

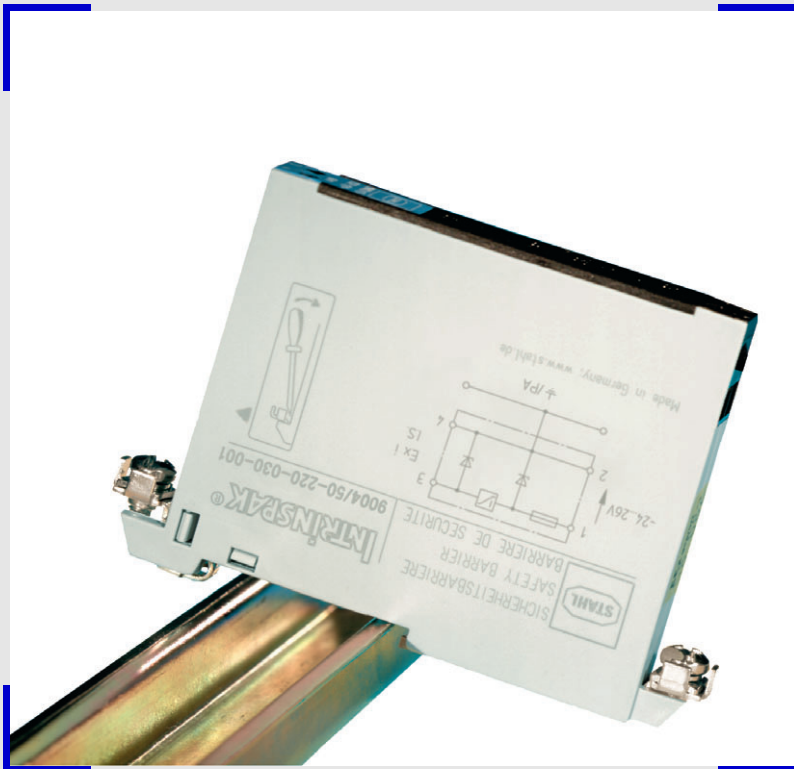
Single-Channel Safety Barriers with Electronic Current Limitation

Series 9004

INTRINSPAK



www.stahl.de



06832E00

- > Broad product range for all standard applications in the world of automation
- > Flexible and space saving
- > Time saving installation due to
 - simple snap on DIN-Rail and
 - connection to PE and ground at the same time
- > Reduced inventory due to uniform exchangeable fuse

A2



R.STAHL safety barriers INTRINSPAK series 9004 are used for various applications.

Because of the electronic current limitation these barriers are suitable for the intrinsic safe power supply of field devices.

The barriers of the series 9004 offering a smaller series resistance and therefore more power on the intrinsic safe side compared to the safety barrier series 9001 and 9002.

A broad range of versions are available for electrical circuits with negative or positive potential.

The types 9004/5... with electronic voltage limitation enabling the application of unregulated power supplies.

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

WebCode 9004A

Single-Channel Safety Barriers with Electronic Current Limitation

Series 9004



Explosion Protection

Global (IECEX)

Gas and dust	IECEX PTB 12.0003X Ex nA [ib Gb] IIC T4 Gc Ex nA [ib Gb] IIB T4 Gc [Ex ib Db] IIIC
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Europe (ATEX)

Gas and dust	PTB 02 ATEX 2008 ⊕ II (2) GD [EEEx ib] IIB/IIC ⊕ II 3 G EEx nA II T4 (Installation in Zone 2)
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Certifications and certificates

Certificates	IECEX, ATEX, Canada (CSA), Kazakhstan (TR), Russia (TR), Serbia (SRPS), Ukraine (TR), Belarus (TR)
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Further parameters

Installation	in Zone 2, Division 2 and in safe area
Further information	see respective certificate and operating instructions

Technical Data

Electrical data

Übertragungsverhalten	
Leakage current at U_N	$\leq 2 \mu\text{A}$ (if not stated otherwise)
Temperature effect	$\leq 0.25 \% / 10 \text{ K}$
Frequency	$\leq 10 \text{ kHz}$

Ambient conditions

Ambient temperature	-20 ... +60 °C / -4 ... +140 °F
Storage temperature	-20 ... +75 °C / -4 ... +167 °F
Maximum relative humidity	95 % mean, no dewing

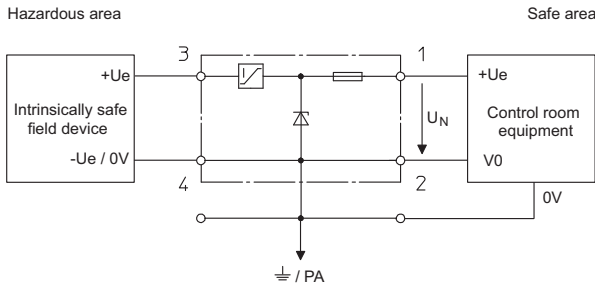
Mechanical data

Ingress protection	according to IEC 60529
terminal enclosure	IP20
Casing	IP40
Enclosure material	Polyamide 6 GF
Connection	4 cage terminals, each maximum 1.5 mm ² flexible / solid 2 PA-terminals, each maximum 4 mm ² flexible / solid
Weight	approx. 0.115 kg

Selection Table

Version	Description	Type	Page
Single-channel barriers	<ul style="list-style-type: none"> • For negative potential • Electronic current limitation • Voltage limitation • Grounded circuit 	9004/01	A2/3
	<ul style="list-style-type: none"> • For negative potential • Electronic current limitation • Grounded circuit 	9004/51	A2/4
	<ul style="list-style-type: none"> • For positive potential • Electronic current limitation • Voltage limitation • Grounded circuit 	9004/00	A2/5
	<ul style="list-style-type: none"> • For positive potential • Electronic current limitation • Grounded circuit 	9004/50	A2/6

Single-Channel Safety Barriers with Electronic Current Limitation for Positive Polarity



- For positive potential
- Electronic current limitation
- Grounded circuit
- Approved for installation in Division 2 and Zone 2
- Intrinsically safe power supply

05853E02

A2

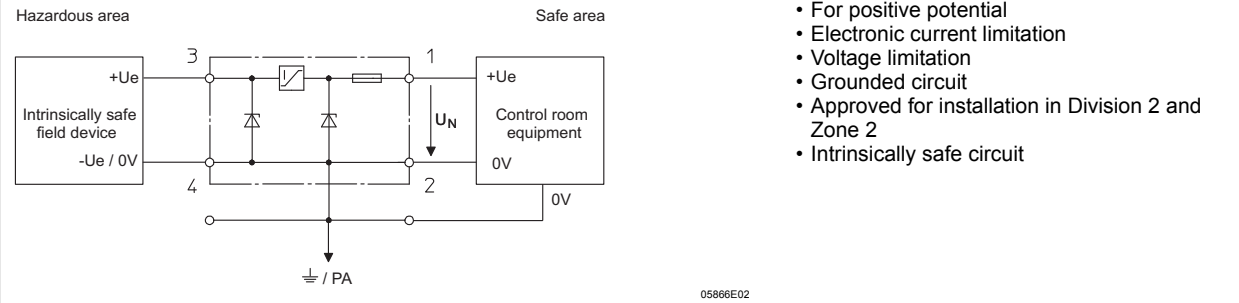
Selection Table

U _N	R _{min}	R _{max}	I _{max}	ΔU	Safety values								Order number
					U _o	I _o	P _o	IIC		IIB			
					V	mA	mW	L _o	C _o	L _o	C _o		
V	Ω	Ω	mA	V	V	mA	mW	mH	μF	mH	μF		
12	26	30	40	0.9	16.8	50	840	0.86	0.16	2.5	1.2	9004/01-168-050-001	
12	20	24	80	0.9	16.8	100	1680	--	--	1.6	1.1	9004/01-168-100-001	
16	34	44	40	0.9	20	50	1000	--	--	2.5	0.68	9004/01-200-050-001	
24	60	68	20	0.9	28	25	700	--	--	2.5	0.28	9004/01-280-025-001	
24	50	56	35	0.9	28	45	1260	--	--	1.5	0.28	9004/01-280-045-001	
26	67	73	20	0.9	31.5	25	787.5	--	--	2.5	0.23	9004/01-315-025-001	

Functional and Maximum Safety Values

U _N	Nominal voltage	ΔU	Additional voltage drop through the safety barrier	L _o	Maximum permissible external inductance
R _{min}	Minimum resistance of the safety barrier	U _o	Maximum voltage	C _o	Maximum permissible external capacity
R _{max}	Maximum resistance of the safety barrier	I _o	Maximum current		
I _{max}	Maximum current through the safety barrier	P _o	Maximum power		

Single-Channel Safety Barriers with Electronic Current Limitation for Positive Polarity with Voltage Limitation



- For positive potential
- Electronic current limitation
- Voltage limitation
- Grounded circuit
- Approved for installation in Division 2 and Zone 2
- Intrinsically safe circuit

05866E02

Selection Table

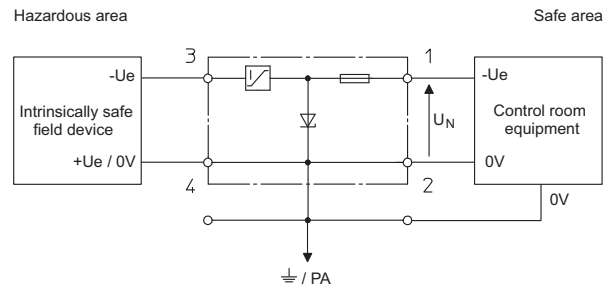
U _N	I _{max}	Safety values							Order number
		U _o	I _o	P _o	IIC L _o	C _o	IIB L _o	C _o	
V	mA	V	mA	mW	mH	μF	mH	μF	
23 ... 27	40	20.6	50	1030	--	--	2.5	0.58	9004/51-206-050-001 ^{*)}
23 ... 27	70	20.6	85	1751	--	--	0.37	0.68	9004/51-206-085-001 ^{*)}
24 ... 26	25	22	30	660	1.3	0.073	2.5	0.55	9004/51-220-030-001 ^{**)}

^{*)} Maximum leakage current < 2 mA; maximum output voltage 17 V
^{**)} Maximum leakage current < 2 mA; maximum output voltage 18 V

Functional and Maximum Safety Values

U _N	Nominal voltage	I _o	Maximum current	C _o	Maximum permissible external capacity
I _{max}	Maximum current through the safety barrier	P _o	Maximum power		
U _o	Maximum voltage	L _o	Maximum permissible external inductance		

Single-Channel Safety Barriers with Electronic Current Limitation for Negative Polarity



- For negative potential
- Electronic current limitation
- Grounded circuit
- Approved for installation in Division 2 and Zone 2

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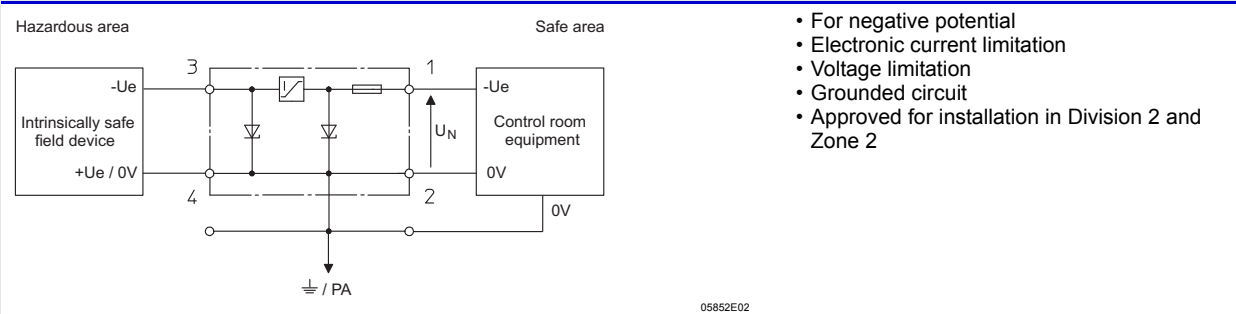
Selection Table

U _N	R _{min}	R _{max}	I _{max}	ΔU	Safety values								Order number
					U _o	I _o	P _o	IIC		IIB			
V	Ω	Ω	mA	V	V	mA	mW	L _o	C _o	L _o	C _o		
24	60	68	20	0.9	28	25	700	--	--	2.5	0.28	9004/00-280-025-001	
24	50	56	35	0.9	28	45	1260	--	--	1.5	0.28	9004/00-280-045-001	
26	67	73	20	0.9	31.5	25	787.5	--	--	2.5	0.23	9004/00-315-025-001	

Functional and Maximum Safety Values

U _N	Nominal voltage	ΔU	Additional voltage drop through the safety barrier	L _o	Maximum permissible external inductance
R _{min}	Minimum resistance of the safety barrier	U _o	Maximum voltage	C _o	Maximum permissible external capacity
R _{max}	Maximum resistance of the safety barrier	I _o	Maximum current		
I _{max}	Maximum current through the safety barrier	P _o	Maximum power		

Single-Channel Safety Barriers with Electronic Current Limitation for Negative Polarity with Voltage Limitation



- For negative potential
- Electronic current limitation
- Voltage limitation
- Grounded circuit
- Approved for installation in Division 2 and Zone 2

Selection Table


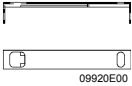
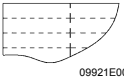

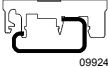
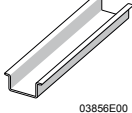
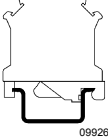
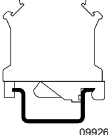
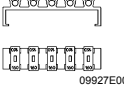
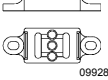
U _N	I _{max}	Safety values							Order number
		U _o	I _o	P _o	IIC		IIB		
V	mA	V	mA	mW	L _o	C _o	L _o	C _o	
24 ... 26	25	22	30	660	1.3	0.073	2.5	0.55	9004/50-220-030-001 **)

**) Maximum leakage current < 2 mA; maximum output voltage 18 V

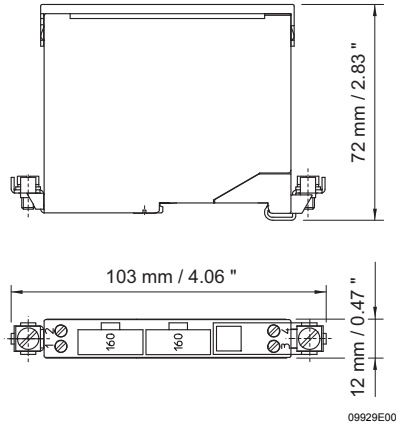
Functional and Maximum Safety Values

U _N	Nominal voltage	I _o	Maximum current	C _o	Maximum permissible external capacity
I _{max}	Maximum current through the safety barrier	P _o	Maximum power		
U _o	Maximum voltage	L _o	Maximum permissible external inductance		

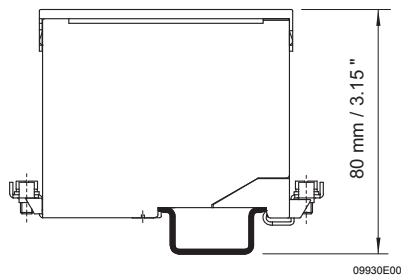
Accessories and Spare Parts

Designation	Figure	Description	Art. no.	Weight kg / lbs
Back-up fuse	 09919E00	for all safety barriers Series 9001, 9002 and 9004 unit: 5 pcs.	158964	0.008 / 0.018
Holder for labels	 09920E00		158977	0.002 / 0.004
Labelling paper	 09921E00	perforated, for typing Format: DIN A4	158973	0.005 / 0.011
Adaptor	 09922E00		158826	0.006 / 0.013
Mounting attachment moulded plastic	 09924E00		165283	0.004 / 0.009
DIN rail	 03856E00	NS 35 / 15 (meter length)	103714	1.410 / 3.109
Earth terminal	 09926E00	USLKG 5 (wire range $\leq 4 \text{ mm}^2$)	112760	0.012 / 0.026
Earth terminal	 09926E00	USLKG 6 N (wire range $\leq 6 \text{ mm}^2$)	112599	0.030 / 0.066
Fuse holder	 09927E00		158834	0.020 / 0.044
Insulating stand off	 09928E00	for rail NS 35/15	158828	0.023 / 0.051

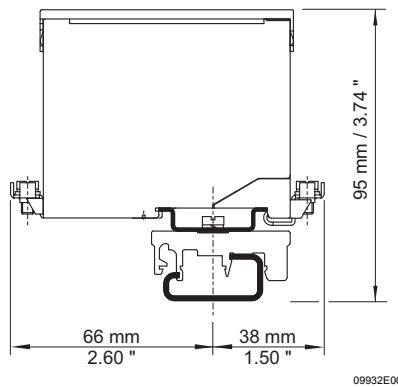
Dimensional Drawings (All Dimensions in mm / inches) - Subject to Alterations



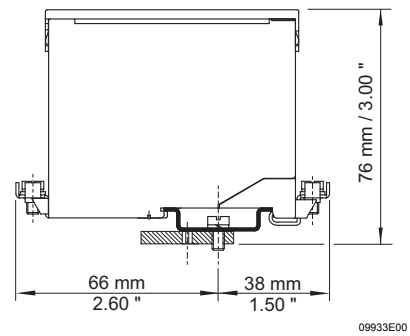
Safety barriers 9001, 9002, 9004



Safety barriers 9001, 9002, 9004
 mounting on
 DIN rail NS 35/15 (acc. to EN 50 022)



Safety barriers 9001, 9002, 9004
 mounting on
 DIN rail NS 32 (acc. to EN 50 035)
 by means of adaptor and
 mounting attachment, moulded plastic



Safety barriers 9001, 9002, 9004
 mounting on
 mounting plate by means of adaptor

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.