- For the intrinsically safe operation of a wide range of devices, such as HART transmitters, solenoid valves, sensors, 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)
- Convenient maintenance and repair through back-up fuse feature

WebCode **9001A**

The 9001 series INTRINSPAK single-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 little space. The back-up fuse is a convenient feature as it is standardized for all variants.

	IECEx / ATEX					
Zone	0	1	2	20	21	22
Ex interface	•	•	•	•	•	•
Installation in			•			

	NEC 500 CEC Appendix J					
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
Ex interface	•	•	•	•	•	•
Installation in		•				

	CEC Section 18 NEC® 505			NEC® 506		
	Class I					
Zone	0	1	2	20	21	22
Ex interface	•	•	•			
Installation in			•			

A2

Selection Table

Product variant	Series 9001/00, Single-channel safety barriers for negative polarity						
Nominal voltage	Minimum resistance R_{min}	Maximum resistance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o	Product Type	Art. No.
6 V	24 Ω	29 Ω	8.3 V	442 mA	917.2 mW	9001/00-083-442-101	158333
	28 Ω	33 Ω	8.6 V	390 mA	839 mW	9001/00-086-390-101	158434
24 V	287 Ω	320 Ω	28 V	100 mA	700 mW	9001/00-280-100-101	158356 ▲
	340 Ω	375 Ω	28 V	85 mA	595 mW	9001/00-280-085-101	158344
	599 Ω	666 Ω	28 V	50 mA	350 mW	9001/00-280-050-101	158660
	1435 Ω	1590 Ω	28 V	20 mA	140 mW	9001/00-280-020-101	158650
Product variant	Series 9001/01, Single-channel safety barriers for positive polarity						
Nominal voltage	Minimum resistance R_{min}	Maximum resistance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o	Product Type	Art. No.
6 V	24 Ω	29 Ω	8.3 V	442 mA	917.2 mW	9001/01-083-442-101	158338
	28 Ω	33 Ω	8.6 V	390 mA	839 mW	9001/01-086-390-101	158439
	39 Ω	45 Ω	8.6 V	270 mA	580.5 mW	9001/01-086-270-101	158428
	65 Ω	73 Ω	8.6 V	150 mA	322.5 mW	9001/01-086-150-101	158418 ▲
	129 Ω	145 Ω	8.6 V	75 mA	161.3 mW	9001/01-086-075-101	158391
	870 Ω	964 Ω	8.6 V	10 mA	21.5 mW	9001/01-086-010-101	158350
8 V	93 Ω	106 Ω	12.6 V	150 mA	473 mW	9001/01-126-150-101	158502
12 V	50 Ω	57 Ω	15.8 V	390 mA	1541 mW	9001/01-158-390-101	158509
	120 Ω	135 Ω	15.8 V	150 mA	593 mW	9001/01-158-150-101	158535 ▲
	235 Ω	262 Ω	16.8 V	75 mA	315 mW	9001/01-168-075-101	158568
	871 Ω	966 Ω	16.8 V	20 mA	84 mW	9001/01-168-020-101	158555
16 V	216 Ω	241 Ω	19.9 V	100 mA	498 mW	9001/01-199-100-101	158632 ▲
	415 Ω	462 Ω	19.9 V	50 mA	249 mW	9001/01-199-050-101	158616
	2097 Ω	2320 Ω	19.9 V	10 mA	50 mW	9001/01-199-010-101	158589
20 ... 35 V	259 Ω	268 Ω	25.2 V	100 mA	630 mW	9001/01-252-100-141	158697 ▲
	455 Ω	506 Ω	25.2 V	60 mA	378 mW	9001/01-252-060-141	158693 ▲
24 V	115 Ω	128 Ω	28 V	280 mA	1960 mW	9001/01-280-280-101	158722
	177 Ω	198 Ω	28 V	165 mA	1155 mW	9001/01-280-165-101	158392 ▲
	263 Ω	294 Ω	28 V	110 mA	770 mW	9001/01-280-110-101	158380 ▲
	287 Ω	320 Ω	28 V	100 mA	700 mW	9001/01-280-100-101	158365 ▲
	340 Ω	375 Ω	28 V	85 mA	595 mW	9001/01-280-085-101	158351 ▲
	415 Ω	462 Ω	28 V	75 mA	525 mW	9001/01-280-075-101	158339
	599 Ω	666 Ω	28 V	50 mA	350 mW	9001/01-280-050-101	158665
	1435 Ω	1590 Ω	28 V	20 mA	140 mW	9001/01-280-020-101	158655
Product variant	Series 9001/02, Single-channel safety barriers for alternating polarity						
Nominal voltage	Minimum resistance R_{min}	Maximum resistance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o	Product Type	Art. No.
± 0.7 V	19.9 Ω	20.1 Ω	1.6 V	150 mA	60 mW	9001/02-016-150-111	158685 ▲
	37 Ω	40 Ω	1.6 V	50 mA	20 mW	9001/02-016-050-111	158677
	120 Ω	134 Ω	1.6 V	15 mA	6 mW	9001/02-016-015-101	158669
± 6 V	31 Ω	36 Ω	9.3 V	390 mA	906.8 mW	9001/02-093-390-101	158755 ▲
	70 Ω	80 Ω	9.3 V	150 mA	348.8 mW	9001/02-093-150-101	158753
	319 Ω	355 Ω	9.3 V	30 mA	69.8 mW	9001/02-093-030-101	158743 ▲
	3141 Ω	3473 Ω	9.3 V	3 mA	6.975 mW	9001/02-093-003-101	158741

▲ Preferred products – in stock or available at short notice

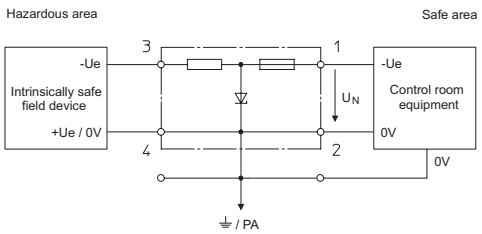
08.11.2020 · PO·en

Schematics of the safety barriers on the Internet r-stahl.com

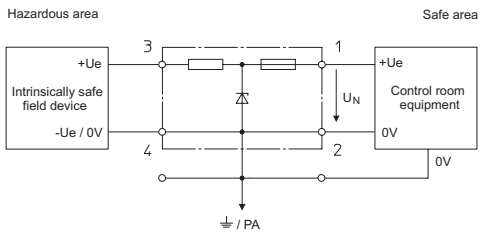
Technical Data

Explosion Protection	
IECEx gas explosion protection	Ex nA [ia Ga] IIC/IIB T4 Gc
IECEx dust explosion protection	[Ex ia Da] IIIC
ATEX gas explosion protection	II 3 (1) G Ex nA [ia Ga] IIC/IIB T4 Gc
ATEX dust explosion protection	II (1) D [Ex ia Da] IIIC
EAC gas explosion protection	2 Ex nA [ia Ga] IIC T4 Gc X
EAC dust explosion protection	[Ex ia Da] IIIC
Certificates	ATEX (PTB), Brazil (ULB), Canada (CSA), EAC (STV), IECEx (PTB), Japan (CML), Korea (KGS), USA (FM), USA (UL)
Notes	CCC certificate available from 2021 onward
Installation	in Zone 2, Division 2 and in safe area
Further information	see respective certificate and operating instructions
Ambient Conditions	
Ambient temperature	-20 °C ... +60 °C
Storage temperature	-20 °C ... +75 °C
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 max.	1.5 mm²
Type of connection cable	Finely stranded Solid
Weight	0.11 kg

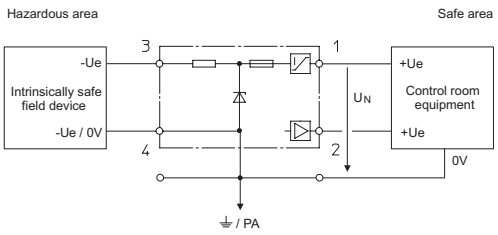
Technical Drawings – Subject to Alterations



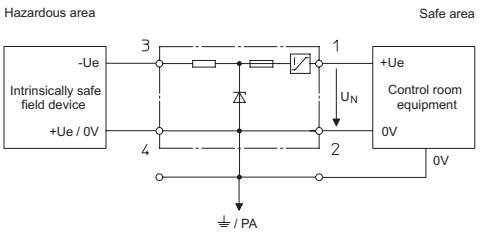
Single-Channel Safety Barriers for Negative Polarity



Single-Channel Safety Barriers for Positive Polarity

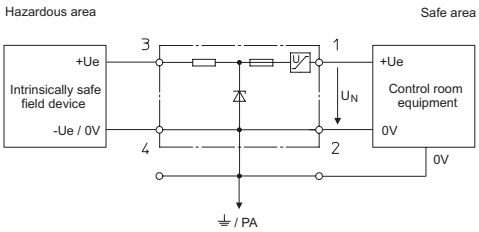


Single-Channel Safety Barriers for Positive Polarity

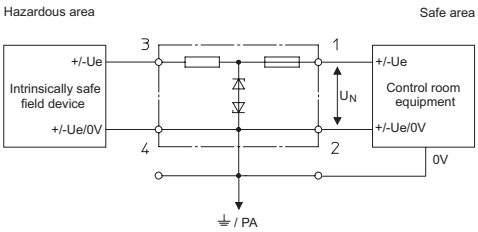


Single-Channel Safety Barriers for Positive Polarity

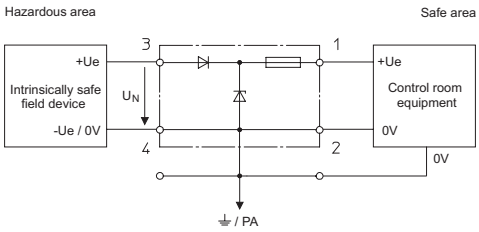
A2



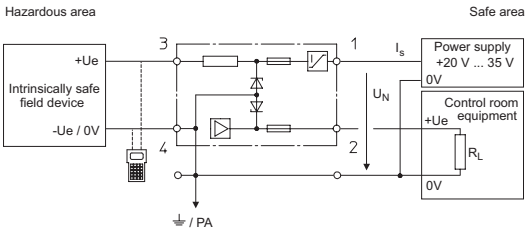
Single-Channel Safety Barriers for Positive Polarity



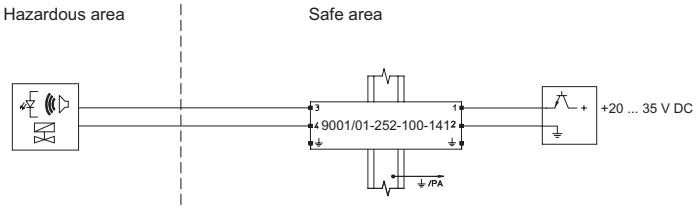
Single-Channel Safety Barriers for Alternating Polarity



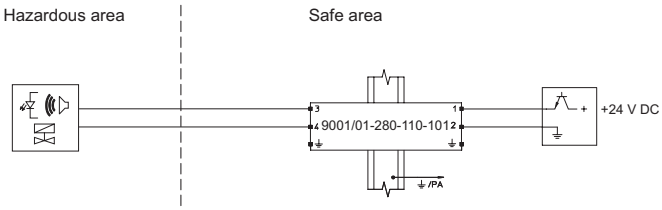
Single-Channel Diode Return Barriers for Positive Polarity



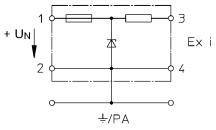
Single-Channel Safety Barriers for Transmitters



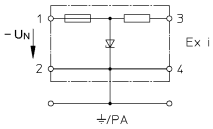
Application: Binary output (current source) for valves, LEDs etc. Field circuit earthed



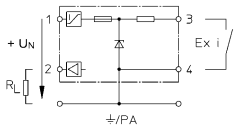
Application: Discrete 2-wire output for magnet reed switches, LEDs and audible alarm indicators



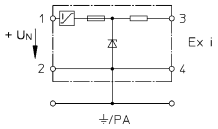
Picture B



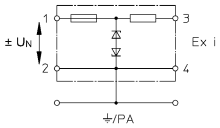
Picture A



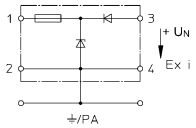
Picture D



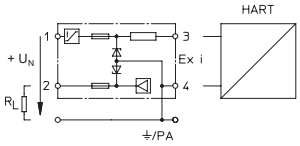
Picture E



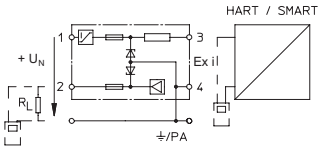
Picture F



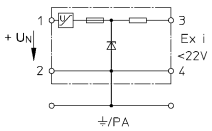
Picture G



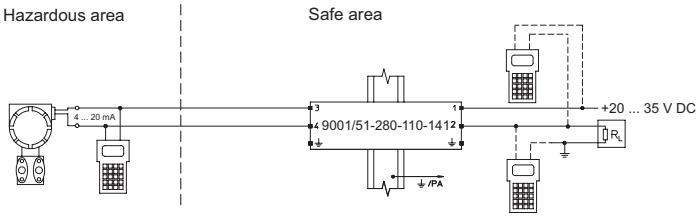
Picture K



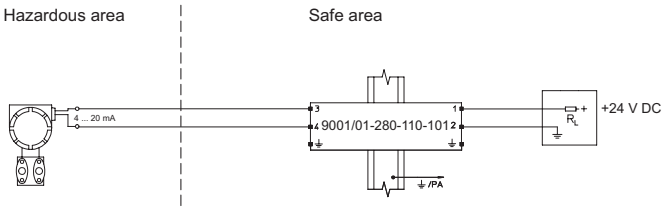
Picture L



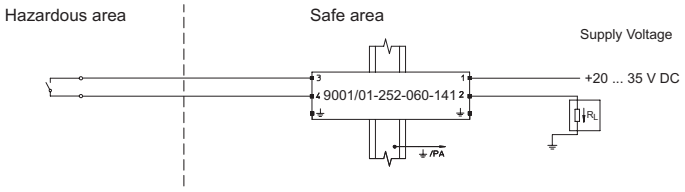
Picture M



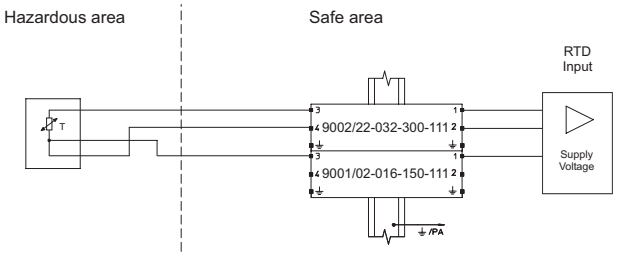
Application: Analog input with standard transmitter
Field circuit earthed



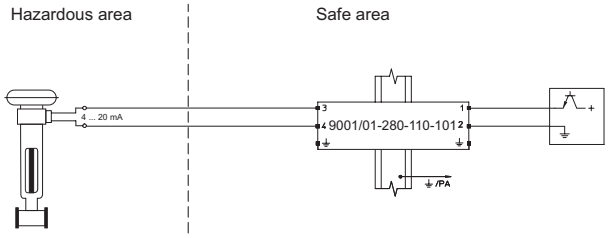
Application: 2-wire 4/20 mA transmitter - Standard



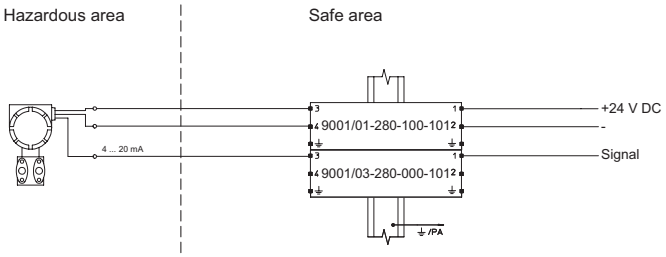
Application: Binary input with switch (load on ground)
Field circuit earthed



Application: Pt100, 3-wire circuit field circuit unearthed



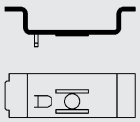
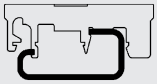
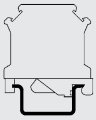
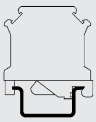
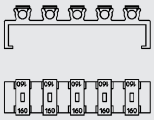
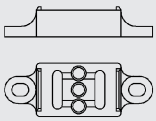
Application: Analog output (current source) with I/P converter etc. Field circuit earthed



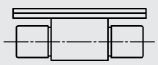
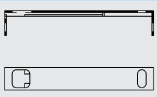
Application: 3-wire 4 ... 20 mA transmitter

A2

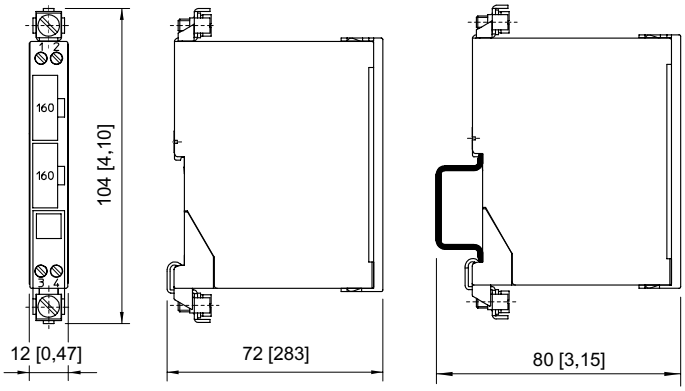
Accessories

Figure	Description	Art. No.	Weight kg
Adaptor			
	Adaptor allows installation of a safety barrier Series 900x on a mounting plate of a previous series.	158826	0.006
Mounting attachment moulded plastic			
	Enables mounting of safety barrier on a G-rail.	165283	0.004
Protective conductor terminal			
	USLKG 5 (wire range 4 mm²) Terminal enables connection of protective conductors to DIN rail. Colour green-yellow.	112760	0.012
Earth terminal			
	USLKG 6 N (wire range 6 mm²) Terminal enables connection of protective / earthing conductors to DIN rail. Colour green-yellow.	112599	0.030
Fuse holder			
	Fuse holder is snapped onto the side of the safety barrier and can be equipped with up to 5 back-up fuses (replacement).	158834	0.020
Insulating stand off			
	Suitable for DIN rail NS35/15, allows electrically insulated mounting of DIN rail from mounting plate.	158828	0.023

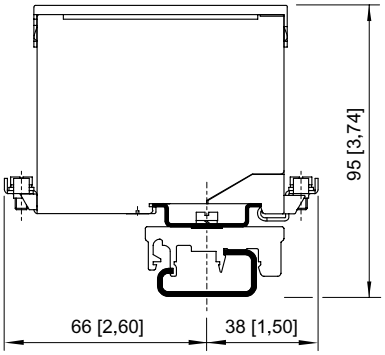
Spare Parts

Figure	Description	Art. No.	Weight kg
Back-up fuse			
	For all safety barriers Series 9001, 9002 and 9004 Packaging unit: 5 pcs.	158964	0.008
Holder for label			
	Transparent cover for labelling	158977	0.002

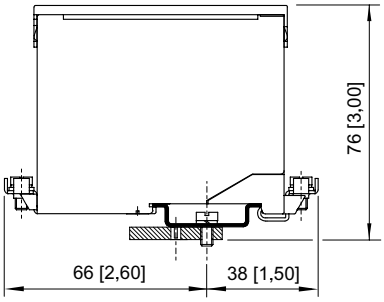
Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



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