IBExU Institut für Sicherheitstechnik GmbH

An-Institut der TU Bergakademie Freiberg

[1] EU-TYPE EXAMINATION CERTIFICATE - Translation

[2] Equipment or protective systems
intended for use in potentially explosive atmospheres, Directive 2014/34/EU

[3] EU-type examination certificate number **IBExU16ATEX1183 X** | Issue 1

[4] Product: **Level-switches**
Types: **NT 61-Z0-ATEX** and
NS 10/G2-2K-VA-ATEX-M12/xxx-SK221 / NS 10/G2-XK-VA-ATEX-M12/YYYY-VZZ

[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, Notified Body number 0637 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 the Directive.

The examination and test results are recorded in the confidential test report IB-17-3-0202.

[9] Compliance with the essential health and safety requirements has been assured by compliance with:
EN 60079-0:2012+A11:2013 EN 60079-11:2012
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 EU-type examination certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

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

NS 10/G2-2K-VA-ATEX-M12/xxx-SK221
NS 10/G2-XK-VA-ATEX-M12/YYYY-VZZ
II 1G Ex ia IIC T4 Ga
II 1D Ex ia IIIC T100 °C Da
$-20\ °C \leq T_a \leq +100\ °C$

NT 61-Z0-ATEX

II 1G Ex ia IIC T4 Ga
II 1D Ex ia IIIC T70 °C Da
$-20\ °C \leq T_a \leq +70\ °C$

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7
09599 Freiberg, GERMANY

Tel: + 49 (0) 37 31 / 38 05 0
Fax: + 49 (0) 37 31 / 38 05 10

By order

(Dipl.-Ing. [FH] Henker)

- Seal -
(Notified Body number 0637)

Certificates without signature and seal are not valid. Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.

Freiberg, 2018-01-19

[13] **Schedule**

[14] **Certificate number IBExU16ATEX1183 X** | Issue 1

[15] **Description of product**

The level-switches are used as remote tank level indicator. A stainless steel pipe is containing reed-switches. The pipe is surrounded by a floater who is equipped with a permanent magnet. That magnet acts to reed-switches that allow a control of tank level.
Additionally the level-switches may contain temperature-switches or PT100 resistance thermometer for temperature measurement.

Technical data

Ambient-temperature / operating pressure:		
NS 10/G2-2K-VA-ATEX-M12/xxx-SK221* and NS 10/G2-XK-VA-ATEX-M12/YYYY-VZZ	-20 °C to +100 °C	/ 10 bar
NT 61-Z0-ATEX	-20 °C to +70 °C	/ 1 bar

*xxx: indicates length of the immersion pipe in mm
*XK: indicates the number of temperature-switches (1K .. 2K)
*YYYY: length of immersion pipe in mm
*VZZ: indicates the variant-number (V1…V99)

Parameters of intrinsic safety:

Level-switch:

Ui	30 V
Ii	50 mA
Pi	100 mW
Ci, Li	negligible

Temperature switch:

Ui	30 V
Ii	50 mA
Pi	100 mW
Ci, Li	negligible

Resistance thermometer PT100:

Ui	30 V
Ii	50 mA
Pi	100 mW
Ci, Li	negligible

Alternative marking for resistance-thermometer PT100

Ui	9 V
Ii	22 mA
Li	negligible
Ci	negligible

Changes compared to the previous approval IBExU16ATEX1183 X (NS-10 only):

- The type designation or type key has been changed and additional placeholders have been added: the length identifier was changed from three digits to four digits and new three-digit variant designation was implemented.
- One or two contacts can be used both as normally closed and normally open contacts in any combination.
- The protective earth conductor (PE) can be connected either via the plug connector or via the screws to the earthed metal container.
- The seal to the container may be provided by the user.

[16] **Test report**
The test results are recorded in the confidential test report IB-17-3-0202 of 2018-01-19.

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

Summary of the test results
The level switches NT 61-Z0-ATEX and NS 10/G2-2K-VA-ATEX-M12/xxx-SK221 resp. NS 10/G2-XK-VA-ATEX-M12/YYYY-VZZ fulfil the requirements of explosion protection for electrical equipment of the Equipment Group II Category 1G and 1D in protection-type "ia" intrinsically save devices for explosion group IIC temperature class T4 and explosion group IIIC with surface-temperature 70 °C and 100 °C.

[17] **Specific conditions of use**
- The ambient temperature range is fixed from -20 °C to +70 °C (NT-61) or +100 °C (NS-10).
- See "Installation and Operating Instructions" for intrinsic safe values.

[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] Henker)

Freiberg, 2018-01-19

IBExU Institut für Sicherheitstechnik GmbH
An-Institut der TU Bergakademie Freiberg

[1] EU-TYPE EXAMINATION CERTIFICATE - Translation

[2] Equipment or protective systems
intended for use in potentially explosive atmospheres, Directive 2014/34/EU

[3] EU-type examination certificate number **IBExU16ATEX1183 X** | Issue 0

[4] Product: **Level-switches**
Types: **NT 61-Z0-ATEX** and **NS 10/G2-2K-VA-ATEX-M12/xxx-SK221**

[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, Notified Body number 0637 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 the Directive.

The examination and test results are recorded in the confidential test report IB-16-3-170 of 2017-07-14.

[9] Compliance with the essential health and safety requirements has been assured by compliance with:
EN 60079-0:2012+A11:2013 EN 60079-11:2012
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 EU-type examination certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

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

NS 10/G2-2K-VA-ATEX-M12/xxx-SK221
Ⓔx II 1G Ex ia IIC T4 Ga
Ⓔx II 1D Ex ia IIIC T100 °C Da
$-20\ °C \leq T_a \leq +100\ °C$

NT 61-Z0-ATEX
Ⓔx II 1G Ex ia IIC T4 Ga
Ⓔx II 1D Ex ia IIIC T70 °C Da
$-20\ °C \leq T_a \leq +70\ °C$

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By order

(Dipl.-Ing. [FH] Henker)

Zertifizierungsstelle Explosionsschutz IBExU Institut für Sicherheitstechnik GmbH Kenn-Nr. 0637
- Seal -
(Notified Body number 0637)

Tel: + 49 (0) 37 31 / 38 05 0
Fax: + 49 (0) 37 31 / 38 05 10

Freiberg, 2017-07-14

[13] **Schedule**

[14] **Certificate number IBExU16ATEX1183 X** | Issue 0

[15] **Description of product**
The level-switches are used as remote tank level indicator. A stainless steel pipe is containing reed-switches. The pipe is surrounded by a floater who is equipped with a permanent magnet. That magnet acts to reed-switches that allow a control of tank level.
Additionally the level-switches may contain temperature-switches or PT100 resistance thermometer for temperature measurement.

Specifications

Ambient-temperature / operating pressure:

NS 10/G2-2K-VA-ATEX-M12/xxx-SK221*	-20 °C to +100 °C	/ 10 bar
NT 61-Z0-ATEX	-20 °C to +100 °C	/ 1 bar

*The 'xxx' notes the length of the pipe in mm.

Level-switch:

Ui	30 V
Ii	50 mA
Pi	100 mW
Ci, Li	negligible

Temperature switch:

Ui	30 V
Ii	50 mA
Pi	100 mW
Ci, Li	negligible

Resistance thermometer PT100:

Ui	30 V
Ii	50 mA
Pi	100 mW
Ci, Li	negligible

Alternative marking for resistance-thermometer PT100

Ui	9 V
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Li	negligible
Ci	negligible

[16] **Test report**
The test results are recorded in the confidential test report IB-16-3-170 of 2017-07-14.

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

Summary of the test results
The level switches Nivotemp NT 61-Z0-ATEX and NS 10/G2-2K-VA-ATEX-M12/xxx-SK221 fulfil the requirements of explosion protection for electrical equipment of the Equipment Group II Category 1G and 1D in protection-type "ia" intrinsically save devices for explosion group IIC temperature class T4 and explosion group IIIC with surface-temperature 70 °C and 100 °C.

[17] **Specific conditions of use**
See "Installation and Operating Instructions" for intrinsic safe values.

[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**
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Freiberg, 2017-07-14