

Temperature head transmitter

YST201,202,203



Universal head transmitter for resistance thermometers (RTD), thermocouples (TC), resistance and voltage transmitters, settable via HART-protocol* (TYP203) for installation in a sensor head (From B)

Application areas

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)

Performance

- Universal settings with HART-protocol* for various input signals
- 2 wire technology, 4 to 20mA analogue output
- High accuracy in total ambient temperature range
- Galvanic isolation** (TYP202 and TYP203)
- An internal temperature sensor for active temperature compensation (For T/C)
- Wide voltage supply range
- Expanded resistance input (max $2K \Omega$)
- Expanded voltage input (max 2K mV)

* Only TYP203 with HART-Protocol-communication.

** TYP202 and TYP203 are galvanic isolated, TYP 201 is not isolated

Technical data

Power supply			
Supply voltage			
Input			
Input	Type	Measurement ranges	Min.measurement Ranges
Resistances thermometer (RTD)	Pt100	-200 to 850 °C (-328 to 1562 °F)	10K
	Pt500	-200 to 250 °C (-328 to 482 °F)	10K
	Pt1000	-200 to 250 °C (-328 to 482 °F)	10K
	Cu50	-50 to 150 °C (-58 to 302 °F)	10K
	Cu100	-50 to 150 °C (-58 to 302 °F)	10K
	*Ni100	-60 to 180 °C (-76 to 356°F)	10K
	*Ni500	-60 to 180 °C (-76 to 356°F)	10K
*Ni1000	-60 to 150 °C (-76 to 302 °F)	10K	
Resistancetransmitter	Widerstand Ω	10 to 400 Ω	10Ω
		10 to 2000 Ω	10Ω
α=5000ppm/K or 6180ppm/K			
Connection type: 2-, 3- or 4-wire connection			
Sensor current: 0.5 mA			
Thermocouples(TC)	B(PtRh30-PtRh6)	0 to +1820 °C (32 to 3308 °F)	500K
	E(NiCr-CuNi)	-270 to +1000 °C (-454 to 1832 °F)	50K
	J(Fe-CuNi)	-210 to +1200 °C (-346 to 2192 °F)	50K
	K(NiCr-Ni)	-270 to +1372 °C (-454 to 2501 °F)	50K
	N(NiCrSi-NiSi)	-270 to +1300 °C (-454 to 2372 °F)	50K
	R(PtRh13-Pt)	-50 to +1768 °C (-58 to 3214 °F)	500K
	S(PtRh10-Pt)	-50 to +1768 °C (-58 to 3214 °F)	500K
	T(Cu-CuNi)	-270 to +400 °C (-454 to 752 °F)	50K
Voltage transmitters(mV)	(mV)	-10 to 75mV	5mV
		-100 to 100mV	5mV
		-100 to 500mV	6mV
		-100 to 2000mV	20mV
Output			
Output signal		4 to 20 mA	
Load		max.(VVersorgungsspannung-7.5 V)/0.022 A	
Signal on alarm	Underranging: Linear drop to 3.8 mA		
	Overranging: linear rise to 20.5 mA		
	Sensor break; sensor open-circuit: 3.6 mA or 22mA		
Linearisation/transmission behaviour		Temperature linear, resistance linear, voltage linear	
Galvanic isolation		U=2 KV AC (input/output)	
Performance characteristics			
Response time		1s	
Referenzbedingungen		Calibration temperature: +23 °C (73.4K)± 5 K	
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 160µA	
Resolution		0.3 µ A	

Accuracy

	Input	Type	Accuracy
Accuracy	RTD	Pt100. Ni100	0.2K or 0.08%
		Pt500. Ni500	0.5K or 0.20%
		Pt1000. Ni1000	0.3K or 0.12%
		Cu50	0.2K or 0.08%
		Cu100	0.3K or 0.12%
	TC	K, J, T, E	typ. 0.5 K or 0.08%
		N	typ. 1,0 K or 0.08%
		S, B, R	typ. 2,0 K or 0.08%
	Ω	10 to 400 Ω	$\pm 0.1 \Omega$ or 0.08%
		10 to 2000 Ω	$\pm 1,5 \Omega$ or 0.12%
	mV	-10 to 75mV	$\pm 20 \mu V$ or 0.08%
		-100 to 100mV	$\pm 20 \mu V$ or 0.08%
		-100 to 500mV	$\pm 30 \mu V$ or 0.08%
		-100 to 2000mV	$\pm 50 \mu V$ or 0.08%

Environment conditions

Installation instructions	Installation angle: no limit
	Installation area: Connection head accord. To DIN 43 729 From B; TAF 10 field housing"

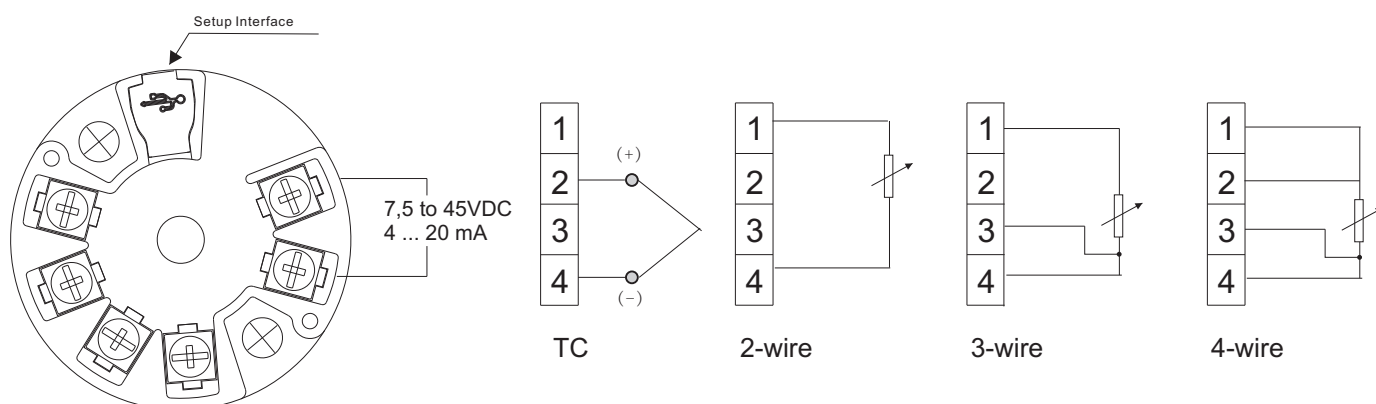
Storage temperature

Ambient temperature limits	-40 to +85 °C (-40 to 185 °F)
Storage temperature	-40 to +100 °C (-40 to 212 °F)
Condensation	Allowable
Degree of protection	IP 00
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

Others

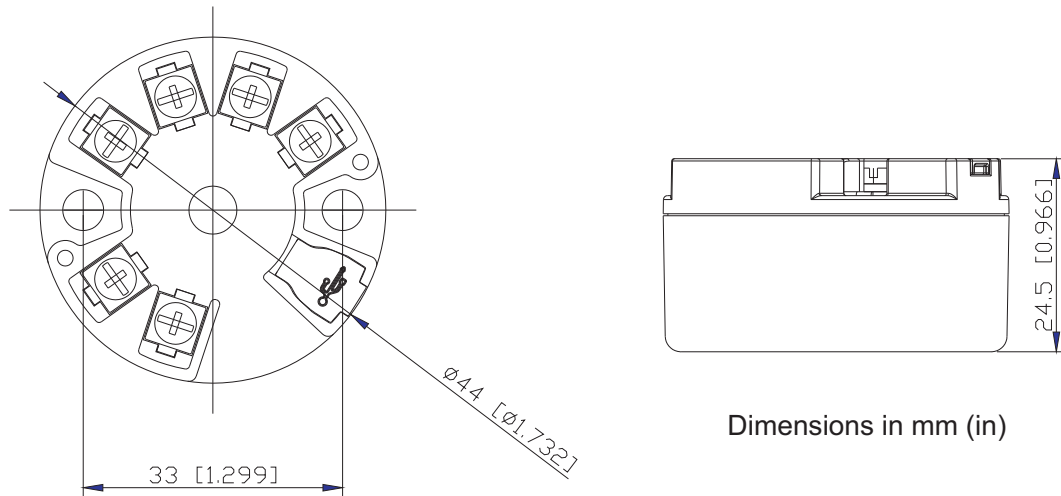
Dimensions	44 mmX22.5 mm
Weight	Approx. 33.5g
Materials	Housing: PC Potting: epoxy

Electrical Connection



The TYP203 has no USB Interface, it can be set up only with HART Modem.

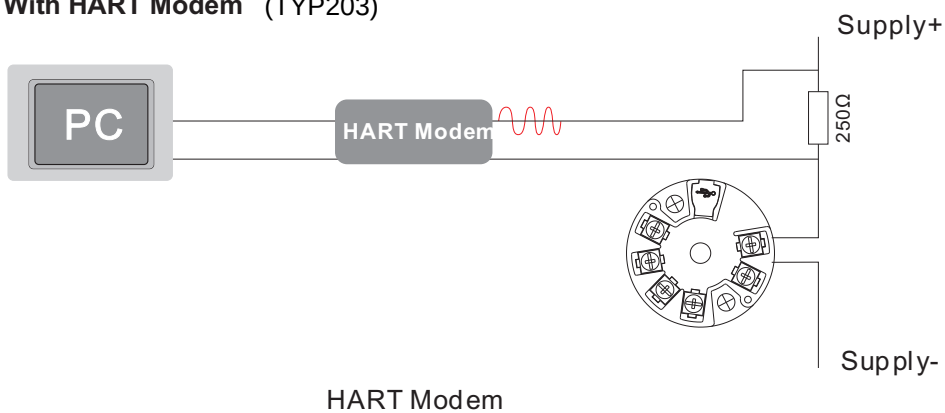
Dimensions



Dimensions in mm (in)

How to programm

With HART Modem (TYP203)



With USB Modem (TYP201 and TYP202)

