

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

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

according to Directive 94/9/EC, Annex III

(Translation)



[2] Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres, Directive 94/9/EC

[3] EC-Type Examination Certificate Number: **IBExU07ATEX1155**

[4] Equipment: Position switch boxes type EB-PE-... and EB-AL-...

[5] Manufacturer: Rauter Sensor Boxes

[6] Address: Düsseldorf Str. 186
41460 Neuss
Germany

[7] The equipment mentioned under [4] and any acceptable variation there to are specified in the schedule to this EC-Type Examination Certificate.

[8] IBExU Institut für Sicherheitstechnik GmbH, NOTIFIED BODY number 0637 in accordance with article 9 of the Council Directive 94/9/EC of 23rd March 1994, certifies that the under [4] mentioned equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of the equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in test report IB-07-3-276 of 05th December 2007.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2006, EN 60079-1:2004, EN 60079-7:2007, EN 61241-0:2006 and EN 61241-1:2004.

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified under [17] in the schedule to this EC-Type Examination Certificate.

[11] This EC-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

[12] The marking of the equipment mentioned under [4] shall include the following:

- a) Type EB-PE-... and EB-AL-...:  II 2G Ex e d IIC T6
 II 2D Ex tD A21 IP 65 T80 °C
-20 °C ≤ Ta ≤ +70 °C
- b) Type EB-PE-..U additional:  I M2 Ex e d I
-20 °C ≤ Ta ≤ +70 °C

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Authorised for certifications
- Explosion protection -

By order

(Dr. Lösch)

Schedule



- Seal -
(ID no. 0637)

Freiberg, 06th December 2007

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.

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[13] **Schedule**

[14] **to EC-TYPE EXAMINATION CERTIFICATE IBExU07ATEX1155**

[15] **Description of the equipment**

The position switch boxes EB-PE ... and EB-AL ... the conducting system serve the position re-registration of rotary drives. The equipment is provided for hazarderous areas which require category M2, 2G or 2D operating supplies for the use. The separately authorized switches resistant to pressure are polyester or aluminium enclosure for one.

Type code

EB-PE... und EB-AL...

PE: polyester enclosure

AL: aluminium enclosure

... : you call the Bartec-ending switch type in this place

EB-PE...-U

U: for mining area

Ambient temperature range: -20 °C to +70 °C
Degree of protection of the enclosure: IP 65

Electrical data

Nominal voltage	Thermal assessment current	
	Ohmic load	Inductive load
400 V AC	3 A	2 A
250 V AC	5 A	3 A
250 V DC	0.4 A	0.03 A
30 V DC/AC	7 A	5 A

[16] **Test report**

The test results are detailed recorded in the test report IB-07-3-276. The test documents are part of the test report and listed there.

Summary of the test results:

The position switch boxes EB-PE ... and EB-AL ... fulfill the requirements of explosion protection for the Equipment Group I and II of Category M2, 2G respectively 2D in type of protection Increased safety combined with flameproof enclosures for gases of the Explosion Group IIC and Temperature Class T6, for dust with a maximum surface temperature of 80 °C and for use in mining areas.

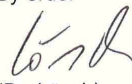
[17] **Special conditions**

none

[18] **Essential health and safety requirements**

Confirmed by compliance of standards (see [9]).

By order


(Dr. Lösch)

Freiberg, 06th December 2007

IBExU Institut für Sicherheitstechnik GmbH

An-Institut der TU Bergakademie Freiberg

- [1] **1st Addition to
EC-TYPE EXAMINATION CERTIFICATE IBExU07ATEX1155
- Translation -**



- [2] Equipment: Position switch boxes
Type EB-PE-... and EB-AL-...
- [3] Manufacturer: Rauter Sensor-Boxes
- [4] Address: Düsseldorf Straße
41460 Neuss
Germany

[5] **Addition / Alteration**

The additions / alterations of the equipment mentioned under [2] compared with the certified equipment concern in particular:

- A high-grade steel signpost fastened with carving nails can be used for the marking.
- The sensor boxes can also be equipped with the cable entries of the comp. Pflitsch, type U28. UNI Dicht E Ex e II of brass or high-grade steel with silicone sealing rings.
- use of the silicone seal in the aluminium system-unit cover of Bartec type 07-5180-.../....
- use of waves O-ring and O-rings wave taking from silicone
- use of installation switches of Bartec type 07-1511 and 07-1581-
- use of mini clamps of Bartec type 07-9702-0220/1 and 07-9702-0320/1
- use of silicone insulating sheet type Sil after DIN 40628
- At the use of the alterations mentioned under a) to g) the ambient temperature range can be extended on -55 °C to +70 °C.

[6] **Test Report**

The proof of the explosion protection of the under [2] mentioned equipment is explained in the Test Report IB-08-3-285 of 05th November 2008. The test documents are part of the Test Report.

[7] **Test result**

IBExU certifies that the under [2] mentioned equipment fulfils the in Annex II of the Directive 94/9/EC fixed Essential Health and Safety Requirements by compliance with EN 60079-0:2006, EN 60079-1:2006, EN 60079-7:2007, EN 61241-0:2006 and EN 61241-1:2004.

The marking of the modified sensor-boxes type EB-AL-...T shall include the following:

⊕ II 2G Ex e d IIC T6

⊕ II 2D Ex tD A21 IP 65 T 80 °C

-55 °C ≤ T_a ≤ +70 °C

Safety instructions

- The correct safety notes and special conditions of the used Ex-components have to be taken into account.
- The extended temperature range is ensured only at use of the sealing compounds allowed for this.

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This addition is only valid in combination with the EC-Type Examination Certificate
IBExU07ATEX1155 of 06th December 2007 valid.

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Authorized for certifications
- Explosion protection -

By order

Wagner

(Dr. Wagner)



- Seal -
(Identification No. 0637)

Freiberg, 05th January 2009

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- [1] **2nd Addition to
EC-TYPE EXAMINATION CERTIFICATE IBExU07ATEX1155**
according to Directive 94/9/EC, Annex III
- Translation -



- [2] Equipment: **Position switch boxes**
a) until now: Types: EB-PE-... and EB-AL-...
b) new Typ: EB-VA-...

- [3] Manufacturer: Rauter Sensor-Boxes

- [4] Address: Düsseldorf Straße
41460 Neuss
Germany

- [5] **Addition / Alteration**
The additions / alterations of the equipment mentioned under [2] compared with the certified equipment concern in particular:

- a) Extension of a type EB-VA ... with stainless steel case in 2 different sizes.
- b) The use of other built-in switches manufactured by R.Stahl type 8064/11, the company SOLDO type BMT1N3-2 and the company Bernstein type MAK-1513-LEX-1.
- c) The device fulfils the requirements of the current standard series EN 60079-0:2012.

The certified electrical values for the limit switch boxes will change as follows:


Nominal voltage	R.Stahl 8064/11		Bernstein MAK-1513-LEX-1	SOLDO BMT1N3-2	
	Ohmic load	Inductive load		Ohmic load	Inductive load
400 V AC	3 A	2 A	-	-	-
250 V AC	5 A	3 A	1 A	1 A	0.5 A
250 V DC	0.4 A	0.03 A	1 A	-	-
30 V AC/DC	7 A	5 A	1 A	1 A	0.5 A

The housing degree of protection IP 65 is complied with in all enclosures types.

- [6] **Test Report**
The proof of the explosion protection of the equipment mentioned under [2] is explained in the Test Report IB-14-3-020 of 21 March 2014. The test documents are part of the Test Report.

- [7] **Test result**
IBExU certifies that the equipment mentioned under [2] fulfils the in Annex II of the Directive 94/9/EC fixed Essential Health and Safety Requirements by compliance with EN 60079-0:2012, EN 60079-1:2007, EN 60079-7:2007, EN 60079-18:2009 and EN 60079-31:2009.

The marking of the modified equipment mentioned under [2] shall include the following:

 II 2G Ex e d IIC T6 Gb or II 2G Ex e mb IIC T6 Gb

 II 2D Ex tb IIIC T 80 °C Db

-55 °C/-20 °C ≤ T_a ≤ +60 °C/+70 °C

The combination of the symbols for the type of protection depends on the types of protection switch being used.

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Safety instructions

- The correct safety notes and special conditions of the used Ex-components have to be taken into account.
- The extended temperature range is ensured only at use of the sealing compounds and suitable Ex-components allowed for this.

This addition is only valid in combination with the EC-Type Examination Certificate IBExU07ATEX1155 of 6 December 2007 valid.

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- Explosion protection -

By order



(Dr. Wagner)



- Seal -
(Identification No. 0637)

Freiberg, 21 March 2014

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IBExU Institut für Sicherheitstechnik GmbH
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[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 **IBExU07ATEX1155** | Issue 1
- [4] Product: **Position switch boxes**
Type: EB-PE-..., EB-AL-... and EB-VA-...
- [5] Manufacturer: Rauter Sensor-Boxes
- [6] Address: Düsseldorf Str. 186
41460 Neuss
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-18-3-0135.
- [9] Compliance with the essential health and safety requirements has been assured by compliance with: EN 60079-0:2018, EN 60079-1:2014, EN 60079-7:2015, EN 60079-18:2015 and EN 60079-31:2014 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:

Ex I M2 Ex eb db I Mb (only type EB-PE-...U)

Ex II 2G Ex eb db IIC T6 Gb or **II 2G Ex eb mb IIC T6 Gb**

Ex II 2D Ex tb IIIC T 80 °C Db

-55 °C/-20 °C ≤ T_a ≤ +60 °C/+70 °C

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By order


Prof. Dr. Redeker



(Notified Body number 0637)

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Freiberg, 2018-09-17

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An-Institut der TU Bergakademie Freiberg

[13] **Schedule**

[14] **Certificate number IBExU07ATEX1155 | Issue 1**

[15] **Description of product**

The position switch boxes EB-PE-..., EB-AL-... and EB-VA-... the conducting system serve the position re-registration of rotary drives. The equipment is provided for hazardous areas which require category M2, 2G or 2D operating supplies for the use. The separately authorized switches resistant to pressure or encapsulated are polyester, aluminium or stainless steel enclosure for one.

Type code

EB-PE-..., EB-AL-... and EB-VA-...

PE: polyester enclosure

AL: aluminium enclosure

VA: stainless steel enclosure

... : at this point, the limit switch type is called

EB-PE-...-U

U: for mining area

EB-AL-...-T

T: low temperature range -55 °C to +70 °C

Technical data:

Ambient temperature range: -55 °C/-20 °C to +60 °C/+70 °C

Degree of protection of the enclosure: IP 65

Electrical data

Nominal voltage	R.Stahl 8064/11		Bernstein MAK-1513-LEX-1	SOLDO Reed-Switch BMN311E-E1A23A6	
	Ohmic load	Inductive Load		Ohmic load	Inductive Load
400 V AC	3 A	2 A	-	-	-
250 V AC	5 A	3 A	1 A	1 A	0.5 A
250 V DC	0.4 A	0.03 A	1 A	-	-
30 V AC/DC	7 A	5 A	1 A	1 A	0.5 A

Variations compared to original issue of this certificate:

Variation 1

Alternatively, the reed switch BMN311E-E1A23A6 can be used.

Variation 2

The product meets the requirements of the current standards. Hence, the marking has been changed.

[16] **Test report**

The test results are recorded in the confidential test report IB-18-3-0135 of 2018-09-17.

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

Summary of the test results

The equipment mentioned in [4] still fulfils the requirements of explosion protection for Equipment Group I and II, Category M2, 2G and 2D, Increased safety "eb" and type of protection flameproof enclosure „db" and protection by encapsulation "mb" as well as Protection by enclosure "tb".

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Safety Instructions

- The correct safety notes and special conditions of the used Ex-components have to be taken into account.
- The extended temperature range is ensured only at use of the sealing compounds and suitable Ex-components allowed for this.

[17] **Specific conditions of use**
None

[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.

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09599 Freiberg, GERMANY

By order


Prof. Dr. Redeker

Freiberg, 2018-09-17