
Screw-in temperature sensor

Resistance thermometer or thermocouple for use in industrial, climatic, ventilating and heating installations and mechanical engineering

Characteristics

- Measuring element as Pt 100 or thermocouple (Type K, L, J, S, B)
- Protecting tube made of stainless steel, ceramics, Kanthal or chemically stable synthetic material
- Connection with cable or connection head (form DIN J, B or A)
- Process terminal thread (1/4", 3/8", 1/2", 3/4", 1", 1/4" NPT, 3/8" NPT, 1/2" NPT)
- Tolerance class A or B
- optionally 1/2, 1/3, 1/5 or 1/10 DIN
- Optionally transmitter 4 - 20 mA
also in EEx ib II T5 / T6



Description

Acquisition of temperature has an rising account in numerous processes. For test objects which allow a touch, side by side to other measuring methods, resistance thermometers and thermocouples are suited for. They are applied to large scale manufactures and are used for example for the measure in gases, fluids, meltings, solids at their surface and in their inner. Accuracy, response characteristic, temperature range and chemical characteristic features determine the suitable sensors and protective mountings.

Screw-in temperature sensors are preferred for use with temperature measurements in gaseous and liquid media. The reliable tightness of this structural shape at depression as well as pressure burden is an important selection criterion. The fitting length should be as short as possible to avoid harmful vibrations of fast flowing media and water hammers. They are available as single (2- to 4-wire) or double Pt 100 (2- or 4-wire) as well as single or double thermocouple (Type K, L, J, S, B). Brought to use are temperature sensors with cable connection or connection head (Form DIN J, B or A).

Speciality: Probe made of chemically stable synthetic (Delrin) are especially suited for use in alkaline solutions or acids.



Technical data

Input

Measuring element:	Resistance thermometer 1 x Pt 100, class B, DIN IEC 751 2 x Pt 100, class B, DIN IEC 751 3 x Pt 100, class B, DIN IEC 751 (type as 2-, 3- or 4-wire) - optionally class A
	Thermocouple Type K (NiCr-Ni), DIN IEC 584 Type L (Fe-CuNi), DIN 43 710 Type J (Fe-CuNi), DIN IEC 584 Type S (PtRh10-Pt), DIN IEC 584 Type B (PtRh30-PtRh6), DIN IEC 584 (type as simple or double element)

Output

Transmitter:	4-20 mA, analog 4-20 mA, analog, electrically isolated 4-20 mA, analog, EEx ib T5 / T6 4-20 mA, digital 4-20 mA, digital, hard log
Limit switch / controller:	1 potential free center-zero relay (250 VAC / 5 A)

Ambient conditions

Ambient temperature:	-40 °C ... +85 °C (Ex-Transmitter -40 °C ... +60 °C)
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Protecting tube

Diameter of protecting tube:	3 ... 25 mm
Mounting length:	20 ... 6000 mm
Material:	Stainless steel, 1.4571 - optionally heat-resisting steel, 1.4762 - optionally heat-resisting steel, 1.4841 - optionally Kanthal, 1.4828 - optionally ceramics, Type 610 - optionally ceramics, Type 530 - optionally ceramics, Type 710 - optionally Delrin, POM

Lagging tube

Diameter of lagging tube:	3 ... 25 mm
Length of lagging tube:	0 ... 1000 mm
Material:	Material of protecting tube

Connection

Cable connection:	Connecting PVC/PVC (up to max. 105 °C) Connecting Teflon/Silicon (up to max. 200 °C) Connecting Teflon/Teflon (up to max. 250 °C) Connecting Teflon/glass silk/steel plait (up to max. 250 °C) Connecting glass silk/glass silk/steel plait (up to max. 350 °C)
Connection head:	Form B - optionally Form J - optionally Form B, PVC - optionally Form BUS - optionally Form A

Fixing

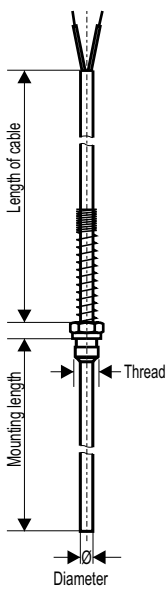
Process terminal thread:	1/4", 3/8", 1/2", 3/4", 1", 1/4" NPT, 3/8" NPT, 1/2" NPT
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Sundries

System of protection:	IP 54 - optionally IP 65
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Ordering draw

Cable connection



Electrical connection (Please signalize)

- PVC / PVC
- Teflon / Silicon
- Teflon / Teflon
- Teflon/glass silk/steel plait
- glass silk/glass silk/steel plait

Length of cable (Please signalize)

Diameter of metallic protecting tube (Please signalize)

- 3, 4, 5, 6, 7, 8, 9,
10, 11, 15, 22 mm

Diameter of ceramic protecting tube (Please signalize)

- 10, 15, 24 (Type 610)
10, 15, 24 (Type 710)
26 (Type 530)

Using temperature (Please signalize)

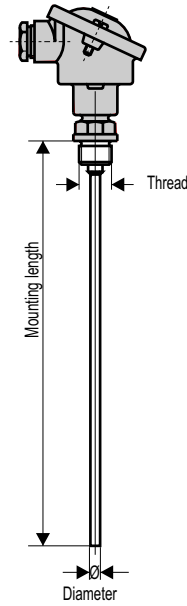
Process terminal thread (Please signalize)

- 1/4", 3/8", 1/2", 3/4", 1",
1/4" NPT, 3/8" NPT, 1/2" NPT

Specialities (Please signalize)

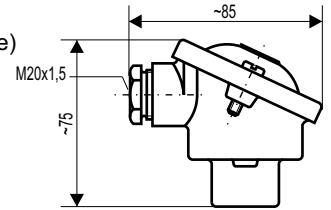
- Type as EEx in II T5 / T6
- System of protection IP 65
- Probe internal full potted
- Gauge slide exchangeable
- Vibrated in glass sand
- Screwing movable
- Stop flange according to DIN 43 734 (15 or 32 mm)

Connection head

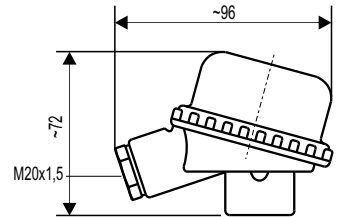


Form of head (Please signalize)

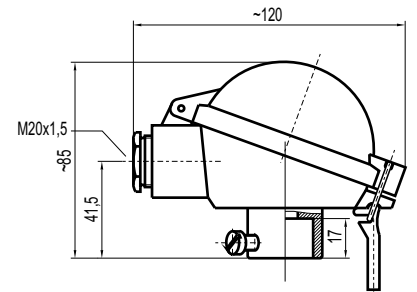
Form B



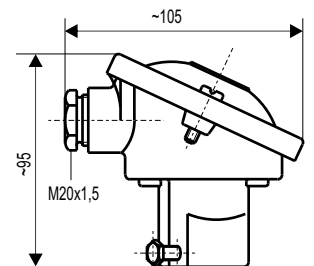
Form B - PVC



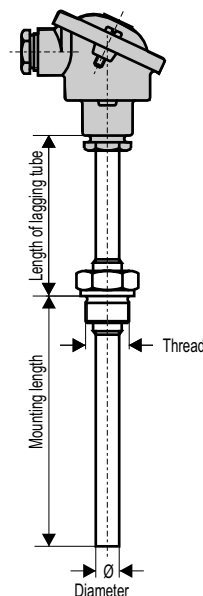
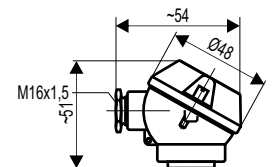
Form BUS



Form A



Form J



Ordering code

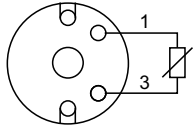
E	S								
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Firm:		Project:	
Electrical connection / Form of head:		Mounting length:	mm
Length of cable:	mm	Diameter:	mm
Length of lagging tube:	mm	Process terminal thread:	"
Using temperature:	°C	Speciality:	

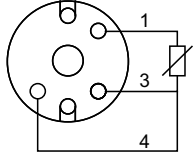
Electrical connections

1 x Pt 100

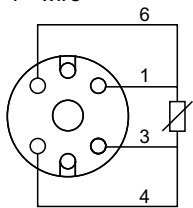
2 - wire



3 - wire

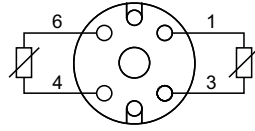


4 - wire

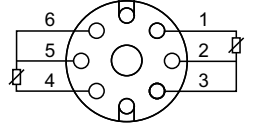


2 x Pt 100

2 - wire

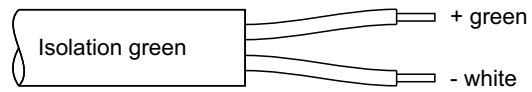


3 - wire

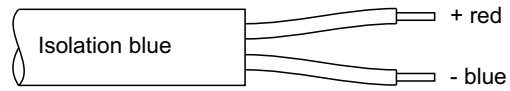


Thermocouples, Compensating circuits

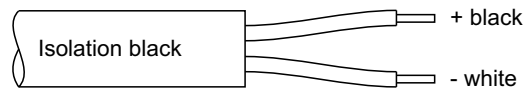
Type K



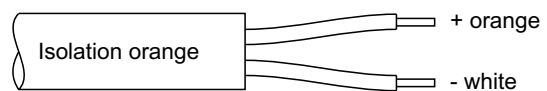
Type L



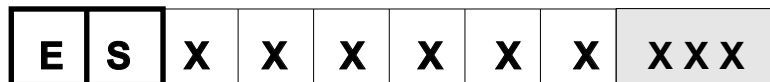
Type J



Type S



Ordering code



Number	Measuring element	Type	Material	Accuracy	Antikink of cable	Transmitter	Rated length
0	1 x Pt 100	0	Stainless steel 1.4571	Class B DIN	None	None	Please signalize
1	2 x Pt 100	2-wire	Heat-resisting steel, 1.4762	Class B 1/2 DIN	Antikink spring	4-20 mA analog	For example 100 mm
2	3 x Pt 100	3-wire	Heat-resisting steel, 1.4841	Class B 1/3 DIN	PVC - PG 16-screwing	4-20 mA analog elec.isol.	
3	Thermocouple Type K	4-wire	Kanthal 1.4828	Class B 1/5 DIN	Metallic-PG 16-screwing	4-20 mA analog EEx	
4	Thermocouple Type L	Double Thermocouple	Ceramics Type 610	Class B 1/10 DIN	Blue EEx-screwing	4-20 mA digital	
5	Thermocouple Type J		Ceramics Type 530	Class A DIN		4-20 mA, digital hard log	
6	Thermocouple Type S		Ceramics Type 710			Relay, Limit switch	
7	Thermocouple Type B		Delrin POM				
8	KTY 81-110		PVC				
9	1 x Pt1000						