



Translation

EC-Type Examination Certificate

(1)

EC-Type Examination Certificate

(2)

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

(3)

DMT 02 ATEX E 195 X

(4)

Equipment: Switching repeater type 9170/*0--*1**

(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 02.2099 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 50284:1999 Equipment Group II Category 1G
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:



II (1) GD [EEx ia] IIC/IIB and for some types additionally
II 3G EEx nAC II T4

Deutsche Montan Technologie GmbH

Essen, dated 18. October 2002

Signed: Jockers

Signed: Arnold

DMT-Certification body

Head of special services unit

(13) Appendix to

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

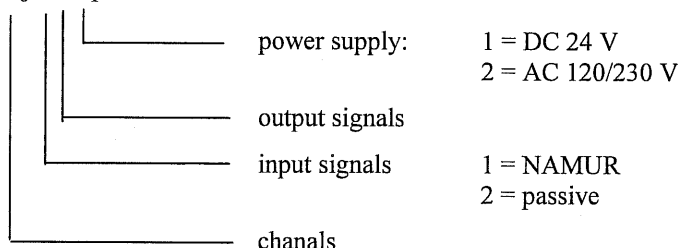
DMT 02 ATEX E 195 X

(15) 15.1 Subject and type

Switching repeater type 9170/*0-**-*1

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

Type 9170/*0-**-*1



All variations are marked with : $\text{\textcircled{Ex}}$ II (1) GD [EEx ia] IIC/IIB and the variations type 9170/*0-*0-11, type 9170/*0-*1-11 and type 9170/*0-*4-11 are marked additionally with $\text{\textcircled{Ex}}$ II 3 G EEx nAC II T4.

15.2 Description

The switching repeater, which will be installed outside the hazardous area or in an enclosure which is in accordance with EN 50021 (type 9170/*0-*0-11, type 9170/*0-*1-11 and type 9170/*0-*4-11), is used for converting the intrinsically safe input signals into non-intrinsically safe output signals.

15.3 Parameters

15.3.1 Power supply circuit

15.3.1.1 Type 9170/*0-**-11 (terminals 7 - 9 and pac-bus connector V007/1 – V007/2)

| | | | | |
|-----------------|----|----|-----|----|
| Nominal voltage | | DC | 24 | V |
| Max. voltage | Um | AC | 250 | V |
| Nominal current | | | 65 | mA |

15.3.1.2 Type 9170/*0-**-21 (terminals 7 - 9)

| | | | | |
|-----------------|----|----|----------|----|
| Nominal voltage | | AC | 120/230V | |
| Max. voltage | Um | AC | 250 | V |
| Nominal current | | | 20 | mA |

15.3.2 Non-intrinsically safe output signals

15.3.2.1 Type 9170/20-*0-*1 (output1 terminals 1, 2 and 3, output 2 terminals 4, 5 and 6)

| | | | | |
|-----------------|----|-------|-----|---|
| Nominal voltage | | AC/DC | 125 | V |
| Max. voltage | Um | AC | 250 | V |
| Nominal current | | | 1 | A |

15.3.2.2 Type 9170/10-*1-*1 (terminals 1, 2 and 3 and terminals 4, 5 and 6, contacts galvanically separated)

| | | | | |
|-----------------|----|-------|-----|---|
| Nominal voltage | | AC/DC | 125 | V |
| Max. voltage | Um | AC | 250 | V |
| Nominal current | | | 1 | A |

| | | | | | |
|----------|--|----|------------|------|----|
| 15.3.2.3 | Type 9170/20-*1-*1 (output1 terminals 1 - 2 and 3 - 2, outout 2 terminals 4 - 6 and 5 - 6) | | | | |
| | Nominal voltage | | AC/DC | 125 | V |
| | Max. voltage | Um | AC | 250 | V |
| | Nominal current | | | 1 | A |
| 15.3.2.4 | Type 9170/*0-*2-*1 (output1 terminals 1, 2 and 3, output 2 terminals 4, 5 and 6 only type 9170/20-*2-*1) | | | | |
| | Nominal voltage | | AC/DC | 250 | V |
| | Max. voltage | Um | AC | 250 | V |
| | Nominal current | | | 3 | A |
| 15.3.2.5 | Type 9170/10-*3-*1 (terminals 1, 2 and 3 and terminals 4, 5 and 6, contacts galvanically separated) | | | | |
| | Nominal voltage | | AC/DC | 250 | V |
| | Max. voltage | Um | AC | 250 | V |
| | Nominal current | | | 3 | A |
| 15.3.2.6 | Type 9170/*0-*4-*1 (output1 terminals 1 - 2, output 2 terminals 5 – 6, only type 9170/20-*4-*1) | | | | |
| | Nominal voltage | | DC | 35 | V |
| | Max. voltage | Um | AC | 250 | V |
| | Nominal current | | | 50 | mA |
| 15.3.3 | Line fault monitoring circuits (only for type 9170/*0-**-11) | | | | |
| | loop 1 terminals 8 – 9 | | | | |
| | loop 2 pac-bus connector V007/3 – V007/4, potentially free contact | | | | |
| | Nominal voltage | | DC | 24 | V |
| | Max. voltage | Um | AC | 250 | V |
| | Nominal current | | | 100 | mA |
| 15.3.4 | Intrinsically safe input circuits | | | | |
| | Input 1: terminals 10 – 11 | | | | |
| | Input 2: terminals 14 – 15 | | | | |
| 15.3.4.1 | Type 9170/*0-1*-*1 | | | | |
| | Voltage | Uo | DC | 10,6 | V |
| | Current | Io | | 24 | mA |
| | Power | Po | | 64 | mW |
| | linear output characteristic | | | | |
| | effective internal capacitance | Ci | | 2,42 | nF |
| | effective internal inductance | Li | negligible | | |

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

| | IIB | IIC |
|----|---------|---------|
| Lo | 230 mH | 63 mH |
| Co | 16,2 µF | 2,32 µF |

if both input circuits are connected in parallel (terminals 10 – 14 and 11 – 15) the following values apply for the resulting circuit:

| | | | | |
|--------------------------------|----|------------|------|----|
| Voltage | Uo | DC | 10,6 | V |
| Current | Io | | 48 | mA |
| Power | Po | | 128 | mW |
| linear output characteristic | | | | |
| effective internal capacitance | Ci | | 4,84 | nF |
| effective internal inductance | Li | negligible | | |

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

| | IIB | IIC |
|----|--------------|--------------|
| Lo | 61 mH | 16 mH |
| Co | 16,2 μ F | 2,32 μ F |

15.3.4.2 Type 9170/*0-2*-*1

| | | | |
|--------------------------------|----|------------|---------|
| Voltage | Uo | DC | 10,6 V |
| Current | Io | | 1,1 mA |
| Power | Po | | 2,9 mW |
| linear output characteristic | | | |
| effective internal capacitance | Ci | | 2,42 nF |
| effective internal inductance | Li | negligible | |

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

| | IIB | IIC |
|----|--------------|--------------|
| Lo | 1000 mH | 1000 mH |
| Co | 16,2 μ F | 2,32 μ F |

if both input circuits are connected in parallel (terminals 10 – 14 and 11 – 15) the following values apply for the resulting circuit:

| | | | |
|--------------------------------|----|------------|---------|
| Voltage | Uo | DC | 10,6 V |
| Current | Io | | 2,2 mA |
| Power | Po | | 5,8 mW |
| linear output characteristic | | | |
| effective internal capacitance | Ci | | 4,84 nF |
| effective internal inductance | Li | negligible | |

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

| | IIB | IIC |
|----|--------------|--------------|
| Lo | 1000 mH | 1000 mH |
| Co | 16,2 μ F | 2,32 μ F |

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

(16) Test and assessment report

BVS PP 02.2099 EG as of 18.10.2002

(17) Special conditions for safe use


For installation of the modules type 9170/*0-*0-11, type 9170/*0-*1-11 and type 9170/*0-*4-11 in areas, where category 3 equipment is required, those moduls have to be mounted in enclosures which are in accordance with EN 50021.



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, 18.10. 2002
BVS-Sch/Mi A 20020459

Deutsche Montan Technologie GmbH



DMT Certification body



Head of special services unit



1st Supplement

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

to the EC-Type Examination Certificate DMT 02 ATEX E 195 X

Equipment: Switching repeater type 9170/*0-**-*1

Manufacturer: R. STAHL Schaltgeräte GmbH

Address: D - 74638 Waldenburg

Description

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

Type 9170/*0-1*-*1

Type 9170/*0-3*-*1

Type 9170/*0-4*-*1

Type 9170/*0-5*-*1

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 50284:1999 Equipment Group II Category 1G
 EN 50281-1-1:1998 Dust explosion protection
 EN 50021:1999 Type of protection 'n'

Parameters

Intrinsically safe input circuits

Input 1: terminals 10 – 11

Input 2: terminals 14 – 15

Type 9170/*0-1*-*1, type 9170/*0-3*-*1, type 9170/*0-4*-*1 and type 9170/*0-5*-*1

| | | | |
|--------------------------------|----------------|------------|---------|
| Voltage | U _o | DC | 10,6 V |
| Current | I _o | | 24 mA |
| Power | P _o | | 64 mW |
| linear output characteristic | | | |
| effective internal capacitance | C _i | | 2,42 nF |
| effective internal inductance | L _i | negligible | |

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

| | IIB | IIC |
|----|---------|---------|
| Lo | 230 mH | 63 mH |
| Co | 16,2 µF | 2,32 µF |

If both input circuits are connected in parallel (terminals 10 – 14 and 11 – 15) the following values apply for the resulting circuit:

| | | | |
|--------------------------------|----|------------|---------|
| Voltage | Uo | DC | 10,6 V |
| Current | Io | | 48 mA |
| Power | Po | | 128 mW |
| linear output characteristic | | | |
| effective internal capacitance | Ci | | 4,84 nF |
| effective internal inductance | Li | negligible | |

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

| | IIB | IIC |
|----|---------|---------|
| Lo | 61 mH | 16 mH |
| Co | 16,2 µF | 2,32 µF |

Test and assessment report

BVS PP 02.2099 EG as of 10.09.2003

Deutsche Montan Technologie GmbH

Bochum, dated 10. September 2003

signed: Jockers

Certification body

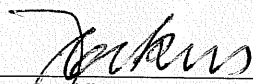
signed: Eickhoff

Special services unit

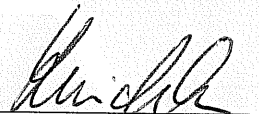
We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 10. September 2003
BVS-Schu/Kw A 20030680

Deutsche Montan Technologie GmbH



Certification body



Special services unit



Translation

2nd Supplement

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

to the EC-Type Examination Certificate DMT 02 ATEX E 195 X

Equipment: Switching repeater type 9170/*0-**-**

Manufacturer: R. STAHL Schaltgeräte GmbH

Address: 74638 Waldenburg, Germany

Description

The switching repeater can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report. The switching repeater has been assessed in acc. with the standards EN 60079-**-** and EN 61241-*. The circuitry has been modified slightly and a new variation is possible:

Type 9170/*0-**-**2

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

EN 60079-0:2006 General requirements
 EN 60079-11:2007 Intrinsic safety 'i'
 EN 60079-15:2005 Type of protection 'n'
 EN 60079-26:2007 Equipment Group II Category 1G
 EN 61241-0:2006 General requirements
 EN 61241-11:2006 Protection by intrinsic safety 'iD'

The marking of the equipment shall include the following:

| | | | |
|--|---------------------------------|-----------|---------------|
| | II (1) G [Ex ia] IIC | for types | 9170/*0-**-2* |
| | II (1) D [Ex iaD] | | 9170/*0-*2-1* |
| | | | 9170/*0-*3-1* |
| | II 3 (1) G Ex nA nC [ia] IIC T4 | for types | 9170/*0-*0-1* |
| | II (1) D [Ex iaD] | | 9170/*0-*1-1* |
| | | | 9170/*0-*4-1* |

Parameters

| | | | | |
|-----|--|----|----|-------|
| 1 | Power supply circuit | | | |
| 1.1 | Type 9170/*0-**-1* (terminals 7 - 9 and pac-bus connector V007/1 – V007/2) | | | |
| | Nominal voltage | | DC | 24 V |
| | Max. voltage | Um | AC | 253 V |
| | Nominal current | | | 50 mA |

| | | | | | |
|-----|--|----|---------|----------|----|
| 1.2 | Type 9170/*0-**-2* (terminals 7 - 9) | | | | |
| | Nominal voltage | | AC | 120/230V | |
| | Max. voltage | Um | AC | 253 | V |
| | Nominal current | | | 13 | mA |
| 2 | Non-intrinsically safe output signals | | | | |
| 2.1 | Type 9170/20-*0-*1 (output1 terminals 1, 2 and 3, output 2 terminals 4, 5 and 6) | | | | |
| | Nominal voltage | | AC/DC | 125 | V |
| | Max. voltage | Um | AC | 253 | V |
| | Nominal current | | | 1 | A |
| 2.2 | Type 9170/10-*1-*1 (terminals 1, 2 and 3 and terminals 4, 5 and 6, contacts galvanically separated) | | | | |
| | Nominal voltage | | AC/DC | 125 | V |
| | Max. voltage | Um | AC | 253 | V |
| | Nominal current | | | 1 | A |
| 2.3 | Type 9170/20-*1-*1 (output1 terminals 1 - 2 and 3 - 2, output 2 terminals 4 - 6 and 5 - 6) | | | | |
| | Nominal voltage | | AC/DC | 125 | V |
| | Max. voltage | Um | AC | 253 | V |
| | Nominal current | | | 1 | A |
| 2.4 | Type 9170/*0-*2-*1 (output1 terminals 1, 2 and 3, output 2 terminals 4, 5 and 6 only type 9170/20-*2-*1) | | | | |
| | Nominal voltage | | AC/DC | 250 | V |
| | Max. voltage | Um | AC | 253 | V |
| | Nominal current | | 2 resp. | 4 | A |
| 2.5 | Type 9170/10-*3-*1 (terminals 1, 2 and 3 and terminals 4, 5 and 6, contacts galvanically separated) | | | | |
| | Nominal voltage | | AC/DC | 250 | V |
| | Max. voltage | Um | AC | 253 | V |
| | Nominal current | | 2 resp. | 4 | A |
| 2.6 | Type 9170/*0-*4-**- (output1 terminals 1 - 2, output 2 terminals 5 - 6, only type 9170/20-*4-**-) | | | | |
| | Nominal voltage | | DC | 35 | V |
| | Max. voltage | Um | AC | 253 | V |
| | Nominal current | | | 50 | mA |
| 3 | Line fault monitoring circuits (only for type 9170/*0-**-1*) | | | | |
| | Loop 1 terminals 8 - 9 | | | | |
| | Loop 2 pac-bus connector V007/3 - V007/4, potentially free contact | | | | |
| | Nominal voltage | | DC | 24 | V |
| | Max. voltage | Um | AC | 253 | V |
| | Nominal current | | | 100 | mA |
| 4 | Intrinsically safe input circuits | | | | |
| | Input 1: terminals 10 - 11, input 2: terminals 14 - 15 | | | | |
| 4.1 | Types 9170/*0-1*-, 9170/*0-3*-, 9170/*0-4*-, 9170/*0-5*-** | | | | |
| | Voltage | Uo | DC | 10.6 | V |
| | Current | Io | | 24 | mA |
| | Power | Po | | 64 | mW |
| | linear output characteristic | | | | |
| | Maximum internal capacitance | Ci | | 2.42 | nF |

Maximum internal inductance Li negligible

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

| | IIB | IIC |
|----|--------|--------|
| Lo | 230 mH | 63 mH |
| Co | 16.2µF | 2.32µF |

If both input circuits are connected in parallel (terminals 10 – 14 and 11 – 15) the following values apply for the resulting circuit:

| | | | |
|------------------------------|----|------------|---------|
| Voltage | Uo | DC | 10,6 V |
| Current | Io | | 48 mA |
| Power | Po | | 128 mW |
| linear output characteristic | | | |
| Maximum internal capacitance | Ci | | 4.84 nF |
| Maximum internal inductance | Li | negligible | |

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

| | IIB | IIC |
|----|---------|---------|
| Lo | 61 mH | 16 mH |
| Co | 16.2 µF | 2.32 µF |

4.2 Type 9170/*0-2*-*

| | | | |
|------------------------------|----|------------|---------|
| Voltage | Uo | DC | 10.6 V |
| Current | Io | | 1.1 mA |
| Power | Po | | 2.9 mW |
| linear output characteristic | | | |
| Maximum internal capacitance | Ci | | 2.42 nF |
| Maximum internal inductance | Li | negligible | |

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

| | IIB | IIC |
|----|---------|---------|
| Lo | 1000 mH | 1000 mH |
| Co | 16.2 µF | 2.32 µF |

If both input circuits are connected in parallel (terminals 10 – 14 and 11 – 15) the following values apply for the resulting circuit:

| | | | |
|------------------------------|----|------------|---------|
| Voltage | Uo | DC | 10.6 V |
| Current | Io | | 2.2 mA |
| Power | Po | | 5.8..mW |
| linear output characteristic | | | |
| Maximum internal capacitance | Ci | | 4.84 nF |
| Maximum internal inductance | Li | negligible | |

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

| | IIB | IIC |
|----|---------|---------|
| Lo | 1000 mH | 1000 mH |
| Co | 16.2 µF | 2.32 µF |

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

Special conditions for safe use

For installation of the modules type 9170/*0-*0-1*, type 9170/*0-*1-1* and type 9170/*0-*4-1* in areas, where Category 3 equipment is required, those moduls have to be mounted in enclosures which are in accordance with EN 60079-15.

Test and assessment report

BVS PP 02.2099 EG as of 18.03.2008

DEKRA EXAM GmbH

Bochum, dated 18. March 2008

Signed:

Simanski

Certification body

Signed:

Dr. Wittler

Special services unit

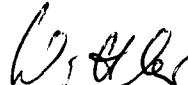
We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 18. March 2008
BVS-Schu/Wa A 20080131

DEKRA EXAM GmbH



Certification body



Special services unit



3rd Supplement

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

to the EC-Type Examination Certificate DMT 02 ATEX E 195 X

Equipment: Switching repeater type 9170/**-**-**

Manufacturer: R. STAHL Schaltgeräte GmbH

Address: 74638 Waldenburg, Germany

Description

The switching repeater can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report. The circuitry of the switching repeater has been modified slightly and new variants are possible:

Type 9170/**-**-*0

Type 9170/**-**-*3

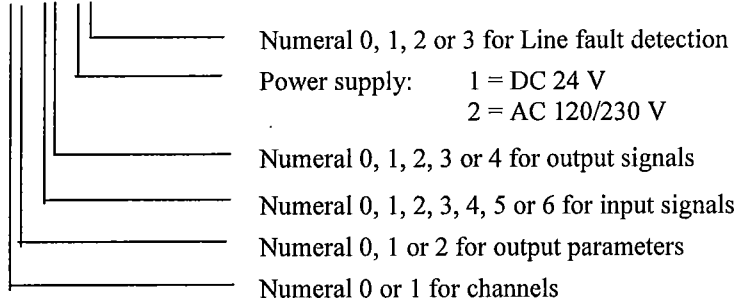
Type 9170/**-**6-**

Type 9170/*1-**-**

Type 9170/*2-**-**

In the complete denomination instead of the *** numerals will be inserted which characterize modifications:


Type 9170/**-**-**



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

| | |
|------------------|-------------------------------------|
| IEC 60079-0:2007 | General requirements |
| EN 60079-11:2007 | Intrinsic safety 'i' |
| EN 60079-15:2005 | Type of protection 'n' |
| EN 60079-26:2007 | Equipment Group II Category 1G |
| EN 50303:2000 | Group I, Cat. M1 apparatus |
| EN 61241-0:2006 | General requirements |
| EN 61241-11:2006 | Protection by intrinsic safety 'iD' |

The marking of the equipment shall include the following:

| | | |
|---|-----------------------------------|----------------|
| | | Type: |
| | II (1) G [Ex ia] IIC | 9170/**-**-2* |
| | II (1) D [Ex ia] IIIC | 9170/**-*-2-1* |
| | | 9170/**-*-3-1* |
|  | 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] I | 9170/*2-12-3* |

Parameters

| | | | | |
|-----|---|----|------------------|-----------|
| 1 | Power supply circuit | | | |
| 1.1 | Type 9170/*0-**-1* and type 9170/*1-**-1* (terminals 7 (L+) - 9 (L-) and pac-bus connector V007/1 – V007/2) Type 9170/*2-12-13 (terminals 7 (L+) – 9 (L-)) | | | |
| | Nominal voltage | | DC | 24 V |
| | Max. voltage | Um | AC | 253 V |
| | Nominal current | | | 50 mA |
| 1.2 | Type 9170/*0-**-2*, type 9170/*1-**-2* and type 9170/*2-12-23 (terminals 7 (L) – 9 (N)) | | | |
| | Nominal voltage | | AC | 120/230 V |
| | Max. voltage | Um | AC | 253 V |
| | Nominal current | | | 13 mA |
| 2 | Non-intrinsically safe output signals | | | |
| 2.1 | Type 9170/2*-*0-** (output 1 terminals 1, 2 and 3, output 2 terminals 4, 5 and 6) | | | |
| | Nominal voltage | | AC/DC | 125 V |
| | Max. voltage | Um | AC | 253 V |
| | Nominal current | | | 1 A |
| 2.2 | Type 9170/1*-*1-** (terminals 1, 2 and 3 and terminals 4, 5 and 6, contacts galvanically separated) | | | |
| | Nominal voltage | | AC/DC | 125 V |
| | Max. voltage | Um | AC | 253 V |
| | Nominal current | | | 1 A |
| 2.3 | Type 9170/2*-*1-** (output 1 terminals 1 - 2 and 3 - 2, output 2 terminals 4 - 6 and 5 - 6) | | | |
| | Nominal voltage | | AC/DC | 125 V |
| | Max. voltage | Um | AC | 253 V |
| | Nominal current | | | 1 A |
| 2.4 | Type 9170/*0-*-2-** and Type 9170/*1-*-2-** (output 1 terminals 1, 2 and 3, output 2 terminals 4, 5 and 6 only type 9170/2*-*2-**) Type 9170/*2-12-3* (output 1 terminals 8, 7 and 6, output 2 terminals 3, 2 and 1 only type 9170/22-12-3*) | | | |
| | Nominal voltage | | AC/DC | 250 V |
| | Max. voltage | Um | AC | 253 V |
| | Nominal current | | DC 2 resp. AC 4A | |

| | | | | |
|-----|--|----|---------------|---------|
| 2.5 | Type 9170/1*-*3-** (terminals 1, 2 and 3 and terminals 4, 5 and 6, contacts galvanically separated) | | | |
| | Nominal voltage | | AC/DC | 250 V |
| | Max. voltage | Um | AC | 253 V |
| | Nominal current | | DC 2 resp. AC | 4A |
| 2.6 | Type 9170/**-*4-** (output1 terminals 1 - 2, output 2 terminals 5 - 6, only type 9170/2*-*4-**) | | | |
| | Nominal voltage | | DC | 35 V |
| | Max. voltage | Um | AC | 253 V |
| | Nominal current | | | 50 mA |
| 3 | Line fault monitoring circuits (only for type 9170/**-*11 and type 9170/**-*12) | | | |
| | Loop 1 terminals 8 - 9 | | | |
| | Loop 2 pac-bus connector V007/3 - V007/4, potentially free contact | | | |
| | Nominal voltage | | DC | 24 V |
| | Max. voltage | Um | AC | 253 V |
| | Nominal current | | | 100 mA |
| 4 | Intrinsically safe input circuits | | | |
| | Input 1: terminals 10 - 11 for Type 9170/*0-**-** and Type 9170/*1-**-**, terminals 11 - 12 for Type 9170/*2-12-*3 | | | |
| | Input 2: terminals 14 - 15 (only for type 9170/2*-*11-**) | | | |
| 4.1 | Types 9170/*0-1*-***, 9170/*0-3*-***, 9170/*0-4*-***, 9170/*0-5*-***, 9170/*0-6*-*** | | | |
| | Voltage | Uo | DC | 10.6 V |
| | Current | Io | | 24 mA |
| | Power | Po | | 64 mW |
| | linear output characteristic | | | |
| | Maximum internal capacitance | Ci | | 2.42 nF |
| | Maximum internal inductance | Li | negligible | |

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

| | IIB | IIC |
|----|---------|---------|
| Lo | 230 mH | 63 mH |
| Co | 16.2 µF | 2.32 µF |

If both input circuits are connected in parallel (terminals 10 - 14 and 11 - 15) the following values apply for the resulting circuit:

| | | | |
|------------------------------|----|------------|---------|
| Voltage | Uo | DC | 10.6 V |
| Current | Io | | 48 mA |
| Power | Po | | 128 mW |
| linear output characteristic | | | |
| Maximum internal capacitance | Ci | | 4.84 nF |
| Maximum internal inductance | Li | negligible | |

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

| | IIB | IIC |
|----|---------|---------|
| Lo | 61 mH | 16 mH |
| Co | 16.2 µF | 2.32 µF |

4.2 Types 9170/*1-1*-.**, 9170/*1-3*-.**, 9170/*1-4*-.**, 9170/*1-5*-.**, 9170/*1-6*-.**, 9170/*2-1*-.**, 9170/*2-3*-.**, 9170/*2-4*-.**, 9170/*2-5*-.** and 9170/*2-6*-.**

| | | | |
|------------------------------|----------------|------------|---------|
| Voltage | U _o | DC | 9.6 V |
| Current | I _o | | 10 mA |
| Power | P _o | | 24 mW |
| linear output characteristic | | | |
| Maximum internal capacitance | C _i | | 2.42 nF |
| Maximum internal inductance | L _i | negligible | |

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

| | IIB | IIC | I |
|----|---------|--------|---------|
| Lo | 1000 mH | 350 mH | 1000 mH |
| Co | 26 μF | 3.6 μF | 99 μF |

If both input circuits (terminals 10 – 14 and 11 – 15 or 11 – 14 and 12 – 15) are connected in parallel, the following values apply for the resulting circuit:

| | | | |
|------------------------------|----------------|------------|---------|
| Voltage | U _o | DC | 9.6 V |
| Current | I _o | | 20 mA |
| Power | P _o | | 48 mW |
| linear output characteristic | | | |
| Maximum internal capacitance | C _i | | 4.84 nF |
| Maximum internal inductance | L _i | negligible | |

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

| | IIB | IIC | I |
|----|--------|--------|---------|
| Lo | 340 mH | 90 mH | 1000 mH |
| Co | 26 μF | 3,6 μF | 99 μF |

4.3 Type 9170/*0-2*-.**

| | | | |
|------------------------------|----------------|------------|---------|
| Voltage | U _o | DC | 10.6 V |
| Current | I _o | | 1.1 mA |
| Power | P _o | | 2.9 mW |
| linear output characteristic | | | |
| Maximum internal capacitance | C _i | | 2.42 nF |
| Maximum internal inductance | L _i | negligible | |

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

| | IIB | IIC |
|----|---------|---------|
| Lo | 1000 mH | 1000 mH |
| Co | 16,2 μF | 2,32 μF |

If both input circuits are connected in parallel (terminals 10 – 14 and 11 – 15) the following values apply for the resulting circuit:

| | | | |
|------------------------------|----------------|------------|---------|
| Voltage | U _o | DC | 10.6 V |
| Current | I _o | | 2.2 mA |
| Power | P _o | | 5.8 mW |
| linear output characteristic | | | |
| Maximum internal capacitance | C _i | | 4.84 nF |
| Maximum internal inductance | L _i | negligible | |

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

| | IIB | IIC |
|----|---------|---------|
| Lo | 1000 mH | 1000 mH |
| Co | 16.2 μF | 2.32 μF |

4.4 Type 9170/*1-2*-* and 9170/*2-2*-*

| | | | |
|------------------------------|----|------------|---------|
| Voltage | Uo | DC | 9.6 V |
| Current | Io | | 0.61 mA |
| Power | Po | | 1.5 mW |
| linear output characteristic | | | |
| Maximum internal capacitance | Ci | | 2.42 nF |
| Maximum internal inductance | Li | negligible | |

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

| | IIB | IIC |
|----|---------|---------|
| Lo | 1000 mH | 1000 mH |
| Co | 26 μF | 3.6 μF |

If both input circuits (terminals 10 – 14 and 11 – 15) are connected in parallel, the following values apply for the resulting circuit:

| | | | |
|------------------------------|----|------------|---------|
| Voltage | Uo | DC | 9.6 V |
| Current | Io | | 1.22 mA |
| Power | Po | | 3 mW |
| linear output characteristic | | | |
| Maximum internal capacitance | Ci | | 4.84 nF |
| Maximum internal inductance | Li | negligible | |

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

| | IIB | IIC |
|----|---------|---------|
| Lo | 1000 mH | 1000 mH |
| Co | 26 μF | 3.6 μF |

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

Special conditions for safe use

For installation of the modules type 9170/**-0-1*, type 9170/**-1-1* and type 9170/**-4-1* in areas, where category 3 equipment is required, those moduls have to be mounted in enclosures which are in accordance with EN 60079-15.

Test and assessment report

BVS PP 02.2099 EG as of 12.05.2009

DEKRA EXAM GmbH

Bochum, dated 12. May 2009

Signed: Simanski


Certification body

Signed: Dr. Eickhoff

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, 12. May 2009
BVS-Schu / Her A 20090125

DEKRA EXAM GmbH_____
Certification body_____
Special services unit

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 02.2099 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 Da] IIIC | 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

Certification body

Signed: Dr. Eickhoff

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/**-*4-1* in areas, where category 3 equipment is required, those modules have to be mounted in enclosures which are in accordance with EN 60079-15.

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