

Model TM191 series

Temperature head transmitter
4...20mA, HART

Materontek
Sensing and Internet of Things

Features

- 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)
- Wide voltage supply range
- Expanded resistance input (max. 2K Ω)
- Expanded voltage input (max. 2Kmv)

Application

- Temperature head transmitter with HART- protocol 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)
- Universal head transmitter for
 - Resistance thermometers (RTD)
 - Thermocouples (TC)
 - Resistance,voltage transmitters
- For installation in a sensor head (Form B)
- Change parameter via hart modem



Technical data

Input sensor

Input	Type	Measurement range	Min.meas.Ranges
Resistance thermometer(RTD)	Pt100	-200°C to 800°C	10K
	Pt500	-200°C to 250°C	10K
	Pt1000	-200°C to 250°C	10K
	Cu50	-50°C to 150°C	10K
	Cu100	-50°C to 150°C	10K
Resistance transmitter	Resistance(Ω)	0 to 400 Ω	10 Ω
		0 to 2000 Ω	20 Ω
Thermocouples(TC)	B(PtRh30-PtRh6)	0°C to 1820°C	500K
	E(NiCr-CuNi)	-270°C to 1000°C	50K
	J(Fe-CuNi)	-210°C to 1200°C	50K
	K(NiCr-Ni)	-270°C to 1372°C	50K
	N(NiCrSi-NiSi)	-270°C to 1300°C	50K
	R(PtRh13-Pt)	-50°C to 1768°C	500K
	S(PtRh10-Pt)	-50°C to 1768°C	500K
	T(Cu-CuNi)	-270°C to 400°C	50K
Voltage transmitters(mV)	Millivolt transmitter(mV)	-10 to 75mV	5mV
		-100 to 100mV	5mV
		-100 to 500mV	6mV
		-100 to 2000mV	20mV
Supply voltage	7.5 to 45 VDC		
Output			
Output signal	4 to 20 mA or 4 to 20mA+HART		
Signal on alarm	Underranging Linear drop to 3.8 mA		
	Overranging linear rise to 20.8 mA		
	Sensor break; sensor open-circuit 22 mA		
Load	max.(Vpower supply-7.5 V)/0.022 A		
Linearisation/transmission behaviour	Temperature linear, resistance linear, voltage linear		
Installation conditions			
Installation instructions	Installation angle: no limit		
	Installation area: Connection head accord. To DIN 43729 Form B; TAF 10 field housing		

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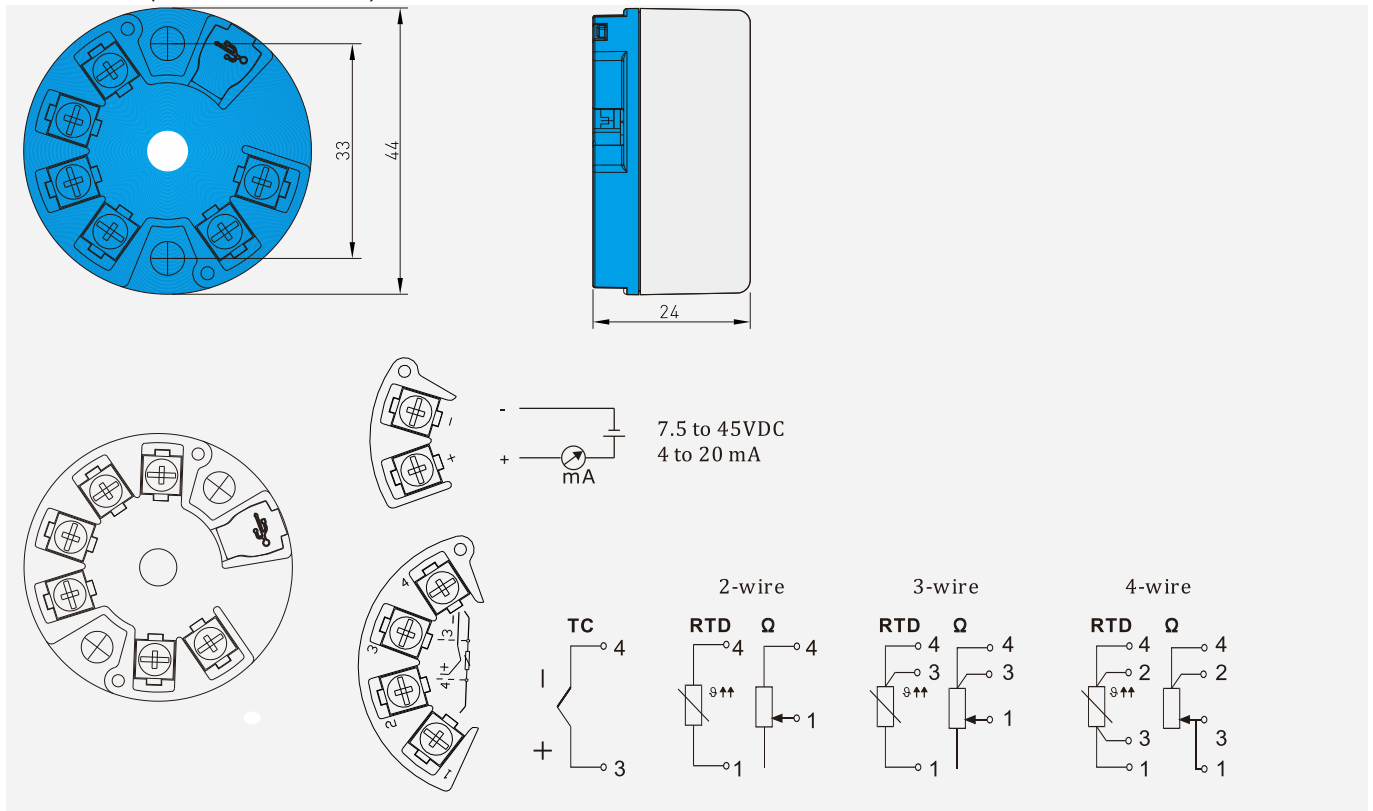
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Performance

Response time	1s
Reference operating conditions	Calibration temperature: 23°C
Long term stability	≤0.05%/year
Maximum measured error	Typ.0.2K or 0.2%
Environment conditions	
Ambient temperature limits	-40°C to 85°C
Storage temperature	-40°C to 100°C
Condensation	Allowable
Degree of protection	IP00,IP66(installed)
Dimensions	Dia. 44 mm x 24 mm
Weight	Approx. 35g
Material	Housing: PC, Potting: epoxy

Dimensions (All dimensions in mm)



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Ordering code

TM191	Model						
	A	Version for Non-hazardous areas					
	B	Ex ia IIC T6					
	Configuration transmitter connection						
	0	Configuration connection TC					
	1	Configuration connection RTD(2-wire)					
	2	Configuration connection RTD(3-wire)					
	3	Configuration connection RTD(4-wire)					
	Configuration temperature sensor						
	A	Standard factory configuration Pt100					
	1	Pt100 -200°Cto 850°C					
	2	Pt500 -200°C to 250°C					
	3	Pt500 -200°C to 250°C					
	4	Pt1000 -200°C to 250°C					
	5	Cu50 -50°C to 150°C					
	6	Cu100 -50°C to 150°C					
	7	Ni100 -60°C to 180°C					
	8	Ni500 -60°C to 180°C					
	B	Type B 0 to 1820°C					
	E	Type E -270 to 1000°C					
	J	Type J -210 to 1200°C					
	K	Type K -270 to 1372°C					
	N	Type N -270 to 1300°C					
	R	Type R -50 to 1768°C					
	S	Type S -50 to 1768°C					
	T	Type T -270 to 400°C					
	Output Signal						
	A	4 to 20mA					
	H	4 to 20mA+HART					
	Configuration						
	A	Standard factory configuration (Pt100/3-wire/0 to 100°C)					
	B	Customized measurement range					
	C	Customized expanded configuration for TC					
	D	Customized expanded configuration for RTD					
	H	AD001-PC Configuration tool					
	K	Rail mounting bracket					
	Isolation						
	N	Without isolation					
	Y	With isolation					
TM191	A	2	1	A	A	N	Order code