



# Switch Amplifier KFU8-SR-Ex1.W

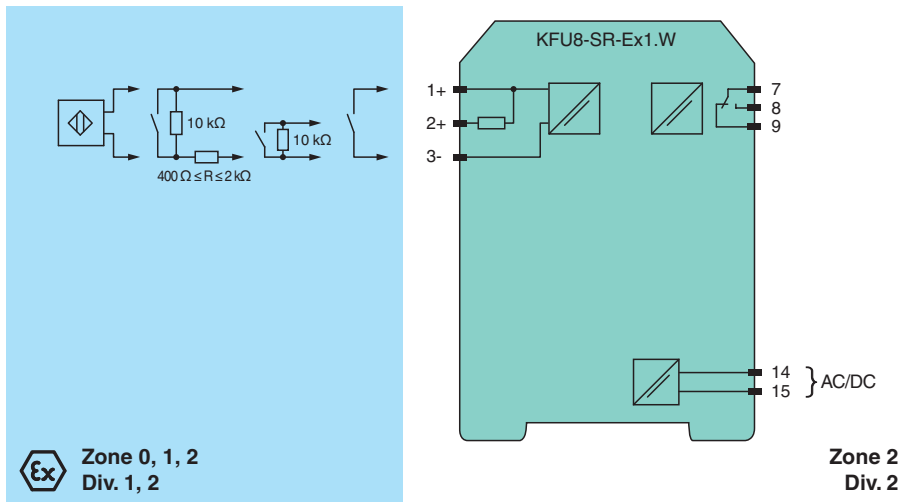
- 1-channel isolated barrier
- Universal usage at different power supplies
- Dry contact or NAMUR inputs
- Relay contact output
- Line fault detection (LFD)
- Reversible mode of operation
- Up to SIL 2 (SC 3) acc. to IEC/EN 61508



## 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 barrier output changes state when the input signal changes state. The normal output state can be reversed using switch S1. Switch S3 is used to enable or disable line fault detection of the field circuit. During an error condition, relays revert to their de-energized state and LEDs indicate the fault according to NAMUR NE44.

## Connection



## Technical Data

<b>General specifications</b>	
Signal type	Digital Input
<b>Functional safety related parameters</b>	
Safety Integrity Level (SIL)	SIL 2
Systematic capability (SC)	SC 3
<b>Supply</b>	
Connection	terminals 14, 15
Rated voltage	$U_r$ 19 ... 30 V DC / 90 ... 253 V AC 50 ... 60 Hz
Power dissipation/power consumption	$\leq 1 \text{ W} / \leq 1 \text{ W} ; 3 \text{ VA}$
<b>Input</b>	
Connection side	field side

Release date: 2023-01-03 Date of issue: 2023-01-03 Filename: 204137\_eng.pdf

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

Pepperl+Fuchs Group USA: +1 330 486 0002 Germany: +49 621 776 2222 Singapore: +65 6779 9091  
 www.pepperl-fuchs.com pa-info@us.pepperl-fuchs.com pa-info@de.pepperl-fuchs.com pa-info@sg.pepperl-fuchs.com



## Technical Data

Connection	terminals 1+, 2+, 3-
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
<b>Output</b>	
Connection side	control side
Connection	terminals 7, 8, 9
Output	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 <sup>7</sup> switching cycles
<b>Transfer characteristics</b>	
Switching frequency	< 10 Hz
<b>Galvanic isolation</b>	
Input/Output	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Input/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Output/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
<b>Indicators/settings</b>	
Display elements	LEDs
Control elements	DIP switch
Configuration	via DIP switches
Labeling	space for labeling at the front
<b>Directive conformity</b>	
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
<b>Conformity</b>	
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
<b>Ambient conditions</b>	
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
<b>Mechanical specifications</b>	
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
<b>Data for application in connection with hazardous areas</b>	
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 <sub>o</sub> 10.5 V
Current	I <sub>o</sub> 13 mA
Power	P <sub>o</sub> 34 mW (linear characteristic)
Supply	

Release date: 2023-01-03 Date of issue: 2023-01-03 Filename: 204137\_eng.pdf

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

 Pepperl+Fuchs Group  
www.pepperl-fuchs.com

 USA: +1 330 486 0002  
pa-info@us.pepperl-fuchs.com

 Germany: +49 621 776 2222  
pa-info@de.pepperl-fuchs.com

 Singapore: +65 6779 9091  
pa-info@sg.pepperl-fuchs.com

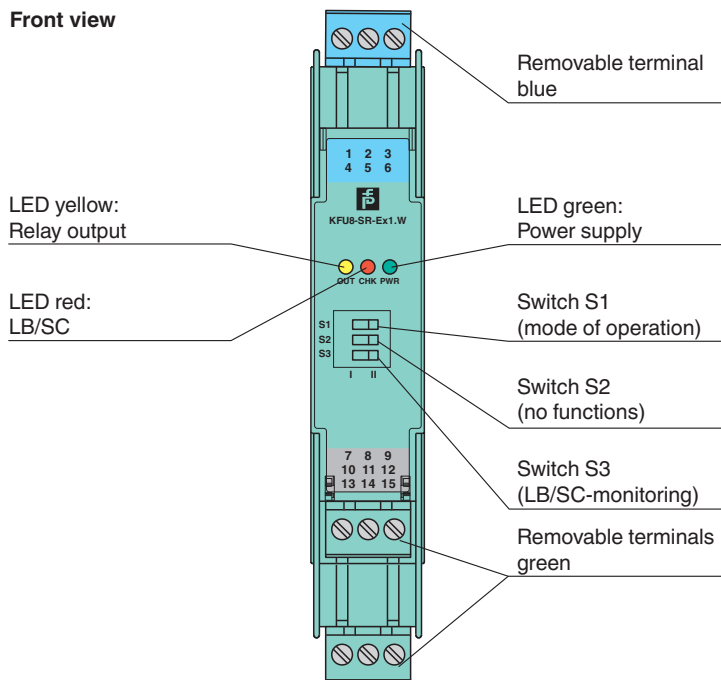
 **PEPPERL+FUCHS**

**Technical Data**

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/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
<b>International approvals</b>		
UL approval		E106378
Control drawing		116-0489
Contact loading		250 V AC/2 A/cos $\phi > 0.75$ ; 126.5 V AC/4 A/cos $\phi > 0.75$ ; 30 V DC/2 A resistive load
<b>IECEx approval</b>		
IECEx certificate		IECEx FIDI 22.0003X
IECEx marking		Ex ec nC [ia Ga] IIC T4 Gc , [Ex ia Da] IIIC , [Ex ia Ma] I
<b>General information</b>		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

**Assembly**

Front view



**Accessories**

	<b>KF-ST-5GN</b>	Terminal block for KF modules, 3-pin screw terminal, green
	<b>KF-ST-5BU</b>	Terminal block for KF modules, 3-pin screw terminal, blue
	<b>KF-CP</b>	Red coding pins, packaging unit: 20 x 6

Release date: 2023-01-03 Date of issue: 2023-01-03 Filename: 204137\_eng.pdf

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

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

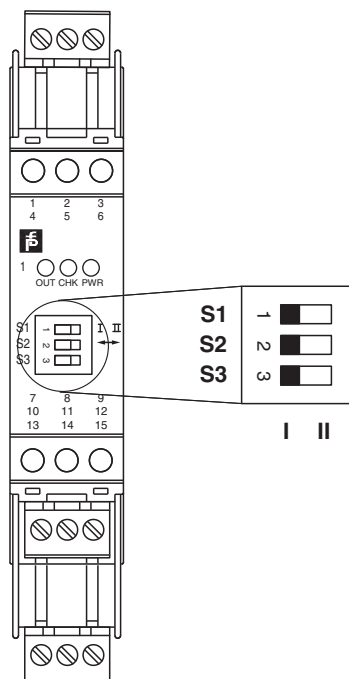
USA: +1 330 486 0002  
pa-info@us.pepperl-fuchs.com

Germany: +49 621 776 2222  
pa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
pa-info@sg.pepperl-fuchs.com

**PEPPERL+FUCHS**

**Configuration**



**Switch position**

S	Function		Position
1	Mode of operation output (relay) energized	with high input current	I
		with low input current	II
2	No function		
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

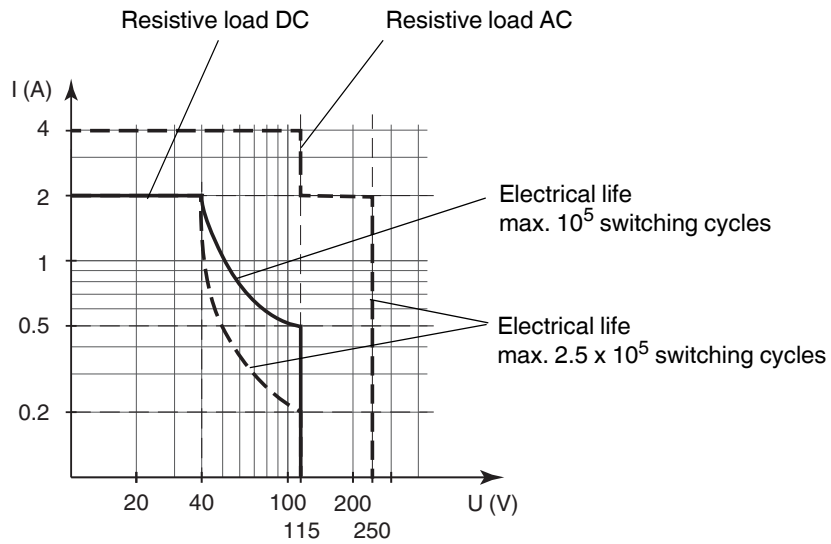
Factory setting: switch 1, 2 and 3 in position I

**Characteristic Curve**

**Maximum switching power of output contacts**

Release date: 2023-01-03 Date of issue: 2023-01-03 Filename: 204137\_eng.pdf

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



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

Release date: 2023-01-03 Date of issue: 2023-01-03 Filename: 204137\_eng.pdf

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

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0002  
pa-info@us.pepperl-fuchs.com

Germany: +49 621 776 2222  
pa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
pa-info@sg.pepperl-fuchs.com

 **PEPPERL+FUCHS**



**SCATTERGOOD  
& JOHNSON LTD**  
ELECTRICAL ENGINEERING & FLUID CONTROL DISTRIBUTORS

Est.1899

At Scattergood & Johnson Ltd, we pride ourselves on being a technical distributor to specialist industries.

Working with a range of quality product manufacturers across a number of specialist markets, we are not your average 'box shifter' - we are your technical and supply chain partner.

We fully support every product we sell - for free! Our internal team and external sales engineers can answer any product or application question, no matter the complexity.

Backing up this technical ability is a range of 50,000+ products available from stock for nationwide next day delivery (same day if required!), or you can collect what you need from any of our trade counters around the UK.

Select your specialist interest below to learn more about how we can help.



Online, In Branch and On the Road - Scattergood & Johnson Ltd, there when you need us.

**[www.scatts.co.uk](http://www.scatts.co.uk)**