

## Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Output 70 mA at 12.5 V DC
- Logic input, non-polarized
- Error message output
- Line fault detection (LFD)
- Up to SIL2 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.

It is controlled via a logic signal. The input has two defined states: 1-Signal = 16 V DC ... 30 V DC, 0-Signal = 0 V DC ... 5 V DC. The current consumption of the input is about 3 mA.

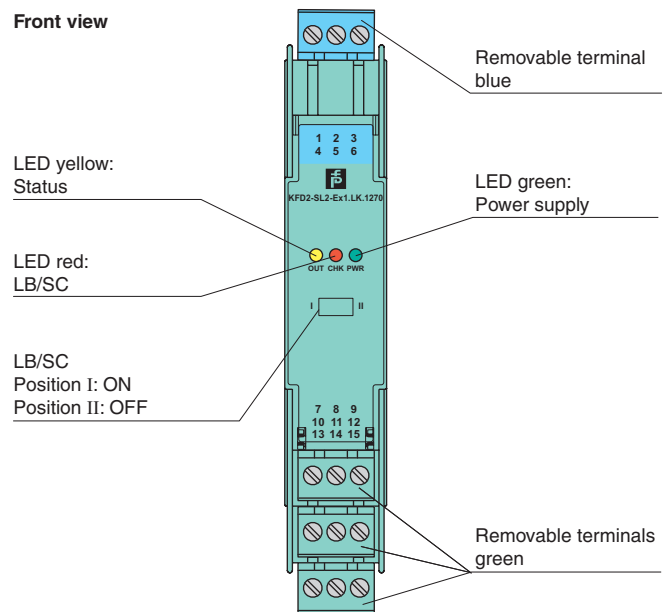
At full load, 12.7 V at 70 mA is available for the hazardous area application.

If the field impedance is  $> 10\text{ k}\Omega$  for lead breakage or  $< 50\ \Omega$  for short circuits a line fault is detected.

During an error condition, the fault indication output de-energizes.

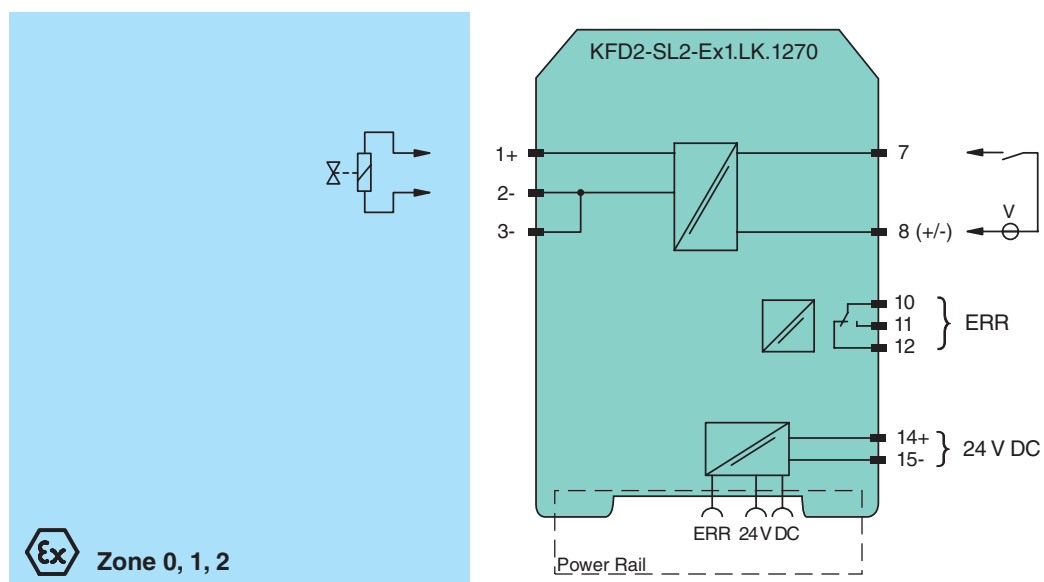
A fault is signaled by LEDs acc. to NAMUR NE44 and a separate collective error message output.

## Assembly



**SIL2**

## Connection



<b>General specifications</b>		
Signal type		Digital Output
<b>Supply</b>		
Connection		Power Rail or terminals 14+, 15-
Rated voltage		19 ... 30 V DC
Power consumption		≤ 1.9 W at 45 mA output current
<b>Input</b>		
Connection		terminals 7, 8
Input current		approx. 3 mA
Signal level		1-signal: 16 ... 30 V DC 0-signal: 0 ... 5 V DC
<b>Output</b>		
Output I		
Connection		terminals 1+, 2- or 3-
Internal resistor	$R_i$	92 $\Omega$
Current	$I_e$	≤ 70 mA
Voltage	$U_e$	≥ 12.5 V
Open loop voltage	$U_s$	≥ 19.2 V
Output signal		These values are valid for the rated operational voltage 19 ... 30 V DC.
Energized/De-energized delay		≤ 20 ms / ≤ 20 ms
Line fault detection		signal at short-circuit $R_B < 50 \Omega$ , lead breakage $R_B > 10 \text{ k}\Omega$ ; test current < 650 $\mu\text{A}$
Output II		
Connection		terminals 10, 11, 12, non-intrinsically safe
Contact loading		253 V AC/2 A/cos $\phi > 0.7$ ; 40 V DC/2 A resistive load
Mechanical life		2 x 10 <sup>7</sup> switching cycles
Energized/De-energized delay		≤ 20 ms / ≤ 20 ms
<b>Electrical isolation</b>		
Input/power supply		functional insulation acc. to EN 50178, rated insulation voltage 50 V <sub>eff</sub>
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2004/108/EC		EN 61326-1:2006, EN 61000-6-4:2007
Low voltage		
Directive 2006/95/EC		EN 50178:1997
<b>Conformity</b>		
Electromagnetic compatibility		NE 21:2006
Protection degree		IEC 60529
<b>Ambient conditions</b>		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
<b>Mechanical specifications</b>		
Protection degree		IP20
Mass		approx. 150 g
Dimensions		20 x 119 x 115 mm (0.8 x 4.7 x 4.5 in), housing type B2
<b>Data for application in connection with Ex-areas</b>		
EC-Type Examination Certificate		
Group, category, type of protection		ZELM 99 ATEX 0015, for additional certificates see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a>
Output I		⊕ II (1)GD [Ex ia] IIB, [Ex ia D] [circuit(s) in zone 0/1/2]
Voltage	$U_o$	22.1 V
Current	$I_o$	248 mA
Power	$P_o$	1.38 W (linear characteristic)
Supply		
Maximum safe voltage	$U_m$	40 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 indication		
Maximum safe voltage	$U_m$	40 V (Attention! The rated voltage can be lower.)
Statement of conformity		
Group, category, type of protection, temperature classification		⊕ II 3G Ex nA nC IIC T4
Output II		
Contact loading		50 V AC/2 A/cos $\phi > 0.7$ ; 40 V DC/1 A resistive load
Electrical isolation		
Output I/other circuits		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Directive conformity		
Directive 94/9/EC		EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-11:2006, EN 61241-0:2006

Release date 2011-08-03 17:56 Date of issue 2011-08-03 213130\_eng.xml

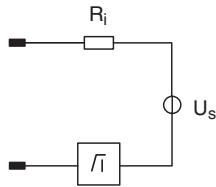
**General information**

Supplementary information

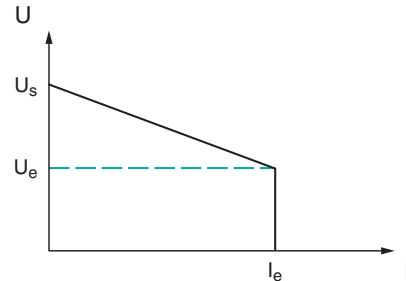
EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

**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 100 individual devices depending on the power consumption of the devices. A galvanically isolated mechanical contact uses the Power Rail to transmit collective error messages.

**Power Rail UPR-03**

The Power Rail UPR-03 is a complete unit consisting of the electrical inset 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!*