



- Slim design saves space – just 12.5 mm wide
- For use up to SIL 2 (IEC/EN 61508)
- A wire breakage and short-circuit monitoring system, which can be disconnected and includes messages

MY R. STAHL 9270A



The Series 9270 Ex i switching repeaters are used to operate contacts, NAMUR proximity switches and 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	1 2 20 21 22
IECEX gas certificate	IECEX IBE 17.0043 X
IECEX gas explosion protection	Ex ec nC [ia Ga] IIC T4 Gc
IECEX dust certificate	IECEX IBE 17.0043 X
IECEX dust explosion protection	[Ex ia Da] IIIC
IECEX firedamp certificate	IECEX IBE 17.0043 X
IECEX firedamp protection	[Ex ia Ma] I
ATEX gas certificate	IBExU17ATEX1151 X
ATEX gas explosion protection	⊕ II 3 (1) G Ex ec nC [ia Ga] IIC T4 Gc
ATEX dust certificate	IBExU17ATEX1151 X
ATEX dust explosion protection	⊕ II (1) D [Ex ia Da] IIIC
ATEX firedamp certificate	IBExU17ATEX1151 X
ATEX firedamp protection	⊕ I (M1) [Ex ia Ma] I
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 (UL), China (CQM), IECEX (IBE), India (PESO), Korea (KTL), SIL (exida), USA (UL)
Ship approval	DNV
Declaration of Conformity	ATEX (EUK), China (CCC)

Safety Data

Max. voltage U_o	9.6 V					
Max. current I_o	10 mA					
Max. power P_o	25 mW					
Max. permissible external capacity C_o for I	210 μ F					
Max. permissible external inductance L_o for I	1000 mH					
Max. permissible external capacity C_o for IIC	3.6 μ F					
Max. permissible external capacity C_o for IIB	26 μ F					
Max. permissible external capa.IIA	210 μ F					
Max. permissible external inductance L_o for IIC	300 mH					
Max. permissible external inductance L_o for IIB	1000 mH					
Max. permissible external inductance L_o for IIA	1000 mH					
Internal capacitance	11 nF					
Internal inductance	Negligible					
Safety-related max. voltage	253 V AC					
Intrinsically safe limiting values inductance L_o /capacitance C_o	Jointly connectable inductance L_o /capacitance C_o					
IIC	L_o [mH]	100 mH	50 mH	5.000 mH	1 mH	0.010 mH
	C_o [μ F]	0.500 μ F	0.570 μ F	0.590 μ F	0.590 μ F	0.590 μ F
IIB	L_o [mH]	100 mH	5 mH	1 mH	0.010 mH	
	C_o [μ F]	1 μ F				
IIA	L_o [mH]	100.000 mH	5.000 mH	1.000 mH	0.010 mH	
	C_o [μ F]	1.000 μ F	1.000 μ F	1.000 μ F	1.000 μ F	
IIIC	L_o [mH]	100.000 mH	5.000 mH	1.000 mH	0.010 mH	
	C_o [μ F]	1.000 μ F	1.000 μ F	1.000 μ F	1.000 μ F	
I	L_o [mH]	100.000 mH	5.000 mH	1.000 mH	0.010 mH	
	C_o [μ F]	1.000 μ F	1.000 μ F	1.000 μ F	1.000 μ F	

Functional Safety

SIL	2
HFT	0
SFF	67%
Lambda SD	6 FIT
Lambda SU	210 FIT
Lambda DD	7 FIT
Lambda DU	110 FIT
PFD _{avg} at T _{proof} 1 year	6,97E-06

Electrical Data

Number of channels	2
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Electrical Data

LFD relay	via 9193/21-11-11
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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	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	≥ 2.1 mA
Input current for OFF	≤ 1.2 mA
Hysteresis	Approx. 0.2 mA
Input internal resistance R _i	1000 Ω
Input for open-circuit voltage U _a	8 V
Short-circuit current	approx. 8 mA

Output

Output per channel	1 NO
Output	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 ⁷ operating cycles
Output switching frequency	20 Hz
Switching delay ON/OFF	6.5 ms
Switching delay OFF/ON	7 ms
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	I _E < 0.05 to 0.35 mA

Output	
Short circuit error detection	$R_E < 100$ to 360 ohm
Ambient Conditions	
Ambient temperature	-20 °C ... +60 °C
Ambient temperature	-4 °F ... +158 °F
Storage temperature	-40 °C ... +80 °C
Storage temperature	-40 °F ... +176 °F
Maximum relative humidity	10 to 95%
Use at the height of	< 2000 m
Electromagnetic compatibility	EN 61326-1 For use in industrial areas Immunity according to EN 61000-6-2 Interference radiation according to EN 61000-6-4
Mechanical Data	
Degree of protection (IP)	IP30
Degree of protection (IP) terminals	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	116 mm
Length, inches	4.57 in
Weight	170 g
Weight	0.37 lb
Mounting / Installation	
Mounting type	DIN rail NS35/15, NS35/7.5
Mounting orientation	any
Connection type	Spring clamp terminal
Min. rigid conductor cross section	0.2 mm ²
Max. rigid conductor cross section	1.5 mm ²
Min. flex conductor cross section	0.2 mm ²
Max. flex conductor cross section	1.5 mm ²
Connection cross-section AWG	24 – 16

Isolators

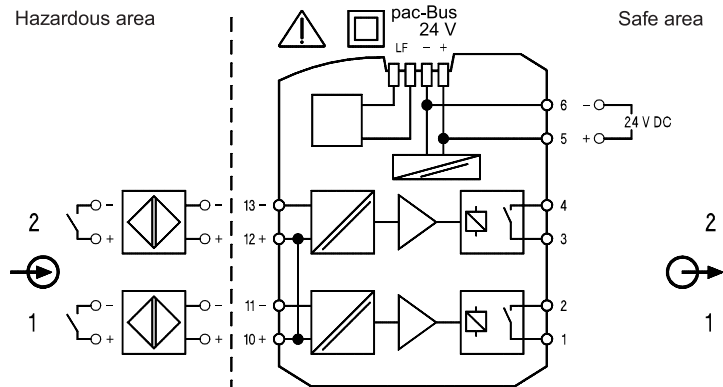
Switching repeater

Ex i field circuit

9270/21-17-14k Art. No. 261416

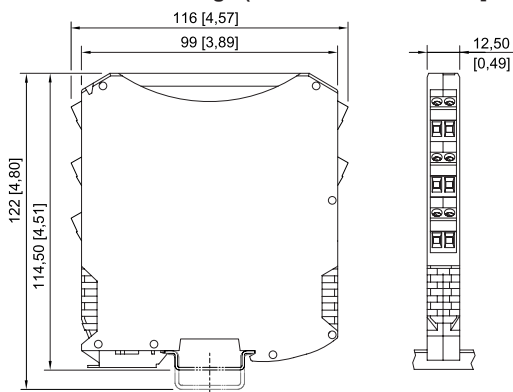


Technical Drawings – Subject to Alterations



9270/21-17-14 connection diagram

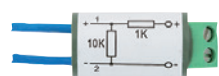
Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



ISpac Series 9260, 9270, 9275, 9276, 9282 with spring clamp terminal

Accessories

Resistive coupling element



Additional connection of contacts also in hazardous areas to enable short-circuit and wire breakage 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.