

Relay Module

KFD0-RSH-1.1D.F1

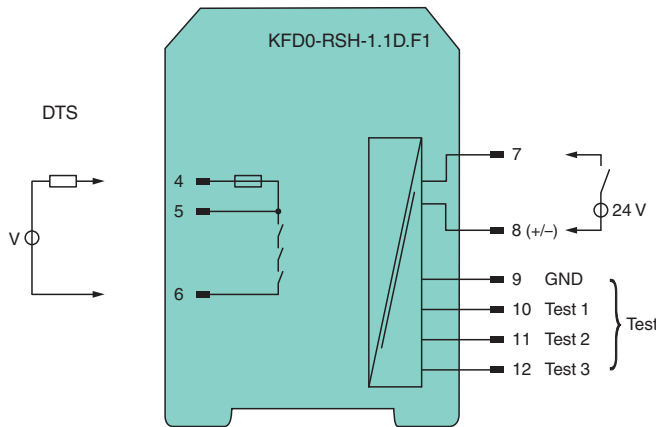
- 1-channel signal conditioner
- 24 V DC supply (loop powered)
- Logic input 19 V DC ... 26.5 V DC, non-polarized
- Relay contact output for de-energized to safe function
- Test pulse immunity
- Up to SIL 3 acc. to IEC/EN 61508
- Up to PL e acc. to EN/ISO 13849

CE SIL3 PL e

Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits. The device 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 circuit. The de-energized to safe (DTS) function is permitted for SIL 3 and PL e applications. The relays are of diverse design, but have a common effect on the individual switching output. For testing of the relays, test terminals can be used. The test mode will be indicated by a LED according to NAMUR NE44. The output is protected against contact welding by a fuse.

Connection



Technical Data

General specifications

Signal type Digital Output

Functional safety related parameters

Safety Integrity Level (SIL) SIL 3

Systematic capability (SC) SC 3

Performance level (PL) PL e

Supply

Connection loop powered

Rated voltage U_r 19 ... 30 V DC loop powered

Power dissipation < 1.5 W

Power consumption < 1.5 W

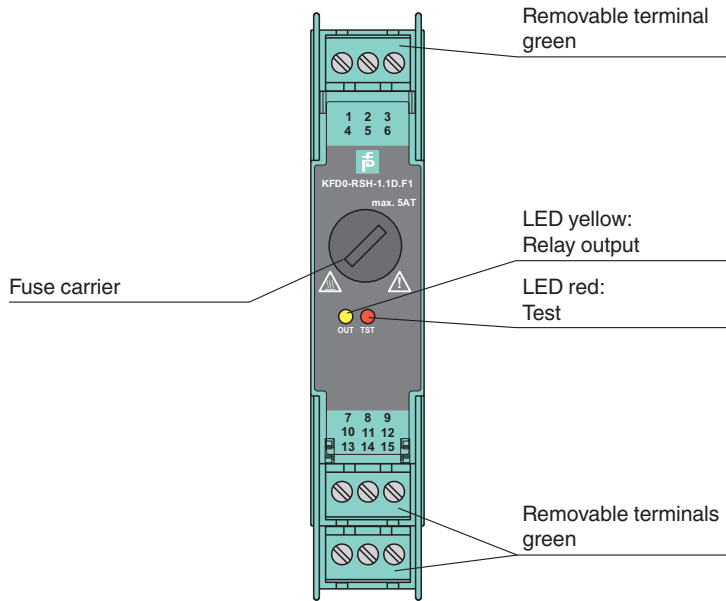
Input

Technical Data

Connection side		control side
Connection		Input terminals 7, 8 ; test input terminals 9, 10, 11, 12
Pulse/Pause ratio		150 ms / 150 ms
Test pulse length		max. 4 ms from DO card
Test input		see functional safety manual
Signal level		0-signal: -5 ... 5 V 1-signal: 19 ... 26.5 V
Rated current	I_r	0-signal: typ. 1.6 mA at 1.5 V DC; typ. 8 mA at 3 V DC (maximum leakage current DO card) 1-signal: ≥ 36 mA (minimum load current DO card)
Output		
Connection side		field side
Connection		terminals 4, 5, 6
Contact loading		253 V AC/5 A/cos ϕ 0.7; 30 V DC/5 A resistive load 253 V AC / 1/2 HP
Minimum switch current		10 mA / 24 V DC
Energized/De-energized delay		150 ms / 150 ms
Mechanical life		5 x 10 ⁶ switching cycles
Fuse rating		2.5 A (scope of delivery) max. 5 AT, recommended maximum utilization of the fuse: 80 %
Transfer characteristics		
Switching frequency		< 3 Hz
Galvanic isolation		
Input/Output		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Indicators/settings		
Display elements		LEDs
Labeling		space for labeling at the front
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Low voltage		
Directive 2014/35/EU		EN 61010-1:2010
Machinery Directive		
Directive 2006/42/EC		EN IEC 62061:2021 , EN/ISO 13849-1:2015
Conformity		
Electromagnetic compatibility		NE 21:2012 , EN 61326-3-1:2008 , EN 61326-3-2:2008
Degree of protection		IEC 60529:2013
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F) Observe the temperature range limited by derating, see section derating.
Mechanical specifications		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 120 g
Dimensions		20 x 119 x 115 mm (0.8 x 4.7 x 4.5 inch) (W x H x D) , housing type B2
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 .

Assembly

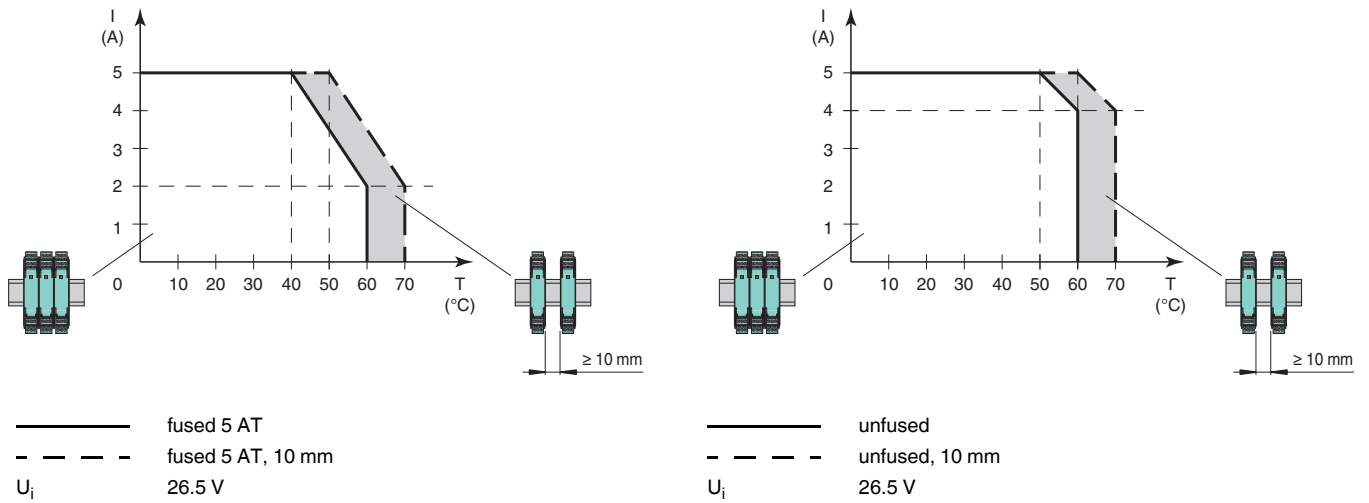
Front view



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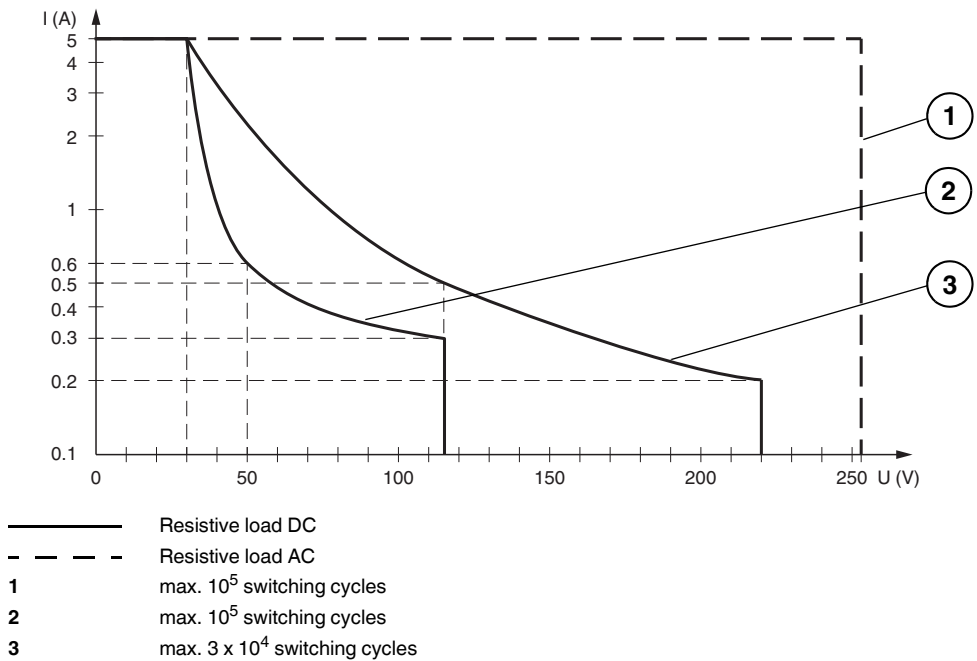
Characteristic Curve

Derating



Characteristic Curve

Maximum Switching Power of Output Contacts



The maximum number of switching cycles is depending on the electrical load and may be higher if reduced currents and voltages are applied.

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