



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 IBE 17.0043X

Issue No: 0

Certificate history:

[Issue No. 0 \(2018-02-13\)](#)

Status: **Current**

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Date of Issue: **2018-02-13**

Applicant: **R. STAHL Schaltgeräte GmbH**
Am Bahnhof 30
74638 Waldenburg
Germany

Equipment: **Switching Repeater type 9270/11-16-14, 9270/11-17-15 and 9270/21-17-14**

Optional accessory:

Type of Protection: **Intrinsic safety "ia"; Type "n"**

Marking:

[Ex ia Da] IIIC

Ex nA nC [ia Ga] IIC T4 Gc

$-20\text{ °C} \leq T_{\text{amb}} \leq +60\text{ °C}$

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

Dipl.-Ing. Alexander Henker

Position:

Deputy Head of Certification Body

*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](#).

Certificate issued by:

IBExU Institut für Sicherheitstechnik GmbH
Certification Body
Fuchsmühlenweg 7
09599 Freiberg
Germany





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Manufacturer: **R. STAHL Schaltgeräte GmbH**
Am Bahnhof 30
74638 Waldenburg
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 : 2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0
IEC 60079-11 : 2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0
IEC 60079-15 : 2010 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:4

*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/IBE/ExTR18.0006/00](#)

Quality Assessment Report:

[DE/BVS/QAR10.0002/13](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The switching repeaters type 9270/11-16-14, type 9270/11-17-15 and type 9270/21-17-14 are used for the intrinsically safe and galvanically isolated signal transmission of NAMUR initiators and contacts. The switching repeaters are single- or dual-channel types. They have intrinsically safe

sensor input circuits and are designed for the operation of proximity switches with NAMUR behaviour and switch contacts located in the hazardous area (zone 0, 1, 2, 20, 21 or 22). The device itself is installed in the safe area or in zone 2.

The switching repeaters offer a galvanic isolation between input and output circuit and between input and supply circuit. The voltage difference between input and output circuit or supply can reach values up to 375 V peak (acc. to table 5 of IEC 60079-11). The devices offer a circuit for line fault detection.

They are equipped with screw terminals or with spring clamps for the external connections.

The technical data are mentioned in the Annex.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The intrinsically safe circuit and the non-intrinsically safe circuits are galvanically safe separated up to a peak value of 375 V.
- If installed in hazardous areas which require equipment of zone 2, the Switching Repeater have to be installed in in a suitable housing fulfilling the requirements of IEC 60079-15 with a degree of protection of at least IP 54 according to IEC 60529 or another recognized type of protection according to IEC 60079-0, Clause 1.
- Connecting and disconnecting of non-intrinsically safe circuits are not permitted.
- The isolating repeaters shall be used in an area of not more than pollution degree 2, as defined per IEC 60664-1.

Annex:

[Annex_IBE17.0043X.pdf](#)



IECEX Certificate of Conformity - Annex



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Technical data:

ambient temperature range	T_{amb}	-20 °C up to +60 °C
degree of protection		≥ IP20 (acc. to. EN 60529)
supply current circuit (non-intrinsically safe)		
rated voltage	U_N	19.2 ... 30 V DC
maximum direct voltage	U_m	125 V
maximum effective value of alternating voltage	U_m	253 V

Relay output circuits:

(terminals no.: 3, 4 / 1, 2)

Maximum switching voltage:

250 V AC (2 A)

30 V DC (2 A)

intrinsically safe output circuit (linear characteristic)

Sensor circuit

(terminals: 10 and 11
as well as 12 and 13)

in type of protection Ex ia IIC

U_o 9.6 V

I_o 10 mA

P_o 25 mW

C_i 11 nF

L_i negligible

For circuits including inductances and capacitances the following has to be observed:

The values for L_o and C_o , mentioned in the EU-Type Examination certificate are allowed for:

- distributed inductance and capacitance e.g. as in a cable or,
- if the total L_i of the external circuit (excluding the cable) is < 1 % of the L_o value or
- if the total C_i of the external circuit (excluding the cable) is < 1 % of the C_o value.

	Ex ia IIC	Ex ia IIB/IIIC	Ex ia IIA
C_o	3.6 μ F	26 μ F	210 μ F
L_o	300 mH	1000 mH	1000 mH

The values of L_o and C_o determined in the EC-Type Examination shall be reduced to 50 % or taken from the following table if both of the following conditions are met:

- the total L_i of the external circuit (excluding the cable) ≥ 1 % of the L_o value and
- the total C_i of the external circuit (excluding the cable) ≥ 1 % of the C_o value.

	Ex ia IIC					Ex ia IIB/IIA, Ex ia IIIC			
C_o	500 nF	570 nF	590 nF	590 nF	590 nF	1 μ F	1 μ F	1 μ F	1 μ F
L_o	100 mH	50 mH	5 mH	1 mH	10 μ H	100 mH	5 mH	1 mH	10 μ H

The reduced capacitance of the external circuit (including cable) shall not be greater than 1 μ F for Groups I, IIA, and IIB and 600 nF for Group IIC.