

Thermocouples with Fabricated Thermowell

Without neck tube, replaceable measuring insert

TTeHoSrA
TTeHoSrAT

Application

The thermocouple models TTeHoSrA and TTeHoSrAT are equipped with a fabricated thermowell and can be mounted directly into the process. The connection head is fixed with two lateral retaining screws as a reasonably priced alternative to the thermowell with M24 screw fitting (form 2 according to DIN 43 772).

For both models, we offer various connection heads and thermocouple materials according to DIN EN 60 584. In addition, model TTeHoSrAT 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 +800 °C (-40 °F to +1472 °F)¹⁾
Type N (NiCrSi-NiSi): -40 °C to +800 °C (-40 °F to +1472 °F)¹⁾
Type J (Fe-CuNi): -40 °C to +750 °C (-40 °F to +1382 °F)
Type S (Pt10Rh-Pt): 0 °C to +800 °C (+32 °F to +1472 °F)¹⁾

Ambient Temperature Ranges²⁾

Model TTeHoSrA: -40 °C to +100 °C (-40 °F to +212 °F)
Model TTeHoSrAT: -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

Measuring Insert

According to DIN 43 735

Spring-loaded in the connection head

Spring travel approximately 7 mm (0.28")

Insertion tube made of sheathed, mineral insulated cable

Sheath Material

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

Insulation: MgO

Measuring Insert Diameter

Depending on the diameter of the thermowell

Thermowell

For clamping into connection heads

Process connection thread spigot (E4.1)

Material stainless steel 316Ti (1.4571)

Connection Heads

Types B, BUZ or BUZ-H



Degree of Protection (DIN EN 60 529)

IP54

Output Signal

Model TTeHoSrA: thermoelectric voltage according to DIN EN 60 584

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

Ordering Information

See pages 4

Special Versions (Upon Request)

- Other thermocouples
- Other head-mount transmitters, also with voltage output
- Version for the subsequent mounting of transmitters
- Other connection threads

Accessories

- Transmitters for rail mounting
- Digital displays for switch panel mounting or wall mounting
- Connection cables
- For models with thermowell and with neck tube see data sheet 8631

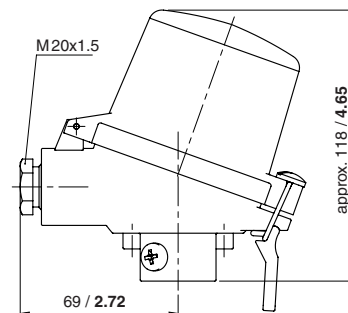
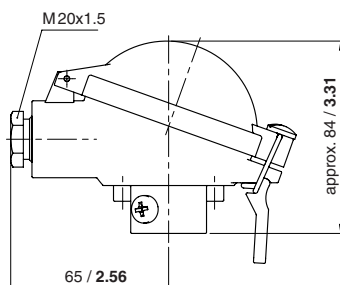
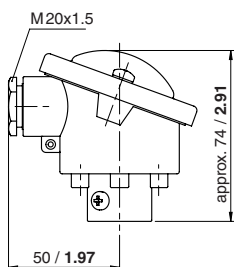
¹⁾ application range limited due to the thermowell material stainless steel 316Ti (1.4571)

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⁾
Material:	die-cast aluminum	die-cast aluminum	die-cast aluminum
Lid:	flanged lid with screws	hinged lid	high lid, hinged
Degree of protection:	IP54	IP54	IP54
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")



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.

Process Connection, Dimensional Data (mm/inches)

Dimensional Data

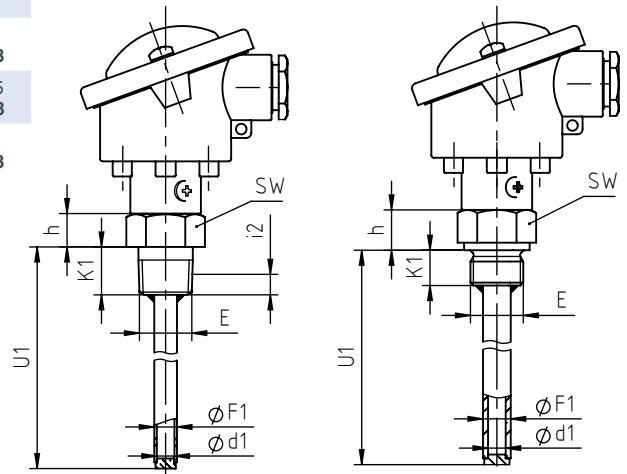
Process connection: Thread spigot (E4.1)

Installation length U1: 30 – 2000 mm (1.18 – 78.74")

Measuring insert length: U1 + h + 25 mm (0.98")

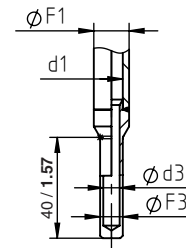
Connection thread:	E	K1	i2	SW	h
G 1/2 B (1/2" BSP)	14 0.55	–	–	27 1.06	16 0.63
1/2" NPT	19 0.75	8.13 0.32	–	27 1.06	13.5 0.53
G 3/4 B (3/4" BSP)	16 0.63	–	–	32 1.26	16 0.63

F1	d1	Measuring insert Ø
6 0.24	4 0.16	3 0.12
9 0.35	7 0.28	6 0.24
11 0.43	7 0.28	6 0.24
12 0.47	7 0.28	6 0.24
14 0.55	9 0.35	6 0.24 ¹⁾



Tapered measuring tip

F1	d1	F3	d3	Measuring insert Ø
9 0.35	7 0.28	6 0.24	3.5 0.14	3 0.12
11 0.43	7 0.28	6 0.24	3.5 0.14	3 0.12
12 0.47	7 0.28	6 0.24	3.5 0.14	3 0.12
14 0.55	9 0.35	9 0.35	6.5 0.26	6 0.24



¹⁾ With crimped-on sleeve Ø 8 x 50 mm (0.31 x 1.97") in the sensor range. Measuring insert with a consistent diameter of 8 mm (0.31") upon request.

Ordering Information

Basic Model:		Thermocouple with Fabricated Thermowell	TTeHoSrA
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
Thermowell Ø F1:	6 x 1 mm (0.24 x 0.04")		F1 = 6 mm
	9 x 1 mm (0.35 x 0.04")		F1 = 9 mm
	11 x 2 mm (0.43 x 0.08")		F1 = 11 mm
	12 x 2.5 mm (0.47 x 0.1")		F1 = 12 mm
	14 x 2.5 mm (0.55 x 0.1")		F1 = 14 mm
Connection head:	type B, aluminum, with screws		B
	type BUZ, aluminum, hinged lid		BUZ
	type BUZ-H, aluminum, high lid		BUZ-H
Tapered measuring tip:	without		without code letter
	with tapered measuring tip		S
Connection thread:	see page 3	e.g.	G ½ B
Installation length:	U1 in mm	e.g.	U1 = 250 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:	instrument tag	stainless steel plate 12 x 55 mm (0.47 x 2.17") sticker on the case	

Example: TTeHoSrAT, K, 1, F1 = 6 mm, BUZ, G ½ B, U1 = 250 mm, 5334-A, 0 °C to +400 °C

Special Versions: Please describe your requirements in cleartext!