

RTD Converter LB5004A

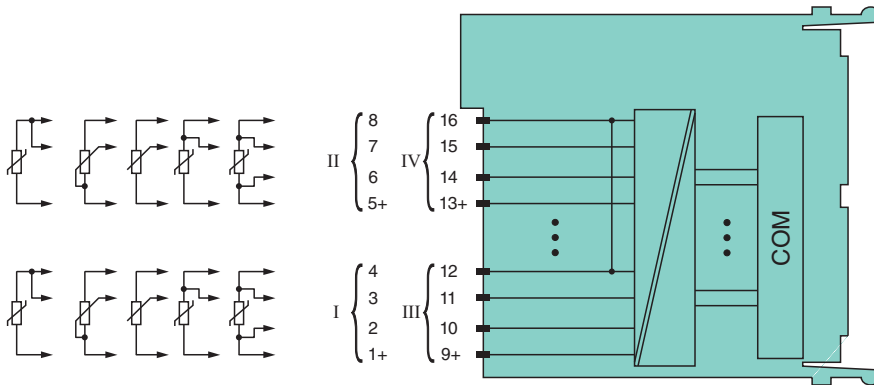
- 4 channels
- Converter for 2-, 3- and 4-wire RTDs (Pt100 ... Pt1000), slide wire sensors etc.
- Installation in Zone 2 or safe area
- Simulation mode for service operations (forcing)
- Line fault detection (LFD)
- Permanently self-monitoring
- Module can be exchanged under voltage



Function

The RTD converter accepts 2-, 3-, 4-wire RTD signals (Pt100 ... Pt1000) and slide-wire sensors from the field. Ni100 through Ni1000 can also be connected. Open and short-circuit line faults are detected. The inputs are galvanically isolated from the bus and the power supply.

Wiring Diagram



Zone 2

Technical Data

Slots	
Occupied slots	2
Supply	
Connection	backplane bus
Rated voltage	U_r 12 V DC , only in connection with the power supplies LB9***
Power dissipation	0.35 W
Power consumption	0.35 W
Internal bus	
Connection	backplane bus
Interface	manufacturer-specific bus to standard com unit
temperature input	
Number of channels	4

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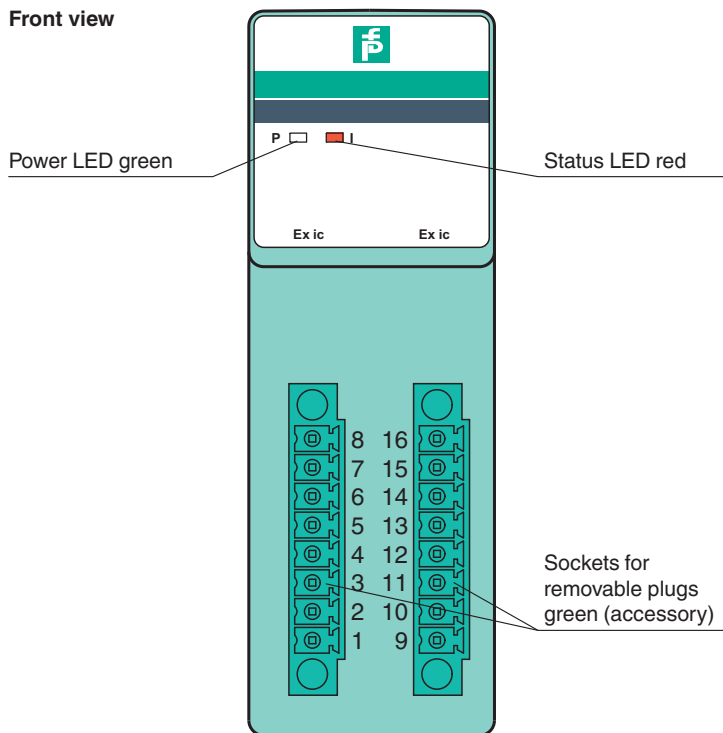
Technical Data

Suitable field devices	
Field device	resistance thermometer
Field device [3]	slide-wire sensors
Field device [5]	potentiometer
Field device interface	
Connection	2-wire sensor
Connection [2]	3-wire sensor
Connection [3]	4-wire sensor
Connection	channel I: resistance/potentiometer input 1 ... 4 channel II: resistance/potentiometer input 5 ... 8 channel III: resistance/potentiometer input 9 ... 12 channel IV: resistance/potentiometer input 13 ... 16
Measuring range	Pt100 (18-390 Ω) (500 Ω incl. line resistance) Pt200 (37-780 Ω) Pt500 (92-1952 Ω) Pt1000 (185-3905 Ω) Ni100 (69-270 Ω) Ni500 (345-1350 Ω) Ni1000 (690-2700 Ω)
Slide-wire sensor	0 ... 10 kΩ
Measuring current	200 μA
Smallest span	50 Ω for 0.1 % accuracy
Linearity error	0.1 %
Conversion time	max. 500 ms (4 channels) max. 1 s (for 4x 3-wire Pt100)
Busy after download	5 ... 15 s
Lead resistance	max. 50 Ω per strand
Line fault detection	can be switched on/off for each channel via configuration tool
Short-circuit	< 10 Ω
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 60068-2-78
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	95 % non-condensing
Altitude	max. 2000 m
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

Technical Data

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
Marking		Ⓜ II 3 G Ex nA [ic] IIC T4 Gc
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 60079-11:2012 EN 60079-15:2010
International approvals		
IECEX approval		
IECEX certificate		IECEX BVS 09.0037X
IECEX marking		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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