

Safety barriers

Dual-channel safety barrier



9002/22-240-160-001 Art. No. 158948



- For the intrinsically safe operation of a wide range of devices, such as HART transmitters, solenoid valves, sensors, potential-free contacts and many more
- Compact and space-saving devices that are easy to install on a DIN rail
- Quick to install as barriers can be simultaneously snapped onto the rail and connected to PE

MY R. STAHL 9002A



The series 9002 INTRINSPAK dual-channel safety barriers enable the intrinsically safe operation of virtually all field devices. The comprehensive portfolio and the combination of safety barriers cover a wide variety of signals. The devices are incredibly robust and require very little space. The back-up fuse is a convenient feature as it is standardised for all variants.

Technical Data

Explosion Protection	
Application range (zones)	2
Ex interface zone	0 1 2 20 21 22
IECEX gas certificate	IECEX PTB 08.0057X
IECEX gas explosion protection	Ex ec [ia Ga] IIC T4 Gc
IECEX dust certificate	IECEX PTB 08.0057X
IECEX dust explosion protection	[Ex ia Da] IIIC
ATEX gas certificate	PTB 01 ATEX 2053 X
ATEX gas explosion protection	⊕ II 3 (1) G Ex ec [ia Ga] IIC T4 Gc
ATEX dust certificate	PTB 01 ATEX 2053 X
ATEX dust explosion protection	⊕ II (1) D [Ex ia Da] IIIC
FMus certificate	3010778
Marking FMus	NONINCENDIVE FOR, Class I, Div. 2, Groups A,B,C,D; T4, Class I, Zone 2, Group IIC T4 IS connections for Class I,II,III, Div. 1, Groups A,B,C,D,E,F,G; Class I, Zone 0, Groups IIC/IIB Hazardous location when inst. per doc. 90 026 11 31 1
Certificate ULus	E81680V1S3
Marking ULus	For use in Hazardous location, Class I, Div. 2, Groups A,B,C,D; T4 Providing IS circuits for Class I,II,III, GROUPS A,B,C,D,E,F,G; per doc. 90 026 11 31 3
cCSA certificate	1284580

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Explosion Protection

Marking cCSA	Associated equipment [Ex ia], Class I, Div. 2, Groups A,B,C,D; Provides IS circuits for Class I,II,III, Class I, Zone 0, Groups IIC/IIB For applicable grps per inst. doc. 90 016 11 31 2
Inmetro gas certificate	UL-BR 12.0354
Inmetro dust certificate	UL-BR 12.0354
Certificates	ATEX (PTB), Brazil (ULB), Canada (CSA), China (CQST), IECEx (PTB), India (PESO), Japan (CML), Korea (KGS), USA (FM), USA (UL)
Declaration of Conformity	ATEX (EUK), China (CCC)
Installation	in Zone 2, Division 2 and in safe areas
Further information	See relevant certificate and operating instructions

Safety Data

Max. voltage U_o	12 V				
Max. current I_o	80 mA				
Max. power P_o	240 mW				
Max. permissible external capacity C_o for IIC	1.41 μ F				
Max. permissible external capacity C_o for IIB	9 μ F				
Max. permissible external inductance L_o for IIC	6 mH				
Max. permissible external inductance L_o for IIB	22 mH				
Intrinsically safe limiting values Inductance L_o /capacitance C_o	Jointly connectable inductance L_o /capacitance C_o				
Channel 1	IIC	L_o [mH]	5 mH	1 mH	0.100 mH
		C_o [μ F]	0.330 μ F	0.5700 μ F	1.1000 μ F
	IIB	L_o [mH]	10 mH	1 mH	0.1 mH
		C_o [μ F]	1.80 μ F	3.30 μ F	6.60 μ F
Channel 2	IIC	L_o [mH]	5 mH	1 mH	0.1 mH
		C_o [μ F]	0.330 μ F	0.570 μ F	1.100 μ F
	IIB	L_o [mH]	10 mH	1 mH	0.1 mH
		C_o [μ F]	1.80 μ F	3.30 μ F	6.60 μ F
Channels 1 + 2	IIC	L_o [mH]			0.02 mH
		C_o [μ F]			0.125 μ F
	IIB	L_o [mH]	2 mH	1 mH	0.1 mH
		C_o [μ F]	0.370 μ F	0.85 μ F	0.930 μ F

Electrical Data

Number of channels	2
Maximum resistance R_{max}	177 Ω
Minimum resistance R_{min}	158 Ω
Maximum output current I_{max}	50 mA
Potential channel 1	alternating
Potential channel 2	alternating
Transmission frequency channel 1	\leq 100 kHz
Type of voltage	AC/DC

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Electrical Data

I_{leak} leakage current for U_n			$\leq 2 \mu\text{A}$				
Channel	Nominal voltage U_N	Maximum output current I_{max}	Minimum resistance R_{min}	Maximum resistance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o
1	9.00 V AC+DC	50 mA	158 Ω	177 Ω	12 V	80 mA	240 mW
2	9 V	50 mA	158 Ω	177 Ω	12 V	80 mA	240 mW
1 + 2	18 V				24 V	160 mA	480 mW

Auxiliary Power

Power supply	Controlled
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Ambient Conditions

Ambient temperature	-20 °C ... 60 °C
Ambient temperature	-4°F ... +140°F
Storage temperature	-20 °C ... 75 °C
Storage temperature	-4°F ... +167°F
Maximum relative humidity	95% average, no condensation
Temperature influence	$\leq 0,25 \%/10\text{K}$

Mechanical Data

Degree of protection (IP)	IP40
Degree of protection (IP) terminals	IP20
Enclosure material	Polyamide 6GF
Number of connection terminals	4
Connection cross-section max.	1.5 mm ²
Connection cross-section AWG	16 AWG
Type of connection cable	Solid Finely stranded
Width	103 mm
Width, inches	4.09 in
Length	12 mm
Length, inches	0.48 in
Depth of cut-out	72 mm
Mounting depth, inches	2.76 in
Weight	110 g
Weight	0.24 lb

Mounting / Installation

Earthing connection cross-section	4 mm ²
Earthing conductor cross-section AWG	12 AWG
Connection type	2 PA
Min. torque, Nm	0.5 Nm
Min. torque, lb/in	4.43 lb/in
Max. torque, Nm	0.6 Nm
Max. torque, lb/in	5.31 lb/in

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Technical Drawings – Subject to Alterations

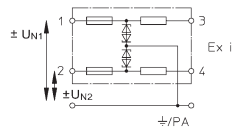
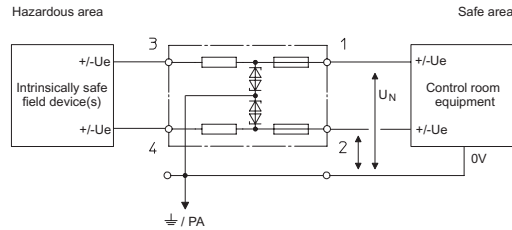
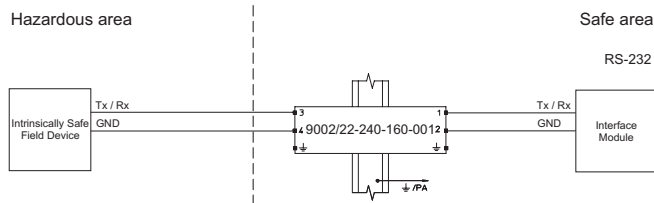


Image M

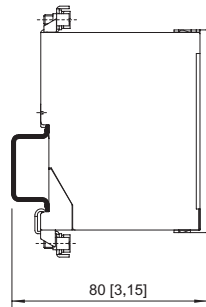
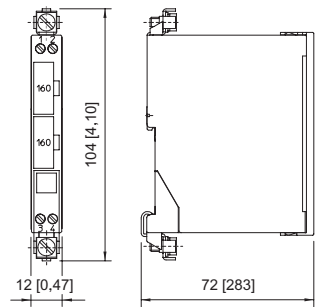


Dual-channel safety barriers, potential: ~ / ~

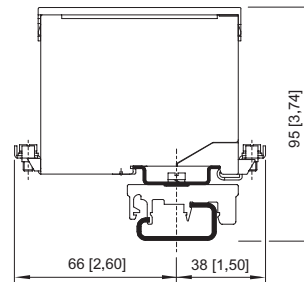


Application with RS 232

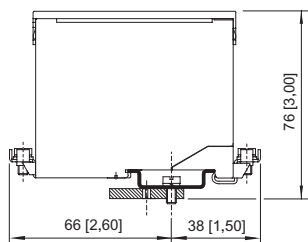
Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



mounted on the NS 35/15 mounting rail



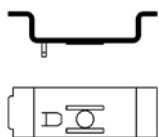
mounted on the NS 32 mounting rail with adaptor and clamping base made of moulded material



installed on mounting plate with adaptor

Accessories

Adaptor

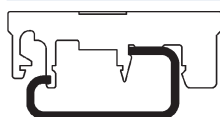


The adaptor enables a series 900x safety barrier to be installed on a mounting plate from a previous series.

Art. No.

158826

Clamping base, moulded material



Enables the safety barrier to be mounted on a G-rail.

Art. No.

165283

Safety barriers

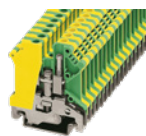
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Protective conductor terminal

Art. No.



USLKG 5 (clamping range 4 mm²)
The terminal enables protective conductors to be connected to the DIN rail. Colour green-yellow.

112760

Earthing terminal

Art. No.



USLKG 6 N (clamping range 6 mm²)
The terminal enables protective conductors/earthing conductors to be connected to the DIN rail. Colour green-yellow.

112599

Fuse holder

Art. No.

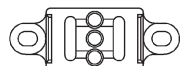


The fuse holder is snapped onto the side of a safety barrier and can be equipped with up to five back-up fuses (replacement).

158834

Insulation and fastening material

Art. No.



Suitable for the NS 35/15 DIN rail, makes it possible to install the DIN rail such that it is electrically insulated from the mounting plate.

158828

Spare Parts

Back-up fuse

Art. No.

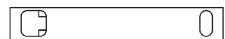


For all series 9001, 9002 and 9004 safety barriers
Packaging unit: 5 pieces

158964

Label carrier

Art. No.



Transparent cover for the label

158977

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