



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 BVS 10.0050X issue No.:1

Status: **Current**

Certificate history:
Issue No. 1 (2012-4-12)
Issue No. 0 (2010-5-31)

Date of Issue: **2012-04-12** Page 1 of 4

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

Electrical Apparatus: **Binary output type 9175/*0-1*-1***
Optional accessory:

Type of Protection: **intrinsic safety "i", Protection "n" electrical apparatus, equipment protection level (EPL) Ga**

Marking: Ex nA nC [ia Ga] IIC T4 Gc and [Ex ia Da] IIIC resp. Ex nAc nCc [ia] IIC T4 and [Ex ia] IIIC

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

Dr.-Ing. Franz Eickhoff

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](http://www.iecex.com).

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

 **DEKRA**
DEKRA EXAM GmbH



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

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 electrical 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 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011-06 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15 : 2010 Edition: 4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*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/BVS/ExTR10.0070/01](#)

Quality Assessment Report:

[DE/BVS/QAR10.0002/02](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Description:

The binary output type 9175 is an associated apparatus as defined in EN 60079-11 as well as a nonincendive apparatus per EN 60079-15. The output circuits defined as intrinsically safe are galvanically separated from the non-I.S. signal circuits and from the power supply circuit. The intrinsically safe circuits are connected internally to each other via the return conductor. The input circuits are galvanically isolated from each other and from the power supply.

The binary output serves the intrinsically safe operation of, e.g. solenoid valves and LED indicating lamps. 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.

Type Designation:

See Annex

Electrical Data:

See Annex

CONDITIONS OF CERTIFICATION: YES as shown below:

For use in Zone 2 the binary output type 9175 has to be mounted inside an enclosure which is in accordance with IEC 60079-15.



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

The Binary Output has been assessed in acc. with IEC 60079-0:2011, IEC 60079-11:2011 and IEC 60079-15:2010.



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Type Designation

	Binary output	Type 9175 /	*	0	-	1	*	-	1	*
			a	b		c	d		e	f
Number of Channels:										
1		1								
2		2								
Output:										
10.5 V / 45 mA		2								
17.5 V / 45 mA		4								
25 V / 35 mA		6								
Function:										
Without line fault detection		0								
With line fault detection		1								
Line fault transparent		2								

Electrical Data

Auxiliary supply circuit

(Terminal: 7 (L+), 9 (L-) and pac-Bus connector V007/ 1 (+), 2 (-))

Nominal Voltage: $U_n = 24 \text{ V DC (18 ... 31,2 V DC)}$

Nominal Current: $I_n \leq 135 \text{ mA (Type 9175/0-1.-10 and -11)}$

$I_n \leq 40 \text{ mA (Type 9175/10-1.-12)}$

Maximum Safety Voltage: $U_m \leq 253 \text{ V AC}$

Non-intrinsically safe signal circuits

Maximum Safety Voltage: $U_m \leq 253 \text{ V AC}$

Signal input circuits Type 9175/0-1.-10 and -11

(Input 1: Terminal 1 (+), 2 (-))

(Input 2: Terminal 5 (+), 6 (-))

For channel 1 or channel 2:

Switching voltage ON: $U_n = 15 - 31.2 \text{ V DC}$

Switching voltage OFF: $U_n \leq 5 \text{ V DC}$

Current consumption: $I_n \leq 5 \text{ mA}$

Signal input circuits Type 9175/10-1.-12

(Input 1: Terminal 1 (+), 2 (-))

Terminal 2 (-) is connected with Terminal 9 (L-) Auxiliary power supply

Switching voltage ON: $U_n = 18 - 31.2 \text{ V DC}$

Switching voltage OFF: $U_n \leq 15 \text{ V DC}$

Current consumption: $I_n \leq 130 \text{ mA}$



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Line-fault indicator circuit

(Circuit 1: Terminal 8, 9(-); circuit 2: pac-Bus connector V007/ 3, 4)

Circuit 1 is connected to the power supply via the return conductor.
Circuit 2 is galvanically separated from circuit 1.

Nominal voltage: $U_n = 30 \text{ V AC/DC}$

Nominal current: $I_n = 100 \text{ mA}$

Intrinsically safe output circuits

(Output 1: Terminal 10 (+), 11 (-)

Output 2: Terminal 14 (+), 15 (-))

The return conductors (terminals 11 and 15) of the output circuits are connected to each other.

The intrinsically safe circuits may also be used in areas endangered by explosive dust atmospheres and be connected to apparatus certified accordingly.

For explosive dust atmospheres, the maximum allowed values for inductance and capacitance as for gas group IIB apply.

Type 9175/*0-12-1* intrinsically safe circuits protection level "ia"

The data are valid for 9175/20-12-1* for channel 1 or channel 2.

$U_o = 11.3 \text{ V}$

$I_o = 75 \text{ mA}$

$P_o = 210 \text{ mW}$ (linear characteristic)

$C_i = 1.1 \text{ nF}$

$L_i = \text{negligible}$

The following values are valid when channels 1 and 2 are connected in parallel:
(only 9175/20-12-1*)

$U_o = 11.3 \text{ V}$

$I_o = 150 \text{ mA}$

$P_o = 420 \text{ mW}$ (linear characteristic)

$C_i = 2.2 \text{ nF}$

$L_i = \text{negligible}$

The maximum allowable values for external inductance and capacitance are shown in the table below.

		IIB	IIC
Channel 1 or channel 2	L_o	25 mH	6.3 mH
	C_o	12.1 μF	1.79 μF
Channels 1 and 2 in parallel	L_o	6.0 mH	1.5 mH
	C_o	12.1 μF	1.79 μF

Type 9175/*0-14-1* intrinsically safe circuits protection level "ia" or "ib"

The data are valid for 9175/20-14-1* for channel 1 or channel 2.

$U_o = 19.6 \text{ V}$

$I_o = 150 \text{ mA}$ protection level ia

$I_o = 60 \text{ mA}$ protection level ib

$P_o = 732 \text{ mW}$ (linear characteristic)

$C_i = 1.1 \text{ nF}$

$L_i = \text{negligible}$



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The following values are valid when channels 1 and 2 are connected in parallel:
(only 9175/20-14-1*)

$U_o = 19.6 \text{ V}$
 $I_o = 300 \text{ mA}$ protection level ia
 $I_o = 120 \text{ mA}$ protection level ib
 $P_o = 1464 \text{ mW}$ (linear characteristic)
Linear characteristic curve
 $C_i = 2.2 \text{ nF}$
 $L_i = \text{negligible}$

The maximum allowable values for external inductance and capacitance are shown in the table below.

		IIB	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

Type 9175/*0-16-1* intrinsically safe circuits protection level “ia” or “ib”

The data are valid for channel 1 or channel 2.

$U_o = 27.6 \text{ V}$
 $I_o = 110 \text{ mA}$ protection level ia
 $I_o = 50 \text{ mA}$ protection level ib
 $P_o = 760 \text{ mW}$ (linear characteristic)
 $C_i = 1.1 \text{ nF}$
 $L_i = \text{negligible}$

The following values are valid when channels 1 and 2 are connected in parallel:
(only 9175/20-16-1*)

$U_o = 27.6 \text{ V}$
 $I_o = 220 \text{ mA}$ protection level ia, group IIB
 $I_o = 100 \text{ mA}$ protection level ib, group IIB
 $P_o = 1520 \text{ mW}$ (linear characteristic)
 $C_i = 2.2 \text{ nF}$
 $L_i = \text{negligible}$

The maximum allowable values for external inductance and capacitance are shown in the table below.

		IIB	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	-