Features

- 1-channel signal conditioner
- 24 V DC supply (loop powered)
- Fail-safe relay contact output for de-energized and energized to safe function
- Logic input 20 V DC ... 26.5 V DC, non-polarized
- Immune to DCS test pulses (Yokogawa)
- Up to SIL3 acc. to IEC 61508

Function

This signal conditioner is a relay module that is suitable for safely switching applications of a load circuit. The device isolates load circuits up to 230 V and the 24 V control interface.

The energized to safe (ETS) function is permitted for SIL2 applications with output I. The de-energized to safe (DTS) function is permitted for SIL3 applications with output II. Additionally a dual pole switching (DPS) is possible by combination of output I and II.

The relays are of diverse design, but have a common effect on the individual switch output. For checking of these relays, terminals 10, 11 and 12 can be used. The test mode will be indicated by LEDs according to NAMUR NE44.

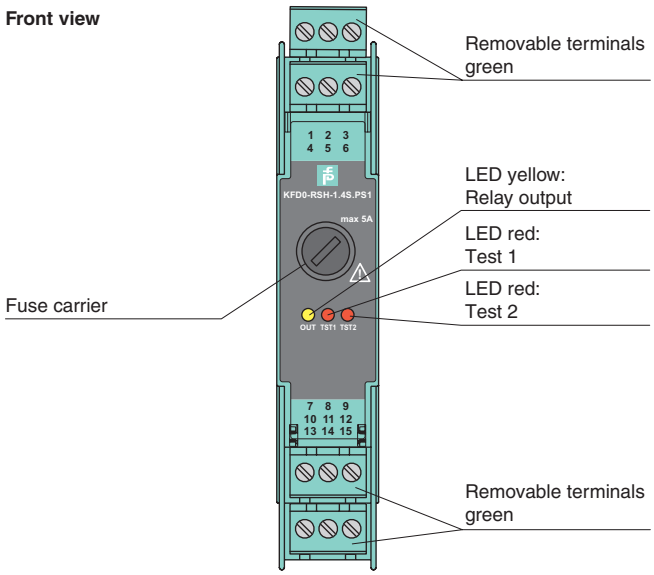
The outputs are galvanically isolated from the input. Output II is protected against contact welding by a fuse depending on the used terminal.

Application

This device is not influenced by test pulses of the control (Yokogawa ProSafe DO cards SDV531, SDV541).

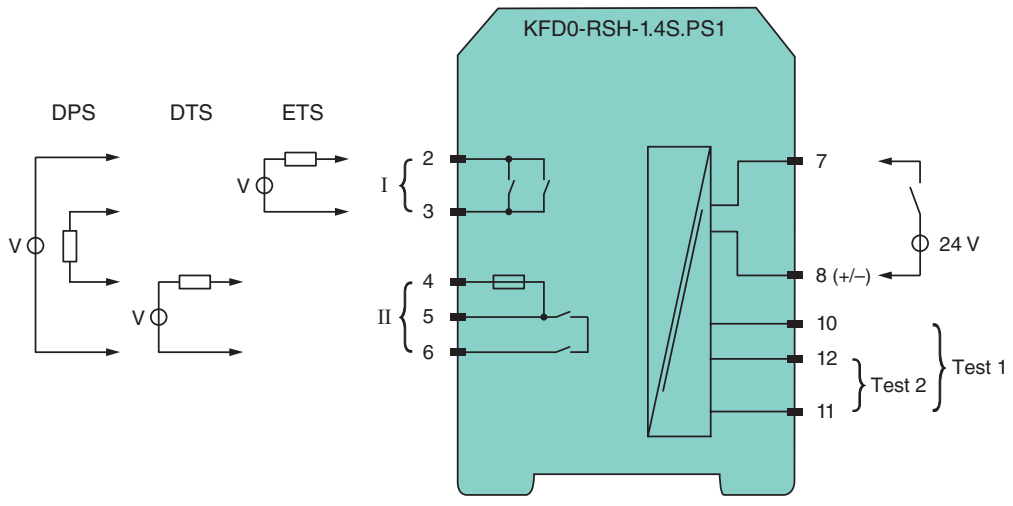
Assembly

Front view



CE SIL3

Connection



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General specifications	
Signal type	Digital output
Supply	
Power loss	< 1.5 W
Power consumption	< 1.5 W
Input	
Connection	Input terminals 7, 8 ; test input terminals 10, 11, 12
Pulse/Pause ratio	≥ 20 ms / ≥ 20 ms
Test input	see Safety Manual
Signal level	0-signal: -3 ... 3 V DC 1-signal: 20 ... 26.5 V
Rated current I_i	45 ... 50 mA
Output	
Connection	output I (ETS): terminals 2, 3 output II (DTS): terminals 4, 5, 6 output I and II (DPS): terminals 2, 3, 4, 5, 6
Contact loading	230 V AC/5 A/cos ϕ 0.7; 24 V DC/5 A resistive load
Minimum switch current	2 mA / 24 V DC
Energized/De-energized delay	approx. 10 ms / approx. 5 ms
Mechanical life	5 x 10^6 switching cycles
Electrical life	2.5 x 10^5 switching cycles at 2 A 1 x 10^4 switching cycles at 5 A
Fuse rating	2.5 A (max. 5 A) recommended maximum utilization of the fuse: 80 %
Transfer characteristics	
Switching frequency	< 10 Hz
Electrical isolation	
Input/Output	reinforced insulation acc. to EN 50178, rated insulation voltage 300 V_{eff}
Output/Output	reinforced insulation acc. to EN 50178, rated insulation voltage 300 V_{eff}
Directive conformity	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006
Low voltage	
Directive 2006/95/EC	EN 50178:1997
Conformity	
Electromagnetic compatibility	NE 21:2006
Protection degree	IEC 60529
Protection against electric shock	IEC 61140
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications	
Protection degree	IP20
Mass	approx. 100 g
Dimensions	20 x 119 x 115 mm (0.8 x 4.7 x 4.5 in) , housing type B2
General information	
Supplementary information	Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com.

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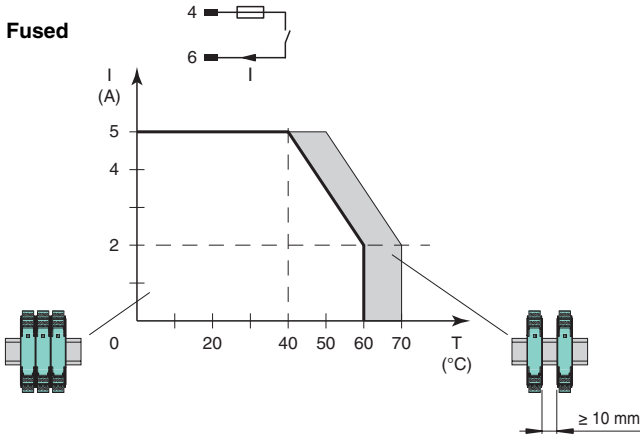
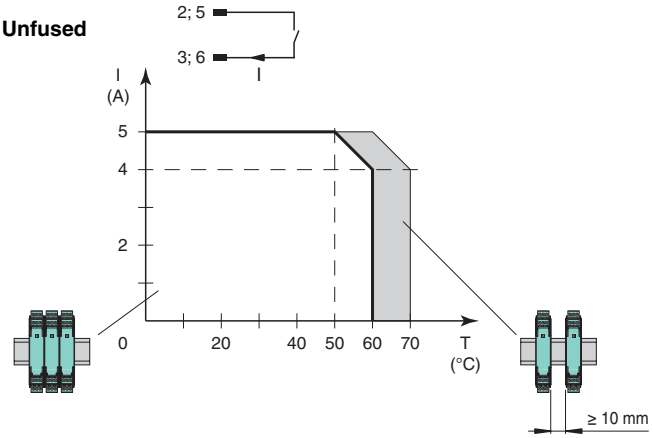
Derating

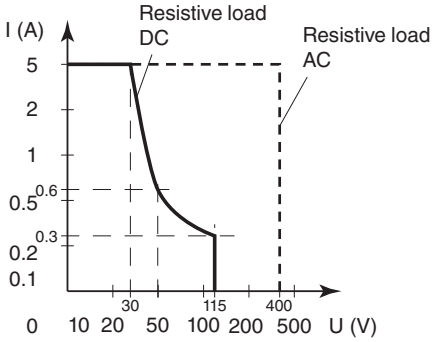
Fused



Unfused



Maximal switching power of output contacts



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