

Features

- 1-channel isolated barrier
- 24 V DC supply (bus powered)
- Dry contact or NAMUR inputs
- Application-specific outputs
- Usable as signal splitter (1 input and 2 outputs)
- 2 passive transistor outputs (resistive)
- Line fault transparency (LFT)
- Up to SIL 2 acc. to IEC 61508

Function

This isolated barrier is used for intrinsic safety applications. The device transfers digital signals (NAMUR sensors or dry contacts) from a hazardous area to a safe area. The input controls two passive transistor outputs with a resistive output characteristic. The outputs have three defined states: 1-Signal = 100 Ω ... 600 Ω, 0-Signal = 19 kΩ and fault > 100 kΩ. This output characteristic offers line fault transparency on the signal lines. Via switches the mode of operation can be reversed and the line fault detection can be switched off. This device mounts on a HiC Termination Board.

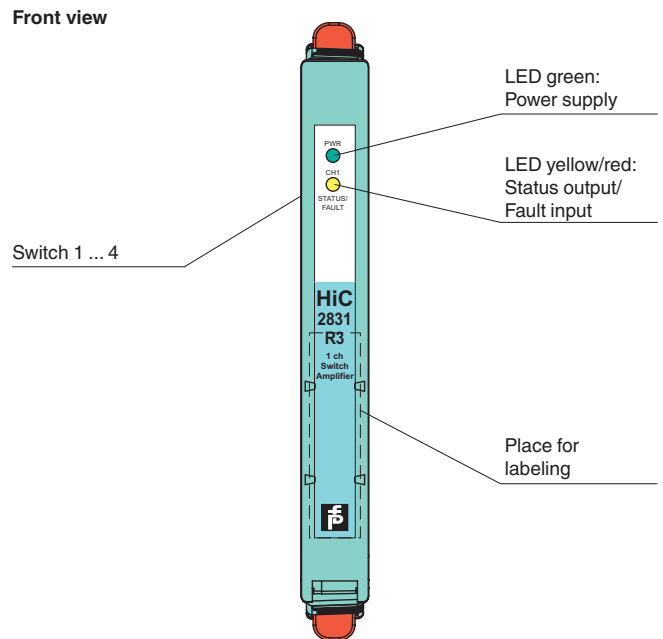
Application

This device is compatible to the control:

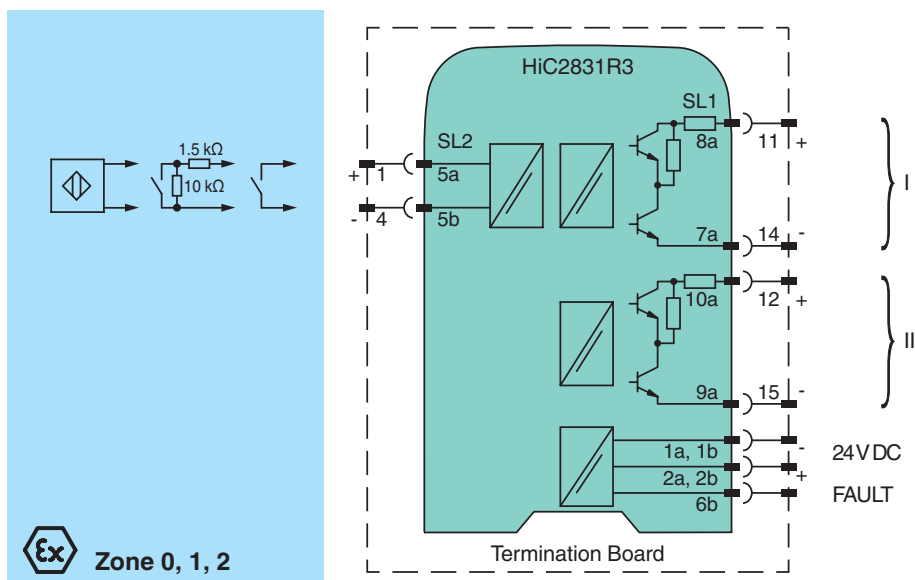
- Honeywell CC-PDIL01

Compatibility check to other ESD/DCS systems on request.

Assembly



Connection



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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

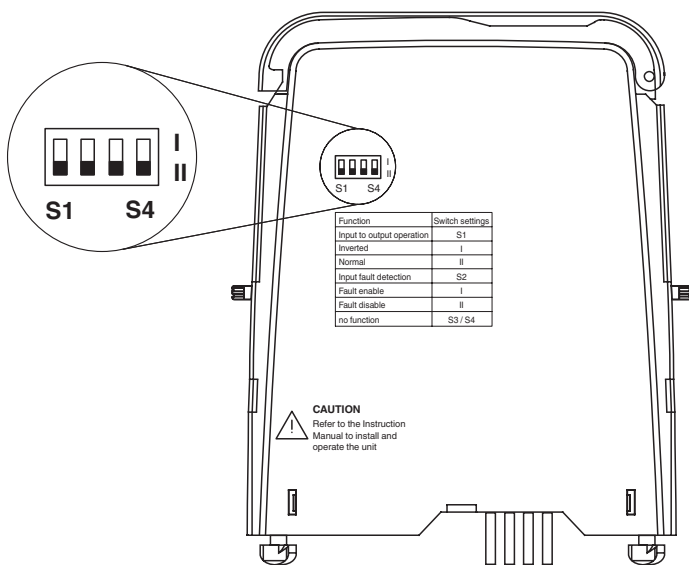
General specifications		
Signal type		Digital Input
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 2
Supply		
Connection		SL1: 1a(-), 1b(-); 2a(+), 2b(+)
Rated voltage	U_r	19 ... 30 V DC bus powered via Termination Board
Ripple		$\leq 10 \%$
Rated current	I_r	$\leq 25 \text{ mA}$
Power dissipation		$\leq 500 \text{ mW}$
Power consumption		$\leq 600 \text{ mW}$
Input		
Connection side		field side
Connection		SL2: 5a(+), 5b(-)
Rated values		acc. to EN 60947-5-6 (NAMUR), see system description for electrical data
Open circuit voltage/short-circuit current		approx. 10 V DC / approx. 8 mA
Switching point/switching hysteresis		1.2 ... 2.1 mA / approx. 0.2 mA
Line fault detection		breakage $I \leq 0.1 \text{ mA}$, short-circuit $I \geq 6.5 \text{ mA}$
Pulse/Pause ratio		$\geq 100 \mu\text{s} / \geq 100 \mu\text{s}$
Output		
Connection side		control side
Connection		SL1: 8a(+), 7a(-); 10a(+), 9a(-)
Rated voltage	U_n	20 ... 28 V DC with external resistance $> 2 \text{ k}\Omega$
Response time		$\leq 200 \mu\text{s}$
Output I, II		signal or error message, passive transistor output (resistive) 0-signal: $19 \text{ k}\Omega \pm 5 \%$ 1-signal: $100 \Omega \dots 600 \Omega$ fault: $> 100 \text{ k}\Omega$
Fault indication output		
Connection		SL1: 6b
Output type		open collector transistor (internal fault bus)
Transfer characteristics		
Switching frequency		$\leq 5 \text{ kHz}$
Galvanic isolation		
Output/power supply		basic insulation according to IEC/EN 61010-1, rated insulation voltage $60 V_{\text{eff}}$
Output/Output		basic insulation according to IEC/EN 61010-1, rated insulation voltage $60 V_{\text{eff}}$
Indicators/settings		
Display elements		LEDs
Control elements		DIP-switch
Configuration		via DIP switches
Labeling		space for labeling at the front
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Conformity		
Electromagnetic compatibility		NE 21:2012, EN 61326-3-2:2008
Degree of protection		IEC 60529:2001
Protection against electrical shock		IEC 61010-1
Ambient conditions		
Ambient temperature		$-20 \dots 60 \text{ }^\circ\text{C}$ ($-4 \dots 140 \text{ }^\circ\text{F}$)
Mechanical specifications		
Degree of protection		IP20
Mass		approx. 100 g
Dimensions		12.5 x 128 x 106 mm (0.5 x 5.1 x 4.2 inch)
Mounting		on Termination Board
Coding		pin 1 and 2 trimmed For further information see system description.
Data for application in connection with hazardous areas		
EU-Type Examination Certificate		BVS 11 ATEX E 026
Marking		 II (1) G [Ex ia] IIC  II (1) D [Ex ia] IIIC  I (M1) [Ex ia] I
Input		Ex ia
Voltage	U_o	10.5 V
Current	I_o	17.1 mA

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Power	P _o	45 mW (linear characteristic)
Supply		
Maximum safe voltage	U _m	253 V AC (Attention! U _m is no rated voltage.)
Output		
Maximum safe voltage	U _m	253 V AC (Attention! U _m is no rated voltage.)
Certificate		
Marking		KIWA 15 ATEX 0037 X ⊕ II 3G Ex ec IIC T4 Gc
Galvanic isolation		
Input/Output		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Input/power supply		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 60079-7:2015+A1:2018 , EN 50303:2000
International approvals		
FM approval		
Control drawing		116-0430 (cFMus)
UL approval		
Control drawing		116-0331
IECEX approval		
IECEX certificate		IECEX BVS 11.0040 IECEX KIWA 15.0019X
IECEX marking		[Ex ia Ga] IIC, [Ex ia] IIIC , [Ex ia] I Ex ec IIC T4 Gc
General information		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com.

Configuration



Switch settings

S	Function		Position
1	Mode of operation	Inverted	I
		Normal	II
2	Input line fault detection	ON	I
		OFF	II
3	no function		
4	no function		

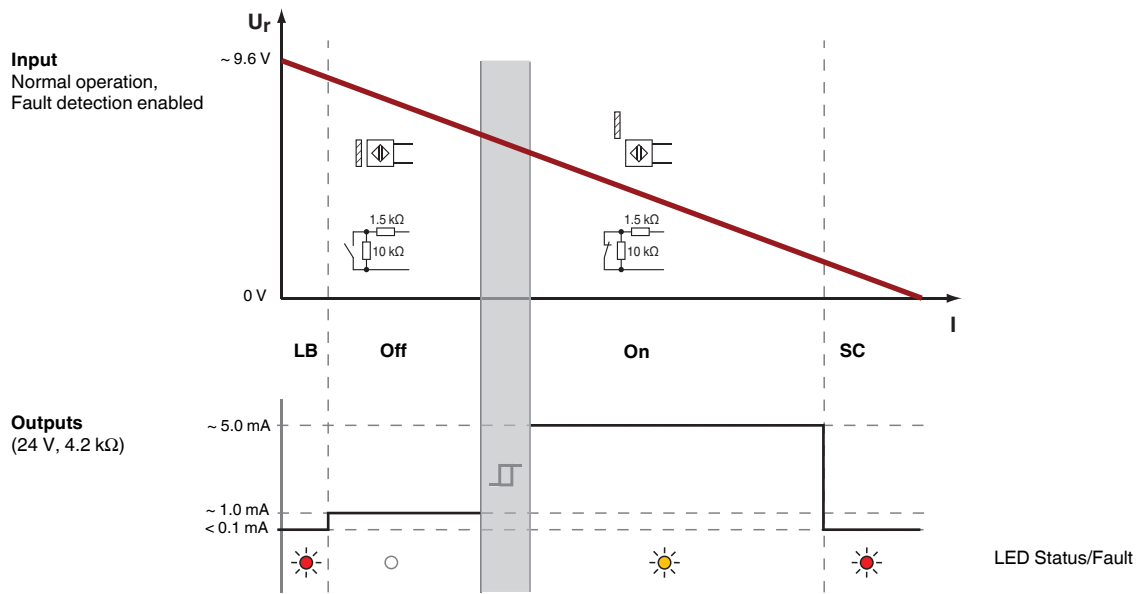
Configure the device in the following way:

- Push the red Quick Lok Bars on each side of the device in the upper position.
- Remove the device from Termination Board.
- Set the DIP switches according to the figure.



The pins for this device are trimmed to polarize it according to its safety parameter. Do not change! For further information see system description.

Switching points



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