# Safety barriers
Two-channel safety barrier

## 9002/00-280-186-001 Art. No. 158845


- 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 | Ⓔx II 3 (1) G Ex ec [ia Ga] IIC T4 Gc |
| ATEX dust certificate | PTB 01 ATEX 2053 X |
| ATEX dust explosion protection | Ⓔx II (1) D [Ex ia Da] IIIC |
| FMus certificate | 3010778 |
| Marking FMus | NONINCENDIVE FOR, Class I, Div. 2, Groups A,B,C,D; T4;<br>Class I, Zone 2, Group IIC T4<br>IS connections for Class I,II,III, Div. 1, Groups C,D,F,G;<br>Class I, Zone 0, Group IIB<br>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<br>Providing IS circuits for<br>Class I,II,III, GROUPS C,D,E,F,G;<br>per doc. 90 026 11 31 3 |
| Inmetro gas certificate | UL-BR 12.0354 |
| Inmetro dust certificate | UL-BR 12.0354 |
| Certificates | ATEX (PTB), Brazil (ULB), Canada (FM), 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 |

# 9002/00-280-186-001 Art. No. 158845

**Safety Data**

| | |
|---|---|
| Max. voltage $U_o$ | 28 V |
| Max. current $I_o$ | 93 mA |
| Max. power $P_o$ | 650 mW |
| Max. permissible external capacity $C_o$ for IIC | 0.083 µF |
| Max. permissible external inductance $L_o$ for IIC | 2 mH |
| Max. permissible external capacity $C_o$ for IIB | 0.65 µF |
| Max. permissible external inductance $L_o$ for IIB | 13 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] | | 1 mH | 0.100 mH |
| | | $C_o$ [µF] | | 0.0520 µF | 0.0830 µF |
| | IIB | $L_o$ [mH] | 10 mH | 1 mH | 0.1 mH |
| | | $C_o$ [µF] | 0.25 µF | 0.35 µF | 0.65 µF |
| Channel 2 | IIC | $L_o$ [mH] | | 1 mH | 0.1 mH |
| | | $C_o$ [µF] | | 0.052 µF | 0.083 µF |
| | IIB | $L_o$ [mH] | 10 mH | 1 mH | 0.1 mH |
| | | $C_o$ [µF] | 0.25 µF | 0.35 µF | 0.65 µF |
| Channels 1 + 2 | IIC | $L_o$ [mH] | | | |
| | | $C_o$ [µF] | | | |
| | IIB | $L_o$ [mH] | | 1 mH | 0.1 mH |
| | | $C_o$ [µF] | | 0.34 µF | 0.551 µF |

**Electrical Data**

| | |
|---|---|
| Number of channels | 2 |
| Type of voltage | DC |
| Maximum resistance $R_{max}$ | 359 Ω |
| Minimum resistance $R_{min}$ | 322 Ω |
| Maximum output current $I_{max}$ | 69 mA |
| Potential channel 1 | Negative |
| Potential channel 2 | Negative |
| Transmission frequency channel 1 | ≤ 100 kHz |
| $I_{leak}$ leakage current for $U_n$ | ≤ 2 µA |

| Channel | Nominal voltage $U_N$ | Maximum output current $I_{max}$ | Minimum resistance $R_{min}$ | Maximum resistance $R_{max}$ | Maximum voltage $U_o$ | Maximum current $I_o$ | Maximum power $P_o$ |
|---|---|---|---|---|---|---|---|
| 1 | -25.00 V | 69 mA | 322 Ω | 359 Ω | 28 V | 93 mA | 650 mW |
| 2 | -25 V | 69 mA | 322 Ω | 359 Ω | 28 V | 93 mA | 650 mW |
| 1 + 2 | | | | | 28 V | 186 mA | 1300 mW |

**Auxiliary Power**

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

**Output**

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

**Ambient Conditions**

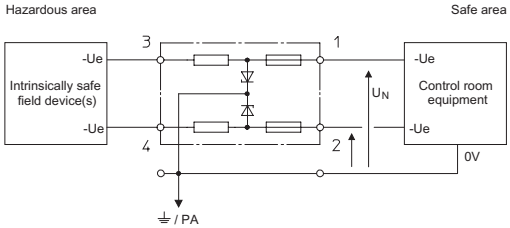
| | |
|---|---|
| Ambient temperature | -20 °C ... 60 °C |

# Safety barriers
Two-channel safety barrier

## 9002/00-280-186-001 Art. No. 158845

| | |
|---|---|
| **Ambient Conditions** | |
| 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 |
| **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 mm² |
| Connection cross-section AWG | 16 AWG |
| Type of connection cable | Solid<br>Finely stranded |
| 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 |

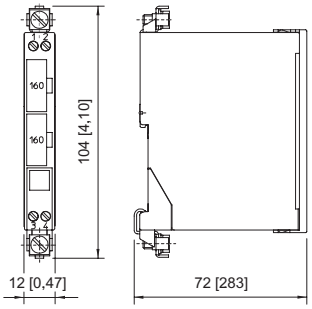
### Technical Drawings – Subject to Alterations

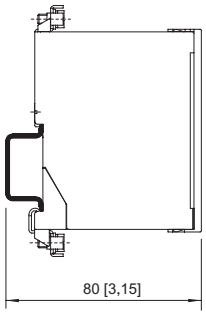



Dual-channel safety barriers, potential: - / -

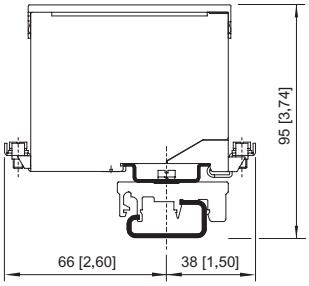
# 9002/00-280-186-001 Art. No. 158845

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

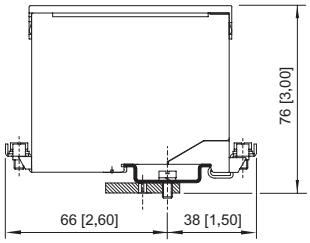



mounted on the NS 35/15 mounting rail

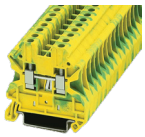


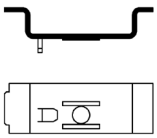

mounted on the NS 32 mounting rail with adaptor and clamping base made of moulded material

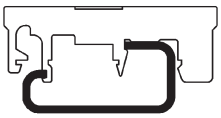


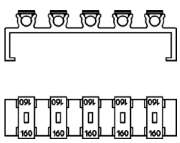

installed on mounting plate with adaptor

## Accessories

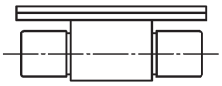
| Terminal block | | Art. No. |
|---|---|---|
|  | Phoenix Contact terminal block UT 4-PE | 113057 |
| | Phoenix Contact terminal block UT 6-PE | 113058 |

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

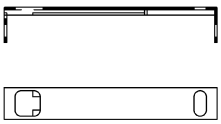
| Clamping base, moulded material | | Art. No. |
|---|---|---|
|  | Enables the safety barrier to be mounted on a G-rail. The safety barrier is mounted using the adapter (Art. No. 158826). | 165283 |

| 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 |

## Spare Parts

| Back-up fuse | | Art. No. |
|---|---|---|
|  | For all series 9001, 9002 and 9004 safety barriers<br>Packaging unit: 5 pieces | 158964 |

## 9002/00-280-186-001 Art. No. 158845

| 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.