

Thermocouple Converter FB5205B3

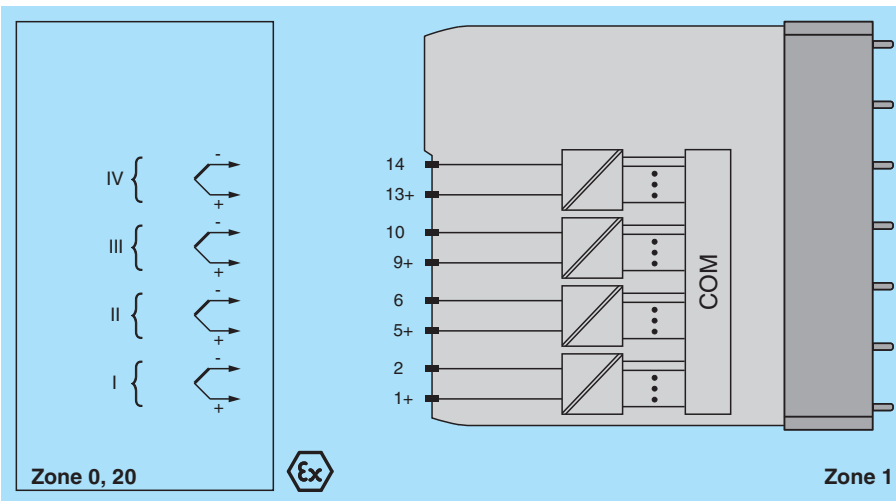
- 4-channel
- Inputs Ex ia
- Installation in suitable enclosures in Zone 1
- Module can be exchanged under voltage (hot swap)
- Converter for thermocouples and mV-signals
- Simulation mode for service operations (forcing)
- Line fault detection (LFD)
- Permanently self-monitoring



Function

The thermocouple converter accepts thermocouple or mV signals from the field. Open circuit line fault alarms are detected. The inputs are galvanically isolated from the bus and the power supply (EN 60079-11). There is a functional isolation between the channels.

Connection



Technical Data

Slots	
Occupied slots	2
Supply	
Connection	backplane bus
Rated voltage	U_r 12 V DC , only in connection with the power supplies FB92**
Power dissipation	0.75 W
Power consumption	0.75 W
Internal bus	
Connection	backplane bus
Interface	manufacturer-specific bus to standard com unit
temperature input	
Number of channels	4
Suitable field devices	

Release date: 2025-03-03 Date of issue: 2025-03-03 Filename: 276332_eng.pdf

Technical Data

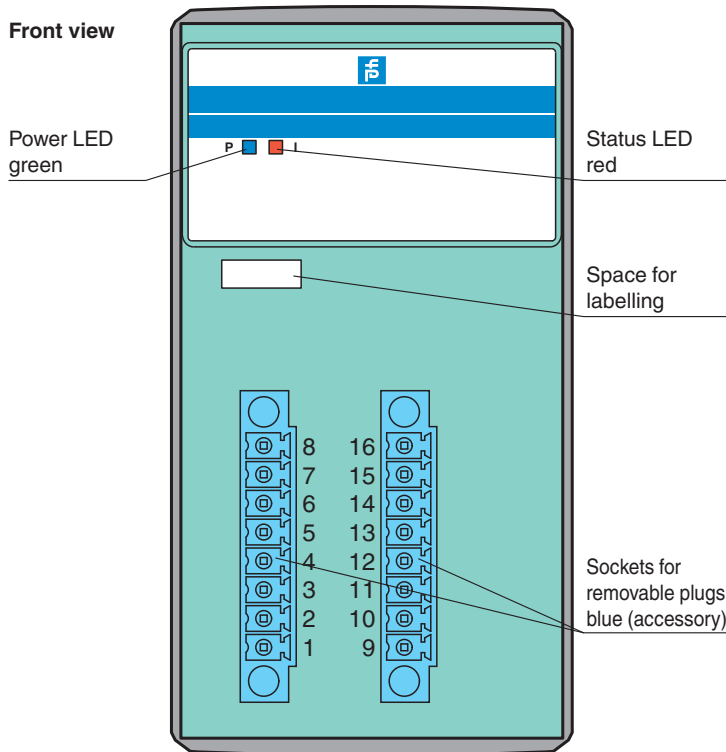
Field device [2]	Thermocouple		
Field device [4]	mV source		
Suitable sensors			
Sensor	thermocouples U, B, E, T, K, S, R, L, J, N, Pallaplat and mV sources		
Connection	channel I: 1+, 2-; channel II: 5+, 6-; channel III: 9+, 10-; channel IV: 13+, 14-		
Measuring range	-65 ... 75 mV with LFD , -75 ... 75 mV without LFD		
Smallest span	5 mV for 0.1 % accuracy		
Linearity error	0.1 %		
Conversion time	max. 300 ms (4 channels) without LFD max. 600 ms (4-channel) 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 k Ω		
Transfer characteristics			
Deviation			
Influence of ambient temperature	max. 0,1 %/10 K		
Indicators/settings			
LED indication	LED green: supply LED red: line fault, collective alarm , flashing: communication error		
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 60068-2-78		
Ambient conditions			
Ambient temperature	-40 ... 60 °C (-40 ... 140 °F)		
Storage temperature	-40 ... 85 °C (-40 ... 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 \pm 0.075 mm/1 g; 10 cycles frequency range 5 ... 100 Hz; transition frequency: 13.2 Hz amplitude/acceleration \pm 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. 955 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	Presafe 19 ATEX 14058U		
Marking	Ⓔ II 2(1)G Ex db eb q [ia Ga] IIC Gb II (1)D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I		
Input			
Voltage	U _o	1 V	
Current	I _o	71 mA	

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Technical Data

Power	P _o	62 mW (trapezoid characteristic curve)
Galvanic isolation		
Input/input		functional insulation acc. to IEC 60664-1:2007, rated insulation voltage 50 V, testing voltage 500 V
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 60079-5:2015 EN 60079-7:2015+A1:2018 EN 60079-11:2012
International approvals		
ATEX approval		Presafe 19 ATEX 14058U
IECEx approval		
IECEx certificate		IECEx PRE 19.0013U
IECEx marking		Ex db eb q [ia Ga] IIC Gb [Ex ia Da] IIC [Ex ia Ma] I
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



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