



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

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Issue 0 (2018-02-13)

Status: **Current** Issue No: 1

Date of Issue: 2022-10-14

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" in combination with increased safety "ec and Type "n", sealed device**

Marking: [Ex ia Ma] I  
[Ex ia Da] IIIC  
Ex ec nC [ia Ga] IIC T4 Gc  
-40 °C ≤ T<sub>a</sub> ≤ +70 °C (max.; depends on installation)

Approved for issue on behalf of the IECEx  
Certification Body:

**Dr.-Ing. Peter Cimalla**

Position:

**Deputy Head of department Certification Body**

Signature:  
(for printed version)

Date:  
(for printed version)

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Certificate issued by:

**IBExU Institut für Sicherheitstechnik GmbH**  
Fuchsmühlenweg 7  
09599 Freiberg  
Germany





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

Manufacturing  
locations:

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 equipment 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 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

[IEC 60079-15:2017](#) Explosive atmospheres - Part 15: Equipment protection by type of protection "n"  
Edition:5.0

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

This Certificate **does not** indicate compliance with 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 Reports:

[DE/IBE/ExTR18.0006/00](#)

[DE/IBE/ExTR18.0006/01](#)

Quality Assessment Report:

[DE/BVS/QAR10.0002/18](#)



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## **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. 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 Switching Repeater have to be assembled in a separately certified housing fulfilling the requirements of IEC 60079-7 (at least IP54) or another recognized type of protection when installed in areas requiring equipment of EPL "Gc".
- Connecting and disconnecting of non-intrinsically safe circuits is not permitted in areas requiring equipment of EPL "Gc" (zone 2) when energized.
- In Zone 2, the DIP Switches may only be toggled when de-energized.



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## DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

- The ambient temperature range has been extended.
- The device complies with the requirements of an associated apparatus for group I and the current standards, thus the marking has been changed.
- Alternate relays may be used.

## Annex:

[Annex\\_IBE17.0043X\\_01\\_1.pdf](#)



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**Technical data:**

**Environmental conditions**

Ambient temperature range

-40 °C ... +60 °C  
-40 °C up to + 70 °C  
(with ≥ 6 mm distance to other devices)

Degree of protection

≥ IP20 (acc. to IEC 60529)

**Electrical data**

**1. Power Supply (Terminals 5 and 6) and pac-BUS**

rated voltage range

$U_n$  24 V DC (19.2 ... 30 V DC)

maximum direct voltage

$U_m$  125 V DC

maximum effective value of alternating voltage

$U_m$  253 V DC

**2. Intrinsically safe output circuit (Terminals 10 and 11 as well as 12 and 13)**

maximum output voltage

$U_o$  9.6 V

maximum output current

$I_o$  10 mA

maximum output power

$P_o$  25 mW

effective internal capacity

$C_i$  11 nF

effective internal inductivity

$L_i$  negligible

**3. Relay output (Terminal 3 and 4 as well as 1 and 2)**

maximum Switching voltage

$U_s$  250 V AC (2 A) /  
120 V DC (0,2 A) /  
30 V DC (2 A)

**Safety instructions:**

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

The values for  $L_o$  and  $C_o$ , mentioned in the 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 $\mu$ F	26 $\mu$ F	210 $\mu$ F
$L_o$	300 mH	1000 mH	1000 mH

The values of  $L_o$  and  $C_o$  determined in the certificate 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.

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

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



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When using the device at altitudes between 2000 and 5000 m above sea level, the instructions in the operating manual must be observed.