

Analog 2-/3-wire transmitter

Characteristics



Input: resistance thermometer Pt100 (DIN EN60751)
 Output: 4...20 mA or 0...10 V
 Supply: 7,5...30 VDC (output current)
 Supply: 15...30 VDC (output voltage)
 Measuring circuit monitoring
 Programmable (Windows95 or higher)
 Accuracy: $\pm 0,2\%$ of end scale value and 0,2 K
 Mounting: for terminal head Form B, optionally: adaptor for rail mounting
 Degree of protection (open mounting): IP00
 Degree of protection (in enclosure): IP of enclosure

Technical data

Types

TA0...: output 4...20 mA TA1...: output 0...10 V

Input resistance thermometer

Measurement input: Pt100 (DIN EN 60571)
 Range limits: -200...+850°C
 Connection circuit: 2-, 3-wire
 Smallest span: 25 K
 Largest span: 1050 K
 Unit: °C or °F
 Sensor lead resistance: ≤ 11 ohms per conductor (3-wire)
 Sensor lead resistance: settable with PC setup program (2-wire)
 Sensor current: 0,5 mA
 Sampling rate: continuous measurement
 Zero shift for spans:
 <75 K: fixed zero -40°C, -20°C, 0°C, 20°C, 40°C
 =75 K: $\pm 50^\circ\text{C}$
 >75 K: see diagram page 2

Output

Signal: TP0...: proportional current 4...20 mA
 TP1...: voltage 0...10 V
 Burden (Rb): TP0...: $R_b = (U_b - 7,5 \text{ V}) / 22 \text{ mA}$
 Load: TP1...: ≤ 10 kohms
 Burden error: TP0...: $\leq \pm 0,02\%$ / 100 ohms
 Load error: TP1...: $\leq \pm 0,1\%$
 Transfer characteristic: linear with temperature
 Transfer accuracy: TP0...: $\leq \pm 0,1\%$ TP1...: $\leq \pm 0,2\%$
 Damping of ripple of supply voltage: >40 dB
 Setting time on temperature change: ≤ 10 ms
 Calibration conditions: 24 VDC, approx. 22°C
 Calibration accuracy: $\leq \pm 0,2\%$ or $\leq \pm 0,2 \text{ K}$

Voltage supply

with reverse polarity protection: TA0...: 7,5...30 VDC
 TA1...: 15...30 VDC
 Supply voltage error: $\leq \pm 0,01\%$ per V deviation from 24 V

Measuring circuit monitoring

Underrange: TA0...: falling to $\leq 3,6 \text{ mA}$
 TA1...: 0 V
 Overrange: TA0...: rising to $\geq 22...<28 \text{ mA}$ (typically 24 mA)
 TA1...: rising to $>11...<14 \text{ V}$ (typically 12 V)
 Probe short circuit: TA0...: $\leq 3,6 \text{ mA}$
 TA1...: 0 V
 Probe aand lead break:
 TA0...: positive: $\geq 22...<28 \text{ mA}$ (typically 24 mA)
 negativ: $\leq 3,6 \text{ mA}$
 TA1...: positive: rising to $>11...<14 \text{ V}$ (typically 12 V)
 negative: 0V

Ambient conditions

Operating temperature: -40...+85°C
 Storage temperature: -40...+100°C
 EMC: EN 61326
 -interference emmisoin: class B
 -immunity to interference: to industrial requirements
 Climatic conditions: rel. humidity $\leq 95\%$, no condensation
 Temperature error: $\pm 0,01\%$ per °C deviation from 22°C
 Vibration strength: to GL Characteristic 2

Mechanics

Material: polycarbonate (encapsulated)
 Screw terminal: $\leq 1,75 \text{ mm}^2$, max. torque 0,6 Nm
 Mounting: inside terminal head Form B
 in switchgear cabinet (adaptor necessary)
 Use only original accessories for mounting
 Operating position: unresricted
 Weight: approx. 45 g
 Degree of protection: in enclosure: IP of enclosure
 open mounting: IP00

Configurable parameters

Circuit type (2-, 3-wire)
 Range start, range end (see diagram page 2)
 TAG-number (8 characters maximum)
 Response to probe break / short circuit (upscale/downscale)
 Fine calibration
 Total lead resistance for 2-wire circuit

Applications

The transmitter can be used in all cases, where the measurement of temperature is necessary. With the possibility of programming a customized adaption to the requirements can be carried out.



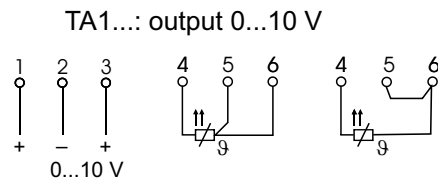
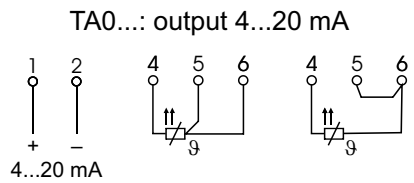
Ordering code

T	A	X	X	X	X	X	X	-	X	X	X
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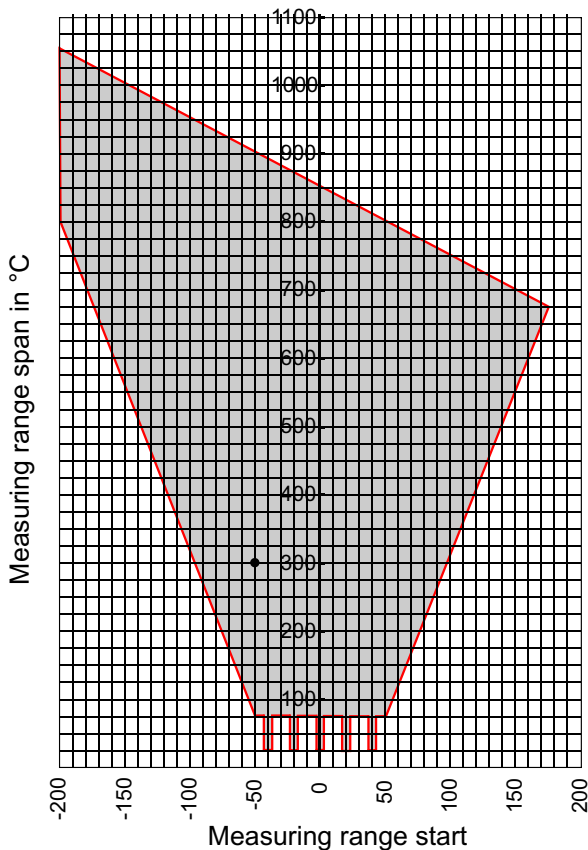
Output:	4...20 mA	0
	0...10 V	1
Programming:	factory-set*	0
	configuration to customer specification	1
Other, accessories:	special model (on request)	0
	PC setup program, multilingual	1
	PC adaptor TTL/RS232, setup program	2
	adaptor for top hat rail	3

*Factory-set: sensor: RTD PT100 2-wire range: 0...100°C probe break/short-circuit: upscale
 lead resistance: 0 ohm (2-wire) TAG number: without

Connection



Range diagram



All the possible range-start values in relation to the range span are contained within the grey area.

range span = range end - range start

Calculation example:

range start = -50°C / range end = 250°C

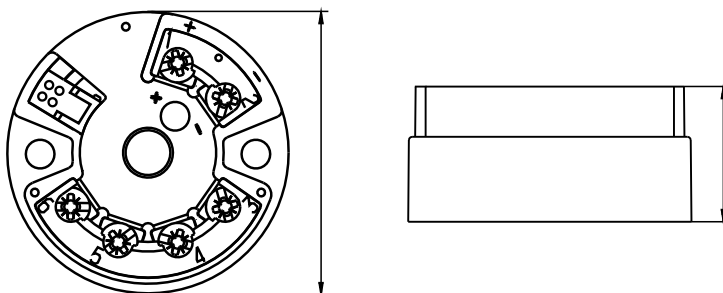
range span = range end - range start

range span = 250°C - (-50°C) = 300 °C

When selecting the range start, make sure it lies within the grey area

Please note: for spans smaller than 75 °C, the only permissible start values are: -40 °C / -20 °C / 0 °C / +40 °C

Dimension



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