

9002/13-280-110-001 Art. No. 158857



- 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 and efficient installation as barriers can be simultaneously snapped onto DIN rail and connected to ground (ISA - RPI12.06)

WebCode **9002A**



The 9002 series INTRINSPAK two-channel zener barriers enable the intrinsically safe operation of virtually all field devices. The comprehensive portfolio and the combination of zener 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 standardized for all variants.

Technical Data

Explosion Protection

Application range (zones)	2
Ex interface zone	0 1 2 20 21 22
IECEEx gas certificate	IECEEx PTB 08.0057X
IECEEx gas explosion protection	Ex nA [ia Ga] IIC T4 Gc
IECEEx dust certificate	IECEEx PTB 08.0057X
IECEEx dust explosion protection	[Ex ia Da] IIIC
ATEX gas certificate	PTB 01 ATEX 2053 X
ATEX gas explosion protection	II 3 (1) G Ex nA [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
ULus certificate	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), Japan (CML), Korea (KGS), USA (FM), USA (UL)
Notes	CCC and UKCA certificate available from 2022 onward
Installation	in Zone 2, Division 2 and in safe area
Further information	see respective certificate and operating instructions

Safety Data

Max. voltage U_o			28 V			
Max. current I_o			107 mA			
Max. power P_o			749 mW			
Intrinsically safe limiting values inductance L_o / capacitance C_o			Max. connectable inductance L_o / capacitance C_o	Jointly connectable inductance L_o / capacitance C_o		
Channel 1	IIC	L_o [mH]	1.350 mH	0.100 mH		
		C_o [μF]	0.083 μF	0.0830 μF		
	IIB	L_o [mH]	9.600 mH	5 mH	1 mH	0.1 mH
		C_o [μF]	0.650 μF	0.23 μF	0.34 μF	0.65 μF
Channel 2	IIC	L_o [mH]	50 mH	50 mH	1 mH	0.1 mH
		C_o [μF]	0.083 μF	0.062 μF	0.075 μF	0.083 μF
	IIB	L_o [mH]	150 mH	50 mH	1 mH	0.1 mH
		C_o [μF]	0.650 μF	0.34 μF	0.41 μF	0.65 μF
Channel 1 + 2	IIC	L_o [mH]	1.25 mH			
		C_o [μF]	0.800 μF			
	IIB	L_o [mH]	9 mH	5 mH	1 mH	0.1 mH
		C_o [μF]	0.635 μF	0.28 μF	0.36 μF	0.551 μF

Electrical Data

Number of channels	2
Maximum resistance R_{max}	296 Ω
Minimum resistance R_{min}	270 Ω
Maximum output current I_{max}	82 mA
Potential channel 1	Positive
Potential channel 2	Positive with diode
Transmission frequency channel 1	≤ 100 kHz
Channel 2 auxiliary voltage drop	2 V
Type of voltage	DC
I_{leak} leakage current for U_n	≤ 2 μA

Chan- nel	Nominal volt- age U_n	Maximum output current I_{max}	Minimum resist- ance R_{min}	Maximum resist- ance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o
1	24.00 V DC	82 mA	270 Ω	296 Ω	28 V	107 mA	749 mW
2	24 V				28 V	3 mA	21 mW
1 + 2					28 V	110 mA	770 mW

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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	≤ 0,25 %/10K

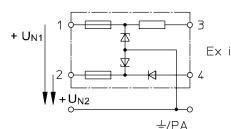
Mechanical Data

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	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	0.11 kg
Weight	0.24 lb

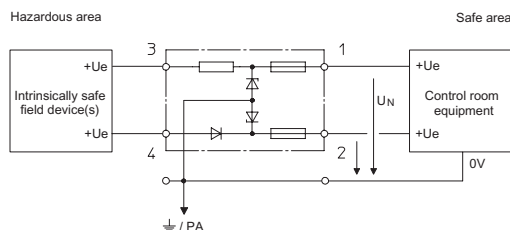
Mounting / Installation

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

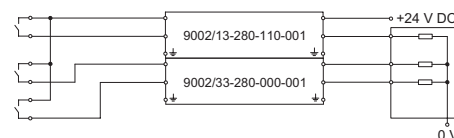
Technical Drawings – Subject to Alterations



Picture F

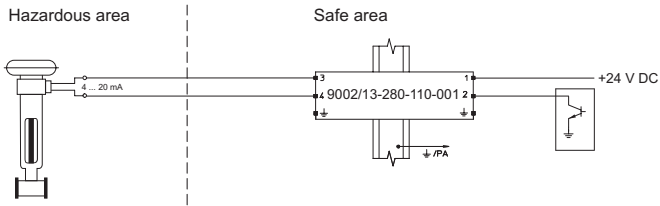


Two-channel safety barriers, safety barrier potential: +
/ evaluation barrier potential: +

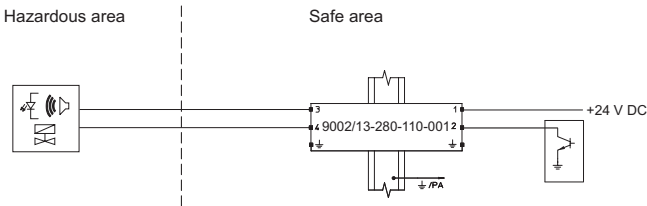


Application: Combination of potential-free contacts

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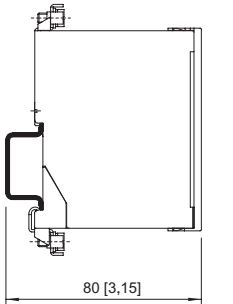
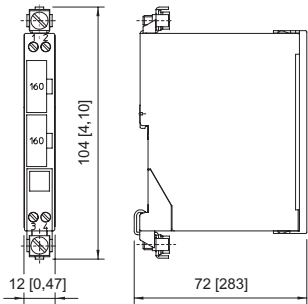


Application: 2-wire 4/20 mA I/P converters and control valves - standard and HART, 4/20 mA indicators

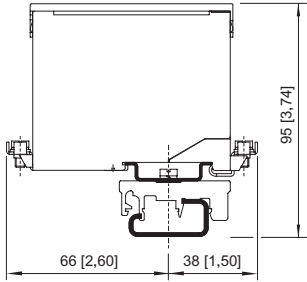


Application: Discrete 2-wire output for solenoid valves, LEDs and signalling devices

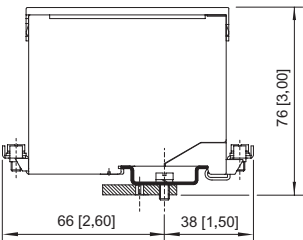
Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



Mounting on DIN rail NS 35/15



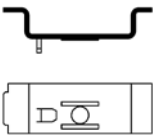
Mounting on DIN rail NS 32 by means of adaptor and mounting attachment, moulded plastic



Mounting on mounting plate by means of adaptor

Accessories

Adaptor

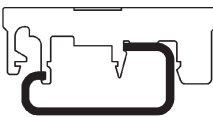


Adaptor allows installation of a safety barrier Series 900x on a mounting plate of a previous series.

Art. No.

158826

Mounting attachment moulded plastic

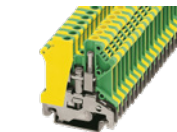


Enables mounting of safety barrier on a G-rail.

Art. No.

165283

Protective conductor terminal



USLKG 5 (clamping range 4 mm²)
Terminal enables connection of protective conductors to DIN rail. Colour green-yellow.

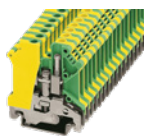
Art. No.

112760

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Earth terminal

Art. No.



USLKG 6 N (wire range 6 mm²)
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



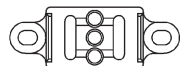
Insulating stand off

Art. No.



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

158828



Spare Parts

Back-up fuse

Art. No.



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

158964

Holder for label

Art. No.



Transparent cover for labelling

158977



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