

# Zener Barrier

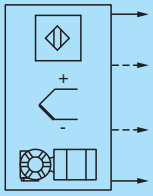
## Z960

- 2-channel
- AC version
- Working voltage 6.5 V at 10 µA
- Series resistance max. 64 Ω
- Fuse rating 50 mA
- DIN rail mounting
- Star connection

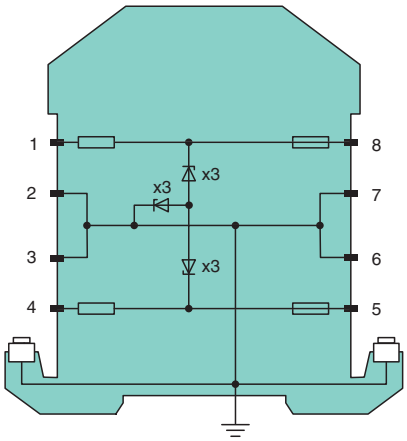
## Function

The Zener Barrier prevents the transfer of unacceptably high energy from the safe area into the hazardous area.
The zener diodes in the Zener Barrier are connected in the reverse direction. The breakdown voltage of the diodes is not exceeded in normal operation. If this voltage is exceeded, due to a fault in the safe area, the diodes start to conduct, causing the fuse to blow. The Zener Barrier has alternating polarities, i. e. interconnected zener diodes are employed and one side is grounded. The Zener Barrier can be used for both alternating voltage signals and direct voltage signals.
Depending on the application, increased or decreased intrinsic safety parameters apply for serial or parallel connection. For the detailed parameters refer to the Zener Barrier certificate. Application examples can be found in the system description of the Zener Barriers.

## Connection




Zone 0, 1, 2
Div. 1, 2




Zone 2
Div. 2

## Technical Data

| | |
|---|---|
| **General specifications** | |
| Type | AC version |
| **Electrical specifications** | |
| Nominal resistance | 50 Ω |
| Series resistance | max. 64 Ω |
| Fuse rating | 50 mA |
| **Hazardous area connection** | |
| Connection | terminals 1, 2; 3, 4 |
| **Safe area connection** | |
| Connection | terminals 5, 6; 7, 8 |

Release date: 2022-01-05 Date of issue: 2022-01-05 Filename: 071858_eng.pdf

## Technical Data

| | | |
|---|---|---|
| Working voltage | | |
| Supply loop | | max. 8.8 V |
| Measurement loop | | max. 6.5 V at 10 µA |
| **Conformity** | | |
| Degree of protection | | IEC 60529 |
| **Ambient conditions** | | |
| Ambient temperature | | -20 ... 60 °C (-4 ... 140 °F) |
| Storage temperature | | -25 ... 70 °C (-13 ... 158 °F) |
| Relative humidity | | max. 75 % , without condensation |
| **Mechanical specifications** | | |
| Degree of protection | | IP20 |
| Connection | | screw terminals |
| Core cross section | | max. 2 x 2.5 ... $mm^2$ |
| Mass | | approx. 150 g |
| Dimensions | | 12.5 x 115 x 116 mm (0.5 x 4.5 x 4.6 inch) (W x H x D) |
| Construction type | | modular terminal housing , see system description |
| Mounting | | on 35 mm DIN mounting rail acc. to EN 60715:2001 |
| **Data for application in connection with hazardous areas** | | |
| EU-type examination certificate | | BAS 01 ATEX 7005 |
| Marking | | ⟨Ex⟩ II (1)GD, I (M1) [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I (-20 °C ≤ $T_{amb}$ ≤ 60 °C) [circuit(s) in zone 0/1/2] |
| Voltage | $U_o$ | 9.94 V |
| Current | $I_o$ | 203 mA |
| Power | $P_o$ | 500 mW |
| Supply | | |
| Maximum safe voltage | $U_m$ | 250 V |
| Series resistance | | min. 49 Ω |
| Certificate | | TÜV 99 ATEX 1484 X |
| Marking | | ⟨Ex⟩ II 3G Ex nA IIC T4 Gc [device in zone 2] |
| Directive conformity | | |
| Directive 2014/34/EU | | EN IEC 60079-0:2018+AC:2020 , EN 60079-11:2012 , EN 60079-15:2010 |
| **International approvals** | | |
| FM approval | | |
| Control drawing | | 116-0118 |
| UL approval | | |
| Control drawing | | 116-0139 (cULus) |
| IECEx approval | | |
| IECEx certificate | | IECEx BAS 09.0142<br>IECEx BAS 17.0091X |
| IECEx marking | | [Ex ia Ga] IIC , [Ex ia Da] IIIC , [Ex ia Ma] I<br>Ex ec IIC T4 Gc |
| **General information** | | |
| Supplementary information | | Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com. |

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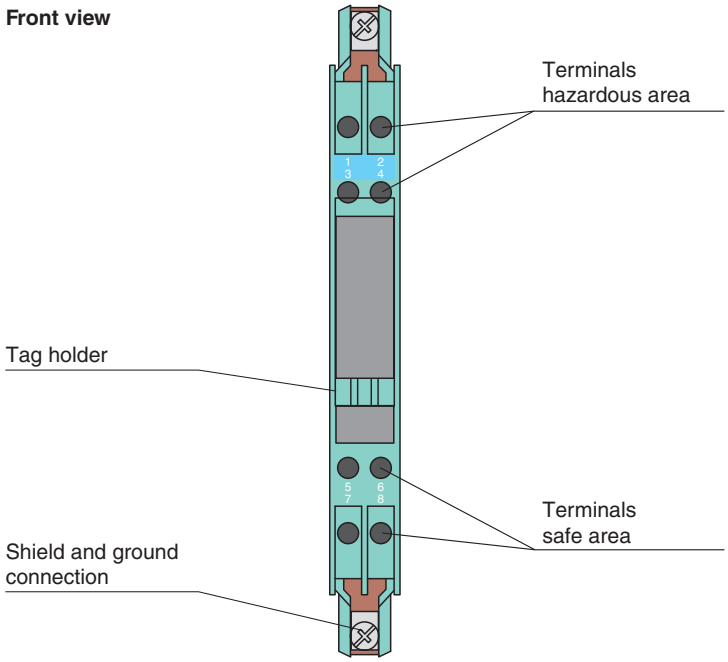
## Assembly

**Front view**




## Matching System Components

| | | |
|---|---|---|
| | **ZH-ES/LB** | Insertion Strip |
| | **ZH-Z.AB/NS** | Mounting block for DIN mounting rail |
| | **ZH-Z.AB/SS** | Mounting block for grounding rail |
| | **ZH-Z.AK16** | Connection terminal for grounding rail |
| | **ZH-Z.AR.125** | Spacing Roller |
| | **ZH-Z.BT** | Label Carrier |
| | **ZH-Z.ES** | Single Socket |
| | **ZH-Z.LL** | Ground Rail Feed |
| | **ZH-Z.NLS-Cu3/10** | Grounding Rail |
| | **USLKG5** | Terminal Block |

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