



Solenoid Driver

HiC2873

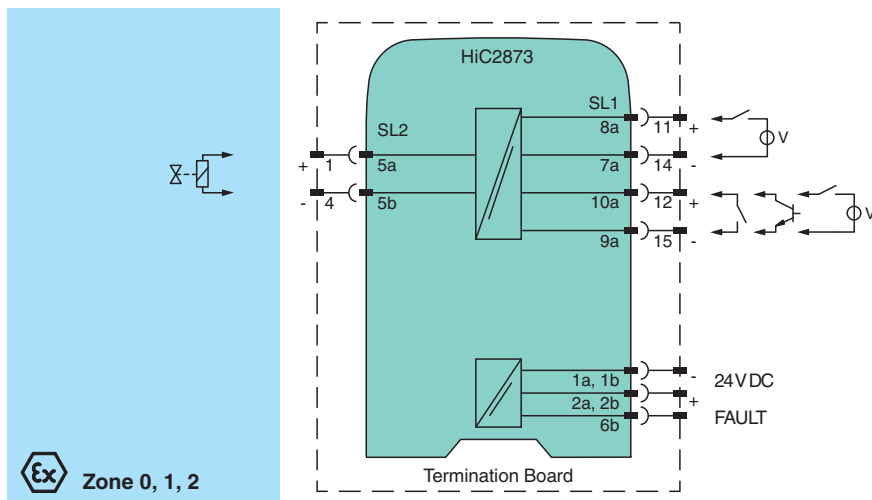
- 1-channel isolated barrier
- 24 V DC supply (bus or loop powered)
- Output 40 mA at 12 V DC, 55 mA current limit
- Contact or logic control input
- Entity parameter $I_o/I_{sc} = 110$ mA
- Line fault detection (LFD)
- Test pulse immunity
- Up to SIL 2 acc. to IEC/EN 61508 (bus powered)
- Up to SIL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



Function

This isolated barrier is used for intrinsic safety applications. The device 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.

Connection



Ex Zone 0, 1, 2

Technical Data

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

Release date: 2022-09-15 Date of issue: 2022-09-15 Filename: 278990_eng.pdf

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0002
pa-info@us.pepperl-fuchs.com

Germany: +49 621 776 2222
pa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
pa-info@sg.pepperl-fuchs.com

PEPPERL+FUCHS

Technical Data

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	\leq 40 mA
Voltage	U _e	\geq 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 Ω lead breakage detection at $>$ 100 k Ω 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 $^{\circ}$ C (-4 ... 140 $^{\circ}$ F)
Mechanical specifications		
Degree of protection		IP20
Mass		approx. 100 g
Dimensions		12.5 x 106 x 128 mm (0.5 x 4.2 x 5.1 inch) (W x H x D)
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
Marking		Ⓜ II (1)G [Ex ia Ga] IIC Ⓜ II (1)D [Ex ia Da] IIIC Ⓜ I (M1) [Ex ia Ma] I

Release date: 2022-09-15 Date of issue: 2022-09-15 Filename: 278990_eng.pdf

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

Pepperl+Fuchs Group
www.pepperl-fuchs.comUSA: +1 330 486 0002
pa-info@us.pepperl-fuchs.comGermany: +49 621 776 2222
pa-info@de.pepperl-fuchs.comSingapore: +65 6779 9091
pa-info@sg.pepperl-fuchs.com

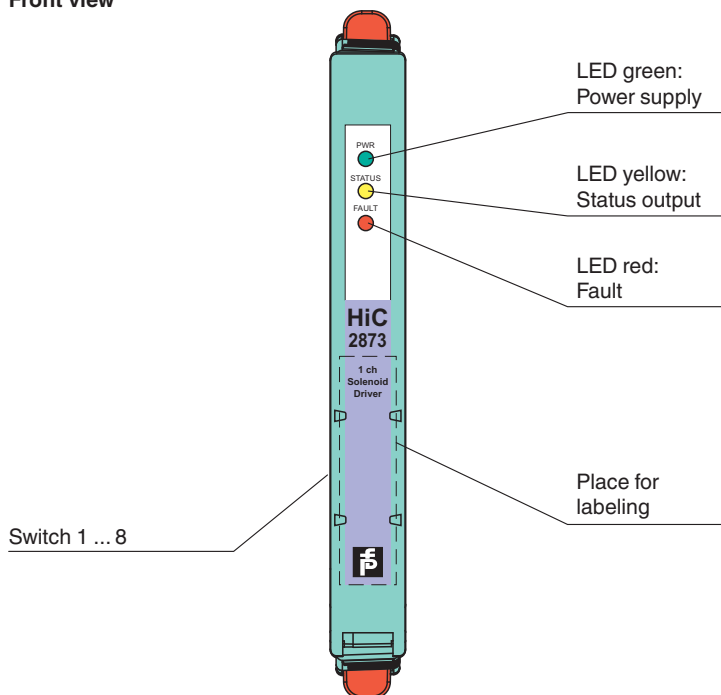
PEPPERL+FUCHS

Technical Data

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		Ⓜ II 3G Ex ec IIC T4 Gc
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 .

Assembly

Front view



Release date: 2022-09-15 Date of issue: 2022-09-15 Filename: 278990_eng.pdf

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

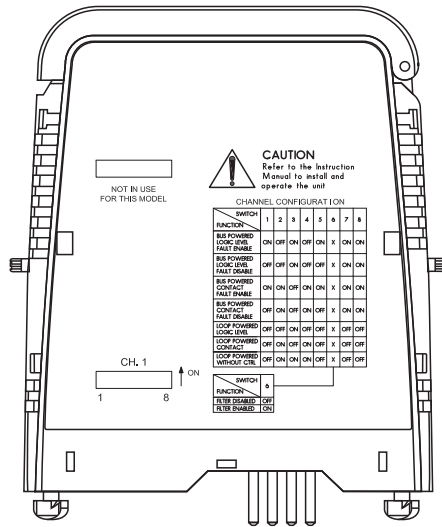
Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0002
pa-info@us.pepperl-fuchs.com

Germany: +49 621 776 2222
pa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
pa-info@sg.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 and II	S6							
Function								
Filter disable	OFF							
Filter enable	ON							

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

Configuration

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.

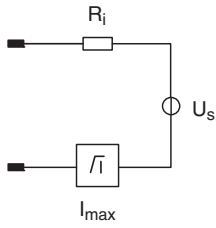
Release date: 2022-09-15 Date of issue: 2022-09-15 Filename: 278990_eng.pdf

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

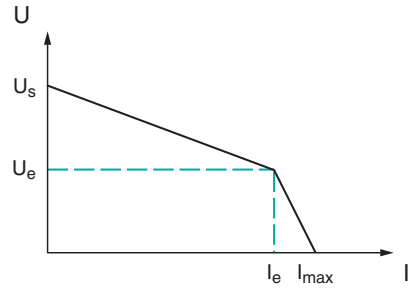
Characteristic Curve

Output characteristics

Output circuit diagram



Output characteristic



Release date: 2022-09-15 Date of issue: 2022-09-15 Filename: 278990_eng.pdf