

Features

- 1-channel isolated barrier
- 24 V DC supply (bus or loop powered)
- Output 40 mA at 12 V DC, 55 mA current limit
- Contact or logic control input
- Entity parameter $I_o/I_{sc} = 110$ mA
- Line fault detection (LFD)
- Test pulse immunity
- Up to SIL 2 acc. to IEC 61508 (bus powered)
- Up to SIL 3 acc. to IEC 61508 (loop powered)

Function

This isolated barrier is used for intrinsic safety applications. It supplies power to solenoids, LEDs, and audible alarms, located in a hazardous area.

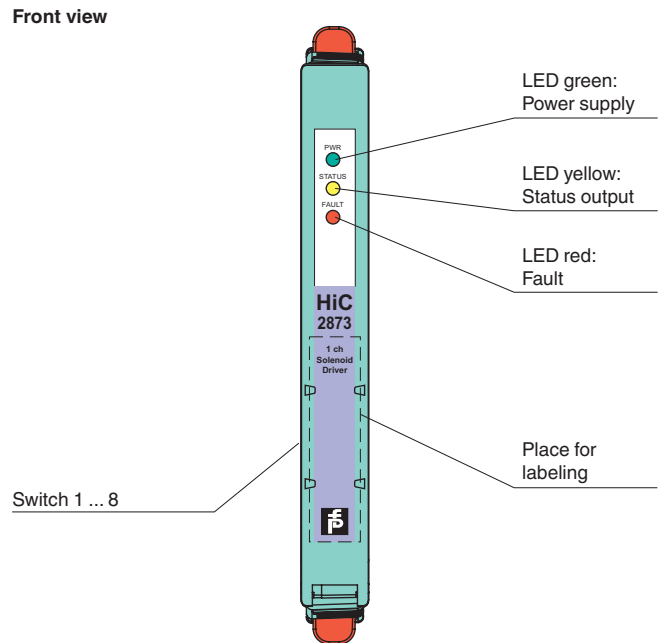
It is controlled with a loop-powered control signal, switch contact, transistor, or logic signal.

At full load, 12 V at 40 mA (with 55 mA current limit) is available for the hazardous area application.

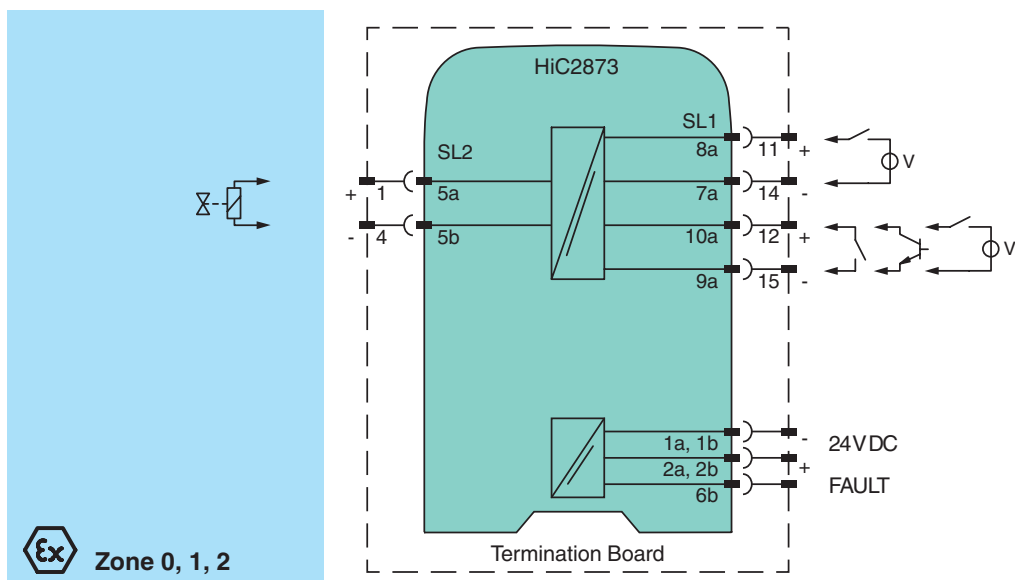
Line fault detection of the field circuit is indicated by a red LED and an output on the fault bus.

This device mounts on a HiC Termination Board.

Assembly



Connection



Release date 2019-01-25 14:15 Date of issue 2019-01-25 278990_eng.xml

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

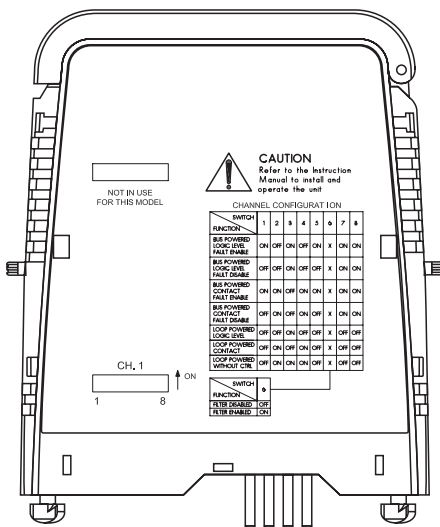
General specifications		
Signal type		Digital Output
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 3
Supply		
Connection		SL1: 1a, 1b(-); 2a, 2b(+)
Rated voltage	U_r	20.4 ... 30 V DC loop powered 20.4 ... 30 V DC bus powered via Termination Board
Input current		62 mA at 24 V, 300 Ω load
Power dissipation		1 W at 24 V, 300 Ω load
Input		
Connection side		control side
Connection		SL1: 8a(+), 7a(-) loop powered SL1: 10a(+), 9a(-) bus powered
Control input		external switch (dry contact or open collector) non isolated or logic signal input fully floating
Signal level		1-signal: 15...30 V DC (current limited at 3 mA) or contact close (internal 10 k Ω pull-up) 0-signal: 0...5 V DC or contact open
Power dissipation		1 W at 24 V, 300 Ω load for loop powered
Inrush current		0.2 A, 15 ms loop powered
Output		
Connection side		field side
Connection		SL2: 5a(+), 5b(-)
Internal resistor	R_i	approx. 240 Ω
Current	I_e	≤ 40 mA
Voltage	U_e	≥ 12 V
Current limit	I_{max}	55 mA
Open loop voltage	U_s	approx. 22.5 V
Load		nominal 0.1 ... 5 k Ω
Switching frequency	f	- bus powered: filter OFF: max. 150 Hz, filter ON: max. 15 Hz - loop powered: max. 10 Hz
Energized/De-energized delay		- bus powered: filter OFF: 1 ms, filter ON: 10 ms - loop powered: switch-on 50 ms, switch-off 6 ms (300 Ω load)
Fault indication output		
Connection		SL1: 6b
Output type		open collector transistor (internal fault bus)
Fault current		4 mA pulsing (20 ms ON, 200 ms OFF)
Fault level		lead short-circuit detection at $< 25 \Omega$ lead breakage detection at $> 100 \text{ k}\Omega$ typical
Galvanic isolation		
Output/power supply, inputs, and collective error		safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 375 V
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 21:2006 For further information see system description.
Degree of protection		IEC 60529:2001
Ambient conditions		
Ambient temperature		-20 ... 60 $^{\circ}\text{C}$ (-4 ... 140 $^{\circ}\text{F}$)
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 4 trimmed For further information see system description.
Data for application in connection with hazardous areas		
EU-Type Examination Certificate		CESI 10 ATEX 046

Release date 2019-01-25 14:15 Date of issue 2019-01-25 278990_eng.xml

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

Marking		
Output		Ex ia Ga, Ex ia Da, Ex ia Ma
Voltage	U_o	25.2 V
Current	I_o	110 mA
Power	P_o	693 mW
Supply		
Maximum safe voltage	U_m	253 V AC (Attention! U_m is no rated voltage.)
Certificate		KIWA 15 ATEX 0036 X
Marking		
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018
International approvals		
FM approval		
Control drawing		116-0431 (cFMus)
UL approval		
Control drawing		116-0383 (cULus)
IECEX approval		
IECEX certificate		IECEX CES 10.0017 IECEX KIWA 15.0018X
IECEX marking		[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] 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

Switches for channel I	S1	S2	S3	S4	S5	S6	S7	S8
Function								
• Bus powered	ON	OFF	ON	OFF	ON	X	ON	ON
• Control input: logic signal								
• Line fault detection enabled								
• Bus powered	OFF	OFF	ON	OFF	OFF	X	ON	ON
• Control input: logic signal								
• Line fault detection disabled								
• Bus powered	ON	ON	OFF	ON	ON	X	ON	ON
• Control input: contact								
• Line fault detection enabled								
• Bus powered	OFF	ON	OFF	ON	OFF	X	ON	ON
• Control input: contact								
• Line fault detection disabled								
• Loop powered	OFF	OFF	ON	OFF	OFF	X	OFF	OFF
• Control input: logic signal								
• Line fault detection disabled								
• Loop powered	OFF	ON	OFF	ON	OFF	X	OFF	OFF
• Control input: contact								
• Line fault detection disabled								
• Loop powered	OFF	ON	ON	ON	OFF	X	OFF	OFF
• Control input: without control								
• Line fault detection disabled								
Switches for channel I and II	S6							
Function								
Filter disable	OFF							
Filter enable	ON							

Factory settings: bus powered, control input: contact, line fault detection enabled, filter disabled

Configure the device in the following way:

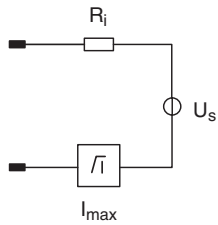
- Push the red Quick Lok Bars on each side of the device in the upper position.
- Remove the device from Termination Board.
- Set the DIP switches according to the figure.



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

Output characteristics

Output circuit diagram



Output characteristic

