

Features

- 1-channel isolated barrier
- 230 V AC supply
- Dry contact or NAMUR inputs
- Input frequency 1 mHz ... 5 kHz
- 2 relay contact outputs
- Start-up override
- Configurable by keypad
- Line fault detection (LFD)
- Up to SIL2 acc. to IEC 61508

Function

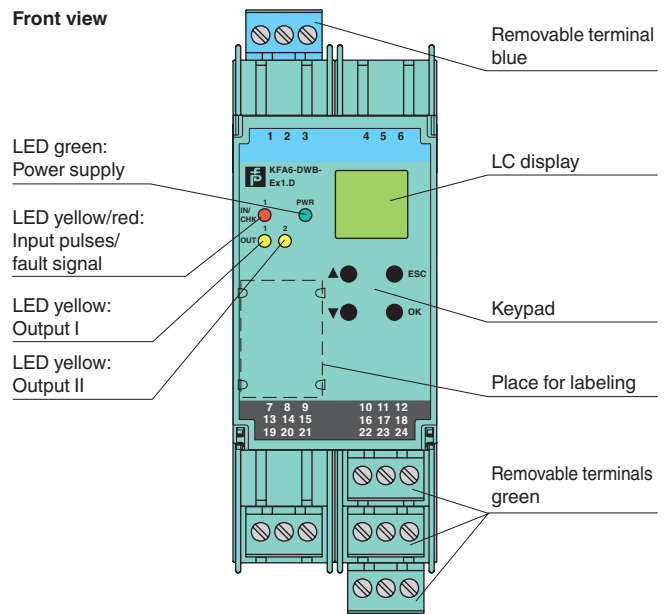
This isolated barrier is used for intrinsic safety applications. It monitors for an overspeed or underspeed condition of a discrete signal (NAMUR sensor/mechanical contact) from a hazardous area by comparing the input frequency to the user programmed reference frequency.

An overspeed or underspeed condition is signaled via the relay outputs. Line fault detection of the field circuit is indicated by a red LED and relay. The start-up override feature sets relay outputs to default conditions programmed by the user for up to 1,000 seconds.

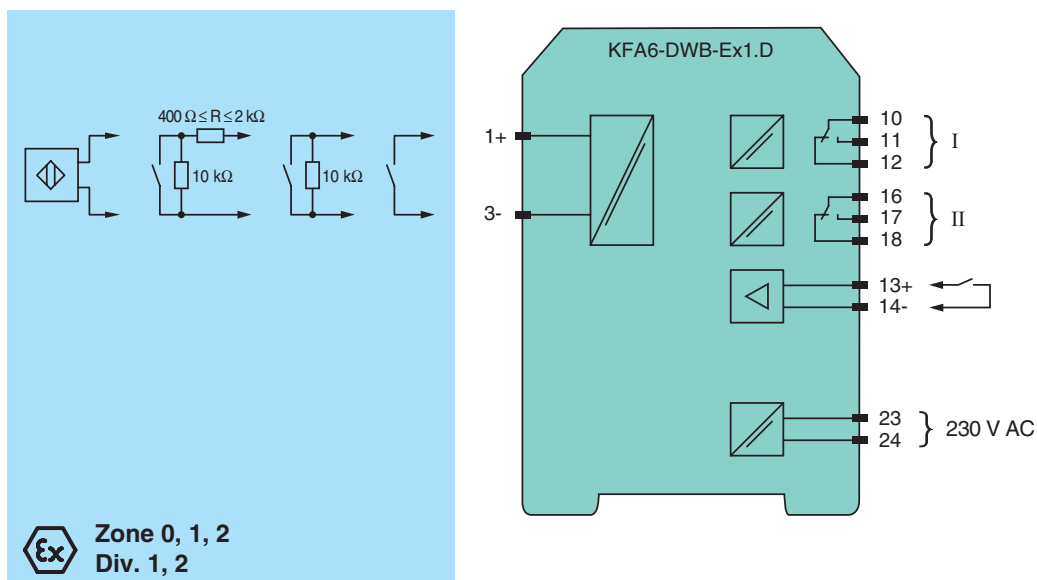
The unit is easily programmed by the use of a keypad located on the front of the unit.

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 \pm 10 %
Rated current	18 mA
Power loss/power consumption	\leq 2 VA / 2 VA
Input	
Connection	Input I: intrinsically safe: terminals 1+, 3- Input II: non-intrinsically safe: terminals 13+, 14-
Input I	acc. to EN 60947-5-6 (NAMUR)
Pulse duration	> 50 μ s
Input frequency	0.001 ... 5000 Hz
Lead monitoring	breakage I \leq 0.15 mA; short-circuit I > 6.5 mA
Input II	startup override: 1 ... 1000 s, adjustable in steps of 1 s
Active/Passive	I > 4 mA (for min. 100 ms) / I < 1 mA
Open circuit voltage/short-circuit current	18 V / 5 mA
Output	
Connection	output I: terminals 10, 11, 12 output II: terminals 16, 17, 18
Output I, II	signal, relay
Contact loading	250 V AC / 2 A / $\cos \phi \geq 0.7$; 40 V DC / 2 A
Mechanical life	5 x 10 ⁷ switching cycles
Energized/De-energized delay	approx. 20 ms / approx. 20 ms
Transfer characteristics	
Input I	
Measurement range	0.001 ... 5000 Hz
Resolution	0.1 % of measured value , \geq 0.001 Hz
Accuracy	0.1 % of measured value , > 0.001 Hz
Measuring time	< 100 ms
Influence of ambient temperature	0.003 %/K (30 ppm)
Output I, II	
Response delay	\leq 200 ms
Electrical isolation	
Output I, II against eachother	reinforced insulation according to IEC 61140, rated insulation voltage 300 V _{eff}
Output I, II/other circuits	reinforced insulation according to IEC 61140, rated insulation voltage 300 V _{eff}
Start-up override/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	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 \leq T _{amb} \leq 60 °C)
Supply	
Maximum safe voltage U _m	253 V AC (Attention! U _m is no rated voltage.)
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)

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Input II		terminals 13+, 14- non-intrinsically safe
Maximum safe voltage	U_m	40 V (Attention! The rated voltage can be lower.)
Output I, II		terminals 10, 11, 12; 16, 17, 18 non-intrinsically safe
Maximum safe voltage	U_m	253 V (Attention! The rated voltage can be lower.)
Contact loading		253 V AC/2 A/cos $\phi > 0.7$; 40 V DC/2 A resistive load (TÜV 99 ATEX 1471)
Output I, II		
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 .