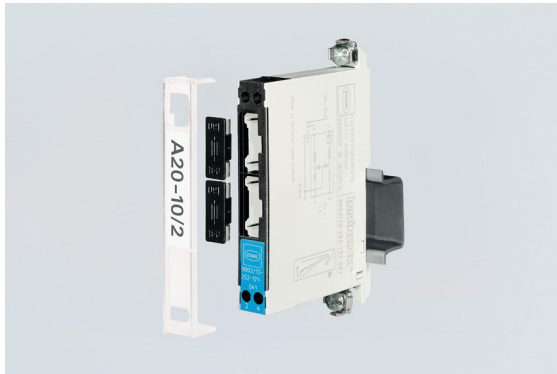


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- For the intrinsically safe operation of a wide range of devices, such as HART transmitters, solenoid valves, sensors, zero-potential contacts and many more
- Compact, space-saving devices that are easy to install on a DIN rail
- Quick and efficient installation as barriers can be simultaneously snapped onto DIN rail and connected to ground (ISA - RPI12.06)

### MY R. STAHL 9002A



The 9002 series INTRINSPAK two-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 very 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 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;<br>Class I, Zone 2, Group IIC T4<br>IS connections for Class I,II,III, Div. 1, Groups A,B,C,D,E,F,G;<br>Class I, Zone 0, Groups IIC/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 A,B,C,D,E,F,G;<br>per doc. 90 026 11 31 3                                                                                     |
| cCSA certificate                | 1284580                                                                                                                                                                                                                                                 |
| Marking cCSA                    | Associated equipment [Ex ia], Class I, Div. 2, Groups A,B,C,D;<br>Provides IS circuits for Class I,II,III,<br>Class I, Zone 0, Groups IIC/IIB<br>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                                                                                                                                                                                                                                           |

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### Explosion Protection

|                           |                                                                                                                              |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Certificates              | ATEX (PTB), Brazil (ULB), Canada (FM), 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 area                                                                                       |
| Further information       | see respective certificate and operating instructions                                                                        |

### Safety Data

|                                                                           |     |                  |                                                            |                |                |
|---------------------------------------------------------------------------|-----|------------------|------------------------------------------------------------|----------------|----------------|
| Max. voltage $U_o/V_{oc}$                                                 |     |                  | 9.3 V                                                      |                |                |
| Max. current $I_o/I_{sc}$                                                 |     |                  | 270 mA                                                     |                |                |
| Max. power $P_o$                                                          |     |                  | 630 mW                                                     |                |                |
| Max. permissible external capacitance $C_o/C_a$ for IIC                   |     |                  | 3.9 $\mu$ F                                                |                |                |
| Max. permissible external inductance $L_o/L_a$ for IIC                    |     |                  | 0.23 mH                                                    |                |                |
| Max. permissible external capacitance $C_o/C_a$ for IIB                   |     |                  | 29 $\mu$ F                                                 |                |                |
| Max. permissible external inductance $L_o/L_a$ for IIB                    |     |                  | 2.2 mH                                                     |                |                |
| Intrinsically safe limiting values<br>Inductance $L_o$ /capacitance $C_o$ |     |                  | Jointly connectable<br>inductance $L_o$ /capacitance $C_o$ |                |                |
| Channel 1                                                                 | IIC | $L_o$ [mH]       |                                                            | 0.5 mH         | 0.100 mH       |
|                                                                           |     | $C_o$ [ $\mu$ F] |                                                            | 0.8800 $\mu$ F | 1.7000 $\mu$ F |
|                                                                           | IIB | $L_o$ [mH]       | 2 mH                                                       | 1 mH           | 0.1 mH         |
|                                                                           |     | $C_o$ [ $\mu$ F] | 3.60 $\mu$ F                                               | 4.80 $\mu$ F   | 11 $\mu$ F     |
| Channel 2                                                                 | IIC | $L_o$ [mH]       |                                                            | 0.5 mH         | 0.1 mH         |
|                                                                           |     | $C_o$ [ $\mu$ F] |                                                            | 0.880 $\mu$ F  | 1.700 $\mu$ F  |
|                                                                           | IIB | $L_o$ [mH]       | 2 mH                                                       | 1 mH           | 0.1 mH         |
|                                                                           |     | $C_o$ [ $\mu$ F] | 3.60 $\mu$ F                                               | 4.80 $\mu$ F   | 11 $\mu$ F     |
| Channels 1<br>+ 2                                                         | IIC | $L_o$ [mH]       |                                                            | 0.2 mH         | 0.10 mH        |
|                                                                           |     | $C_o$ [ $\mu$ F] |                                                            | 0.150 $\mu$ F  | 0.190 $\mu$ F  |
|                                                                           | IIB | $L_o$ [mH]       |                                                            | 1 mH           | 0.1 mH         |
|                                                                           |     | $C_o$ [ $\mu$ F] |                                                            | 1 $\mu$ F      | 1.300 $\mu$ F  |

### Electrical Data

|                                      |                  |
|--------------------------------------|------------------|
| Number of channels                   | 2                |
| Maximum resistance $R_{max}$         | 49 $\Omega$      |
| Min. resistance $R_{min}$            | 43 $\Omega$      |
| Maximum output current $I_{max}$     | 122 mA           |
| Potential channel 1                  | Positive         |
| Potential channel 2                  | Negative         |
| Transmission frequency channel 1     | $\leq 100$ kHz   |
| Type of voltage                      | DC               |
| $I_{leak}$ leakage current for $U_n$ | $\leq 2$ $\mu$ A |

| Chan-<br>nel | $V_{nom}$ | $I_{max}$ | $R_{min}$   | $R_{max}$   | $U_o/V_{oc}$ | $I_o/I_{sc}$ | $P_o$   |
|--------------|-----------|-----------|-------------|-------------|--------------|--------------|---------|
| 1            | 6.00 V DC | 122 mA    | 43 $\Omega$ | 49 $\Omega$ | 9.30 V       | 270 mA       | 630 mW  |
| 2            | -6 V      | 122 mA    | 43 $\Omega$ | 49 $\Omega$ | 9.30 V       | 270 mA       | 630 mW  |
| 1 + 2        |           |           |             |             | 18.70 V      | 270 mA       | 1260 mW |

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Auxiliary Power

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

Output

|                       |                                   |
|-----------------------|-----------------------------------|
| Temperature influence | $\leq 0,25 \text{ \%}/10\text{K}$ |
|-----------------------|-----------------------------------|

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 |

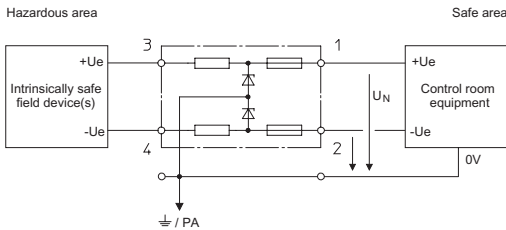
Mechanical Data

|                                     |                          |
|-------------------------------------|--------------------------|
| Degree of protection (IP)           | IP40                     |
| Degree of protection (IP) terminals | IP20                     |
| Enclosure material                  | Polyamide 6GF            |
| Number of connection terminals      | 4                        |
| Connection cross-section max.       | 1.5 mm <sup>2</sup>      |
| 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                  |

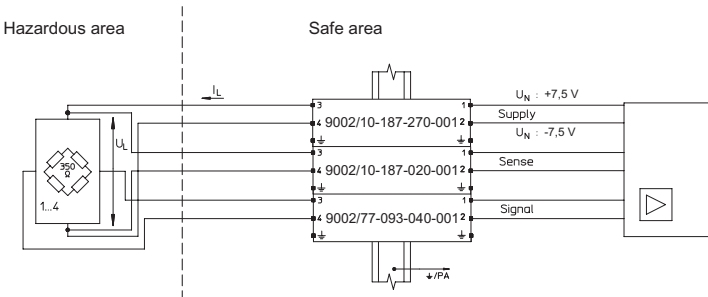
Mounting / Installation

|                                      |                   |
|--------------------------------------|-------------------|
| Earthing connection cross-section    | 4 mm <sup>2</sup> |
| 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



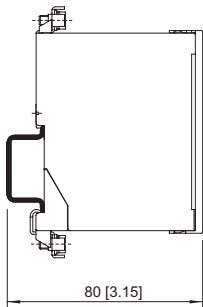
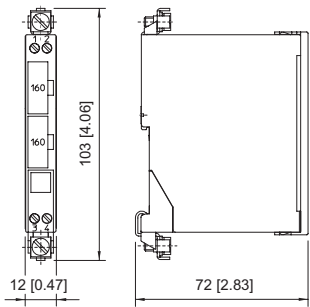
Dual-channel safety barriers, potential: + / -



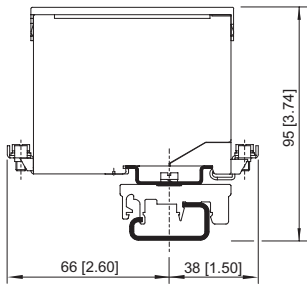
Application: Load cell (DMS) 350 Ω or 700 Ω  
6-wire ± 7.5 V (15 V) field circuit unearthed

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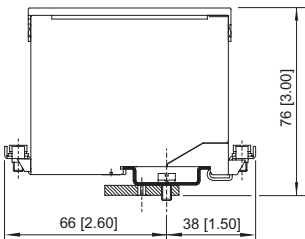
Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



Mounting on DIN rail NS 35/15

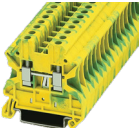
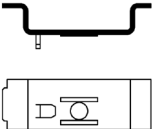
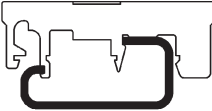
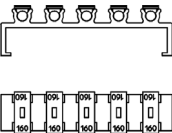


Mounting on DIN rail NS 32 by means of adaptor and mounting attachment, moulded plastic



Mounting on mounting plate by means of adaptor

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 adaptor (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

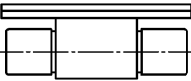
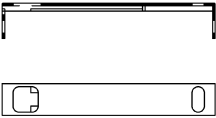
| Back-up fuse | Art. No. |
|--------------|----------|
|--------------|----------|

Zener Barriers

Two-channel safety barrier



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|                                                                                  |                                                                   |                 |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------|
|  | For all zener barriers Series 9001, 9002 and 9004<br>unit: 5 pcs. | 158964          |
| <b>Label carrier</b>                                                             |                                                                   | <b>Art. No.</b> |
|  | 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.