

## Relay Module

### KCD0-RSH-1.1D.1

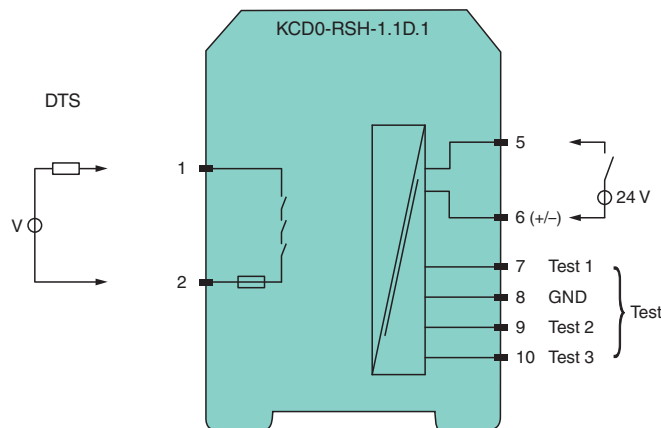
- 1-channel signal conditioner
- 24 V DC supply (loop powered)
- Logic input 19 V DC ... 26.5 V DC, non-polarized
- Relay contact output for de-energized to safe function
- Test pulse immunity
- Up to SIL 3 acc. to IEC/EN 61508
- Up to PL e acc. to EN/ISO 13849



## 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 AC and the 24 V DC control circuit. The de-energized to safe (DTS) function is permitted for SIL 3 and PL e applications. For testing of the relays, test terminals can be used. The test mode will be indicated by a LED. The output is protected against contact welding by a fuse.

## Connection



Zone 2

## 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                    | < 1.3 W                           |

## Technical Data

|  |       |   |
|--|-------|---|
| Power consumption  |       | < 1.3 W   |
| <b>Input</b>   |       |   |
| Connection side  |       | control side  |
| Connection   |       | Input terminals 5, 6 ; test input terminals 7, 8, 9, 10   |
| 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<br>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)<br>1-signal: $\geq 36$ mA (minimum load current DO card) |
| <b>Output</b>  |       |   |
| Connection side  |       | field side  |
| Connection   |       | terminals 1, 2  |
| Contact loading  |       | 253 V AC/3 A/cos $\phi$ 0.7; 30 V DC/3 A resistive load<br>253 V AC / 1/8 HP  |
| Minimum switch current   |       | 10 mA / 24 V DC   |
| Energized/De-energized delay                                   |       | 150 ms / 150 ms   |
| Mechanical life  |       | $5 \times 10^6$ switching cycles  |
| <b>Transfer characteristics</b>                                |       |   |
| Switching frequency  |       | < 3 Hz  |
| <b>Galvanic isolation</b>                                      |       |   |
| Input/Output   |       | reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>  |
| <b>Indicators/settings</b>                                     |       |   |
| Display elements   |       | LEDs  |
| Labeling   |       | space for labeling at the front   |
| <b>Directive conformity</b>                                    |       |   |
| 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 62061:2005+AC:2010+A1:2013+A2:2015 , EN/ISO 13849-1:2015   |
| <b>Conformity</b>  |       |   |
| Electromagnetic compatibility                                  |       | NE 21:2012 , EN 61326-3-1:2008 , EN 61326-3-2:2008  |
| Degree of protection   |       | IEC 60529:2013  |
| <b>Ambient conditions</b>                                      |       |   |
| Ambient temperature  |       | -20 ... 60 °C (-4 ... 140 °F)<br>Observe the temperature range limited by derating, see section derating.   |
| <b>Mechanical specifications</b>                               |       |   |
| Degree of protection   |       | IP20  |
| Connection   |       | screw terminals   |
| Mass   |       | approx. 100 g   |
| Dimensions   |       | 12.5 x 119 x 114 mm (0.5 x 4.7 x 4.5 inch) (W x H x D) , housing type A2  |
| Mounting   |       | on 35 mm DIN mounting rail acc. to EN 60715:2001  |
| <b>Data for application in connection with hazardous areas</b> |       |   |
| Certificate  |       | PF 15 CERT 3932 X   |
| Marking  |       | ⊕ II 3G Ex nC ec IIC T4 Gc [device in zone 2]   |
| Directive conformity   |       |   |
| Directive 2014/34/EU   |       | EN 60079-0:2012+A11:2013 , EN 60079-7:2015 , EN 60079-15:2010   |
| <b>International approvals</b>                                 |       |   |
| UL approval  |       | E106378   |
| <b>General information</b>                                     |       |   |

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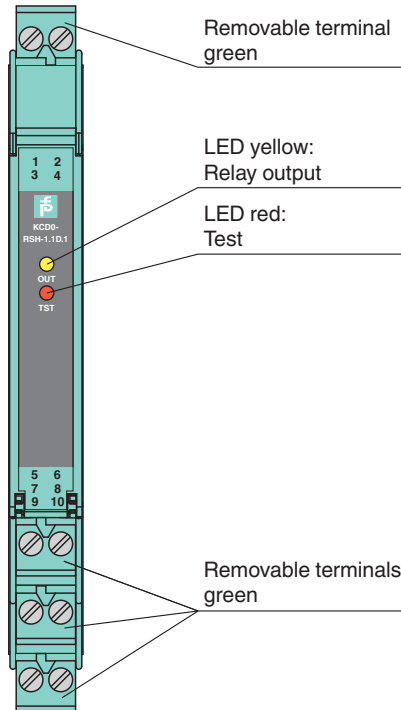
**Technical Data**

Supplementary information


Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

**Assembly**



Front view



**Matching System Components**

|   |                  |  |
|---|------------------|--|
|  | <b>K-DUCT-GY</b> | Profile rail, wiring comb field side, gray |
|---|------------------|--|

**Accessories**

|   |                  |  |
|---|------------------|--|
|  | <b>KC-ST-5GN</b> | Terminal block for KC modules, 2-pin screw terminal, green |
|  | <b>KF-CP</b>     | Red coding pins, packaging unit: 20 x 6                    |

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

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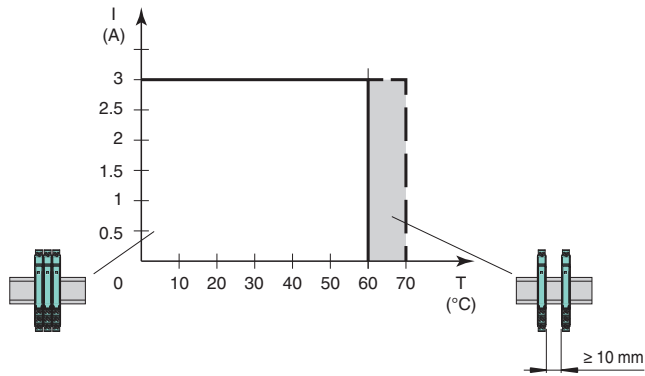
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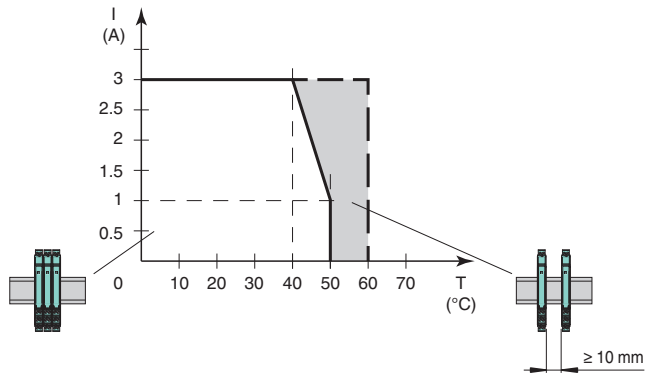
**Characteristic Curve**

**Derating**



— fused  
 - - - fused, 10 mm  
 $U_i$  26.5 V

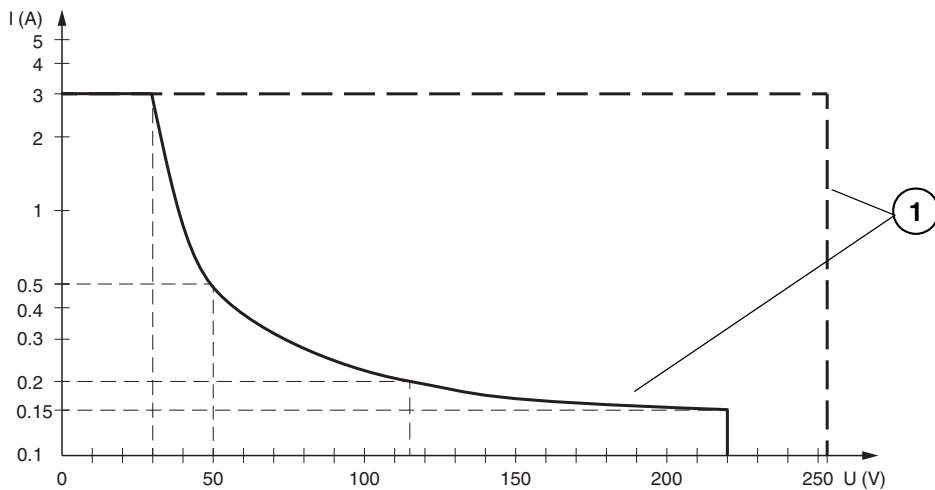
**Derating for Zone 2 Application**



— fused  
 - - - fused, 10 mm  
 $U_i$  26.5 V

**Characteristic Curve**

**Maximum Switching Power of Output Contacts**



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- Resistive load DC
- - - - - Resistive load AC
- 1 max.  $3 \times 10^4$  switching cycles

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