

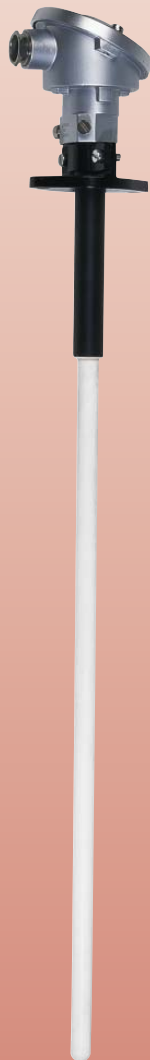


## Screw-In and Insertion Thermocouples according to DIN with Removable Measuring Element



measuring  
•  
monitoring  
•  
analysing

### TTD



- 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



T2

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**Screw-In and Insertion Thermocouples according to DIN 43 765** with Removable Measuring Element Model TTD

**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<sub>DC</sub>

**Screw-in thermocouple form B with or without neck tube**

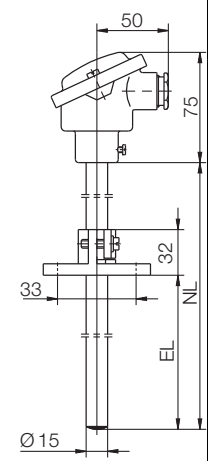
protective tube G 1/2 male according to DIN 43 763 (with neck tube)

	Model number	Immersion length [mm]	Protective tube	Sensor type/classe	Connection head
	TTD-L94 102..	100	9 x 7 mm st. steel 1.4571 max. 800 °C without neck tube	..J1.. = 1x FeCu-Ni, classe 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		..J2.. = 2x FeCu-Ni, classe 2 (-200... +600 °C)	
	TTD-L94 252..	250			
	TTD-L94 402..	400			
	TTD-B94 102..	100	9 x 7 mm st. steel 1.4571 max. 800 °C with neck tube	..K1.. = 1x NiCr-Ni, classe 2 (-200... +800 °C)	
	TTD-B94 162..	160		..K2.. = 2x NiCr-Ni, classe 2 (-200... +800 °C)	
	TTD-B94 252..	250			
	TTD-B94 402..	400			

\* Please specify measuring range when ordering!

### Screw-in thermocouple Form BM

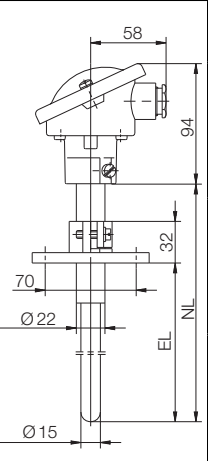
Steel protective tube according to DIN 43 763 with adjustable flange

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

\* Please specify measuring range when ordering!

### Screw-in thermocouple Form AK

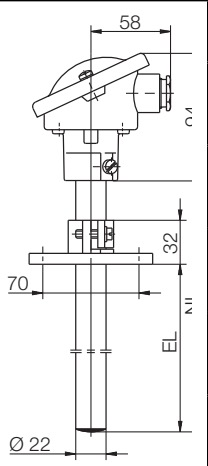
Ceramic protective tube according to DIN 43 763 with adjustable flange

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

\* Please specify measuring range when ordering!

### Screw-in thermocouple Form AM

Steel protective tube according to DIN 43 763 with adjustable flange

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

\* Please specify measuring range when ordering!



**Screw-In and Insertion Thermocouples according to DIN 43 765** with Removable Measuring Element  
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**Screw-in thermocouple Form MA with rigid measuring element**

Stainless steel protective tube G 1/2 male

	Model number	Immersion length [mm]	Protective tube	Sensor type / classe	Connection head
	TTE-164 052..	50	6 mm st. steel 1.4571 -200... +600 °C without neck tube	..J1.. = 1x FeCu-Ni, classe 2 ..J2.. = 2x FeCu-Ni, classe 2 ..K1.. = 1x NiCr-Ni, classe 2 ..K2.. = 2x NiCr-Ni, classe 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]	Sensortyp / Klasse	Electrical connection
	TTD-MC2500	AM	500	12	..J1.. = 1x FeCu-Ni, classe 2 ..J2.. = 2x FeCu-Ni, classe 2 ..K1.. = 1x NiCr-Ni, classe 2 ..K2.. = 2x NiCr-Ni, classe 2	..K = ceramic base for head Form B ..T = Form B with transducer for top mounting (Please specify measuring range when ordering)
	TTD-MC2710	AM	710	12		
	TTD-MC21T0	AM	1000	12		
	TTD-MC2T40	AM	1400	12		
	TTD-MC22T0	AM	2000	12		
	TTD-M62100	B	100	6		
	TTD-M62160	B	160	6		
	TTD-M62250	B	250	6		
	TTD-M62400	B	400	6		
	TTD-M82250	BM	250	8		
TTD-M82500	BM	500	8			