

Transmitter for temperature, head mounting for Pt100

2-wire technology, SIEMENS Sitrans TH100

Type series PA210.



Application area

- all areas of the process industry

Features

- Digital programmable transmitter
- Suitable for installation in connecting heads in accordance with DIN, form B
- Input for resistance thermometer
- Output signal: 4...20 mA invertible, 2-wire technology
- Programmable output signal for sensor breakage and sensor short circuit
- Power supply:
 - 8...35 V DC
 - 8...30 V DC (Ex)

Options

- Approvals/Certificates
 - Explosion protection (ATEX/UKEX) for gases and dust
- As per UKCA regulations
- Parameterization via PC Software

Application

The digital transmitter converts a temperature-dependent change in resistance into a current signal typical to process control systems. Likewise, linear changes in resistance, e.g. by valves or level transmitters can be converted into an analog current signal. An extensive range of configuration options is available.

Technical data

Constructional design

Dimensions:	see dimensional drawing, molded plastic
Degree of protection per EN 60529:	■ case IP 40 ■ Terminals IP 00
Weight:	50 g (0.11 lb)

Input

Resistance thermometer

Measured variable:	temperature
Sensor type :	Pt100 per EN 60751
Characteristic curve:	temperature-linear
Type of connection:	2-, 3- or 4-wire technology
Resolution:	14 bit
Measuring accuracy:	Span <250 °C (450 °F): < 0.25 °C (0.45 °F) Span >250 °C (450 °F): < 0.1 % of span
Repeatability:	< 0.1 °C (0.18 °F)
Measuring current :	approx. 0.4 mA
Measuring cycle:	< 0.7 s
Measuring range:	-200...+850 °C (-328 ... +1562 °F)
Measuring span :	25...1050 °C (77 ... 1922 °F)
Unit:	°C or °F
Offset:	programmable: -100 ... +100 °C (-180 ... +180 °F)
Line resistance:	max. 20 Ω (total from feeder and return conductor)
Noise rejection:	50 and 60 Hz

Output

Output signal:	4 ... 20 mA, 2-wire technology
Auxiliary power:	8.5 ... 36 V DC
Max. load:	$(U_{aux} - 8,5 \text{ V})/0,023 \text{ A}$
Overrange:	3.6 ... 23 mA, infinitely adjustable (default range: 3.84 ... 20.5 mA)
Error signal:	(following sensor fault) 3.6 ... 23 mA, infinitely adjustable (default value: 22.8 mA)
Damping time:	0 ... 30 s (default value: 0 s)
Protection:	against reversed polarity
Resolution:	12 bit

Accuracy:	at 23 °C (73.4 °F) < 0.1 % of span
Temperature effect:	< 0.1 %/10 °C (0.1 %/18 °F)
Effect of auxiliary power:	< 0.01 % of span/V
Effect of load impedance:	< 0.025 % of max. span/100 Ω
Long-term drift:	■ < 0.025 % of the max. span in the first month ■ < 0.035 % of the max. span after one year ■ < 0.05 % of the max. span after 5 years

Temperature ranges and ambient conditions

Ambient:	-40...+85 °C (-40...+185 °F)
Storage:	-40...+85 °C (-40...+185 °F)
Relative humidity:	98 %, with condensation

Electromagnetic compatibility

According to:	EN 61326 and NAMUR NE21
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Certificates and Approvals

Explosion protection ATEX SIEMENS Sitrans TH100

EG type examination certificate:	DEKRA 21ATEX0033 X
Type of protection:	II 1G Ex ia IIC T6...T4 Ga II 2 (1) G Ex ib [ia Ga] IIC T6...T4 Gb II 3 (1) G Ex ic [ia Ga] IIC T6...T4 Gc II 2D Ex ia IIIC Db
EG type examination certificate:	DEKRA 21ATEX0034 X
Type of protection:	II 3G Ex ic IIC T6...T4 Gc

Explosion protection UKEX SIEMENS Sitrans TH100

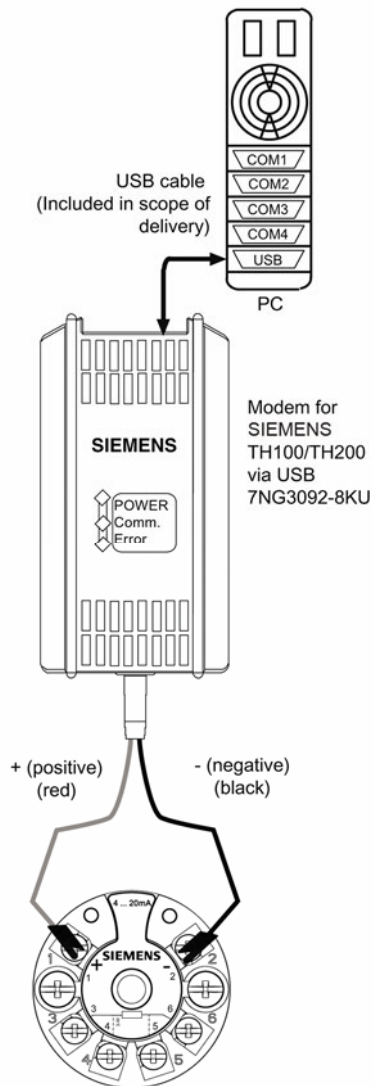
Type examination certificate:	DEKRA 21UKEX0376X
Type of protection:	II 3G Ex ic IIC T6...T4 Gc

Software Requirements (SIPROM T)

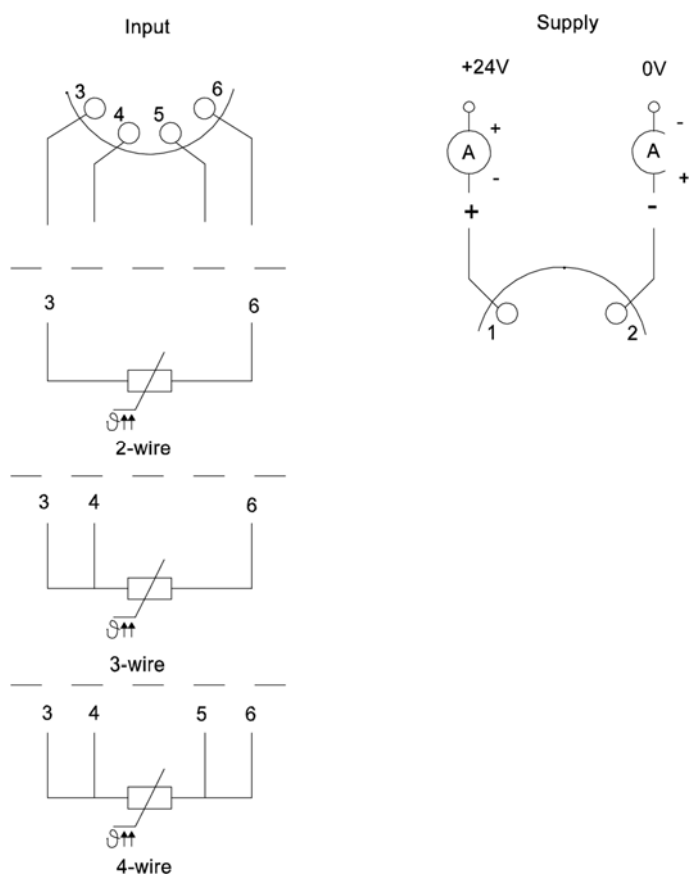
PC operating system:	Windows ME, 2000 and XP Windows 7 Windows 8
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Parameterisation

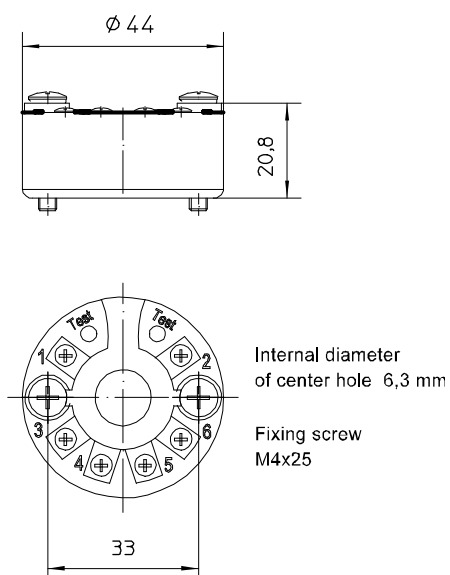
SIEMENS Sitrans TH100 USB modem



Connection diagram



Dimensions



1(+) and 2(-) Supply
3, 4, 5 and 6 Sensor connections (Pt100)

Order details

Transmitter for temperature, head mounting for Pt 100, SIEMENS Sitrans TH100			
PA2100	design	standard	
PA2101		Ex-protection, type of ex-protection as follows	
F11	standard range	input	Pt100 in 3-wire technology
		temperature range	0...100 °C
		error current (following sensor breakage)	22.8 mA
		damping	0.0 s
F12	custom-made configuratio	input	as per customers specificatio
		measuring range	
		error current (following sensor breakage)	
		damping	
H1	output signal	4...20 mA, 2-wire technology	

Additional features (to be indicated in case of need, only)			
S80.1	Ex marking (SIEMENS Sitrans TH100)	ATEX	DEKRA 21 ATEX0033 X Ex II 1G Ex ia IIC T6...T4 Ga Ex II 2 (1) G Ex ib [ia Ga] IIC T6...T4 Gb Ex II 3 (1) G Ex ic [ia Ga] IIC T6...T4 Gc Ex II 2D Ex ia IIIC Db
			DEKRA 21 ATEX0034 X Ex II 3G Ex ic IIC T6/T4 Gc
S94		UKEX	DEKRA 21UKEX0376 X Ex II 3G Ex ic IIC T6...T4 Gc
W2660	as per UKCA regulations		

Accessories	
MC1250	modem with USB-port (PA2100 compatible to SIEMENS Sitrans TH100)

Order code (example): PA2100 - F11 - H1