

GENERAL DESCRIPTION

The wide range of **THERMOCONT** temperature sensors is able to cover almost all demands in the area of industrial temperature measurement. The numerous versions and multiple kinds of applicable probes make **THERMOCONT** suitable choice for all industries. PFA coated probe versions with teflon inserted steel flange are applicable for chemical and petrochemical applications where aggressive mediums could damage steel probes. The vibration-resistant versions are suitable for special applications where the measurement is exposed to high vibrations. The strengthened probe versions are designed primarily for oil, gas and steam pipeline industrial applications. The shock proof stainless steel construction includes the inner and outer (double) tube and well, the welded flange. This type is also provides suitable solution for all applications where robust design is advantageous. Suiting for unique technologies and industrial processes, special versions are also available along with the standard models.




MAIN FEATURES

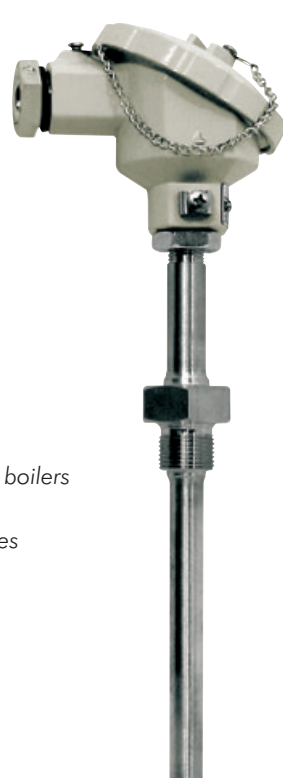
- Thermocouples and RTDs (Resistance Temperature Detectors)
- Temperature range from -50 °C up to +600 °C
- Multiple kinds of thermo-sensors
- Stainless steel probes
- Fast response sensor version
- Plastic coated version
- Vibration-resistant version
- Heavy-duty robust version
- Ex versions
- IP 65 protection

APPLICATIONS

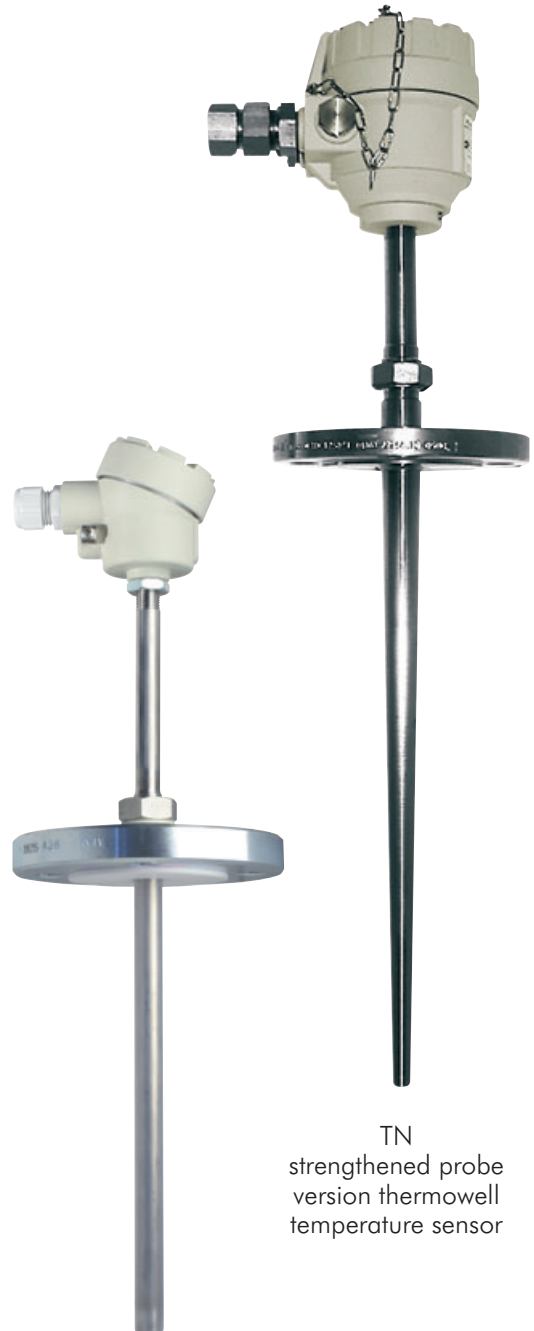
- Temperature metering in tanks, tubes, furnaces or boilers
- Can be mounted to special technological places
- For temperature metering of liquids, vapours, gases
- Temperature metering in bearings
- Special versions for unique applications

CERTIFICATIONS

- ATEX  II 2G EEx d IIC T6...T1, 600 °C
- ATEX  II 1/2G EEx d ia IIC T6...T1, 600 °C
- ATEX  II 1G EEx ia IIC T6...T1, 600 °C



TSP
standard
temperature sensor



TN
strengthened probe
version thermowell
temperature sensor



TPP
plastic coated Ex version
temperature sensor



TGP
bearing
temperature sensor



TFP
temperature sensor

TECHNICAL DATA

Features \ Type		THERMOCONT T temperature sensors					
		Normal	Ex	Vibration-resistant	Strengthened probe	Fast response	Plastic coated
Sensor	Accuracy class	A or B accuracy class in accordance to EN 60751					
	Type	As per order codes				Only with single sensor	As per order codes
	Vibration-resistance	–	EN 60751 4.4.2		Rendelési kód szerint		
	Design	Ground-independent					
	Material of inner protecting tube	A38		DIN 1.4571		A38	
Head	Housing material	EN 573-3 (DIN 1712) Aluminium		Paint coated EN AC 43100	EN 573-3 (DIN 1712) Aluminium		
	Cable gland	M20x1.5, see: special data for Ex certified models table					
	Cable	Ø 7-10 mm, see: special data for Ex certified models table					
	Electrical connection	Screw type terminal					
Outer protecting	Material	DIN 1.4571 stainless steel				PFA coating	
	Insertion length	As per order codes					
	Mechanical connection	As per order codes				Flanges as per order codes	
General data	Range	–50 °C... +600 °C				–50 °C... +200 °C	
	Pressure	2.5 MPa (25 bar) at 20 °C; 1.6 MPa (16 bar) at 400 °C		4 MPa (40 bar) for 1" NPT connection / pressure rating of flanges	2.5 MPa (25 bar) at 20 °C; 1.6 MPa (16 bar) at 400 °C		0.1 MPa (1 bar)
	Time-constant	< 3 min.				< 20 s	4,5 min.
	Ambient temperature	–20 °C... +80 °C; see: special data for Ex certified models table					
	Grounding	Outer, grounding screw on the housing					
	Electrical protection	Class III.					
	Mechanical protection	IP 65					
	Ex marking	–	Ⓜ II 2 G EEx d IIC T6...T1, 600 °C, Ⓜ II 1 G EEx d ia IIC T6...T1, 600 °C, Ⓜ II 1 G EEx ia IIC T6...T1, 600 °C,			–	Ⓜ II 1 G EEx ia IIC T6...T1, 600 °C,

⁽¹⁾ In the standard temperature ranges (about up to 400 °C) the temperature error of „A” temperature class resistance temperature sensors is below ±1 °C, while it is max. ±2.3 °C in case of „B” temperature class temperature sensors.

SPECIAL DATA FOR Ex CERTIFIED MODELS

Features \ Type	THERMOCONT T bearing temperature sensors	THERMOCONT T temperature sensors
Operating temperature	–50 °C... +180 °C	–30 °C... +200 °C
Sensor	Pt100	
Sensor diameter	Ø 8 mm	Ø 6, Ø 8 mm
Accuracy class	A or B accuracy class in accordance to EN 60751	
Measuring current	1 mA	max. 5 mA
Material of sensor tube	Stainless steel, DIN 1.4571 / Cu protector cover	DIN 1.4571
Mechanical connection	As per order codes	
Electrical connection	SIT type silicone rubber and shield, 3x0.75 mm ²	Teflon coated, 0.25 mm ² wire cross section cable
Cable protection	finned copper-braid protective jacket	
Cable length	6 m, diameter: 7 mm	max. 3 m, as per order codes
Insertion length	As per order codes	
Ingress protection	IP 65	IP 40
Electrical protection	Class III.	
Insulation resistivity	min. 10 MΩ, at 20 °C ±5 °C min. 1 MΩ at the highest value operating temperature	
Voltage-test	500 V, 50 Hz AC for 1 min., at 20 °C ±5 °C	
Mass	0,55 kg	0,05 kg
Time constant	< 20 ms	
Pressure	max. 6 MPa	

Temperature sensors	
Ex marking	Ⓜ II 1 G EEx ia IIC T6...T1, 600 °C; Ⓜ II 2 G EEx d IIC T6...T1, 600 °C; Ⓜ II 1 G EEx d ia IIC T6...T1, 600 °C
Intrinsically safe limit data	$U_i = 30 \text{ V}$, $I_i = 100 \text{ mA}$, $P_i \leq 750 \text{ mW}$, Internal capacitance $> C_i = 0 \text{ nF}$, Internal inductivity $L_i = 0 \text{ mH}$
Ambient temperature	–20 °C ... +80 °C
Cable gland	M 20 x1.5, EEx ia version: Ø 7.5 - 11.9 mm, EEx d ia and EEx d version: Ø 9.5 - 10 mm
Strengthened thermowell temperature sensors	
Ex marking	See above
Intrinsically safe limit data	See above
Ambient temperature	See above
Cable gland	M 20 x1.5, EEx ia version: Ø 7 - 10 mm, EEx d ia and EEx d version: Ø 7.5 - 11.5 mm

Temperature classes						
T6	T5	T4	T3	T2	T1	T600
Ambient temperature from –20 °C						
+65 °C	+70 °C	+70 °C	+80 °C	+80 °C	+80 °C	+80 °C
Medium temperature from –20 °C						
+85 °C	+100 °C	+135 °C	+200 °C	+300 °C	+450 °C	+600 °C

THERMOCONT T


Temperature element with strengthened case


Ingress protection: IP 65

Housing: aluminium casting

Process connection and well: stainless steel DIN 1.4571

 Ex marking: ATEX  II 1G EEx ia IIC T6...T1, 600°C

 ATEX  II 2G EEx d IIC T6...T1, 600°C

 ATEX  II 1/2G EEx d ia IIC T6...T1, 600°C

Type

 T - -
Well (DIN 1.4571)

 T - -

N Drilled, tapered

U Drilled straight

Sensor

 T - -

K Thermocouple NiCr-Ni (IEC 584)

P Resistance Temperature Sensor Pt100 (IEC 751)

Process connection*

 T - -

1 1" NPT

2 DIN DN40 PN40 [PN25]

5 DIN DN50 PN40 [PN25]

F 2" ANSI 300RF

T 1 1/2" ANSI 300RF

Sensor classification / Arrangement

 T - -

Thermocouple

1 Class 1, single

4 Class 1, dual

Resistance Temperature Sensor

1 Class A, single, 2-wire

4 Class A, dual, 3-wire

7 Class A, single, 4-wire

Protrusion length

 T - -

TN - Drilled, tapered

1 160 mm

3 250 mm

6 400 mm

8 500 mm

9 600 mm

A 700 mm

B 800 mm

TU - Drilled strait

1 160 mm

3 250 mm

6 400 mm

8 500 mm

9 600 mm

A 700 mm

B 800 mm

Ex certificate

 T - -

0 None

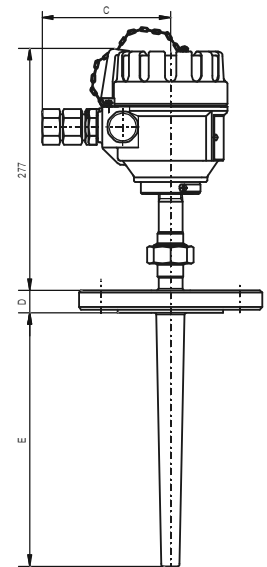
7 EExia

8 EExdia

9 EExd

 T - -

* On request: other process connections



THERMOWELLS, TEMPERATURE SENSORS

THERMOCONT T

THERMOCONT TF

Resistance thermometer (RTD), Pt100 sensor
 Process temperature: max. 200°C
 Protecting tube made of 1.4571, integrated cable

Type

T F P - -

Process connection

T F P - -

1	∅ 6mm 1.4571
2	∅ 8mm 1.4571
3	M 12 x 1.5
4	M 8 x 1

Pt 100 sensor

T F P - -

1	Class A, single
2	Class B, single
4 *	Class A, dual
5 *	Class B, dual
6 *	Class B, single, 4-wire
7 *	Class A, single, 4-wire

Probe length

T F P - -

1	60 mm
2	100 mm
3	160 mm
4	250 mm
5 **	10 mm
6 **	30 mm

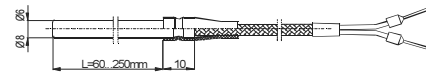
Cable length

T F P - -

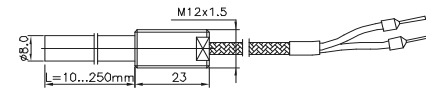
0	0,6 m
1	1 m
2	2 m
3	3 m

T F P - -

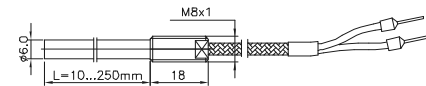
* only with ∅ 8 mm tube diameter
 ** only with threaded process connection



THERMOCONT TFP-1, TFP-2



THERMOCONT TFP-3



THERMOCONT TFP-4

THERMOCONT TG

Bearing RTD sensor, Pt 100
 Protecting tube made of A38, integrated cable
 Process temperature: max. 180°C

Type

T G P - -

Process connection

T G P - -

1	Rimmed
2	M 20 x 1,5

Pt 100 sensor

T G P - -

1	Class A Pt 100, 3-wire
2	Class B Pt 100, 3-wire

Probe length

T G P - -

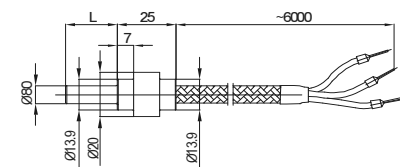
1	30 mm
2	50 mm
3	100 mm
4	160 mm
5	380 mm

Cable length

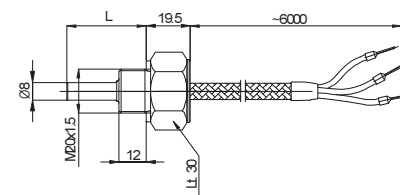
T G P - -

3	3 m
4	6 m

T G P - -



THERMOCONT TGP-1



THERMOCONT TGP-2

THERMOWELLS, TEMPERATURE SENSORS
THERMOCONT T
THERMOCONT TS

RTD temperature sensor

Ingress protection: IP 65

With silvered output terminals, 1.4571 or PFA coated stainless steel tube

 Ex marking: ATEX II 2G EExd IIC T6-T1 600°C
 ATEX II ½ G EExdia IIC T6-T1 600°C
 ATEX II 1 G EExia IIC T6-T1 600°C

Type

 T - -
Version

 T - -

 S 1.4571 (stainless steel)
 P PFA coated stainless steel

Sensor

 T - -

 P Pt 100
 V Pt 100 shock proof
 G Pt 100 fast-response

Process connection

 T - -

 0 Flange DN 25 PN 25, 1.4571
 1 M 20 x 1.5
 2 1/2" BSP
 3 1/2" NPT
 4 3/8" BSP
 5 Flange DN 40 PN 25/16, 1.0037
 6 Flange DN 50 PN 25/16, 1.0037
 7 Flange DN 80 PN 25/16, 1.0037
 8 Flange DN 100 PN 25, 1.0037
 9 Flange DN 150 PN 25, 1.0037

Pt100 Sensor

 T - -

 1 Class A
 2 Class B
 4 Class A, dual
 5 Class B, dual
 6 Class B + 4-wire
 7 Class A + 4-wire

Probe length

 T - -

 1 160 mm
 2 250 mm
 3 400 mm
 4 500 mm
 5 1000 mm
 6 1500 mm
 7 2000 mm
 8 2500 mm
 9 3000 mm

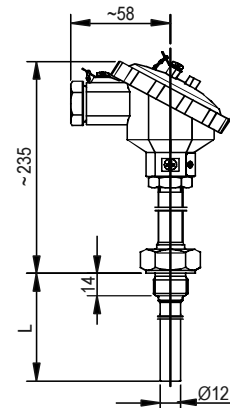
Ex Approval

 T - -

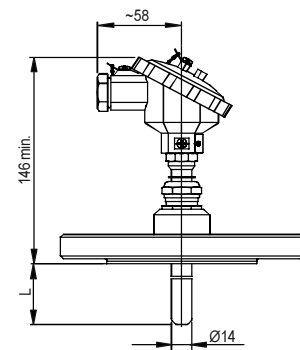
 0 None
 7 EEx ia
 8 EEx d ia
 9 EEx d

 T - -

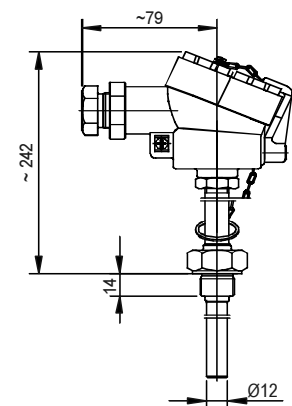
On special request: other process connections and probe lengths



TSP, TSV



TPP


 TSP
 EExd, EExdia