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.:2	Certificate history: Issue No. 2 (2012-10-19) Issue No. 1 (2010-8-5) Issue No. 0 (2006-4-13)
Status:	**Current**	
Date of Issue:	**2012-10-19** 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**

Marking: for type 9185/11-**-10

Ex nA [ib Gb] IIC T4 Gc and
[Ex ib Db] IIIC or
Ex nAc [ib] IIC T4 and
[Ex ib] IIIC

for type 9185/12-4*-10

Ex nA IIC T4 Gc or
Ex nAc IIC T4

Approved for issue on behalf of the IECEx Certification Body: H.-Ch. Simanski

Position: 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.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA EXAM GmbH

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

Additional 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"

*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/ExTR06.0035/02

Quality Assessment Report:

DE/BVS/QAR10.0002/02

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Schedule

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

The Fieldbus Isolating Repeaters are designed to transmit and convert data from different interfaces and transmission protocols. The devices are designed for DIN rail mounting and are equipped with detachable terminals for the external power supply available in screw terminal, cage clamp terminal and insulation cutting terminal versions, while the data interfaces connect via Sub-d type connectors.

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

Type designation

See Annex

Electrical data

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.

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

The Fieldbus isolating repeater has been assessed in acc. with IEC 60079-0 :2011, IEC 60079-11 :2011 and IEC 60079-15 :2010.

Annexe: BVS_06_0004X_R.Stahl_Annex_issue2.pdf

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Certificate No.: **IECEx BVS 06.0004X, Issue 2**
Annex

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	Um	AC	253	V

2 Non-intrinsically safe bus interfaces

Max. voltage	Um	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	kΩ

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	kΩ

3 Interfaces 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	kΩ

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	kΩ

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	Uo	DC	3.73	V
Current	Io		149	mA
Power	Po		139	mW

linear output characteristic

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

Voltage	Ui	±	4.2	V
Effective internal capacitance	Ci		negligible	
Effective internal inductance	Li		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	Uo	DC	5.88	V
Current	Io		50	mA
Power	Po		73.3	mW

linear output characteristic

The values for the external capacitances Co and inductances Lo are shown in the following table:

	IIB	IIC
max. external inductance Lo	56 mH	15 mH
max. external capacitance Co	1000 µF	43 µF

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	±	5.88	V
Effective internal capacitance	Ci		negligible	
Effective internal inductance	Li		negligible	

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