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

Certificate No.:	**IECEx IBE 17.0044X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 1	Issue 0 (2018-02-13)
Date of Issue:	2022-10-14		
Applicant:	**R. STAHL Schaltgeräte GmbH** Am Bahnhof 30 74638 Waldenburg **Germany**		
Equipment:	**Digital Output type 9275/10-21-25-11 and 9275/10-24-48-11**		
Optional accessory:			
Type of Protection:	**Intrinsic safety "ia" ; increased safety "ec"**		
Marking:	[Ex ia Ma] I [Ex ia Da] IIIC Ex ec [ia Ga] IIC T4 Gc -20 °C ≤ T_a ≤ +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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3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7
09599 Freiberg
Germany

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Certificate No.: **IECEx IBE 17.0044X**

Date of issue: 2022-10-14 Issue No: 1

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 60079-7:2017 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/ExTR18.0009/00 DE/IBE/ExTR18.0009/01

Quality Assessment Report:

DE/BVS/QAR10.0002/18

IECEx Certificate of Conformity

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The Digital Outputs Type 9275/10-21-25-11 and 9275/10-24-48-11 are used for the intrinsically safe and galvanically isolated operation of solenoid valves, alarm transmitters, indicators, etc. The equipment offers the installation in zone 2 or in the safe area. The output signal can be connected to devices in zone 0 or zone 20 in mines susceptible to firedamp.

The Digital Outputs offer galvanic isolation between I.S. output and Non-I.S. input circuit and between I.S. output, the supply circuit and the line fault detection circuit. The voltage difference between input and output circuit or supply can reach values up to 375 V peak according to table 5 of IEC 60079-11. The devices offer a circuit for line faults 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 Digital Outputs 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.

IECEx Certificate of Conformity

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.
- The use of a new version of the spring pressure terminal is permitted.

Annex:

Annex_IBE17.0044X_01.pdf

IECEx Certificate of Conformity - Annex

Certificate No: IECEx IBE 17.0044X Issue No: 1

Date of Issue: 2022-10-14

Technical data:

Environmental conditions

Ambient temperature range	-20 °C … + 60 °C -20 °C … + 70 °C (distance t ≥ 6 mm to other devices)
Degree of protection	≥ IP20 (acc. to IEC 60529)
maximum r.m.s. a.c. or d.c. voltage	U_m = 253 V AC / 125 V DC

Electrical data

Supply current circuit (non-intrinsically safe) (terminals 5 and 6 / pac-Bus)

Rated voltage range	U_n	24 V DC (19.2 ... 30 V DC)
Power consumption	P_n	< 2.2 W

Logic input circuit (non-intrinsically safe) (Terminals 1 and 2)

Maximum input voltage	U	30 V
Nominal current	I_n	< 12 mA

Fault signal output (non-intrinsically safe) (Terminals 3 and 4)

Maximum switching voltage	U	30 V DC
Maximum switching current	I	50 mA

Intrinsically safe output circuit (linear characteristic) for type 9275/10-21-25-11

output circuit (Terminals 10 and 11)	in type of protection Ex ia IIC/IIB	
Maximum output voltage	U_o	23.98 V
Maximum output current	I_o	37.4 mA
Maximum output power	P_o	224 mW (linear, max)
Effective internal capacitance	C_i	11 nF
Effective internal inductance	L_i	negligible
Linear characteristic:	R_i	641 Ω

Intrinsically safe output circuit (linear characteristic) for type 9275/10-24-48-11

output circuit (Terminals 10 and 11)	in type of protection Ex ia IIC/IIB	
Maximum output voltage	U_o	27.06 V
Maximum output current	I_o	91.11 mA
Maximum output power	P_o	616 mW (linear, max)
Effective internal capacitance	C_i	11 nF
Effective internal inductance	L_i	negligible
Linear characteristic:	R_i	297 Ω

IECEx Certificate of Conformity - Annex

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Date of Issue: 2022-10-14

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.

9275/10-21-25-11	**Ex ia IIC**	**Ex ia IIB/IIIC**	**Ex ia IIA**
C_o	0.11 µF	0.91 µF	3.33 µF
L_o	22 mH	100 mH	200 mH
9275/10-24-48-11	**Ex ia IIC**	**Ex ia IIB/IIIC**	**Ex ia IIA**
C_o	0.078 µF	0.686 µF	2.29 µF
L_o	3.5 mH	15 mH	32 mH

The values of L_o and C_o determined in 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.

9275/10-21-25-11	Ex ia IIC					Ex ia IIB, Ex ia IIIC			
C_o	68 nF	68 nF	68 nF	68 nF	89 nF	0.3 µF	0.48 µF	0.51 µF	0.89 µF
L_o	20 mH	10 mH	5 mH	2 mH	0.5 mH	100 mH	20 mH	1 mH	0,1 mH
9275/10-24-48-11	Ex ia IIC					Ex ia IIB, Ex ia IIIC			
C_o	44 nF	60 nF	78 nF	-	-	0.27 µF	0.3 µF	0.44 µF	0.19 µF
L_o	1 mH	0.5 mH	0.2 mH	-	-	10 mH	2 mH	0.5 mH	0.2 mH

9275/10-21-25-11	Ex ia IIA				
C_o	0.67 µF	0.76 µF	0.76 µF	0.83 µF	0.89 µF
L_o	50 mH	20 mH	1 mH	0.5 mH	0.2 mH
9275/10-24-48-11	Ex ia IIA				
C_o	0.47 µF	0.47 µF	0.62 µF	0.8 µF	0.89 µF
L_o	20 mH	2 mH	0.5 mH	0.2 mH	0.1 mH

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

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