

Features

- 1-channel isolated barrier
- 24 V DC supply (bus or loop powered)
- Output 40 mA at 11.2 V DC, 55 mA current limit
- Contact or logic control input
- Entity parameter $I_o/I_{sc} = 93$ mA
- Line fault detection (LFD)
- Test pulse immunity
- Up to SIL2 acc. to IEC 61508 (bus powered)
- Up to SIL3 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.

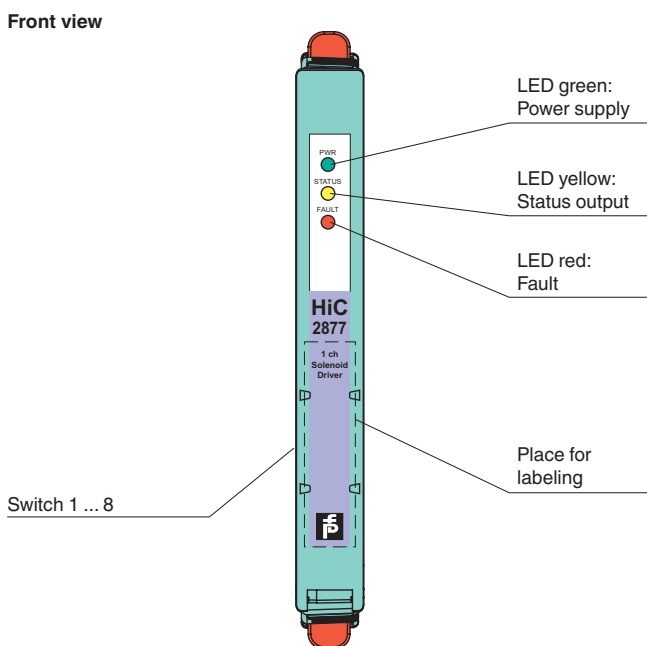
It is controlled with a loop-powered control signal, switch contact, transistor, or logic signal.

At full load, 11.2 V at 40 mA (with 55 mA current limit) is available for the hazardous area application.

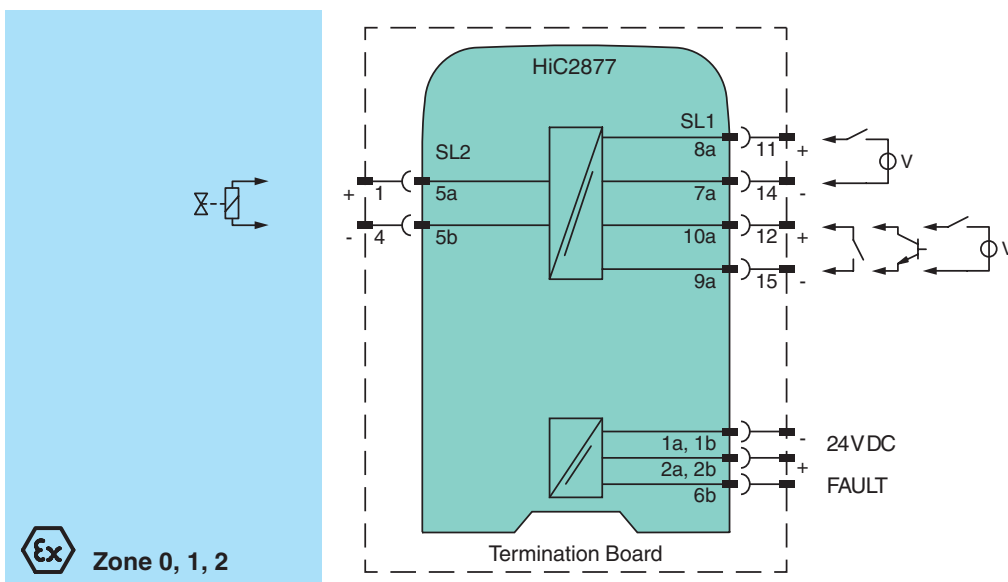
Line fault detection of the field circuit is indicated by a red LED and an output on the fault bus.

This device mounts on a HiC Termination Board.

Assembly



Connection



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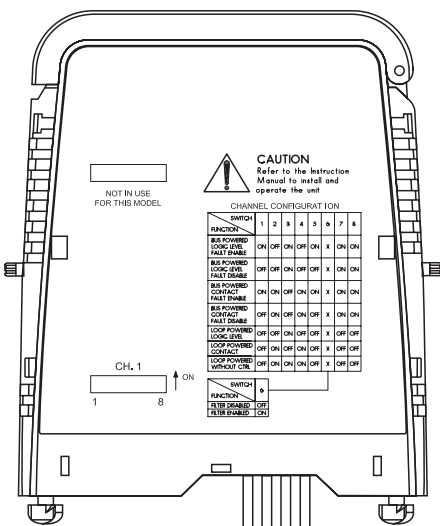
Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

General specifications		
Signal type		Digital Output
Supply		
Connection		SL1: 1a, 1b(-); 2a, 2b(+)
Rated voltage		20.4 ... 30 V via Termination Board or 20.4 ... 30 V via loop powered input , reverse polarity protected
Input current		62 mA at 24 V, 300 Ω load
Power loss		1 W at 24 V, 300 Ω load
Input		
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 kΩ pull-up) 0-signal: 0...5 V DC or contact open
Power loss		1 W at 24 V, 300 Ω load for loop powered
Inrush current		0.2 A , 15 ms loop powered
Output		
Connection		SL2: 5a(+), 5b(-)
Internal resistor	R _i	approx. 280 Ω
Current	I _e	≥ 40 mA
Voltage	U _e	≥ 11.2 V
Current limit	I _{max}	55 mA
Open loop voltage	U _s	approx. 22.5 V
Load		nominal 0.1 ... 5 kΩ
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)
Error message 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 Ω lead breakage detection at > 100 kΩ typical
Electrical isolation		
Output/power supply, inputs, and collective error		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
Conformity		
Electromagnetic compatibility		NE 21:2006 For further information see system description.
Degree of protection		IEC 60529:2001
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °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 in)
Mounting		on Termination Board
Coding		pin 2 and 3 trimmed For further information see system description.
Data for application in connection with Ex-areas		
EC-Type Examination Certificate		CESI 10 ATEX 046 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		⊕ II (I) GD, I (M1), [Ex ia] II C, [Ex iaD], [Ex ia] I
Output		Ex ia, Ex iaD
Voltage	U _o	25.2 V
Current	I _o	93 mA
Power	P _o	586 mW
Supply		
Maximum safe voltage	U _m	253 V AC (Attention! U _m is no rated voltage.)
Statement of conformity		PF 10 CERT 1747 X , observe statement of conformity
Group, category, type of protection, temperature class		⊕ II 3G Ex nA II T4

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Directive conformity	
Directive 94/9/EC	EN 60079-0, EN 60079-11, EN 60079-15, EN 60079-26, EN 61241-0, EN 61241-11
International approvals	
IECEX approval	IECEX CES 10.0017
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 .

Configuration



Switch settings

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

Switches for channel I	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:

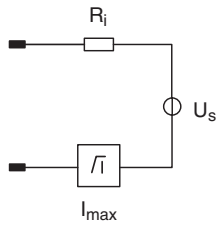
- Push the red Quick Lok Bars on each side of the device in the upper position.
- Remove the device from Termination Board.
- Set the DIP switches according to the figure.



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

