

THERMOCONT TN/TX

Thermowell Temperature Sensors

The wide range of **THERMOCONT** temperature sensors covers nearly all needs in industrial temperature measurement, both in terms of design and the selection of Pt100 resistance temperature sensors. **THERMOCONT TN/TX** reinforced-case temperature sensors are used with various media (*liquids, gases, vapors*) in pipelines, tanks, and furnaces. They are primarily designed for oil, gas, and heavy chemical industry applications but can be used anywhere where a robust protective tube design is an advantage.

To shield the thermal sensors physically and protect them from vibrations, a protective assembly is used, which consists of an outer and an inner tube. The outer protective tube is made of machined stainless steel welded to the flange for safety reasons. The ribbing on the outer protective tube does not allow the external ambient temperature to interfere with the accuracy of the measurement. The head has a protective chain to prevent falling off. The sensor insert can be replaced without dismantling the technological system. The stellite-coated variant ensures high wear resistance and corrosion resistance.

FEATURES

- Robust design for heavy chemical industry
- Stainless steel, drilled, tapered thermowell case
- Up to 800 mm (2.62 ft) insertion length
- Sensor can be replaced without removing the instrument from the process
- Vibration-resistant version
- 2 or 4-wire types
- Welded flange
- Gas thermometer version
- Explosion-proof variants available

APPLICATIONS

- Temperature measurement of liquids, gases, vapors
- Special versions for unique applications
- For applications exposed to mechanical damage
- Chemical and Oil Industry

CERTIFICATES

- ATEX (Ex ia G)
- ATEX (Ex d G)
- ATEX (Ex d ia G)



TECHNICAL DATA

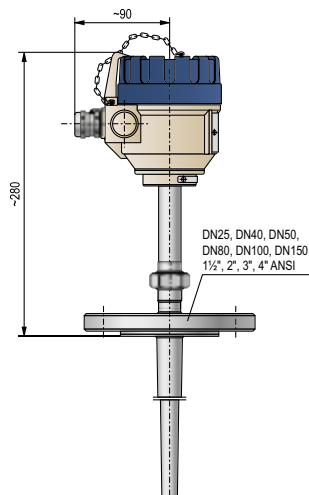
		Strengthened probe [TN□, TU□]	For gases [TXP]
Sensor	Accuracy class ⁽¹⁾	"A" / "B" accuracy class in accordance to EN 60751	"A" class
	Type	Single or dual	
	Vibration resistance	EN 60751.4.4.2	
	Grounding	Ground-independent	
Head	Material of inner protective tube	1.4571	PTFE
	Housing material	Painted EN AC 43100	
	Cable gland	M20×1.5 / ½" NPT	M20×1.5 or without cable glands, ½" NPT interior thread
	Cable	Ø6...Ø12 mm (Ø.236...Ø.472"), see "Ex Information"	
External Protection	Electrical connection	Terminal with fixing screw	
	Material	1.4571 stainless steel	
	Probe length	160...3000 mm (6.3"...10 ft) ⁽²⁾	120...500 mm (4.75"...20")
	Process connection	As per order code	M33×2; 1" NPT
General data	Range	−50...+600 °C (−58...+1112 °F)	−50...+150 °C (−58...+302 °F)
	Medium pressure	1" NPT – 40 bar (580 psi) or pressure rating of flanges	up to 80 bar (1160 psi)
	Cable length	Ø7...Ø12 mm (Ø.275...Ø.472")	Ø6...Ø12 mm (Ø.236...Ø.472")
	Ambient temperature	−20...+80 °C (−4...+176 °F)	−30...+80 °C (−22...+176 °F)
	Grounding	External, grounding screw on the housing	
	Electrical protection	Class III	
	Ingress protection	IP65	IP67
	Ex marking	Ⓜ II 1 G Ex ia IIC T6...T1 Ga; Ⓜ II 2 G Ex d IIB T6...T1 Gb Ⓜ II 1/2 G Ex d ia IIB T6...T1 Ga/Gb	Ⓜ II 1 G Ex ia IIB T6...T4 Ga; Ⓜ II 2 G Ex d IIB T6...T4 Gb Ⓜ II 1/2 G Ex d ia IIB T6...T4 Ga/Gb
	Ex Information	"d": Supply voltage: max. 28 V, Current: max. 100 mA "ia": U _i = 30 V, I _i = 100 mA, P _i = 750 mW, C _i = 0 nF, L _i = 0 mH "d ia": U _i = 30 V, I _i = 140 mA, P _i = 1.4 W, C _i = 0 nF, L _i = 0 mH	U _i : 30 V, I _i : 140 mA, P _i : 1.1W; C ₀ = 0, L ₀ = 0

⁽¹⁾ In standard temperature ranges (below +400 °C [+752 °F]), the margin of error for class "A" resistance temperature sensors is below ±1 °C (±1.8 °F); in the case of class "B" temperature sensors, it is ±2.3 °C (±39.4 °F) maximum.

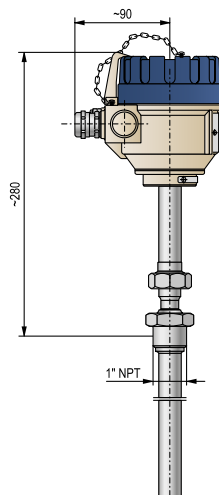
⁽²⁾ If the measured medium is abrasive, the maximum probe length is limited to 1000 mm (40").

Temperature classes	T6	T5	T4	T3	T2	T1
Ambient temperature from −20 °C (−4 °F)	+65 °C (+149 °F)	+70 °C (+158 °F)		+80 °C (+176 °F)		
Process temperature from −20 °C (−4 °F)	+85 °C (+185 °F)	+100 °C (+212 °F)	+135 °C (+275 °F)	+200 °C (+392 °F)	+300 °C (+572 °F)	+450 °C (+842 °F)

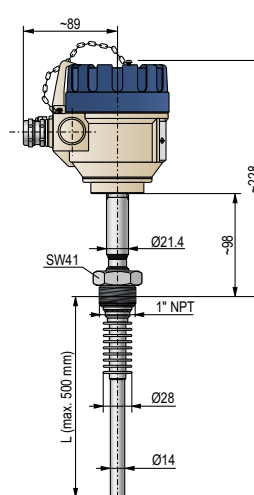
DIMENSIONS



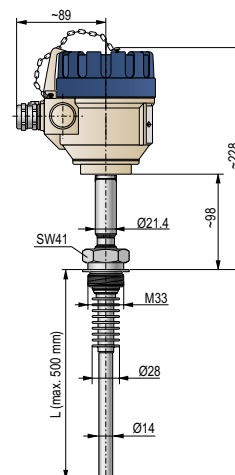
TNP / TNK-□□□



TUP / TUK-□□□



TXP-1□□



TXP-V□□

ORDER CODES (NOT ALL CODE VARIATION AVAILABLE)

Temperature sensor with strengthened probe

THERMOCONT T ■ ■ ■ - ■ ■ ■ - ■ ■ ■ (1)

Sensor tube	Code
Drilled, tapered	N
Drilled, straight	U

Sensor	Code
Thermocouple NiCr-Ni (IEC 584)	K
Resistance Temperature Sensor Pt100 (IEC 751)	P

Process connection (2)	Code
1" NPT	1
DN40 PN40 (PN25)	2
DN50 PN40 (PN25)	5
2" ANSI 300RF	F
1 1/2" ANSI 300RF	T

Sensor classification / Arrangement		Code
Thermocouple	Class 1, single	1
	Class 1, dual	4
Resistance Temperature Sensor	Class "A"	
	Single, 2-wire	1
	Dual, 3-wire	4
	Single, 4-wire	7

Code	Probe length		Code
TN – Drilled, tapered			
1	160 mm (6.3")	700 mm (27.6")	A
3	250 mm (9.8")	800 mm (31.5")	B
6	400 mm (15.7")	900 mm (35.4")	C
8	500 mm (19.7")	1000 mm (39.4")	D
9	600 mm (23.6")		
TU – Drilled, straight			
1	160 mm (6.3")	700 mm (27.6")	A
3	250 mm (9.8")	800 mm (31.5")	B
6	400 mm (15.7")	900 mm (35.4")	C
8	500 mm (19.7")	1000 mm (39.4")	D
9	600 mm (23.6")		

Ex certificate	Code
None	0
Ex ia G	7
Ex d ia G	8
Ex d G	9

(1) The order code of an Ex version product should end in "Ex".

(2) On request: other process connections.

Temperature sensor for gases

THERMOCONT TX ■ ■ ■ - ■ ■ ■ - ■ ■ ■ (1)

Sensor	Code
Resistance Temperature Sensor Pt100 (IEC 751)	P

Process connection (2)	Code
1" NPT	1
M33x2	V

Sensor classification / Arrangement		Code
Class "A", Pt100	Single, 2-wire	1
	Dual, 3-wire	4
	Single, 4-wire	7

Code	Probe length		Code
0	120 mm (4.7")	350 mm (13.8")	5
1	160 mm (6.3")	400 mm (15.7")	6
2	200 mm (7.9")	450 mm (17.7")	7
3	250 mm (9.8")	500 mm (19.7")	8
4	300 mm (11.8")		

Ex certificate	Code
None	0
Ex d ia G	8
Ex d G	9

