

Features

- 1-channel isolated barrier
- 230 V AC supply
- 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.

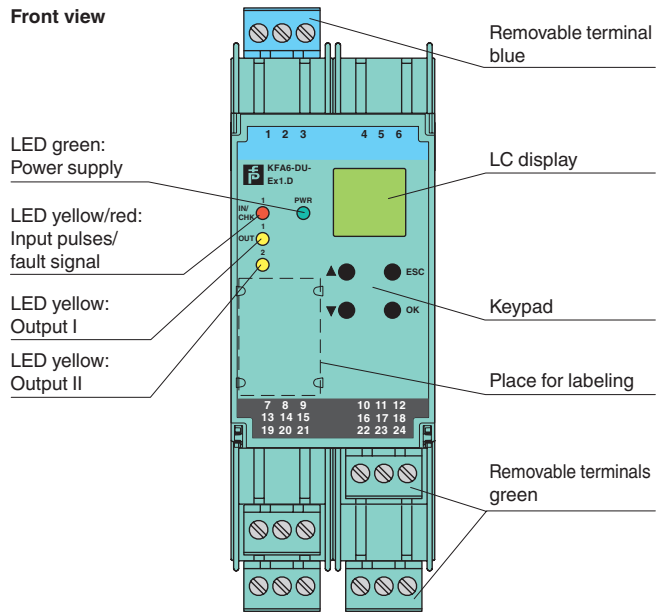
The output relay switch duration is easily adjusted, and a pulse divider function allows step-down ratios from 1:1 to 9999:1.

A reset can be activated via dry contact switch and used to terminate a particular time function.

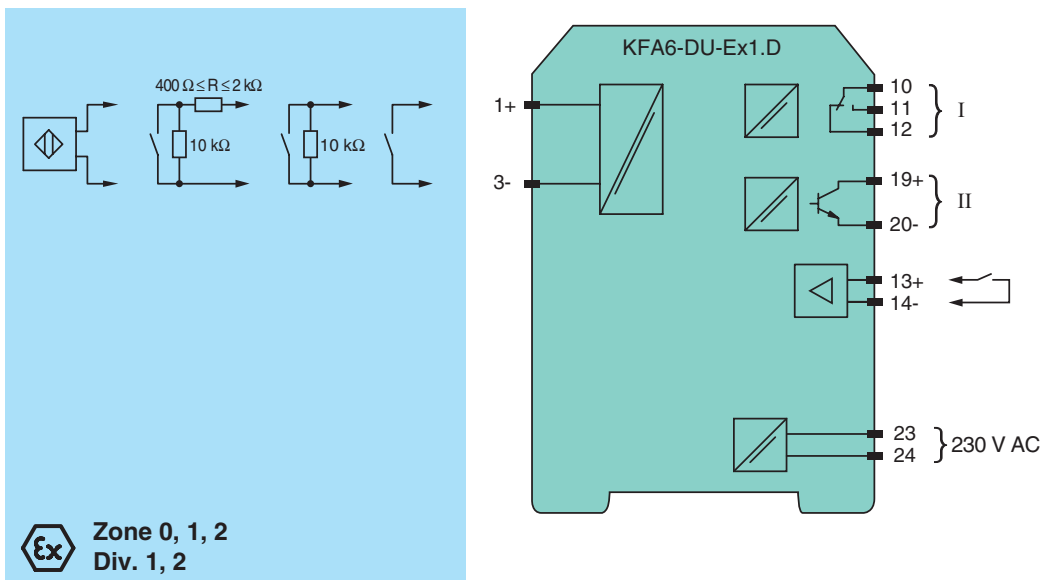
The unit is easily programmed by the use of a keypad located on the front of the unit. Line fault detection of the field circuit is indicated by a red LED.

For additional information, refer to the manual and www.pepperl-fuchs.com.

Assembly



Connection



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

General specifications		
Signal type		Digital Input
Supply		
Connection		terminals 23, 24
Rated voltage	U_n	230 V AC \pm 10 %
Rated current	I_n	15 mA
Power consumption		4 VA
Input		
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 μ 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 mA; short-circuit $I >$ 6.5 mA
Input II		reset
Active/Passive		$I >$ 3 mA / $I <$ 1.5 mA
Open circuit voltage/short-circuit current		12 V / 3.5 mA
Pulse duration		\geq 10 ms
Output		
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		5×10^7 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 μ A)
Transfer characteristics		
Input I		
Resolution		$<$ 0.1 % of the set value, min. 10 ms
Accuracy		2 ms
Influence of ambient temperature		0.003 %/K (50 ppm)
Electrical isolation		
Input I/other circuits		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Output I/power supply and reset		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Output I, II against eachother		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Output II/power supply		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Output II/reset		basic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V _{eff}
Reset/power supply		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Directive conformity		
Electromagnetic compatibility		
Directive 2004/108/EC		EN 61326-1:2006
Low voltage		
Directive 2006/95/EC		EN 61010-1:2010
Conformity		
Electromagnetic compatibility		NE 21:2006
Degree of protection		IEC 60529:2001
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
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
Data for application in connection with Ex-areas		
EC-Type Examination Certificate		TÜV 99 ATEX 1408 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		 II (1)GD, I (M1) [Ex ia] IIC, [Ex iaD], [Ex ia] I (-20 °C \leq T _{amb} \leq 60 °C)
Supply		
Maximum safe voltage	U_m	253 V AC (Attention! The rated voltage can be lower.)

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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.)
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
International approvals		
FM approval		
Control drawing		16-538FM-12
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 .