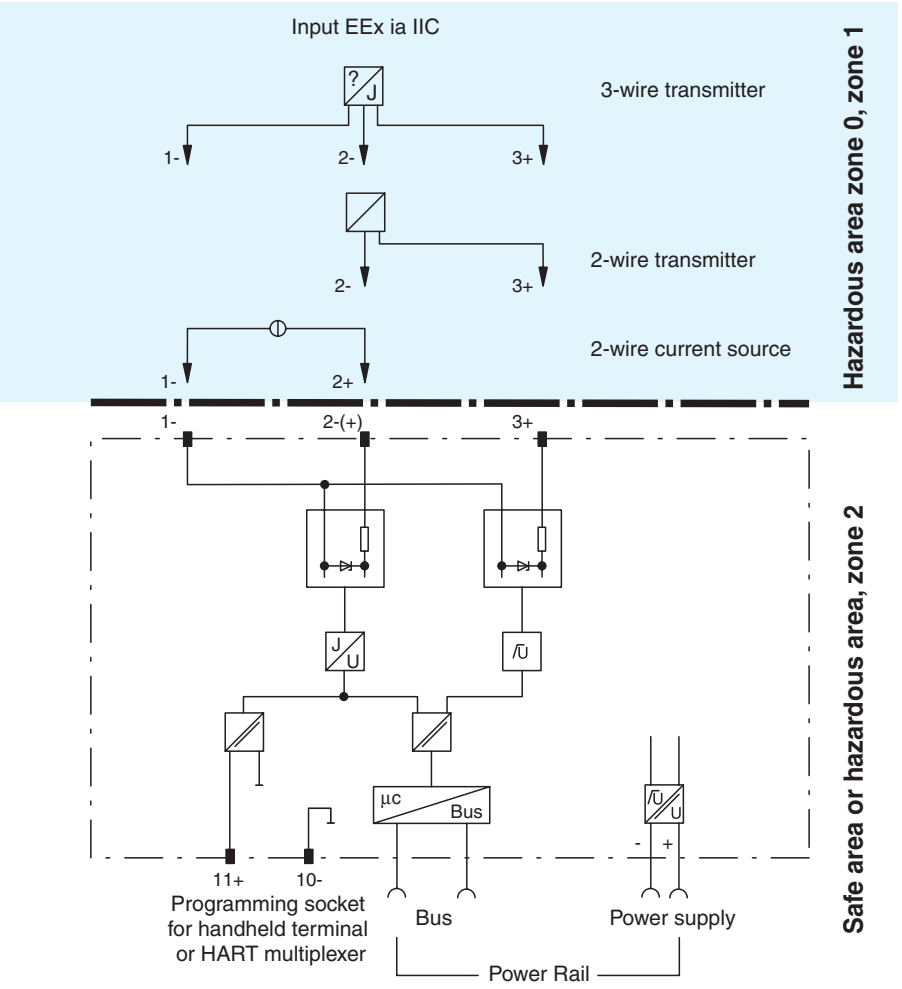
- 1-channel
- Input EEx ia IIC
- Device installation in Zone 2
- 24 V DC supply voltage
- Lead breakage (LB) and short-circuit (SC) monitoring
- 4 limit values
- Transfer of SMART signals into the hazardous area
- Power Rail bus
- EMC acc. to NAMUR NE 21

Function

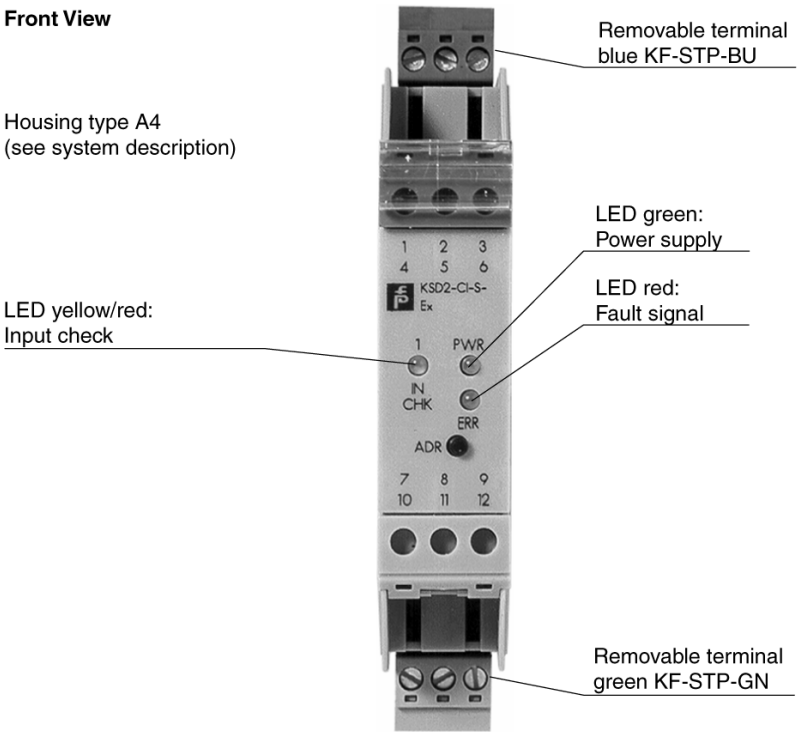
The KSD2-CI-S-Ex is designed for the connection of 2- or 3-wire transmitters. It may also be used as a repeater for 0/4 mA ... 20 mA signals (current source). With a supply voltage > 20 V DC it is guaranteed that at least 14.7 V at 20 mA is available in the hazardous area. The circuit (terminals 3+, 1-) is monitored for lead faults.

Connection



Composition

Front View



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Supply	
Connection	Power Rail
Rated voltage	20 ... 30 V DC
Ripple	< 10 %
Power loss	1.1 W , increase up to 2.2 W in the case of short-circuit between terminals 1 and 3 or 2 and 3
Power consumption	1.4 W , increase up to 2.2 W in the case of short-circuit between terminals 1 and 3 or 2 and 3
Input	
Connection	terminals 1, 2, 3
Input signal	0 ... 20 mA or 4 ... 20 mA
Input resistance	approx. 105 Ω , terminals 1, 2
Transmitter supply voltage	> 14.7 V at 20 mA
Line monitoring	breakage I ≤ 50 µA , short-circuit I > 25 mA
Output	
Connection	Power Rail
Interface	CAN protocol via Power Rail bus
Transfer characteristics	
Deviation	0.1 % of output signal range at 20 °C (293 K)
Influence of ambient temperature	0.01 % / K of output signal range
Electrical isolation	
Input/power supply, internal bus	safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 375 V
Directive conformity	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006
Explosion protection	
Directive 94/9/EC	EN 60079-0:2006, EN 60079-11: 2007
Standard conformity	
Insulation coordination	EN 50178:1997
Electrical isolation	EN 60079-11:2007
Electromagnetic compatibility	NE 21:2006
Protection degree	IEC 60529
Climatic conditions	IEC 60721
Ambient conditions	
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
Damaging gas	acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Protection degree	IP20
Connection	terminal connection ≤ 2.5 mm²
Mass	approx. 100 g
Dimensions	20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)
Mounting	DIN rail mounting
Data for application in connection with Ex-areas	
EC-Type Examination Certificate	BAS 99 ATEX 7182 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection	⟨Ex⟩ II (1)GD [EEx ia] IIC
Supply	Power Rail
Safety maximum voltage U_m	250 V (Attention! U_m is no rated voltage.)
Signal	CAN bus (Power Rail)
Safety maximum voltage U_m	250 V (Attention! U_m is no rated voltage.)
Input	terminals 3, 2, 1 and 3, 2
Voltage U_o	25.4 V
Current I_o	93 mA
Output	terminals 2, 1
Voltage U_o	3.6 V
Current I_o	0 mA
Power P_o	0 mW
Statement of conformity	TÜV 00 ATEX 1617 X , observe statement of conformity
Group, category, type of protection, temperature classification	⟨Ex⟩ II 3G EEx nA II T4
Electrical isolation	
Input/power supply, internal bus	safe electrical isolation acc. to IEC 60079-11:2007, voltage peak value 375 V

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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.

Function

2-wire transmitters are connected to terminals 2- and 3+. The input for the signal current is terminal 2. 2-wire transmitters with SMART communications are connected to terminals 3+ and 2-. The KSD2-CI-S-Ex is delivered standard with the KF-STP-** device connectors. These connectors are equipped with 2.3 mm jacks which may be used for connecting a SMART communicator. The KFD2-HMM-16 or KFD0-HMS-16 HART multiplexers can be connected to terminals 11+ and 10-.

3-wire transmitters are connected to terminals 3+, 2- and 1-. The transmitter power is supplied through the terminals 3+ and 1-. The signal input is terminal 2.

Current sources which produce a signal in the range of 0/4 mA ... 20 mA are connected to terminals 2+ and 1-. Therefore, the current flows in the signal input and can be transmitted in the safe area.

Application

- The supply of power to 2- or 3-wire transmitters and the transfer of the measurement current
- Current signal repeater
- The supply of SMART transmitters in the hazardous area and the transfer of the analogue measurement current in the safe area. The interface allows a bidirectional communication between the transmitter and a handheld terminal or a HART multiplexer. These devices can be connected in the safe area. The bus transfers exclusively the digitised signal current.
- Suited for the following SMART systems: ABB, Chessel, Endress+Hauser, Emerson, Foxboro, Smar, Yokogawa

Notes

Software functions

Adjustable by the **PACT***ware***™** human machine interface:

- TAG numbers, 28 alphanumeric characters, can be programmed into device
- Commentary, may be saved in PC memory
- Information on devices may be saved in PC memory
- Physical units are adjustable
  - list see system description RPI
- Lead monitoring selectable
- Separate detection and indication of lead breakage and lead short circuit
- 4 limit values
  - upper alarm level limit
  - upper warn level limit
  - lower alarm level limit
  - lower warn level limit
  - hysteresis adjustable
- Lower scale value and upper scale value of the measurement range
  - for the determination of the overflow and underflow range
  - for the configuration of the analogue monitor of the human machine interface
- Overrange and underrange alarm
- Malfunction output status
  - user defined
  - min.
  - max.
  - hold last value
- Simulation
  - of the input value
  - of the device diagnosis
  - of the process channel diagnosis

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