

Zener Barrier

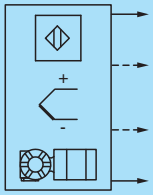
Z796

- 2-channel
- DC version, positive polarity
- Working voltage 24 V/18 V at 10 µA
- Series resistance max. 340 Ω/437 Ω
- Fuse rating 50 mA
- DIN rail mounting
- Asymmetrical version

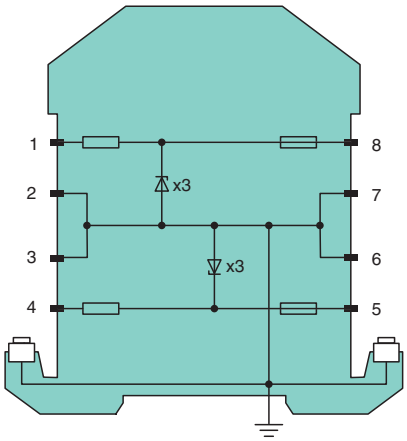
Function

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 a positive polarity, i. e. the anodes of the zener diodes are grounded.
Asymmetrical Zener Barriers are for optimization of applications which have different voltage levels regarding to ground potential.
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

Search characteristics		
Additional functions		
Asymmetrical version		yes
General specifications		
Type		DC version, positive polarity
Electrical specifications		
Nominal resistance		terminals 1, 8: 320 Ω; terminals 4, 5: 415 Ω
Series resistance		terminals 1, 8: max. 340 Ω terminals 4, 5: max. 437 Ω
Fuse rating		50 mA

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Technical Data

Hazardous area connection		
Connection		terminals 1, 2; 3, 4
Safe area connection		
Connection		terminals 5, 6; 7, 8
Working voltage		
Supply loop		terminals 7, 8: max. 24.6 V terminals 5, 6: max. 19 V
Measurement loop		terminals 7, 8: max. 24 V at 10 µA terminals 5, 6: max. 18 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	terminals 1, 2: 26.6 V; terminals 3, 4: 20.5 V
Current	I_o	terminals 1, 2: 85 mA; terminals 3, 4: 50 mA
Power	P_o	terminals 1, 2: 560 mW; terminals 3, 4: 260 mW
Supply		
Maximum safe voltage	U_m	250 V
Series resistance		terminals 1, 2: min. 314 Ω; terminals 3, 4: min. 407 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 IECEx BAS 17.0091X
IECEx marking		[Ex ia Ga] IIC , [Ex ia Da] IIIC , [Ex ia Ma] I 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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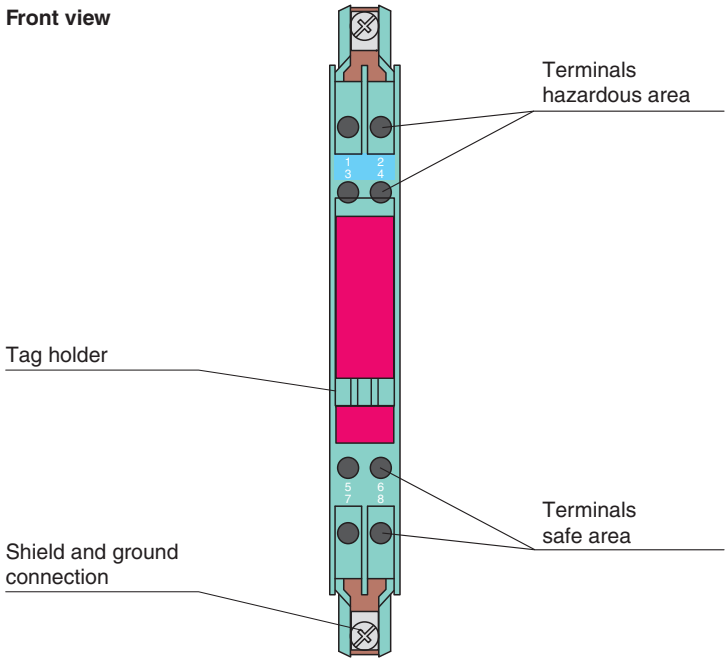
Assembly

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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