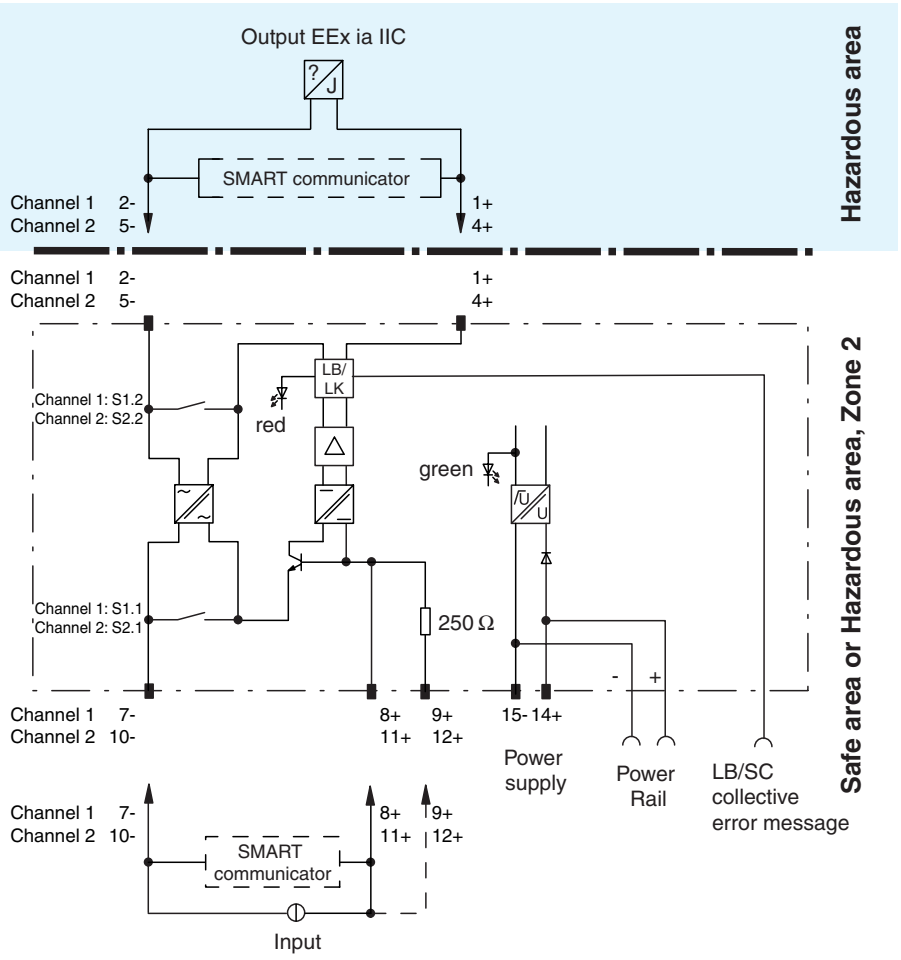
- 2-channel
- Output EEx ia IIC
- Device installation permissible in zone 2
- Lead breakage (LB) monitoring and short-circuit (SC) monitoring via Power Rail
- Conductive for HART communication (galvanically isolated)
- Accuracy 0.1 %
- EMC acc. to NAMUR NE 21

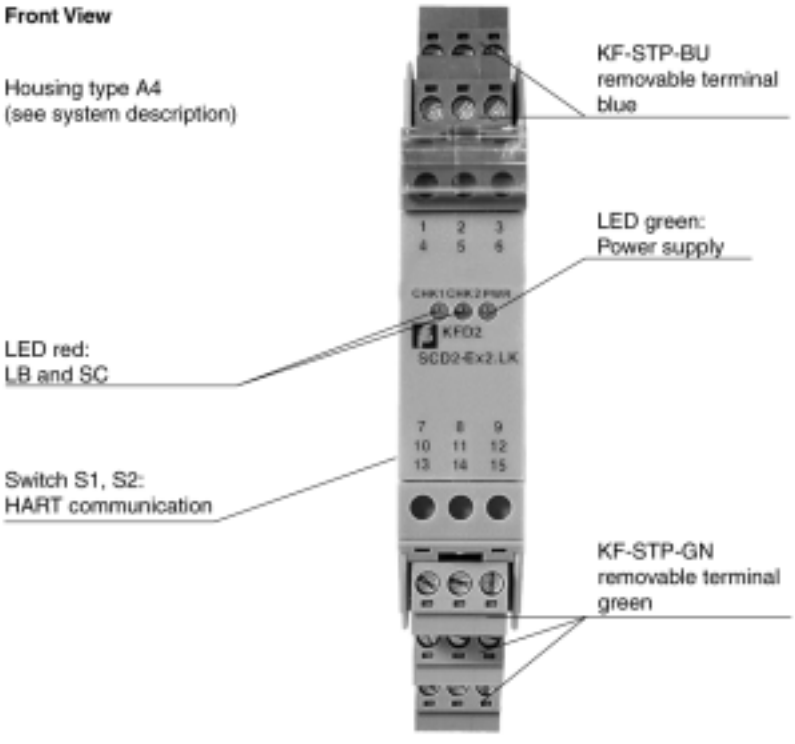
Function

A 4 mA ... 20 mA current is transferred from the safe area to the hazardous area.
Digital signals can be superimposed on the analogue values in either the hazardous area or the safe area. A bidirectional communication between a HART device in the field and the corresponding SMART communicator in the safe area is possible.
When the current source has a low AC impedance, it may be important to connect it to terminals 7- and 9+ or terminals 10-, 12+ in order to obtain a fault free HART transmission.
In order to facilitate the connection of a handheld terminal to the circuit, the KFD2-SCD2-Ex2.LK is usually delivered with KFD-STP-GN or KFD-STP-BU device connectors. The applicable test jacks are integrated into these connectors.

Lead monitoring, input characteristics
During lead breakage (> 800 Ohm) and short circuit (< 50 Ohm) the input resistance is >100 kOhm, the field current is < 1 mA and the red LED is flashing.
The voltage drop at the current input (terminal 7-, 8+ or 10-, 11+) is lower than 4 V. Thus, it corresponds to a compensating resistance of 200 Ohm at 20 mA. The AC input impedance corresponds to the output impedance of the unit.



Composition



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Supply				
Connection		Power Rail or terminals 14+, 15-		
Rated voltage		10 ... 35 V DC		
Ripple		within the supply tolerance		
Power loss		1,4 W		
Power consumption		1,8 W at 20 mA		
Input				
Connection		terminals 7-, 8+, (9+); 10-, 11+, (12+)		
Voltage drop U_d		approx. 4 V or internal resistance 200 Ohm at 20 mA		
Input resistance		> 100 kΩ, when wiring resistance in the field < 50 Ω or > 800 kΩ at 20 mA		
Safety maximum voltage U_m		250 V rms		
Current		4 ... 20 mA limited to approx. 25 mA		
Output				
Connection		terminals 1+, 2-; 4+, 5-		
Current		4 ... 20 mA		
Voltage		≥ 14 V at 20 mA		
Load		100 ... 700 Ω		
Transfer characteristics				
Deviation				
After calibration		at 293 K (20 °C): 10 µA incl. non-linearity, calibration, hysteresis, supply and load changes		
Temperature		1 µA/°C		
Rise time		< 100 µs (bounce from 10 ... 90 %)		
Standard conformity				
Coordination of insulation		acc. to DIN EN 50178		
Electrical isolation		acc. to DIN EN 50178		
Electromagnetic compatibility		acc. to EN 50081-2 / EN 50082-2, NAMUR NE 21		
Directive conformity				
Electromagnetic compatibility				
Directive 89/336/EG		EN 61326, EN 50081-2, NE 21		
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		BAS 00 ATEX 7240 , for additional certificates see www.pepperl-fuchs.com		
Voltage	U_0	25,2 V		
Current	I_0	93 mA		
Power	P_0	585 mW		
Supply				
Safety maximum voltage	U_m	250 V rms		
Type of protection [EEx ia]				
Explosion group		IIA	IIB	IIC
External capacitance		2,9 µF	0,82 µF	0,107 µF
External inductance		36 mH	17,7 mH	4,3 mH
Directive conformity				
Directive 94/9 EU		EN 50014, EN 50020		
Entity parameter				
Certification number		4Z6A5.AX		
FM control drawing		No. 116-0129		
Suitable for installation in division 2		yes		
Connection		terminals 2, 1		
Input I				
Voltage V_{OC}		25,9 V		
Current	I_t	94,5 mA		
Explosion group		A&B	C&E	D, F&G
Max. external capacitance C_a		0,17 µF	0,52 µF	1,38 µF
Max. external inductance L_a		4,04 mH	16,3 mH	33,1 mH
Safety parameter				
CSA control drawing		LR 65756-13		
Control drawing		No. 116-0132		
Connection		terminals 2, 1		
Input I				
Safety parameter		25,2 V / 280 Ohm		

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Voltage V_{OC}		25,2 V		
Current	I_{SC}	93 mA		
Explosion group		A&B	C&E	D, F&G
Max. external capacitance C_a		0,19 µF	0,57 µF	1,52 µF
Max. external inductance L_a		3,1 mH	16,7 mH	34 mH

Adjustment HART function

When using positioners, which do not meet the HART standard, set the switches to the 1 position (without HART function) (see adjustment table).

Switch		Position	Function
Channel 1	**Channel 2**		
S1.1 S1.2	S2.1 S2.2	0 (OFF) 0 (OFF)	HART
S1.1 S1.2	S2.1 S2.2	0 (OFF) 1 (ON)	non HART
S1.1 S1.2	S2.1 S2.2	1 (ON) 0 (OFF)	
S1.1 S1.2	S2.1 S2.2	1 (ON) 1 ON)	

Accessories

PR-03 Power Rail
UPR-03 Power Rail
KFD2-EB2 power feed module
The KFD2-EB2 power feed module and the PR-03 or the UPR-03 Power Rail are used to supply the devices with 24 VDC and at the same time to evaluate combined fault indications.
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.

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