

Universal Temperature Head Transmitter TMT 190-A



Universal head transmitter for
resistance thermometers (RTD),
thermocouples (TC), resistance
and voltage transmitters,
for installation in a sensor head (From B)

Application areas

- Temperature head transmitter for converting various input signals into a scalable 4 to 20 mA analogue output signal
- Input
 - Resistance thermometer (RTD)
 - Thermocouple (TC)
 - Resistance transmitter (Ω)
 - Voltage transmitter (mV)

Performance

- 2 wire technology, 4 to 20mA analogue output
- High accuracy in total ambient temperature range
- An internal temperature sensor for active temperature compensation (For T/C)
- Customer specific measurement range settings)

Technical data

Power supply

Supply voltage	$U_b = 7.5$ to 45VDC (without display), polarity protected
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Input

	Type	Measurement ranges	Min.meas. Ranges
Resistance thermometer(RTD)	Pt100 Pt500 Pt1000	-200°C to 850°C(-328°F to 1562°F) -200°C to 250°C(-328°F to 482°F) -200°C to 250°C(-328°F to 482°F)	10K 10K 10K
	Cu50 Cu100	-50°C to 150°C (-58°F to 302°F) -50°C to 150°C (-58°F to 302°F)	10K 10K
	*Ni100 *Ni500 *Ni1000	-60°C to 180°C (-76°F to 356°F) -60°C to 180°C (-76°F to 356°F) -60°C to 150°C (-76°F to 302°F)	10K 10K 10K
Resistance transmitter	Resistance(Ω)	0 to 400Ω 0 to 2000Ω	10Ω 200Ω
*α=5000ppm/K or 6180ppm/K Connection type: 2-, 3- or 4-wire connection Sensor current: 0.5 mA			
Thermocouples(TC)	B(PtRh30-PtRh6) E(NiCr-CuNi) J(Fe-CuNi) K(NiCr-Ni) N(NiCrSi-NiSi) R(PtRh13-Pt) S(PtRh10-Pt) T(Cu-CuNi)	0 to 1820°C(32 to 3308°F) -270 to 1000°C(-454 to 1832°F) -210 to 1200°C(-346 to 2192°F) -270 to 1372°C(-454 to 2501°F) -270 to 1300°C(-454 to 2372°F) -50 to 1768°C(-58 to 3214.4°F) -50 to 1768°C(-58 to 3214.4°F) -270 to 400°C(-454 to 752°F)	500K 50K 50K 50K 50K 500K 500K 50K
Voltage transmitters(mV)	Millivolt transmitter(mV)	-10 to 75mV -100 to 100mV -100 to 500mV -100 to 2000mV	5mV 5mV 6mV 20mV

Output

Output signal	4 to 20 mA
Signal on alarm	Underranging Linear drop to 3.8 mA
	OVERRANGING linear rise to 22 mA
	Sensor break; sensor open-circuit 3.6 mA or 22mA
Load	max.(V _{power supply} -7.5 V)/0.022 mA
Linearisation/transmission behaviour	Temperature linear, resistance linear, voltage linear

Performance characteristics

Response time	1 s		
Reference operating conditions	Calibration temperature: 23°C(73.4°F)±5K		
Long term stability	≤0.05%/year		
Switch on delay	≤5s		
Influence of ambient	Negligible		
Load influence	Negligible		
Power supply influence	Negligible		
Self stability configuration	0 to 2%		
Filter configuring	0 to 160 μ A		
Resolution	0.3 μ A		
		Type	Measurement accuracy
Maximum measured error	Resistance thermometer RTD	Pt100, Cu50 Cu100	0.2K or 0.08% 0.2K or 0.08% 0.3K or 0.12%
	Thermocouple TC	K, J, T, E N S, B, R	typ.0.5K or 0.08% typ.1.0K or 0.08% typ.2.0K or 0.08%
Maximum measured error		Type	Measurement accuracy
	Resistance transmitter(Ω)	0 to 400 Ω	±0.1 Ω or 0.08%
	Voltage transmitters(mV)	-10 to 75mV	±20 μ V or 0.08%

Environment conditions

Ambient temperature limits	-40 to 85°C(-40°F to 185°F)
Storage temperature	-40 to 100°C(-40°F to 212°F)
Condensation	Allowable
Degree of protection	IP 00,IP66 Installed
Shock and vibration resistance	4g/2 to 150 Hz as per IEC 60 068-26
Electromagnetic compatibility(EMC)	Interference immunity and interference emission according to GB/T17626.2-1998), compliance with IEC 61000-4-3:1995.

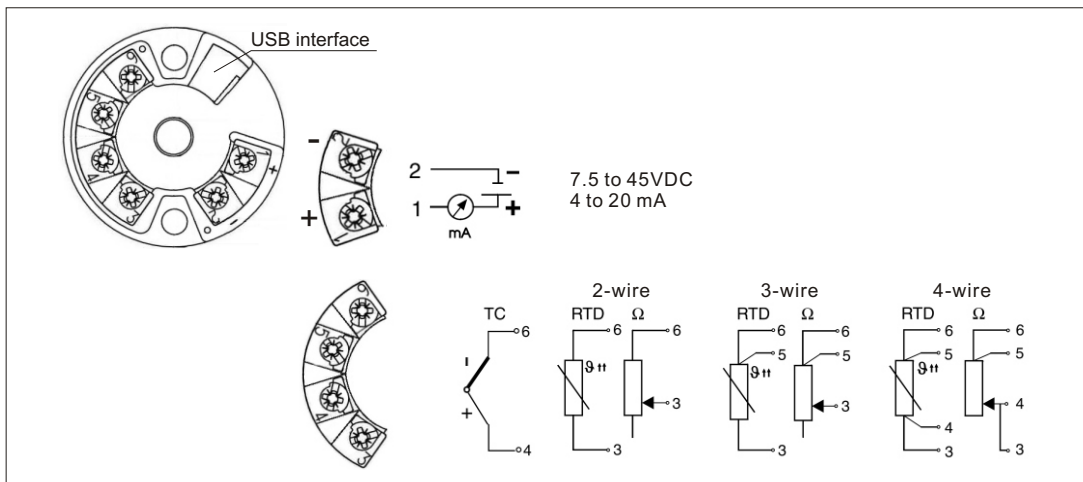
Installation conditions

Installation instructions	<ul style="list-style-type: none"> • Installation angle: no limit • Installation area: • Connection head accord. To DIN 43729 From B; TAF 10 field housing
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Others

Dimensions	Dia. 44 mmX22.5 mm
Weight	Approx. 33.5g
Material	Housing: PC Potting: epoxy

Electrical connections



Demotions

