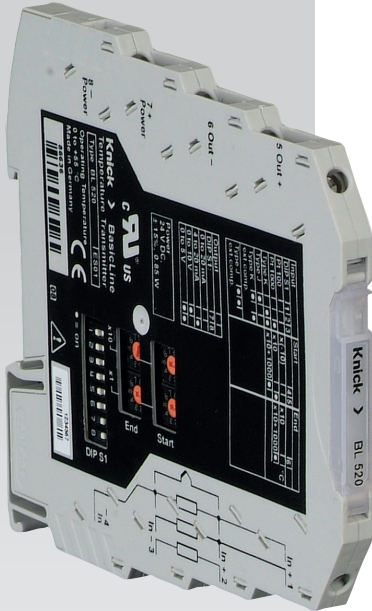


Temperature Transmitters



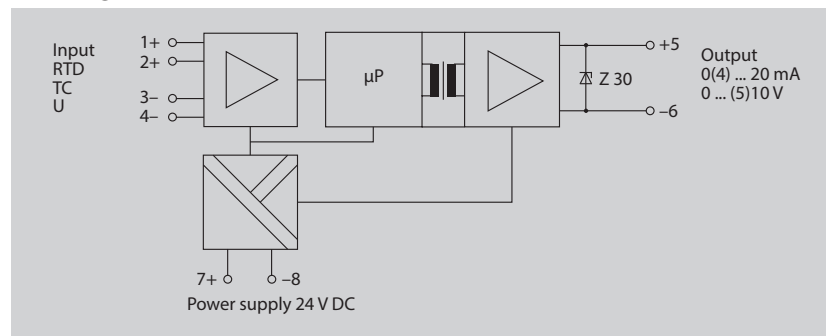
BasicLine BL 520

The temperature transmitter with range selection in plain text

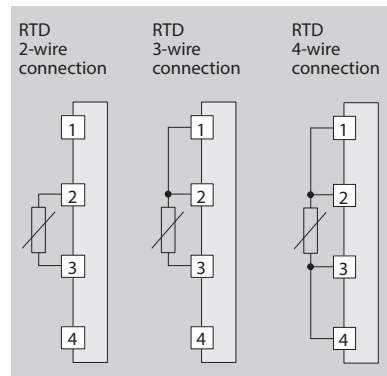
Facts

- Flexible temperature detection with conventional sensors:
Pt 100, Pt 1000,
thermocouples type J and K
- Intuitive, "readable" configuration using 4 rotary and 8 dip switches
- Calibrated switching without potentiometer adjustment
- Automatic recognition of the sensor connection (2-, 3-, or 4-wire)
- High accuracy due to innovative circuit design
- Minimum space consumption in the enclosure: 6-mm housing
- CE compliant and UL approved
- 3-year warranty
- Perfect price-performance ratio

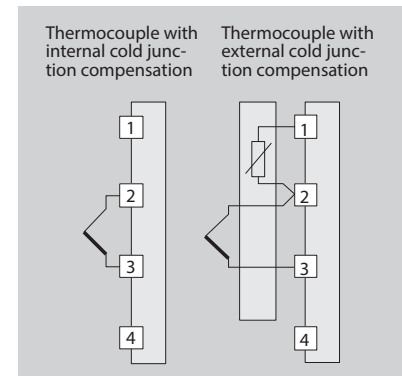
Block Diagram



Connection of Resistance Thermometers



Connection of Thermocouples



No.	Error	4 ... 20 mA	0 ... 20 mA	0 ... 5 V	0 ... 10 V
0	None	-	-	-	-
1	Value below range	3.6	0	0	0
2	Value above range	21	21	5.25	10.5
3	Sensor short circuit	21	21	5.25	10.5
4	Sensor open	21	21	5.25	10.5
5	-	-	-	-	-
6	-	-	-	-	-
7	Identification of connection	21	21	5.25	10.5
8	Switch misadjusted	21	21	5.25	10.5
9	Adjustment error	21	21	5.25	10.5
10	Device error ¹⁾	3.6	0	0	0

¹⁾ Self-locking error. Disconnect power supply to reset.

Input	Output	Power supply
Pt 100, Pt 1000, Thermocouples Type J and K	0 ... 20 mA 4 ... 20 mA 0 ... 10 V	24 V DC

Product Line

Device	Order No.
BasicLine BL 520	Adjustable BL 520

Specifications

Input data

Resistance thermometers	Sensor type	Standard	Measuring range
	Pt 100	DIN 60751	-200 ... +850 °C
	Pt 1000	DIN 60751	-200 ... +850 °C
Connection	2-, 3- or 4-wire, (automatic recognition, LED signaling)		
Max. line resistance	100 ohms		
Error limits	< 5 kohms ± (50 mohms + 0.05 % meas. val.) for spans > 15 ohms		
Temperature coefficient ¹⁾	< 0.005 %/K of adjusted end value		

Thermocouples	Sensor type	Standard	Measuring range
	Type J	DIN 60584-1	-210 ... +1200 °C
	Type K	DIN 60584-1	-200 ... +1372 °C
Input resistance	>10 Mohms		
Max. line resistance	1 kohm		
Input error limits	± (10 µV + 0.05 % meas.val.) for spans > 2 mV		
Temperature coefficient ¹⁾	< 50 ppm/K of adjusted end value		
Error	Internal reference junction	< 1.5 K	
	External reference junction	< 80 mohms + 0.1 % meas. val.	Via Pt 100 for T _{comp} = 0 ... 80 °C

Output data

Outputs	0 ... 20 mA, 4 ... 20 mA, 0 ... 5 V, 0 ... 10 V (16 bit)		
Control range	0 ... approx. 102.5 % span, at 4 ... 20 mA: -1.25 % ... approx. 102.5 % span		
Load	Current output	≤ 10 V (≤ 500 ohms at 20 mA)	
	Voltage output	≤ 1 mA (≥ 10 kohms at 10 V)	
Error limits	Current output	± (10 µA + 0.05 % meas. val.)	
	Voltage output	±(5 mV + 0.05 % meas. val.)	
Residual ripple	< 10 mV _{rms}		
Temperature coefficient ¹⁾	< 0.005 %/K full scale		
Error signaling	See table		
Measuring rate ³⁾	Approx. 3/sec		

Power supply

Power supply	24 V DC (± 15%), 0.85 W
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Isolation

Galvanic isolation	3-port isolation between input, output and power supply
Test voltage	1,5 kV AC, 50 Hz
Working voltage	300 V AC/DC (basic insulation) with overvoltage category II / pollution degree 2 according to EN 61010-1.

Standards and approvals

Conformity	CE compliant
EMC ²⁾	Product family standard: EN 61326
Approval	UL Recognized Components File-No. E220033, Standard: UL 508, CAN/CSA 22.2 No. 14-95

Further data

Ambient conditions	Stationary operation, weatherproof, relative humidity 5 ... 95 %, no condensation, max. altitude 2000 m, water or wind-driven precipitation (rain, hail, snow) excluded	
Ambient temperature	Operation: 0 ... +55 °C	Transport, storage: -25 ... +85 °C
Housing	Modular housing, screw terminals, IP 20 protection	
Mounting	35-mm mounting rail, EN 60715	
Dimensions	6.1 mm x 101 mm x 93 mm	
Wire cross-section	Max. 2.5 mm ² , 24-14 AWG	
Weight	Approx. 50 g	

1) Average TC in specified operating temperature range, reference temperature 23 °C

2) Slight deviations are possible while there is interference

3) For thermocouples with external reference junction compensation: approx. 2 / s

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