



- 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

A2

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.

	IECEX / ATEX						NEC® 500 CE Code Appendix J						CE Code Section 18 NEC® 505 NEC® 506					
	Class I		Class II		Class III		Class I		Class II		Class III		Class I		Class II		Class III	
Zone	0	1	2	20	21	22	1	2	1	2	1	2	0	1	2	20	21	22
Ex interface	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			
Installation in			•					•		•		•			•			

Selection Table									
Product variant Series 9002/00, potential: Negative/negative									
Channel	Nominal voltage U_N	Minimum resistance R_{min}	Maximum resistance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o	Schematic	Product Type	Art. No.
1	17.5 V	321 Ω	359 Ω	26 V	87 mA	540 mW	Image C	9002/00-260-138-001	158867
2	-	417 Ω	464 Ω	20 V	51 mA	245 mW			
1 + 2	-	-	-	26 V	138 mA	785 mW			
1	25 V	322 Ω	359 Ω	28 V	93 mA	650 mW	-	9002/00-280-186-001	158845
2	-	322 Ω	359 Ω	28 V	93 mA	650 mW			
1 + 2	-	-	-	28 V	186 mA	1300 mW			
Product variant Series 9002/10, potential: Positive/negative									
Channel	Nominal voltage U_N	Minimum resistance R_{min}	Maximum resistance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o	Schematic	Product Type	Art. No.
1	6 V	490 Ω	543 Ω	9.3 V	20 mA	50 mW	Image A	9002/10-187-020-001	158937
2	-	490 Ω	543 Ω	9.3 V	20 mA	50 mW			
1 + 2	-	-	-	18.7 V	20 mA	90 mW			
1	6 V	43 Ω	49 Ω	9.3 V	270 mA	630 mW	Image A	9002/10-187-270-001	158933
2	-	43 Ω	49 Ω	9.3 V	270 mA	630 mW			
1 + 2	-	-	-	18.7 V	270 mA	1260 mW			
Product variant Series 9002/11, potential: Positive/positive									
Channel	Nominal voltage U_N	Minimum resistance R_{min}	Maximum resistance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o	Schematic	Product Type	Art. No.
1	1 V	46 Ω	52 Ω	13 V	321 mA	1040 mW	-	9002/11-130-360-001	158958
2	-	46 Ω	52 Ω	1.6 V	39 mA	16 mW			
1 + 2	-	-	-	13 V	360 mA	1170 mW			
1	6 V	322 Ω	359 Ω	28 V	89 mA	630 mW	-	9002/11-280-293-001	158864
2	-	60 Ω	68 Ω	9.6 V	180 mA	430 mW			
1 + 2	-	-	-	28 V	269 mA	1050 mW			

Selection Table									
Series 9002/11, potential: Positive/positive									
Channel	Nominal voltage U_N	Minimum resistance R_{min}	Maximum resistance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o	Schematic	Product Type	Art. No.
1	9 V	1052 Ω	1165 Ω	12 V	12 mA	40 mW	–	9002/11-120-024-001	158943
2	–	1052 Ω	1165 Ω	12 V	12 mA	40 mW			
1 + 2	–	–	–	12 V	24 mA	70 mW			
1	10 V	953 Ω	978 Ω	13.7 V	14.5 mA	50 mW	–	9002/11-137-029-001	158940
2	–	953 Ω	978 Ω	13.7 V	14.5 mA	50 mW			
1 + 2	–	–	–	13.7 V	29 mA	100 mW			
1	16 V	1435 Ω	1590 Ω	19.9 V	15 mA	75 mW	Image B	9002/11-199-030-001	158929
2	–	1435 Ω	1590 Ω	19.9 V	15 mA	75 mW			
1 + 2	–	–	–	19.9 V	30 mA	150 mW			
1	25 V	322 Ω	359 Ω	28 V	93 mA	650 mW	Image B	9002/11-280-186-001	158848
2	–	322 Ω	359 Ω	28 V	93 mA	650 mW			
1 + 2	–	–	–	28 V	186 mA	1300 mW			
Series 9002/13, safety barrier potential: Positive/evaluation barrier potential: Positive									
Channel	Nominal voltage U_N	Minimum resistance R_{min}	Maximum resistance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o	Schematic	Product Type	Art. No.
1	16 V	96 Ω	109 Ω	19.9 V	222 mA	1100 mW	Image F	9002/13-199-225-001	158921
2	–	–	–	19.9 V	3 mA	15 mW			
1 + 2	–	–	–	19.9 V	225 mA	1120 mW			
1	22 V	217 Ω	244 Ω	25.2 V	118 mA	740 mW	Image N	9002/13-252-121-041	158830
2	–	–	–	25.2 V	0 mA	20 mW			
1 + 2	–	–	–	25.2 V	121 mA	760 mW			
1	24 V	322 Ω	359 Ω	28 V	90 mA	630 mW	Image F	9002/13-280-093-001	158852
2	–	–	–	28 V	3 mA	21 mW			
1 + 2	–	–	–	28 V	93 mA	651 mW			
1	24 V	270 Ω	296 Ω	28 V	107 mA	749 mW	Image F	9002/13-280-110-001	158857
2	–	–	–	28 V	3 mA	21 mW			
1 + 2	–	–	–	28 V	110 mA	770 mW			
Series 9002/22, potential: Alternating/alternating									
Channel	Nominal voltage U_N	Minimum resistance R_{min}	Maximum resistance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o	Schematic	Product Type	Art. No.
1	0.7 V	19.9 Ω	20.1 Ω	1.6 V	150 mA	60 mW	Image J	9002/22-032-300-111	158954
2	1.4 V	19.9 Ω	20.1 Ω	1.6 V	150 mA	60 mW			
1 + 2	–	–	–	3.2 V	300 mA	120 mW			
1	5.5 V	84 Ω	95 Ω	7.9 V	100 mA	198 mW	–	9002/22-158-200-001	158952
2	11 V	84 Ω	95 Ω	7.9 V	100 mA	198 mW			
1 + 2	–	–	–	15.8 V	200 mA	395 mW			
1	9 V	1051 Ω	1164 Ω	12 V	12 mA	40 mW	–	9002/22-240-024-001	158950
2	18 V	1051 Ω	1164 Ω	12 V	12 mA	40 mW			
1 + 2	–	–	–	24 V	24 mA	80 mW			
1	9 V	158 Ω	177 Ω	12 V	80 mA	240 mW	Image M	9002/22-240-160-001	158948
2	18 V	158 Ω	177 Ω	12 V	80 mA	240 mW			
1 + 2	–	–	–	24 V	160 mA	480 mW			
Series 9002/33, evaluation barrier potential: Positive/evaluation barrier potential: Positive									
Channel	Nominal voltage U_N	Minimum resistance R_{min}	Maximum resistance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o	Schematic	Product Type	Art. No.
1	25.5 V	0	0	28 V	0 mA	0	Image I	9002/33-280-000-001	158913
2	–	–	–	28 V	0 mA	0			
1 + 2	–	–	–	28 V	0	0			
Series 9002/77, star barrier/star barrier									
Channel	Nominal voltage U_N	Minimum resistance R_{min}	Maximum resistance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o	Schematic	Product Type	Art. No.
1	–	492 Ω	546 Ω	9.3 V	20 mA	50 mW	Image K	9002/77-093-040-001	158905
2	–	492 Ω	546 Ω	9.3 V	20 mA	50 mW			
1 + 2	6 V	–	–	9.3 V	40 mA	90 mW			
1	–	71.7 Ω	81.5 Ω	9.3 V	150 mA	350 mW	Image K	9002/77-093-300-001	158897
2	–	71.7 Ω	81.5 Ω	9.3 V	150 mA	350 mW			
1 + 2	6 V	–	–	9.3 V	300 mA	700 mW			
1	–	60.3 Ω	68.9 Ω	10 V	200 mA	500 mW	–	9002/77-100-400-001	158893
2	–	60.3 Ω	68.9 Ω	10 V	200 mA	500 mW			
1 + 2	6 V	–	–	10 V	400 mA	1000 mW			

Selection Table									
Series 9002/77, star barrier/star barrier									
Channel	Nominal voltage U_N	Minimum resistance R_{min}	Maximum resistance R_{max}	Maximum voltage U_o	Maximum current I_o	Maximum power P_o	Schematic	Product Type	Art. No.
1	-	112 Ω	126 Ω	15 V	150 mA	560 mW	Image K	9002/77-150-300-001	158889
2	-	112 Ω	126 Ω	15 V	150 mA	560 mW			
1 + 2	12 V	-	-	15 V	300 mA	1130 mW			
1	-	322 Ω	359 Ω	22 V	73 mA	400 mW	-	9002/77-220-146-001	158885
2	-	322 Ω	359 Ω	22 V	73 mA	400 mW			
1 + 2	18 V	-	-	22 V	296 mA	800 mW			
1	-	657 Ω	731 Ω	28 V	94 mA	330 mW	Image K	9002/77-280-094-001	158877
2	-	657 Ω	731 Ω	28 V	47 mA	330 mW			
1 + 2	24 V	-	-	28 V	94 mA	660 mW			

Safety barrier schematics are available online at r-stahl.com

Technical Data	
Explosion Protection	
IECEX gas explosion protection	Ex ec [ia Ga] IIC T4 Gc
IECEX dust explosion protection	[Ex ia Da] IIIC
ATEX gas explosion protection	⊕ II 3 (1) G Ex ec [ia Ga] IIC T4 Gc
ATEX dust explosion protection	⊕ II (1) D [Ex ia Da] IIIC
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)
Further information	See relevant 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 (IP) terminals	IP20
Enclosure material	Polyamide 6GF
Number of connection terminals	4
Connection cross-section max.	1.5 mm ²
Type of connection cable	Solid Finely stranded
Weight	110 g

Technical Drawings – Subject to Alterations

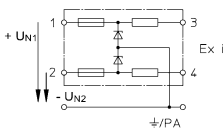


Image A

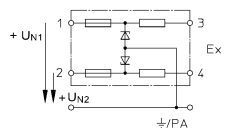


Image B

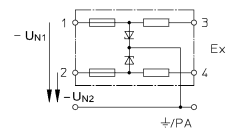


Image C

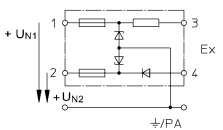


Image F

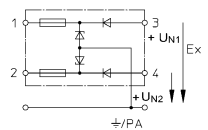


Image I

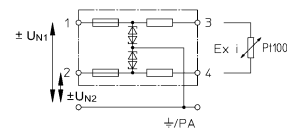


Image J

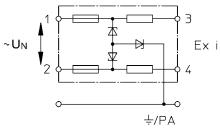


Image K

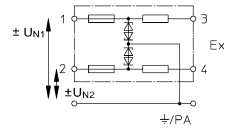


Image M

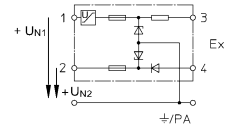
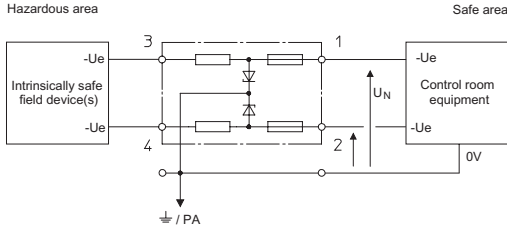
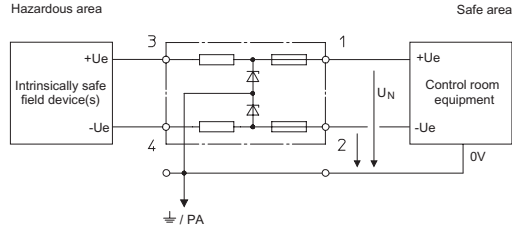


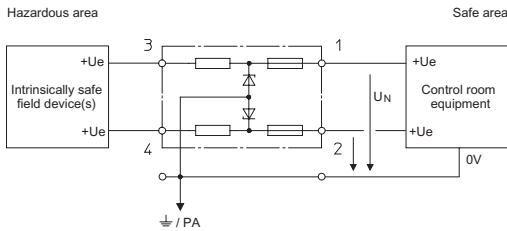
Image N



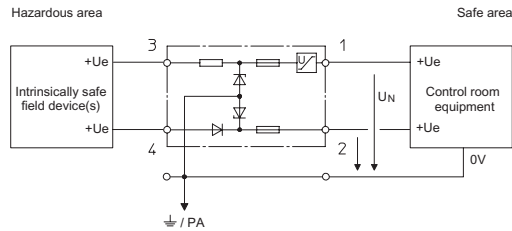
Dual-channel safety barriers, potential: - / -



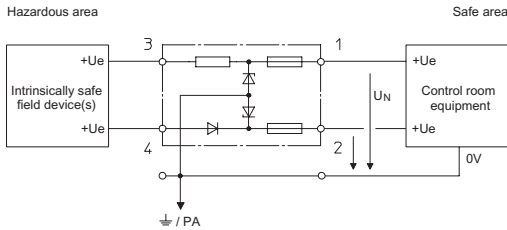
Dual-channel safety barriers, potential: + / -



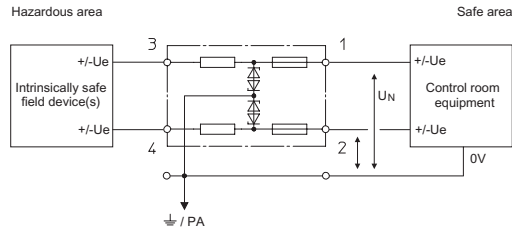
Dual-channel safety barriers, potential: + / +



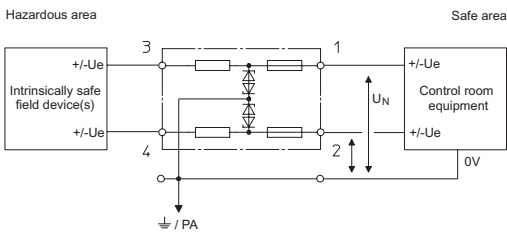
Dual-channel safety barriers, safety barrier potential: + / evaluation barrier potential: +



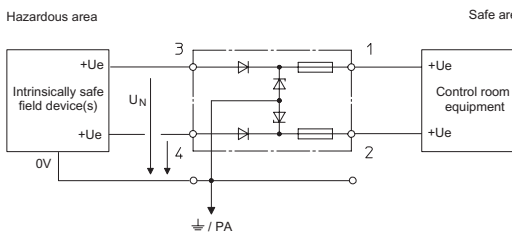
Dual-channel safety barriers, safety barrier potential: + / evaluation barrier potential: +



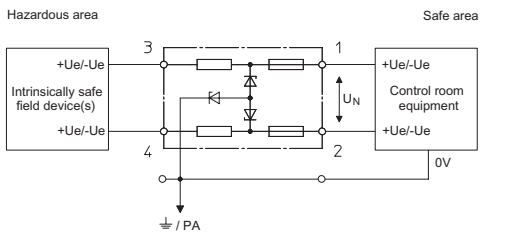
Dual-channel safety barriers, potential: ~ / ~



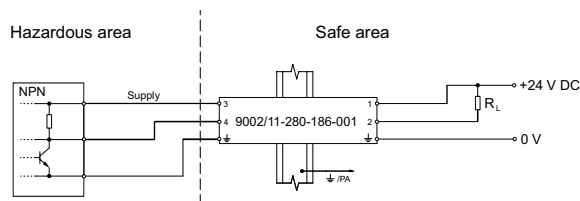
Dual-channel safety barriers, potential: ~ / ~



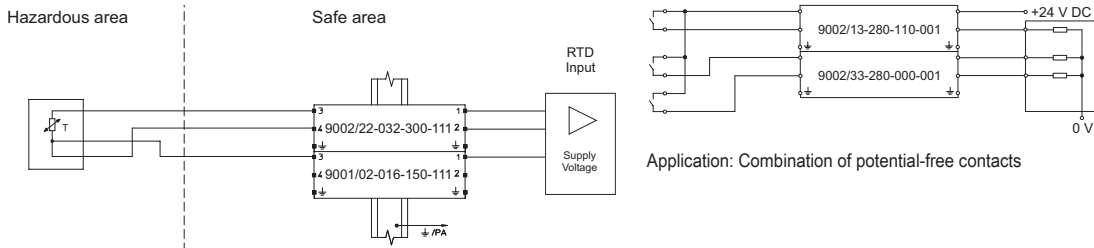
Dual-channel safety barriers, evaluation barrier potential: + / evaluation barrier potential: +



Dual-channel safety barriers, star barrier/star barrier

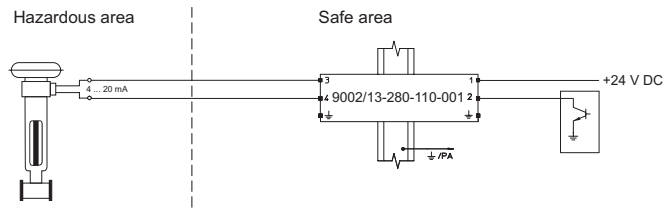


Application: 3-wire NPN inputs (negative switching) of proximity switches, photocells and encoders

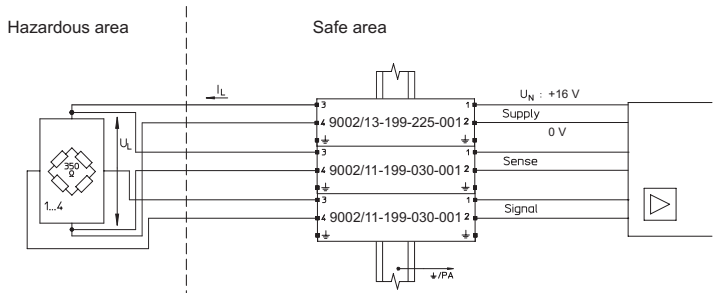


Application: Combination of potential-free contacts

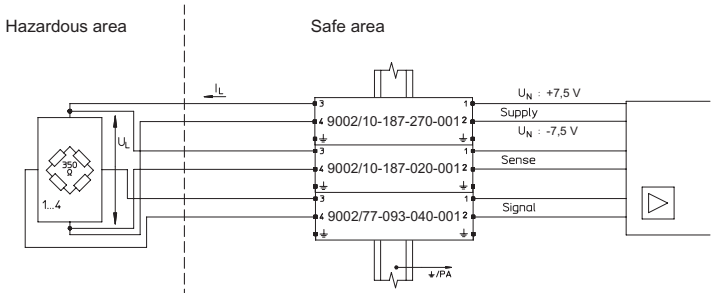
Application: Pt100, 3-wire circuit unearthed



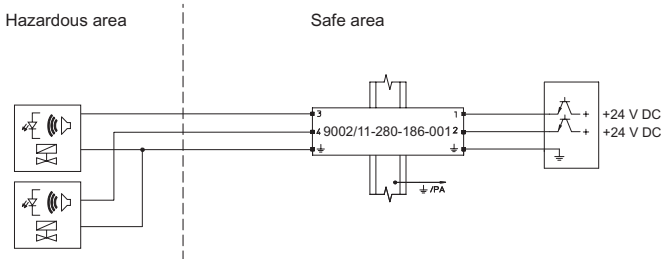
Application: 2-wire 4 to 20 mA I/P converters and control valves – standard and HART, 4 to 20 mA indicators



Application: Load cell (DMS) 350 Ω or 700 Ω 6-wire + 16 V field circuit unearthed

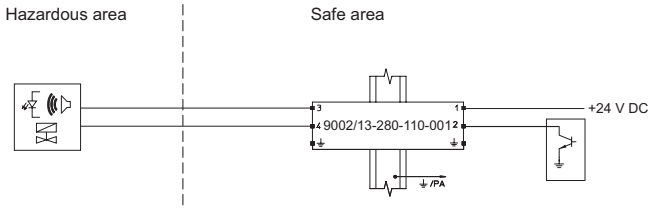


Application: Load cell (DMS) 350 Ω or 700 Ω 6-wire ± 7.5 V (15 V) field circuit unearthed

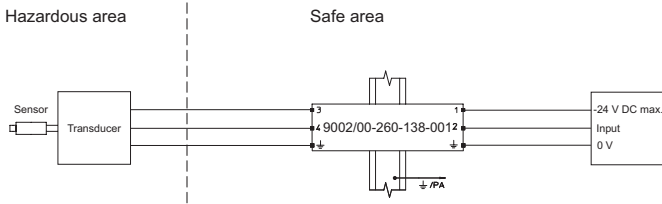


Application: Discrete 2-wire output for solenoid valves, LEDs and signalling devices

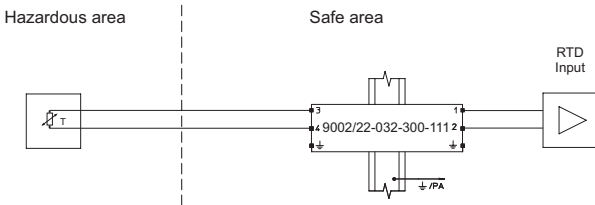
A2



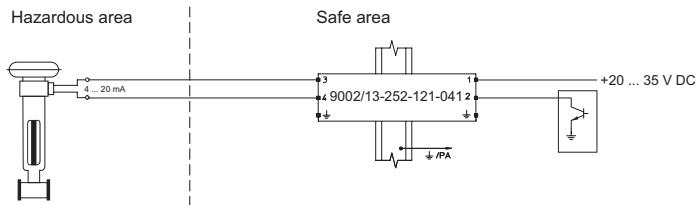
Application: Discrete 2-wire output for solenoid valves, LEDs and signalling devices



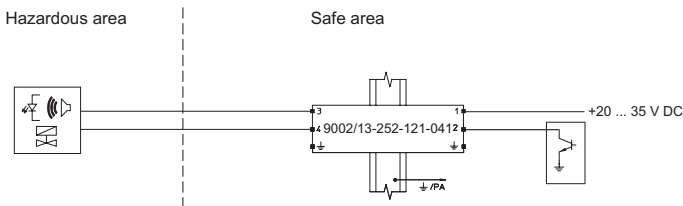
Application: Vibration sensor



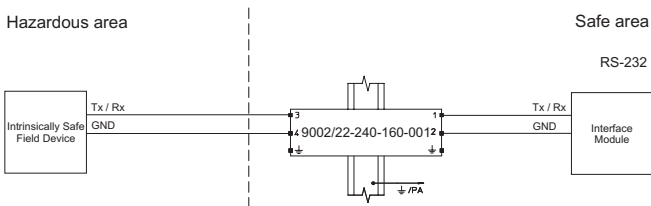
Application: Pt100, 2-wire circuit, field circuit unearthed



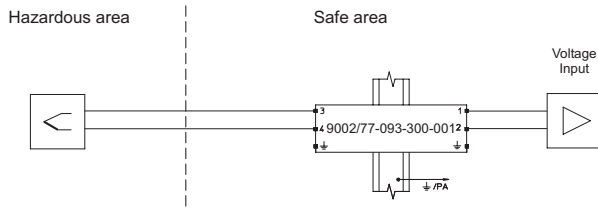
Application: Analogue output (power source) for I/P converters etc., field circuit unearthed



Application: Analogue output (power source) for I/P converters etc., field circuit unearthed



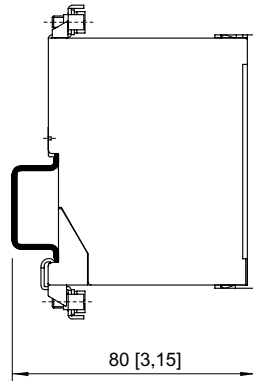
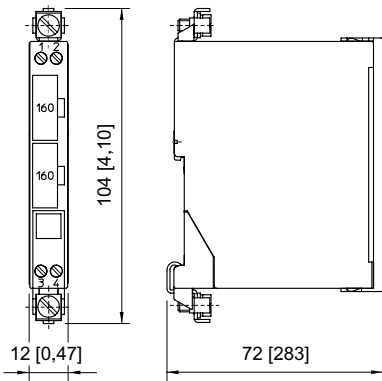
Application with RS 232



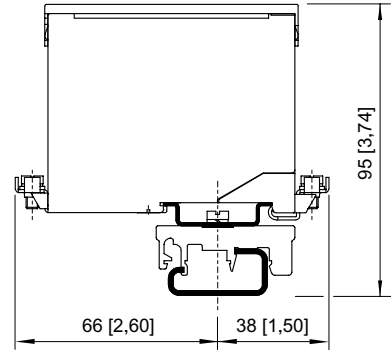
Application: Thermocouples

Accessories			
Figure	Description	Art. No.	Weight
Adaptor			
	The adaptor enables a series 900x safety barrier to be installed on a mounting plate from a previous series.	158826	6 g
Clamping base, moulded material			
	Enables the safety barrier to be mounted on a G-rail.	165283	4 g
Protective conductor terminal			
	USLKG 5 (clamping range 4 mm ²) The terminal enables protective conductors to be connected to the DIN rail. Colour green-yellow.	112760	12 g
Earthing terminal			
	USLKG 6 N (clamping range 6 mm ²) The terminal enables protective conductors/earthing conductors to be connected to the DIN rail. Colour green-yellow.	112599	30 g
Fuse holder			
	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	20 g
Insulation and fastening material			
	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	23 g

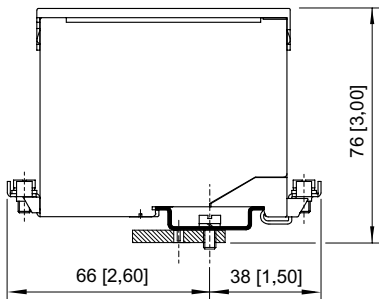
Spare Parts			
Figure	Description	Art. No.	Weight
Back-up fuse			
	For all series 9001, 9002 and 9004 safety barriers Packaging unit: 5 pieces	158964	8 g
Label carrier			
	Transparent cover for the label	158977	2 g



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