Features

- 1-channel signal conditioner
- 24 V DC supply
- Input for 2- or 3-wire sensors or AC sources
- Relay contact output
- Timer function
- Configurable by DIP switches
- Connection via screw terminals

Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits.

The device transmits the status of 2- and 3-wire sensors to the relay output.

The device has an input for the following digital signals:
- Mechanical contacts
- 2-wire sensors (NAMUR, SN, DC, S0)
- 3-wire sensors (NPN, PNP, push-pull)
- AC sources

The input is reverse polarity protected and short-circuit proofed.

The connected sensors can also be supplied externally.

The device has an adjustable on delay, an off dealy, or an one-shot function for the relay output.

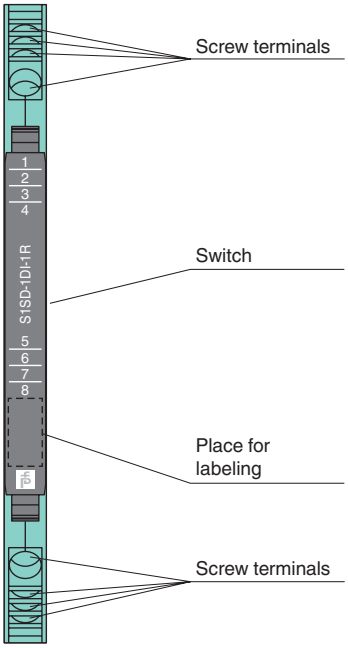
The device is easily configured by the use of DIP switches.

The device can be powered via terminals or Power Bus.

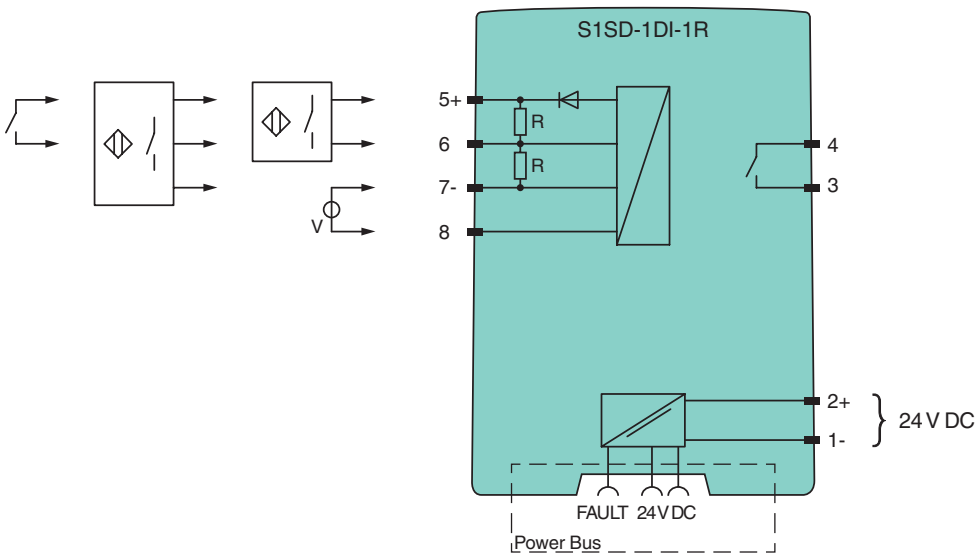
If used the device with Power Bus, a collective error messaging feature is available.

Assembly

Front view



Connection



Release date 2017-02-27 10:34 Date of issue 2017-02-27 276405_eng.xml

General specifications		
Signal type		Digital Input
Supply		
Connection		Power Bus or terminals 1-, 2+
Rated voltage	U_r	16.8 ... 31.2 V DC
Power dissipation		0.6 W
Power consumption		1.1 W
Input		
NAMUR sensor		
Type		2-wire
Connection		terminals 5+, 6
Signal		acc. to EN 60947-5-6 (NAMUR)
Sensor supply		8 V
Open-circuit		< 0.1 mA
Switching point		1.2 ... 2.1 mA
Short-circuit		> 6 mA
Input impedance		1 kΩ
Mechanical contact		
Type		2-wire
Connection		terminals 5+, 6
Sensor supply		15 V
External supply		16.8 ... 31.2 V DC
Switching point		8 ... 10 V / 1.2 ... 2.1 mA
Input impedance		4 kΩ
SN sensor		
Type		2-wire
Connection		terminals 5+, 6
Sensor supply		8 V
Open-circuit		< 0.1 mA
Switching point		1.2 ... 2.1 mA
Short-circuit		> 6 mA
Input impedance		1 kΩ
2-wire DC sensor		
Type		2-wire
Connection		terminals 5+, 6
Signal		acc. to EN 60947-5-2
Sensor supply		16 V / 25 mA , short-circuit protected
External supply		16.8 ... 31.2 V DC
Switching point		4 ... 6 V
Input impedance		1 kΩ
S0 sensor		
Type		2-wire
Connection		terminals 5+, 6
Signal		acc. to EN 62053-31 , Type B
Sensor supply		15 V
Switching point		0.15 ... 2 mA
Input impedance		4 kΩ
NPN sensor		
Type		3-wire
Connection		terminals 5+, 6, 7-
Signal		acc. to EN 60947-5-2
Sensor supply		16 V / 25 mA , short-circuit protected
External supply		16.8 ... 31.2 V DC
Switching point		3 ... 5 V
Input impedance		4 kΩ
PNP sensor		
Type		3-wire
Connection		terminals 5+, 6, 7-
Signal		acc. to EN 60947-5-2
Sensor supply		16 V / 25 mA , short-circuit protected
External supply		16.8 ... 31.2 V DC
Switching point		8 ... 10 V
Input impedance		4 kΩ
AC source		

Release date 2017-02-27 10:34 Date of issue 2017-02-27 276405_eng.xml

Connection	terminals 7, 8
Signal	24 V AC/DC
Switching point	10 ... 15 V
Input impedance	> 680 kΩ
AC source	
Connection	terminals 7, 8
Signal	115 V AC/DC
Switching point	40 ... 60 V
Input impedance	> 680 kΩ
AC source	
Connection	terminals 7, 8
Signal	230 V AC/DC
Switching point	80 ... 115 V
Input impedance	> 680 kΩ
Output	
Connection	terminals 3, 4:
Output	signal, relay
Contact loading	253 V AC/2 A/cos ϕ > 0.7; 126.5 V AC/2 A/cos ϕ > 0.7; 30 V DC/2 A resistive load
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
Galvanic isolation	
Output/power supply	safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V_{eff} test voltage 3 kV, 50 Hz, 1 min
Input/Other circuits	safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V_{eff} test voltage 3 kV, 50 Hz, 1 min
Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)
Low voltage	
Directive 2014/35/EU	EN 61010-1:2010
Conformity	
Degree of protection	IEC 60529:2001
Protection against electrical shock	EN 61010-1:2010
Ambient conditions	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Damaging gas	designed for operation in environmental conditions acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Connection type	screw terminals
Core cross-section	0.5 ... 2.5 mm^2 , 20 ... 14 AWG
Degree of protection	IP20
Mass	approx. 60 g
Dimensions	6.2 x 97 x 107 mm (0.24 x 3.82 x 4.21 inch) , housing type S1
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
General information	
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com.
Accessories	
Optional accessories	power feed module S1SD-2PF Power Bus POWERBUS-SETL5.*** Power Bus POWERBUS-SETH5.*** cover for DIN mounting rail POWERBUS-COV.250 end cap POWERBUS-CAP

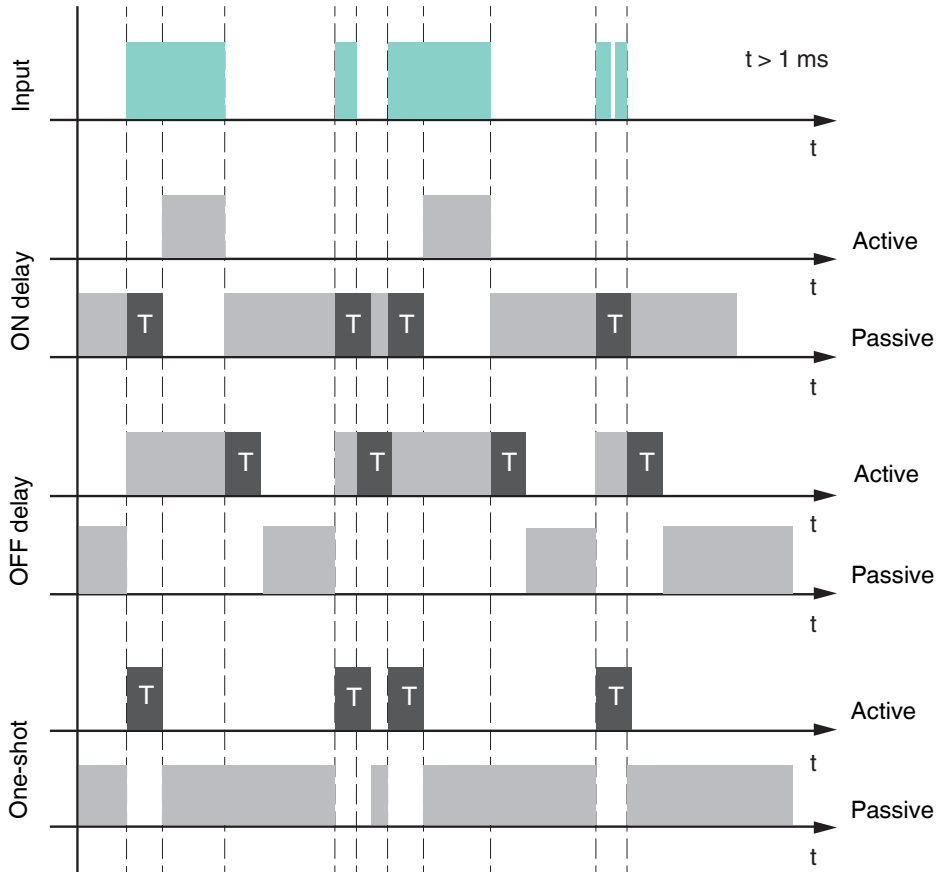
Release date 2017-02-27 10:34 Date of issue 2017-02-27 276405_eng.xml

Configuration

Switch settings

Switch	S									
	1	2	3	4	5	6	7	8	9	10
Sensor										
NAMUR/SN sensor										
PNP sensor/mechanical contact/push-pull	ON									
2-wire DC sensor		ON								
NPN sensor	ON	ON								
S0 senosr			ON							
AC sources										
24 V	ON		ON							
120 V		ON	ON							
230 V	ON	ON	ON							
Output										
Not inverted										
Inverted ON				ON						
Timer										
Timer off										
On delay						ON				
Off delay					ON					
One-shot					ON	ON				
Time T										
0.5 s										
1 s							ON			
5 s								ON		
10 s							ON	ON		

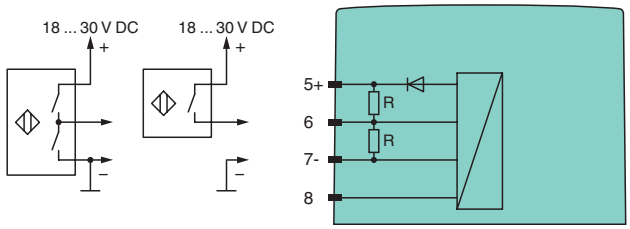
Timer function



Release date 2017-02-27 10:34 Date of issue 2017-02-27 276405_eng.xml

Additional function

External supply



For mechanical contacts, 2-wire DC sensors and 3-wire sensors.

Release date 2017-02-27 10:34 Date of issue 2017-02-27 276405_eng.xml