



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 EPS 15.0037X

Issue No: 0

Certificate history:

Issue No. 0 (2015-09-30)

Status: **Current**

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Date of Issue: **2015-09-30**

Applicant: **Bachofen AG**
Ackerstrasse 42
8610 Uster
Switzerland

Equipment: **Trimod Besta Level Switch, Type X...**

Optional accessory:

Type of Protection: **"d", "e", "ia"**

Marking: Ex ia d IIC T6 Ga/Gb

Ex de IIC T6 Ga/Gb

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

Dieter Zitzmann

Position:

Certification manager

*Signature:
(for printed version)*

Date:

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:

Bureau Veritas Consumer Products Services Germany GmbH
Businesspark A96
86842 Türkheim
Germany





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Manufacturer: **Bachofen AG**
Ackerstrasse 42
8610 Uster
Switzerland

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 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2006 Edition:2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
IEC 60079-7 : 2006-07 Edition:4	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/EPS/ExTR15.0053/00](#)

Quality Assessment Report:

[DE/EPS/QAR12.0005/03](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The level switch Trimod Besta XA** (XA..., X2A..., X5A..., XU...A..., X5U...A...); XB** (XB..., X2B..., X5B..., XU...B..., X5U...B...); XI** (XI..., X2I..., X5I..., XIN..., X2IN..., X5IN..., XII..., X2II..., X5II..., XIE9..., X2IE9..., X5IE9..., XINE9..., X2INE9..., X5INE9..., XIIIE9..., X2IIIE9..., X5IIIE9...) are used for monitoring and controlling of the fluid level of a tank or basin in zone 0 or 1. The floater unit (SWM) is used in zone 0 area and the flange unit (FLM) is used as separation between zone 0 and 1. In Zone 1 there is the switching unit (SAM) with switching contact or sensor assembly protected by different types of protection for category 2.

Electrical data :see Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

see Annex

Annex:

[IECEX EPS 15.0037 X - Annex.pdf](#)



Annex to Certificate
IECEx EPS 15.0037 X Issue No.: 0
2015-09-16



Electrical data:

XA...: Supply-voltage: max. 250Vac/250Vdc

Switching current: max. 5Aac (ohmic) / 5Aac (inductive) or. 0,25Adc (ohmic) / 0,03Adc (inductive)

XB..., XI..., XIE9...: Only for connection to certified intrinsically safe circuits with maximum values:

Type XI... and XIE9...				Type XB...
Circuit Type 1	Circuit Type 2	Circuit Type 3	Circuit Type 4	
Ui = 16 V	Ui = 16 V	Ui = 16 V	Ui = 16 V	li = 0,5 A
li = 25 mA	li = 25 mA	li = 52 mA	li = 76 mA	Ci = 0
Pi = 34 mW	Pi = 64 mW	Pi = 169 mW	Pi = 242 mW	Li = 0

The types XI... and XIE9... are equipped with certified Initiators by Pepperl + Fuchs. The interrelation between connected circuit type, sensor type, the internal reactance, the temperature class and the maximum ambient temperature is shown in following table.

				Circuit Type 1			Circuit Type 2			Circuit Type 3			Circuit Type 4		
Type	Sensor	Ci [nF]	Li [μH]	Maximum ambient temperature in °C fur use in temperature class											
				T6	T5	T4-T1	T6	T5	T4-T1	T6	T5	T4-T1	T6	T5	T4-T1
XI...	NJ2-11-N	45	50	73	88	100	66	81	100	45	60	89	30	45	74
XIE9...	NJ2-11-SN	50	150	73	88	100	66	81	100	45	60	89	30	45	74



Special conditions for safe use:

Only the float and flange unit of the Trimod Besta level switch type X is allowed for use in hazardous location category 1. The float and flange module must be included in the regular pressure test of the Installation.

Maximum temperatures:

Typ	Temperature range of the medium	Ambient temperature range
XA...	-40°C to +330°C	-40°C to +80°C
XU...A ...	-30°C to +80°C	-30°C to +80°C
XI...	-30°C to +220°C	-30°C to +80°C
XIE9...	-50°C to +220°C	-40°C to +80°C
XB...	-40°C to +330°C	-40°C to +80°C
XU...B ...	-30°C to +80°C	-30°C to +80°C

The maximum temperature of the medium for FEP-coated float modules is 200°C.

If temperatures on cable glands are higher than +70°C or higher than +80°C at the branching conductor, then only a certified temperature resistant cable shall be connected.

For the installation of the level switch on basins with hot mediums it must be considered that the surface temperature of the flange module and switch module does not reach the maximum surface temperature defined in respective temperature class.

For level switches for vertical installation it must be assured that the floater guiding rod is secured against sideways moving.

For installation and attachment of components (for example junction boxes, bushings, cable glands or connection parts) only such components with separate certification are allowed which are certified for minimum same standards as shown on first page or which are technical conform with these standards. The respective special conditions stated in the component certificates must be considered.

The process pressure of the medium must be between 0,8 to 1,1bar for applications which require category 1/2 apparatus. If these values are deviated, the safe operation according to pressure and temperatures is in the responsibility of the operator.