Solenoid Driver

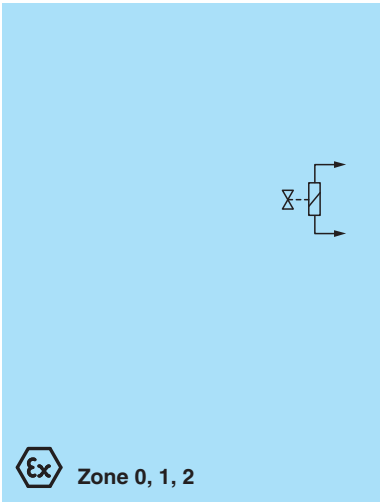
KFD2-VM-Ex1.35.L

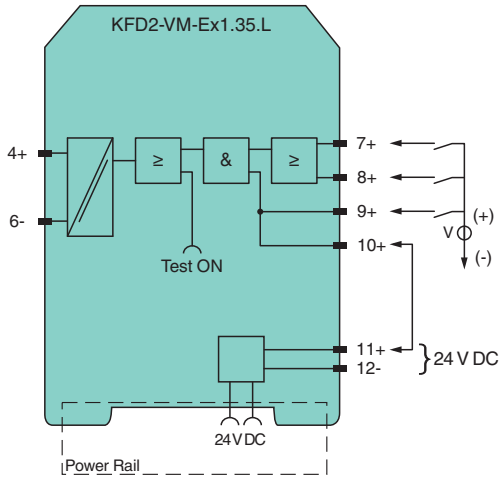
- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Output 15.3 V DC at 17 mA
- 3 logic inputs with AND/OR logic
- Service port for isolator function test

Function

This isolated barrier is used for intrinsic safety applications. It supplies power to solenoids and other similar loads.
It is controlled by two "OR" and one "AND" configured logic input.
At full load, 15.3 V at 17 mA is available for the hazardous area load. The output signal has a resistive characteristic.
An override/test jack feature is available on the front plate of the device.
By engaging the service plug, the logic inputs are bypassed and the output is energized. The operation of this test feature is indicated by a red LED.

Connection





Technical Data

General specifications		
Signal type		Digital Output
Supply		
Connection		Power Rail or terminals 11+, 12-
Rated voltage	U_r	20 ... 30 V DC
Ripple		≤ 10 %
Rated current	I_r	≤ 52 mA
Power dissipation		typ. 1.2 W
Power consumption		< 1.5 W
Input		
Connection side		control side

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Technical Data

Connection		terminals 7+, 8+, 9+
Signal level		1-signal: 15 ... 30 V DC ; input current: approx. 2.3 mA at 24 V DC 0-signal: 0 ... 5 V DC or open input
Response delay		5 ... 30 ms (typical 10 ms)
Output		
Connection side		field side
Internal resistor	R_i	max. 410 Ω
Current	I_e	typ. 18 mA
Voltage	U_e	typ. 16 V
Limit		current I_E: ≥ 17 mA; typ. 18 mA voltage U_E: ≥ 15.3 V; typ. 16 V
Open loop voltage	U_s	min. 22.3 V
Connection		terminals 4+, 6-
Output current		17 mA
Output signal		These values are valid for the rated operating voltages from 20 ... 30 V DC.
Transfer characteristics		
Switching frequency		15 Hz
Galvanic isolation		
Input/power supply		not available
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Conformity		
Electromagnetic compatibility		NE 21:2012
Degree of protection		IEC 60529:2001
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 120 g
Dimensions		20 x 107 x 115 mm (0.8 x 4.2 x 4.5 inch) (W x H x D) , housing type B1
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with hazardous areas		
EU-type examination certificate		PTB 00 ATEX 2132
Marking		⟨Ex⟩ II (1)GD [Ex ia] IIC [circuit(s) in zone 0/1/2]
Output		Ex ia
Voltage	U_o	25.2 V DC
Current	I_o	67.2 mA
Power	P_o	423.5 mW (linear characteristic)
Supply		
Maximum safe voltage	U_m	253 V AC/125 V DC without jumper 10-11, 60 V with jumper 10-11 (Attention! U_m is no rated voltage.)
Input		
Maximum safe voltage	U_m	60 V (Attention! U_m is no rated voltage.)
Galvanic isolation		
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
Directive conformity		
Directive 2014/34/EU		EN IEC 60079-0:2018+AC:2020 , EN 60079-11:2012
General information		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com.

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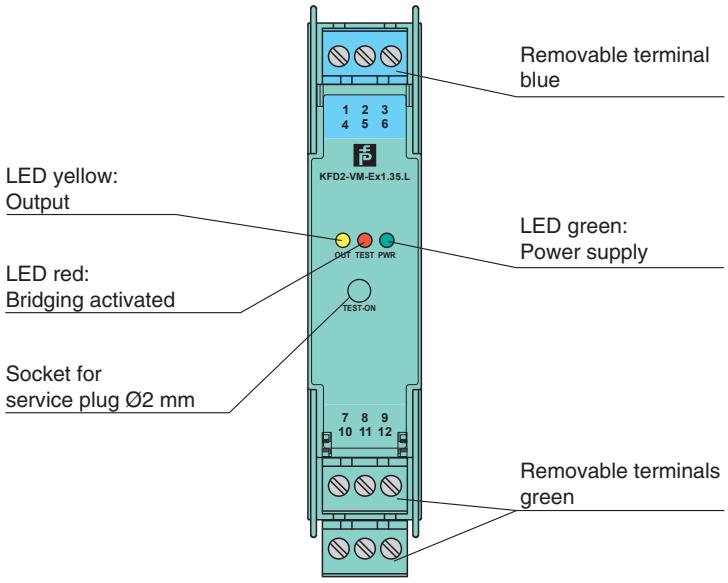
Assembly

Front view



Characteristic Curve

Output circuit diagramm

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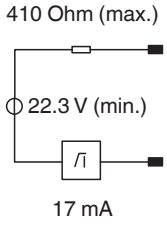
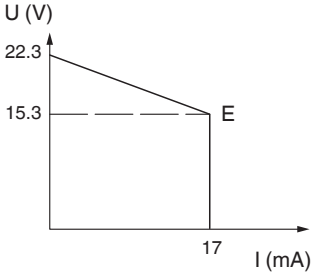


Output characteristic for input voltage 20 V ... 30 V

E: Curve angle point (U_E, I_E)



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