

# Safety barriers

## Single-channel safety barriers



9001/01-280-110-101 Art. No. 158380



- 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 9001A



The series 9001 INTRINSPAK single-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 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 09.0001X
IECEX gas explosion protection	Ex ec [ia Ga] IIC T4 Gc
IECEX dust certificate	IECEX PTB 09.0001X
IECEX dust explosion protection	[Ex ia Da] IIIC
ATEX gas certificate	PTB 01 ATEX 2088 X
ATEX gas explosion protection	⊕ II 3 (1) G Ex ec [ia Ga] IIC T4 Gc
ATEX dust certificate	PTB 01 ATEX 2088 X
ATEX dust explosion protection	⊕ II (1) D [Ex ia Da] IIIC
FMus certificate	3011002
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. 90 016 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. 90 016 11 31 3
cCSA certificate	1284547

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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 12.0353
Inmetro dust certificate	UL-BR 12.0353
Certificates	ATEX (PTB), Brazil (ULB), Canada (CSA), China (NEPSI), 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 $U_o$	28 V		
Max. current $I_o$	110 mA		
Max. power $P_o$	770 mW		
Max. permissible external capacity $C_o$ for IIC	0.083 $\mu$ F		
Max. permissible external capacity $C_o$ for IIB	0.65 $\mu$ F		
Max. permissible external inductance $L_o$ for IIC	1.2 mH		
Max. permissible external inductance $L_o$ for IIB	9 mH		
Intrinsically safe limiting values Inductance $L_o$ /capacitance $C_o$	Jointly connectable inductance $L_o$ /capacitance $C_o$		
IIC	$L_o$ [mH]	0.010 mH	
	$C_o$ [ $\mu$ F]	0.083 $\mu$ F	
IIB	$L_o$ [mH]	5 mH	1 mH
	$C_o$ [ $\mu$ F]	0.230 $\mu$ F	0.34 $\mu$ F

### Electrical Data

Number of channels	1		
Maximum resistance $R_{max}$	294 $\Omega$		
Minimum resistance $R_{min}$	263 $\Omega$		
Maximum output current $I_{max}$	81 mA		
Potential	Positive		
Transmission frequency channel 1	$\leq$ 100 kHz		
$I_{leak}$ leakage current for $U_n$	$\leq$ 2 $\mu$ A		

### Auxiliary Power

Nominal voltage	24 V DC
Power supply	Controlled

### 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

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### Ambient Conditions

Temperature influence  $\leq 0,25 \%/10K$

### Mechanical Data

Degree of protection (IP)	IP40
Degree of protection note	according to IEC 60529
Degree of protection (IP) terminals	IP20
Enclosure material	Polyamide 6GF
Number of connection terminals	4
Connection cross section min.	1.5 mm <sup>2</sup>
Connection cross-section max.	1.5 mm <sup>2</sup>
Connection cross-section AWG	16 AWG
Type of connection cable	Finely stranded Solid
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 <sup>2</sup>
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

### Technical Drawings – Subject to Alterations

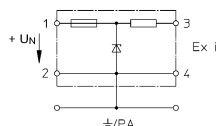
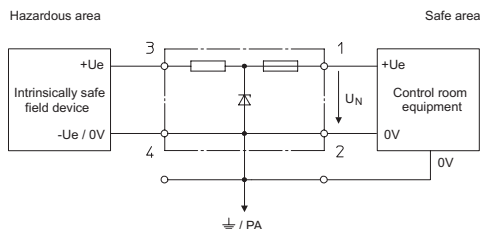
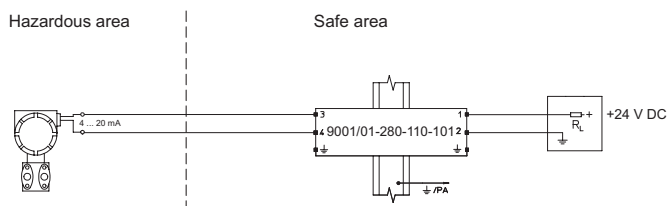


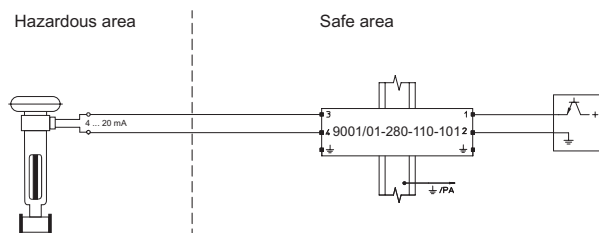
Image B



Single-Channel Safety Barriers for Positive Polarity



Application: 2-wire 4/20 mA transmitter - Standard



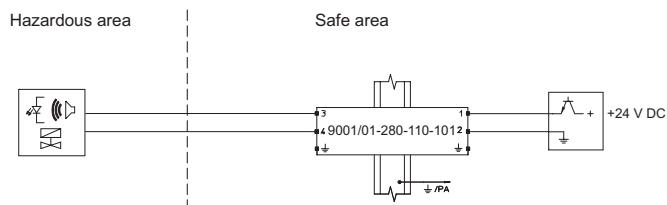
Application: Analog output (current source) with I/P converter etc. Field circuit earthed

# Safety barriers

## Single-channel safety barriers

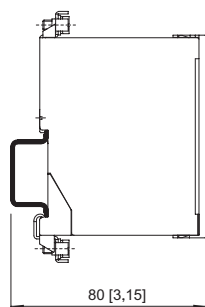
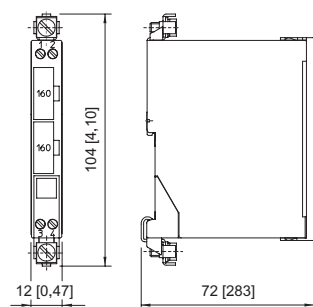


9001/01-280-110-101 Art. No. 158380

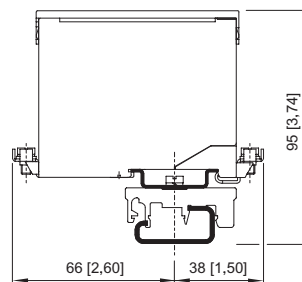


Application: Discrete 2-wire output for magnet reed switches, LEDs and audible alarm indicators

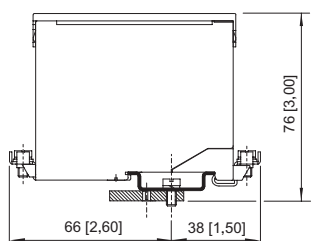
### Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



mounted on the NS 35/15 mounting rail



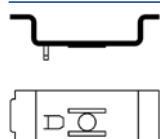
mounted on the NS 32 mounting rail with adaptor and clamping base made of moulded material



installed on mounting plate with adaptor

## Accessories

### Adaptor

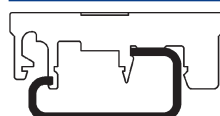


The adaptor enables a series 900x safety barrier to be installed on a mounting plate from a previous series.

Art. No.

158826

### Clamping base, moulded material

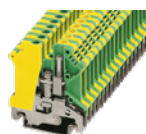


Enables the safety barrier to be mounted on a G-rail.

Art. No.

165283

### Protective conductor terminal



USLKG 5 (clamping range 4 mm<sup>2</sup>)  
The terminal enables protective conductors to be connected to the DIN rail. Colour green-yellow.

Art. No.

112760

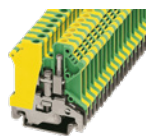
# Safety barriers

## Single-channel safety barriers

9001/01-280-110-101 Art. No. 158380

### Earthing terminal

Art. No.



USLKG 6 N (clamping range 6 mm<sup>2</sup>)  
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



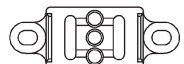
### Insulation and fastening material

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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