

**Features**

- 1-channel isolated barrier
- 24 V DC supply (bus or loop powered)
- Output 45 mA at 12 V DC
- Line fault transparency (LFT)
- Test pulse immunity
- Housing width 12.5 mm
- Up to SIL 3 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.

The device is controlled with a loop powered signal or a bus powered logic signal.

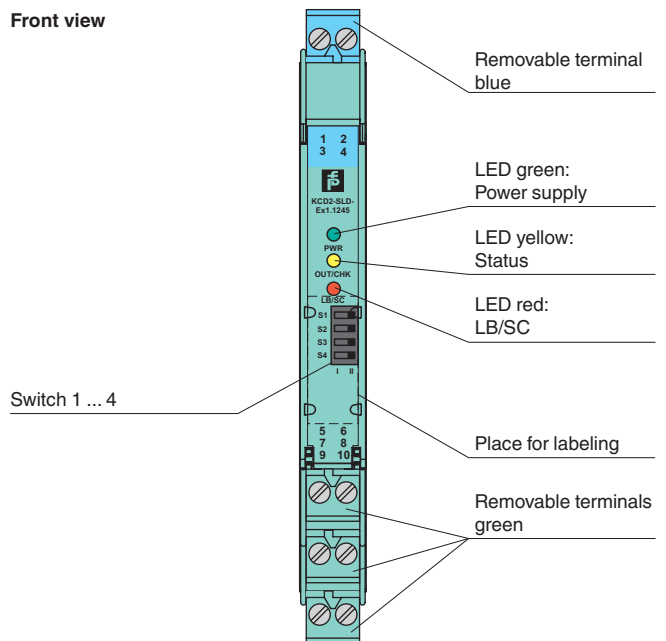
The device is immune to the test pulses of various control systems.

The device simulates a minimum load at the input. The minimum load can be activated and de-activated.

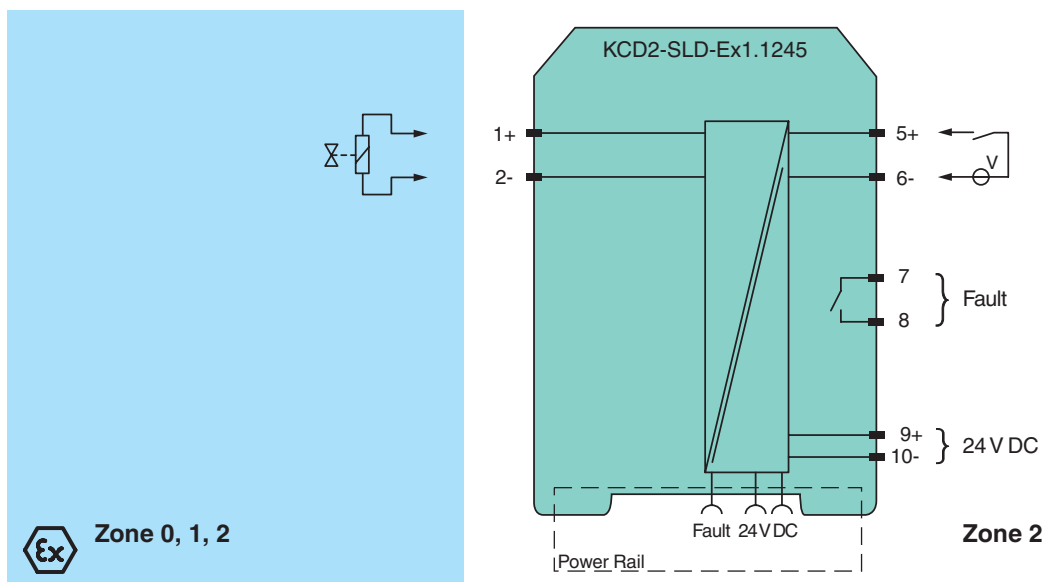
The line fault transparency function can display a line fault in the field by a change in impedance at the switching input of the solenoid driver.

A line fault is indicated by a red LED and output via the fault indication output or a switch contact.

**Assembly**



**Connection**



Release date 2018-09-06 Date of issue 2018-09-06 324436\_eng.xml

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

<b>General specifications</b>		
Signal type		Digital Output
<b>Functional safety related parameters</b>		
Safety Integrity Level (SIL)		SIL 3
<b>Supply</b>		
Connection		terminals 5+, 6- loop powered Power Rail or terminals 9+, 10- bus powered
Rated voltage	$U_r$	19 ... 30 V DC
Input current		75 mA at 24 V , 270 $\Omega$ load
Power dissipation		1.3 W at 24 V , 270 $\Omega$ load
<b>Input</b>		
Connection side		control side
Connection		terminals 5+, 6-
Test pulse length		$\leq 2$ ms from DO card
Signal level		loop powered 1-signal: 19 ... 30 V DC 0-signal: 0 ... 5 V DC bus powered 1-signal: 15 ... 30 V DC (current limited at 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: $\geq 36$ mA (minimum load current DO card)
Inrush current		$< 200$ mA , 10 ms loop powered
<b>Output</b>		
Connection side		field side
Connection		terminals 1+, 2-
Internal resistor	$R_i$	240 $\Omega$
Current	$I_e$	typ. 45 mA
Voltage	$U_e$	typ. 12 V
Current limit	$I_{max}$	50 mA
Open loop voltage	$U_s$	typ. 24.6 V
Load		nominal 0.05 ... 18 k $\Omega$
Output II		fault signal
Connection		terminals 7, 8 , non-intrinsically safe
Contact loading		30 V DC/ 0.5 A resistive load
Mechanical life		10 <sup>5</sup> switching cycles
Energized/De-energized delay		$\leq 20$ ms / $\leq 20$ ms
Line fault detection		signal at short-circuit $R_B < 25 \Omega$ , lead breakage $R_B > 50 \text{ k}\Omega$ ; test current $< 500 \mu\text{A}$
<b>Galvanic isolation</b>		
Output/other circuits		basic insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Output II/power supply		basic insulation according to IEC/EN 61010-1, rated insulation voltage 32 V <sub>eff</sub>
<b>Indicators/settings</b>		
Display elements		LEDs
Control elements		DIP-switch
Configuration		via DIP switches
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 ... 60 °C (-4 ... 140 °F)
<b>Mechanical specifications</b>		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 150 g
Dimensions		12.5 x 114 x 119 mm (0.5 x 4.5 x 4.7 inch) , 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

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

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

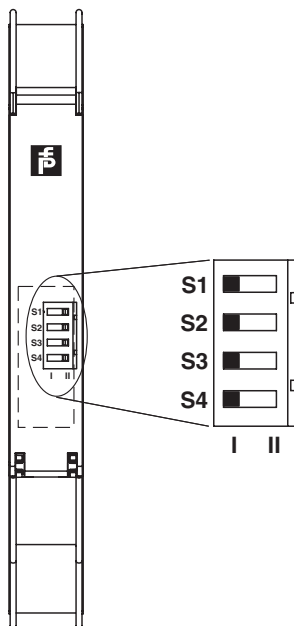
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Marking		II 3(1)G Ex nC ec [ia Ga] IIC T4 Gc II (1)D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I
Output I		Ex ia
Voltage	$U_o$	26 V
Current	$I_o$	110 mA
Power	$P_o$	715 mW
Supply		
Maximum safe voltage	$U_m$	60 V (Attention! The rated voltage can be lower.)
Input		
Maximum safe voltage	$U_m$	60 V (Attention! The rated voltage can be lower.)
Collective error message		
Maximum safe voltage	$U_m$	60 V (Attention! The rated voltage can be lower.)
Galvanic isolation		
Output I/other circuits		safe electrical isolation acc. to IEC/EN 60079-11, rated insulation voltage 300 V <sub>rms</sub>
Directive conformity		
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>		
IECEX approval		
IECEX certificate		IECEX EXA 17.0001X
IECEX marking		Ex nC ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC [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> .

## Configuration



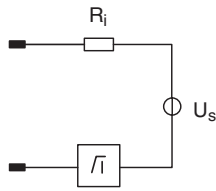
### Switch settings

Switch	Function		Position
S1	Line fault detection	enabled	I
		disabled	II
S2	Operating mode	loop powered	I
		bus powered with logic input	II
S3	Minimum load	enabled	I
		disabled	II
S4	No function		

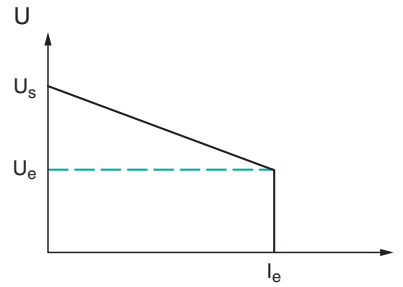
Factory settings: line fault detection enabled, operating mode loop powered, minimum load enabled

**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 150 individual devices depending on the power consumption of the devices. Collective error messages received from the Power Rail activate a galvanically-isolated mechanical contact.

**Power Rail UPR-03**

The Power Rail UPR-03 is a complete unit consisting of the electrical insert 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.



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