



# SMART Current Driver KCD2-SCD-Ex1.SP

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Current output up to 650  $\Omega$  load
- HART-IP and valve positioner
- Lead breakage monitoring
- Housing width 12.5 mm
- Connection via spring terminals with push-in connection technology
- Up to SIL 2 acc. to IEC/EN 61508



**SIL 2**



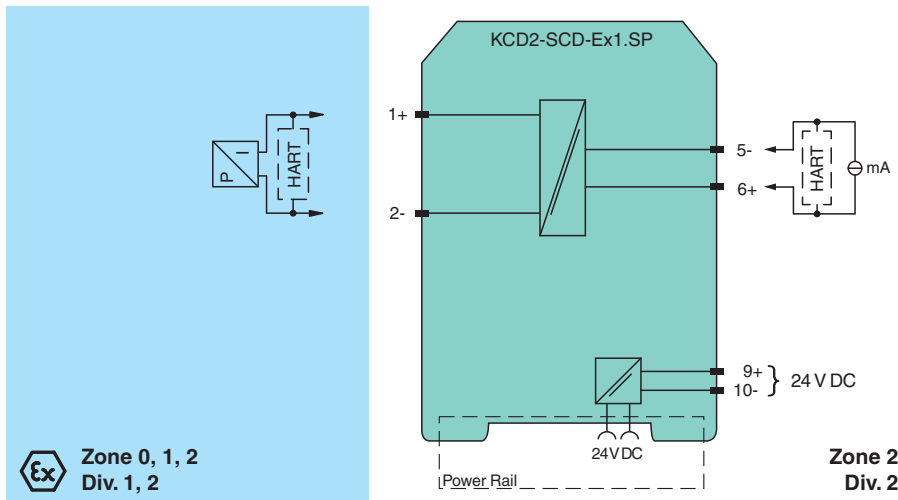
## Function

This isolated barrier is used for intrinsic safety applications. The device repeats the input signal from a control system to drive SMART 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 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.

## Wiring Diagram



## Technical Data

<b>General specifications</b>	
Signal type	Analog output
<b>Functional safety related parameters</b>	
Safety Integrity Level (SIL)	SIL 2
Systematic capability (SC)	SC 3
<b>Supply</b>	
Connection	Power Rail or terminals 9+, 10-

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## Technical Data

Rated voltage	$U_r$	19 ... 30 V DC
Ripple		≤ 10 %
Rated current	$I_r$	≤ 30 mA at 24 V
Power dissipation		≤ 600 mW at 20 mA and 500 Ω load
Power consumption		≤ 700 mW
<b>Input</b>		
Connection side		control side
Connection		terminals 5-, 6+
Input signal		4 ... 20 mA , limited to approx. 26 mA
Input voltage		open loop voltage of the control system < 30 V
Voltage drop		approx. 6 V at 20 mA
Input resistance		> 100 kΩ, with field wiring open
<b>Output</b>		
Connection side		field side
Connection		terminals 1+, 2-
Voltage		≥ 13 V at 20 mA
Current		4 ... 20 mA
Load		0 ... 650 Ω
Ripple		20 mV <sub>rms</sub>
<b>Transfer characteristics</b>		
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 <sub>pp</sub> signal 0 ... 3 kHz (-3 dB) control side into the field side: bandwidth with 0.5 V <sub>pp</sub> signal 0 ... 3 kHz (-3 dB)
Rise time		10 to 90 % ≤ 10 ms
<b>Galvanic isolation</b>		
Input/Output		basic insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Input/power supply		basic insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Output/power supply		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
<b>Indicators/settings</b>		
Display elements		LED
Labeling		space for labeling at the front
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
<b>Conformity</b>		
Electromagnetic compatibility		NE 21:2017 EN 61326-3-2:2018
Degree of protection		IEC 60529
Protection against electrical shock		UL 61010-1:2019
<b>Ambient conditions</b>		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F)
<b>Mechanical specifications</b>		
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
<b>Data for application in connection with hazardous areas</b>		
EU-type examination certificate		CESI 06 ATEX 021 X
Marking		⊕ II (1)G [Ex ia Ga] IIC ⊕ II (1)D [Ex ia Da] IIIC ⊕ I (M1) [Ex ia Ma] I
Output		Ex ia

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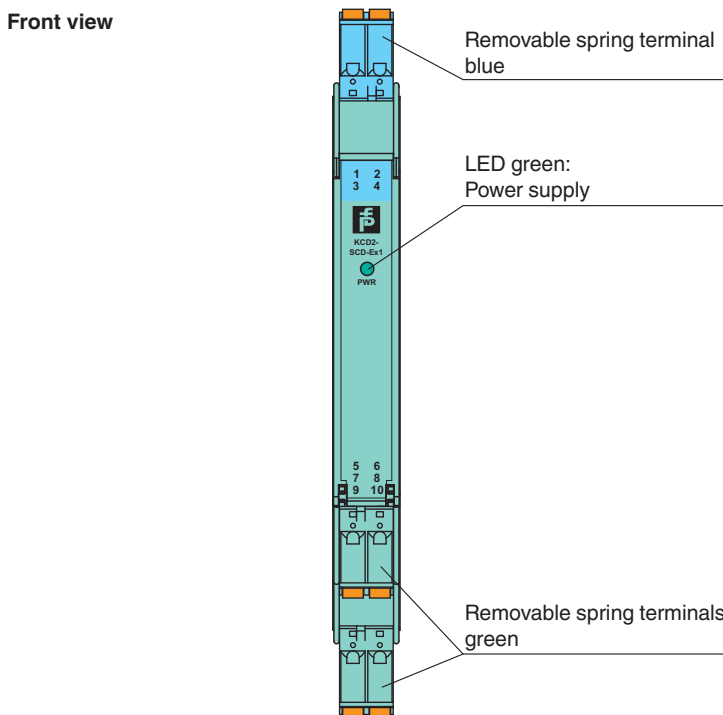
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**Technical Data**

<b>Supply</b>			
Maximum safe voltage	$U_m$	250 V AC (Attention! $U_m$ is no rated voltage.)	
<b>Equipment</b>			
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	
<b>Certificate</b>			
CESI 19 ATEX 021 X			
<b>Marking</b>			
Ⓜ II 3G Ex ec IIC T4 Gc			
<b>Galvanic isolation</b>			
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		
<b>Directive conformity</b>			
Directive 2014/34/EU	EN IEC 60079-0:2018 , EN 60079-11:2012 , EN IEC 60079-7:2015+A1:2018		
<b>International approvals</b>			
<b>FM approval</b>			
FM certificate	FM 18 CA 0116 X , FM 19 US 0117 X		
Control drawing	116-0469 (cFMus)		
<b>UL approval</b>			
Control drawing	E106378		
Control drawing	116-0459 (cULus)		
<b>IECEX approval</b>			
IECEX certificate	IECEX CES 06.0001X		
IECEX marking	[Ex ia Ga] IIC , [Ex ia Da] IIIC , [Ex ia Ma] I Ex ec IIC T4 Gc		
<b>General information</b>			
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .		

**Assembly**



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