

# Isolator Barriers

## Switching repeater

Ex i field circuit

9270/21-17-14s Art. No. 261411



- Slim design – 12.5 mm wide – for one- and two-channel versions
- Can be used for functional safety levels up to SIL 2 (IEC/EN 61508)
- Offers line fault detection with signalization

WebCode 9270A



Series 9270 switching repeaters can be used for operating contacts, NAMUR proximity sensors or optocouplers. A relay output or electronic output transmits the signals to the control level. The intrinsically safe digital input is galvanically separated from the output and auxiliary power.

### Technical Data

#### Explosion Protection

Application range (Zones)	2
Ex interface zone	0 1 2 20 21 22
IECEX gas certificate	IECEX IBE 17.0043 X
IECEX gas explosion protection	Ex nA nC [Ex ia Ga] IIC T4 Gc
IECEX dust certificate	IECEX IBE 17.0043 X
IECEX dust explosion protection	[Ex ia Da] IIIC
ATEX gas certificate	IBExU17ATEX1151 X
ATEX gas explosion protection	⊕ II 3 (1) G Ex nA nC [Ex ia Ga] IIC T4 Gc
ATEX dust certificate	IBExU17ATEX1151 X
ATEX dust explosion protection	⊕ II (1) D [Ex ia Da] IIIC
cULus certificate	E81680
Marking cULus	Class I, Div. 2, Groups A,B,C,D; Class I, Zone 2, AEx/Ex nA nC Group IIC AIS Class I,II,III, Div. 1, Groups A,B,C,D,E,F,G; Class I, Zone 0, [AEx ia]/[Ex ia] IIC T4 any mounting pos. Ta = 60°C See Doc. 9270 6 031 001 3
Certificates	ATEX (IBE), Canada / USA (UL), IECEX (IBE), Korea (KTL), SIL (exida)
Ship approval	DNVGL

#### Safety Data

Max. voltage $U_o/V_{oc}$	9.6 V
Max. current $I_o/I_{sc}$	10 mA
Max. power $P_o$	25 mW

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### Safety Data

Max. permissible external capacitance $C_o/C_a$ for IIC	3.6 $\mu$ F
Max. permissible external capacitance $C_o/C_a$ for IIB	26 $\mu$ F
Max. permissible external capa.IIA	210 $\mu$ F
Max. permissible external inductance $L_o/L_a$ for IIC	300 mH
Max. permissible external inductance $L_o/L_a$ for IIB	1000 mH
Max. permissible external inductance $L_o$ for IIA	1000 mH
Internal capacitance	1.1 nF
Internal inductance	Negligible
Safety-related max. voltage	253 V AC

### Functional Safety

SIL	2
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### Electrical Data

Number of channels	2
LFD relay	via 9193/21-11-11

### Auxiliary Power

Auxiliary power	24 V DC
Auxiliary power voltage range	19.2 to 30 V
Nominal current	35 mA
Power consumption	1 W
Max. power dissipation	1 W
Polarity reversal protection	Yes
Undervoltage monitoring	No
Operation indication	Green "PWR" LED

### Galvanic Isolation

Test voltage as per standard	IEC EN 60079-11
Ex i input to output	375 V AC peak value
Ex i input to auxiliary power	375 V AC peak value
Ex i input to fault message contact	375 V AC peak value
Test voltage as per standard 2	EN 61010/EN 50178
Output to auxiliary power	300 $V_{eff}$
Output to output	300 $V_{eff}$
Fault message contact to auxiliary power	300 $V_{eff}$
Fault message contact to output	300 $V_{eff}$

### Input

Input signal	As per EN 60947-5-6 (NAMUR)
Input current for ON	$\geq 2,1$ mA
Input current for OFF	$\leq 1.2$ mA
Input internal resistance $R_i$	1000 $\Omega$
Input for open-circuit voltage $U_a$	8 V

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### Output

Output per channel	1 NO
Output	1 NO – relay
Min. output load condition	5 V/10 mA
Max. output DC load condition	30 V/2 A
Max. output AC load condition	250 V/2 A
Output switching capacity	500 VA
Electrical service life note	resistive load
Output mechanical service life	1 x 10 <sup>7</sup> operating cycles
Output switching frequency	20 Hz
INV switch user adjustment	Activated/deactivated
Switching state indication	Yellow "OUT" LED
LF switch user adjustment	Activated/deactivated
Indication of line fault	Red "LF" LED
Wire breakage error detection	IE < 0.05 to 0.35 mA
Short circuit error detection	RE < 100 to 360 ohm

### Ambient Conditions

Ambient temperature °C	-20 °C ... +60 °C
Ambient temperature °F	-4 °F ... +158 °F
Storage temperature °C	-40 °C ... +80 °C
Storage temperature °F	-40 °F ... +176 °F
Max. relative humidity	10 to 95%
Use at the height of	< 2000 m
Electromagnetic compatibility	EN 61326-1 Use in industrial environment Immunity according to EN 61000-6-2 Interference emission to EN 61000-6-4

### Mechanical Data

Degree of protection (IP)	IP30
Terminal degree of prot. (IP)	IP20
Fire resistance (UL 94)	V0
Enclosure material	Polyamide
Grid dimension	12.5 mm
Width	12.5 mm
Width, inches	0.49 in
Height	114.5 mm
Height, inches	4.51 in
Length	112.5 mm
Length, inches	4.43 in
Weight	0.17 kg
Weight	0.37 lb

### Mounting / Installation

Mounting type	DIN rail NS35/15, NS35/7.5
Mounting orientation	any
Connection type	Screw terminal
Min. rigid conductor cross section	0.2 mm <sup>2</sup>
Max. rigid conductor cross section	2.5 mm <sup>2</sup>

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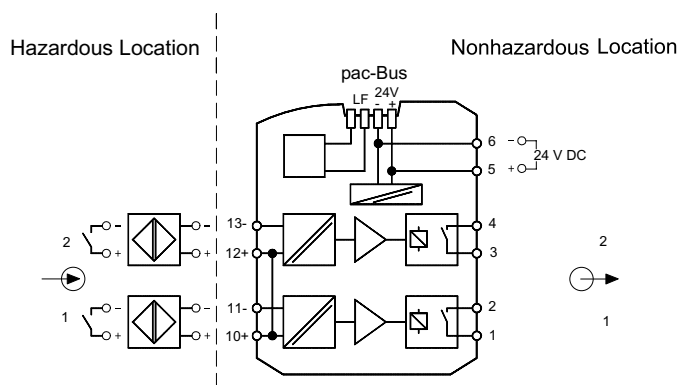
Ex i field circuit

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### Mounting / Installation

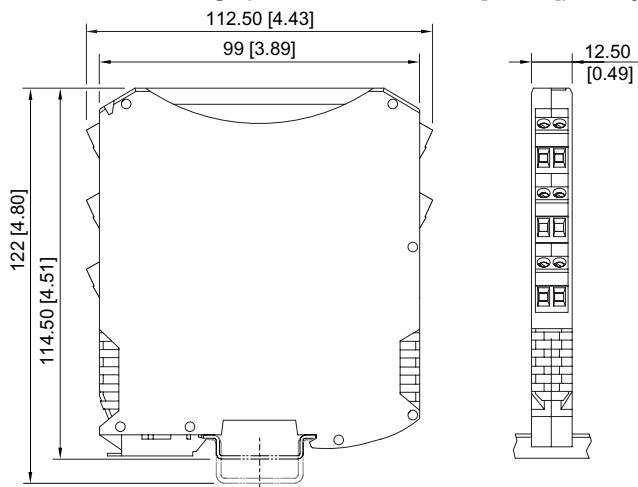
Min. flex conductor cross section	0.2 mm <sup>2</sup>
Max. flex conductor cross section	2.5 mm <sup>2</sup>
Connection cross-section AWG	24 – 13

### Technical Drawings – Subject to Alterations



Connection diagram 9270/21-17-14

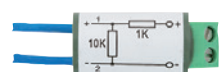
### Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



ISpac Series 9260, 9265, 9270, 9275, 9276, 9282 with screw terminal

### Accessories

#### Resistance coupling element



Connection of additional contacts in the Ex area as well, in order to enable short circuit and open circuit detection.

**Art. No.**

105944

We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.