



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



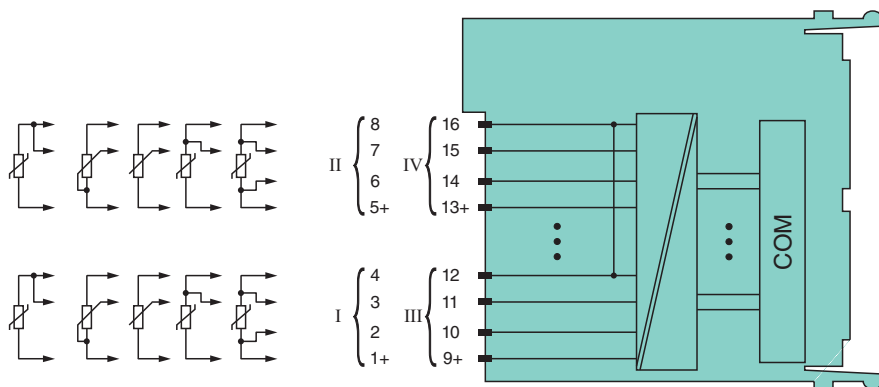
Function

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.

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	0.35 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

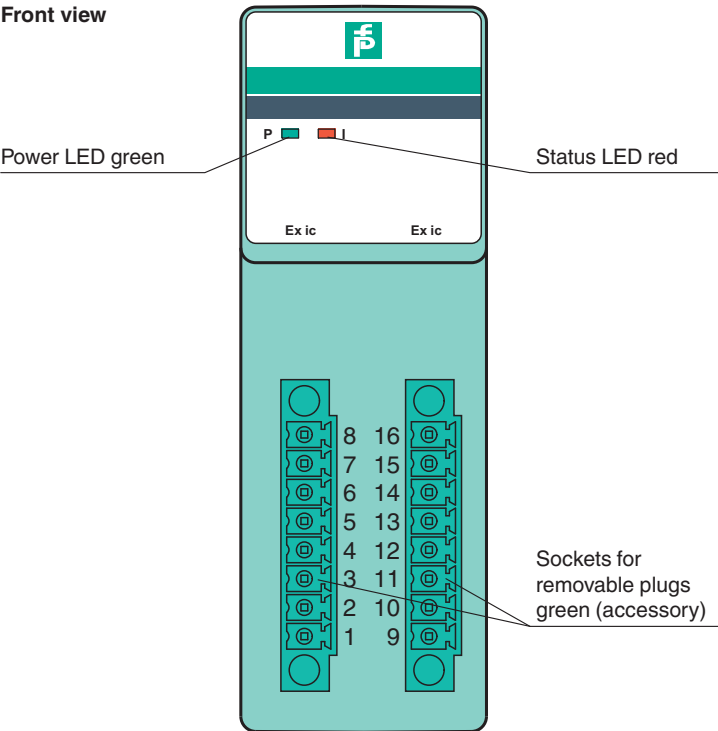
Suitable field devices		
Field device		resistance thermometer
Field device [3]		slide-wire sensors
Field device [5]		potentiometer
Field device interface		
Connection		2-wire sensor
Connection [2]		3-wire sensor
Connection [3]		4-wire sensor
Connection		channel I: resistance/potentiometer input 1 ... 4 channel II: resistance/potentiometer input 5 ... 8 channel III: resistance/potentiometer input 9 ... 12 channel IV: resistance/potentiometer input 13 ... 16
Measurement 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		-40 ... 60 °C (-40 ... 140 °F) , 70 °C (non-Ex)
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

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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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