## **Features**

- · 1-channel isolated barrier
- · 24 V DC supply (Power Rail)
- Current output up to 700  $\Omega$  load
- · HART I/P and valve positioner
- · Line fault detection (LFD)
- · Accuracy 0.1 %
- · Terminal blocks with test sockets
- Up to SIL2 acc. to IEC 61508

## **Function**

This isolated barrier is used for intrinsic safety applications. It drives SMART I/P converters, electrical valves, and positioners in hazardous areas.

Digital signals are superimposed on the analog values at the field or control side and are transferred bi-directionally.

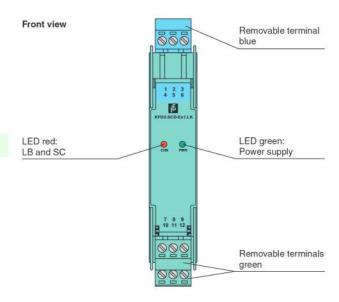
Current transferred across the DC/DC converter is repeated at terminals 1 and 2.

An open and shorted field circuit presents a high input impedance to the control side to allow line fault detection by control system.

If the loop resistance for the digital communication is too low, an internal resistor of 250  $\Omega$  between terminals 8 and 9 is available, which may be used as the HART communication resistor.

Sockets for the connection of a HART communicator are integrated into the terminals of the device.

## **Assembly**

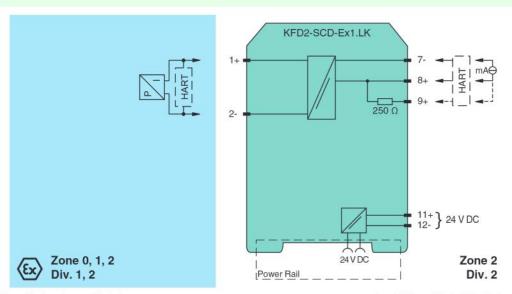






SIL2

## Connection



General specifications		
Signal type		Analog output
Supply		
Connection		Power Rail or terminals 11+, 12-
Rated voltage		20 35 V DC
Ripple		within the supply tolerance
Power loss		1.1 W at 20 mA into 10 V (equivalent to 500 Ω) load
Power consumption		1.3 W
Input		
Connection		terminals 7-, 8+
Voltage drop		approx. 4 V or internal resistance 200 Ω at 20 mA
Input resistance		> 100 k $\Omega$ , when wiring resistance in the field < 50 $\Omega$ or > 800 $\Omega$ at 20 mA
Current		4 20 mA limited to approx. 25 mA
Output		The Let His tillined to approx. Let his
Connection		terminals 1+, 2-
Current		4 20 mA
Load		100 700 Ω
		≥ 14 V at 20 mA
Voltage		2 14 V at 20 IIIA
Transfer characteristics		
Deviation After collibration		at 20 °C (60 °E) < 10.1 °C include the linearity and hyptocolic
After calibration	arat	at 20 °C (68 °F): ≤ ± 0.1 % incl. non-linearity and hysteresis
Influence of ambient temperature		≤±20 ppm/K
Rise time		< 100 μs (bounce from 10 90 %)
Electrical isolation		L 1 L 1 L 1 L 1 L 1 L 1 L 1 L 1 L 1 L 1
Input/power supply		basic insulation acc. to EN 50178, rated insulation voltage of 50 V AC
Directive conformity		
Electromagnetic compatibilit	ty	
Directive 2004/108/EC		EN 61326-1:2006
Conformity		
Insulation coordination		EN 50178:1997
Electrical isolation		EN 50178:1997
Electromagnetic compatibilit	ty	NE 21:2006
Protection degree		IEC 60529:2001
Ambient conditions		
Ambient conditions Ambient temperature		-20 60 °C (-4 140 °F)
Ambient temperature  Mechanical specifications	•	-20 60 °C (-4 140 °F)
Ambient temperature	•	-20 60 °C (-4 140 °F)
Ambient temperature  Mechanical specifications	<b>S</b>	
Ambient temperature  Mechanical specifications  Protection degree	•	IP20
Ambient temperature  Mechanical specifications  Protection degree  Mass	•	IP20 approx. 100 g
Ambient temperature  Mechanical specifications  Protection degree  Mass  Dimensions		IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1
Ambient temperature  Mechanical specifications Protection degree  Mass Dimensions Mounting  Data for application in cor	nnection	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1
Ambient temperature  Mechanical specifications Protection degree  Mass Dimensions Mounting  Data for application in corwith Ex-areas	nnection	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001
Ambient temperature  Mechanical specifications Protection degree  Mass Dimensions Mounting  Data for application in corwith Ex-areas EC-Type Examination Certifications	nnection	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001  BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com
Ambient temperature  Mechanical specifications Protection degree  Mass Dimensions Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of page 1.	nnection licate protection U <sub>o</sub>	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001 BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com $\textcircled{x}$ II (1)GD [EEx ia] IIC (-20 °C $\leq$ T <sub>amb</sub> $\leq$ 60 °C)
Ambient temperature  Mechanical specifications Protection degree  Mass Dimensions Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of provided to the control of the correction	nnection icate protection U <sub>0</sub> I <sub>0</sub>	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001 BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com $\textcircled{x}$ II (1)GD [EEx ia] IIC (-20 °C $\leq$ T <sub>amb</sub> $\leq$ 60 °C) 25.2 V
Ambient temperature  Mechanical specifications  Protection degree  Mass  Dimensions  Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of providinge  Current	nnection licate protection U <sub>o</sub>	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001 BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com $\textcircled{N}$ II (1)GD [EEx ia] IIC (-20 °C $\leq$ T <sub>amb</sub> $\leq$ 60 °C) 25.2 V 93 mA
Ambient temperature  Mechanical specifications  Protection degree  Mass  Dimensions  Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of providing Current  Power	nnection ficate protection U <sub>o</sub> I <sub>o</sub> P <sub>o</sub>	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001 BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com $\textcircled{k}$ II (1)GD [EEx ia] IIC (-20 °C $\leq$ T <sub>amb</sub> $\leq$ 60 °C) 25.2 V 93 mA 585 mW
Ambient temperature  Mechanical specifications  Protection degree  Mass  Dimensions  Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of providing Current  Power  Supply	nnection icate protection U <sub>0</sub> I <sub>0</sub>	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001 BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com $\textcircled{N}$ II (1)GD [EEx ia] IIC (-20 °C $\leq$ T <sub>amb</sub> $\leq$ 60 °C) 25.2 V 93 mA
Ambient temperature  Mechanical specifications  Protection degree  Mass  Dimensions  Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of providing Current  Power  Supply  Maximum safe voltage  Equipment	nnection licate protection U <sub>o</sub> I <sub>o</sub> P <sub>o</sub>	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001 BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com $\textcircled{k}$ II (1)GD [EEx ia] IIC (-20 °C $\leq$ T <sub>amb</sub> $\leq$ 60 °C) 25.2 V 93 mA 585 mW 250 V ms (Attention! The rated voltage can be lower.)
Ambient temperature  Mechanical specifications Protection degree  Mass Dimensions Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of provided provi	nnection icate protection Uo Io Po Um	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001 BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com $\textcircled{N}$ II (1)GD [EEx ia] IIC (-20 °C $\leq$ T <sub>amb</sub> $\leq$ 60 °C) 25.2 V 93 mA 585 mW 250 V ms (Attention! The rated voltage can be lower.)
Ambient temperature  Mechanical specifications Protection degree  Mass Dimensions Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of power supply  Voltage Current Power  Supply Maximum safe voltage  Equipment Voltage Current	nnection icate protection Uo Io Po Um	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001  BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com  ⟨ы⟩ II (1)GD [EEx ia] IIC (-20 °C ≤ T <sub>amb</sub> ≤ 60 °C) 25.2 V 93 mA 585 mW  250 V ms (Attention! The rated voltage can be lower.)
Ambient temperature  Mechanical specifications Protection degree  Mass  Dimensions  Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of provide the current power  Supply  Maximum safe voltage  Equipment  Voltage  Current  Power	nnection icate protection Uo Io Po Um	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001 BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com $\textcircled{N}$ II (1)GD [EEx ia] IIC (-20 °C $\leq$ T <sub>amb</sub> $\leq$ 60 °C) 25.2 V 93 mA 585 mW 250 V ms (Attention! The rated voltage can be lower.)
Ambient temperature  Mechanical specifications Protection degree  Mass  Dimensions  Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of provide and control of the correct of the	nnection icate protection Uo Io Po Um Uo Io	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001  BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com  ⟨ы⟩ II (1)GD [EEx ia] IIC (-20 °C ≤ T <sub>amb</sub> ≤ 60 °C) 25.2 V 93 mA 585 mW  250 V ms (Attention! The rated voltage can be lower.)  25.5 V 93 mA 0.58 W
Ambient temperature  Mechanical specifications Protection degree  Mass  Dimensions  Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of provide and provided and	nnection icate protection Uo Io Po Um	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001  BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com  ⟨x⟩ II (1)GD [EEx ia] IIC (-20 °C ≤ T <sub>amb</sub> ≤ 60 °C) 25.2 V 93 mA 585 mW  250 V ms (Attention! The rated voltage can be lower.)  25.5 W 93 mA 0.58 W
Ambient temperature  Mechanical specifications Protection degree  Mass Dimensions Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of provided provi	nnection  icate protection  Uo Io Po  Um  Uo Io Po  Um	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001  BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com  ⟨ы⟩ II (1)GD [EEx ia] IIC (-20 °C ≤ T <sub>amb</sub> ≤ 60 °C) 25.2 V 93 mA 585 mW  250 V ms (Attention! The rated voltage can be lower.)  25.5 V 93 mA 0.58 W
Ambient temperature  Mechanical specifications Protection degree  Mass Dimensions Mounting Data for application in corwith Ex-areas EC-Type Examination Certification in corwith Ex-areas  Europe Examination Certification in corwith Ex-areas  Supply Maximum safe voltage Equipment Voltage Current Power Input Maximum safe voltage Statement of conformity Group, category, type of patemperature class	nnection  icate protection  Uo Io Po  Um  Uo Io Po  Um	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001  BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com  ⟨♠⟩ II (1)GD [EEx ia] IIC (-20 °C ≤ T <sub>amb</sub> ≤ 60 °C) 25.2 V 93 mA 585 mW  250 V ms (Attention! The rated voltage can be lower.)  25.5 V 93 mA 0.58 W  250 V ms (Attention! The rated voltage can be lower.)  TÜV 99 ATEX 1499 X , observe statement of conformity
Ambient temperature  Mechanical specifications Protection degree  Mass  Dimensions  Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification in corwith Ex-areas  EC-Type Examination Certification in corwith Ex-areas  EC-Type Examination Certification in corwith Ex-areas  Europe Examination Certification in corwith Ex-areas  Europe Examination Certification in corwith Ex-areas  Europe Examination Certification in corwith Ex-areas  Eventually Examination in corwith Ex-areas  Eventually Examination in corwith Examination in corwing in corwi	nnection  icate protection  Uo Io Po  Um  Uo Io Po  Um	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001  BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com
Ambient temperature  Mechanical specifications Protection degree  Mass  Dimensions  Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of provide the company of the	nnection  icate protection  Uo Io Po  Um  Uo Io Po  Um	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001  BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com  ③ II (1)GD [EEx ia] IIC (-20 °C ≤ T <sub>amb</sub> ≤ 60 °C) 25.2 V 93 mA 585 mW  250 V ms (Attention! The rated voltage can be lower.)  25.5 V 93 mA 0.58 W  250 V ms (Attention! The rated voltage can be lower.)  TÜV 99 ATEX 1499 X , observe statement of conformity  ③ II 3G Ex nA II T4 [device in zone 2]  safe galvanic isolation acc. to EN 50020, voltage peak value 375 V
Ambient temperature  Mechanical specifications Protection degree  Mass  Dimensions  Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of provide the company of the correct of the	nnection  icate protection  Uo Io Po  Um  Uo Io Po  Um	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001  BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com
Ambient temperature  Mechanical specifications Protection degree  Mass  Dimensions  Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of provide the company of the correct of the	nnection  icate protection  Uo Io Po  Um  Uo Io Po  Um	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001  BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com
Ambient temperature  Mechanical specifications Protection degree Mass Dimensions Mounting Data for application in corwith Ex-areas EC-Type Examination Certification, category, type of provide the company of the correction of the	nnection  icate protection  Uo Io Po  Um  Uo Io Po  Um	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001  BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com  ③ II (1)GD [EEx ia] IIC (-20 °C ≤ T <sub>amb</sub> ≤ 60 °C) 25.2 V 93 mA 585 mW  250 V ms (Attention! The rated voltage can be lower.)  25.5 V 93 mA 0.58 W  250 V ms (Attention! The rated voltage can be lower.)  TÜV 99 ATEX 1499 X , observe statement of conformity  ③ II 3G Ex nA II T4 [device in zone 2]  safe galvanic isolation acc. to EN 50020, voltage peak value 375 V
Ambient temperature  Mechanical specifications Protection degree  Mass  Dimensions  Mounting  Data for application in corwith Ex-areas  EC-Type Examination Certification, category, type of provide the company of the correct of the	nnection  icate protection  Uo Io Po  Um  Uo Io Po  Um	IP20 approx. 100 g 20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1 on 35 mm DIN mounting rail acc. to EN 60715:2001  BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com