



## Solenoid Driver

### KCD0-SD3-Ex1.1045

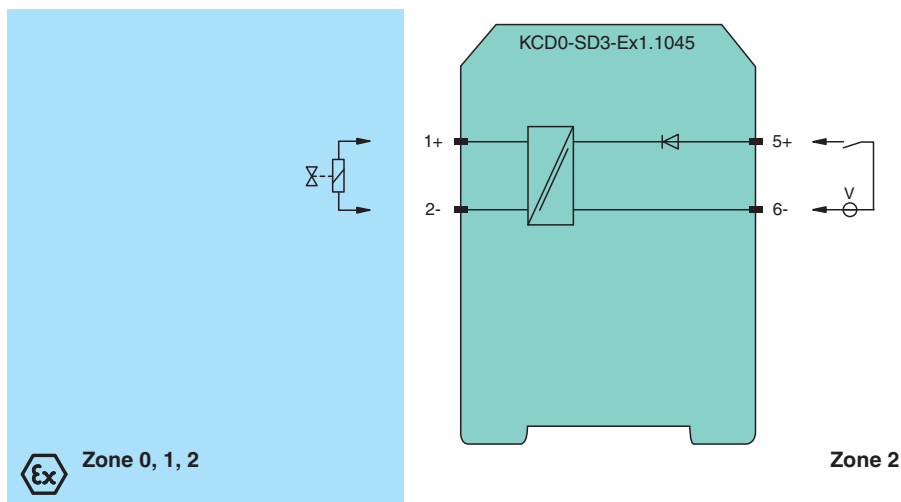
- 1-channel isolated barrier
- 24 V DC supply (loop powered)
- Current limit 45 mA at 10 V DC
- Test pulse immunity
- Housing width 12.5 mm
- Up to SIL 3 acc. to IEC/EN 61508



## Function

This isolated barrier is used for intrinsic safety applications. The device supplies power to solenoids, LEDs and audible alarms located in a hazardous area. The device 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, 10 V at 45 mA is available for the hazardous area application.

## Connection



## 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  $U_r$  loop powered

Power dissipation < 1.3 W

### Input

Connection side control side

Connection terminals 5+, 6-

Release date: 2022-01-17 Date of issue: 2022-01-17 Filename: 304983\_eng.pdf

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

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0002  
pa-info@us.pepperl-fuchs.com

Germany: +49 621 776 2222  
pa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
pa-info@sg.pepperl-fuchs.com

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## Technical Data

Test pulse length		max. 2 ms from DO card
Signal level		1-signal: 19 ... 30 V DC 0-signal: 0 ... 5 V DC
Rated voltage	$U_r$	19 ... 30 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: $\geq 36$ mA (minimum load current DO card)
Inrush current		$\leq 200$ mA after 100 $\mu$ s
<b>Output</b>		
Connection side		field side
Connection		terminals 1+, 2-
Internal resistor	$R_i$	approx. 285 $\Omega$
Current	$I_e$	typ. 45 mA
Voltage	$U_e$	$\geq 10$ V
Current limit	$I_{max}$	45 mA
Open loop voltage	$U_s$	typ. 24.6 V
Switching frequency	f	max. 10 Hz
Energized/De-energized delay		28 ms / 10 ms
<b>Galvanic isolation</b>		
Output/other circuits		basic insulation according to IEC/EN 61010-1, rated insulation voltage 300 $V_{eff}$
<b>Indicators/settings</b>		
Display elements		LED
Labeling		space for labeling at the front
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
<b>Conformity</b>		
Electromagnetic compatibility		NE 21:2012 , EN 61326-3-2:2008 For further information see system description.
Degree of protection		IEC 60529:2013
Protection against electrical shock		EN 61010-1:2010
<b>Ambient conditions</b>		
Ambient temperature		-20 ... 70 °C (-4 ... 158 °F)
<b>Mechanical specifications</b>		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 150 g
Dimensions		12.5 x 119 x 114 mm (0.5 x 4.7 x 4.5 inch) (W x H x D) , housing type A2
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		EXA 17 ATEX 0002 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	$U_o$	26 V
Current	$I_o$	93 mA
Power	$P_o$	605 mW
<b>Input</b>		
Maximum safe voltage	$U_m$	60 V (Attention! The rated voltage can be lower.)
<b>Galvanic isolation</b>		
Input/Output		safe electrical isolation acc. to IEC/EN 60079-11, rated insulation voltage 300 $V_{rms}$
<b>Directive conformity</b>		
Directive 2014/34/EU		EN 60079-0:2012+A11:2013 , EN 60079-7:2015 , EN 60079-11:2012 , EN 60079-15:2010
<b>International approvals</b>		

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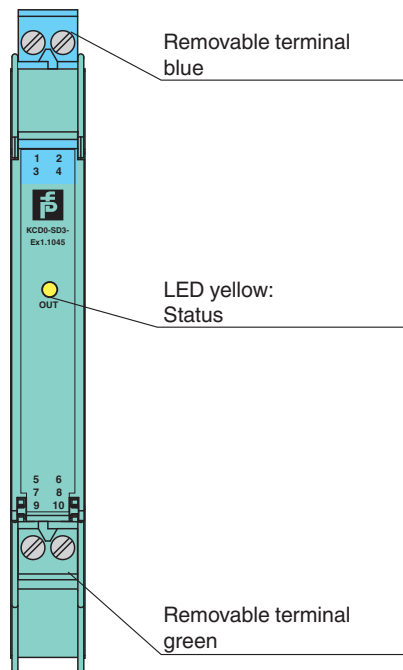
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**Technical Data**


UL approval	E106378
Control drawing	116-0448 (cULus)
IECEX approval	
IECEX certificate	IECEX EXA 17.0001X
IECEX marking	Ex ec [ia Ga] IIC T4 Gc [Ex ia Da] IIC [Ex ia Ma] I
<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**




Front view



**Matching System Components**

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

	<b>KC-ST-5GN</b>	Terminal block for KC modules, 2-pin screw terminal, green
	<b>KC-ST-5BU</b>	Terminal block for KC modules, 2-pin screw terminal, blue
	<b>KF-CP</b>	Red coding pins, packaging unit: 20 x 6

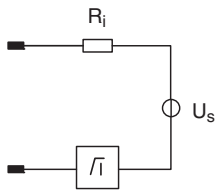
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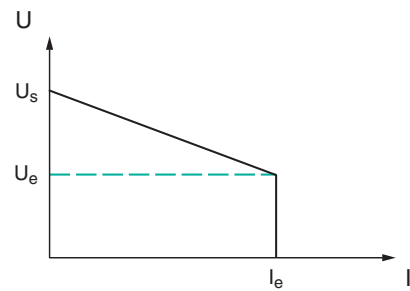
## Characteristic Curve

### Output characteristics

Output circuit diagram



Output characteristic





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