

Safety barriers

Dual-channel safety barrier



9002/77-093-040-001 Art. No. 158905



- 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 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.

Technical Data

| Explosion Protection | |
|---------------------------------|---|
| Application range (zones) | 2 |
| Ex interface zone | 0 1 2 20 21 22 |
| IECEX gas certificate | IECEX PTB 08.0057X |
| IECEX gas explosion protection | Ex ec [ia Ga] IIC T4 Gc |
| IECEX dust certificate | IECEX PTB 08.0057X |
| IECEX dust explosion protection | [Ex ia Da] IIIC |
| ATEX gas certificate | PTB 01 ATEX 2053 X |
| ATEX gas explosion protection | ⊕ II 3 (1) G Ex ec [ia Ga] IIC T4 Gc |
| ATEX dust certificate | PTB 01 ATEX 2053 X |
| ATEX dust explosion protection | ⊕ II (1) D [Ex ia Da] IIIC |
| FMus certificate | 3010778 |
| 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. 90 026 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. 90 026 11 31 3 |
| cCSA certificate | 1284580 |

9002/77-093-040-001 Art. No. 158905

Explosion Protection

| | |
|---------------------------|--|
| Marking cCSA | Associated equipment [Ex ia], Class I, Div. 2, Groups A,B,C,D; Provides IS circuits for Class I,II,III, Class I, Zone 0, Groups IIC/IIB For applicable grps per inst. doc. 90 016 11 31 2 |
| Inmetro gas certificate | UL-BR 12.0354 |
| Inmetro dust certificate | UL-BR 12.0354 |
| 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) |
| Installation | in Zone 2, Division 2 and in safe areas |
| Further information | See relevant certificate and operating instructions |

Safety Data

| | | | | | |
|---|--|------------------|---------------|--------------|----------------|
| Max. voltage U_o | 9.3 V | | | | |
| Max. current I_o | 20 mA | | | | |
| Max. power P_o | 50 mW | | | | |
| Max. permissible external capacity C_o for IIC | 4.1 μ F | | | | |
| Max. permissible external capacity C_o for IIB | 31 μ F | | | | |
| Max. permissible external inductance L_o for IIC | 90 mH | | | | |
| Max. permissible external inductance L_o for IIB | 330 mH | | | | |
| Intrinsically safe limiting values Inductance L_o /capacitance C_o | Jointly connectable inductance L_o /capacitance C_o | | | | |
| Channel 1 | IIC | L_o [mH] | 10 mH | 1 mH | 0.100 mH |
| | | C_o [μ F] | 0.680 μ F | 1 μ F | 1.8000 μ F |
| | IIB | L_o [mH] | 10 mH | 1 mH | 0.1 mH |
| | | C_o [μ F] | 3.60 μ F | 5.70 μ F | 11 μ F |
| Channel 2 | IIC | L_o [mH] | 10 mH | 1 mH | 0.1 mH |
| | | C_o [μ F] | 0.680 μ F | 1 μ F | 1.800 μ F |
| | IIB | L_o [mH] | 10 mH | 1 mH | 0.1 mH |
| | | C_o [μ F] | 3.60 μ F | 5.70 μ F | 11 μ F |
| Channels 1 + 2 | IIC | L_o [mH] | 10 mH | 1 mH | 0.10 mH |
| | | C_o [μ F] | 0.590 μ F | 1 μ F | 1.800 μ F |
| | IIB | L_o [mH] | 10 mH | 1 mH | 0.1 mH |
| | | C_o [μ F] | 3.400 μ F | 5.70 μ F | 11 μ F |

Electrical Data

| | |
|--------------------------------------|-------------------------|
| Number of channels | 2 |
| Maximum resistance R_{max} | 546 Ω |
| Minimum resistance R_{min} | 492 Ω |
| Potential channel 1 | Star barrier (positive) |
| Potential channel 2 | Star barrier (negative) |
| Transmission frequency channel 1 | \leq 50 kHz |
| Type of voltage | AC/DC |
| I_{leak} leakage current for U_n | \leq 2 μ A |

Safety barriers

Dual-channel safety barrier



9002/77-093-040-001 Art. No. 158905

| Channel | Nominal voltage U_N | Minimum resist- ance R_{min} | Maximum resist- ance R_{max} | Maximum voltage U_o | Maximum current I_o | Maximum power P_o |
|---------|--------------------------|-----------------------------------|-----------------------------------|--------------------------|--------------------------|------------------------|
| 1 | | 492 Ω | 546 Ω | 9.30 V | 20 mA | 50 mW |
| 2 | | 492 Ω | 546 Ω | 9.30 V | 20 mA | 50 mW |
| 1 + 2 | 6 V | | | 9.30 V | 40 mA | 90 mW |

Auxiliary Power

| | |
|--------------|------------|
| Power supply | Controlled |
|--------------|------------|

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 |
| Temperature influence | ≤ 0,25 %/10K |

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 |
| 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, inches | 0.48 in |
| Depth of cut-out | 72 mm |
| Mounting depth, 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 Nm |
| Min. torque, lb/in | 4.43 lb/in |
| Max. torque, Nm | 0.6 Nm |
| Max. torque, lb/in | 5.31 lb/in |

Safety barriers

Dual-channel safety barrier



9002/77-093-040-001 Art. No. 158905

Technical Drawings – Subject to Alterations

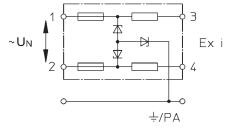
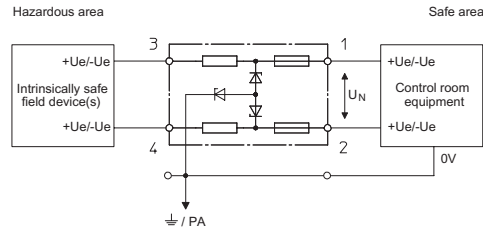
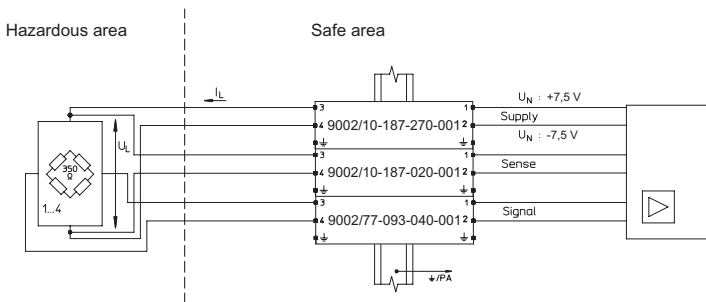


Image K

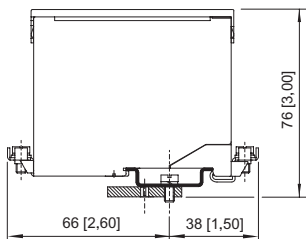
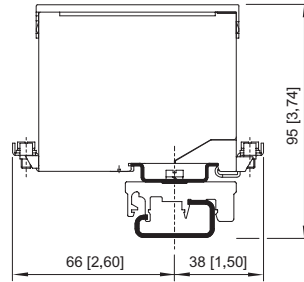
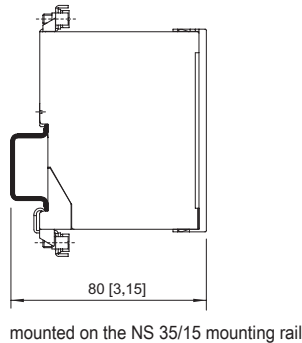
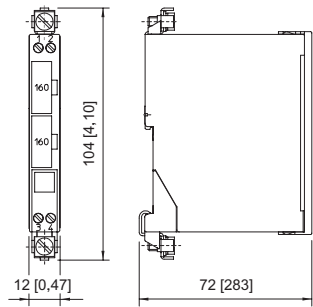


Dual-channel safety barriers, star barrier/star barrier



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

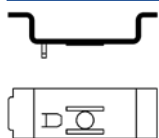
Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



installed on mounting plate with adaptor

Accessories

Adaptor



The adaptor enables a series 900x safety barrier to be installed on a mounting plate from a previous series.

Art. No.

158826

Safety barriers

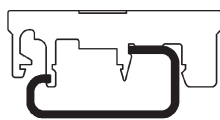
Dual-channel safety barrier



9002/77-093-040-001 Art. No. 158905

Clamping base, moulded material

Art. No.

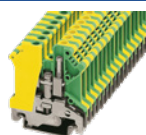


Enables the safety barrier to be mounted on a G-rail.

165283

Protective conductor terminal

Art. No.

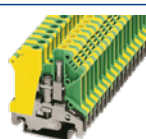


USLKG 5 (clamping range 4 mm²)
The terminal enables protective conductors to be connected to the DIN rail. Colour green-yellow.

112760

Earthing terminal

Art. No.

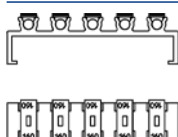


USLKG 6 N (clamping range 6 mm²)
The terminal enables protective conductors/earthing conductors to be connected to the DIN rail. Colour green-yellow.

112599

Fuse holder

Art. No.

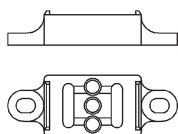


The fuse holder is snapped onto the side of a safety barrier and can be equipped with up to five back-up fuses (replacement).

158834

Insulation and fastening material

Art. No.



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

Spare Parts

Back-up fuse

Art. No.

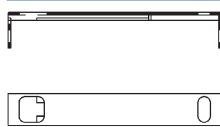


For all series 9001, 9002 and 9004 safety barriers
Packaging unit: 5 pieces

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.