



- 2-channel
- Control circuit EEx ia IIC
- 24 V DC rated operational voltage
- Reversible mode of operation
- Lead breakage (LB) monitoring and short-circuit (SC) monitoring
- 1 signal output per channel with 1 NO

KFD2-SR-Ex2

Successor KFD2-SR2-Ex2

Function

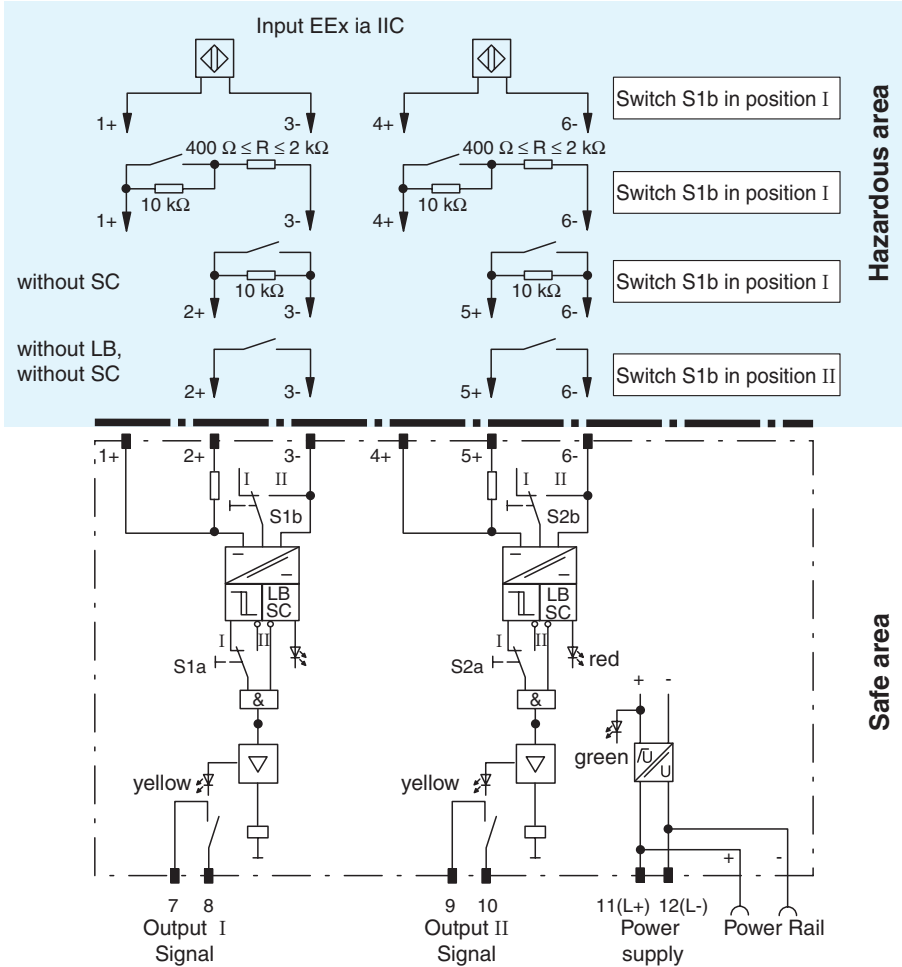
The transformer isolated barrier transfers digital signals from the hazardous area. Sensors per DIN EN 60947-5-6 (NAMUR) and mechanical contacts may be used as alarms.

External faults are indicated according to NAMUR NE 44 realised by a red flashing LED.

The inputs are safely isolated from the inputs, outputs and the power supply per DIN EN 50020.

The outputs and the power supply are galvanically isolated per IEC 61140 with a rated insulation voltage of 300 V_{eff}.

Connection



Composition

Front View

Housing type A4
(see system description)

LED gelb:
Relay output I

LED yellow:
LB and SC channel I

LED yellow:
Relay output II

LED red:
LB and SC channel II

Switch S1b and S2b
(LB-monitoring, channel I/II
installation position
below the terminals)

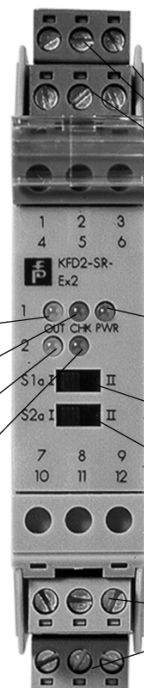
removable terminals
blue

LED green:
Power supply

Switch S1a
(mode of operation)

Switch S2a
(mode of operation)

removable terminals
green



Supply		
Connection		Power Rail or terminals 11 (L+), 12 (L-)
Rated voltage		20 ... 35 V DC
Ripple		≤ 10 %
Rated current		47 ... 27 mA
Input		
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
Pulse/Pause ratio		≥ 20 ms / ≥ 20 ms
Lead monitoring		breakage I ≤ 0,1 mA , short-circuit I ≥ 6 mA
Output		
Connection		output I: terminals 7, 8 ; output II: terminals 9, 10
Contact loading		253 V AC / 2 A / cos φ > 0.7; 40 V DC / 2 A resistive load;
Energised/De-energised delay		approx. 20 ms / approx. 20 ms
Mechanical life		5 x 10 ⁷ switching cycles
Transfer characteristics		
Switching frequency		≤ 25 Hz
Electrical isolation		
Output/power supply		reinforced insulation according to IEC 61140, rated insulation voltage 300 V _{eff}
Output/Output		basic insulation according to IEC 61140, rated insulation voltage 300 V _{eff}
Directive conformity		
Electromagnetic compatibility		standards
Directive 89/336/EC		EN 61326, EN 50081-2, NE 21
Standard conformity		
Climatic conditions		acc. to DIN IEC 721
Ambient conditions		
Ambient temperature		-20 ... 60 °C (253 ... 333 K)
Mechanical specifications		
Protection degree		IP20
Mass		approx. 150 g
Data for application in conjunction with hazardous areas		
EC-Type Examination Certificate		PTB 00 ATEX 2082 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		⊕ II (1) G D [EEx ia] IIC [circuit(s) in zone 0/1/2]
Input		EEx ia IIC
Voltage U ₀		12,7 V
Current I ₀		20 mA
Power P ₀		62 mW (linear characteristic)
Supply		
Safety maximum voltage U _m		253 V AC / 125 V DC (Attention! U _m is no rated voltage.)
Type of protection [EEx ia and EEx ib]		
Explosion group	IIA	IIB IIC
External capacitance	25,4 μF	7,1 μF 1,1 μF
External inductance	600 mH	330 mH 90 mH
Output		
Contact loading		253 V AC / 4 A / cos φ ≥ 0.7; 40 V DC / 0.5 A resistive load
Safety maximum voltage U _m		253 V AC (Attention! The rated voltage can be lower.)
Electrical isolation		
Input/input		safe electrical isolation acc. to EN 50020, voltage peak value 30 V
Input/Output		safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Input/power supply		safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity		
Directive 94/9 EC		EN 50014, EN 50020
Entity parameter		
Certification number		J.I.3002773
FM control drawing		No. 116-0035
Suitable for installation in division 2		yes
Connection		terminals 1, 3; 2, 3; 4, 6; 5, 6
Input I		
Voltage V _{OC}		12,9 V
Current I _t		19,8 mA

034784_ENG.xml
11/19/04

Explosion group	A&B	C&E	D, F&G
Max. external capacitance C_a	1,273 μ F	3,82 μ F	10,18 μ F
Max. external inductance L_a	84,8 mH	254,4 mH	678,4 mH
Safety parameter			
UL control drawing	E 106378		
CSA control drawing	LR 36087-19		
Control drawing	No. 116-0047		
Connection	terminals 1, 3; 2, 3; 4, 6; 5, 6		
Input I			
Safety parameter	12,6 V / 650 Ohm		
Voltage V_{OC}	12,9 V		
Current I_{SC}	19,8 mA		
Explosion group	A&B	C&E	D, F&G
Max. external capacitance C_a	1,273 μ F	3,82 μ F	10,18 μ F
Max. external inductance L_a	84,88 mH	298,7 mH	744,4 mH

Supplementary information

EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed. For information see www.pepperl-fuchs.com.

Accessories

PR-03 Power Rail

UPR-03 Power Rail

KFD2-EB2 power feed module

The devices are supplied with 24 V DC through the KFD2-EB2 power feed module and the PR-03 or the UPR-03 Power Rail. Each power feed module monitors and provides protection for groups of as many as 100 individual devices. The PR-03 Power Rail is an insert component for the DIN rail. The UPR-03 Power Rail is a complete unit consisting of an electrical insert and an aluminium DIN rail measuring 35 mm x 15 mm x 2000 mm. The devices are simply snapped in place to make electrical contact. If a Power Rail is not being used, power can be supplied to the devices directly through the device terminals.