



Translation

**EC-Type Examination Certificate**

(1)

(2)

**- Directive 94/9/EC -**  
**Equipment and protective systems intended for use**  
**in potentially explosive atmospheres**

(3)

**DMT 02 ATEX E 246 X**

(4)

**Equipment: Fieldbus isolating repeater type 9185/1\*-\*5-10**

(5)

**Manufacturer: R. STAHL Schaltgeräte GmbH**

(6)

**Address: D 74638 Waldenburg**

(7)

The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate

(8)

The certification body of Deutsche Montan Technologie GmbH, notified body no 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the test and assessment report BVS PP 02.2129 EG.

(9)

The Essential Health and Safety Requirements are assured by compliance with:

EN 50014:1997+A1-A2 General requirements  
EN 50020:1994 Intrinsic safety 'i'  
EN 50281-1-1:1998 Dust explosion protection  
EN 50021:1999 Type of protection 'n'

(10)

If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11)

This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.

Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate

(12)

The marking of the equipment shall include the following:

**Ex II (2) GD [EEx ib] IIC/IIB and II 3 G EEx nA II T4**

**Ex II 3 G EEx nA II T4** (for type 9185/12-45-10)

**Deutsche Montan Technologie GmbH**

Essen, dated 05. December 2002

Signed: Jockers

Signed: Eickhoff

DMT-Certification body

Head of special services unit



(13) Appendix to

(14) **EC-Type Examination Certificate**

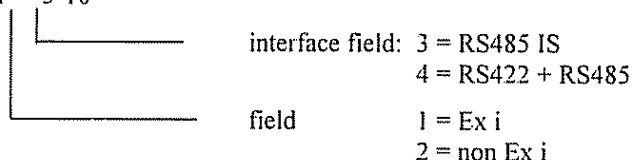
**DMT 02 ATEX E 246 X**

(15) 15.1 Subject and type

Fieldbus isolating repeater type 9185/1\*-\*5-10

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

Type 9185/1\*-\*5-10



15.2 Description

The fieldbus isolating repeater, which will be installed outside the hazardous area or in an enclosure which is in accordance with EN 50021, is used for converting intrinsically safe bus signals into non-intrinsically safe signals

15.3 Parameters

15.3.1	Power supply circuit (terminals 7 (L+) - 9 (I-) and pac-bus connector V007/1 – V007/2)				
	Nominal voltage	DC	24	V	
	max. voltage	Um AC	250	V	
	Nominal current		80	mA	
15.3.2	Non-intrinsically safe bus interfaces				
	max. voltage	Um AC	250	V	
15.3.2.1	RS232 interface				
	Connection: sub-d plug X1:				
	Type 9185/11-35-10 and type 9185/12-45-10: 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	
15.3.2.2	RS485/RS422 interface				
	Connection: sub-d socket X2:				
	RS485 Data line or RS422-receiver (TXD): B+ = Pin 3, A- = Pin 8				
	Power supply termination resistance: U+ = Pin 6, U- = Pin 5				
	RS485 Repeater signal or RS422 transmitter (RXD): B+ = Pin 4, A- = Pin 9				
	Nominal voltage	DC	5	V	
	Input resistance $R_{Receiver}$		≥ 12	kΩ	



15.3.3 Intrinsically safe bus interface

The intrinsically safe bus interface is galvanically isolated from the non-intrinsically safe circuits and from earth.

15.3.3.1 Type 9185/11-35-10 (RS485 IS)

Connections: sub-d socket X3, Pin 3 (B+), Pin 5 (U-), Pin 6 (U+), Pin 8 (A-)

Voltage	U <sub>o</sub>	DC	3,73	V
Current	I <sub>o</sub>		149	mA
Power	P <sub>o</sub>		139	mW

linear output characteristic

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

Voltage	U <sub>i</sub>	±	4,2	V
Effective internal capacitance	C <sub>i</sub>	negligible		
Effective internal inductance	L <sub>i</sub>	negligible		

15.3.3.2 Type 9185/11-45-10 (RS422/485)

connections: sub-d socket X3, Pin 3 (B+), Pin 5 (U-), Pin 6 (U+), Pin 8 (A-)

Voltage	U <sub>o</sub>	DC	5,88	V
Current	I <sub>o</sub>		50	mA
Power	P <sub>o</sub>		73,3	mW

linear output characteristic

The values for the external capacitances C<sub>o</sub> and inductances L<sub>o</sub> are shown in the following table:

	IIB	IIC
max. external inductance L <sub>o</sub>	56 mH	15 mH
max. external capacitance C <sub>o</sub>	1000 µF	43 µF

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

Voltage	U	±	5,88	V
Effective internal capacitance	C <sub>i</sub>	negligible		
Effective internal inductance	L <sub>i</sub>	negligible		

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

(16) Test and assessment report

BVS PP 02.2129 EG as of 05.12.2002

(17) Special conditions for safe use

For installation of the fieldbus isolating repeater in areas, where category 3 equipment is required, those modules have to be mounted in enclosures which are in accordance with EN 50021.

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We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

45307 Essen, 05.12.2002

BVS-Schu/Mi A 20020678

**Deutsche Montan Technologie GmbH**

  
DMT-Certification body

  
Head of special services unit



## Translation

# 1st Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

## to the EC-Type Examination Certificate DMT 02 ATEX E 246 X

**Equipment:** Fieldbus isolating repeater type 9185/1\*-\*-10

**Manufacturer:** R. STAHL Schaltgeräte GmbH

**Address:** D - 74638 Waldenburg

### Description

The repeater can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report and the following variation is also available:

Type 9185/1\*-\*-6-10

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2 General requirements  
EN 50020:2002 Intrinsic safety 'i'  
EN 50281-1-1:1998 +A1 Dust explosion protection  
EN 50021:1999 Type of protection 'n'

### Test and assessment report

BVS PP 02.2129 EG as of 06.04.2004

## EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 06. April 2004

Signed: Migenda

\_\_\_\_\_  
Certification body

Signed: Dr. Wittler

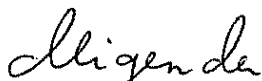
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Special services

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We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 06. April 2004  
BVS-Schu/Kw A 20040193

## EXAM BBG Prüf- und Zertifizier GmbH

  
\_\_\_\_\_  
Certification body

  
\_\_\_\_\_  
Special services unit



## 2nd Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

### to the EC-Type Examination Certificate DMT 02 ATEX E 246 X

**Equipment:** Fieldbus isolating repeater type 9185/11-\*\*-10

**Manufacturer:** R. STAHL Schaltgeräte GmbH

**Address:** 74638 Waldenburg, Germany

#### Description

The isolating repeater has been modified slightly; the variation type 9185/12-\*\*-10 has been deleted and the repeater has been tested in acc. with EN 60079-\* and EN 61241-11.

Instead of the \*\*\* in the complete denomination numerals will be inserted which characterize modifications:  
Type 9185/11-\*\*-10

┌───┐ ├───┐ └───┘	Functionality	5 = repeater 6 = bridge
	Interface field:	3 = RS485 IS 4 = RS422 + RS485

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 60079-0:2009	General requirements
EN 60079-11:2007	Intrinsic safety 'i'
EN 60079-15:2005	Type of protection 'n'
EN 61241-11:2006	Intrinsic safety 'iD'

The marking of the equipment shall include the following:



**II 3(2) G Ex nAc [ib] IIC T4**  
**II (2) D [Ex ib] IIIC**

## Parameters

1	Power supply circuit (terminals 7 (L+) - 9 (L-) and pac-bus connector V007/1 – V007/2)				
	Nominal voltage		DC	24	V
	max. voltage	Um	AC	253	V
	Nominal current			80	mA
2	Non-intrinsically safe bus interfaces				
	max. voltage	Um	AC	253	V
2.1	RS232 interface connection: sub-d plug X1: type 9185/11-35-10 and type 9185/11-46-10: 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: RS485 Data line or RS422-receiver (TXD): B+ = Pin 3, A- = Pin 8 Power supply termination resistance: U+ = Pin 6, U- = Pin 5 RS485 Repeater signal or RS422 transmitter (RXD): B+ = Pin 4, A- = Pin 9				
	Nominal voltage		DC	5	V
	Input resistance $R_{Receiver}$			≥ 12	kΩ
3	Intrinsically safe bus interface				
	The intrinsically safe bus interface is galvanically isolated from the non-intrinsically safe circuits and from earth.				
3.1	Type 9185/11-35-10 (RS485 IS)				
	Connections: sub-d socket X3, Pin 3 (B+), Pin 5 (U-), Pin 6 (U+), Pin 8 (A-)				
	Voltage	U <sub>o</sub>	DC	3.73	V
	Current	I <sub>o</sub>		149	mA
	Power	P <sub>o</sub>		139	mW
	linear output characteristic				
	For the connection of intrinsically safe fieldbus circuits RS485 IS with the following max. value:				
	Voltage	U <sub>i</sub>		± 4.2	V
	effective internal capacitance	C <sub>i</sub>		negligible	
	effective internal inductance	L <sub>i</sub>		negligible	
3.2	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-)				
	Voltage	U <sub>o</sub>	DC	5.88	V
	Current	I <sub>o</sub>		50	mA
	Power	P <sub>o</sub>		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 use in areas where combustible dust is present 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

Special conditions for safe use

For installation of the fieldbus isolating repeater in areas, where category 3 equipment is required, this module has to be mounted inside an enclosure which is in accordance with EN 60079-15.

Test and assessment report

BVS PP 02.2129 EG as of 21.07.2010

**DEKRA EXAM GmbH**  
Bochum, dated 21 July 2010

Signed: Dr. Franz Eickhoff

Signed: Dr. Gregor Arnold

\_\_\_\_\_  
Certification body

\_\_\_\_\_  
Special services unit

We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 21.07.2010  
BVS-Schu/Her A 20100069

**DEKRA EXAM GmbH**



\_\_\_\_\_  
Certification body



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Special services unit

**EG-Konformitätserklärung**  
*EC-Declaration of Conformity*  
*Déclaration de Conformité CE*



Wir; we; nous

R. STAHL Schaltgeräte GmbH, Am Bahnhof 30, 74638 Waldenburg, Germany

**9185/11-cd-10**

c = 3, 4      d = 5, 6

**erklären in alleiniger Verantwortung, dass das Produkt**  
*hereby declare in our sole responsibility, that the product*  
*déclarons, sous notre seule responsabilité, que le produit*

**Feldbus-Trennübertrager**  
*Fieldbus isolating repeater*  
*Convertisseur fieldbus*

**mit der**            **EG-Baumusterprüfbescheinigung:**  
*under*            *EC-Type Examination Certificate:*  
*avec*             *Attestation d'examen CE de type:*

**DMT 02 ATEX E 246 X**  
**(DEKRA EXAM GmbH**  
**Dinnendahlstraße 9, 44809 Bochum)**

**auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt**  
*which is the subject of this declaration, is in conformity with the following standards or normative documents*  
*auquel cette déclaration se rapporte, est conforme aux normes ou aux documents normatifs suivants*

<b>Bestimmungen der Richtlinie</b> <i>Terms of the directive</i> <i>Prescription de la directive</i>	<b>Nummer sowie Ausgabedatum der Norm</b> <i>Number and date of issue of the standard</i> <i>Numéro ainsi que date d'émission de la norme</i>
<b>94/9/EG: ATEX-Richtlinie</b> <i>94/9/EC: ATEX Directive</i> <i>94/9/CE: Directive ATEX</i>	EN 60079-0: 2009 EN 60079-11: 2007 EN 60079-15: 2005 EN 61241-11: 2006
<b>2004/108/EG: EMV-Richtlinie</b> <i>2004/108/EC: EMC Directive</i> <i>2004/108/CE: Directive CEM</i>	EN 61326-1: 2006
<b>Allgemeine Normen ohne Bezug auf eine Richtlinie</b> <i>General standards without reference to a directive</i> <i>Normes générales sans référence à une directive</i>	EN 50178: 1997 EN 61010-1: 2001

Waldenburg, 10.08.2010

**Ort und Datum**  
*Place and date*  
*Lieu et date*

  
**J.-P. Rückgauer**  
**Leiter Entwicklung und Technik**  
*Director Design and Technology*  
*Directeur Développement et Technique*

  
**Dr. S. Jung**  
**Leiter Qualitätsmanagement**  
*Director Quality Management Dept.*  
*Directeur Dép. Assurance de Qualité*