

- 1-Channel
- Control circuit EEx ia IIC Class I, Div 1, Groups A-G
- Reversible mode of operation
- 2 Outputs
 - 2 Signal outputs with 1 alternator each or
 - 1 Signal output and 1 fault signal output with 1 alternator each
- EMC per NAMUR NE 21

DC 24 V:

KFD2-SR2-Ex1.W.LB

replaces model KFD2-SR-Ex1.LK and KFD2-SR-Ex1.2S
KHD2-SR2-Ex1.W.LB

AC 115 V:

KFA5-SR2-Ex1.W.LB

KHA5-SR2-Ex1.W.LB

AC 230 V:

KFA6-SR2-Ex1.W.LB

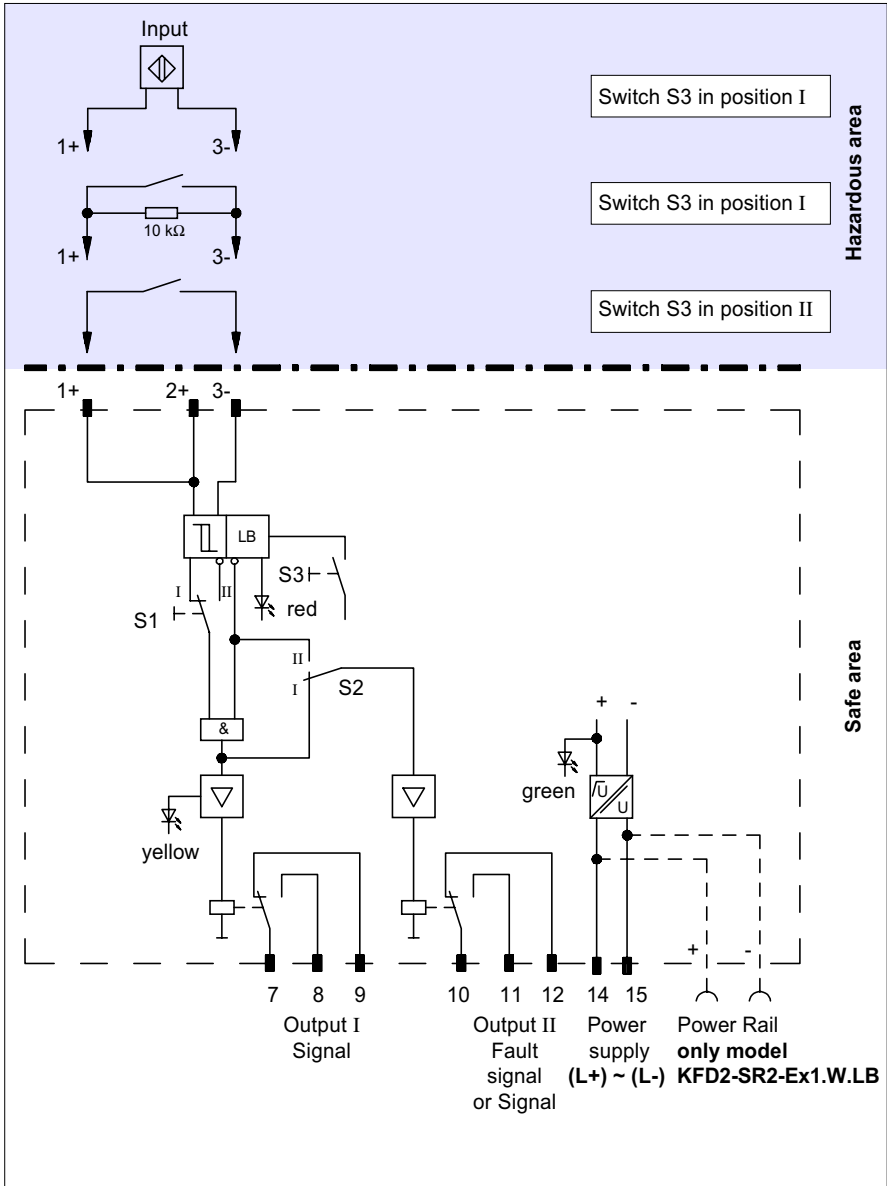
KHA6-SR2-Ex1.W.LB

The transformer isolated barrier transfers digital signals from the hazardous area. Sensors per DIN 19 234 (NAMUR) and mechanical contacts may be used as alarms. The control circuit is monitored for lead breakage (LB).

AC units have a low heat build-up due to voltage peak value generation. This switching technique has been submitted for a patent.

Output II can be switched as a signal output or a fault signal output with the S2 switch. The input is safely isolated from the output and the power supply in accordance with DIN EN 50 020. The output and the power supply are safely isolated from each other per DIN VDE 0106 Section 101.

The KF units are designed with removeable terminals and the KH units (Catalog Interface DIN-Rail Housing housing type D see page 15) with integrated terminals.



Front View

Housing type C (see page 14)

LED yellow: Relay output

LED red: LB

removable terminal

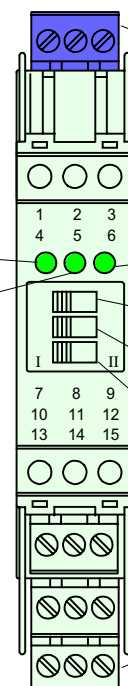
LED green: Power supply

Switch S1 (Mode of operation)

Switch S2 (Output selection II)

Switch S3 (LB-monitoring)

removable terminal



P000287E 29.05.98



Technical data	KHD2-SR2-Ex1.W.LB	KHA5-SR2-Ex1.W.LB	KHA6-SR2-Ex1.W.LB																																			
Power supply Nominal voltage Maximum voltage U_m Ripple Nominal current Power consumption	Terminals 14 (L+), 15 (L-) DC 20 V ... 30 V DC 40 V ≤ 10 % ≤ 50 mA -	Terminals 14, 15 AC 103.5 V ... 126 V, 45 Hz ... 65 Hz DC 126.5 V - - ≤ 1 W	Terminals 14, 15 AC 207 V ... 253 V, 45 Hz ... 65 Hz DC 253 V - - ≤ 1.3 W																																			
Input (Intrinsically safe) Nominal data Input pulse length / Input pulse interval Lead monitoring	Terminals 1+, 3- per DIN 19 234 or NAMUR, ≈ DC 8 V / ≈ 8 mA ≥ 20 ms / ≥ 20 ms Breakage $J \leq 0.1$ mA																																					
Certificate of Conformity Peak Values $U_0 / I_0 / P_0$ Allowable circuit values Ignition protection method, category Explosion group Max. external capacitance Max. external inductance Ignition protection method, category Explosion group Max. external capacitance Max. external inductance	PTB Nr. Ex-94.C.2086 for additional international approvals see page 384 <table border="1"> <tr> <td>10.5 V / 13 mA / 34 mW</td> <td>10.6 V / 19 mA / 51 mW</td> <td>10.6 V / 19 mA / 51 mW</td> </tr> </table> <table border="1"> <tr> <td>[EEx ia]</td> <td></td> <td></td> <td></td> </tr> <tr> <td>IIB / IIC</td> <td>IIB / IIC</td> <td>IIB / IIC</td> <td>IIB / IIC</td> </tr> <tr> <td>2.1 μF / 0.62 μF</td> <td>2.1 μF / 0.59 μF</td> <td>2.1 μF / 0.59 μF</td> <td>2.1 μF / 0.59 μF</td> </tr> <tr> <td>7 mH / 3 mH</td> <td>5 mH / 3 mH</td> <td>5 mH / 3 mH</td> <td>5 mH / 3 mH</td> </tr> <tr> <td>[EEx ib]</td> <td></td> <td></td> <td></td> </tr> <tr> <td>IIB / IIC</td> <td>IIB / IIC</td> <td>IIB / IIC</td> <td>IIB / IIC</td> </tr> <tr> <td>22 μF / 3 μF</td> <td>20 μF / 2.9 μF</td> <td>20 μF / 2.9 μF</td> <td>20 μF / 2.9 μF</td> </tr> <tr> <td>740 mH / 200 mH</td> <td>360 mH / 100 mH</td> <td>360 mH / 100 mH</td> <td>360 mH / 100 mH</td> </tr> </table>			10.5 V / 13 mA / 34 mW	10.6 V / 19 mA / 51 mW	10.6 V / 19 mA / 51 mW	[EEx ia]				IIB / IIC	IIB / IIC	IIB / IIC	IIB / IIC	2.1 μF / 0.62 μF	2.1 μF / 0.59 μF	2.1 μF / 0.59 μF	2.1 μF / 0.59 μF	7 mH / 3 mH	5 mH / 3 mH	5 mH / 3 mH	5 mH / 3 mH	[EEx ib]				IIB / IIC	IIB / IIC	IIB / IIC	IIB / IIC	22 μF / 3 μF	20 μF / 2.9 μF	20 μF / 2.9 μF	20 μF / 2.9 μF	740 mH / 200 mH	360 mH / 100 mH	360 mH / 100 mH	360 mH / 100 mH
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Entity Parameters Suitable for Div 2 installation/mounting Voltage V_{oc} Current I_{sc} Voltage V_t Current I_t Explosion group Max. external capacitance (C_a) Max. external inductance (L_a) Safety Parameters Safety Parameters	FM Control Drawing No. 116-0035 Terminals 1+, 3- No 12.9 V 19.8 mA - - A&B C&E D, F&G 1.273 μF 3.82 μF 10.18 μF 84.88 mH 298.7 mH 744.4 mH CSA Control Drawing No. 116-0047 Terminals 1+, 3- 12.6 V / 650 Ohms																																					
Output (Not intrinsically safe) Output I: Signal Output II: Signal or Fault signal Contact load Mechanical life Energizing delay / De-energizing delay	Terminals 7, 8, 9 Terminals 10, 11, 12 AC: 253 V / 2 A / $\cos \varphi > 0.7$; DC: 40 V / 2 A ohmic load 10 ⁷ Switchings ≈ 20 ms / ≈ 20 ms																																					
Transfer characteristics Switching frequency	≤ 10 Hz																																					
Galvanic isolation Input / Output Input / Power supply Output / Power supply Output / Output	Safe galvanic isolation per EN 50 020, voltage peak value 375 V Safe galvanic isolation per EN 50 020, voltage peak value 375 V Safe isolation per DIN VDE 0106, design isolation voltage 253 V _{eff} Basic insulation per DIN EN 50 178, design isolation voltage 253 V _{eff}																																					
Conformity to standard EMC / Electromagnetic compatibility	per EN 50 081-2 / EN 50 082-2, NAMUR NE 21																																					
Weight Ambient temperature	≈ 150 g (≈ 5.3 oz) -20 °C ... +60 °C (-4 °F ... 140 °F)																																					
	See page 12 for additional information on mechanical and electrical standards of the K-System.																																					