

Thermocouples with Mineral Insulated Stem

Without thermowell, non-replaceable measuring insert

TTeMiA
TTeMiAT

Application

The thermocouple models TTeMiA and TTeMiAT are equipped with a temperature sensor, made of sheathed, mineral insulated cable, which is led out of the connection head without thermowell. These thermocouples are suitable for pressure-tight installations with compression fitting into processes with non-critical media as well as generally for plugging (e.g. with stop flange). The temperature sensor is bendable and can be fitted flexibly in the installation space with due regard to the minimum bending radius. For this construction type, there is no replaceable measuring insert available.

For both models, we offer various connection heads and thermocouple materials according to DIN EN 60 584. In addition, model TTeMiAT is available with several fitted transmitters with analogue or digital output.

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 TTeMiA: -40 °C to +100 °C (-40 °F to +212 °F)
Model TTeMiAT: -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 · |t|

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 (dF): 6^{±0.06} mm (0.24^{±0.0024} ")
Min. bending radius: 5-fold diameter (Ø dF)

Connection Heads

Types B, BUZ, BUZ-H, BUZ-H-W or NS

Degree of Protection (DIN EN 60 529)

IP65

Output Signal

Model TTeMiA: thermoelectric voltage according to
DIN EN 60 584

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



Ordering Information

See page 3

Special Versions (Upon Request)

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

Accessories

- Transmitters for rail mounting
- Digital displays for switch panel mounting or wall mounting
- Compensating cables and extension cables
- Thermowells for plain stems (data sheets 8.8140 and 8.8141)
- Compression fittings
- Stop flanges

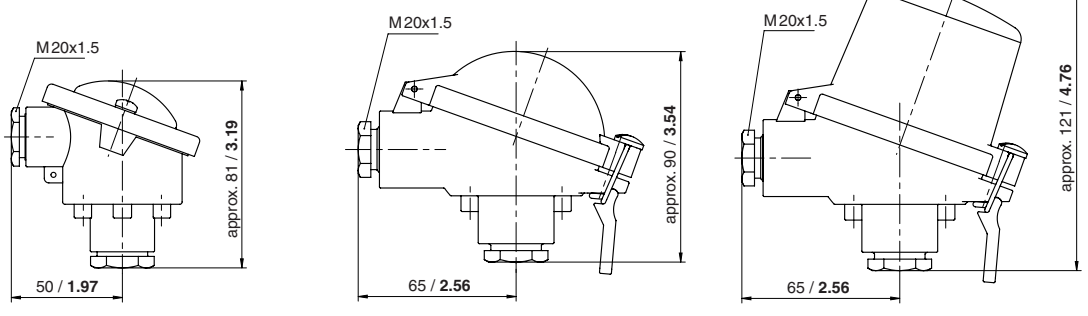
¹⁾ application range limited due to the sheath material Inconel 600

²⁾ permissible operating and storage temperature at the connection head

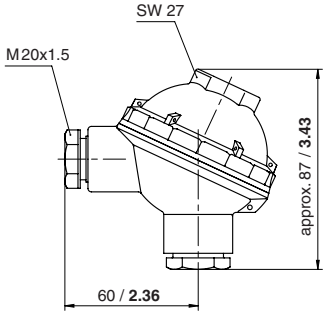
³⁾ whichever value is higher

Connection Heads, Dimensional Data (mm/inches)

Connection Heads			
	Head B	Head BUZ	Head BUZ-H ¹⁾ , BUZ-H-W
Material:	die-cast aluminum	die-cast aluminum	die-cast aluminum
Lid:	flanged lid with screws	hinged lid	BUZ-H: high lid, hinged BUZ-H-W: high lid with LED display
Degree of protection:	IP65	IP65	IP65
No. of transmitters:	1	1	2
Max. installation dimensions:	Ø 44 x 21 mm (1.73 x 0.82")	Ø 45 x 40 mm (1.77 x 1.57")	lid Ø 60 x 40 mm (2.36 x 1.57") base Ø 45 x 16 mm (1.77 x 0.63")

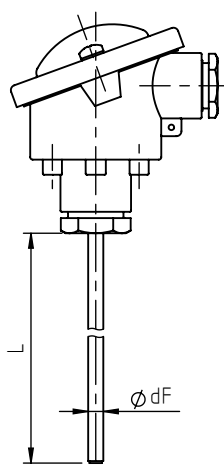


Head NS	
Material:	plastic polyphenylene oxide
Lid:	screw-on lid
Degree of protection:	IP65
No. of transmitters:	1
Max. installation dimensions:	Ø 42 x 14 mm (1.65 x 0.55")



Dimensional Data

Process connection:	Without screw fitting (E1)
Installation length L:	30 – 2000 mm (1.18 – 78.74") ²⁾
Stem Ø dF:	6 mm (0.24")



¹⁾ For connection head BUZ-H, the transmitter is fitted in the lid and the measuring insert is assembled with ceramic terminal block. Moreover, the head BUZ-H offers the possibility of installing two transmitters.
²⁾ For lengths exceeding 2000 mm, the measuring insert is supplied as coil.

Ordering Information

Basic Model:		Thermocouple with Mineral Insulated Stem	TTeMiA	
Transmitter:	without		without code letter	
	with fitted transmitter		T	
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	
Connection head:	type B, aluminum, with screws ²⁾		B	
	type BUZ, aluminum, hinged lid ²⁾		BUZ	
	type BUZ-H, aluminum, high lid ²⁾		BUZ-H	
	type BUZ-H-W, aluminum, high lid with LED display		BUZ-H-W	
	type NS, polyphenylene oxide, screw-on lid		NS	
Installation length:	L in mm	e.g.	L = 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 +400 °C	
Options:	instrument tag	stainless steel plate 12 x 55 mm (0.47 x 2.17")		
		sticker on the case		

Example: TTeMiAT, K, 1, BUZ, L = 500 mm, 5334-A, 0 °C to +400 °C

Special Versions: Please describe your requirements in cleartext!