



Switch Amplifier KFU8-SR-Ex2.W

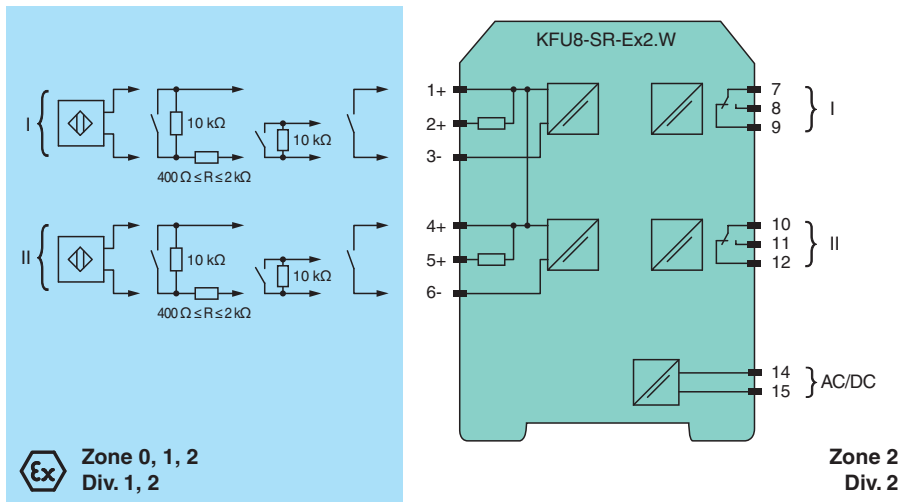
- 2-channel isolated barrier
- Universal usage at different power supplies
- Dry contact or NAMUR inputs
- Relay contact output
- Line fault detection (LFD)
- Reversible mode of operation
- Up to SIL 2 (SC 3) acc. to IEC/EN 61508



Function

This isolated barrier is used for intrinsic safety applications. It transfers digital signals (NAMUR sensors/mechanical contacts) from a hazardous area to a safe area. The proximity sensor or switch controls a form C changeover relay contact for the safe area load. The normal output state can be reversed using switches S1 and S2. Switch S3 is used to enable or disable line fault detection of the field circuit. During an error condition, the relays revert to their de-energized state and the LEDs indicate the fault according to NAMUR NE44.

Connection



Technical Data

General specifications

Signal type Digital Input

Functional safety related parameters

Safety Integrity Level (SIL) SIL 2

Systematic capability (SC) SC 3

Supply

Connection terminals 14, 15

Rated voltage U_r 19 ... 30 V DC / 90 ... 253 V AC 50 ... 60 Hz

Power dissipation/power consumption $\leq 1.3 \text{ W} / \leq 1.3 \text{ W} ; 3.6 \text{ VA}$

Input

Connection side field side

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

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Technical Data

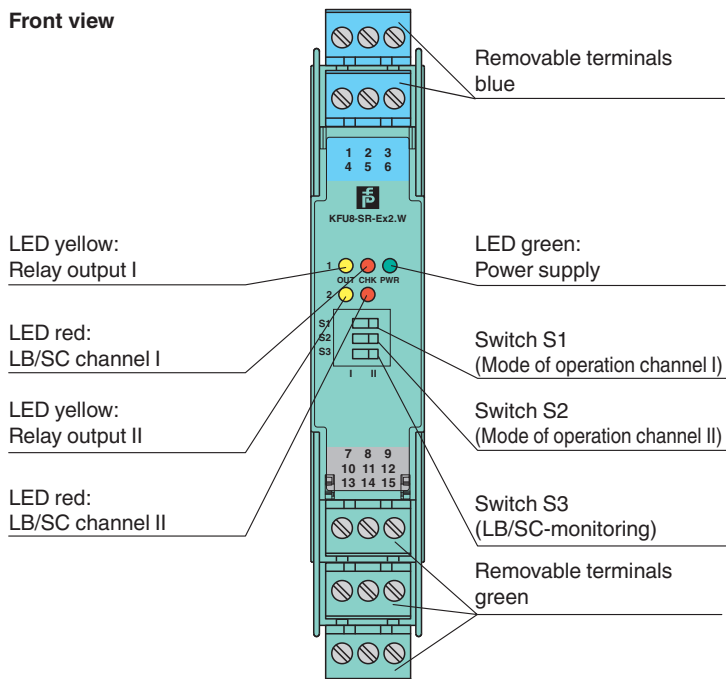
Connection	terminals 1+, 2+, 3-; 4+, 5+, 6-		
Rated values	acc. to EN 60947-5-6 (NAMUR)		
Open circuit voltage/short-circuit current	approx. 8 V DC / approx. 8 mA		
Switching point/switching hysteresis	1.2 ... 2.1 mA / approx. 0.2 mA		
Line fault detection	breakage $I \leq 0.1$ mA , short-circuit $I > 6$ mA		
Pulse/Pause ratio	min. 20 ms / min. 20 ms		
Output			
Connection side	control side		
Connection	output I: terminals 7, 8, 9 ; output II: terminals 10, 11, 12		
Output I, II	signal ; relay		
Contact loading	250 V AC/2 A/cos $\phi > 0.75$; 126.5 V AC/4 A/cos $\phi > 0.75$; 40 V DC/2 A resistive load		
Minimum switch current	2 mA / 24 V DC		
Energized/De-energized delay	approx. 20 ms / approx. 20 ms		
Mechanical life	10^7 switching cycles		
Transfer characteristics			
Switching frequency	≤ 10 Hz		
Galvanic isolation			
Input/Output	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}		
Input/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}		
Output/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}		
Output/Output	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}		
Indicators/settings			
Display elements	LEDs		
Control elements	DIP switch		
Configuration	via DIP switches		
Labeling	space for labeling at the front		
Directive conformity			
Electromagnetic compatibility			
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)		
Low voltage			
Directive 2014/35/EU	EN 61010-1:2010+A1:2019+A1:2019/AC:2019		
Conformity			
Electromagnetic compatibility	NE 21:2017 , EN 61326-3-1:2017 , EN IEC 61326-3-2:2018 , EN IEC 61326-1:2021 (industrial locations)		
Degree of protection	IEC 60529:1989+A1:1999+A2:2013		
Input	EN 60947-5-6:2000		
Ambient conditions			
Ambient temperature	-40 ... 60 °C (-40 ... 140 °F) extended ambient temperature range up to 70 °C (158 °F), refer to manual for necessary mounting conditions		
Mechanical specifications			
Degree of protection	IP20		
Connection	screw terminals		
Mass	approx. 150 g		
Dimensions	20 x 119 x 115 mm (0.8 x 4.7 x 4.5 inch) (W x H x D) , housing type B2		
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001		
Data for application in connection with hazardous areas			
EU-type examination certificate	FIDI 22 ATEX 0029 X		
Marking	Ⓢ II 3(1)G Ex ec nC [ia Ga] IIC T4 Gc Ⓢ II (1)D [Ex ia Da] IIIC Ⓢ I (M1) [Ex ia Ma] I		
Input	Ex ia		
Voltage	U _o	10.5 V	
Current	I _o	13 mA	
Power	P _o	34 mW (linear characteristic)	

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Technical Data

Supply			
Maximum safe voltage	U _m	253 V AC (Attention! U _m is no rated voltage.)	
Output			
Maximum safe voltage	U _m	253 V AC (Attention! The rated voltage can be lower.)	
Galvanic isolation			
Input/input		not available	
Input/Output		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V	
Input/power supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V	
Directive conformity			
Directive 2014/34/EU		EN IEC 60079-0:2018 , EN 60079-7:2015+A1:2018 , EN 60079-11:2012 , EN IEC 60079-15:2019	
International approvals			
UL approval		E106378	
Control drawing		116-0489	
Contact loading		250 V AC/2 A/cos φ > 0.75; 126.5 V AC/4 A/cos φ > 0.75; 30 V DC/2 A resistive load	
IECEx approval			
IECEx certificate		IECEx FIDI 22.0003X	
IECEx marking		Ex ec nC [ia Ga] IIC T4 Gc , [Ex ia Da] IIIC , [Ex ia Ma] I	
General information			
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com .	

Assembly




Accessories

	KF-ST-5GN	Terminal block for KF modules, 3-pin screw terminal, green
	KF-ST-5BU	Terminal block for KF modules, 3-pin screw terminal, blue

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Accessories

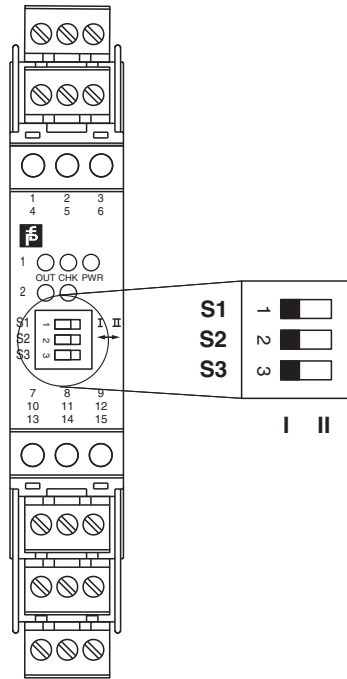
	KF-CP	Red coding pins, packaging unit: 20 x 6
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Configuration



Switch position

S	Function		Position
1	Mode of operation output I (relay) energized	with high input current	I
		with low input current	II
2	Mode of operation output II (relay) energized	with high input current	I
		with low input current	II
3	Line fault detection	ON	I
		OFF	II

Operating states

Control circuit	Input signal
Initiator high impedance/contact opened	low input current
Initiator low impedance/contact closed	high input current
Lead breakage, lead short circuit	Line fault

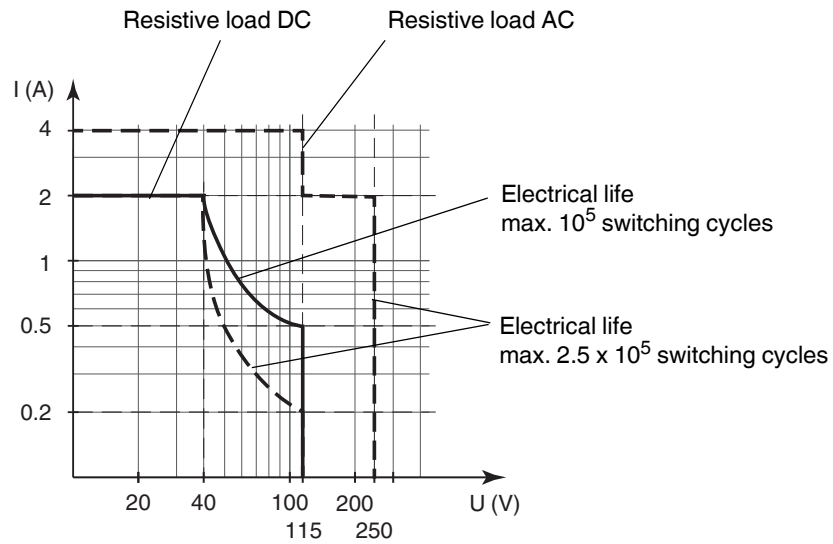
Factory setting: switch 1, 2 and 3 in position I

Characteristic Curve

Maximum switching power of output contacts

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The maximum number of switching cycles is depending on the electrical load and may be higher when reduced currents and voltages are applied.