

# Safety Barriers

## Single-channel safety barriers



9001/02-016-150-111 Art. No. 158685



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

WebCode **9001A**



The 9001 series 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 22
Ex interface zone	0 1 2 20 21 22
IECEX gas certificate	IECEX PTB 09.0001X
ATEX gas certificate	PTB 01 ATEX 2088 X
USA FM gas certificate	3011002
USA UL gas certificate	E81680V1S3
CAN CSA gas certificate	1284547
Inmetro gas certificate	UL-BR 12.0353
IECEX dust certificate	IECEX PTB 09.0001X
ATEX dust certificate	PTB 01 ATEX 2088 X
Inmetro dust certificate	UL-BR 12.0353
Certificate EAC	TS RU C-DE.ГБ04.В.00652
Gas explosion protection IECEx	Ex nA [ia Ga] IIC/IIB T4 Gc
Gas explosion protection ATEX	⊕ II 3 (1) G Ex nA [ia Ga] IIC/IIB T4 Gc
Gas explosion protection USA FM	Class I, Div. 2, Groups A,B,C,D; Class I, Zone 2, IIC, T4
Gas explosion protection USA UL	Class I Div. 2, Groups A,B,C,D, T4
Gas explosion protection USA UL	Class I, Div. 2, Groups A,B,C,D, T4
Gas explosion protection Canada CSA	Class I, Div. 2, Groups A,B,C,D; Class I, Zone 2, IIC, T4
Gas explosion protection EAC	⊕ 2 Ex nA [ia Ga] IIC T4 Gc X

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### Explosion Protection

Intrinsically safe connection USA FM	CL. I,II,III, DIV. 1, GP. A,B,C,D,E,F,G and CL. I, ZONE 0 GP. IIC/IIB, HAZ. LOC. When installed per doc. 90 016 11 31 1
Intrinsically safe connection USA UL	CL. I, GP. A,B,C,D; CL. II, GP. E,F,G; CL. III, per doc. 90 016 11 31 3
Intrinsically safe connection CAN CSA	CL. I, II, III, for application groups per installation doc. 90 016 11 31 2
Dust explosion protection IECEx	[Ex ia Da] IIIC
Dust explosion protection ATEX	⊕ II (1) D [Ex ia Da] IIIC
Dust explosion protection EAC	⊕ [Ex ia Da] IIIC
Certificates	ATEX (PTB), Brazil (ULB), Canada (CSA), EAC (STV), IECEx (PTB), Korea (KGS), USA (FM), USA (UL)
Installation	in Zone 2, Division 2 and in safe area
Further information	see respective certificate and operating instructions

### Safety Data

Max. voltage $U_o$	1.6 V
Max. current $I_o$	150 mA
Max. power $P_o$	60 mW
Max. permissible external capacitance $C_o$ for IIC	100 $\mu$ F
Max. permissible external capacitance $C_o$ for IIB	1000 $\mu$ F
Max. permissible external inductance $L_o$ for IIC	1.3 mH
Max. permissible external inductance $L_o$ for IIB	7 mH

### Electrical Data

Number of channels	1
Rated operational voltage AC	
Rated operational voltage DC	0.7 V
Maximum resistance $R_{max}$	20.1 $\Omega$
Min. resistance $R_{min}$	19.9 $\Omega$
Maximum output current $I_{max}$	35 mA
Potential	Alternative potential
Ohmic current limiting using frequency $\geq$ 50 mA	$\leq$ 100 kHz
Ohmic current limiting using frequency $\leq$ 50 mA	$\leq$ 50 kHz
Leakage current $I_{leak}$ for $U_N$	$\leq$ 10 $\mu$ A
Frequency range	

### Auxiliary Power

Nominal voltage	$\pm$ 0.7 V
Power supply	Controlled, nominal voltage

### Ambient Conditions

Ambient temperature	-20 °C ... +60 °C
Ambient temperature	-4°F ... +140°F
Storage temperature	-20 °C ... +75 °C

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### Ambient Conditions

Storage temperature	-4°F ... +167°F
Relative humidity max.	95% on average, no condensation
Temperature influence	≤ 0,25 %/10K

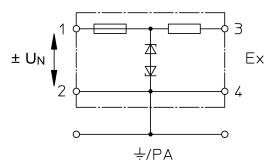
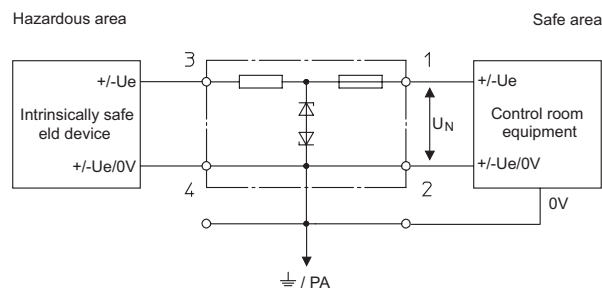
### Mechanical Data

Degree of protection (IP)	IP40
Degree of protection note	according to IEC 60529
Terminal degree of protection (IP)	IP20
Enclosure material	Polyamide 6GF
Number of connection terminals	4
Connection cross-section min.	1.5 mm <sup>2</sup>
Connection cross section max.	4 mm <sup>2</sup>
Connection cross-section AWG	... 12 AWG
Type of connection cable	Finely stranded Solid
Width	103 mm
Length	12 mm
Mounting depth	72 mm
Weight	0.11 kg

### Mounting / Installation

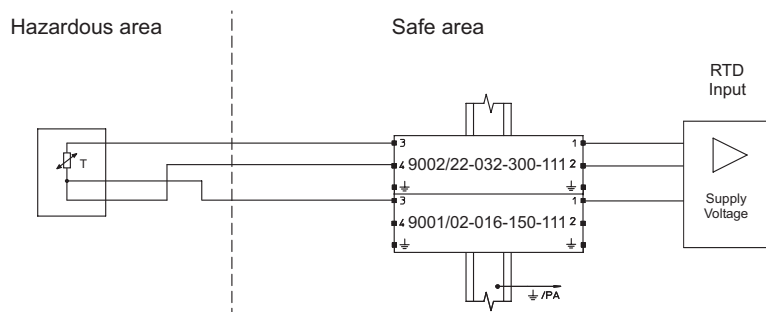
Connection type	2 PA
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### Technical Drawings – Subject to Alterations



Picture F

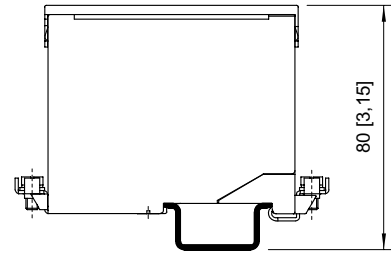
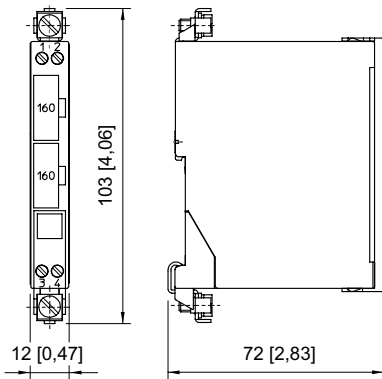
### Single-Channel Safety Barriers for Alternating Polarity



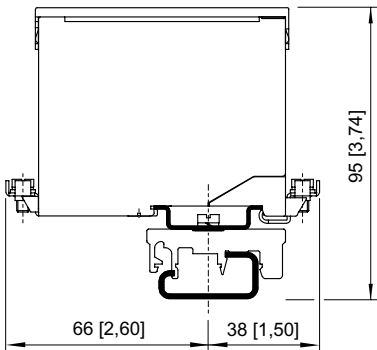
Application: Pt100, 3-wire circuit field circuit unearthed

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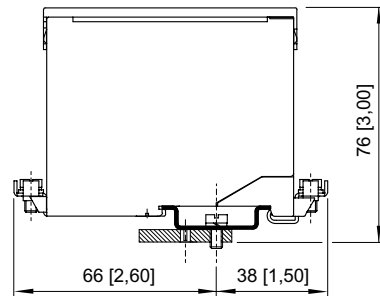
**Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations**



Mounting on DIN rail NS 35/15



Mounting on DIN rail NS 32 by means of adaptor and mounting attachment, moulded plastic



Mounting on mounting plate by means of adaptor

## Accessories and Spare Parts

### Back-up fuse

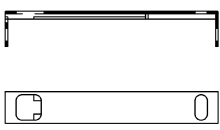


For all safety barriers Series 9001, 9002 and 9004  
unit: 5 pcs.

**Art. No.**

158964

### Holder for label

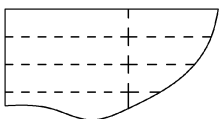


Transparent cover for labelling

**Art. No.**

158977

### Labelling paper

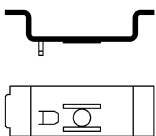


Perforated, for typing  
Format: DIN A4  
Packaging unit: 80 pieces

**Art. No.**

158973

### Adaptor



Adaptor allows installation of a safety barrier Series 900x on a mounting plate of a previous series.

**Art. No.**

158826

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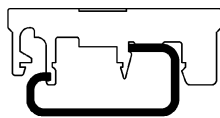
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### Mounting attachment moulded plastic

Art. No.

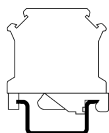


Enables mounting of safety barrier on a G-rail.

165283

### Earth terminal

Art. No.



USLKG 5 (wire range 4 mm<sup>2</sup>)  
Terminal enables connection of protective conductors to DIN rail. Colour green-yellow.

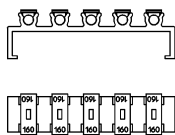
112760

USLKG 6 N (wire range 6 mm<sup>2</sup>)  
Terminal enables connection of protective / earthing conductors to DIN rail. Colour green-yellow.

112599

### Fuse holder

Art. No.

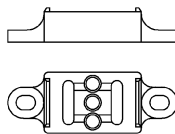


Fuse holder is snapped onto the side of the safety barrier and can be equipped with up to 5 back-up fuses (replacement).

158834

### Insulating stand off

Art. No.



Suitable for DIN rail NS35/15, allows electrically insulated mounting of DIN rail from mounting plate.

158828

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.