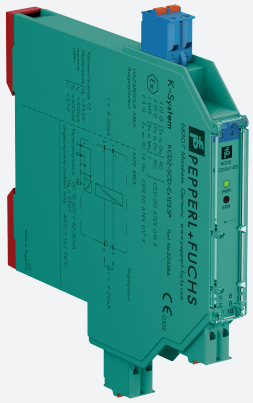


SMART Current Driver

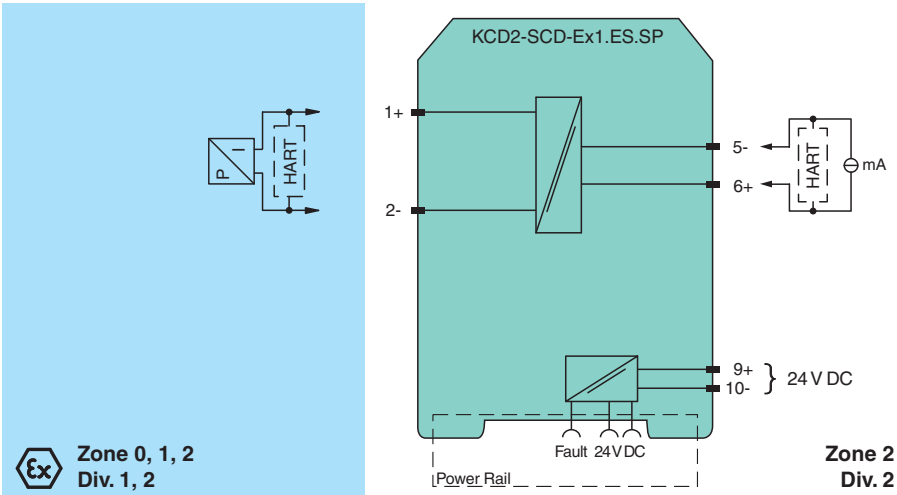
KCD2-SCD-Ex1.ES.SP

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Current output up to 650 Ω load
- HART I/P and valve positioner
- Line fault detection (LFD)
- Housing width 12.5 mm
- Connection via spring terminals with push-in connection technology
- Up to SIL 3 acc. to IEC/EN 61508

Function

This isolated barrier is used for intrinsic safety applications.
The device repeats the input signal from a control system to drive HART I/P converters, electrical valves, and positioners located in a hazardous area.
Digital signals are superimposed on the analog values at the field side or control side and are transferred bi-directionally.
The current is transferred via a DC/DC converter and repeated at the output terminals.
An open or short field circuit presents a high impedance to the control side to allow alarm conditions to be monitored by the control system.
Test sockets for the connection of HART communicators are integrated into the terminals of the device.
A fault is signalized by LEDs and a separate collective error message output.

Connection



Technical Data

General specifications		
Signal type		Analog output
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 3
Supply		
Connection		Power Rail or terminals 9+, 10-
Rated voltage	U_r	19 ... 30 V DC
Ripple		≤ 10 %
Rated current	I_r	≤ 33 mA at 24 V

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Power dissipation		≤ 700 mW at 20 mA and 500 Ω load
Power consumption		≤ 800 mW
Input		
Connection side		control side
Connection		terminals 5-, 6+
Input signal		4 ... 20 mA , limited to approx. 25 mA
Input voltage		open loop voltage of the control system < 60 V
Voltage drop		approx. 6 V at 20 mA
Input resistance		> 100 kΩ, with field wiring open or < 50 Ω
Output		
Connection side		field side
Connection		terminals 1+, 2-
Voltage		≥ 13 V at 20 mA
Current		4 ... 20 mA
Load		100 ... 650 Ω
Ripple		20 mV_{rms}
Line fault detection		field wiring open or < 50 Ω and test current < 2 mA
Transfer characteristics		
Deviation		at 20 °C (68 °F), 4 ... 20 mA < 0.1 % of full scale, incl. non-linearity and hysteresis
Influence of ambient temperature		< 2 µA/K (-20 ... 70 °C (-4 ... 158 °F)); < 4 µA/K (-40 ... -20 °C (-40 ... -4 °F))
Frequency range		field side into the control side: bandwidth with 0.5 V_{pp} signal 0 ... 3 kHz (-3 dB) control side into the field side: bandwidth with 1 mA_{pp} signal 0 ... 3 kHz (-3 dB)
Rise time		10 to 90 % ≤ 10 ms
Galvanic isolation		
Input/Output		basic insulation according to IEC/EN 61010-1, rated insulation voltage 300 V_{eff}
Input/power supply		basic insulation according to IEC/EN 61010-1, rated insulation voltage 300 V_{eff}
Output/power supply		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)
Conformity		
Electromagnetic compatibility		NE 21:2017 EN 61326-3-2:2018
Degree of protection		IEC 60529
Protection against electrical shock		UL 61010-1:2012
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications		
Degree of protection		IP20
Connection		spring terminals
Mass		approx. 100 g
Dimensions		12.5 x 124 x 114 mm (0.5 x 4.9 x 4.5 inch) (W x H x D) , housing type A2
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with hazardous areas		
EU-type examination certificate		CESI 20 ATEX 016 X
Marking		Ⓔx II (1)G [Ex ia Ga] IIC Ⓔx II (1)D [Ex ia Da] IIIC Ⓔx I (M1) [Ex ia Ma] I
Output		Ex ia
Supply		
Maximum safe voltage	U_m	250 V AC (Attention! U_m is no rated voltage.)

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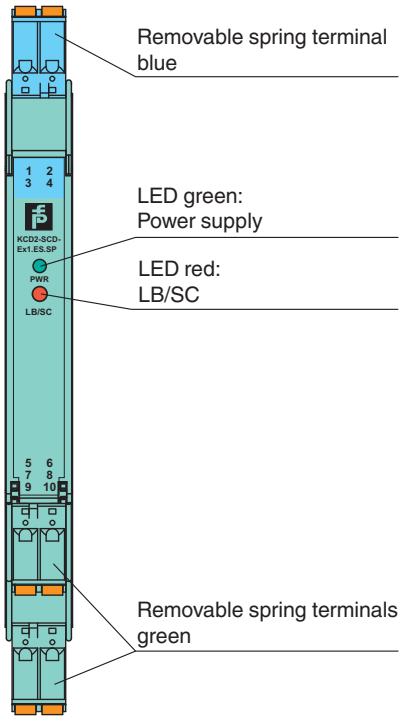
Equipment	terminals 1+, 2-
Voltage U_o	25.2 V
Current I_o	100 mA
Power P_o	630 mW
Internal capacitance C_i	5.7 nF
Internal inductance L_i	negligible
Certificate	CESI 20 ATEX 017 X
Marking	Ⓔx II 3G Ex ec IIC T4 Gc
Galvanic isolation	
Input/Output	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Output/power supply	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Directive conformity	
Directive 2014/34/EU	EN IEC 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015
International approvals	
UL approval	E106378
Control drawing	116-0471 (cULus)
IECEx approval	
IECEx certificate	IECEx CES 20.0009X
IECEx marking	[Ex ia Ga] IIC , [Ex ia Da] IIIC , [Ex ia Ma] I Ex ec IIC T4 Gc
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

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Matching System Components

	**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-BU**	Profile rail, wiring comb field side, blue
	**K-DUCT-BU-UPR-03**	Profile rail with UPR-03- * insert, 3 conductors, wiring comb field side, blue

Accessories

	**KC-CTT-5GN**	Terminal block for KC modules, 2-pin spring terminal, with test sockets, green
	**KC-CTT-5BU**	Terminal block for KC modules, 2-pin spring terminal, with test sockets, blue
	**KC-CTT-3GN2BU**	Terminal block for KC modules, 2-pin spring terminal, with test sockets
	**KF-CP**	Red coding pins, packaging unit: 20 x 6

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