Relay Module

KFD2-RSH-1.2E.L3-Y1

- 1-channel signal conditioner
- 24 V DC supply
- Logic input 20.5 V DC ... 26.4 V DC
- Recommended connectable voltage 50 V AC ... 230 V AC, 60 V DC ... 110 V DC
- Relay contact output for energized to safe function
- Line fault transparency (LFT)
- Diagnostic function
- Up to SIL 3 acc. to IEC/EN 61508

C € SIL 3

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 energized to safe (ETS) function is permitted for SIL 3 applications.

An internal fault or a line fault is signalized by the impedance change of the relay contact input and an additional relay contact output.

A fault is signalized by LEDs and a separate collective error message output.

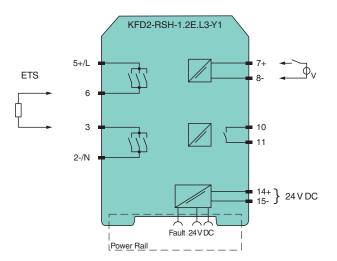
Application

This device is compatible to the following control:

Emerson DeltaV CHARM

Compatibility check to other ESD/DCS systems on request.

Connection



Technical Data

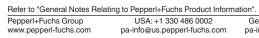
General specifications	
Signal type	Digital Output
Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 3
Systematic capability (SC)	SC 3
Cumply	



Release date: 2023-03-20 Date of issue: 2023-03-20 Filename: 326598_eng.pdf



Power consumption < 1.7 W, includes the power consumption of the digital input, see derating curves round. Connection side Connection terminals 7-, 8-	Technical Data			
Input current Power consumption 1.7 /W , includes the power consumption of the digital input, see derating curves input Connection side Connection Internation of the control side internal fault detection Internation Test pulse length	Connection		Power Rail or terminals 14+, 15-	
Power consumption < 1.7 W, includes the power consumption of the digital input, see derating curves round. Connection side Connection terminals 7-, 8-	Rated voltage	U_{r}	19 26.4 V DC	
Connection side Connection side Connection Pulsar/Pause ratio min. 150 ms / min. 150 ms with disabled internal fault detection min. 15 / ms. 1 with enabled internal fault detection min. 15 / ms. 1 with enabled internal fault detection min. 15 / ms. 1 with enabled internal fault detection min. 15 / ms. 1 with enabled internal fault detection min. 15 / ms. 1 with enabled internal fault detection max. 2 ms from DO card O-signal: 2.5 x DO D 1-signal: 2.5 x DO D 1-signa	Input current		max. 35 mA at 24 V DC , max. 44 mA at 19 V DC , with enabled internal fault detection	
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min. 1 s / min. 1 s / min. 1 s with enabled internal fault detection	Connection		terminals 7+, 8-	
Signal level	Pulse/Pause ratio			
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card) 1-signat: 2-36 mA (minimum load current DO card)	Signal level			
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60 110 V DC	Connection			
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Ambient conditions Ambient temperature -20 60 °C (-4 140 °F)	Electromagnetic compatibility		NE 21:2017 , IEC/EN 61326-3-2:2018 , EN 61326-3-1:2017	
Ambient temperature -20 60 °C (-4 140 °F)	Degree of protection		IEC 60529:2013	
	Ambient conditions			
Table to the state of the state	Ambient temperature		-20 60 °C (-4 140 °F) Observe the temperature range limited by derating, see section derating.	

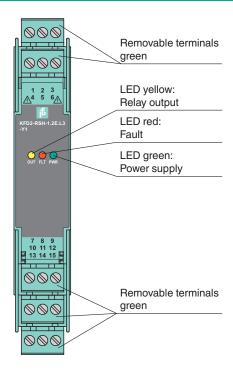


Technical Data

Mechanical specifications	
Degree of protection	IP20
Connection	screw terminals
Mass	approx. 134 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

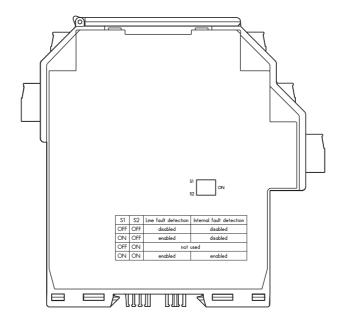


Matching System Components

KFD2-EB2	Power Feed Module
UPR-03	Universal Power Rail with end caps and cover, 3 conductors, length: 2 m
UPR-03-M	Universal Power Rail with end caps and cover, 3 conductors, length: 1,6 m
UPR-03-S	Universal Power Rail with end caps and cover, 3 conductors, length: 0.8 m
K-DUCT-GY	Profile rail, wiring comb field side, gray
K-DUCT-GY-UPR-03	Profile rail with UPR-03-* insert, 3 conductors, wiring comb field side, gray

KF-ST-5GN Terminal block for KF modules, 3-pin screw terminal, green KF-CP Red coding pins, packaging unit: 20 x 6

Configuration



Output switch settings

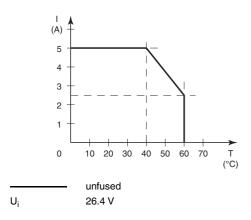
S1	S2	Line fault detection	Internal fault detection	
OFF	OFF	disabled	disabled	
ON	OFF	enabled	disabled	
OFF	ON	not used		
ON	ON	enabled	enabled	

Factory settings: line fault detection enabled, internal fault detection enabled

During a switching event the device detects an internal fault. A full test of all 3 redundant relay channels requires 3 consecutive switching events.

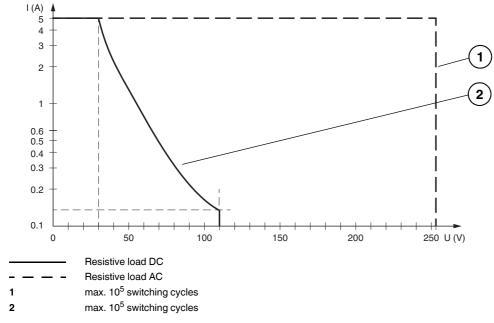
Characteristic Curve

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.