

**Features**

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Dry contact or NAMUR inputs
- Relay and transistor output
- Adjustable output timer functions from 10 ms ... 60 min
- Input frequency up to 80 Hz; pulse divider up to 1 kHz
- Reset function
- Configurable by keypad
- Line fault detection (LFD)

**Function**

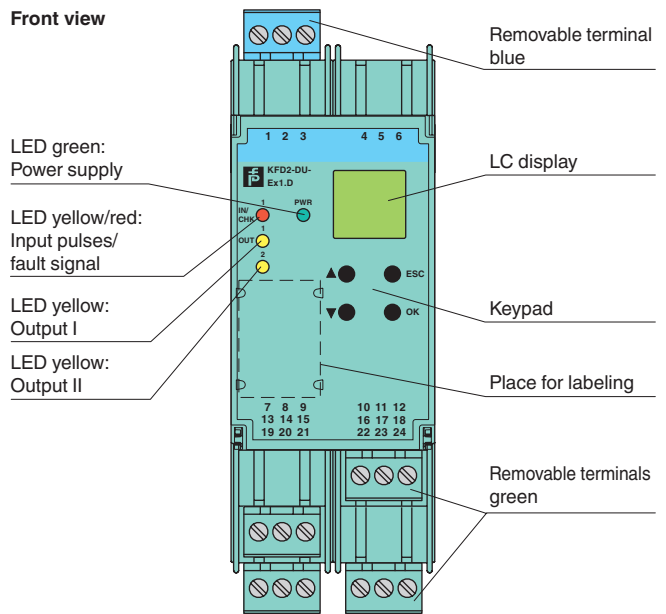
This isolated barrier is used for intrinsic safety applications. It is a highly configurable timer that accepts a digital signal (NAMUR sensor/mechanical contact) from a hazardous area and is commonly used in applications requiring on-delay, off-delay, one-shot, or pulse lengthening.

The output relay switch duration is easily adjusted, and a pulse divider function allows step-down ratios from 1:1 to 9999:1. A reset can be activated via dry contact switch and used to terminate a particular time function.

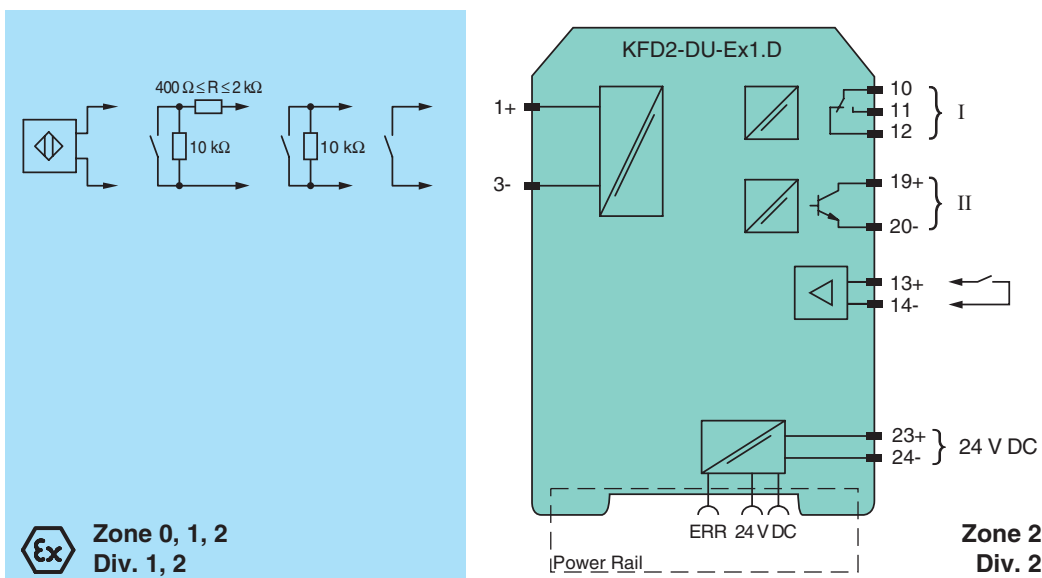
The unit is easily programmed by the use of a keypad located on the front of the unit. Line fault detection of the field circuit is indicated by a red LED and through the collective error output via Power Rail.

For additional information, refer to the manual and [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

**Assembly**



**Connection**



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

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<b>General specifications</b>		
Signal type		Digital Input
<b>Supply</b>		
Connection		Power Rail or terminals 23+, 24-
Rated voltage	$U_n$	20 ... 30 V DC
Rated current	$I_n$	approx. 100 mA
Power consumption		1.8 W
<b>Input</b>		
Connection		Input I: terminals 1+, 3- ; input II: terminals 13+, 14-
Input I		acc. to EN 60947-5-6 (NAMUR), see system description for electrical data
Open circuit voltage/short-circuit current		8.2 V / 10 mA
Switching point/switching hysteresis		1.2 ... 2.1 mA / approx. 0.2 mA
Pulse duration		$\geq 75 \mu\text{s}$ / 1 ms see instruction manuals; the maximum input frequency has to be observed.
Input frequency		0 ... 80 Hz , pulse divider 0 ... 1 kHz
Lead monitoring		breakage $I \leq 0.15 \text{ mA}$ ; short-circuit $I > 6.5 \text{ mA}$
Input II		reset
Active/Passive		$I > 4 \text{ mA}$ / $I < 1.5 \text{ mA}$
Open circuit voltage/short-circuit current		18 V / 5 mA
Pulse duration		$\geq 10 \text{ ms}$
<b>Output</b>		
Connection		output I: terminals 10, 11, 12 ; output II: terminals 19+, 20-
Output I		signal , Relay output
Contact loading		253 V AC / 2 A / $\cos \phi \geq 0.7$ ; 40 V DC / 2 A
Mechanical life		$5 \times 10^7$ switching cycles
Energized/De-energized delay		approx. 20 ms / approx. 20 ms
Output II		signal , electronic unit, isolated
Contact loading		40 V / 50 mA
Energized/De-energized delay		after rising input flank 3 ms ; after falling input flank 2 ms
Signal level		1-signal: (L+) -2.5 V (50 mA, short-circuit/overload proof) 0-signal: blocked output (off-state current $\leq 10 \mu\text{A}$ )
<b>Transfer characteristics</b>		
Input I		
Resolution		$< 0.1 \%$ of the set value, min. 10 ms
Accuracy		2 ms
Influence of ambient temperature		0.003 %/K (50 ppm)
<b>Electrical isolation</b>		
Input I/other circuits		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Output I/power supply and reset		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Output I, II against each other		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Output II/power supply and collective error		basic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V <sub>eff</sub>
Output II/reset		basic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V <sub>eff</sub>
Reset/power supply and collective error		functional insulation acc. to IEC 62103, rated insulation voltage 50 V <sub>eff</sub>
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2004/108/EC		EN 61326-1:2006
Low voltage		
Directive 2006/95/EC		EN 61010-1:2010
<b>Conformity</b>		
Electromagnetic compatibility		NE 21:2006
Degree of protection		IEC 60529:2001
<b>Ambient conditions</b>		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
<b>Mechanical specifications</b>		
Degree of protection		IP20
Mass		approx. 300 g
Dimensions		40 x 119 x 115 mm (1.6 x 4.7 x 4.5 in) , housing type C3
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
<b>Data for application in connection with Ex-areas</b>		
EC-Type Examination Certificate		TÜV 99 ATEX 1408 , for additional certificates see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a>
Group, category, type of protection		 II (1)GD, I (M1) [Ex ia] IIC, [Ex iaD], [Ex ia] I (-20 °C $\leq$ T <sub>amb</sub> $\leq$ 60 °C)
Supply		

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Maximum safe voltage	$U_m$	40 V DC (Attention! The rated voltage can be lower.)
Input I		terminals 1+, 3- Ex ia IIC, Ex iaD
Voltage	$U_o$	10.1 V
Current	$I_o$	13.5 mA
Power	$P_o$	34 mW (linear characteristic)
Input II		terminals 13+, 14- non-intrinsically safe
Maximum safe voltage	$U_m$	40 V (Attention! The rated voltage can be lower.)
Output I		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 (TÜV 99 ATEX 1408) 50 V AC/2 A/cos $\phi > 0.7$ ; 40 V DC/2 A resistive load (TÜV 02 ATEX 1885 X)
Maximum safe voltage	$U_m$	253 V (Attention! The rated voltage can be lower.)
Output II		terminals 19+, 20- non-intrinsically safe
Maximum safe voltage	$U_m$	40 V (Attention! The rated voltage can be lower.)
Statement of conformity		TÜV 02 ATEX 1885 X
Group, category, type of protection, temperature class		⊕ II 3G Ex nA nC IIC T4
Output I		
Contact loading		50 V AC/2 A/cos $\phi > 0.7$ ; 40 V DC/1 A resistive load
Electrical isolation		
Input I/other circuits		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Directive conformity		
Directive 94/9/EC		EN 60079-0:2012 , EN 60079-11:2012 , EN 60079-15:2010 , EN 60079-26:2007
<b>International approvals</b>		
FM approval		
Control drawing		16-538FM-12
<b>General information</b>		
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 <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

## 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!*