- 1-channel
- Input frequency 1 mHz ... 12 kHz
- Analogue output 0/4 mA ... 20 mA
- Measuring range parameterisable
- 2 relay outputs
- 1 electronic output, isolated
- Each output can be assigned individual parameters, such as a trip value (high/low alarm), serially switched output, pulse divider or error message output
- Startup override
- Restart inhibit
- Lead breakage (LB) monitoring and short-circuit (SC) monitoring
- Bounce filter
- Parameterization via PC or control panel
- Up to SIL2 acc. to IEC 61508

24 V DC

KFD2-UFC-1

(without control panel)

Function

The universal frequency converter KFD2-UFC-1 converts an input frequency into a frequency-proportional current and offers at the same time the possibility to monitor trip values.

The frequency value for the minimum (0 mA or 4 mA) and the maximum output current (20 mA) is freely parameterisable.

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

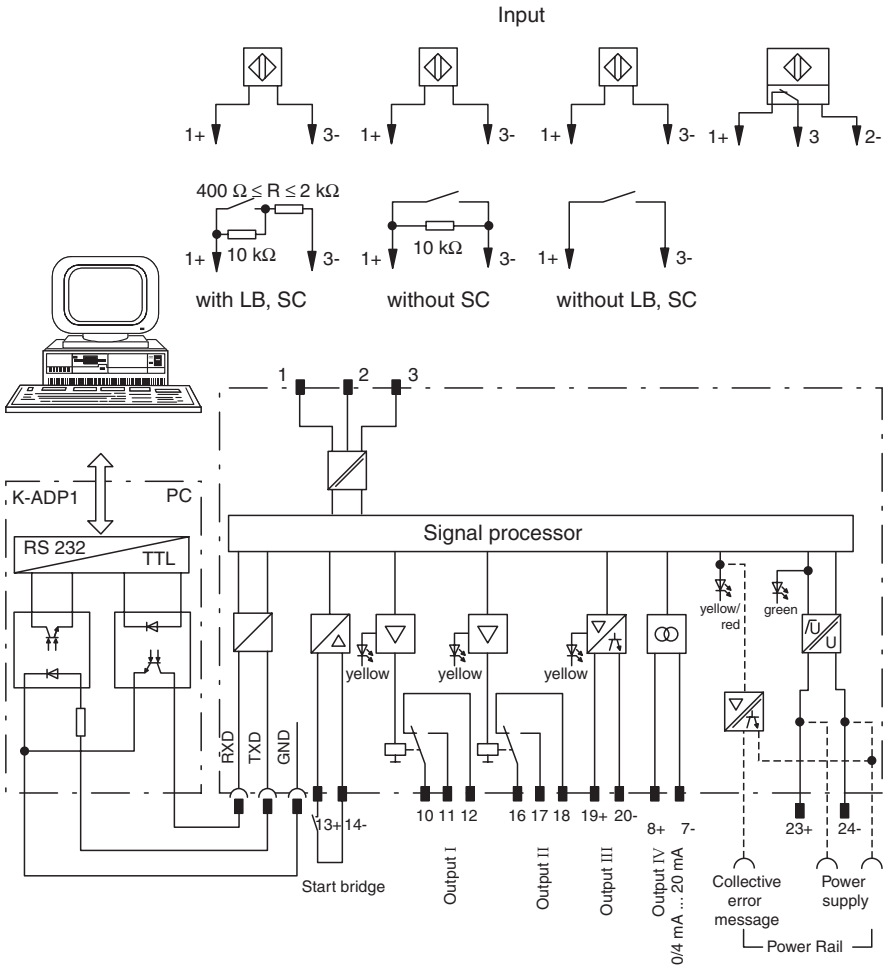
A start-up override that can be activated externally is integrated as well. The maximum input frequency is 12 kHz.

The input and output circuits are galvanically isolated.

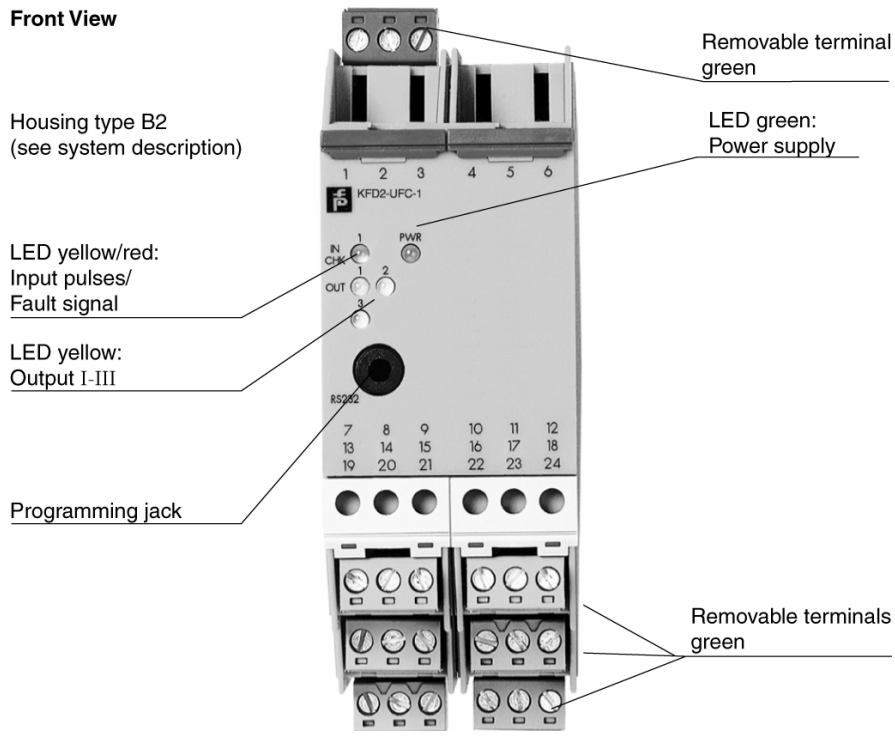
The KFD2-UFC-1 can be supplied via the Power Rail, which also transfers the collective error message.

The device can be adjusted means of the software.

Connection



Composition



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Supply	
Connection	terminals 23+, 24- or power feed module/Power Rail
Rated voltage	20 ... 30 V DC
Rated current	approx. 100 mA
Power loss/power consumption	≤ 2 W / 2.2 W
Input	
Connection	input I: 2-wire sensor: terminals 1+, 3- three wire sensor: terminals 1+, 2- and 3 input II: terminals 13+, 14- startup override;
Input I	sensor
Open circuit voltage/short-circuit current	22 V / 40 mA
Input resistance	4.7 kΩ
Switching point/switching hysteresis	logic 1: > 2.5 mA ; logic 0: < 1.9 mA
Pulse duration	> 50 µs
Input frequency	0.001 ... 12000 Hz
Lead monitoring	breakage I ≤ 0.15 mA; short-circuit I > 4 mA
Input II	startup override: 1 ... 1000 s, adjustable in steps of 1 s
Active/passive	I > 4 mA (for min. 100 ms) / I < 1.5 mA
Open circuit voltage/short-circuit current	18 V / 5 mA
Output	
Connection	output I: terminals 10, 11, 12 ; output II: terminals 16, 17, 18 output III: terminals 19+, 20- ; output IV: terminals 8+, 7-
Collective error message	Power Rail
Output I, II	signal, relay
Contact loading	250 V AC / 2 A / cos ϕ ≥ 0.7 ; 40 V DC / 2 A
Mechanical life	5 x 10^7 switching cycles
Energized/de-energized delay	approx. 20 ms / approx. 20 ms
Output III	electronic output, passive
Contact loading	40 V DC
Signal level	1-signal: (L+) -2.5 V (50 mA, short-circuit/overload proof) 0-signal: blocked output (off-state current ≤ 10 µA)
Output IV	analog
Current range	0 ... 20 mA or 4 ... 20 mA
Open circuit voltage	≤ 24 V DC
Load	≤ 650 Ω
Fault signal	downscale I ≤ 3.6 mA , upscale ≥ 21.5 mA (acc. NAMUR NE43)
Transfer characteristics	
Input I	
Measuring range	0.001 ... 12000 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 %/°C (30 ppm)
Output I, II	
Response delay	≤ 200 ms
Output IV	
Resolution	< 10 µA
Accuracy	< 20 µA
Influence of ambient temperature	0.005 %/°C (50 ppm)
Electrical isolation	
Input/other circuits	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Output I, II/other circuits	reinforced insulation acc. to IEC 61140, rated insulation voltage 300 V_{rms}
Mutual output I, II, III	reinforced insulation acc. to IEC 61140, rated insulation voltage 300 V_{rms}
Output III, IV/power supply and collective error	reinforced insulation acc. to IEC 61140, rated insulation voltage 300 V_{rms}
Output III/IV/start-up override	functional insulation acc. to EN 50178, rated insulation voltage 253 V_{eff}
Start-up override/power supply and collective error	reinforced insulation acc. to IEC 61140, rated insulation voltage 300 V_{rms}
Interface/power supply	reinforced insulation acc. to IEC 61140, rated insulation voltage 300 V_{rms}
Interface/output III	functional insulation acc. to EN 50178, rated insulation voltage 300 V_{rms}
Directive conformity	
Electromagnetic compatibility	
Directive 89/336/EEC	EN 61326, EN 50081-2
Conformity	
Insulation coordination	EN 50178

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Electrical isolation	EN 50178
Electromagnetic compatibility	NE 21
Protection degree	IEC 60529
Protection against electric shock	IEC 61140
Ambient conditions	
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
Mechanical specifications	
Protection degree	IP20
Mass	300 g
Dimensions	40 x 100 x 115 mm (1.6 x 3.9 x 4.5 in)

Supplementary information

Statement of Conformity, Declaration of Conformity and instructions have to be observed. For information see www.pepperl-fuchs.com.

Accessories

Power feed modules 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 100 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.

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

PACT*ware*™

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

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