



# Solenoid Driver

## KFD0-SD2-Ex1.1065

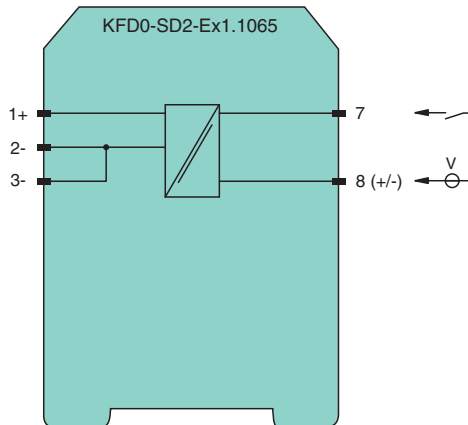
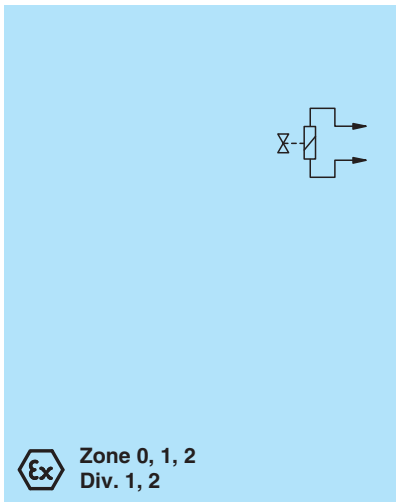
- 1-channel isolated barrier
- 24 V DC supply (loop powered)
- Current limit 65 mA at 9.8 V DC
- Up to SIL 3 acc. to IEC/EN 61508



### 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 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, 9.8 V at 65 mA is available for the hazardous area application.

### Connection



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

### Technical Data

<b>General specifications</b>			
Signal type	Digital Output		
<b>Functional safety related parameters</b>			
Safety Integrity Level (SIL)	SIL 3		
<b>Supply</b>			
Rated voltage	$U_r$	20 ... 35 V DC , loop powered	
Power dissipation		< 1 W ( $\leq$ 30 V)	
<b>Input</b>			
Connection side		control side	
Connection		terminals 7, 8	
Rated voltage	$U_r$	20 ... 35 V DC	

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

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## Technical Data

Current	72 mA at 20 V input voltage, load = 150 $\Omega$ 50 mA at 35 V input voltage, load = 150 $\Omega$	
<b>Output</b>		
Connection side	field side	
Connection	terminals 1+, 2-	
Internal resistor	$R_i$	$\leq 90 \Omega$
Current	$I_e$	$\leq 65 \text{ mA}$
Voltage	$U_e$	$\geq 9.8 \text{ V}$
Open loop voltage	$U_s$	min. 15.4 V
Output rated operating current	65 mA	
Output signal	These values are valid for the rated operating voltage 20 ... 35 V DC.	
Energized/De-energized delay	single operation: 300 $\mu\text{s}$ /50 $\mu\text{s}$ ; periodical: 5 $\mu\text{s}$ / 50 $\mu\text{s}$	
<b>Indicators/settings</b>		
Display elements	LED	
Labeling	space for labeling at the front	
<b>Directive conformity</b>		
Electromagnetic compatibility	EN 61326-1:2013 (industrial locations)	
Directive 2014/30/EU		
<b>Conformity</b>		
Electromagnetic compatibility	NE 21:2006	
Degree of protection	IEC 60529:2001	
Protection against electrical shock	UL 61010-1:2004	
<b>Ambient conditions</b>		
Ambient temperature	-20 ... 60 $^{\circ}\text{C}$ (-4 ... 140 $^{\circ}\text{F}$ )	
<b>Mechanical specifications</b>		
Degree of protection	IP20	
Connection	screw terminals	
Mass	approx. 100 g	
Dimensions	20 x 107 x 115 mm (0.8 x 4.2 x 4.5 inch) (W x H x D) , housing type B1	
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001	
<b>Data for application in connection with hazardous areas</b>		
EU-type examination certificate	BASEEFA 06 ATEX 0252	
Marking	$\text{Ex II (1)G [Ex ia Ga] IIC}$ $\text{Ex II (1)D [Ex ia Da] IIIC}$ $\text{Ex I (M1) [Ex ia Ma] I}$	
Voltage	$U_o$	17.22 V
Current	$I_o$	220 mA
Power	$P_o$	947 mW
<b>Input</b>		
Maximum safe voltage	$U_m$	250 V (Attention! The rated voltage can be lower.)
Certificate	TÜV 99 ATEX 1499 X	
Marking	$\text{Ex II 3G Ex nA II T4}$	
<b>Galvanic isolation</b>		
Input/Output	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V	
<b>Directive conformity</b>		
Directive 2014/34/EU	EN IEC 60079-0:2018+AC:2020 , EN 60079-11:2012 , EN 60079-15:2010	
<b>International approvals</b>		
<b>FM approval</b>		
Control drawing	116-0309	
<b>UL approval</b>		
Control drawing	E106378	
Control drawing	116-0316 (cULus)	
<b>IECEx approval</b>		
IECEx certificate	IECEx BAS 06.0058 IECEx CML 19.0093X	

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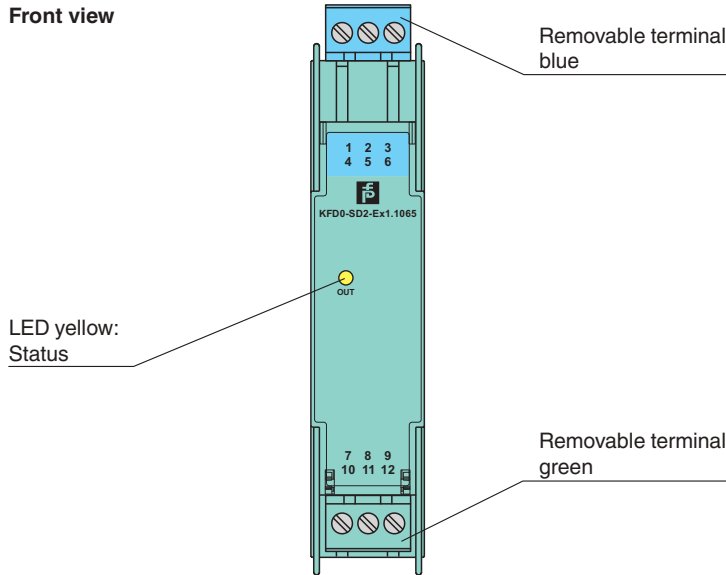
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**PEPPERL+FUCHS**


**Technical Data**

IECEX marking	[Ex ia Ga] IIC , [Ex ia Da] IIIC , [Ex ia Ma] I Ex ec IIC T4 Gc
<b>General information</b>	
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .




**Assembly**



**Matching System Components**

	<b>K-DUCT-BU</b>	Profile rail, wiring comb field side, blue
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**Accessories**

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

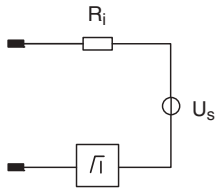
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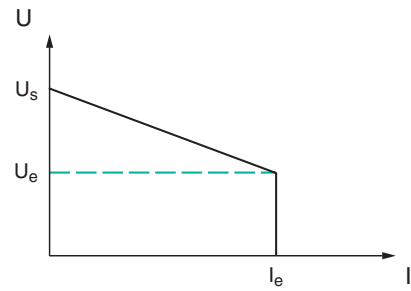
# Characteristic Curve

## Output characteristics

Output circuit diagram



Output characteristic



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