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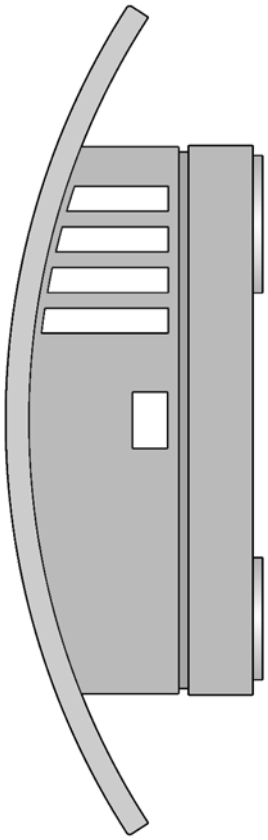
Indoor, outdoor and channel RTD temperature probe



- **For temperatures from -50 ... +90 °C (200 °C)**
- **For application in the air conditioning technology**
- **Protection class IP20 to IP65**
- **Connection: in 2-wire, 3-wire or 4-wire circuit**
- **Available with 4 ... 20 mA or 0 ... 10 V transmitter**

Indoor, outdoor and channel RTD temperature probes for air conditioning technology are mainly used for temperature measurement in rooms, in air channels and outdoors.

Various device versions made of plastic with different protection classes are available for the respective measuring task.

The measuring insert is normally fitted with a Pt 100 temperature probe as per DIN EN 60751, Class B in 2-wire circuit, versions with Pt500, Pt1000 or Ni1000 can also be supplied. From the connection terminals, wiring in 3-wire and 4-wire circuit is also possible.
A transmitter can be optionally integrated.

Technical Data

Connection case	Plastic case PC (basic type 902520/11 material PP), IP20 to IP65, basic type 902524/25 protection class IP54 and IP65
Sheath	Stainless steel 1.4571; Ø 5.4 mm, Ø 6 mm
Measuring insert	Pt100 temperature probe, DIN EN 60751, class B, 2-wire circuit Pt1000 temperature probe, DIN EN 60751, class B, 2-wire circuit, For further probes, refer to the order details
Transmitter	Analog transmitters, output signal 4 ... 20 mA or 0 ... 10 V

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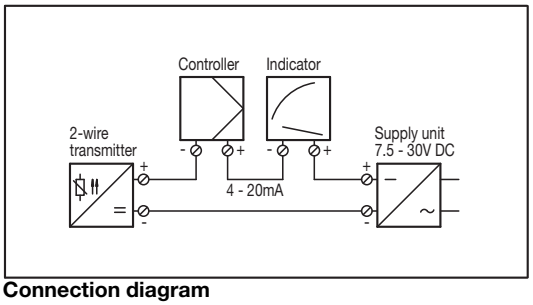
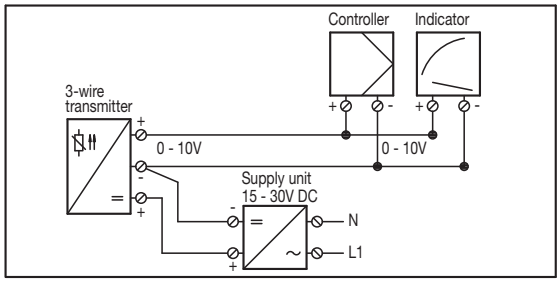
Transmitter		**Output 4 ... 20 mA**	**Output 0 ... 10 V**
	Input		
	Measuring input	Pt100 (DIN EN 60751)	
	Probe current	≤ 0.5 mA	
	Measuring range	Permanent measurement due to analog signal path	
	Measuring circuit monitoring		
	Underrange	dropping to ≤ 3.6 mA	0 V
	Overrange	increasing to ÷ 22 mA ... < 28 mA (typical 24 mA)	increasing to ÷ 11 V ... < 14 V (typical 12 V)
	Probe short-circuit	≤ 3.6 mA	0 V
	Probe and wire break	÷ 22 mA ... < 28 mA (typical 24 mA)	÷ 11 V ... < 14 V (typical 12 V)
	Output		
	Output signal	load-independent direct current 4 ... 20 mA	Direct current 0 ... 10 V
	Transmission behavior	temperature linear	
	Transmission accuracy	≤ ± 0.1 %	≤ ± 0.2 %
	Damping of the residual ripple of a voltage supply of 24 V, amplitude 10 V/50 Hz, burden 470 Ω/Load 10MΩ	37 dB	40 dB
	Burden (Rb)	Rb = (Ub - 7.5 V) / 22 mA	-
	Burden influence	≤ ± 0.02 % / 100 Ω[1]	-
	Load/load influence	-	÷ 10 kΩ / ≤ ± 0.1 %
	Setting time for temperature changes	≤ 10 ms	
	Adjustment conditions	DC 24 V / approx. 22 °C	
	Calibration accuracy	≤ ± 0.2 %[1,2] or ≤ ± 0.2 K	
	Overall accuracy, probe/calibration	± 0.4 K (typical) at 20 °C / 24 V voltage supply	
	Voltage supply		
	Voltage supply (Ub)	DC 7.5 ... 30 V	DC 15 ... 30 V
	Reverse voltage protection	yes	
	Voltage supply influence	≤ ± 0.01 %/V deviation from 24 V[1]	
	Environmental influences		
	Operating temperature range	-40 ...+ 85 °C	
	Storage temperature range	-40 ... +100 °C	
	Temperature coefficient	≤ ± 0.01 %/K deviation from 22 °C[1]	
	Ambient conditions similar to DIN EN 60654 Kl. C1	relative humidity ≤ 95 % annual average, no condensation	
	EMC Interference emission/ resistance	EN 61326 class B/Industrial requirements	

1. All specifications referring to the measuring range limit value of 20mA. 2. The higher value is valid.

Connection example with power pack, output 4 ... 20 mA

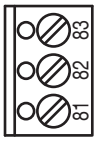


Connection example with power pack, output 0 ... 10 V



Connection diagram

Output 4 - 20mA



Connection for		Terminal		
Supply voltage 7.5 - 30V DC	+ 81	$R_B = \frac{U_b - 7.5V}{22mA}$	81	82
Current output 4 - 20mA	- 82	R_B = burden resistance U_b = supply voltage	+	-

Output 0 - 10V

Connection for	Terminal			
Supply voltage 15 - 30V DC	+ 81 - 82	Load ≥ 10kΩ	81	82 83
Voltage output 0 - 10V	- 82 + 83		+	- +