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 BVS 19.0027X

Issue No: 0

Certificate history:
Issue No. 0 (2019-04-17)

Status: **Current**

Date of Issue: **2019-04-17**

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

Equipment: **Sample Gas Cooler type EGK 2A Ex**

Optional accessory:

Type of Protection: **Intrinsic Safety "i"; Protection by encapsulation "m"; Pressurized Enclosure "p"; Powder Filling "q"; Increased Safety "e"**

Marking:

Ex pxb eb mb q [ia] IIC T4 Gb

Approved for issue on behalf of the IECEx Certification Body: Jörg Koch

Position: Head of Certification Body

Signature:
(for printed version)

Date: 17.4.19

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.

Certificate issued by:

DEKRA Testing and Certification GmbH
Certification Body
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
On the safe side.

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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 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 : 2017 Edition:7.0	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-18 : 2017 Edition:4.1	Explosive atmospheres - Part 18: Protection by encapsulation "m"
IEC 60079-2 : 2014-07 Edition:6	Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure "p"
IEC 60079-5 : 2015 Edition:4.0	Explosive atmospheres –Part 5: Equipment protection by powder filling "q"
IEC 60079-7 : 2017 Edition:5.1	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*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/BVS/ExTR19.0024/00

Quality Assessment Report:

DE/BVS/QAR16.0002/02

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Description of the product

The Sample Gas Cooler is designated for cooling purposes of gas and consists of a metal rack fitted with an electrically operated cooler unit, a mechanical heat exchanger and an electrical control unit.
The cooler unit consists of a compressor type TL4G (including cooling circuit) designed in type of protection "Pressurized Enclosure", fitted with connection facilities designed in type of protection "increased Safety" for the permanently connected motor cable. A single starting capacitor for the AC 230 V compressor motor is mounted additionally according to the associated Ex-component certificate.
The AC 115 V compressor motor version needs three starting capacitors in parallel. The control unit type BR104Ex MC, which provides type of protection Ex eb mb [ia] IIC T4, consists of an enclosure designed in type of protection "increased Safety" containing an electronic module embedded in casting compound and fitted with terminals for the interconnection of the intrinsically safe and non-intrinsically safe circuits of the control unit. Operation- and indicator-facilities are mounted in the cover of the control unit enclosure and comprise of a display- and keyboard unit (4-digit LED-display and push buttons for programming purposes).
The starting capacitor(s) for the compressor motor in type of protection Powder Filling "q" is (are) subject to other IECEx certificates.

Listing of all components used referring to older standards

Subject and Type	Certificate	Standards
Housing of controller unit: Empty Enclosure type series 26.******	IECEx PTB 08.0003U Issue No. 4	IEC 60079-0:2011 IEC 60079-7:2015
Alternate housing of controller unit: BPG Range of Enclosures	IECEx SIR 06.0086U Issue No. 3	IEC 60079-0:2011 IEC 60079-7:2006 1)
Ex motor capacitor type series 27-***-***-**	IECEx SEV 17.0021X Issue No. 0	IEC 60079-0:2011 IEC 60079-5:2015
Terminal strips Wago type 236-501	IECEx PTB 06.0042U Issue No. 2	IEC 60079-0:2011 IEC 60079-5:2015
Cable gland type series HSK-K-Ex 1.292.****.**	IECEx BVS 14.0020X Issue No. 1	IEC 60079-0:2011 IEC 60079-7:2015
Alternate cable gland: type series: SKINTOP® MS-M** ATEX ****	IECEx IBE 13.0026X Issue No. 0	IEC 60079-0:2011 IEC 60079-7:2006

1) No applicable technical differences

Ratings

See Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Fuses providing a braking capacity of ≥ 1.5 kA and a suitable motor protection switch shall be inserted in the mains supply circuit of the Sample Gas Cooler.

2. A fuse (braking capacity ≥ 1.5 kA) providing a rated value adapted to the AC / DC switching parameters of the status relay contact shall be inserted in the status-relay-contact circuit (see parameters).

3. The special conditions for safe use listed in the associated certificate of the optionally applied starting capacitor(s) shall be taken into account.

Annex:

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Annex

Rating

1 Non intrinsically safe circuits

1.1 Mains power supply

Nominal voltage	AC 115 / 230 V (60 / 50 Hz)
Nominal current	2.5 / 1 A
Nominal power consumption	170 / 110 W
Motor protective switch adjusted to rated value	3.2 / 1.3 A

1.2 Status relay contact

Parameters	AC	DC	DC	DC	DC
Voltage	250 V	24 V	60 V	110 V	220 V
Current	5 A	5 A	1 A	0.4 A	0.3 A
Power	100 VA	100 W	-	-	-

2 Intrinsically safe control circuit

Circuit			
Parameters	PT100	4-digit LED display	switching contact / Button: Start 1 / 2 Test 1 / 2 Pressostat 1 / 2
Voltage U_o	7 V	7 V	7 V
Current I_o	≤ 5.5 mA	≤ 270 mA ≤ 1.4 A_s	≤ 40 mA

3 Minimum-pressure above atmospheric conditions 0.2 bar

4 Ambient temperature range -20 °C ≤ T_a ≤ +45 °C