

# Safety barriers

## Single-channel safety barriers

**STAHL****INTRINSPAK**

9001/00-086-390-101 Art. No. 158434



- 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 9001A**

The series 9001 INTRINSPAK single-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 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                                                                                                                                                                                                                                     |
| IECEEx gas certificate           | IECEEx PTB 09.0001X                                                                                                                                                                                                                                     |
| IECEEx gas explosion protection  | Ex ec [ia Ga] IIC T4 Gc                                                                                                                                                                                                                                 |
| IECEEx dust certificate          | IECEEx PTB 09.0001X                                                                                                                                                                                                                                     |
| IECEEx dust explosion protection | [Ex ia Da] IIIC                                                                                                                                                                                                                                         |
| ATEX gas certificate             | PTB 01 ATEX 2088 X                                                                                                                                                                                                                                      |
| ATEX gas explosion protection    | II 3 (1) G Ex ec [ia Ga] IIC T4 Gc                                                                                                                                                                                                                      |
| ATEX dust certificate            | PTB 01 ATEX 2088 X                                                                                                                                                                                                                                      |
| ATEX dust explosion protection   | II (1) D [Ex ia Da] IIIC                                                                                                                                                                                                                                |
| FMus certificate                 | 3011002                                                                                                                                                                                                                                                 |
| 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. 90 016 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. 90 016 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), IECEEx (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                                                                                                                                                                                                     |

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### Safety Data

|                                                                                          |                                                                           |          |          |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------|----------|
| Max. voltage U <sub>o</sub>                                                              | 8.6 V                                                                     |          |          |
| Max. current I <sub>o</sub>                                                              | 390 mA                                                                    |          |          |
| Max. power P <sub>o</sub>                                                                | 839 mW                                                                    |          |          |
| Max. permissible external capacity C <sub>o</sub> for IIC                                | 6.2 µF                                                                    |          |          |
| Max. permissible external inductance L <sub>o</sub> for IIC                              | 0.16 mH                                                                   |          |          |
| Max. permissible external capacity C <sub>o</sub> for IIB                                | 55 µF                                                                     |          |          |
| Max. permissible external inductance L <sub>o</sub> for IIB                              | 0.89 mH                                                                   |          |          |
| Intrinsically safe limiting values Inductance L <sub>o</sub> /capacitance C <sub>o</sub> | Jointly connectable inductance L <sub>o</sub> /capacitance C <sub>o</sub> |          |          |
| IIC                                                                                      | L <sub>o</sub> [mH]                                                       | 0.200 mH | 0.100 mH |
|                                                                                          | C <sub>o</sub> [µF]                                                       | 1.500 µF | 2.100 µF |
| IIB                                                                                      | L <sub>o</sub> [mH]                                                       | 1 mH     | 0.100 mH |
|                                                                                          | C <sub>o</sub> [µF]                                                       | 5.30 µF  | 14 µF    |

### Electrical Data

|                                      |                  |
|--------------------------------------|------------------|
| Number of channels                   | 1                |
| Type of voltage                      | DC               |
| Maximum resistance $R_{max}$         | 33 $\Omega$      |
| Minimum resistance $R_{min}$         | 28 $\Omega$      |
| Maximum output current $I_{max}$     | 110 mA           |
| Potential                            | Negative         |
| Transmission frequency channel 1     | $\leq 100$ kHz   |
| Transmission frequency channel 2     | $\leq 50$ kHz    |
| $I_{leak}$ leakage current for $U_n$ | $\leq 2$ $\mu$ A |

### Auxiliary Power

|                 |            |
|-----------------|------------|
| Nominal voltage | 6 V        |
| Power supply    | Controlled |

### Output

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

### 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 |

### 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 mm <sup>2</sup>    |
| Connection cross-section max.       | 1.5 mm <sup>2</sup>    |

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### Mechanical Data

|                              |                          |
|------------------------------|--------------------------|
| Connection cross-section AWG | 16 AWG                   |
| Type of connection cable     | Finely stranded<br>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 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

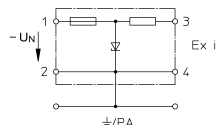
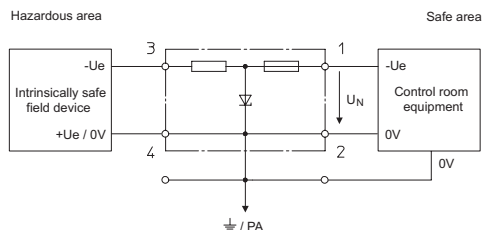
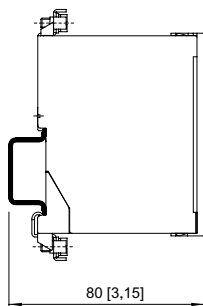
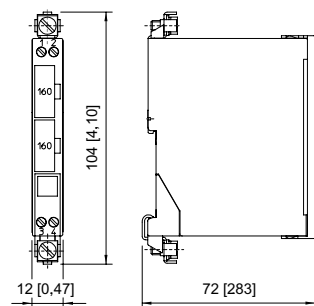


Image A

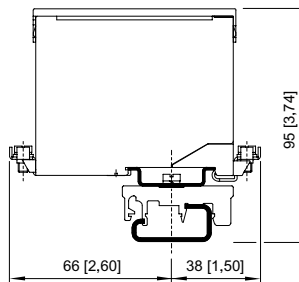


Single-Channel Safety Barriers for Negative Polarity

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

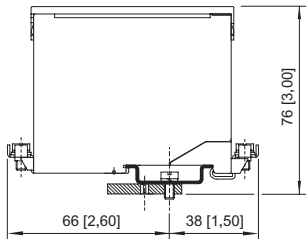


mounted on the NS 35/15 mounting rail



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

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installed on mounting plate with adaptor

### Accessories

#### Terminal block

Art. No.



Phoenix Contact terminal block UT 4-PE

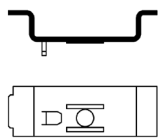
113057

Phoenix Contact terminal block UT 6-PE

113058

#### Adaptor

Art. No.

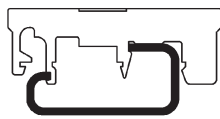


The adaptor enables a safety barrier to be installed on a clamping base (Art. No. 165283) or mounting plate from a previous series.

158826

#### Clamping base, moulded material

Art. No.

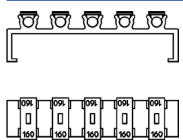


Enables the safety barrier to be mounted on a G-rail. The safety barrier is mounted using the adaptor (Art. No. 158826).

165283

#### Fuse holder

Art. No.



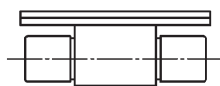
The fuse holder is snapped onto the side of a safety barrier and can be equipped with up to five back-up fuses (replacement).

158834

### Spare Parts

#### Back-up fuse

Art. No.

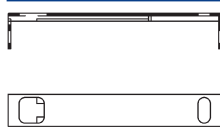


For all series 9001, 9002 and 9004 safety barriers  
Packaging unit: 5 pieces

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.