



- 1-channel
- Control circuit EEx ia IIC
- Reversible mode of operation
- Output I: signal output (NO)
- Output II: optionally signal output/fault signal
- Device installation permissible in zone 2
- LB/SC monitoring
- Fault bus output
- Up to SIL2 acc. to IEC 61508

HiC2821

Function

The isolated switch amplifier repeats the status of a voltage-free contact or IS proximity sensor in a hazardous area to a relay output in a safe area.

The control circuit is monitored for lead breakage (LB) and short circuit (SC).

The external faults are indicated according to NAMUR NE44 by a red flashing LED. A fault bus signal is in addition produced on the termination board.

Relay output II can optionally be assigned to the input signal or the error message with the aid of switch S3.

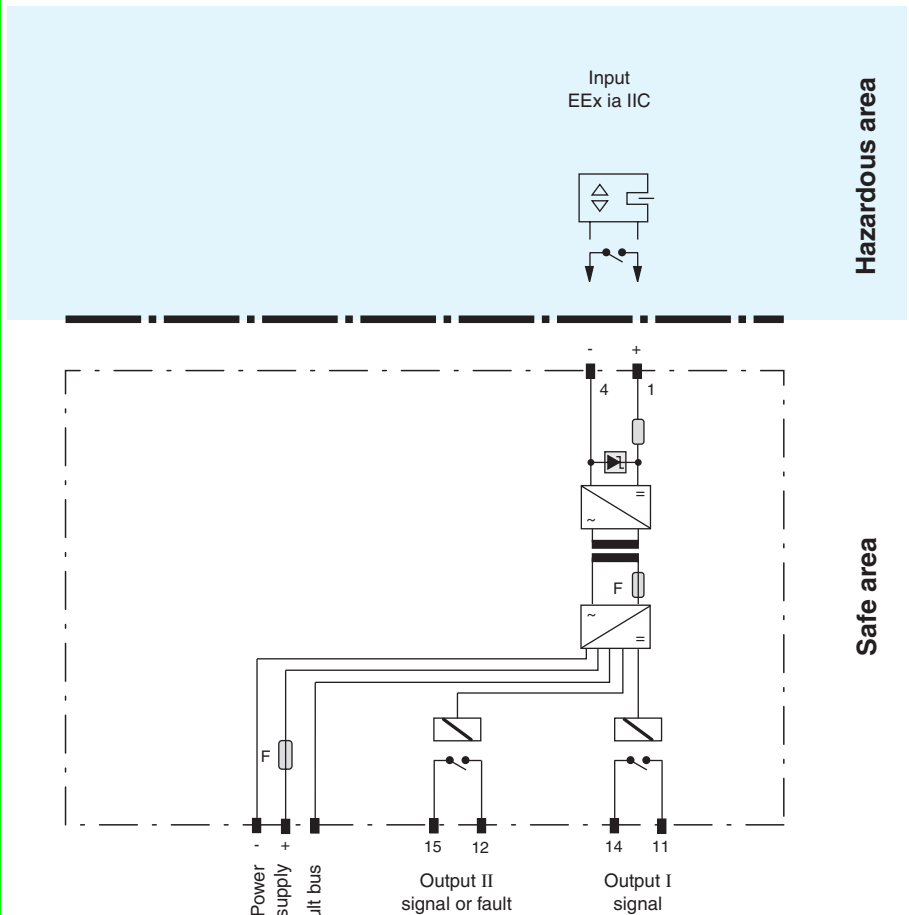
The intrinsically safe input is safely isolated from the output and the power supply in accordance with EN 50020. Relay outputs are safely isolated from each other and from the power supply in accordance with IEC 61140.

Application

For detection of positions, final positions and switching states in hazardous areas.

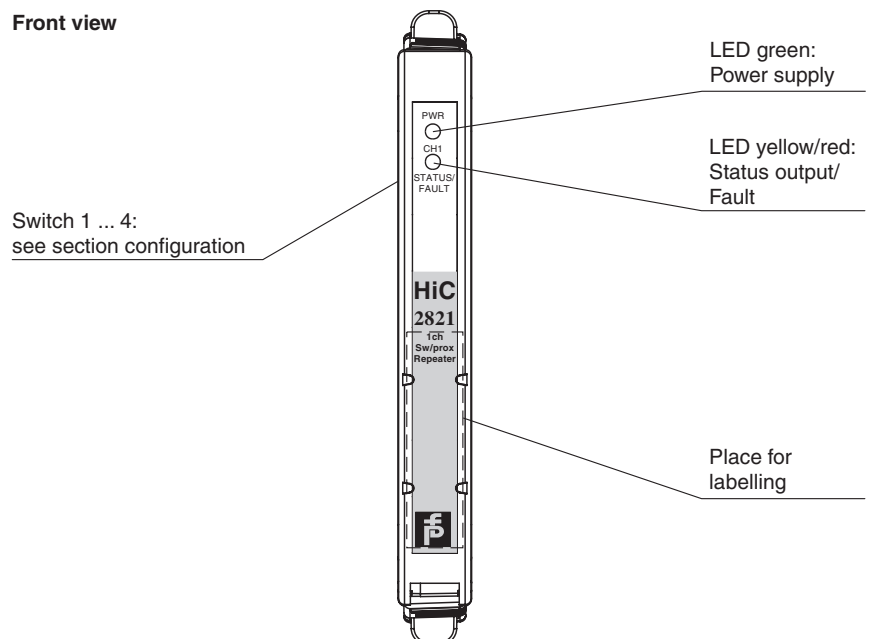
Proximity sensors in acc. to EN 60947-5-6 (NAMUR) or mechanical contacts (switches, pushbuttons) are evaluated.

Connection



Composition

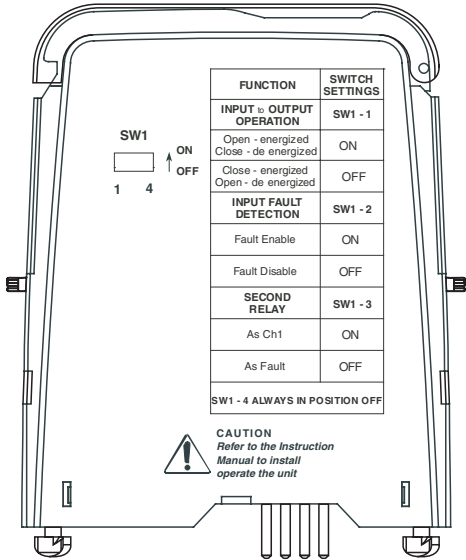
Front view



Supply		
Connection		Termination Board
Rated voltage		19 ... 30 V DC
Ripple		≤ 10 %
Rated current		≤ 30 mA
Power loss		≤ 500 mW
Power consumption		≤ 500 mW
Input		
Connection		Termination Board terminals 1+, 4-
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		$\geq 20 \text{ ms} / \geq 20 \text{ ms}$
Output		
Connection		Termination Board terminals 11, 14; 12, 15
Output I		signal ; relay
Output II		signal or error message ; relay
Contact loading		50 V DC / 0.5 A
Minimum switch current		2 mA / 24 V DC
Energized/de-energized delay		≤ 20 ms / ≤ 20 ms
Mechanical life		10 ⁷ switching cycles
Transfer characteristics		
Switching frequency		≤ 10 Hz
Electrical isolation		
Output/power supply		basic insulation acc. to EN 50178, rated insulation voltage of 50 V AC
Output/output		basic insulation acc. to EN 50178, rated insulation voltage of 50 V AC
Indicators/settings		
Labelling		place for labelling on the front side
Directive conformity		
Electromagnetic compatibility		
Directive 89/336/EC		EN 61326
Conformity		
Protection degree		IEC 60529
Protection against electric shock		IEC 61140
Ambient conditions		
Ambient temperature		-20 ... 60 °C (253 ... 333 K)
Mechanical specifications		
Protection degree		IP20
Mass		approx. 100 g
Dimensions		12.5 x 128 x 106 mm (0.5 x 5.1 x 4.2 in)
Data for application in conjunction with hazardous areas		
EC-Type Examination Certificate		BASEEFA 06 ATEX 0093 X , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		 II (1)GD [Ex ia] IIC; [Ex ia D] [circuit(s) in zone 0/1/2/20/21/22] I (M1) [Ex ia] I
Input		Ex ia/Ex ia D
Voltage U_o		10.5 V
Current I_o		17.1 mA
Power P_o		45 mW (linear characteristic)
Supply		
Safety maximum voltage U_m		253 V AC (Attention! U_m is no rated voltage.)
Permissible connection values [Ex ia]		
Explosion group	I	IIA IIB IIC
External capacitance	73.1 μF	75 μF 16.8 μF 2.41 μF
External inductance	1 H	972.7 mH 486.3 mH 121.5 mH
L/R ratio	1.628 μH/Ω	1.628 μH/Ω 1.628 μH/Ω 801 μH/Ω
Output		
Contact loading		50 V DC / 0.5 A
Safety maximum voltage U_m		253 V AC (Attention! The rated voltage can be lower.)
Statement of conformity		Pepperl+Fuchs
Group, category, type of protection, temperature classification		 II 3G Ex nA nC IIC T4 X
Electrical isolation		
Input/output		safe electrical isolation acc. to EN 50020, voltage peak value 375 V

Input/power supply	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity	
Directive 94/9 EC	EN 60079-0, EN 50020, IEC 61241-11, IEC 61241-0, EN 60079-26, EN 60079-15
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed. For information see www.pepperl-fuchs.com .

Configuration



- The configuration is performed in the following way:
- Remove the module from termination board, pulling-up the tab on each side of the module.
 - Set the DIP switches according to the figure.