

Thermocouples – Measuring Insert

Replacement part for the installation into connection heads

TTeMiAo
TTeMiAoT

Application

The measuring inserts TTeMiAo and TTeMiAoT according to DIN 43 735 are solely intended for installation into protective fittings for electrical thermometers with connection heads form B according to DIN EN 50 446.

For both models, we offer various thermocouples according to DIN EN 60 584. In addition, model TTeMiAoT is available with several fitted transmitters with analogue or digital output.

For the installation in connection heads with flameproof enclosure (types XD-AD and XD-SD), the measuring inserts are optionally available with a sleeve, which forms, in combination with a socket, a flameproof gap in the connection head. The measuring inserts must not be replaced in explosive atmospheres and do not have an own EU Type Examination Certificate. They are solely intended for operation in accordingly certified protective fittings.

Standard Versions

Measuring Element

Thermocouple types K, N, J and S according to DIN EN 60 584 as single or dual element

Operating Temperature Ranges

Type K (NiCr-Ni): -40 °C to +1175 °C (-40 °F to +2147 °F)¹⁾
Type N (NiCrSi-NiSi): -40 °C to +1175 °C (-40 °F to +2147 °F)¹⁾
Type J (Fe-CuNi): -40 °C to +750 °C (-40 °F to +1382 °F)
Type S (Pt10Rh-Pt): 0 °C to +1175 °C (+32 °F to +2147 °F)¹⁾

Ambient Temperature Ranges²⁾

Model TTeMiAo: -40 °C to +100 °C (-40 °F to +212 °F)
Model TTeMiAoT: -40 °C to +85 °C (-40 °F to +185 °F)

Accuracy

Class 1 according to DIN EN 60 584

Tolerance value³⁾ J, K, N: +1.5 °C or 0.004 · ltl

for type J in the range: -40 °C to +750 °C (-40 °F to +1382 °F)

for type K, N in the range: -40 °C to +1000 °C (-40 °F to +1832 °F)

Tolerance value³⁾ S: +1.0 °C or (1+(t-1100)·0.003) °C

in the entire operating temperature range

Temperature Sensor

Made of sheathed, mineral insulated cable

Sheath material: Inconel 600 (2.4816) for type K, N, S
1.4401 for type J

Insulation: MgO

Diameter (d): 3±0.05 or 6±0.06 mm (0.12±0.002 or 0.24±0.0024")

Min. bending radius: 5-fold diameter (d)

Spring travel: approximately 7 mm (0.28")

Degree of Protection (DIN EN 60 529)

IP00⁴⁾



Hot Junction

Hot junction insulated

Output Signal

Model TTeMiAo: thermoelectric voltage according to DIN EN 60 584

Model TTeMiAoT: 4...20 mA, HART® or PROFIBUS® PA/ FOUNDATION™ Fieldbus

Ordering Information

See page 3

Special Versions (Upon Request)

- Measuring insert diameter 4.5 or 8 mm (0.18 or 0.31")
- Other thermocouples
- Hot junction welded to sheath
- Special sheath materials
- Other head-mount transmitters, also with voltage output
- Version for the subsequent mounting of transmitters

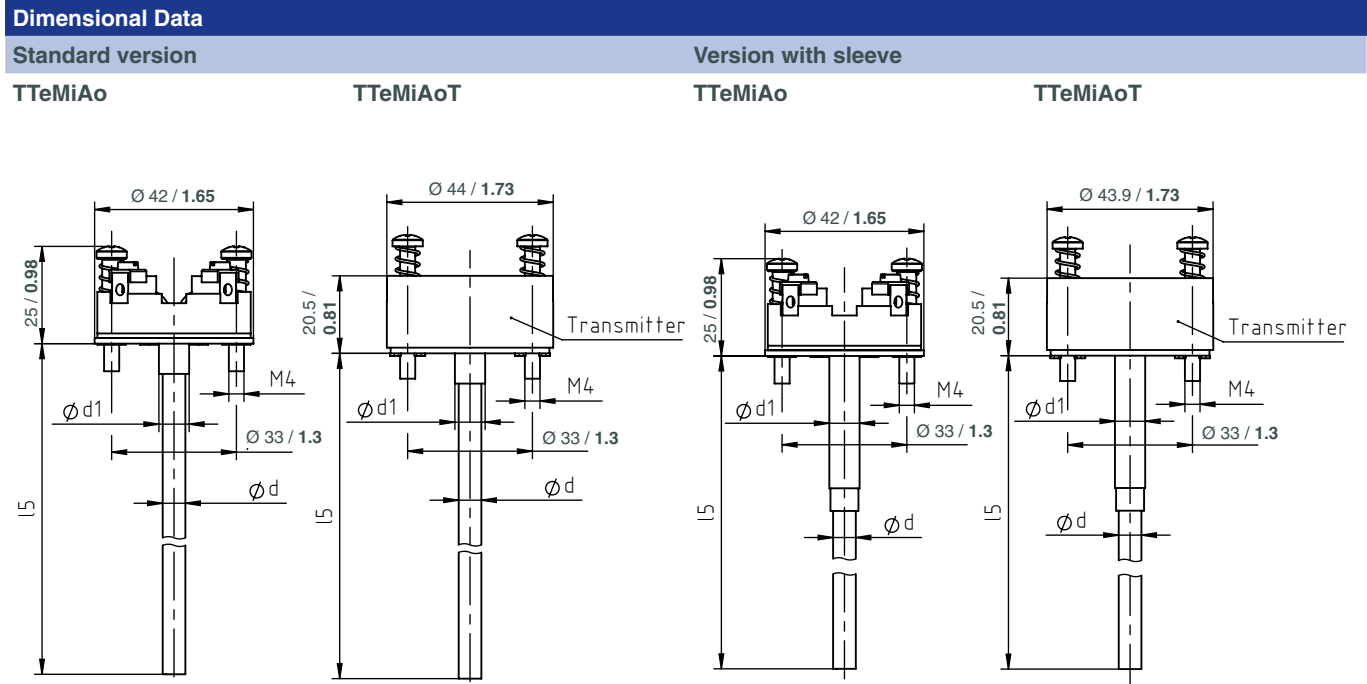
¹⁾ application range limited due to the sheath material Inconel 600

²⁾ max. permissible temperature at the ceramic terminal block or the transmitter

³⁾ whichever value is higher

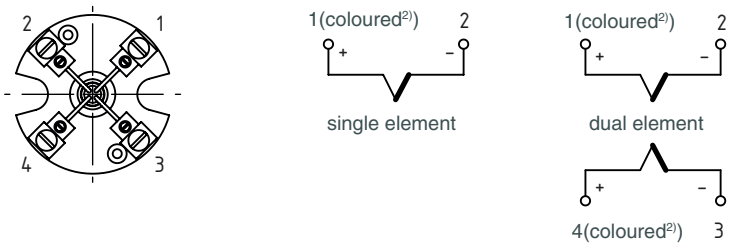
⁴⁾ Measuring inserts are intended for the installation into protective fittings for electrical thermometers, which are equipped with an appropriate degree of protection for safe operation.

Dimensional Data (mm/inches) and Weight (kg/lb), Electrical Connection



Dimensional Data and Weights				
Ø d	Ø d1		approx. weight ¹⁾	
	standard	sleeve	TPtMiXiAo	TPtMiXiAoT
3 / 0.12	6 / 0.24	8 / 0.31	0.13 / 0.29	0.12 / 0.26
6 / 0.24	8 / 0.31	8 / 0.31	0.15 / 0.33	0.15 / 0.33

Electrical Connection



¹⁾ based on an installation length (l5) of 150 mm (5.91")
²⁾ colour coding according to DIN EN 60 584-3

Ordering Information

Basic Model: Thermocouple – Measuring Insert Intrinsically Safe		TTeMiAo
Transmitter:	without	without code letter
	with fitted transmitter	T
Version:	standard	S
	with fitting sleeve for connection heads with flameproof enclosure	D
Thermocouple:	type K, NiCr-Ni	K
	type N, NiCrSi-NiSi	N
	type J, Fe-CuNi	J
	type S, Pt10Rh-Pt	S
No. of thermocouples:	1	1
	2	2
Measuring insert Ø d:	3 mm (0.12")	d = 3 mm
	6 mm (0.24")	d = 6 mm
Installation length:	15 in mm	e.g. I5 = 200 mm
With fitted transmitter:	TT5334: 4...20 mA	5334-A, 5334-B
	TT5337: 4...20 mA + HART 7	5337-A, 5337-D
	TT5350: PROFIBUS® PA/FOUNDATION™ Fieldbus	5350-A, 5350-B
Measuring range:	scaling of the 4...20 mA signal to the temperature range	e.g. 0 °C to +250 °C
Options:	crimped-on tube sleeve 50 mm Ø 8 mm (0.31") (1.97") for alignment to the internal thermowell diameter	

Example: TTeMiAoT, D, N, 1, d = 6 mm, I5 = 150 mm, 5334A, 0 °C to +300 °C

Special Versions: Please describe your requirements in cleartext!