



Solenoid Driver

KFD2-SLD-Ex2.1045-Y1

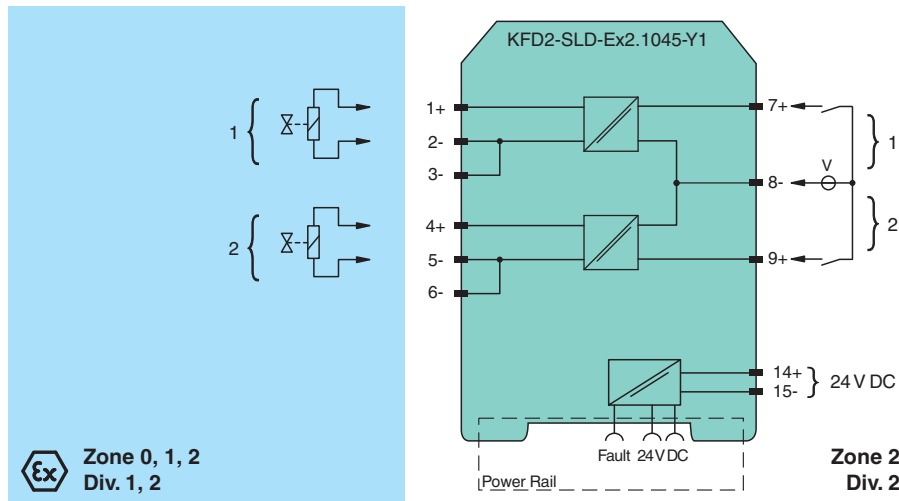
- 2-channel isolated barrier
- 24 V DC supply (bus or loop powered)
- Output 45 mA at 10 V DC
- Line fault transparency (LFT)
- Test pulse immunity



Function

This isolated barrier is used for intrinsic safety applications.
 The device supplies power to solenoids, LEDs and audible alarms located in the explosion-hazardous area.
 The device is controlled with a loop powered signal or a bus powered logic signal.
 The device is immune to the test pulses of various control systems.
 The device simulates a minimum load at the input. The minimum load is set via the mode of operation. In the loop-powered mode of operation, a minimum load of 20 mA is simulated. In the bus-powered mode of operation, a minimum load of 5 mA is simulated.
 The line fault transparency function can display a line fault in the field by a change in impedance at the switching input of the solenoid driver.
 A fault is indicated by LEDs and output via a fault indication output.

Connection



Technical Data

General specifications

Signal type		Digital Output	
Supply			
Connection		Power Rail or terminals 14+, 15-	
Rated voltage	U _r	18 ... 30 V DC	
Power consumption		max. 3.5 W at 45 mA output current	
Input			
Connection side		control side	
Connection		terminals 7, 8, 9	
Test pulse length		max. 2 ms from DO card	

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Technical Data

Signal level		loop powered 1-signal: 18 ... 30 V DC 0-signal: 0 ... 5 V DC bus powered 1-signal: 15 ... 30 V DC (current limited to 5 mA) 0-signal: 0 ... 5 V DC
Rated current	I_r	0-signal: typ. 1.6 mA at 1.5 V DC; typ. 8 mA at 3 V DC (maximum leakage current DO card) 1-signal: ≥ 20 mA (minimum load current DO card)
Inrush current		≤ 200 mA after 100 μ s
Output		
Connection side		field side
Connection		channel 1: terminals 1+, 2-, 3- channel 2: terminals 4+, 5-, 6-
Internal resistor	R_i	276 Ω
Current	I_e	45 mA
Voltage	U_e	≥ 10 V
Current limit	I_{max}	45 mA
Open loop voltage	U_s	min. 23.6 V
Load		nominal 0.05 ... 20 k Ω
Energized/De-energized delay		≤ 20 ms / ≤ 20 ms
Galvanic isolation		
Input/Output		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Power supply/Output		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Indicators/settings		
Display elements		LEDs
Control elements		DIP switch
Configuration		via DIP switches
Labeling		space for labeling at the front
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Conformity		
Electromagnetic compatibility		NE 21:2017, EN IEC 61326-1:2021 (industrial locations), EN IEC 61326-3-2:2018 For further information see system description.
Ambient conditions		
Ambient temperature		-40 ... 60 °C (-40 ... 140 °F) extended ambient temperature range up to 70 °C (158 °F), refer to manual for necessary mounting conditions
Mechanical specifications		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 150 g
Dimensions		20 x 119 x 115 mm (0.8 x 4.7 x 4.5 inch) (W x H x D), housing type B2
Height		119 mm
Width		20 mm
Depth		115 mm
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with hazardous areas		
EU-type examination certificate		FIDI 21 ATEX 0091 X
Marking		Ⓔ II 3(1)G Ex ec [ia Ga] IIC T4 Gc Ⓔ II (1)D [Ex ia Da] IIIC Ⓔ I (M1) [Ex ia Ma] I
Output		Ex ia
Voltage	U_o	25.2 V
Current	I_o	93 mA
Power	P_o	586 mW (linear characteristic)
Supply		

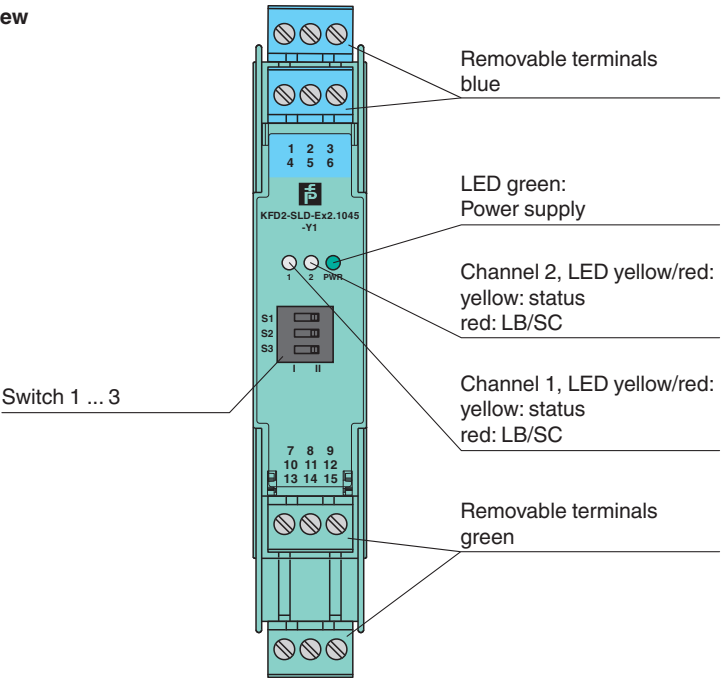
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Technical Data

Maximum safe voltage	U _m	250 V (Attention! The rated voltage can be lower.)
Input		
Maximum safe voltage	U _m	250 V (Attention! The rated voltage can be lower.)
Collective error message		
Maximum safe voltage	U _m	250 V (Attention! The rated voltage can be lower.)
Galvanic isolation		
Input/Output		safe electrical isolation acc. to IEC/EN 60079-11, rated insulation voltage 300 V _{rms}
Output/power supply		safe electrical isolation acc. to IEC/EN 60079-11, rated insulation voltage 300 V _{rms}
Directive conformity		
Directive 2014/34/EU		EN IEC 60079-0:2018+AC:2020 , EN 60079-7:2015+A1:2018 , EN 60079-11:2012
International approvals		
UL approval		E106378
Control drawing		116-0488
IECEx approval		
IECEx certificate		IECEx FIDI 21.0009X
IECEx marking		Ex ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ma] I
General information		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com .

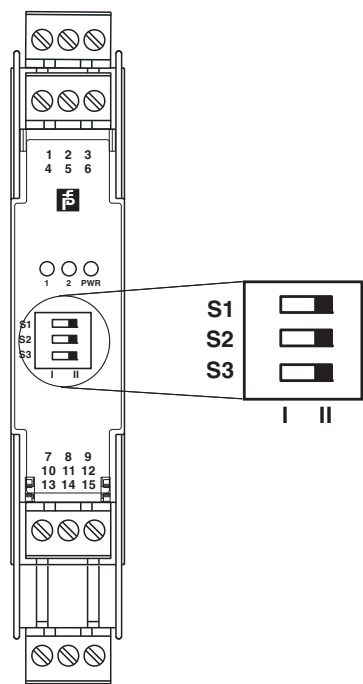
Assembly

Front view



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Configuration



Switch settings

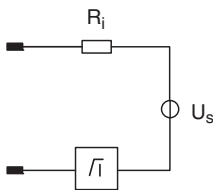
Switch	Function	Position
S1	Line fault transparency (LFT)	enabled
		disabled
S2	Mode of operation channel 1	loop powered
		bus powered
S3	Mode of operation channel 2	loop powered
		bus powered

Factory setting: line fault detection enabled, mode of operation loop powered

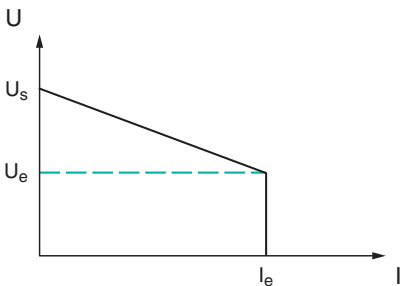
Characteristic Curve

Output characteristics

Output circuit diagram



Output characteristic



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