

Thermocouple Converter LB5005A

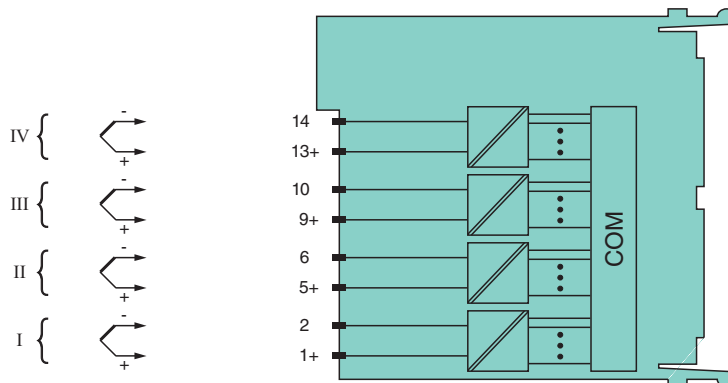
- 4 channels
- Converter for thermocouples and mV-signals
- Installation in Zone 2 or safe area
- Simulation mode for service operations (forcing)
- Line fault detection (LFD)
- Permanently self-monitoring
- Module can be exchanged under voltage



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



Zone 2

Technical Data

Slots

Occupied slots	2
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Supply

Connection	backplane bus
Rated voltage	U_r 12 V DC , only in connection with the power supplies LB9***
Power dissipation	0.75 W
Power consumption	0.75 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

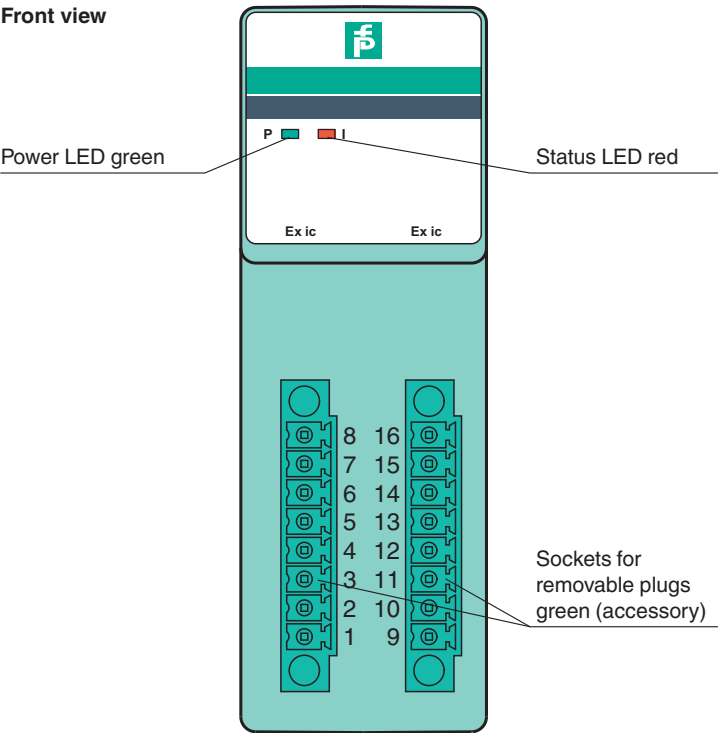
temperature input		
Number of channels		4
Suitable field devices		
Field device [2]		Thermocouple
Field device [4]		mV source
Suitable sensors		
Sensor		thermocouples U, B, E, T, K, S, R, L, J, N, Pallaplat and mV sources
Connection		channel I: 1+, 2-; channel II: 5+, 6-; channel III: 9+, 10-; channel IV: 13+, 14-
Measurement 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
Test voltage		1.5 kV input - input 1.5 kV input - bus and auxiliary power
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		Power LED (P) green: supply Status LED (I) red: line fault (collective alarm) , red 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 60068-2-56
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 ± 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 when mounted on backplane
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. 150 g
Dimensions		32.5 x 100 x 102 mm (1.28 x 3.9 x 4 inch)
Data for application in connection with hazardous areas		
Certificate		PF 08 CERT 1234 X

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Technical Data

Marking	II 3 G Ex nA [ic] IIC T4 Gc	
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 60079-11:2012 EN 60079-15:2010
International approvals		
IECEx approval		BVS 09.0037X
Approved for		Ex nA [ic] IIC T4 Gc
General information		
System information		The module has to be mounted in appropriate backplanes (LB9***) in Zone 2 or outside hazardous areas. Here, observe the corresponding declaration of conformity. For use in hazardous areas (e. g. Zone 2 or Zone 22) the module must be installed in an appropriate enclosure.
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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