

Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Output 20.4 mA at 13.5 V DC
- 19 V DC ... 30 V DC input
- Line fault detection (LFD)
- Conformal coating
- Up to SIL3 acc. to IEC 61508

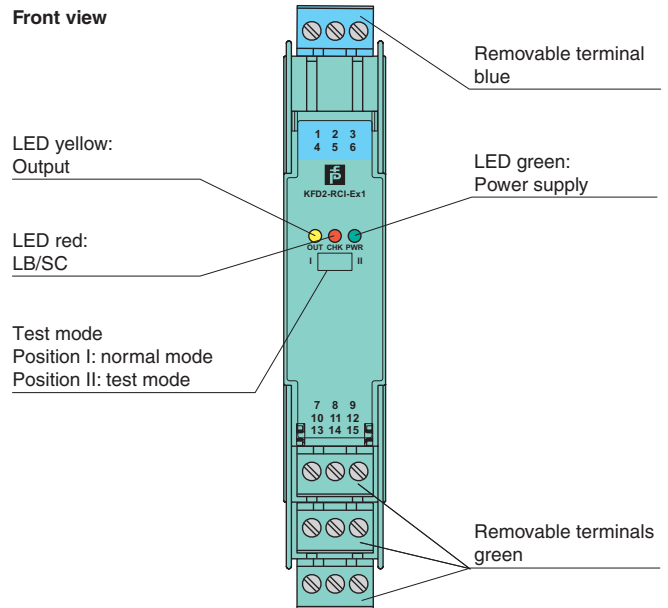
Function

This isolated barrier is used for intrinsic safety applications. The device can be used in shut down applications with HART positioners.

Via the logic input the positioner is energized or de-energized (shut down). Independent of the status, a second input enables HART communication with the positioner. With this the asset management system can request for example diagnostic information or can initiate a partial stroke test. The HART communication also works with de-energized positioner.

A unique collective error messaging feature is available when used with the Power Rail system.

Assembly

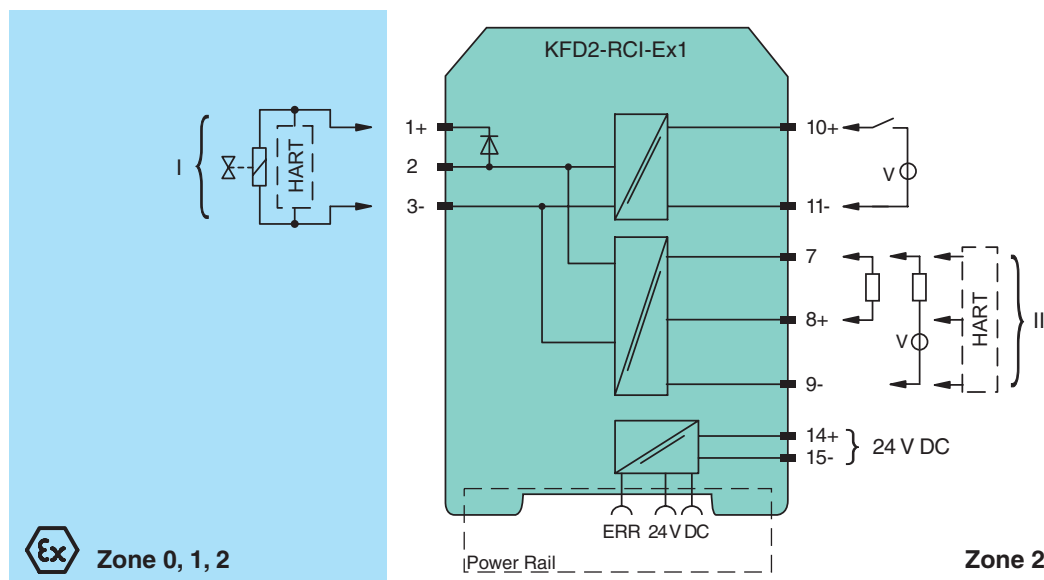


CE



SIL 3

Connection



General specifications		
Signal type		Digital Output
Supply		
Connection		Power Rail or terminals 14+, 15-
Rated voltage	U_r	19 ... 30 V DC
Rated current	I_r	< 35 mA
Power consumption		< 0.8 W
Input		
Connection		terminals 10+, 11-
Input current		40 mA at 19 ... 30 V DC
Signal level		1-signal: 19 ... 30 V DC 0-signal: 0 ... 5 V DC
Power consumption		< 1.2 W
Operating mode		loop powered
Output		
Output I		
Connection		terminals 1+, 3- (terminals 1+, 2 for test loop)
Current		1-signal: 20.4 mA 0-signal: 4.2 mA
Voltage		1-signal: > 13.5 V
Load		≤ 650 Ω
Response time		< 40 ms input to output
Line fault detection		short circuit voltage < 1 V , open circuit voltage > 16 V
Output II		
Connection		terminal 7: source (-) or sink (+), terminal 8: source (+), terminal 9: sink (-)
Current		11 mA source or sink mode
Voltage		9 ... 30 V sink mode from external supply
Load		≤ 650 Ω , source mode , for HART ≥ 230 Ω
Communication		pass-through of HART signal between input II and output
Galvanic isolation		
Input/power supply		functional insulation acc. to IEC 62103, rated insulation voltage 50 V _{eff}
Output II/power supply		functional insulation acc. to IEC 62103, rated insulation voltage 50 V _{eff}
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Conformity		
Electromagnetic compatibility		NE 21:2012
Degree of protection		IEC 60529:2001
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Degree of protection		IP20
Mass		approx. 150 g
Dimensions		20 x 119 x 115 mm (0.8 x 4.7 x 4.5 inch) , housing type B2
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with hazardous areas		
EU-Type Examination Certificate		
Marking		Ⓔ II (1)GD [Ex ia] IIC; [Ex iaD] [circuit(s) in zone 0/1/2/20/21/22]
Equipment		terminals 1+, 2 / 3-
Voltage	U_o	25.4 V
Current	I_o	93.6 mA
Power	P_o	595 mW (linear characteristic)
Supply		
Maximum safe voltage	U_m	253 V (Attention! The rated voltage can be lower.)
Input		
Maximum safe voltage	U_m	253 V (Attention! The rated voltage can be lower.)
Collective error message		
Maximum safe voltage	U_m	253 V (Attention! The rated voltage can be lower.)
Certificate		
Marking		PF 09 CERT 1438 X
Galvanic isolation		Ⓔ II 3G Ex nA IIC T4 Gc
Output I/other circuits		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-15:2010

Release date 2017-01-19 14:23 Date of issue 2017-01-19 216568_eng.xml

International approvals	
IECEX approval	IECEX CES 09.0008
Approved for	[Ex ia] IIC , [Ex iaD]
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com .

Function

The device supplies power to safety valve controller with HART functionality.

It is controlled by means of a logic circuit. Voltage signals in a range of 19 V DC ... 30 V DC are accepted as 1-signal. The 0-signal must be within a range of 0 V DC ... 5 V DC. The current consumption of the logic input is about 40 mA.

At full load, 13.5 V at 20.4 mA is available for the hazardous area load.

Line fault detection of the field circuit is indicated by a red LED. The error signal switches on if the field voltage is > 16 V for lead breakage (LB) or < 1 V for short circuit (SC).

This device provides the HART pass-through for maintenance and diagnostic of the solenoid valve. The HART communication is available both in ON condition and in OFF condition of the solenoid.

Accessories

Power feed module KFD2-EB2

The power feed module is used to supply the devices with 24 V DC via the Power Rail. The fuse-protected power feed module can supply up to 150 individual devices depending on the power consumption of the devices. Collective error messages received from the Power Rail activate a galvanically-isolated mechanical contact.

Power Rail UPR-03

The Power Rail UPR-03 is a complete unit consisting of the electrical insert and an aluminium profile rail 35 mm x 15 mm. To make electrical contact, the devices are simply engaged.

Profile Rail K-DUCT with Power Rail

The profile rail K-DUCT is an aluminum profile rail with Power Rail insert and two integral cable ducts for system and field cables. Due to this assembly no additional cable guides are necessary.



Power Rail and Profile Rail must not be fed via the device terminals of the individual devices!