Zener Barriers
Single-channel safety barriers

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, 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)
- Convenient maintenance and repair through back-up fuse feature

MY R. STAHL **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.

Technical Data

Explosion Protection	
Application range (zones)	2
Ex interface zone	0, 1, 2, 20, 21, 22
IECEx gas certificate	IECEx PTB 09.0001X
IECEx gas explosion protection	Ex ec [ia Ga] IIC T4 Gc
IECEx dust certificate	IECEx PTB 09.0001X
IECEx dust explosion protection	[Ex ia Da] IIIC
ATEX gas certificate	PTB 01 ATEX 2088 X
ATEX gas explosion protection	Ⓔx II 3 (1) G Ex ec [ia Ga] IIC T4 Gc
ATEX dust certificate	PTB 01 ATEX 2088 X
ATEX dust explosion protection	Ⓔx 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), IECEx (PTB), India (PESO), Japan (CML), Korea (KGS), USA (FM), USA (UL)
Declaration of conformity	ATEX (EUK), China (CCC)
Installation	in Zone 2, Class I, Div. 2, and Class I, Zone 2 and in safe area
Further information	see respective certificate and operating instructions

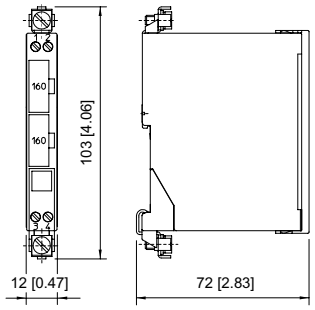
9001/01-252-060-141 Art. No. 158693

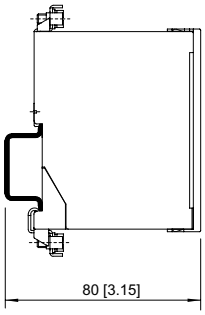
Safety Data				
Max. voltage U_o/V_{oc}		25.2 V		
Max. current I_o/I_{sc}		60 mA		
Max. power P_o		378 mW		
Max. permissible external capacitance C_o/C_a for IIC		0.107 µF		
Max. permissible external inductance L_o/La for IIC		6.2 mH		
Max. permissible external capacitance C_o/C_a for IIB		0.82 µF		
Max. permissible external inductance L_o/La 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	L_o [mH]	5 mH	1 mH	0.200 mH
	C_o [µF]	0.055 µF	0.072 µF	0.107 µF
IIB	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		
Min. 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 µA		
Max. open-circuit output volt.		21 V		
Auxiliary voltage drop		3 V		
Maximum load current ILast		40 mA		
Auxiliary Power				
Nominal voltage V_{nom}		20 – 35 V		
Power supply		Uncontrolled		
Output				
Temperature influence		≤ 0,25 %/10K		
Ambient Conditions				
Ambient temperature °C		-20 °C ... 60 °C		
Ambient temperature °F		-4°F ... +140°F		
Storage temperature °C		-20 °C ... 75 °C		
Storage temperature °F		-4°F ... +167°F		
Max. relative humidity		95% average, no condensation		

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

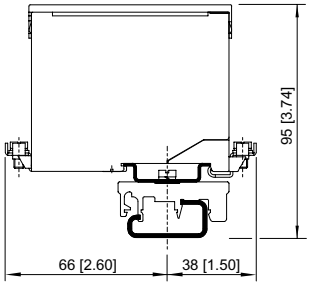
Mechanical Data	
Degree of protection (IP)	IP40
Degree of protection note	according to IEC 60529
Degree of protection (IP) terminals	IP20
Enclosure material	Polyamide 6GF
Number of connection terminals	4
Connection cross section min.	1.5 mm²
Connection cross-section max.	1.5 mm²
Connection cross-section 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 mm²
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

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

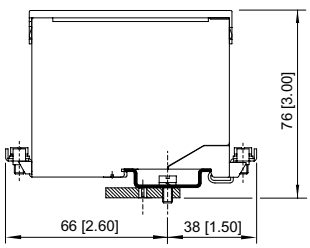




Mounting on DIN rail NS 35/15



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

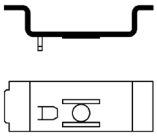


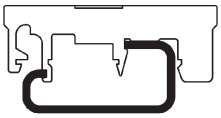
Mounting on mounting plate by means of adaptor

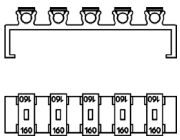
9001/01-252-060-141 Art. No. 158693

Accessories

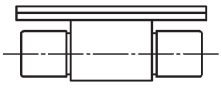
Terminal block		Art. No.
	Phoenix Contact terminal block UT 4-PE	113057
	Phoenix Contact terminal block UT 6-PE	113058

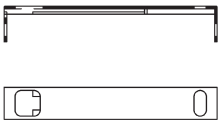
Adaptor		Art. No.
	The adaptor enables a zener barrier to be installed on a clamping base (Art. No. 165283) or mounting plate from a previous series.	158826

Clamping base, moulded material		Art. No.
	Enables mounting of zener barrier on a G-rail. The safety barrier is mounted using the adapter (Art. No. 158826).	165283

Fuse holder		Art. No.
	Fuse holder is snapped onto the side of the zener barrier and can be equipped with up to 5 back-up fuses (replacement).	158834

Spare Parts

Back-up fuse		Art. No.
	For all zener barriers Series 9001, 9002 and 9004 unit: 5 pcs.	158964

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

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