



Screw-In and Insertion Thermocouples according to DIN with Removable Measuring Element



measuring
•
monitoring
•
analysing

- Measuring ranges: -200 ... +1150 °C
- NiCr-Ni or Fe-CuNi thermocouples
- Accuracy class 2
- Optional head mounted transmitter output: 4 - 20 mA
- Protective tubes according to DIN 43 763 form B, BM, AK, AM, MA



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Model:
TTD...

Screw-In and Insertion Thermocouples according to DIN 43 765

with Removable Measuring Element



Description

The screw-in and immersion thermocouples comprise a rugged installation fitting, made of steel, stainless steel or ceramic with a thread, rigid or sliding flange connection, a connection head made of die cast aluminium and removable measuring insert. The measuring insert can be replaced without emptying the process.

Thermocouples according to IEC 584-1, category 2 are fitted in the measuring insert as standard.

These sensors are available as single or double thermocouples.

The connection head is suitable for ambient temperatures to 85 °C.

The thermocouples are available with a transmitter as an option.

Special versions

In addition to immersion lengths according to DIN standard, customized thermocouples can also be delivered.

For example:

- Terminal housings BUZ or BBK
- other immersion lengths
- other materials
- other connection types
- other thermocouple models

Transmitter

Thermocouples with transmitter are used to transmit measuring signals noise-free over long distances.

The two-wire transmitter is encapsulated in epoxy resin and is situated in the connection head; it outputs a temperature linear output signal of 4 - 20 mA.

Applications

Screw-in and insertion thermocouples are particularly suited for measuring temperature in liquid and gaseous media. The reliable tightness of this installation type in vacuum and under high pressure is an important selection criterion.

Areas of application are to be found in air conditioning and refrigeration technology, in heating installation, furnace, machine and apparatus construction as well as in industry in general.

Technical Details

Protection:	head form B IP 54 max. ambient temperature at the head: 85 °C
Thermocouple:	NiCr-Ni (K) or FeCu-Ni (J)
Accuracy class:	2
Transmitter	
Output:	4 - 20 mA
Min./max. measuring range:	-50/+600 °C
Minimum measuring span:	50 K
Supply voltage:	10 - 38 V _{DC}

Screw-in thermocouple form B with or without neck well

protective tube G 1/2 AG according to DIN 43 763 (with neckwell)

	Model number	Immersion length (mm)	Protective tube	Sensor type/category	Connection head
	TTD-L94 102..	100	9x7 mm st. steel 1.4571 max. 800 °C without neck well	..J1..= 1x FeCu-Ni, cat. 2 (-200 ... +600 °C)	..B= Form B ..T= Form B with transducer for top mounting TUM-KT* ..P= Form B with transducer for top mounting TUM-KP*
	TTD-L94 162..	160			
	TTD-L94 252..	250		..K1..=1x NiCr-Ni, cat. 2 (-200 ... +800 °C)	
	TTD-L94 402..	400			
	TTD-B94 102..	100	9x7 mm st. steel 1.4571 max. 800 °C with neck well		
	TTD-B94 162..	160			
	TTD-B94 252..	250			
	TTD-B94 402..	400			

*Please specify meas. range when ordering

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Screw-in thermocouple form BM

Stainless steel protective tube according to DIN 43 763 with adjustable flange

	Model number	Length (mm) NL/EL	Protective tube	Sensor type/category	Connection head
	TTD-AF1 25K..	250 / 100 - 210	15 mm Steel 1.4762 -200...+1150 °C (without mechanical stress)	..K1.. = 1x NiCr-Ni, category 2 (-200...+1150 °C) ..K2.. = 2x NiCr-Ni, category 2 (-200...+1150 °C)	..B = form B
TTD-AF1 50K..	500 / 100 - 460	..T = form B with transducer for top mounting TUM-KT* ..P = form B with transducer for top mounting TUM-KP*			

*Please specify meas. range when ordering

Screw-in thermocouple form AK

Ceramic protective tube according to DIN 43 763 with adjustable flange

	Model number	Length (mm) NL/EL	Protective tube	Sensor type/category	Connection head
	TTD-AFK 50K..	500 / 100 - 460	15 mm ceramic KER 610 -200...+1200 °C (without mechanical stress)	..K1.. = 1x NiCr-Ni, category 2 (-200...+1150 °C) ..K2.. = 2x NiCr-Ni, category 2 (-200...+1150 °C)	..B = form B
TTD-AFK 71K..	710 / 100 - 670	..T = form B with transducer for top mounting TUM-KT*			
TTD-AFK 1TK..	1000 / 100 - 960	..P = form B with transducer for top mounting TUM-KP*			

*Please specify meas. range when ordering

Screw-in thermocouple form AM

Stainless steel protective tube according to DIN 43 763 with adjustable flange

	Model number	Length (mm) NL/EL	Protective tube	Sensor type/category	Connection head
	TTD-AM1 50K..	500 / 100 - 460	22 mm Steel 1.4762 -200...+1150 °C (without mechanical stress)	..K1.. = 1x NiCr-Ni, category 2 (-200...+1150 °C) ..K2.. = 2x NiCr-Ni, category 2 (-200...+1150 °C)	..B = form B
TTD-AM1 71K..	710 / 100 - 670	..T = form B with transducer for top mounting TUM-KT*			
TTD-AM1 1TK..	1000 / 100 - 960	..P = form B with transducer for top mounting TUM-KP*			
TTD-AM1 T4K..	1400 / 100 - 1360				
TTD-AM1 2TK..	2000 / 100 - 1960				

*Please specify meas. range when ordering

Screw-in and Insertion Thermocouples

Measuring Elements



Screw-in thermocouple form MA with rigid measuring element

Stainless steel protective tube G 1/2 AG

	Model number	Immersion length (mm)	Bulb	Sensor type/category	Connection head
	TTE-164 052..	50	6 mm stainless steel 1.4571 -200..+600 °C	..J1..=1 x FeCu-Ni, category 2 ..J2..=2x FeCu-Ni, category 2 ..K1..=1 x NiCr-Ni, category 2 ..K2..=2x NiCr-Ni, category 2	..M= form MA
	TTE-164 102..	100			
	TTE-164 162..	160			
	TTE-164 252..	250			
	TTE-164 402..	400			
	TTE-164 502..	500			
	TTE-164 xx2..	other lengths			

Please specify special lengths in writing

Replacement measuring element for thermocouples according to DIN 43 762

	Model number	for form	Immersion length (mm)	Diameter (mm)	Sensor type/category	Electrical connection
	TTD-MC2500	AM	500	12	..J1..= 1 x FeCu-Ni, category 2	..K= ceramic base for head form B
	TTD-MC2710	AM	710	12		
	TTD-MC21T0	AM	1000	12		
	TTD-MC2T40	AM	1400	12	..J2..= 2x FeCu-Ni, category 2	..T= form B with transducer for top mounting (Please specify meas. range when ordering)
	TTD-MC22T0	AM	2000	12		
	TTD-M62100	B	100	6	..K1..=1 x NiCr-Ni, category 2	
	TTD-M62160	B	160	6		
	TTD-M62250	B	250	6		
	TTD-M62400	B	400	6	..K2..=2x NiCr-Ni, category 2	
	TTD-M82250	BM	250	8		
TTD-M82500	BM	500	8			