltd.

Issue date: 01st September 2016

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

SCHEDULE

to Type Examination Certificate No. FM16ATEX0030X

13 **Description of Equipment or Protective System:**

General – The 4492 CPsingle and CPdouble peristaltic pumps are intended to discharge condensate from gas analysis systems in commercial applications. The pumps consist of a pump head and drive motor and operate on the peristaltic principle. The output axle of the gear motor turns a rotor on which two diametrically arranged rollers press a hose against a dimensionally adapted hood and the continuous rotation displaces the contents of the hose in the direction of rotation. The constructive selection of rotor speed and hose diameter also allow minimal or larger amounts to be conveyed, depending on the viscosity of the medium to be pumped.

Construction - The pumps are provided with flying leads. As their physical configuration is not compatible with Zone 2 wiring methods, installation within a suitable final enclosure is required.

Ratings - The 4492 CPsingle and CPdouble peristaltic pumps operate at 115 Vac or 230 Vac, selectable by the installer's wiring configuration. The pumps are rated for use in an ambient temperature range of 0°C to +50°C.

4492abcdefg, CPsingle and CPdouble condensate pumps
NI/I/2/ABCD/T4 0°C < Ta < 50°C

a = Condensate path; 1 or 2
b = Building version; 1 or 2
c = Voltage; 2
d = Application area; 2
e = Hose material; 1, 2 or 3
f = Liters/hour; 0, 1, 2 or 3
g = Hose connections; 1, 2, 3, 4, 5, 6, 7, 8 or 9

14 **Specific Conditions of Use:**

1. The equipment shall be installed within a tool-secured enclosure providing a minimum degree of ingress protection of IP54 and meeting the requirements of EN 60079-0 or certified as Ex e and in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application. The enclosure shall be rated for the service temperature range of 0°C to 52°C.

2. Wiring, including the earth conductor, shall be terminated within the enclosure using terminals meeting EN 60947-7-1, 60947-7-2, or 60999-1, as applicable, or certified as Ex e and rated for the marked supply voltage, load current and service temperature range of 0°C to 52°C.

3. The earthing scheme shall be constructed in accordance with the earthing requirements of EN 60079-0.

15 **Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

SCHEDULE

to Type Examination Certificate No. FM16ATEX0030X

16 **Test and Assessment Procedure and Conditions:**

This Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by FM Approvals Ltd.

18 **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
01st September 2016	Original Issue.

FM Approvals Ltd. 1 Windsor Dials, Windsor, Berkshire, UK. SL4 1RS
T: +44 (0) 1753 750 000 F: +44 (0) 1753 868 700 E-mail: atex@fmapprovals.com www.fmapprovals.com

1 TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3	**Type Examination Certificate No:**	**FM16ATEX0030X**
4	**Equipment or protective system: (Type Reference and Name)**	**Model 4492 CPsingle and CPdouble Condensate Pumps**
5	**Name of Applicant:**	**Bühler Technologies GmbH**
6	**Address of Applicant:**	**Harkortstrasse 29, Ratingen, DE-40880, Germany**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Ltd. certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3058168 dated 24th August 2016

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0: 2012 + A11: 2013, EN 60079-15: 2010

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

11 This Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:

II 3 G Ex nA IIC T4 Ta = 0°C to 50°C Gc

cn=Mick Gower, o=FM Approvals, ou, email=mick.gower@fmapprovals.com, c=GB
2016.10.28 15:54:24 +01'00'

Mick Gower
Certification Manager, FM Approvals Ltd.

Issue date: 28th October 2016

FM Approvals Ltd. 1 Windsor Dials, Windsor, Berkshire, UK. SL4 1RS
T: +44 (0) 1753 750 000 F: +44 (0) 1753 868 700 E-mail: atex@fmapprovals.com www.fmapprovals.com

SCHEDULE

to Type Examination Certificate No. FM16ATEX0030X

13 **Description of Equipment or Protective System:**

General – The 4492 CPsingle and CPdouble peristaltic pumps are intended to discharge condensate from gas analysis systems in commercial applications. The pumps consist of a pump head and drive motor and operate on the peristaltic principle. The output axle of the gear motor turns a rotor on which two diametrically arranged rollers press a hose against a dimensionally adapted hood and the continuous rotation displaces the contents of the hose in the direction of rotation. The constructive selection of rotor speed and hose diameter also allow minimal or larger amounts to be conveyed, depending on the viscosity of the medium to be pumped.

Construction - The pumps are provided with flying leads. As their physical configuration is not compatible with Zone 2 wiring methods, installation within a suitable final enclosure is required.

Ratings - The 4492 CPsingle and CPdouble peristaltic pumps operate at 115 Vac or 230 Vac, selectable by the installer's wiring configuration. The pumps are rated for use in an ambient temperature range of 0°C to +50°C.

4492abcdefg, CPsingle and CPdouble condensate pumps
NI/I/2/ABCD/T4 0°C < Ta < 50°C

a = Condensate path; 1 or 2
b = Building version; 1 or 2
c = Voltage; 2
d = Application area; 2
e = Hose material; 1, 2 or 3
f = Liters/hour; 0, 1, 2 or 3
g = Hose connections; 1, 2, 3, 4, 5, 6, 7, 8 or 9

14 **Specific Conditions of Use:**

1. The equipment shall be installed within a tool-secured enclosure providing a minimum degree of ingress protection of IP54 and meeting the requirements of EN 60079-0 or certified as Ex e and in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application. The enclosure shall be rated for the service temperature range of 0°C to 52°C.

2. Wiring, including the earth conductor, shall be terminated within the enclosure using terminals meeting EN 60947-7-1, 60947-7-2, or 60999-1, as applicable, or certified as Ex e and rated for the marked supply voltage, load current and service temperature range of 0°C to 52°C.

3. The earthing scheme shall be constructed in accordance with the earthing requirements of EN 60079-0.

15 **Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

FM Approvals Ltd. 1 Windsor Dials, Windsor, Berkshire, UK. SL4 1RS
T: +44 (0) 1753 750 000 F: +44 (0) 1753 868 700 E-mail: atex@fmapprovals.com www.fmapprovals.com

SCHEDULE

to Type Examination Certificate No. FM16ATEX0030X

16 **Test and Assessment Procedure and Conditions:**

This Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by FM Approvals Ltd.

18 **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
01st September 2016	Original Issue.
28th October 2016	Supplement 1: Report Reference: RR207007 dated 25th October 2016 Description of the Change: Minor revisions to instructions not impacting certification

FM Approvals Ltd. 1 Windsor Dials, Windsor, Berkshire, UK. SL4 1RS
T: +44 (0) 1753 750 000 F: +44 (0) 1753 868 700 E-mail: atex@fmapprovals.com www.fmapprovals.com

1 TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3	**Type Examination Certificate No:**	**FM16ATEX0030X**
4	**Equipment or protective system: (Type Reference and Name)**	**Model 4492 CPsingle and CPdouble Condensate Pumps**
5	**Name of Applicant:**	**Bühler Technologies GmbH**
6	**Address of Applicant:**	**Harkortstrasse 29, Ratingen, DE-40880, Germany**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Ltd. certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3058168 dated 24th August 2016

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0: 2012 + A11: 2013, EN 60079-15: 2010

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

11 This Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:

II 3 G Ex nA IIC T4 Ta = 0°C to 50°C Gc

cn=Mick Gower, o=FM Approvals, ou, email=mick.gower@fmapprovals.com, c=GB
2017.01.18 13:16:19 Z

Mick Gower
Certification Manager, FM Approvals Ltd.

Issue date: 18th January 2017

FM Approvals Ltd. 1 Windsor Dials, Windsor, Berkshire, UK. SL4 1RS
T: +44 (0) 1753 750 000 F: +44 (0) 1753 868 700 E-mail: atex@fmapprovals.com www.fmapprovals.com

SCHEDULE

to Type Examination Certificate No. FM16ATEX0030X

13 **Description of Equipment or Protective System:**

General – The 4492 CPsingle and CPdouble peristaltic pumps are intended to discharge condensate from gas analysis systems in commercial applications. The pumps consist of a pump head and drive motor and operate on the peristaltic principle. The output axle of the gear motor turns a rotor on which two diametrically arranged rollers press a hose against a dimensionally adapted hood and the continuous rotation displaces the contents of the hose in the direction of rotation. The constructive selection of rotor speed and hose diameter also allow minimal or larger amounts to be conveyed, depending on the viscosity of the medium to be pumped.

Construction - The pumps are provided with flying leads. As their physical configuration is not compatible with Zone 2 wiring methods, installation within a suitable final enclosure is required.

Ratings - The 4492 CPsingle and CPdouble peristaltic pumps operate at 115 Vac or 230 Vac, selectable by the installer's wiring configuration. The pumps are rated for use in an ambient temperature range of 0°C to +50°C.

4492abcdefg, CPsingle and CPdouble condensate pumps
NI/I/2/ABCD/T4 0°C < Ta < 50°C

a = Condensate path; 1 or 2
b = Building version; 1 or 2
c = Voltage; 2
d = Application area; 2
e = Hose material; 1, 2 or 3
f = Liters/hour; 0, 1, 2 or 3
g = Hose connections; 1, 2, 3, 4, 5, 6, 7, 8 or 9

14 **Specific Conditions of Use:**

1. The equipment shall be installed within a tool-secured enclosure providing a minimum degree of ingress protection of IP54 and meeting the requirements of EN 60079-0 or certified as Ex e and in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application. The enclosure shall be rated for the service temperature range of 0°C to 52°C.

2. Wiring, including the earth conductor, shall be terminated within the enclosure using terminals meeting EN 60947-7-1, 60947-7-2, or 60999-1, as applicable, or certified as Ex e and rated for the marked supply voltage, load current and service temperature range of 0°C to 52°C.

3. The earthing scheme shall be constructed in accordance with the earthing requirements of EN 60079-0.

15 **Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

SCHEDULE

to Type Examination Certificate No. FM16ATEX0030X

16 **Test and Assessment Procedure and Conditions:**

This Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by FM Approvals Ltd.

18 **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
01st September 2016	Original Issue.
28th October 2016	Supplement 1: Report Reference: RR207007 dated 25th October 2016 Description of the Change: Minor revisions to instructions not impacting certification
18th January 2017	Supplement 2: Report Reference: RR208001 dated 15th January 2017 Description of the Change: Unique instruction manual number created for 'Ex' pump variants. Marking label revised.

1 # TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3	**Type Examination Certificate No:**	**FM16ATEX0030X**
4	**Equipment or protective system: (Type Reference and Name)**	**Model 4492 CPsingle and CPdouble Condensate Pumps**
5	**Name of Applicant:**	**Bühler Technologies GmbH**
6	**Address of Applicant:**	**Harkortstrasse 29, Ratingen, DE-40880, Germany**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Europe Ltd. certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3058168 dated 24th August 2016

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0:2012+A11:2013 and EN 60079-15:2010

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

11 This Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:

II 3 G Ex nA IIC T4 Ta = 0°C to +50°C Gc

Digitally signed by Damien Mc Ardle
DN: cn=Damien Mc Ardle, o=FM Approvals, ou=FM Approvals Europe Ltd, email=damien.mcardle@fmapprovals.com, c=IE
Date: 2019.04.12 13:33:19 +01'00'

Damien Mc Ardle
Certification Manager, FM Approvals Europe Ltd.

Issue date: 12th April 2019

SCHEDULE

to Type Examination Certificate No. FM16ATEX0030X

13 **Description of Equipment or Protective System:**

General – The 4492 CPsingle and CPdouble peristaltic pumps are intended to discharge condensate from gas analysis systems in commercial applications. The pumps consist of a pump head and drive motor and operate on the peristaltic principle. The output axle of the gear motor turns a rotor on which two diametrically arranged rollers press a hose against a dimensionally adapted hood and the continuous rotation displaces the contents of the hose in the direction of rotation. The constructive selection of rotor speed and hose diameter also allow minimal or larger amounts to be conveyed, depending on the viscosity of the medium to be pumped.

Construction - The pumps are provided with flying leads. As their physical configuration is not compatible with Zone 2 wiring methods, installation within a suitable final enclosure is required.

Ratings - The 4492 CPsingle and CPdouble peristaltic pumps operate at 115 Vac or 230 Vac, selectable by the installer's wiring configuration. The pumps are rated for use in an ambient temperature range of 0°C to +50°C.

4492abcdefg, CPsingle and CPdouble condensate pumps
NI/I/2/ABCD/T4 0°C < Ta < +50°C

a = Condensate path; 1 or 2
b = Building version; 1 or 2
c = Voltage; 2
d = Application area; 2
e = Hose material; 1, 2 or 3
f = Liters/hour; 0, 1, 2 or 3
g = Hose connections; 1, 2, 3, 4, 5, 6, 7, 8 or 9

14 **Specific Conditions of Use:**

1. The equipment shall be installed within a tool-secured enclosure providing a minimum degree of ingress protection of IP54 and meeting the requirements of EN 60079-0 or certified as Ex e and in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application. The enclosure shall be rated for the service temperature range of 0°C to +52°C.

2. Wiring, including the earth conductor, shall be terminated within the enclosure using terminals meeting EN 60947-7-1, 60947-7-2, or 60999-1, as applicable, or certified as Ex e and rated for the marked supply voltage, load current and service temperature range of 0°C to +52°C.

3. The earthing scheme shall be constructed in accordance with the earthing requirements of EN 60079-0.

15 **Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

SCHEDULE

to Type Examination Certificate No. FM16ATEX0030X

16 **Test and Assessment Procedure and Conditions:**

This Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by FM Approvals Europe Ltd.

18 **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
01st September 2016	Original Issue.
28th October 2016	Supplement 1: Report Reference: RR207007 dated 25th October 2016 Description of the Change: Minor revisions to instructions not impacting certification
18th January 2017	Supplement 2: Report Reference: RR208001 dated 15th January 2017 Description of the Change: Unique instruction manual number created for 'Ex' pump variants. Marking label revised.
12th April 2019	Supplement 3: Description of the Change: Certificate transferred from FM Approvals Ltd., notified body no. 1725, to FM Approvals Europe Ltd., notified body no. 2809.

FM Approvals Europe Ltd. One Georges Quay Plaza, Dublin. Ireland. D02 E440
T: +353 (0) 1761 4200 E-mail: atex@fmapprovals.com www.fmapprovals.com

1 TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3	**Type Examination Certificate No:**	**FM16ATEX0030X**
4	**Equipment or protective system: (Type Reference and Name)**	**Model 4492 CPsingle and CPdouble Condensate Pumps**
5	**Name of Applicant:**	**Bühler Technologies GmbH**
6	**Address of Applicant:**	**Harkortstrasse 29, Ratingen, DE-40880, Germany**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Europe Ltd. certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3058168 dated 24th August 2016

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN IEC 60079-0:2018 and EN 60079-15:2010

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

11 This Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:

II 3 G Ex nA IIC T4 Gc Ta = 0°C to +50°C

Digitally signed by Richard Zammitt
Foxit PhantomPDF Version: 10.1.5

Richard Zammitt
Certification Manager, FM Approvals Europe Ltd.

Issue date: 21st February 2022

FM Approvals Europe Ltd. One Georges Quay Plaza, Dublin. Ireland. D02 E440
T: +353 (0) 1761 4200 E-mail: atex@fmapprovals.com www.fmapprovals.com

SCHEDULE

to Type Examination Certificate No. FM16ATEX0030X

13 **Description of Equipment or Protective System:**

General – The 4492 CPsingle and CPdouble peristaltic pumps are intended to discharge condensate from gas analysis systems in commercial applications. The pumps consist of a pump head and drive motor and operate on the peristaltic principle. The output axle of the gear motor turns a rotor on which two diametrically arranged rollers press a hose against a dimensionally adapted hood and the continuous rotation displaces the contents of the hose in the direction of rotation. The constructive selection of rotor speed and hose diameter also allow minimal or larger amounts to be conveyed, depending on the viscosity of the medium to be pumped.

Construction - The pumps are provided with flying leads. As their physical configuration is not compatible with Zone 2 wiring methods, installation within a suitable final enclosure is required.

Ratings - The 4492 CPsingle and CPdouble peristaltic pumps operate at 115 Vac or 230 Vac, selectable by the installer's wiring configuration. The pumps are rated for use in an ambient temperature range of 0°C to +50°C.

4492abcdefg, CPsingle and CPdouble condensate pumps
II 3 G Ex nA IIC T4 Gc Ta = 0°C to +50°C

a = Condensate path; 1 or 2
b = Building version; 1 or 2
c = Voltage; 2
d = Application area; 2
e = Hose material; 1, 2 or 3
f = Liters/hour; 0, 1, 2 or 3
g = Hose connections; 1, 2, 3, 4, 5, 6, 7, 8 or 9

14 **Specific Conditions of Use:**

1. The equipment shall be installed within a tool-secured enclosure providing a minimum degree of ingress protection of IP54 and meeting the requirements of EN 60079-0 or certified as Ex e and in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application. The enclosure shall be rated for the service temperature range of 0°C to +52°C.

2. Wiring, including the earth conductor, shall be terminated within the enclosure using terminals meeting EN 60947-7-1, 60947-7-2, or 60999-1, as applicable, or certified as Ex e and rated for the marked supply voltage, load current and service temperature range of 0°C to +52°C.

3. The earthing scheme shall be constructed in accordance with the earthing requirements of EN 60079-0.

15 **Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

SCHEDULE

to Type Examination Certificate No. FM16ATEX0030X

16 **Test and Assessment Procedure and Conditions:**

This Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by FM Approvals Europe Ltd.

18 **Certificate History**

Details of the supplements to this certificate are described below:

Date	**Description**
01st September 2016	Original Issue.
28th October 2016	Supplement 1: Report Reference: RR207007 dated 25th October 2016 Description of the Change: Minor revisions to instructions not impacting certification
18th January 2017	Supplement 2: Report Reference: RR208001 dated 15th January 2017 Description of the Change: Unique instruction manual number created for 'Ex' pump variants. Marking label revised.
12th April 2019	Supplement 3: Description of the Change: Certificate transferred from FM Approvals Ltd., notified body no. 1725, to FM Approvals Europe Ltd., notified body no. 2809.
21st February 2022	Supplement 4: Report Reference: RR231317 dated 18th February 2022. Description of the Change: 1) EN 60079-0:2012+A1:2013 updated to EN IEC 60079-0:2018 2) Documents update.

CERTIFICATE OF CONFORMITY

1. **HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**
2. **Certificate No:** **FM16CA0040X**
3. **Equipment: (Type Reference and Name)** **Model 4492 CPsingle and CPdouble Condensate Pumps**
4. **Name of Listing Company:** **Bühler Technologies GmbH**
5. **Address of Listing Company:** **Harkortstrasse 29, DE-40880, Ratingen, Germany**

6. The examination and test results are recorded in confidential report number:

   3058168 dated 24th August 2016

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

   CSA-C22.2 No. 213: R2013, CAN/CSA-C22.2 No. 61010-1:2004

8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
10. Equipment Ratings:

    Class I, Division 2, Groups A, B, C and D, T4 hazardous (classified) locations with an ambient temperature rating of 0°C to +50°C

11. The marking of the equipment shall include:

Certificate issued by:

J. E. Marquedant
Manager, Electrical Systems

24 August 2016
Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

SCHEDULE

Canadian Certificate Of Conformity No: FM16CA0040X

Class I Division 2, Groups A, B, C, D; T4 Ta = 0°C to +50°C

12. **Description of Equipment:**

General – The 4492 CPsingle and CPdouble peristaltic pumps are intended to discharge condensate from gas analysis systems in commercial applications. The pumps consist of a pump head and drive motor and operate on the peristaltic principle. The output axle of the gear motor turns a rotor on which two diametrically arranged rollers press a hose against a dimensionally adapted hood and the continuous rotation displaces the contents of the hose in the direction of rotation. The constructive selection of rotor speed and hose diameter also allow minimal or larger amounts to be conveyed, depending on the viscosity of the medium to be pumped.

Construction - The pumps are provided with flying leads. As their physical configuration is not compatible with Class I, Division 2 wiring methods, installation within a suitable final enclosure is required.

Ratings - The 4492 CPsingle and CPdouble peristaltic pumps operate at 115 Vac or 230 Vac, selectable by the installer's wiring configuration. The pumps are rated for use in an ambient temperature range of 0°C to +50°C.

4492abcdefg, CPsingle and CPdouble condensate pumps
NI/I/2/ABCD/T4 0°C < Ta < 50°C

a = Condensate path; 1 or 2
b = Building version; 1 or 2
c = Voltage; 2
d = Application area; 2
e = Hose material; 1, 2 or 3
f = Liters/hour; 0, 1, 2 or 3
g = Hose connections; 1, 2, 3, 4, 5, 6, 7, 8 or 9

13. **Specific Conditions of Use:**

1. The equipment shall be installed within a tool-secured enclosure in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application. The enclosure shall be rated for the service temperature range of 0°C to 52°C.

2. Wiring shall be terminated within the enclosure using Canadian-Certified terminal(s) rated for the marked supply voltage, load current and service temperature range of 0°C to 52°C.

14. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals Canadian Certification Scheme.

15. **Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

SCHEDULE

Canadian Certificate Of Conformity No: FM16CA0040X

16. **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
24th August 2016	Original Issue.

CERTIFICATE OF CONFORMITY

1. **HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**
2. **Certificate No:** **FM16CA0040X**
3. **Equipment:** **Model 4492 CPsingle and CPdouble Condensate Pumps**
   (Type Reference and Name)
4. **Name of Listing Company:** **Bühler Technologies GmbH**
5. **Address of Listing Company:** **Harkortstrasse 29, DE-40880, Ratingen, Germany**
6. The examination and test results are recorded in confidential report number:

   3058168 dated 24th August 2016
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

   CSA-C22.2 No. 213: 2017, CAN/CSA-C22.2 No. 61010-1:2004
8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
10. Equipment Ratings:

    Class I, Division 2, Groups A, B, C and D, T4 hazardous (classified) locations with an ambient temperature rating of 0°C to +50°C
11. The marking of the equipment shall include:

    Class I Division 2, Groups A, B, C, D; T4 Ta = 0°C to +50°C

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

18 February 2022
Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

SCHEDULE

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SCHEDULE

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Date	Description
24th August 2016	Original Issue.
18th February 2022	Supplement 1: Report Reference: RR231317 dated 18th February 2022. Description of the Change: 1) CSA-C22.2 No. 213: R2013 updated to CSA-C22.2 No. 213:2017

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
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CERTIFICATE OF CONFORMITY

1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** **FM16US0070X**
3. **Equipment:** **Model 4492 CPsingle and CPdouble Condensate Pumps**
   (Type Reference and Name)
4. **Name of Listing Company:** **Bühler Technologies GmbH**
5. **Address of Listing Company:** **Harkortstrasse 29, DE-40880, Ratingen, Germany**
6. The examination and test results are recorded in confidential report number:

   3058168 dated 24th August 2016
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

   FM Class 3600:2011, FM Class 3611:2004, FM Class 3810:2005
8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
10. Equipment Ratings:

    Nonincendive for Class I, Division 2, Groups A, B, C and D, T4 hazardous (classified) locations with an ambient temperature rating of 0°C to +50°C
11. The marking of the equipment shall include:

Certificate issued by:

J. E. Marquedant
Manager, Electrical Systems

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SCHEDULE

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Class I Division 2, Groups A, B, C, D; T4 Ta = 0°C to +50°C

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f = Liters/hour; 0, 1, 2 or 3
g = Hose connections; 1, 2, 3, 4, 5, 6, 7, 8 or 9

13. **Specific Conditions of Use:**

1. The equipment shall be installed within a tool-secured enclosure in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application. The enclosure shall be rated for a service temperature range of -20°C to 52°C.

2. Wiring shall be terminated within the enclosure using US-Listed terminal(s) rated for the marked supply voltage and load current and a service temperature range of -20°C to 52°C.

14. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

15. **Schedule Drawings**

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   FM Class 3600:2022, FM Class 3611:2021, FM Class 3810:2021
   ANSI/UL 121201:2019, ANSI/ISA 61010-1:2004
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24th August 2016	Original Issue.
18th February 2022	Supplement 1: Report Reference: RR231317 dated 18th February 2022. Description of the Change: 1) FM3600 updated to latest editon (2022) 2) FM3611 and FM3810 updated to latest edition (2021) 3) ANSI/UL 121201:2019 added to standards list 4) ANSI/ISA 61010-1:2004 added to standards list

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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	

Ansprechpartner/ Person in charge

Name/ Name	
Abt./ Dept.	
Tel./ Phone	
E-Mail	

Gerät/ Device	
Anzahl/ Quantity	
Auftragsnr./ Order No.	

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

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, Lebensgefahr/ poisonous, risk of death	☐ gesundheitsgefährdend/ harmful to health	☐ gesundheitsschädlich/ health hazard	☐ umweltgefährdend/ 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.

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.

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.

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

Firmenstempel/ Company Sign

Datum/ Date

rechtsverbindliche Unterschrift/ Legally binding signature

Bühler Technologies GmbH, Harkortstr. 29, D-40880 Ratingen
Tel. +49 (0) 21 02 / 49 89-0, Fax: +49 (0) 21 02 / 49 89-20
E-Mail: service@buehler-technologies.com
Internet: www.buehler-technologies.com

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.

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.

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 assembles 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.

Bühler Technologies GmbH, Harkortstr. 29, D-40880 Ratingen
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