



# 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)

Certificate No.: **IECEX BVS 13.0012X** Page 1 of 4 [Certificate history:](#)  
Issue 0 (2013-01-29)

Status: **Current** Issue No: 1

Date of Issue: 2023-10-31

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

Equipment: **Digital Output Loop Powered type 9176/\*0-1\*-00**

Optional accessory:

Type of Protection: **Intrinsic Safety "i"; Increased Safety "e"**

Marking: Ex ec [ia Ga] IIC T4 Gc  
[Ex ia Da] IIIC

Approved for issue on behalf of the IECEx  
Certification Body:

**Dr Franz Eickhoff**

Position:

**Senior Lead Auditor, Certification Manager and officially  
recognised expert**

Signature:  
(for printed version)

Date:  
(for printed version)

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Certification Body  
Dinnendahlstrasse 9  
44809 Bochum  
Germany





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

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

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 Report:

[DE/BVS/ExTR13.0005/00](#)

Quality Assessment Report:

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



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## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

### Description

The digital output loop powered type 9176/\*0-1\*-00 is an associated apparatus per IEC 60079-11. The connection terminals are compliant to IEC 60079-7. The intrinsically safe circuit is galvanically separated from the non I.S. signal circuit.

The digital output is used for the intrinsically safe operation of, e.g. solenoid valves and LED indicating lights. The devices can be set up as single or dual channel equipment. To increase the output power, the intrinsically safe output circuits of the dual-channel devices can be connected in parallel.

### Listing of all components used referring to older standards

Subject and type	Certificate	Standards
Optocoupler type TOK25-5	PTB Ex 10-20289	EN 60079-0:2009 <sup>1</sup> EN 60079-11:2007 <sup>1</sup>

Note: The requirements of the ATEX and IECEx standards for this product are identical.

- 1 No applicable technical differences
- 2 Technical differences evaluated and found satisfactory

### Subject and type

See Annex

### Parameters

See Annex

### SPECIFIC CONDITIONS OF USE: YES as shown below:

- 1 For installation in areas, where EPL Gc equipment is required, the equipment shall be installed in an enclosure that provides a minimum ingress protection of IP54 in accordance with IEC 60079-0.
- 2 For installation in areas, where EPL Gc is required, the equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1.



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

- Assessment of digital output loop powered in accordance with the current standard versions
- Lower ambient temperature was enlarged from  $-20\text{ °C}$  to  $-40\text{ °C}$
- The IEC60079-15 is no longer applied, as the requirements for type of protection "nA" have been transferred to IEC 60079-7 type of protection "ec", therefore assessment for the IEC 60079-7 standard and changes in marking etc.
- The IEC 60079-26 is no longer applied, as the requirements for EPL Ga is guaranteed by intrinsic safety "ia". The IEC 60079-26 does not contain any additional requirements for the device.

## Annex:

[BVS\\_13\\_0012X\\_RStahl\\_Annex\\_issue1.pdf](#)



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**Annex**  
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## Subject and Type

Digital Output Loop Powered Type 9176/\*0-1\*-00

Instead of the \*\*\* in the complete denomination letters and numerals will be inserted which characterize the following modifications:

Digital Output Loop Powered Type 9176/		*	0	-	1	*	-	0	0
		a	b		c	d		e	f
Channels	1	1	2		1	2		0	0
	2								
Output	10 V / 60 mA	2	4		1	2		0	0
	17.5 V / 45 mA								
	25 V / 29 mA								
	25 V / 35 mA								
	25 V / 43 mA								

## Parameters

- 1 Non-intrinsically safe signal input circuit  
 Input 1: terminals 1 (+), 2 (-)  
 Input 2: terminals 5 (+), 6 (-)
- |                       |       |    |           |    |
|-----------------------|-------|----|-----------|----|
| Switching voltage ON  | $U_n$ | DC | 18 – 31.2 | V  |
| Switching voltage OFF | $U_n$ | DC | 5         | V  |
| Nominal current       | $I_n$ |    | 83        | mA |
| Maximum voltage       | $U_m$ | AC | 253       | V  |
- 2 Intrinsically safe output circuits, level of protection "ia"  
 Output 1: terminals 10 (+), 11 (-);  
 Output 2: terminals 14 (+), 15 (-)
- 2.1 Type 9176/\*0-12-00 (Ex ia IIB, IIC resp. IIIC)  
 For channel 1 or channel 2:
- |                               |       |  |      |    |
|-------------------------------|-------|--|------|----|
| Maximum output voltage        | $U_o$ |  | 11.3 | V  |
| Maximum output current        | $I_o$ |  | 75   | mA |
| Linear output characteristics |       |  |      |    |
| Maximum output power          | $P_o$ |  | 210  | mW |
- The following values are valid when channels 1 and 2 are connected in parallel:  
 (only 9176/20-12-00)
- |                               |       |  |      |    |
|-------------------------------|-------|--|------|----|
| Maximum output voltage        | $U_o$ |  | 11.3 | V  |
| Maximum output current        | $I_o$ |  | 150  | mA |
| Linear output characteristics |       |  |      |    |
| Maximum output power          | $P_o$ |  | 420  | mW |



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The maximum values for maximum external capacitance  $C_o$  or maximum external inductance  $L_o$  are shown in the table below.

		IIB / IIIC	IIC
Channel 1 or channel 2	$L_o$	25 mH	6.3 mH
	$C_o$	12.1 $\mu$ F	1.79 $\mu$ F
Channels 1 and 2 in parallel	$L_o$	6.0 mH	1.5 mH
	$C_o$	12.1 $\mu$ F	1.79 $\mu$ F

2.2 Type 9176/\*0-14-00 (Ex ia IIB, IIC resp. IIIC or Ex ib IIB, IIC resp. IIIC)

For channel 1 or channel 2:

Maximum output voltage	$U_o$	19.6	V
Maximum output current for "ia"	$I_o$	150	mA
Maximum output current for "ib"	$I_o$	60	mA
Linear output characteristics			
Maximum output power	$P_o$	732	mW

The following values are valid when channels 1 and 2 are connected in parallel:  
(only 9176/20-14-00)

Maximum output voltage	$U_o$	19.6	V
Maximum output current for "ia"	$I_o$	300	mA
Maximum output current for "ib"	$I_o$	120	mA
Linear output characteristics			
Maximum output power	$P_o$	1464	mW

The maximum values for maximum external capacitance  $C_o$  or maximum external inductance  $L_o$  are shown in the table below.

		IIB / IIIC	IIC
Channel 1 or channel 2	$L_o$	6.0 mH	1.5 mH
	$C_o$	1470 nF	235 nF
Channels 1 and 2 in parallel	$L_o$	1.5 mH	0.3 mH
	$C_o$	1470 nF	235 nF

2.3 Type 9176/\*0-15-00 (Ex ia IIB, IIC resp. IIIC or Ex ib IIB, IIC resp. IIIC)

For channel 1 or channel 2:

Maximum output voltage	$U_o$	27.6	V
Maximum output current for "ia"	$I_o$	86.5	mA
Maximum output current for "ib"	$I_o$	44	mA
Linear output characteristics			
Maximum output power	$P_o$	596	mW

The following values are valid when channels 1 and 2 are connected in parallel:  
(only 9176/20-15-00)

Maximum output voltage	$U_o$	27.6	V
Maximum output current for "ia"	$I_o$	173	mA
Maximum output current for "ib"	$I_o$	88	mA
Linear output characteristics			
Maximum output power	$P_o$	1192	mW



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The maximum values for maximum external capacitance  $C_o$  or maximum external inductance  $L_o$  are shown in the table below.

		IIB / IIIC	IIC
Channel 1 or channel 2	$L_o$	17 mH	1.8 mH
	$C_o$	667 nF	85 nF
Channels 1 and 2 in parallel	$L_o$	2.5 mH	-
	$C_o$	665 nF	-

**2.4** Type 9176/\*0-16-00 (Ex ia IIB, IIC resp. IIIC or Ex ib IIB, IIC resp. IIIC)

For channel 1 or channel 2:

Maximum output voltage	$U_o$	27.6	V
Maximum output current for "ia"	$I_o$	110	mA
Maximum output current for "ib"	$I_o$	50	mA
Linear output characteristics			
Maximum output power	$P_o$	760	mW

The following values are valid when channels 1 and 2 are connected in parallel:  
 (only 9176/20-16-00)

Maximum output voltage	$U_o$	27.6	V
Maximum output current for "ia"	$I_o$	220	mA
Maximum output current for "ib"	$I_o$	100	mA
Linear output characteristics			
Maximum output power	$P_o$	1520	mW

The maximum values for maximum external capacitance  $C_o$  or maximum external inductance  $L_o$  are shown in the table below.

		IIB / IIIC	IIC
Channel 1 or channel 2	$L_o$	9 mH	1.2 mH
	$C_o$	667 nF	85 nF
Channels 1 and 2 in parallel	$L_o$	1.8 mH	-
	$C_o$	665 nF	-

**2.5** Type 9176/\*0-17-00 (Ex ia IIB, IIC resp. IIIC)

For channel 1 or channel 2:

Maximum output voltage	$U_o$	27.6	V
Maximum output current for "ia"	$I_o$	60	mA
Linear output characteristics			
Maximum output power	$P_o$	415	mW

The following values are valid when channels 1 and 2 are connected in parallel:  
 (only 9176/20-17-00)

Maximum output voltage	$U_o$	27.6	V
Maximum output current for "ia"	$I_o$	120	mA
Linear output characteristics			
Maximum output power	$P_o$	830	mW



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The maximum values for maximum external capacitance  $C_o$  or maximum external inductance  $L_o$  are shown in the table below.

		IIB / IIIC	IIC
Channel 1 or channel 2	$L_o$	40 mH	6.6 mH
	$C_o$	667 nF	85 nF
Channels 1 and 2 in parallel	$L_o$	7.5 mH	-
	$C_o$	665 nF	-

3 Ambient temperature range  $T_a$   
any mounting position -40 °C up to +60 °C  
for vertical mounting position (horizontal DIN-Rail) -40 °C up to +70 °C