# Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input for NAMUR sensors or dry contacts
- Input frequency 1 mHz ... 5 kHz
- Current output 0/4 mA ... 20 mA
- Relay and transistor output
- · Start-up override
- Line fault detection (LFD)
- Up to SIL2 acc. to IEC 61508/IEC 61511

# Function

This isolated barrier is used for intrinsic safety applications.

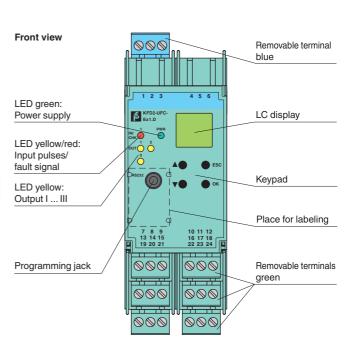
The device is a universal frequency converter that changes a digital input signal into a proportional free adjustable 0/4 mA ... 20 mA analog output signal and functions as a switch amplifier and a trip alarm.

The functions of the switch outputs (2 relay outputs and 1 potential free transistor output) are easily adjustable [trip value display (min/max alarm), serially switched output, pulse divider output, error signal output].

The device is easily configured by the use of keypad or with the PACTware configuration software.

A fault is signalized by LEDs acc. to NAMUR NE44 and a separate collective error message output.

For additional information, refer to the manual and www.pepperl-fuchs.com.

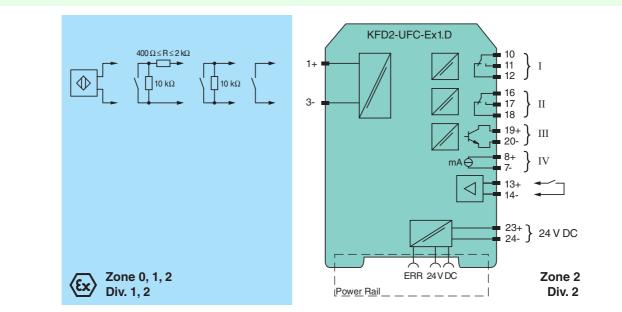


CE (Ex

Assembly

SIL2

# Connection



General specifications   Digital Input     Supply   Digital Input     Supply   terminals 22+, 24-or power feed module/Power Rail     Rated vortage   20-, 30 V DC     Rated oursent   appox. 100 mA     Connection   terminals 22+, 24-or power feed module/Power Rail     Connection   uppot. 100 mA     Connection   uppot. 100 mA     Connection   uppot. 100 mA     Connection   uppot. 100 mA     Pute duration   > 50 µs     Input. 1   sonsor acc. to EN 60947-56 (NAMUR) or mechanical contact     Pute duration   > 50 µs     Input. 1   sonsor acc. to EN 60947-56 (NAMUR) or mechanical contact     Input. 1   sonsor acc. to EN 60947-56 (NAMUR) or mechanical contact     Input. 1   sonsor acc. to EN 60947-56 (NAMUR) or mechanical contact     Output. 1   sonsor acc. to EN 60947-56 (NAMUR) or mechanical contact     Output. 1   sonsor acc. to EN 60947-56 (NAMUR) or mechanical contact     Output. 1   sonsor acc. to EN 60947-56 (NAMUR) or mechanical contact     Output. 1   sonsor acc. to EN 60947-56 (NAMUR) or mechanical contact     Open Circuit voltageAbort -circuit worton acontact		
Supply   Familian 23: 24 or power feed module/Power Rail     Connection   terminals 23: 24 or power feed module/Power Rail     Rated voltage   2030 V DC     Rated voltage   2030 V DC     Rated voltage   2030 V DC     Rated voltage   22 W / 22 W     Input   52 W / 22 W     Input 1   Septor 2000 mechanical contact     Pulse duration   > 50 µs     Input 1:   sensor acc. In SN 0647 >-56 (NAMUR) or mechanical contact     Load monitoring   Dot 1 500 Hz     Load monitoring   10 ar M of rom 1.10 m 3/ 1 < 1.5 m A	•	
Connection   terminals 23-, 24. or power feed module/Power Rail     Rated voltage   2020 V DC     Rated current   approx. 100 mA     Power loss/power consumption   2 V / 2.2 W     Connection   Imput F     Connection   Imput F. individual safe: terminals 14, 3- Imput I non-individual safe: terminals 15, 14-     Input I requency   0.0015000 Hz     Lead monitoring   Beraser acc. to EN 60947-5-6 (NAMUR) or mechanical contact     Active/Passive   10.0015000 Hz     Lead monitoring   Beraser acc. to EN 60947-5-6 (NAMUR) or mechanical contact     Open circuit voltage/short-circuit   16.9 / S and/stable in steps of 1 s     Active/Passive   12.4 mA (for min. 100 ms) / 1< 1.5 mA		gital input
Finish voltage   2030 V DC     Ratic durrent   approx.100 mÅ     Power losspower consumption   5.2 W 2.2 W     Input   Input I: intrinsically safe: terminals 14, 3- Input I: non-intrinsically safe: terminals 13, 14-     Puise duration   > 50 µs     Input I: mon-intrinsically safe: terminals 13, 14-     Puise duration   > 50 µs     Input I: aon-intrinsically safe: terminals 13, 14-     Puise duration   > 50 µs     Input I: admonitoring   brankage 15 0.15 mA     Input III   safup override: 1 1000 s, adjustable in steps of 1 s     Active/Pasive   1 × 4 mA (for min. 100 ms) / 1 < 1.5 mA	-	
Fated curven   approx. 100 mÅ     Power loss/power consumption   52 W / 2.2 W     Power loss/power consumption   52 W / 2.2 W     Connection   Input I: intrinsically safe: terminals 14, 3- Input I: non-intrinsically safe: terminals 14, 14-     Input I: consumption   > 50 µ     Pulse duration   > 50 µ     Input I: consumption   > 500 µ     Lead monitoring   breakage 12 0.15 mA stort-circuit 1 - 6.5 m A     Input I:   startup override: 1 1000 s., adjustable in stops of 1 s     Active/Passivo   1.5 4 mA (for min. 100 ma) / 1 < 1.5 mA		
Power loss/power consumption   \$2 W / 2.2 W     input   Input 1: intrinsically safe: terminals 14, 3- input 11: non-intrinsically safe: terminals 13, 14-     Connection   Input 1: intrinsically safe: terminals 13, 14-     Pulse duration   > 50 µs     Input 1: non-intrinsically safe: terminals 13, 14-   Input 10     Input 1: non-intrinsically safe: terminals 13, 14-   Input 10     Input 1: non-intrinsically safe: terminals 13, 14-   Input 10     Input 1: non-intrinsically safe: terminals 13, 14-   Input 10     Lead monitoring   Doto 12     Lead monitoring   Is 4m A(for min. 100 mg / 1<1.5 mA	•	
Input   Input liminationally safe: terminals 14, 14- Input limon-intrinsically safe: terminals 13+, 14- Input limon-intrinsically safe: terminals 13+, 14- Input limon-intrinsically safe: terminals 13+, 14-     Input limon-intrinsically safe: terminals 13+, 14- Input limon-intrinsically safe: terminals 13+, 14-   Safe 13- Input limon-intrinsically safe: terminals 13+, 14-     Input limon-intrinsically safe: terminals 10, 17   Safe 13- Input limon-intrinsically safe: terminals 10, 15 mA     Input limon-intrinsically safe: terminals 10, 15 mA   Safe 13- Input limon-intrinsically safe 15- Input limon-intrinsically safe 15- Input limon-intrinsically safe 15- Input limon-intrinsically safe 15- Input limon-intrinsically 17, 18- output limon-intrinsical 15, 24, 26, 92, 67, 140 VD C/2A     Contact loading   Safe 16, 24, 26, 92, 67, 140 VD C/2A     Signal level   Safe 16, 24, 25, 92, 60, 74, 200, 92, 60, 74, 200, 92, 60, 74, 200, 92, 60, 74, 200, 92, 60, 74, 200, 92, 60, 74, 200, 92, 60, 74, 200, 92, 60, 74, 200, 92, 60, 74, 200, 92, 74, 200, 92, 60, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 74, 200, 92, 7		·
Connection   Input I: intrinsiculty safe: terminals 1+, 3- Input I: sensor acc. to EN 60947-5-6 (NAMUR) or mechanical contact     Pulse duration   > 50 µs     Input I: sensor acc. to EN 60947-5-6 (NAMUR) or mechanical contact   > 50 µs     Input I: sensor acc. to EN 60947-5-6 (NAMUR) or mechanical contact   > 50 µs     Input I: sensor acc. to EN 60947-5-6 (NAMUR) or mechanical contact   > 50 µs     Input I: sensor acc. to EN 60947-5-6 (NAMUR) or mechanical contact   > 50 µs     Active/Passive   0.0015000 Hz   Sensor Acc. to EN 60947-5-6 (NAMUR) or mechanical contact     Active/Passive   1 > 4 mA (for min. 100 ms) / 1 < 1.5 mA		2 W / 2.2 W
Input I   Input I:   Input I:   Input I:     Input I:   sensor acc. to EN 60947-5-6 (NAMUR) or mechanical contact     Pulse duration   > 50 µs     Input I:   sensor acc. to EN 60947-5-6 (NAMUR) or mechanical contact     Input I:   sensor acc. to EN 60947-5-6 (NAMUR) or mechanical contact     Input I:   sensor acc. to EN 60947-5-6 (NAMUR) or mechanical contact     Active/Passive   1 > 4 mA (for min. 100 ms, adjustable in steps of 1 s     Active/Passive   1 > 4 mA (for min. 100 ms, 1 + 1.5 mA     Output   Output I:   terminals 10, 11, 12     output I:   terminals 10, 17, 18   output I:     Output I:   terminals 10, 7, 18   output I:     Connection   signal, relay   output I:   terminals 10, 7, 18     Output I:   terminals 10, 7, 18   output I:   terminals 10, 7, 18     Output II   terminals 10, 7, 18   terminals 10, 11   terminals 10, 10     Output II   terminals 10, 7, 18   terminals 10, 10   terminals 10, 10     Output II   signal, relay   terminals 10, 10   terminals 10, 10   terminals 10, 10   terminals 10, 10   t		
Pulse duration   > 50 μs     Input Inquency   0.001 5000 Hz     Lead monitoring   breakage I ≤ 0.15 mA; short-circuit I > 6.5 mA     Input II   startup override: 1 1000 s, adjustable in steps of 1 s     Active/Passive   13 4 M (for min. 100 ms) / 1 < 1.5 mA	Inp	out II: non-intrinsically safe: terminals 13+, 14-
Input frequency $0.01 \dots 5000 Hz$ Laad monitoringbreakago I ± 0.15 mA; short-circuit I ± 5. mAInput IIStartup override: 1 1000 s, adjustable in steps of 1 sActive/PassiveI >4 mA (for min. 100 ms) / I < 1.5 mA		
Lead monitoringbreakage I ≤ 0.15 mA; short-circuit I > 6.5 mAInput IIstartup override: 11000 s, adjustable in steps of 1 sActive/PassiveI > 4 m 4 (for min. 100 ms) / I < 1.5 mA		•
Input IIstartup override: 1 1000 s, adjustable in steps of 1 sActive Passive1 > 4 mA (for min. 100 ms) / l < 1.5 mA	ut frequency 0.0	001 5000 Hz
Active/Passive $1 > 4 mA$ (for min. 100 ms) / $1 < 1.5 mA$ Open circuit voltage/short-circuit current $18 V / 5 mA$ Output $18 V / 5 mA$ Outputcompatibility (for the massive management value)Connectionoutput I: terminals 10, 11, 12 output IV: terminals 94, 20- output IV: terminals 94, 20- output IV: terminals 94, 7-Output Isignal, relayContect loading250 V AC / 2 A / cos $\diamond = 0.7 : 40 V DC / 2 A$ Mechanical life $5 \times 10^7$ switching cyclesEnergized/De-energized delayapprox. 20 ms / approx. 20 msOutput IIelectronic output, passiveContact loading40 V DCSignal level1-signal: (L+) - 2.5 V (50 mA, short-circuit/overload proof) Orisinal: switched off (off-state current < 10 µA)Output IIanalog Current rangeOutput IVanalogCollective error messagePower RailTransfer characteristics Input I0.001 5000 HzMeasuring time0.001 5000 HzAccuracy0.1 % of the measurement value, > 0.001 HzAccuracy0.1 % of the measurement value, > 0.001 HzAccuracy0.03 %/K (30 ppm)Output I, IIenforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output I, IIreinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output I, IV other circuitsreinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output I, IV other circuitsreinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub></sub>	-	
Open circuit voltage/short-circuit current   18 V / 5 mA     Output   -     Connection   output I: terminals 10, 11, 12 output II: terminals 16, 7, 18 output II: terminals 16, 7, 20- output IV: terminals 19+, 20- output IV: terminals 8+, 7-     Output Garding   250 V AC / 2A / cos e ≥ 0.7; 20 V DC / 2 A     Mechanical life   5 x 10 <sup>2</sup> awitching cycles     Energized/De-energized delay   approx. 20 ms / approx. 20 ms     Output II   electronic output, passive     Contact loading   40 V D C     Signal level   - signal: (L+) - 2.5 V (50 mA, short-circuit/overload proof) O-signal: switched df (dif-state current ≤ 10 µA)     Output IN   analog     Current range   0 20 mA or 4 20 mA     Open loop voltage   < 24 V DC	l sta	artup override: 1 1000 s, adjustable in steps of 1 s
current   index     Output   output 1: terminals 10, 11, 12 output 11: terminals 16, 17, 18 output 11: terminals 19, 20- output 11: terminals 84, 7-     Output I.1   signal: relay     Contact loading   SigNa 109, 200     Energized/De-energized delay   approx.20ms /	ive/Passive I > -	4 mA (for min. 100 ms) / l < 1.5 mA
Connection   output I: terminals 10, 11, 12 output II: terminals 16, 17, 18 output IV: terminals 19, 20- output IV: terminals 19, 20- output IV: terminals 8+, 7-     Output I, II   Sandar S	-	5 V / 5 mA
output II: terminals 16, 17, 18 output II: terminals 14, 20- output IV: terminals 84, 7-Output I, IIIsignal, relayContract Ioading250 V AC / 2 A / cos $\phi \ge 0.7$ ; 40 V DC / 2 AMechanical life5 × 10 <sup>7</sup> switching cyclesEnergized/De-energized delayapprox. 20 ms / approx. 20 msOutput IIIelectronic output, passiveContract Ioading40 V DCSignal level1-signal: (L+) - 2.5 V (50 mA, short-circuit/overload proof) osignal: switched of (off-state current < 10 µA)	ut	
Contact loading250 V AC / 2 A / cos $\phi \ge 0.7$ ; 40 V DC / 2 AMechanical life5 × 10 <sup>2</sup> switching cyclesBenergized/De-energized delayapprox. 20 msOutput IIelectronic output, passiveContact loading40 V DCSignal level1-signai: (L+) - 2.5 V (50 mA, short-circuit/overload proof)Output IVanalogOutput IVanalogOutput IVanalogOutput IVanalogCurrent range0 20 mA or 4 20 mAOpen loop voltage $\leq 44$ V DCLoad $< 650 \Omega$ Fault signaldownscale I $\le 3.6$ mA, upscale $\ge 21.5$ mA (acc. NAMUR NE43)Collective error messagePoer RailInput I0.001 5000 HzMeasurement range0.01% of the measurement value, $\ge 0.001$ HzAccuracy0.1% of the measurement value, $\ge 0.001$ HzAccuracy0.1% of the measurement value, $\ge 0.001$ HzNutput IVMeasuring time<000 ms	out	tput II: terminals 16, 17, 18 tout III: terminasl 19+, 20-
Mechanical life $5 \times 10^7$ switching cyclesEnergized/De-energized delayapprox. 20 ms / approx. 20 msOutput IIIelectronic output, passiveContact loading40 V DCSignal level1-signal: (L+) - 2.5 V (50 mA, short-circuit/overload proof) O-signal: switched off (off-state current < 10 µA)	it I, II sig	nal, relay
Energized/De-energized delayapprox. 20 ms / approx. 20 msOutput IIIelectronic output, passiveContact loading40 V DCSignal level1-signal: (L+) - 2.5 V (50 mA, short-circuit/overload proof) o-signal: switched off (off-state current < 10 $\mu$ A)Output IVanalogOutput IVanalogCurrent range0 20 mA or 4 20 mAOpen loop voltage<24 V DC	ntact loading 250	0 V AC / 2 A / $\cos \phi \ge 0.7$ ; 40 V DC / 2 A
Output IIIelectronic output, passiveContact loading40 V DCSignal level1-signal: (L+) - 2.5 V (50 mA, short-circuit/overload proof) o-signal: switched off (off-state current $\leq 10  \mu$ A)Output IVanalogOutput IVanalogCurrent range0 20 mA or 4 20 mAOpen loop voltage $\leq 24 V DC$ Load $\leq 650  \Omega$ Fault signaldownscale I $\leq 3.6  \text{mA}$ , upscale $\geq 21.5  \text{mA}$ (acc. NAMUR NE43)Collective error messagePower RailTransfer characteristicsInput IInput I0.001 5000 HzMeasurement range0.01 5000 HzAccuracy0.1 % of the measurement value , $\geq 0.001  \text{Hz}$ Measuring time< 100 ms	chanical life 5 x	< 10 <sup>7</sup> switching cycles
Contact loading40 V DCSignal level1-signal: (L+) - 2.5 V (50 mA, short-circuit/overload proof) O-signal: switched off (off-state current < 10 $\mu$ A)Output IVanalogCurrent range0 20 mA or 4 20 mAOpen loop voltage< 24 V DC	ergized/De-energized delay app	prox. 20 ms / approx. 20 ms
Signal level1-signal: (L+) - 2.5 V (50 mA, short-circuit/overload proof) O-signal: switched off (off-state current < 10 $\mu$ A)Output IVanalogCurrent range020 mA or 420 mAOpen loop voltage< 24 V DC	it III ele	ectronic output, passive
O-signal: switched off (off-state current ≤ 10 $\mu$ A)Output IVanalogOutput IVanalogCurrent range020 mA or 420 mAOpen loop voltage≤ 24 V DCLoad≤ 650 $\Omega$ Fault signaldownscale I ≤ 3.6 mA, upscale ≥ 21.5 mA (acc. NAMUR NE43)Collective error messagePower RailTransfer characteristicsInput IMeasurement range0.001 5000 HZResolution0.1 % of the measurement value , ≥ 0.001 HzAccuracy0.1 % of the measurement value , > 0.001 HzMeasuring time< 100 ms	ntact loading 40	V DC
Current range0 20 mA or 4 20 mAOpen loop voltage $\leq 24 V DC$ Load $\leq 650 \Omega$ Fault signaldownscale 1 $\leq 3.6$ mA, upscale $\geq 21.5$ mA (acc. NAMUR NE43)Collective error messagePower RailInput IMeasurement range0.001 5000 HzResolution0.1 % of the measurement value , $\geq 0.001$ HzAccuracy0.1 % of the measurement value , $\geq 0.001$ HzMeasuring time1.003 %/K (30 ppm)Output I, IIResolution0.003 %/K (30 ppm)Output I, IIResolution $< 10 \muA$ Accuracy $< 200$ msOutput I VResolution $< 0.005 %/K (50 ppm)$ Output I VResolution $< 0.05 %/K (50 ppm)$ Output I, IIResolution $< 10 \muA$ Accuracy $< 20 \muA$ Influence of ambient temperature $0.005 %/K (50 ppm)$ Output I, IIResolution $< e10 \muA$ Accuracy $< 20 \muA$ Influence of ambient temperature $0.005 %/K (50 ppm)$ Electrical isolationreinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Input I, III, IIIreinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output II II/power supply and collectivereinsulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>		
Open loop voltage   ≤ 24 V DC     Load   ≤ 650 Ω     Fault signal   downscale I ≤ 3.6 mA, upscale ≥ 21.5 mA (acc. NAMUR NE43)     Collective error message   Power Rail     Transfer characteristics   -     Input I   -     Measurement range   0.001 5000 Hz     Accuracy   0.1% of the measurement value , ≥ 0.001 Hz     Accuracy   0.1% of the measurement value , > 0.001 Hz     Measuring time   < 100 ms	it IV ana	alog
Open loop voltage   ≤ 24 V DC     Load   ≤ 650 Ω     Fault signal   downscale I ≤ 3.6 mA, upscale ≥ 21.5 mA (acc. NAMUR NE43)     Collective error message   Power Rail     Transfer characteristics   -     Input I   -     Measurement range   0.001 5000 Hz     Accuracy   0.1% of the measurement value , ≥ 0.001 Hz     Accuracy   0.1% of the measurement value , > 0.001 Hz     Measuring time   < 100 ms	rrent range 0	20 mA or 4 20 mA
Load≤ 650 ΩFault signaldownscale I ≤ 3.6 mA, upscale ≥ 21.5 mA (acc. NAMUR NE43)Collective error messagePower RailTransfer characteristicsInput IMeasurement range0.001 5000 HzResolution0.1 % of the measurement value, ≥ 0.001 HzAccuracy0.1 % of the measurement value, > 0.001 HzMeasuring time< 100 ms	<b>v</b>	24 V DC
Collective error message   Power Rail     Transfer characteristics   Power Rail     Input I   Input I     Measurement range   0.001 5000 Hz     Resolution   0.1 % of the measurement value , ≥ 0.001 Hz     Accuracy   0.1 % of the measurement value , > 0.001 Hz     Measuring time   < 100 ms     Influence of ambient temperature   0.003 %/K (30 ppm)     Output I, II      Response delay   ≤ 200 ms     Output IV      Resolution   < 10 μA     Accuracy   < 20 μA     Influence of ambient temperature   0.003 %/K (50 ppm)     Output IV      Resolution   < 10 μA     Accuracy   < 20 μA     Influence of ambient temperature   0.005 %/K (50 ppm)     Electrical isolation      Input I /other circuits   reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output I, II/other circuits   reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output II /Ipower supply and collective error   basici insulation according to IEC/EN 61010-1, rated		$350 \Omega$
Collective error message   Power Rail     Transfer characteristics   Input I     Input I   0.001 5000 Hz     Measurement range   0.001 5000 Hz     Resolution   0.1 % of the measurement value , ≥ 0.001 Hz     Accuracy   0.1 % of the measurement value , ≥ 0.001 Hz     Measuring time   < 100 ms	ult signal dov	wnscale I $\leq$ 3.6 mA , upscale $\geq$ 21.5 mA (acc. NAMUR NE43)
Transfer characteristics   Input I     Input I   0.001 5000 Hz     Measurement range   0.01 % of the measurement value , ≥ 0.001 Hz     Accuracy   0.1 % of the measurement value , > 0.001 Hz     Accuracy   0.1 % of the measurement value , > 0.001 Hz     Measuring time   < 100 ms	•	wer Rail
Measurement range0.0015000 HzResolution0.1% of the measurement value , ≥ 0.001 HzAccuracy0.1% of the measurement value , > 0.001 HzMeasuring time< 100 ms	, i i i i i i i i i i i i i i i i i i i	
Measurement range0.0015000 HzResolution0.1% of the measurement value , ≥ 0.001 HzAccuracy0.1% of the measurement value , > 0.001 HzMeasuring time< 100 ms		
Resolution0.1 % of the measurement value , ≥ 0.001 HzAccuracy0.1 % of the measurement value , > 0.001 HzMeasuring time< 100 ms		001 5000 Hz
Accuracy   0.1 % of the measurement value , > 0.001 Hz     Measuring time   < 100 ms	0	
Measuring time< 100 msInfluence of ambient temperature0.003 %/K (30 ppm)Output I, IIResponse delay≤ 200 msOutput IVResolution< 10 μA		
Influence of ambient temperature 0.003 %/K (30 ppm)   Output I, II -   Response delay ≤ 200 ms   Output IV -   Resolution < 10 μA	,	
Output I, II   Instruction     Response delay   ≤ 200 ms     Output IV      Resolution   < 10 μA	5	
Response delay ≤ 200 ms   Output IV    Resolution < 10 μA		
Output IV   Image: Constraint of the second of		200 ms
Resolution<10 μAAccuracy<20 μA		
Accuracy < 20 μA		10 uA
Influence of ambient temperature 0.005 %/K (50 ppm)   Electrical isolation reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Input I/other circuits reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output I, II/other circuits reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Mutual output I, II, III reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output III/power supply and collective error basic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V <sub>eff</sub>		•
Electrical isolation   reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output I, II/other circuits   reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Mutual output I, II, III   reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output III/power supply and collective error   basic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V <sub>eff</sub>	•	•
Input I/other circuitsreinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output I, II/other circuitsreinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Mutual output I, II, IIIreinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output III/power supply and collective errorbasic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V <sub>eff</sub>	•	
Output I, II/other circuits reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Mutual output I, II, III reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output III/power supply and collective error basic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V <sub>eff</sub>		inforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V
Mutual output I, II, III reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> Output III/power supply and collective error basic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V <sub>eff</sub>		
Output III/power supply and collective basic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V <sub>eff</sub> error		
	•	
Dasic insulation according to IEC/EN 01010-1, rated insulation voltage 50 V <sub>eff</sub>	t III/start-up override	sic insulation according to IEC/EN 61010 1, roted insulation voltage 50 V/
Output III/IV basic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V <sub>eff</sub>		
Output IV/power supply and collective functional insulation acc. to IEC 62103, rated insulation voltage 50 V <sub>eff</sub>		
error Start-up override/power supply and sultation acc. to IEC 62103, rated insulation voltage 50 V <sub>eff</sub>		nctional insulation acc. to IEC 62103, rated insulation voltage 50 $V_{eff}$
collective error Interface/power supply and collective functional insulation acc. to IEC 62103, rated insulation voltage 50 V <sub>eff</sub>		nctional insulation acc. to IEC 62103, rated insulation voltage 50 $V_{eff}$
error Interface/output III basic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V <sub>eff</sub>	ace/output III bas	sic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V <sub>eff</sub>
Directive conformity		

Subject to reasonable modifications due to technical advances. Pepperl+Fuchs Group • Tel.: Germany +49-621-776-0 • USA +1-330-4253555 • Singapore +65-67-799091 • Internet www.pepperl-fuchs.com

Electromagnetic compatibilit	У	
Directive 2004/108/EC	,	EN 61326-1:2006
Low voltage		
Directive 2006/95/EC		EN 61010-1:2010
Conformity		
Electromagnetic compatibilit	y	NE 21:2006
Protection degree	,	IEC 60529:2001
Input		EN 60947-5-6:2000
Ambient conditions		
Ambient temperature		-20 60 °C (-4 140 °F)
Mechanical specifications	;	
Protection degree		IP20
Mass		300 g
Dimensions		40 x 119 x 115 mm (1.6 x 4.7 x 4.5 in) , housing type C3
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in con with Ex-areas	nection	
EC-Type Examination Certifi	icate	TÜV 99 ATEX 1471, for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		⟨ $ix$ ⟩ II (1)GD, I (M1) [Ex ia] IIC, [Ex iaD], [Ex ia] I (-20 °C ≤ T <sub>amb</sub> ≤ 60 °C)
Supply		
Maximum safe voltage	Um	40 V DC (Attention! U <sub>m</sub> is no rated voltage.)
Input I		terminals 1+, 3- Ex ia IIC, Ex iaD
Voltage	Uo	10.1 V
Current	I <sub>o</sub>	13.5 mA
Power	Po	34 mW (linear characteristic)
Input II		terminals 13+, 14- non-intrinsically safe
Maximum safe voltage	Um	40 V (Attention! The rated voltage can be lower.)
Output I, II		terminals 10, 11, 12; 16, 17, 18 non-intrinsically safe
Maximum safe voltage	Um	253 V (Attention! The rated voltage can be lower.)
Contact loading		253 V AC/2 A/cos φ > 0.7; 40 V DC/2 A resistive load (TÜV 99 ATEX 1471)
Output III		terminals 19+, 20- non-intrinsically safe
Maximum safe voltage	$U_m U_m$	40 V (Attention! U <sub>m</sub> is no rated voltage.)
Output IV		terminals 8+, 7- non-intrinsically safe
Maximum safe voltage	Um	40 V DC (Attention! U <sub>m</sub> is no rated voltage.)
Interface		RS 232
Maximum safe voltage	Um	40 V (Attention! U <sub>m</sub> is no rated voltage.)
Statement of conformity		TÜV 02 ATEX 1885 X
Group, category, type of protection, temperature class		€ II 3G Ex nA nC IIC T4
Output I, II		
Contact loading		50 V AC/2 A/cos $\phi$ > 0.7; 40 V DC/1 A resistive load
Electrical isolation		
Input I/other circuits		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Directive conformity		
Directive 94/9/EC		EN 60079-0:2009, EN 60079-11:2007, EN 60079-15:2005, EN 60079-26:2007, EN 61241-11:2006
International approvals		
FM approval		
Control drawing		16-538FM-12
General information		
Supplementary information		EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl- fuchs.com.

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# KFD2-UFC-Ex1.D

# Accessories

### Power feed module KFD2-EB2

The power feed module is used to supply the devices with 24 V DC via the Power Rail. The fuse-protected power feed module can supply up to 150 individual devices depending on the power consumption of the devices. A galvanically isolated mechanical contact uses the Power Rail to transmit collective error messages.

#### **Power Rail UPR-03**

The Power Rail UPR-03 is a complete unit consisting of the electrical inset and an aluminium profile rail 35 mm x 15 mm. To make electrical contact, the devices are simply engaged.

### Profile Rail K-DUCT with Power Rail

The profile rail K-DUCT is an aluminum profile rail with Power Rail insert and two integral cable ducts for system and field cables. Due to this assembly no additional cable guides are necessary.



Power Rail and Profile Rail must not be fed via the device terminals of the individual devices!

**PACT***ware*<sup>™</sup>

Device-specific drivers (DTM)

#### Adapter K-ADP1

Programming adapter for parameterisation via the serial RS 232 interface of a PC/Notebook

For programming, please use the new version of adapter K-ADP1 (part no. 181953, connector length 14mm). When using the previous version K-ADP1 (connector length 18 mm) the plug is exposed by approx. 3 mm. The function is not affected.

# Adapter K-ADP-USB

Programming adapter for parameterisation via the serial USB interface of a PC/Notebook