

Solenoid Driver

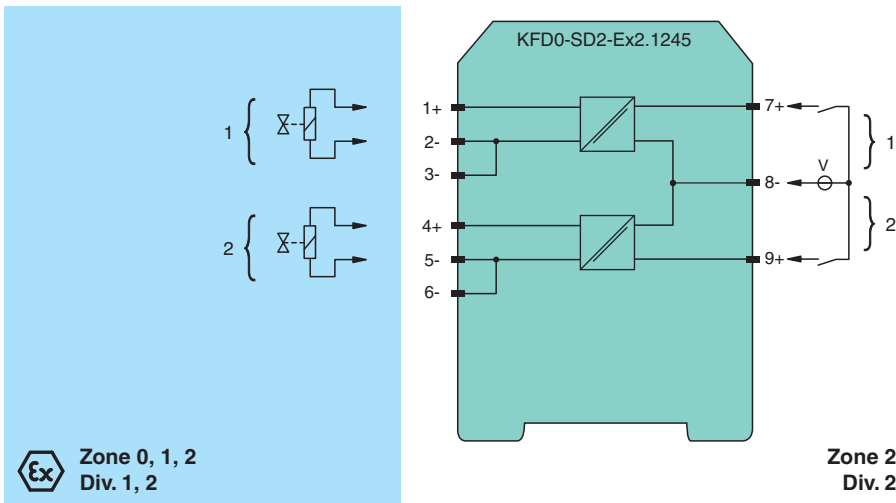
KFD0-SD2-Ex2.1245

- 2-channel isolated barrier
- 24 V DC supply (loop powered)
- Output 45 mA at 12 V DC
- Test pulse immunity
- Up to SIL 3 acc. to IEC/EN 61508



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. It is loop powered, so the available energy at the output is received from the input signal. The output signal has a resistive characteristic. As a result the output voltage and current are dependent on the load and the input voltage. At full load, 12 V at 45 mA is available for the hazardous area application. A fault is signaled by LEDs.

Connection



Ex Zone 0, 1, 2
Div. 1, 2

Zone 2
Div. 2

Technical Data

General specifications			
Signal type	Digital Output		
Functional safety related parameters			
Safety Integrity Level (SIL)	SIL 3		
Systematic capability (SC)	SC 3		
Supply			
Rated voltage	U_r	18 ... 30 V DC , loop powered	
Power dissipation	< 1.1 W (\leq 30 V) per channel		
Input			
Connection side	control side		
Connection	terminals 7, 8, 9		
Test pulse length	max. 2 ms from DO card		
Rated voltage	U_r	18 ... 30 V DC	

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

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Technical Data

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: ≥ 35 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	236 Ω
Current	I_e	45 mA
Voltage	U_e	≥ 12 V
Open loop voltage	U_s	min. 23.6 V
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}
Indicators/settings		
Display elements		LEDs
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
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	110 mA
Power	P_o	693 mW (linear characteristic)
Input		
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}
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

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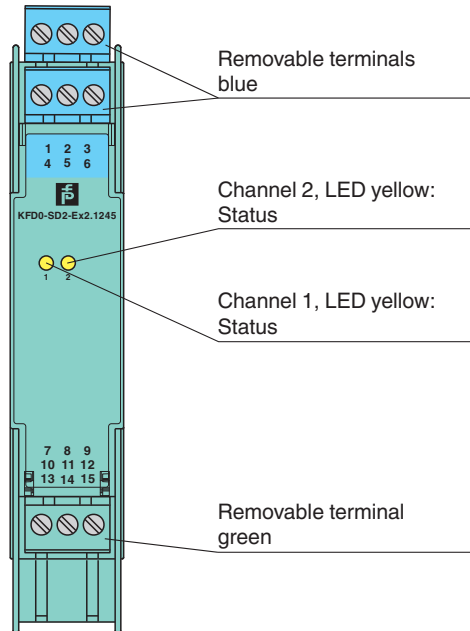
General information

Supplementary information


Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com.

Assembly




Front view



Matching System Components

	K-DUCT-BU	Profile rail, wiring comb field side, blue
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Accessories

	KF-ST-5GN	Terminal block for KF modules, 3-pin screw terminal, green
	KF-ST-5BU	Terminal block for KF modules, 3-pin screw terminal, blue
	KF-CP	Red coding pins, packaging unit: 20 x 6

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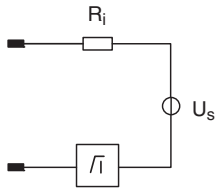
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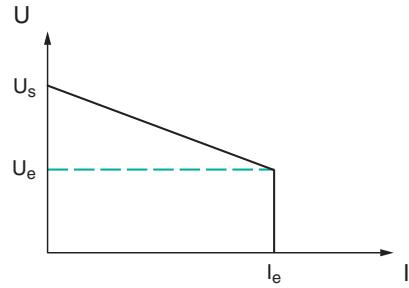
Characteristic Curve

Output characteristics

Output circuit diagram



Output characteristic



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