



Transformer Isolated Barrier KFD2-SR-Ex1.W

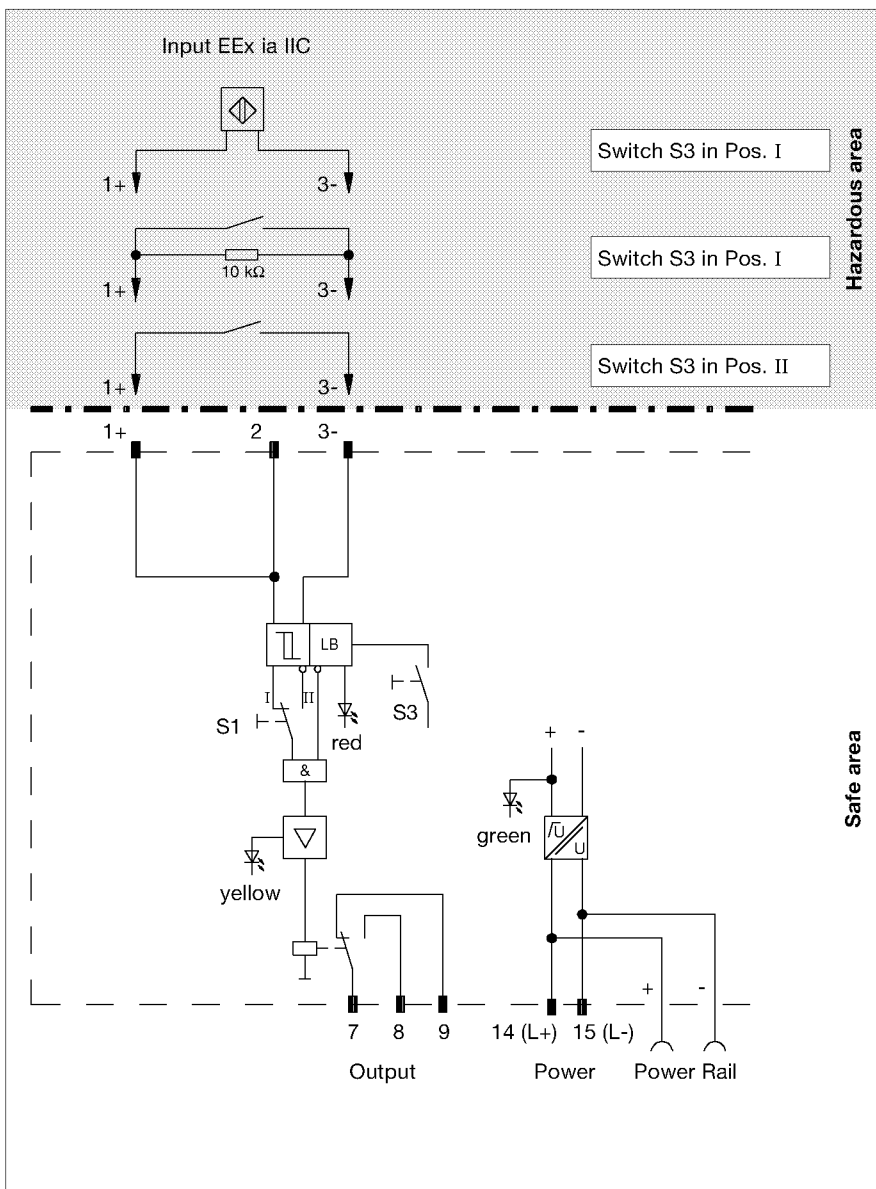


Output: Relay

- Single Channel
- Hazardous Field Circuit EEx ia IIC and Class I, Div 1, Groups A-G
- DC 24 V Nominal Power Supply
- Selectable Mode of Operation
- 1 Signal Output with 1 Form 'C' Relay
- Lead Breakage (LB) Monitoring
- EMC in acc. with NAMUR NE 21

This Model will replace KFD2-SR-Ex1 & KHD2-SR-Ex1.P

This device is a single-channel, transformer-isolated intrinsic safety barrier with a built-in amplifier which isolates and transfers discrete signals (NAMUR sensors/mechanical contacts) from a hazardous area to a safe area. It may also be used to act as an amplifier/interface for discrete signals in non-explosive applications. Barrier output changes state when the input signal changes state. The normal output state can be reversed through the mode of operation switch.



Front View

Housing type C
(see page 23)

LED
Relay output (yellow)

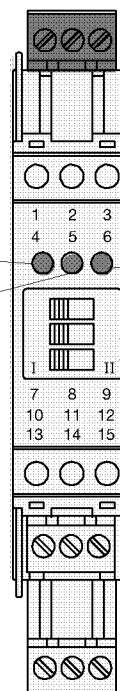
LED
LB (red)

LED
Power (green)

Switch S1
(mode of operation)

Switch S2
(no functions)

Switch S3
(LB Monitoring)





Technical Data Power supply Nominal voltage Ripple Max. current consumption	<div>Power Rail or Terminals, 14 (L+), 15 (L-)</div> DC 20 V ... 30 V $\leq 10 \%$ 23 mA
Field circuit (Intrinsically safe) Nominal data Open circuit voltage / Short circuit current Switch point / Switching hysteresis Input pulse length / Input pulse pause Lead monitoring	<div>Terminals 1+, 3-</div> to DIN 19 234 resp. NAMUR $\approx DC 8 V / \approx 8 mA$ 1.2 mA ... 2.1 mA / $\approx 0.2 mA$ $\geq 20 ms / \geq 20 ms$ Breakage I $\leq 0.1 mA$
Details of Certificate of Conformity Voltage U_0 Current I_0 Power P_0 Permissible circuit values Ignition protection class, category Explosion group Max. external capacitance Max. external inductance Fail-safe maximum voltage U_m Power supply	<div>Other international approvals see page 454</div> PTB No. Ex-94.C.2086 10.5 V 13 mA 34 mW <div> <div>[EEx ia]</div> <div> IIB / IIC 2.1 μF / 0.62 μF 7 mH / 3 mH </div> <div> <div>[EEx ib]</div> <div> IIB / IIC 22.0 μF / 3.0 μF 740 mH / 200 mH </div> </div> DC 40 V </div>
Entity Parameters Non incndive Voltage V_{oc} Current I_{sc} Voltage V_t Current I_t Explosion group Max. external capacitance (C_e) Max. external inductance (L_e)	<div>Terminals</div> FM "in preparation" Yes / No V mA V mA A&B C&E D, F&G μF μF μF mH mH mH
Safety Parameters	<div>Terminals</div> CSA "in preparation"
Output (Not intrinsically safe) Output: Contact load Mechanical service life Response time: Energising delay / De-energising delay	<div>Terminals 7, 8, 9</div> AC: 253 V / 2 A / $\cos \varphi > 0.7$; DC: 40 V / 2 A resistance load 10^8 operations $\approx 20 ms / \approx 20 ms$
Transfer characteristics Switching frequency	$< 10 Hz$
Conformity to standard Input Isolation co-ordination Galvanic isolation Climatical condition EMC	to DIN 19234 (NAMUR) to EN 50 178 to EN 50 178 to IEC 721 to EN 50 081-2 / EN 50 082-2, NAMUR NE 21
Weight Ambient temperature Max. wire size	$\approx 150 g (\approx 5.3 oz)$ $-20 ^\circ C \dots +60 ^\circ C (-4 ^\circ F \dots +140 ^\circ F)$ 2,5 mm ² (14 AWG)