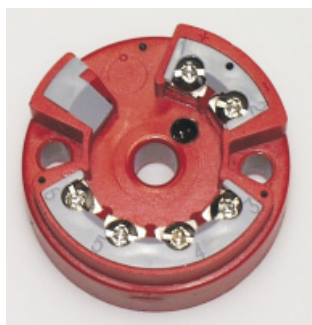


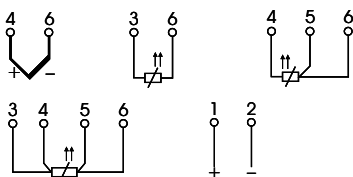
Programmable 2-wire transmitter

Characteristics



- Input: thermocouple or resistance thermometer
- Output: 4...20 mA
- Supply: 10...35 V
- Supply version EEx: 10...30 V
- EEx version ia IIC T4...T6
- Measurement circuit monitoring
- Input/output galvanically insulated
- Programmable via Windows W95 or above
- Accuracy up to $\pm 0,2$ K

Mounting, connection



- Mounting in terminal head form B
- Optional adaptor for DIN top hat rail
- Protection IP00 (open mounting)
- Protection IP54 (terminal head mounting)
- Protection IP66 HART version (terminal head mounting)

Technical data

Model

TP0...	Standard
TP1...	HART interface
TP2...	EEx
TP3	HART interface, EEx

Input thermocouples

Shortest span:	type L, J, U, T, K, E, N:	50 K
Shortest span:	type S, R, B:	500 K
Shortest span:	type D, C, MoRe5-MoRe41:	500 K
Cold junction:	Pt 100 internal or external	
Cold junction accuracy:	± 1 K	
Sensor current:	350 nA	
Sampling rate:	> 1 measurement per second	
Input filter:	digital filter 1st order	
Accuracy Typ L:	-200...+900°C:	$\pm 0,5$ K
Accuracy Typ J:	-150...+1200°C:	$\pm 0,5$ K
Accuracy Typ U:	-200...+600°C:	$\pm 0,5$ K
Accuracy Typ T:	-200...+400°C:	$\pm 0,5$ K
Accuracy Typ K:	-140...+1372°C:	$\pm 0,5$ K
Accuracy Typ E:	-150...+1000 °C:	$\pm 0,5$ K
Accuracy Typ N:	-100...+1300°C:	± 1 K
Accuracy Typ S:	+20...+1768°C:	± 2 K
Accuracy Typ R:	+50...+1768°C:	± 2 K
Accuracy Typ B:	+400...+1820°C:	± 2 K
Accuracy Typ D:	+500...+2495°C:	± 1 K
Accuracy Typ C:	+500...+2320 °C:	± 1 K
Accuracy PtRe5-MoRe41:	+400...+2000°C	± 2 K

Input resistance thermometer

Connection circuit:	2-, 3-, 4-wire
Shortest span:	10 K
Sensor current:	< 0,6 mA
Sampling rate:	> 1 measurement per second
Input filter:	digital filter 1st order
Accuracy Pt 100	-100...+200°C: $\pm 0,2$ K
Accuracy Pt 100	-200...+850/+649°C: $\pm 0,4$ K
Accuracy Pt 500/1000	-100...+200°C: $\pm 0,2$ K
Accuracy Pt 100/1000	-200...+250°C: $\pm 0,4$ K
Accuracy Ni 100	-60...+250°C: $\pm 0,2$ K
Accuracy Ni 500/1000	-60...+150 °C: $\pm 0,2$ K

Configurable parameters

- Type of sensor
- Connection: 2-, 3-, 4-wire
- Digital filter
- Custom linearization
- Range limits
- Output signal rising/falling
- TAG number
- Response to probe break/short circuit
- Recalibration
- Lead resistance 2-wire
- Fine calibration
- External/internal cold junction
- °F programmable

Applications

The transmitter can be used in all cases, where the measurement of temperature is necessary. Having the opportunity to use an optional mounting adaptor the transmitter can be mounted in switchgear cabinets.



PROGRAMMABLE 2-WIRE TRANSMITTER

Ordering code

T	P	X	X	X	X	X	X	-	X	X	X
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Type:	Standard	0
	with HART-interface	1
	EEx ia IIC T4...T6	2
	with HART-interface, EEX ia IIC T4...T6	3
Programming:	factory-set	0
	configuration to customer specification	1
Input:	factory-set (Pt 100 DIN, 4-wire, 0...100°C)	0
	thermocouple	1
	resistance thermometer 2-wire	2
	resistance thermometer 3-wire	3
	resistance thermometer 4-wire	4
Thermocouple:	type L (Fe-CuNi, DIN 43710, -200...+900°C)	0
	type J (Fe-CuNi, DIN EN 60584, -150...+1200°C)	1
	type U (Cu-CuNi, DIN 43710, -200...+600°C)	2
	type T (Cu-CuNi, DIN EN 60584, -200...+400)	3
	type K (NiCr-Ni, DIN EN 60584, -140...1372)	4
	type E (NiCr-CuNi, DIN EN 60584, -150...+1000°C)	5
	type N (NiCrSi-NiSi, DIN EN 60548, -100...+1000°C)	6
	type S (Pt10Rh-Pt, DIN EN 60548, 20...1768°C)	7
	type R (Pt13Rh-Pt, DIN 60584, 50...1768°C)	8
	type B (Pt30Rh-Pt6Rh, DIN EN 60584, 400...1820°C)	9
	MoRe5-MoRe41, (500...2000°C)	A
	type D (W3Re-W25Re, 500...2495°C)	B
	type C (W5Re-W26Re, 500...2320°C)	C
Resistance thermometer:	Pt 100 DIN EN 60751 (0,385/°C)	0
	Pt 100 JIS	1
	Pt 500 DIN	2
	Pt 1000 DIN	3
	Ni 100	4
	Ni 500	5
	Ni 1000	6
Output and behaviour on error:	factory-set (4...20 mA, upscale)	0
	4...20 mA, downscale	1
	20...4 mA, upscale	2
	20...4 mA, downscale	3
Accessories:	PC setup program, multilingual	0
	PC adaptor TTL/RS232, setup program	1
	adaptor for top hat rail	2

Technical data

Measurement circuit monitoring

Underrange:	linear drop up to 3,8 mA
Overrange:	linear rise to 20,5 mA
Probe short circuit:	≤3,5 mA or ≥21 mA
Probe and leak break:	≤3,5 mA or ≥21 mA
Current limiting:	≤23 mA

Output

Signal:	proportional DC current
Electrical insulation:	between input and output
Test voltage:	Û = 3,75 kV/50Hz (PT0...,PT2...) Û = 2 kV/50 HZ (PT1...,PT3...)
Transfer characteristic:	linear with temperature custom linearization inversion of output signal
Burden (Rb):	Rb = (Ub - 8 V) / 0,022 A (PT1...,PT3...) Rb = (Ub - 10 V) / 0,022 A (PT1...,PT3...)
Burden error:	≤± 0,02% / 100 Ohm
Calibration/accuracy:	24 VDC, at approx. 22°C / ≤±0,05%
Digital filter:	0...125 s, configurable (PT0...,PT2...) 0...100 s, configurable (PT1..., PT3...)
Step response 0...100%:	< 2s (with filter constant 0s)
Switch-on delay:	5 s (TP0...,TP2...), 4 s (TP1...,TP3...)

Supply

With reverse protection:	TP0...: 8...35 VDC, TP2...: 8...30 VDC TP1...: 10...35 VDC, TP3...: 10...30 VDC
Error:	≤ ± 0,01% / V deviation from 24 V

Ambient conditions

Operating temperature:	-40...+85°C
Storing temperature:	-40...+100°C
EMV:	EN 61326, Kl. B, industrial requirements
Climatic conditions:	rel. humidity 95%, with condensation
Temperature error:	≤ ± 0,005% / K (TC + cold junction)
Vibration strength:	according to GL, characteristic 2

Mechanics

Material:	polycarbonate (encapsulated)
Screw connection:	≤1,75 mm ² , tightening torque max. 0,6 Nm
Mounting:	in terminal head form B in switchgear cabinet (adaptor necessary)
Weight:	ca. 40 g
Protection:	in terminal head: IP54 in terminal head: IP66 version TP1...,TP3... open mounting: IP00