

Temperature head transmitter TMT 180L



Head transmitter for resistance thermometers
PT 100,
settable using a PC,
for installation in a sensor head From B

Application areas

- PC programmable (PCP) Temperature head transmitter for converting a Pt100 input signals into a scalable 4 to 20 mA analogue output signal
- Input
Resistance thermometer Pt100
- Online configuration using PC

Performance

- Universal PC programmable for PT 100 input signals
- 2 wire technology, 4 to 20 mA analogue output
- High accuracy in total ambient temperature range
- Fault signal on sensor break or short circuit, presettable to NAMUR NE 43
- EMC to EN 61 326-1, CE
- Online configuration during measurement using SETUP connector
- Customer specific measurement range settings

Input

	Type	Measurement ranges	Min. measurement Range
Measurement range	Pt100 acc.to IEC 751	-200 to 650°C(-328 to 1202°F) -50 to 250°C(-58 to 482°F)	10K 10K
	<ul style="list-style-type: none"> • Connection type: 2-, 3- or 4-wire connection cable resistance compensation possible in the 2-wire system(0 to 20Ω) • Sensor cable resistance: max. 11 Ω per cable • Sensor current: ≤0.6 mA 		

Output

Output signal	Analogue 4 to 20 mA, 20 to 4 mA
Transmission behaviour	Temperature linear
Signal on alarm	<ul style="list-style-type: none"> • Measurement range undercut: Linear drop to 3.8 mA • Exceeding measurement range: Linear rise to 20.5 mA • Sensor breakage; Sensor short circuit ≤3.6 mA or ≥21.0 mA
Load	max.(V _{power supply} -10V)/0.022A (Current output)
Input current required	≤3.5 mA
Current limit	≤23 mA
Switch on delay	4 s(during power up I _a =3.8 mA)

Power supply

Supply voltage	U _b =10 to 35 V, polarity protected
Residual ripple	Allowable ripple U _{ss} ≤3 V at U _b ≥13V, f _{max.} =1 kHz

Performance

Response time	1 s
Reference conditions	Calibration temperature +23°C(73.4°F)±5K

Maximum measured error	Type		Meas.Accuracy ^[1]
	Resistance thermometer RTD	Pt100 -200 to 650°C (-328 to 1202°F) Pt100 ^[2] -50 to 250°C (58 to 482°F)	0.2K or 0.08% 0.1K or 0.08%
[1] % is related to the adjusted measurement range (the value to be applied is the greater one) [2] As option			
Influence of power supply	$\leq \pm 0.01\%/V$ deviation from 24 V ^a		
Influence of ambient temperature (temperature drift)	Resistance thermometer(Pt100): $T_d = \pm (15\text{ppm/K} * \text{range end value} + 200) + 50\text{ppm/K} * \text{preset meas.range} * \Delta \vartheta$ $\Delta \vartheta$ = Deviation of the ambient temperature according to reference condition		
Long term stability	$\leq 0.1\text{K/Year}^c$ or $\leq 0.05\%/Year^{cb}$		
Influence of load	$\leq \pm 0.02\%/100\Omega^a$		

a. All data is related to a measurement end value.

b. According to reference conditions

c. % is related to adjusted measurement range(the value to be applied is the greater one).

Installation

Installation angle	No limit
Installation area	Connection head accord.to DIN 43729 From B; TAF 10 field housing

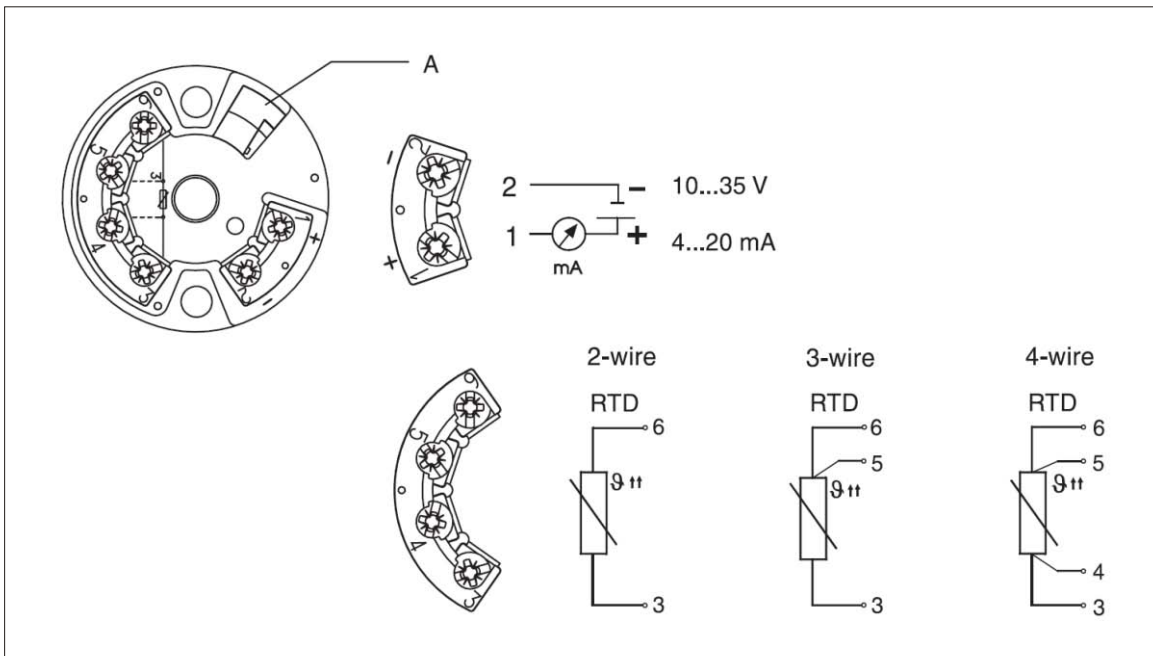
Ambient conditions

Ambient temperature range	-40 to 85°C(-40 to 185°F)
Storage temperature range	-40 to 100°C(-40 to 212°F)
Climate class	According to EN 60 654-1, Class C
Condensation	Allowable
Ingress protection	IP 00, IP 54 (installed in sensor head)
Shock and vibration resistance	4 g/2 to 150 Hz according to IEC 60 068-2-6
Electromagnetic compatibility(EMC)	Interference immunity and interference emission according to EN 61 326-1 (IEC 1326)

Others

Weight	Approx. 40 g
Material	Housing: PC Potting: PUR
Terminals	Cable up to max. 1.75mm ² -secure screws

Electrical connection



Dimensions

