

Thermocouple Converter

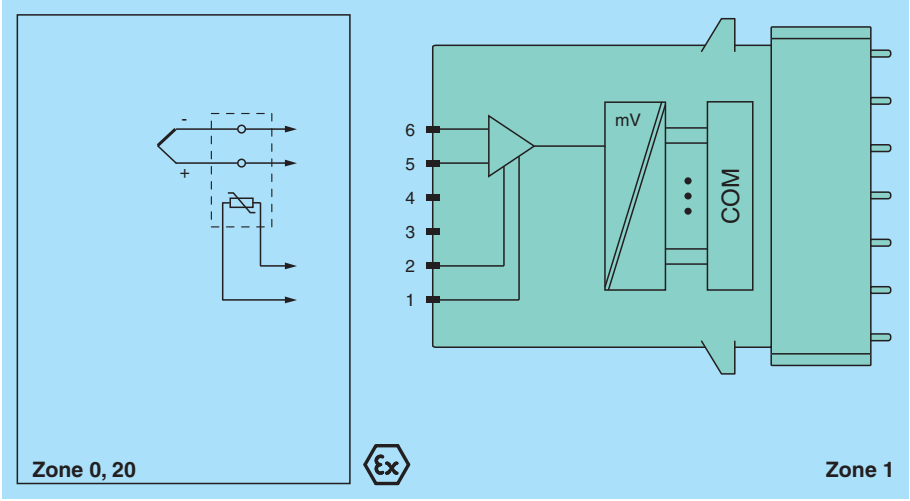
FB5202B

- 1-channel
- Input Ex ia
- Installation in suitable enclosures in Zone 1
- Module can be exchanged under voltage (hot swap)
- Converter for thermocouples and mV-signals
- Simulation mode for service operations (forcing)
- Line fault detection (LFD)
- Permanently self-monitoring

Function

The mV input accepts thermocouple or mV signals from the hazardous area.
Open circuit line fault alarms are detected.
The input is galvanically isolated from the bus and the power supply (EN 60079-11).

Connection



Technical Data

Slots		
Occupied slots		1
Supply		
Connection		backplane bus
Rated voltage	U_r	12 V DC , only in connection with the power supplies FB92**
Power dissipation		0.45 W
Power consumption		0.45 W
Internal bus		
Connection		backplane bus
Interface		manufacturer-specific bus to standard com unit
Input		
Compensation (reference junction CJC)		internal cold junction compensation or external cold junction

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Technical Data

temperature input	
Number of channels	1
Suitable field devices	
Field device [2]	Thermocouple
Field device [4]	mV source
Suitable sensors	
Sensor	thermocouples U, B, E, T, K, S, R, L, J, N, Pallaplat and mV sources
Connection	cold junction: 1, 2 thermocouple: 5+, 6-
Measurement range	-75 ... mV ... 75 mV
Smallest span	5 mV for 0.1 % accuracy
Linearity error	0.1 %
Conversion time	internal cold junction: max. 120 ms without LFD max. 240 ms with LFD external cold junction: max. 20 ms without LFD max. 80 ms with LFD
Compensation (reference junction CJC)	internal cold junction compensation or external cold junction
Line fault detection	can be switched on/off for each channel via configuration tool ,
Open-circuit	> 1 kΩ
Transfer characteristics	
Deviation	
Influence of ambient temperature	max. 0,1 %/10 K
Indicators/settings	
LED indication	LED green: supply LED red: line fault
Coding	optional mechanical coding via front socket
Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013
Conformity	
Electromagnetic compatibility	NE 21
Degree of protection	IEC 60529
Environmental test	EN 60068-2-14
Shock resistance	EN 60068-2-27
Vibration resistance	EN 60068-2-6
Damaging gas	EN 60068-2-42
Relative humidity	EN 60068-2-56
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	
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 mm^2) or screw terminals (0.08 ... 1.5 mm^2)
Mass	approx. 350 g
Dimensions	28 x 107 x 132 mm (1.1 x 4.2 x 5.2 inch)
Data for application in connection with hazardous areas	

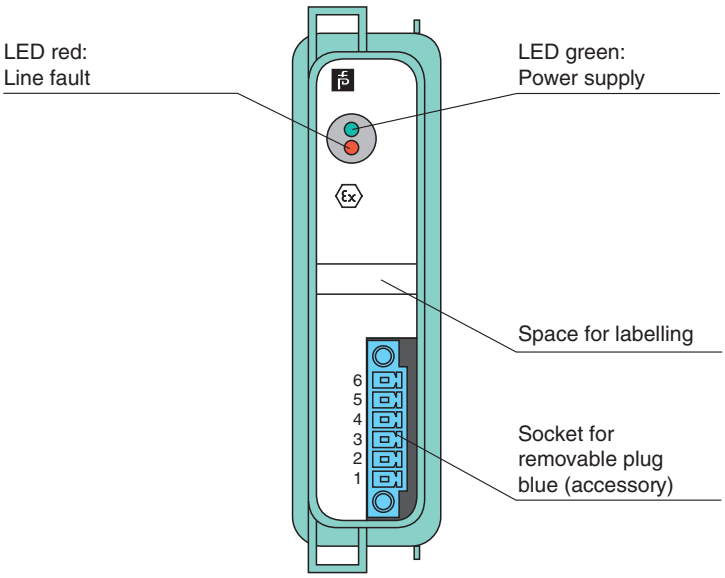
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Technical Data

EU-type examination certificate		PTB 97 ATEX 1074 U
Marking		⟨Ex⟩ II 2(1) G Ex d [ia Ga] IIC Gb ⟨Ex⟩ II (1) D [Ex ia Da] IIIC
Input		
Voltage	U_o	1.8 V
Current	I_o	43 mA
Power	P_o	67 mW (trapezoid characteristic curve)
Galvanic isolation		
Input/power supply, internal bus		safe electrical isolation acc. to EN 60079-11, 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		PTB 97 ATEX 1075 ; PTB 97 ATEX 1074 U
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.

Assembly

Front view



Accessories

	FB9224*	Field Unit
	FB9225*	
	FB9248*	

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