

Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Output 45 mA at 11.7 V DC
- Logic input, non-polarized
- Lead monitoring
- Up to SIL2 acc. to IEC 61508

Function

This isolated barrier is used for intrinsic safety applications. It supplies power to solenoids, LEDs, and audible alarms, located in a hazardous area.

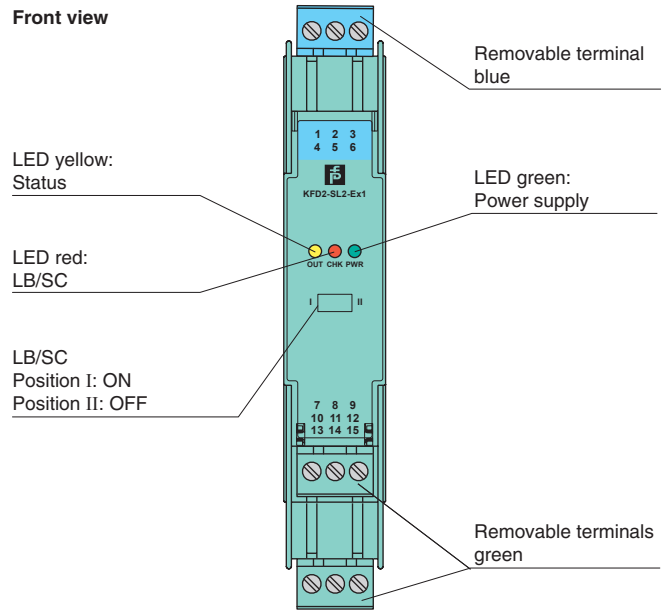
It is controlled via a logic signal. The input has two defined states: 1-Signal = 16 V DC ... 30 V DC, 0-Signal = 0 V DC ... 5 V DC. The current consumption of the input is about 3 mA.

At full load, 11.7 V at 45 mA is available for the hazardous area application.

If the field impedance is $> 10\text{ k}\Omega$ for lead breakage or $< 50\ \Omega$ for short circuits a line fault is detected.

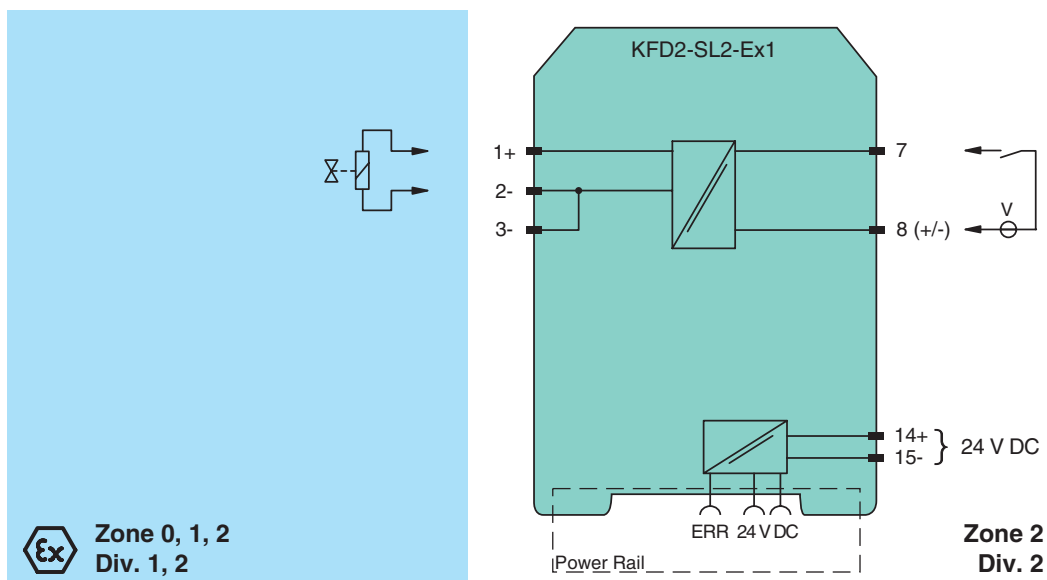
A fault is signaled by LEDs acc. to NAMUR NE44 and a separate collective error message output.

Assembly



SIL2

Connection



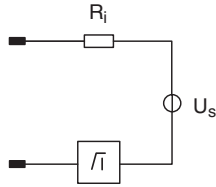
General specifications		
Signal type		Digital Output
Supply		
Connection		Power Rail or terminals 14+, 15-
Rated voltage		20 ... 30 V DC
Power consumption		≤ 1.7 W at 45 mA output current
Input		
Connection		terminals 7, 8
Input current		approx. 3 mA at 24 V DC
Signal level		1-signal: 16 ... 30 V DC 0-signal: 0 ... 5 V DC
Output		
Connection		terminals 1+, 2- or 3-
Internal resistor	R_i	272 Ω
Current	I_e	≤ 45 mA
Voltage	U_e	≥ 11.7 V
Open loop voltage	U_s	≥ 24 V
Output signal		These values are valid for the rated operational voltages from 20 ... 30 V DC.
Energized/De-energized delay		≤ 20 ms / ≤ 20 ms
Line fault detection		signal at short-circuit $R_B < 50 \Omega$, lead breakage $R_B > 10 \text{ k}\Omega$, test current < 650 μA
Electrical isolation		
Input/power supply		functional insulation acc. to EN 50178, rated insulation voltage 50 V _{eff}
Directive conformity		
Electromagnetic compatibility		
Directive 2004/108/EC		EN 61326-1:2006
Low voltage		
Directive 2006/95/EC		EN 50178:1997
Conformity		
Electromagnetic compatibility		NE 21
Protection degree		IEC 60529
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Protection degree		IP20
Mass		approx. 150 g
Dimensions		20 x 119 x 115 mm (0.8 x 4.7 x 4.5 in), housing type B2
Data for application in connection with Ex-areas		
EC-Type Examination Certificate		ZELM 00 ATEX 0024, for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		Ⓔ II (1)GD [Ex ia] IIC; [Ex iaD] [circuit(s) in zone 0/1/2/20/21/22]
Output		Ex ia IIC, Ex iaD
Voltage	U_o	28 V
Current	I_o	110 mA
Power	P_o	770 mW (linear characteristic)
Supply		
Maximum safe voltage	U_m	40 V (Attention! The rated voltage can be lower.)
Input		
Maximum safe voltage	U_m	60 V (Attention! The rated voltage can be lower.)
Collective error indication		
Maximum safe voltage	U_m	40 V (Attention! The rated voltage can be lower.)
Statement of conformity		
Group, category, type of protection, temperature class		Ⓔ II 3G Ex nA II T4
Electrical isolation		
Input/Output		safe galvanic isolation acc. to EN 50020, voltage peak value 375 V
Output/power supply		safe galvanic isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity		
Directive 94/9/EC		EN 50020:2002, EN 60079-0:2006, EN 60079-15:2005, IEC 61241-0, IEC 61241-11
International approvals		
FM approval		
Control drawing		16-548FM-12
IECEX approval		IECEX TUN 04.0001
Approved for		[Ex ia] IIC, [Ex iaD]
General information		

Supplementary information

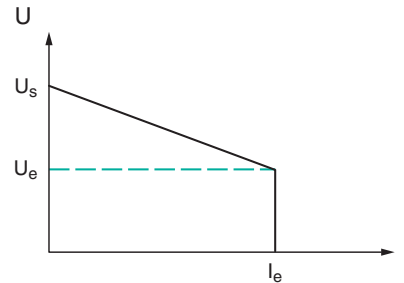
EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com.

Output characteristics

Output circuit diagram



Output characteristic



Accessories

Power feed module KFD2-EB2

The power feed module is used to supply the devices with 24 V DC via the Power Rail. The fuse-protected power feed module can supply up to 100 individual devices depending on the power consumption of the devices. A galvanically isolated mechanical contact uses the Power Rail to transmit collective error messages.

Power Rail UPR-03

The Power Rail UPR-03 is a complete unit consisting of the electrical inset and an aluminium profile rail 35 mm x 15 mm. To make electrical contact, the devices are simply engaged.

Profile Rail K-DUCT with Power Rail

The profile rail K-DUCT is an aluminum profile rail with Power Rail insert and two integral cable ducts for system and field cables. Due to this assembly no additional cable guides are necessary.



Attention

Power Rail and Profile Rail must not be fed via the device terminals of the individual devices!