

Safety barriers

Single-channel safety barriers

STAHL**INTRINSPAK**

9001/01-252-060-141 Art. No. 158693



- 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

MY R. STAHL 9001A

The series 9001 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
Ex interface zone	0, 1, 2, 20, 21, 22
IECEEx gas certificate	IECEEx PTB 09.0001X
IECEEx gas explosion protection	Ex ec [ia Ga] IIC T4 Gc
IECEEx dust certificate	IECEEx PTB 09.0001X
IECEEx dust explosion protection	[Ex ia Da] IIIC
ATEX gas certificate	PTB 01 ATEX 2088 X
ATEX gas explosion protection	II 3 (1) G Ex ec [ia Ga] IIC T4 Gc
ATEX dust certificate	PTB 01 ATEX 2088 X
ATEX dust explosion protection	II (1) D [Ex ia Da] IIIC
FMus certificate	3011002
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. 90 016 11 31 1
Certificate ULus	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. 90 016 11 31 3
Inmetro gas certificate	UL-BR 12.0353
Inmetro dust certificate	UL-BR 12.0353
Certificates	ATEX (PTB), Brazil (ULB), Canada (FM), China (NEPSI), IECEEx (PTB), India (PESO), Japan (CML), Korea (KGS), USA (FM), USA (UL)
Declaration of conformity	ATEX (EUK), China (CCC)
Installation	in Zone 2, Division 2 and in safe areas
Further information	See relevant certificate and operating instructions

9001/01-252-060-141 Art. No. 158693

Safety Data

Max. voltage U _o	25.2 V								
Max. current I _o	60 mA								
Max. power P _o	378 mW								
Max. permissible external capacity C _o for IIC	0.107 µF								
Max. permissible external inductance L _o for IIC	6.2 mH								
Max. permissible external capacity C _o for IIB	0.82 µF								
Max. permissible external inductance L _o for IIB	25 mH								
Notes	This safety barrier has a switching function and two electrical circuits: The switching circuit (through the intrinsically safe apparatus or the switch) and the load circuit (through the load). If terminals 3 and 4 are bridged, the safety barrier switches and the load circuit is closed. The switching circuit is intrinsically safe and is limited by the voltage limiting and the series resistance of the safety barrier. The load circuit is non-intrinsically safe and is not limited by the series resistance either. Instead, the load current is limited to ≤ 40 mA. The load circuit is designed as Ex ec and must not lead into Zone 1 or Zone 0.								
Intrinsically safe limiting values Inductance L _o /capacitance C _o	Jointly connectable inductance L _o /capacitance C _o								
IIC	<table><tr><td>L_o [mH]</td><td>5 mH</td><td>1 mH</td><td>0.200 mH</td></tr><tr><td>C_o [µF]</td><td>0.055 µF</td><td>0.072 µF</td><td>0.107 µF</td></tr></table>	L _o [mH]	5 mH	1 mH	0.200 mH	C _o [µF]	0.055 µF	0.072 µF	0.107 µF
L _o [mH]	5 mH	1 mH	0.200 mH						
C _o [µF]	0.055 µF	0.072 µF	0.107 µF						
IIB	<table><tr><td>L_o [mH]</td><td>20 mH</td><td>1 mH</td><td>0.100 mH</td></tr><tr><td>C_o [µF]</td><td>0.400 µF</td><td>0.45 µF</td><td>0.82 µF</td></tr></table>	L _o [mH]	20 mH	1 mH	0.100 mH	C _o [µF]	0.400 µF	0.45 µF	0.82 µF
L _o [mH]	20 mH	1 mH	0.100 mH						
C _o [µF]	0.400 µF	0.45 µF	0.82 µF						

Electrical Data

Number of channels	1
Type of voltage	DC
Maximum resistance R_{max}	506 Ω
Minimum resistance R_{min}	455 Ω
Maximum output current I_{max}	40 mA
Potential	Positive
Transmission frequency channel 1	≤ 50 kHz
I_{leak} leakage current for U_n	≤ 100 μ A
Max. open-circuit output volt.	21 V
Auxiliary voltage drop	3 V
Maximum load current I_{Last}	40 mA

Auxiliary Power

Nominal voltage	20 – 35 V
Power supply	Uncontrolled

Output

Temperature influence	$\leq 0,25$ %/10K
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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

9001/01-252-060-141 Art. No. 158693

Mechanical Data

Degree of protection (IP)	IP40
Degree of protection note	according to IEC 60529
Degree of protection (IP) terminals	IP20
Enclosure material	Polyamide 6GF
Number of connection terminals	4
Connection cross section min.	1.5 mm ²
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 in inches	0.48 in
Mounting depth	72 mm
Mounting depth in inches	2.76 in
Weight	110 g
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 N · m
Min. torque, lb/in	4.43 lb/in
Max. torque, Nm	0.6 N · m
Max. torque, lb/in	5.31 lb/in

Technical Drawings – Subject to Alterations

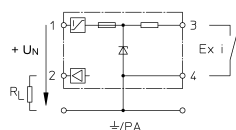
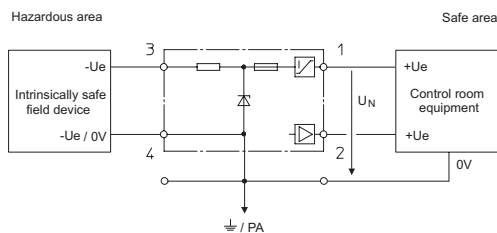
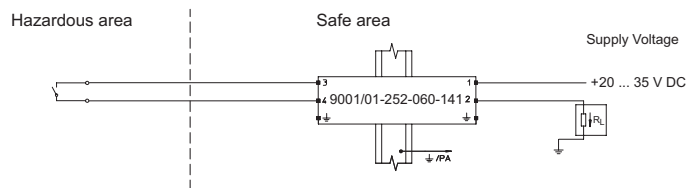


Image D



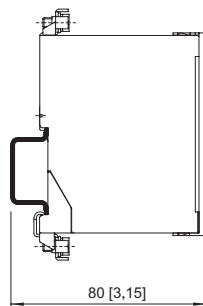
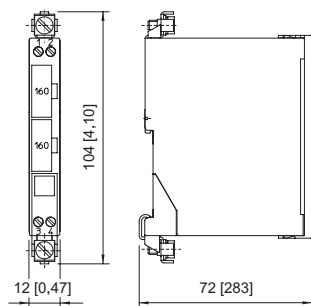
Single-Channel Safety Barriers for Positive Polarity



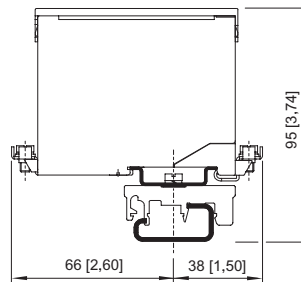
Application: Binary input with switch (load on ground)
Field circuit earthed

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

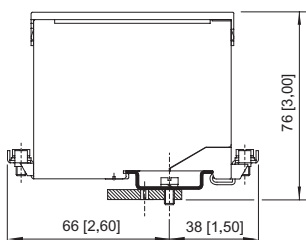
9001/01-252-060-141 Art. No. 158693



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

Accessories

Terminal block



Phoenix Contact terminal block UT 4-PE

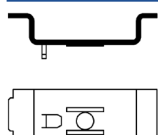
Art. No.

113057

Phoenix Contact terminal block UT 6-PE

113058

Adaptor

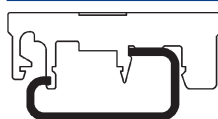


The adaptor enables a safety barrier to be installed on a clamping base (Art. No. 165283) or mounting plate from a previous series.

Art. No.

158826

Clamping base, moulded material

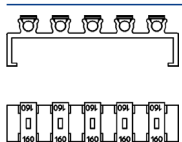


Enables the safety barrier to be mounted on a G-rail. The safety barrier is mounted using the adaptor (Art. No. 158826).

Art. No.

165283

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).

Art. No.

158834

Spare Parts

Back-up fuse



For all series 9001, 9002 and 9004 safety barriers
Packaging unit: 5 pieces

Art. No.

158964

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9001/01-252-060-141 Art. No. 158693

Label carrier		Art. No.
	Transparent cover for the label	158977

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.