

# Switching Repeater

Switching Repeater Field Circuit Ex i / I.S.



serial No. Date  
EX-GB- 900 09/15

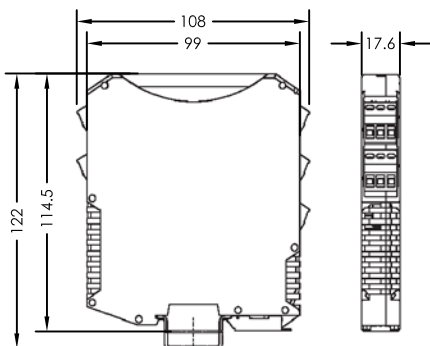
## Features

- Intrinsically safe Input [Ex ia] IIC
- Galvanic isolation between input, output and power supply
- Open-circuit / short-circuit monitoring and messaging (can be switched off)
- Inversion of output signal can be set
- Transmission frequency up to 10 kHz
- For use up to SIL 2 (relay - output)
- Optionally SIL 3 (electronic - output) (IEC 61508)

Basic function: binary / digital Input, 1 and 2 channels.  
The switching repeaters are suitable typically for intrinsically safe operation of contacts, proximity switches to EN 60947-5-6 (NAMUR), optocoupler outputs etc.  
The output of the switching repeater behaves acc. to EN 60947-5-6 (NAMUR).



## Dimension drawing



## Mechanical data

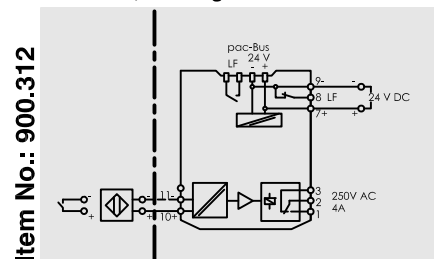
Weight Assembly	approx. 160 g on DIN rail (NS35/15, NS35/7.5) or In pac-Carrler
Installation position	horizontal or vertical
Enclosure	IP30
Terminals	IP20
Enclosure material	PA 6.6
Fire protection class	V0 (UL-94)

## Connection

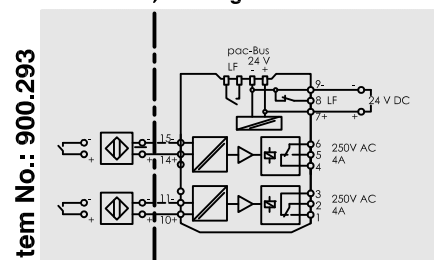
<b>Connection single-wire</b>	
- rigid	0,2 ... 2,5 mm <sup>2</sup>
- flexible	0,2 ... 2,5 mm <sup>2</sup>
- flexible, end covering sleeves (without / with plastic sleeving)	0,25 ... 2,5 mm <sup>2</sup>
<b>Connection two wires</b>	
- rigid	0,2 ... 1 mm <sup>2</sup>
- flexible	0,2 ... 1,5 mm <sup>2</sup>
- flexible, end covering sleeves	0,25 ... 1 mm <sup>2</sup>

## Connection diagram

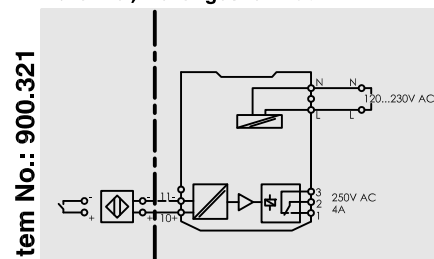
1 channel, 1 changeover- 24V DC



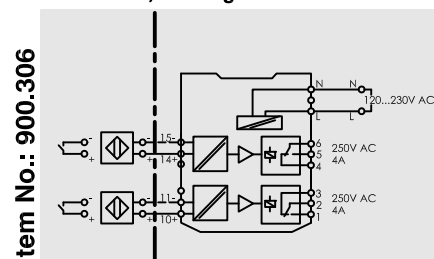
2 channels, 2 changeovers- 24V DC



1 channel, 1 changeover- 230V AC



2 channels, 2 changeovers - 230V AC



## Explosion Protection

	24V DC	230V AC
<b>Global (IECEX)</b> Gas	IECEX BVS 09.0041X [Ex ia] IIC, [Ex ia] IIIC	[Ex ia] IIC, [Ex ia] IIIC
<b>Europe (ATEX)</b> Gas and dust	DMT 02 ATEX E 195 X E II (1) G [Ex ia] IIC E II (1) G [Ex ia] IIC	DMT 02 ATEX E 195 X E II (1) D [Ex ia] IIIC E II (1) D [Ex ia] IIIC
<b>USA (NEC)</b> Gas and dust	3017145 (FM) CL I, DIV. 2, GP. A,B,C,D CL I, ZONE 2, GP. IIC AIS CL I, II, III, DIV. 1, GP. A,B,C,D,E,F,G CL I ZONE 0 [AEx ia] IIC, T4 at Ta = 70 °C E81680 (UL) CL I, GR A-G CL II, GR EFG CL III, Ta = 70 °C	3017145 (FM) AIS CL I, II, III, DIV. 1, GP. A,B,C,D,E,F,G CL I, ZONE 0 [AEx ia] IIC, T4 at Ta = 70 °C  E81680 (UL) CL I, GR A-G CL II, GR EFG CL III, Ta = 70 °C
<b>Russia (Gost-R)</b> Gas	[Exia]IIC [Exia]IIIC [ExiaD] [ExiaD]	
<b>Certificates and approvals</b> Certificates	IECEX, ATEX, Brazil (INMETRO), India (PESO), Canada (CSA), Kazakhstan (JSC), Korea (KTL) only for 9170/10-12-21., Russia (GOST-R), Serbia (SRPS), USA (FM, UL), Belarus (GOST-B)	IECEX, ATEX, Brazil (INMETRO), India (PESO), Canada (CSA), Kazakhstan (JSC), Korea (KTL) only for 9170/10-12-21., Russia (GOST-R), Serbia (SRPS), USA (FM, UL), Belarus (GOST-B)
<b>Other approvals</b>	shlp approval (DNV)	shlp approval (DNV)



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# (1) 4. Nachtrag zur EG-Baumusterprüfbescheinigung

(2) Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - Richtlinie 94/9/EG Ergänzung gemäß Anhang III Ziffer 6

(3) Nr. der EG-Baumusterprüfbescheinigung: **DMT 02 ATEX E 195 X**

(4) Gerät: **Schaltverstärker Typ 9170/\*\*..\*\*..\*\***

(5) Hersteller: **R. STAHL Schaltgeräte GmbH**

(6) Anschrift: **74638 Waldenburg**

(7) Die Bauart dieser Geräte sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu diesem Nachtrag festgelegt.

(8) Die Zertifizierungsstelle der DEKRA EXAM GmbH, benannte Stelle Nr. 0158 gemäß Artikel 9 der Richtlinie 94/9/EG des Europäischen Parlaments und des Rates vom 23. März 1994, bescheinigt, dass diese Geräte die grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie erfüllen. Die Ergebnisse der Prüfung sind in dem Prüfprotokoll BVS-PP-02-2099-EG niedergelegt.


(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit

IEC 60079-0:2011	Allgemeine Anforderungen
IEC 60079-11:2011	Eigensicherheit „I“
EN 60079-15:2010	Zündschutzart „n“
EN 60079-26:2007	Geräte EPL Ga
EN 50303:2000	Gruppe I, Kat. M1-Geräte

(10) Falls das Zeichen "X" hinter der Bescheinigungsnummer steht, wird in der Anlage zu dieser Bescheinigung auf besondere Bedingungen für die sichere Anwendung des Gerätes hingewiesen.


(11) Dieser Nachtrag zur EG-Baumusterprüfbescheinigung bezieht sich nur auf die Konzeption und die Baumusterprüfung der beschriebenen Geräte in Übereinstimmung mit der Richtlinie 94/9/EG. Für Herstellung und Inverkehrbringen der Geräte sind weitere Anforderungen der Richtlinie zu erfüllen, die nicht durch diese Bescheinigung abgedeckt sind.

(12) Die Kennzeichnung des Gerätes muss die folgenden Angaben enthalten:

	alternativ	Typ
II (1) G [Ex Ia Ga] IIC	II (1) G [Ex Ia] IIC	9170/**..**..2*
II (1) D [Ex Ia Da] IIIC	II (1) D [Ex Ia] IIIC	9170/**..**..1*
 II 3 (1) G Ex nA nC [Ia Ga] IIC T4 Gc	II 3 (1) G Ex nAc nCc [Ia] IIC T4	9170/**..**..3-1*
II (1) D [Ex Ia Da] IIIC	II (1) D [Ex Ia] IIIC	9170/**..**..0-1*
I (M1) [Ex Ia Ma] I	I (M1) [Ex Ia] I	9170/**..**..1-1*
		9170/**..**..4-1*
		9170/*2-12-3

DEKRA EXAM GmbH  
Bochum, den 19.03.2012

  
Zertifizierungsstelle

  
Fachbereich

Translation

(1) **4. Supplement to the EC-Type Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC Supplement accordant with Annex III number 6

(3) No. of EC-Type Examination Certificate: **DMT 02 ATEX E 195 X**

(4) Equipment: **Switching repeater type 9170/\*\*-\*\*-\*\***

(5) Manufacturer: **R. STAHL Schaltgeräte GmbH**

(6) Address: **74638 Waldenburg, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.


(8) The certification body of DEKRA EXAM 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 02.2009 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:  
IEC 60079-0:2011 General requirements  
IEC 60079-11:2011 Intrinsic safety 'i'  
EN 60079-15:2010 Type of protection 'n'  
EN 60079-26:2007 Equipment EPL Ga  
EN 50303:2000 Group I, Cat. M1 apparatus

(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 appendix to this certificate.

(11) This supplement to the 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:

	alternative	type
II (1) G [Ex Ia Ga] IIC	II (1) G [Ex Ia] IIC	9170/**-**-2*
II (1) D [Ex Ia Da] IIIC	II (1) D [Ex Ia] IIIC	9170/**-2-1*
		9170/**-3-1*
 II 3 (1) G Ex nA nC [Ia Ga] IIC T4 Gc	II 3 (1) G Ex nAc nCc [Ia] IIC T4	9170/**-0-1*
	II (1) D [Ex Ia] IIIC	9170/**-1-1*
		9170/**-4-1*
I (M1) [Ex Ia Ma] I	I (M1) [Ex Ia] I	9170/2-12-3*

DEKRA EXAM GmbH  
Bochum, dated 19.03.2012

Signed: SImanski

Signed: Dr. Eickhoff

Certification body

Special services unit

- (13) Appendix to
- (14) **4. Supplement to the EC-Type Examination Certificate  
DMT 02 ATEX E 195 X**
- (15) 15.1 Subject and type

Switching repeater type 9170/\*\*\_\*\*\_\*\*

15.2 Description

The conformity of the switching repeater with the standards IEC 60079-0:2011, IEC 60079-11:2011 and EN 60079-15:2010 has been assessed.

15.3 Parameters

Not changed

- (16) Test and Assessment Report

BVS PP 02.2099 EG as of 19.03.2012

- (17) Special conditions for safe use

For installation of the modules type 9170/\*\*\_\*\*\_0-1\*, type 9170/\*\*\_\*\*\_1-1\* and type 9170/\*\*\_\*\*\_A-1\* in areas where category 3 equipment is required, those modules have to be mounted in enclosures which are in accordance with EN 60079-15.

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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.

DEKRA EXAM GmbH  
44809 Bochum, 19.03.2012  
BVS-Schu/Sch A 20120114

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

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