

HART Output Isolator with Shutdown Input

SIL2

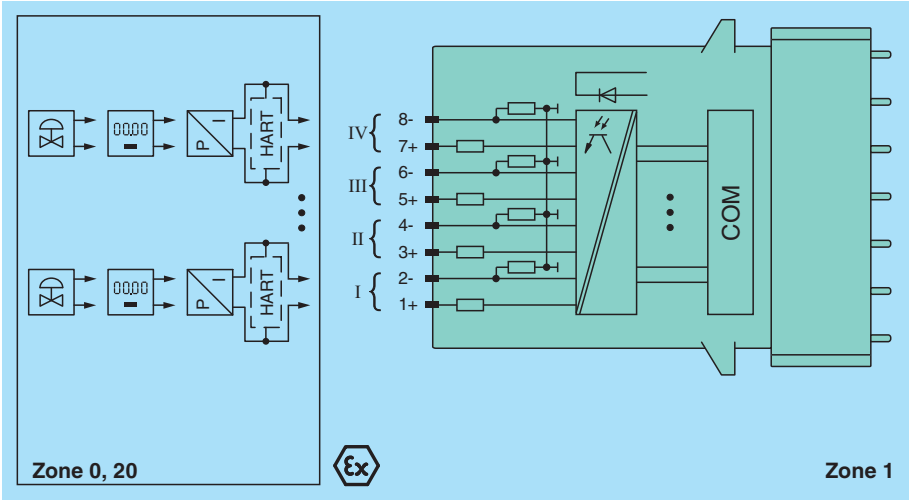
FB4205C2

- 4-channel
- Outputs Ex ia
- Installation in suitable enclosures in Zone 1
- Module can be exchanged under voltage (hot swap)
- Analog output module for 0/4 mA ... 20 mA
- HART communication via field bus or service bus
- Simulation mode for service operations (forcing)
- Line fault detection (LFD): one LED per channel
- Permanently self-monitoring
- Output with bus-independent safety shutdown

Function

The device drives positioners, proportional valves, I/P converters, or local indicators.
Open and short-circuit line faults are detected.
The output can be switched off via a contact. This can be used for bus-independent safety applications.
The output is galvanically isolated from the bus and the power supply.

Connection



Technical Data

Slots		
Occupied slots		2
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 2
Supply		
Connection		backplane bus
Rated voltage	U_r	12 V DC , only in connection with the power supplies FB92**
Power dissipation		2.15 W
Power consumption		3.3 W
Internal bus		

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Technical Data

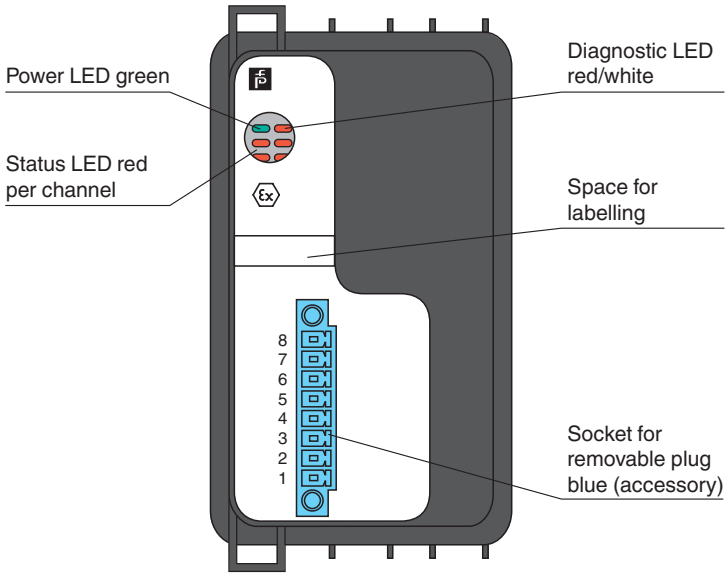
Connection	backplane bus
Interface	manufacturer-specific bus to standard com unit
Analog input	
HART communication	yes
HART secondary variable	no
Analog output	
Number of channels	4
Suitable field devices	
Field device	Proportional Valve
Field device [2]	I/P converters
Field device [3]	on-site display
Connection	terminals 1+, 2-; 3+, 4-; 5+, 6-; 7+, 8-
Current	0 ... 20 mA short-circuit protected
Line fault detection	can be switched on/off for each channel via configuration tool , configurable via configuration tool
Short-circuit	No
Open-circuit	deviation of preset output value > 0.5 mA
Load	max. 750 Ω at 20 mA
HART communication	yes
HART secondary variable	yes
Watchdog	within 0.5 s the device goes in safe state, e.g. after loss of communication
Transfer characteristics	
Deviation	
After calibration	0.1 % of the signal range at 20 °C (68 °F)
Influence of ambient temperature	0.1 %/10 K of the signal range
Refresh time	100 ms
Indicators/settings	
LED indication	Power LED (P) green: supply Diagnostic LED (I) red: module fault , red flashing: communication error , white: fixed parameter set (parameters from com unit are ignored) , white flashing: requests parameters from com unit Status LED (1-4) red: line fault (lead breakage or short circuit)
Coding	optional mechanical coding via front socket
Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013
Conformity	
Electromagnetic compatibility	NE 21:2007
Degree of protection	IEC 60529:2000
Environmental test	EN 60068-2-14:2009
Shock resistance	EN 60068-2-27:2009
Vibration resistance	EN 60068-2-6:2008
Damaging gas	EN 60068-2-42:2003
Relative humidity	EN 60068-2-78:2001
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Storage temperature	-25 ... 85 °C (-13 ... 185 °F)
Relative humidity	95 % non-condensing
Shock resistance	shock type I, shock duration 11 ms, shock amplitude 15 g, number of shocks 18
Vibration resistance	frequency range 10 ... 150 Hz; transition frequency: 57.56 Hz, amplitude/acceleration ± 0.075 mm/1 g; 10 cycles frequency range 5 ... 100 Hz; transition frequency: 13.2 Hz amplitude/acceleration ± 1 mm/0.7 g; 90 minutes at each resonance
Damaging gas	designed for operation in environmental conditions acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	

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Technical Data

Degree of protection		IP20 (module) , a separate housing is required acc. to the system description
Connection		removable front connector with screw flange (accessory) wiring connection via spring terminals (0.14 ... 1.5 mm²) or screw terminals (0.08 ... 1.5 mm²)
Mass		approx. 750 g
Dimensions		57 x 107 x 132 mm (2.2 x 4.2 x 5.2 inch)
Data for application in connection with hazardous areas		
EU-type examination certificate		BVS 12 ATEX E 015 X
Marking		⟨Ex⟩ II 2(1) G Ex d [ia Ga] IIC T4 Gb ⟨Ex⟩ II (1) D [Ex ia Da] IIIC
Output		
Voltage	U_o	27 V
Current	I_o	87 mA
Power	P_o	575 mW (linear characteristic)
Galvanic isolation		
Output/power supply, internal bus		safe electrical isolation acc. to EN 60079-11:2007 , voltage peak value 375 V
Directive conformity		
Directive 2014/34/EU		EN IEC 60079-0:2018+AC:2020 EN 60079-1:2014 EN 60079-11:2012
International approvals		
ATEX approval		BVS 12 ATEX E 015 X
General information		
System information		The module has to be mounted in appropriate backplanes and housings (FB92**) in Zone 1, 2, 21, 22 or outside hazardous areas (gas or dust). Here, observe the corresponding EC-type examination certificate.
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.

Front view



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