

Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input HART with transmitter supply
- 4 relay outputs (NO)
- 3 analog outputs 4 mA ... 20 mA
- Parameterization via control panel

Function

At the HART Loop Converter can be connected HART compatible transmitter and positioner. The signals are transmitted only through the HART protocol.

The device analyzes up to 4 HART variables and converts them to analog current signals or trip values.

The device can supply 2-wire transmitter. For retrofitting the HART Loop Converter can be connected to existing field circuits.

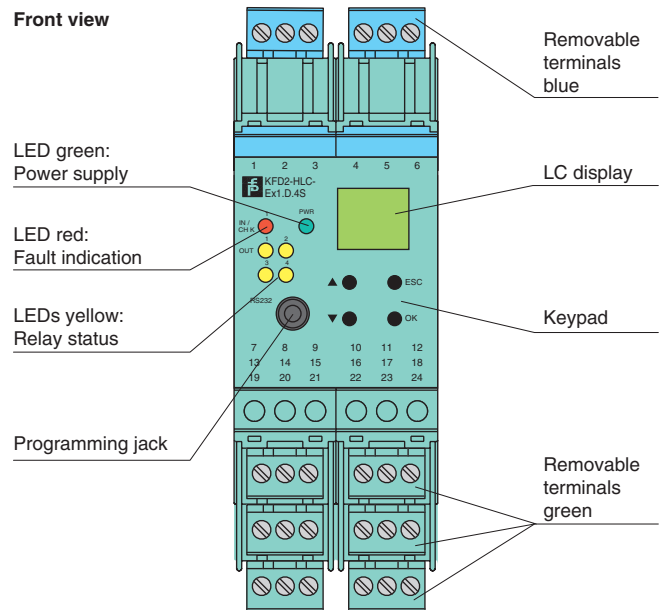
Additionally to the current outputs, 4 normally opened contacts are available, which draw the trip value from the HART variables.

The operation is performed via an operator panel on the front side of the device.

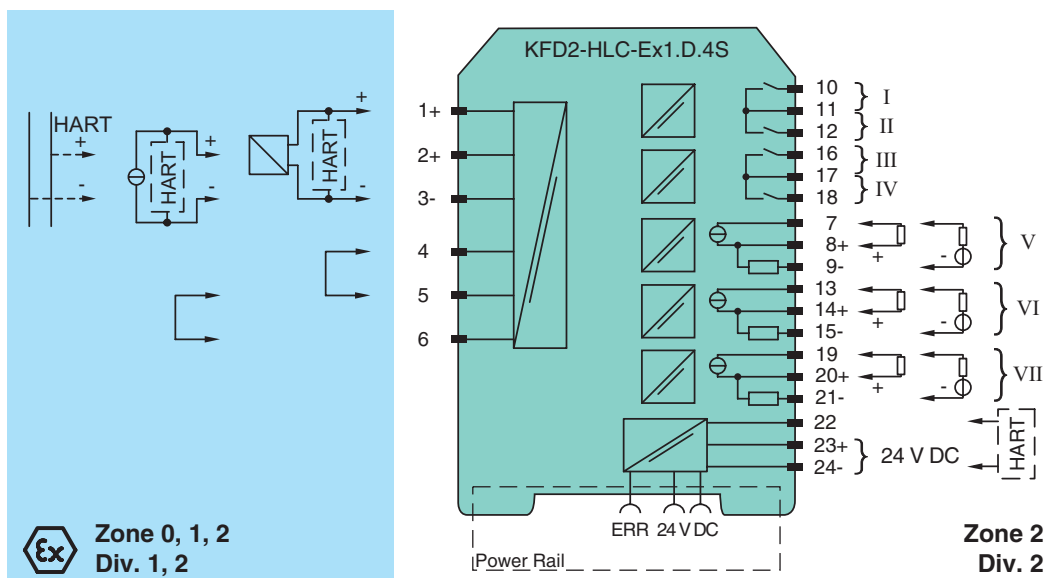
Application

- Configurable as primary or secondary master
- Automatic HART burst supported
- Support for a HART handheld device connected on safe area side
- Can be configured to assign the same input variable to multiple outputs (signal splitting)

Assembly



Connection



Supply		
Connection		Power Rail or terminals 23+, 24-
Rated voltage		19 ... 30 V
Rated current		approx. 140 mA at 24 V DC
Power loss		2.7 W
Power consumption		3.3 W
Input		
Connection		terminals 1, 2, 3, 4, 5, 6
Input signal		HART communication, transmitter supply
Open-circuit voltage/short-circuit current		typ. 24 V / 28 mA
Input resistance		250 Ω , 5 % (terminals 2, 3 and with jumper on 5, 6)
Available voltage		≥ 15.5 V at 20 mA, short-circuit proof
Output		
Connection		output I: terminals 10, 11, output II: terminals 11, 12, output III: terminals 16, 17, output IV: terminals 17, 18 output V: terminals 7, 8, 9, output VI: terminals 13, 14, 15, output VII: terminals 19, 20, 21
Collective error message		Power Rail and LED red
Output I, II, III, IV		
Output signal		relay and LED yellow
Mechanical life		10^7 switching cycles
Energized/de-energized delay		approx. 20 ms / approx. 20 ms
Output V, VI, VII		
Output signal		analogue
Current range		4 ... 20 mA , source or sink mode
Load		$\leq 650 \Omega$, source mode
Voltage range		5 ... 30 V , sink mode from external supply
Fault signal		downscale $I \leq 2$ mA, upscale $I \geq 21.5$ mA (acc. NAMUR NE43) or hold measurement value
Other outputs		HART handheld device on terminals 22, 24
Transfer characteristics		
Output V, VI, VII		
Resolution		$\leq 2 \mu\text{A}$
Accuracy		$< 20 \mu\text{A}$, $10 \mu\text{A}$ typ.
Influence of ambient temperature		$< \pm 2 \mu\text{A/K}$
Duration of measurement/Response delay		HART message acquisition time plus 100 ms
Relay		programmable either for fault or trip value (with direction, hysteresis and delay)
Electrical isolation		
Output I, II/III, IV		function isolation acc. to IEC 62103, rated insulation voltage 250 V _{rms}
Output I, II, III, IV/other circuits		reinforced insulation acc. to IEC 62103, rated insulation voltage 300 V _{rms}
Output V/VI/VII/power supply		function insulation acc. to IEC 62103, rated insulation voltage 50 V _{rms}
Directive conformity		
Electromagnetic compatibility		
Directive 89/336/EC		EN 61326
Low voltage		
Directive 73/23/EEC		IEC 62103
Conformity		
Electromagnetic compatibility		NE 21
Protection degree		IEC 60529
Protection against electric shock		IEC 60664-1
Ambient conditions		
Ambient temperature		-20 ... 60 °C (253 ... 333 K)
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
Data for application in conjunction with hazardous areas		
EC-Type Examination Certificate		BASEEFA 07 ATEX 0174 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		 II (1)GD [Ex ia] IIC [Ex iaD]
Input		Ex ia/Ex ia D
Supply		
Safety maximum voltage U _m		253 V AC (Attention! The rated voltage can be lower.)
Equipment		
Voltage U _o		25.2 V
Current I _o		104.9 mA
Power P _o		0.661 W

Equipment		terminals 2, 5/3
Voltage	U_i	< 28 V
Power	P_i	< 1.33 W
Voltage	U_o	1.1 V
Current	I_o	11.9 mA
Power	P_o	4 mW
Output I, II, III, IV		terminals 10, 11; 11, 12; 16, 17; 17, 18 , non-intrinsically safe
Safety maximum voltage U_m		253 V (Attention! U_m is no rated voltage.)
Contact loading		253 V AC/1 A/cos $\phi > 0.7$; 30 V DC/1 A resistive load (BASEEFA 07 ATEX 0174) 50 V AC/1 A/cos $\phi > 0.7$; 30 V DC/1 A resistive load (Pepperl+Fuchs self-declaration)
Output V, VI, VII		terminals 7, 8, 9; 13, 14, 15; 19, 20, 21 , non-intrinsically safe
Safety maximum voltage U_m		253 V (Attention! U_m is no rated voltage.)
Statement of conformity		Pepperl+Fuchs
Group, category, type of protection, temperature classification		Ⓔ II 3G Ex nA nC II T4 X
Electrical isolation		
Input/other circuits		safe electrical isolation acc. to EN 60079-11, voltage peak value 375 V
Directive conformity		
Directive 94/9 EC		EN 60079-0 , EN 60079-11 , EN 61241-0 , EN 61241-11
General information		
Supplementary information		EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed where applicable. 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!