

Translation

(1) **EU-Type Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**



(3) **Certificate Number** TÜV 10 ATEX 381296 X **issue:** 00

(4) for the product: Safety Barrier type SB ...

(5) of the manufacturer: **FAFNIR GmbH**

(6) Address: Schnackenburgallee 149 c, 22525 Hamburg, Germany

Order number: 8003002010

Date of issue: 2019-05-23

(7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 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 ATEX Assessment Report No. 19 203 237353.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012 + A11:2013 EN 60079-1:2014 EN 60079-11:2012 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 for 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 equipment. These are not covered by this certificate.

(12) The marking of the product shall include the following:

 **See item 15 of the schedule**

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the notified body


Roder

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(13) **SCHEDULE**

(14) **EU-Type Examination Certificate No. TÜV 10 ATEX 381296 X issue 00**

(15) Description of product

The safety barrier type SB 1 is preferably used in conjunction with a certified flameproof enclosure, e. g. HPH Ex d ..., for connecting intrinsically safe sensors (two-wire) to non-intrinsically safe circuits. The safety barrier type SB 3 is used to connect intrinsically safe sensors (four-wire) to non-intrinsically safe circuits.


In the future, the safety barriers may also be manufactured in accordance with the test documents listed in the ATEX test report. The changes affect the addition of a new type and the dust explosion protection. Furthermore, the equipment was assessed according to the latest standards.

The marking is as follows:

Type SB 1

 II 2(1) G Ex db [ia Ga] IIC T6... T4 Gb resp.
 II 1(1) D Ex ta [ia Da] IIIC T115 °C Da

Type SB 3

 II (1) G [Ex ia Ga] IIC resp.
 II (1) D [Ex ia Da] IIIC

Type designation:

SB 1 Single-channel safety barrier potted in a bushing
 SB 3 Three-channel safety barrier in the wall housing

Technical data:

Type SB 1

Supply circuit $U = 24 V_{DC}$
 $U_m = 253 V$

Output circuit in type of protection "Intrinsic Safety" Ex ia IIC/IIB/IIIC
 Maximum values: $U_o = 28.4 V$
 $I_o = 100 mA$
 $P_i = 705 mW$

Characteristic line: linear

Maximum permissible outer capacitance and inductance:

	Ex ia IIC		Ex ia IIB/IIIC	
L_o	500 μH	560 μH	5 mH	2 mH
C_o	71 nF	68 nF	330 nF	400 nF

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Type SB 3

Supply circuit

U = 24 V_{DC} for channel 1
 U = 5 V_{DC} for channel 2 and 3
 U_m = 253 V

Output circuit

in type of protection "Intrinsic Safety" Ex ia IIC/IIB/IIIC

Maximum values: U_o = 28.4 V

I_o = 95 mA

P_i = 507 mW

Characteristic line: linear

Maximum permissible outer capacitance and inductance:

	Ex ia IIC		Ex ia IIB/IIIC	
L _o	500 μH	200 μH	5 mH	2 mH
C _o	72 nF	79 nF	340 nF	410 nF

Permissible ambient temperature range:

The ambient temperature range for SB 3 is -40 °C to +70 °C.

The ambient temperature range for SB 1 is

Used as Category 2G equipment

Temperature class	Ambient temperature
T6	-40 °C to +40 °C
T5	-40 °C to +55 °C
T4	-40 °C to +85 °C
T3	-40 °C to +85 °C
T2	-40 °C to +85 °C
T1	-40 °C to +85 °C

Used as Category 1D equipment

Maximum surface temperature		Ambient temperature
dust layer ≤ 5 mm	Immersed in dust	
+115 °C	+115 °C	-40 °C to +85 °C

All further data are valid unchanged.

(16) Drawings and documents are listed in the ATEX Assessment Report No. 19 203 237353

Schedule to EU-Type Examination Certificate No. TÜV 10 ATEX 381296 X issue 00

(17) Specific Conditions for Use

1. The side of the safety barrier SB 1, where the encapsulation can be seen, must be operated protected against UV light.
2. The safety barrier SB 1 has no terminal compartment. It must be installed in an enclosure that corresponds to a suitable type of protection. In addition, it can only be installed in zone 1 in conjunction with a flameproof enclosure (such as HPH Ex d ...).
3. Repair of flameproof joints of SB 1 is not planned.
4. The equipotential bonding connection must be connected to the equipotential bonding of the potentially explosive area (an equipotential bonding must exist for the entire intrinsically safe area). Therefore, the safety barriers do not meet the dielectric strength requirements. When carrying out an insulation test on the intrinsically safe circuit, the device must therefore be disconnected from equipotential bonding.
5. The maximum permissible pressure of SB 1 is 30 bar.

(18) Essential Health and Safety Requirements

no additional ones

- End of Certificate -