Zener Barriers
Single-channel safety barriers

9001/01-158-390-101 Art. No. 158509



- 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	ExNBSPec [ia Ga]NBSPIICNBSPT4N
IECEx dust certificate	IECEx PTB 09.0001X
IECEx dust explosion protection	[Ex ia Da]NBSPIIIC
ATEX gas certificate	PTB 01 ATEX 2088 X
ATEX gas explosion protection	IINBSP3 (1) GNBSPExNBSPec [ia IICNBSPT4NBSPGc
ATEX dust certificate	PTB 01 ATEX 2088 X
ATEX dust explosion protection	IINBSP(1) DNBSP[Ex ia Da]NBSPI
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)
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

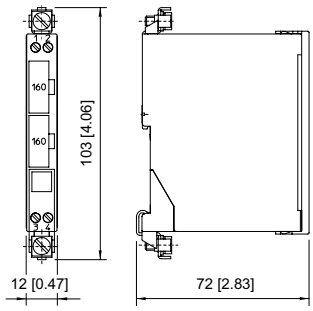
9001/01-158-390-101 Art. No. 158509

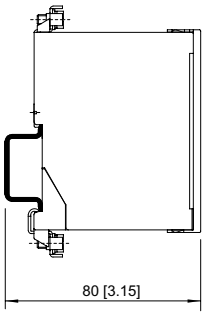
Safety Data			
Max. voltage U_o/V_{oc}		15.8 V	
Max. current I_o/I_{sc}		390 mA	
Max. power P_o		1541 mW	
Max. permissible external capacitance C_o/C_a for IIC		0.478 µF	
Max. permissible external inductance L_o/La for IIC		0.16 mH	
Max. permissible external capacitance C_o/C_a for IIB		2.88 µF	
Max. permissible external inductance L_o/La for IIB		0.89 mH	
Intrinsically safe limiting values Inductance L_o/capacitance C_o		Jointly connectable inductance L_o/capacitance C_o	
IIC	L_o [mH]	0.200 mH	0.100 mH
	C_o [µF]	0.290 µF	0.320 µF
IIB	L_o [mH]	1 mH	0.100 mH
	C_o [µF]	1.70 µF	2.40 µF
Electrical Data			
Number of channels		1	
Type of voltage		DC	
Maximum resistance R_{max}		57 Ω	
Min. resistance R_{min}		50 Ω	
Maximum output current I_{max}		< 100 mA	
Potential		Positive	
Transmission frequency channel 1		≤ 100 kHz	
I_{leak} leakage current for U_n		≤ 2 µA	
Auxiliary voltage drop		< 1,4 V	
Auxiliary Power			
Nominal voltage V_{nom}		12 V	
Power supply		Controlled	
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	
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	

9001/01-158-390-101 Art. No. 158509

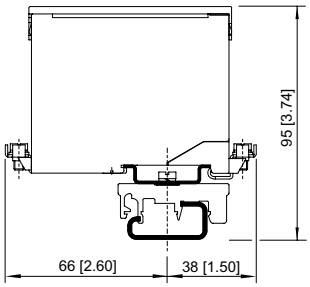
Mechanical Data	
Connection cross-section max.	1.5 mm²
Connection cross-section AWG	16 AWG
Type of connection cable	Finely stranded Solid
Width	103 mm
Width, inches	4.09 in
Length	12 mm
Length in inches	0.48 in
Mounting depth	72 mm
Mounting depth in inches	2.76 in
Weight	110 g
Weight	0.24 lb
Mounting / 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

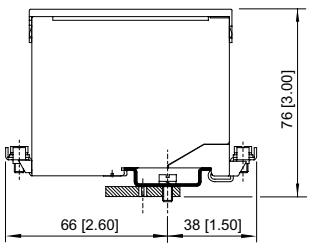




Mounting on DIN rail NS 35/15



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

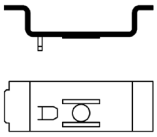


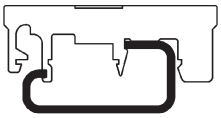
Mounting on mounting plate by means of adaptor

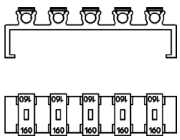
9001/01-158-390-101 Art. No. 158509

Accessories

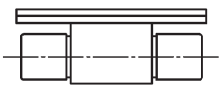
Terminal block		Art. No.
	Phoenix Contact terminal block UT 4-PE	113057
	Phoenix Contact terminal block UT 6-PE	113058

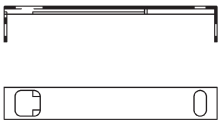
Adaptor		Art. No.
	The adaptor enables a zener barrier to be installed on a clamping base (Art. No. 165283) or mounting plate from a previous series.	158826

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

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.