

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.

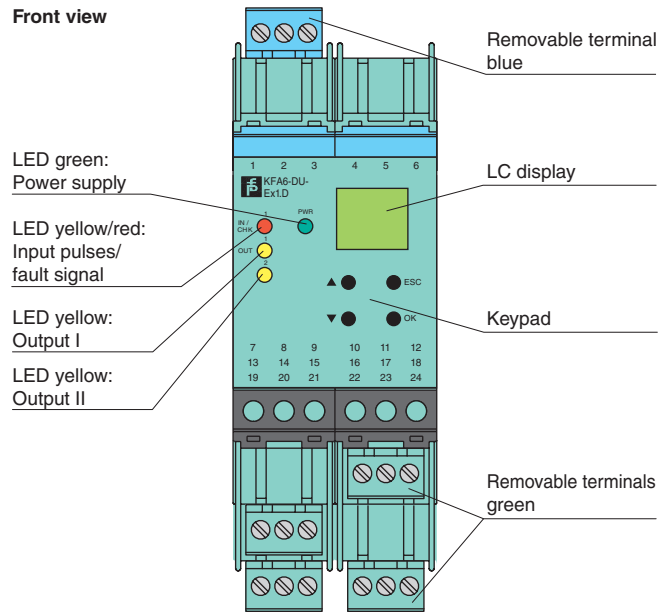
The output relay switch duration is easily adjusted, and a pulse divider function allows step-down ratios from 1:1 to 9999:1.

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

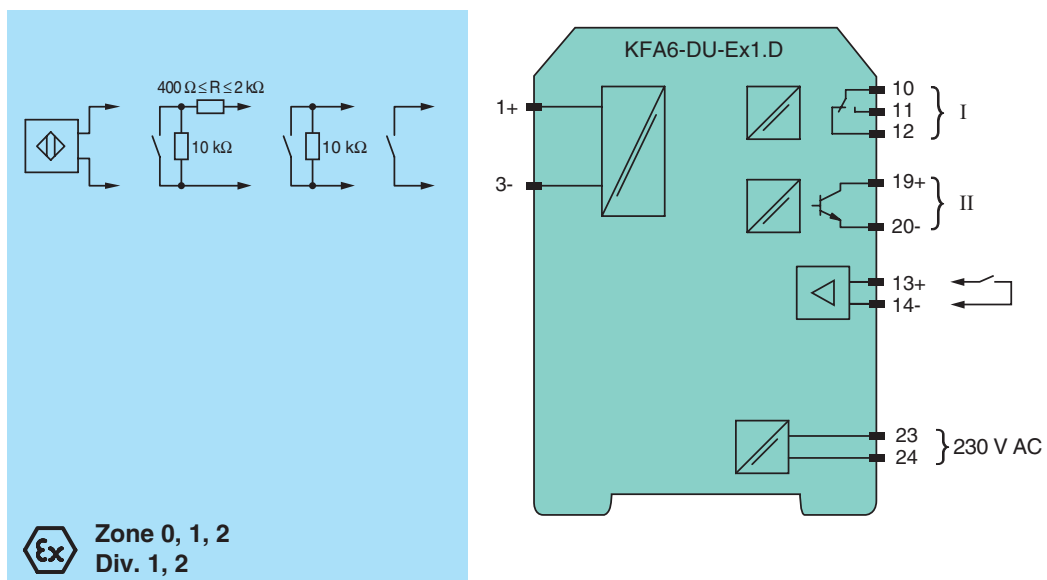
The unit is easily programmed by the use of a keypad located on the front of the unit. Line fault detection of the field circuit is indicated by a red LED.

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

Assembly



Connection



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General specifications	
Signal type	Digital input
Supply	
Connection	terminals 23, 24
Rated voltage	230 V AC ± 10 %
Rated current	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	≥ 75 μs / 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 ≤ 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	≥ 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 φ ≥ 0.7 ; 40 V DC/ 2 A
Mechanical life	5 x 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 ≤ 10 μA)
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	
Output I/power supply and reset	reinforced insulation according to IEC 61140, rated insulation voltage 300 V _{eff}
Output I, II against eachother	reinforced insulation according to IEC 61140, rated insulation voltage 300 V _{eff}
Output II/power supply	reinforced insulation according to IEC 61140, rated insulation voltage 300 V _{eff}
Output II/Reset	basic insulation according to IEC 62103, rated insulation voltage 50 V _{eff}
Reset/power supply	reinforced insulation according to IEC 61140, 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 50178:1997
Conformity	
Insulation coordination	IEC 62103
Electrical isolation	IEC 62103
Electromagnetic compatibility	NE 21
Protection degree	IEC 60529
Protection against electric shock	IEC 61140
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications	
Protection degree	IP20
Mass	approx. 300 g
Dimensions	40 x 119 x 115 mm (1.6 x 4.7 x 4.5 in) , housing type C3
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 ≤ T _{amb} ≤ 60 °C)
Supply	

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Maximum safe voltage U_m	253 V AC (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.)
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 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 60079-26:2007, EN 61241-0:2006, EN 61241-11:2006
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 .