



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 06.0004X issue No.:1

Status: **Current**

Certificate history:
Issue No. 1 (2010-8-5)
Issue No. 0 (2006-4-13)

Date of Issue: **2010-08-05** Page 1 of 4

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

Electrical Apparatus: **Fieldbus Isolating Repeater type 9185/1*-**-10**
Optional accessory:

Type of Protection: **Intrinsic safety 'i', Construction, test and Marking of Type of Protection "n" electrical apparatus, Protection by intrinsic safety 'iD'**

Marking: **Ex nAc [ib] IIC T4 and [Ex ib] IIIC type 9185/11-**-10**
Ex nAc IIC T4 Type 9185/12-4*-10

Approved for issue on behalf of the IECEx Certification Body: Dr. F. 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



IECEX Certificate of Conformity

Certificate No.: IECEx BVS 06.0004X

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Issue No.: 1

Page 2 of 4

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 : 2007-10 Edition: 5	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15 : 2005-03 Edition: 3	Electrical apparatus for explosive gas atmospheres Part 15: Construction, test and Marking of Type of Protection "n" electrical apparatus
IEC 61241-11 : 2005 Edition: 1	Electrical apparatus for use in the presence of combustible dusts - Part 11: Protection by intrinsic safety 'ID'

*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/ExTR06.0035/01](#)

Quality Assessment Report:

[DE/BVS/QAR10.0002/00](#)



IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0004X

Date of Issue: 2010-08-05

Issue No.: 1

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Type designation

See Annex

Parameter

See Annex

CONDITIONS OF CERTIFICATION: YES as shown below:

Special conditions for safe use

If mounted in Zone 2, the Fieldbus Isolating Repeater has to be assembled into an enclosure in acc. with IEC 60079-15.



IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0004X

Date of Issue: 2010-08-05

Issue No.: 1

Page 4 of 4

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

The isolating repeater has been modified slightly and the use for dust atmospheres has been added.
The CoC has been linked to a new QAR.



IECEX Certificate of Conformity



Certificate No.: IECEx BVS 06.0004X, Issue 1
Annex
Page 1 of 2

Type designation:

Fieldbus Isolating Repeater	Type 9185 / 1 * - * * - 1 0
	1
Interface field: Ex i	1
not Ex i	2
Interface field: RS485IS	3
RS422 + RS485	4
Functionality Repeater	5
Bridge	6
	1
	0

Electrical data

1	Power supply circuit (terminals 7 (L+) - 9 (L-) and pac-bus connector V007/1 – V007/2)				
	Nominal voltage	U_{in}	DC	24	V
	Range of nominal voltage		DC	18-31.2	V
	Nominal current			80	mA
	Max. voltage	U_m	AC	253	V
2	Non-intrinsically safe bus interfaces				
	Max. voltage	U_m	AC	253	V
2.1	RS232 interface: connection: sub-d plug X1				
	Types 9185/11-35-10, 9185/11-46-10 and 9185/12-4*-10:				
	Pin 2 (RXD), 3 (TXD), 5 (GND), 7 (RTS), 8 (CTS)				
	Type 9185/11-45-10: Pin 2 (TXD), 3 (RXD), 5 (GND), 7 (RTS), 8 (CTS)				
	Nominal voltage			± 15	V
	Input resistance $R_{Receiver}$			≥ 3	k Ω
2.2	RS485/RS422 interface: connection: sub-d socket X2				
	Types 9185/11-**-10				
	RS485 Data line or RS422-receiver (TXD): Pin 3 (B+), Pin 8 (A-)				
	Power supply termination resistance: Pin 6 (U+), Pin 5 (U-)				
	RS485 Repeater signal or RS422 transmitter (RXD): Pin 4 (B+), Pin 9 (A-)				
	Type 9185/12-4*-10				
	RS485 or RS422 TXD: Pin 3 (B+), Pin 5 (U-), Pin 6 (U+), Pin 8 (A-)				
	RS422 RXD: Pin 4 (B+), Pin 9, (A-)				
	Nominal voltage		DC	5	V
	Input resistance $R_{Receiver}$			≥ 12	k Ω



IECEX Certificate of Conformity



Certificate No.: IECEx BVS 06.0004X, Issue 1
Annex
Page 2 of 2

- 3 Interface field side
- 3.1 Non IS Type 9185/12-46-10 (RS422) (connection: sub-d socket X3)
TXD: Pin 3 (B+), Pin 8 (A-), RXD: Pin 4 (B+), Pin 9, (A-)

Nominal voltage	DC	5	V
Input resistance $R_{Receiver}$		≥ 12	k Ω

- 3.2 Non IS Type 9185/12-45-10 (RS422/RS485) (connection: sub-d socket X3)
RS485 or RS422 TXD: Pin 3 (B+), Pin 8 (A-)
RS422 RXD: Pin 4 (B+), Pin 9, (A-)

Nominal voltage	DC	5	V
Input resistance $R_{Receiver}$		≥ 12	k Ω

- 3.3 IS Type 9185/11-35-10 (RS485 IS)
(connections: sub-d socket X3, Pin 3 (B+), Pin 5 (U-), Pin 6 (U+), Pin 8 (A-))
The intrinsically safe bus interface is galvanically isolated from the non-intrinsically safe circuits and from earth.

Voltage	U_o	DC	3.73	V
Current	I_o		149	mA
Power	P_o		139	mW
Linear output characteristic				

For the connection of intrinsically safe fieldbus circuits RS485 IS with the following max. value:

Voltage	U_i	\pm	4.2	V
Effective internal capacitance	C_i		negligible	
Effective internal inductance	L_i		negligible	

- 3.4 IS Type 9185/11-45-10 and type 9185/11-46-10 (RS422/RS485)
(connections: sub-d socket X3, Pin 3 (B+), Pin 5 (U-), Pin 6 (U+), Pin 8 (A-))
The intrinsically safe bus interface is galvanically isolated from the non-intrinsically safe circuits and from earth.

Voltage	U_o	DC	5.88	V
Current	I_o		50	mA
Power	P_o		73.3	mW
Linear output characteristic				

The values for the external capacitances C_o and inductances L_o are shown in the following table:

	IIB	IIC
max. external inductance L_o	56 mH	15 mH
max. external capacitance C_o	1000 μ F	43 μ F

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

For the connection of intrinsically safe fieldbus circuits with the following max. value:

Voltage	U	\pm	5.88	V
Effective internal capacitance	C_i		negligible	
Effective internal inductance	L_i		negligible	

- 4 Ambient temperature range T_a -20 °C up to +70 °C