

Resistance Thermometers with Fabricated Thermowell

According to DIN 43 772, replaceable measuring insert

TPtSrA
TPtSrAT

Application

The resistance thermometer models TPtSrA and TPtSrAT are equipped with a fabricated thermowell and can be mounted directly into the process. The measuring insert can be replaced as separate component during operation.

For both models, we offer various connection heads and measuring resistors according to DIN EN 60 751. In addition, model TPtSrAT is available with several fitted transmitters with analogue or digital output.

Standard Versions

Measuring Element

Platinum thin-film measuring resistor Pt100 according to DIN EN 60 751 in 2-, 3- or 4-wire connection as single or dual measuring resistor

Operating Temperature Range¹⁾

-200 °C to +600 °C (-328 °F to +1112 °F)

Ambient Temperature Ranges²⁾

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

Model TPtSrAT: -40 °C to +85 °C (-40 °F to +185 °F)

Accuracy

Class AA, A or B according to DIN EN 60 751

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: stainless steel 316L (1.4404)

Insulation: MgO

Measuring Insert Diameter

dF: $3^{±0.05}$ or $6^{±0.06}$ mm ($0.12^{±0.002}$ or $0.24^{±0.0024}$ ")

Thermowell

Form 2, 2F or 2G according to DIN 43 772

Material stainless steel 316Ti (1.4571)

Connection Heads

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

Degree of Protection (DIN EN 60 529)

IP65

Output Signal

Model TPtSrA: resistance according to DIN EN 60 751

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



Ordering Information

See page 4

Special Versions (Upon Request)

- Other basic values (e.g. Pt500, Pt1000) and limited tolerances (e.g. 1/2 cl. B, 1/3 cl. B)
- Measuring resistor wire-wound in ceramic -200 °C to +800 °C (-328 °F to +1472 °F)
- Other head-mount transmitters, also with voltage output
- Version for the subsequent mounting of transmitters
- Other connection heads
- Higher degree of protection up to IP68
- Deviating thermowell diameters, connection threads or flanges

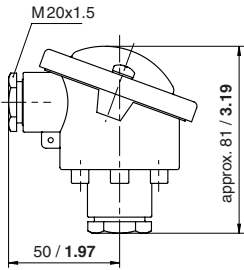
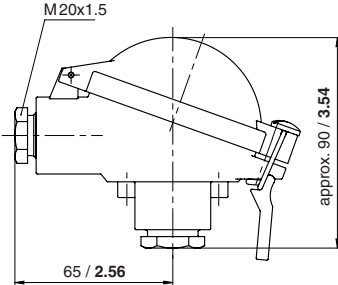
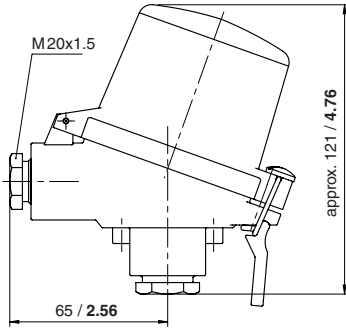
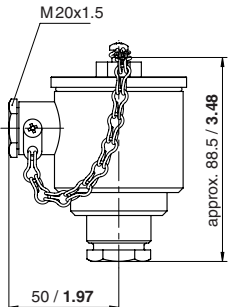
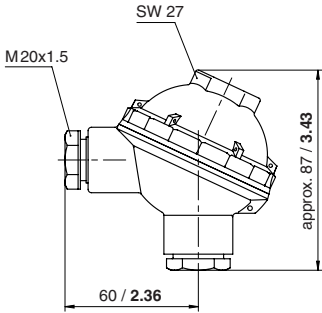
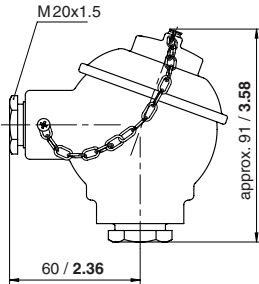
Accessories

- Transmitters for rail mounting
- Digital displays for switch panel mounting or wall mounting
- Compression fittings for thermowell form 2
- Connection cables

¹⁾ for accuracy class AA, the operating temperature range is reduced to -70 °C to +550 °C (-94 °F to +1022 °F)

²⁾ permissible operating and storage temperature at the connection head

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 BEG	Head NS	Head GG
Material:	stainless steel 1.4401	plastic polyphenylene oxide	grey cast iron
Lid:	screw-on lid	screw-on lid	screw-on lid
Degree of protection:	IP65	IP65	IP65
No. of transmitters:	1	1	1
Max. installation dimensions:	Ø 45 x 20 mm (1.77 x 0.79")	Ø 42 x 14 mm (1.65 x 0.55")	Ø 42 x 20 mm (1.65 x 0.79")
			

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 Connections, Dimensional Data (mm/inches)

Dimensional Data

Process connections: Without thread

Form acc. to DIN 43 772: form 2

Installation length U1¹⁾: 280, 370, 520 mm (11.02, 14.57, 20.47")

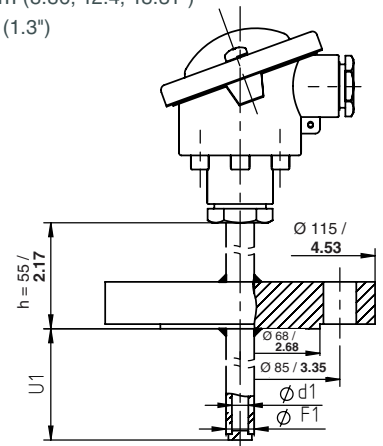
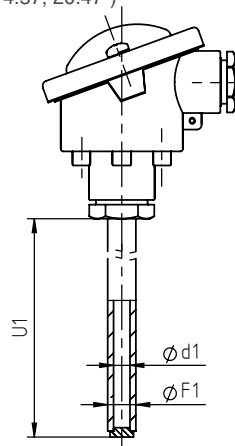
Measuring insert length: U1 + 33 mm (1.3")

Blind flange acc. to DIN 2527, DN 25 PN 40, form C form 2F

225, 315, 465 mm (8.86, 12.4, 18.31")

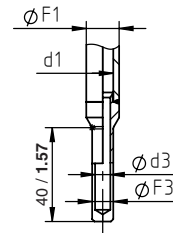
U1 + h + 33 mm (1.3")

F1	d1	Measuring insert Ø
6 / 0.24 ²⁾	4 / 0.16 ²⁾	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 ³⁾



Tapered measuring tip²⁾

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



Process connection: Thread spigot

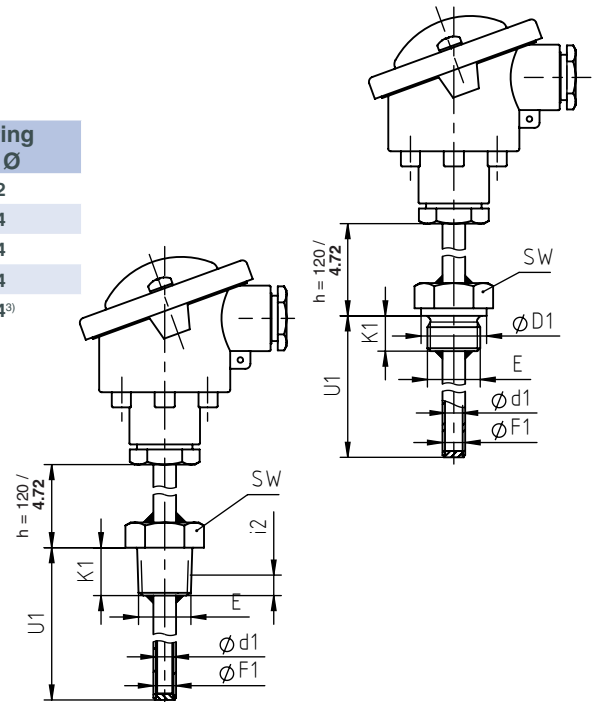
Form acc. to DIN 43 772: form 2G

Installation length U1¹⁾: 160, 250, 400 mm (6.3, 9.84, 15.75")

Measuring insert length: U1 + h + 33 mm (1.3")

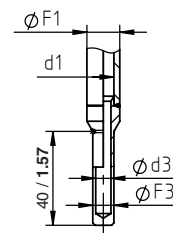
E		F1	d1	Measuring insert Ø
G ½ B (½" BSP) ½" NPT ²⁾ M20x1.5 ²⁾	G ¼ B (¼" BSP) ²⁾	6 / 0.24 ²⁾	4 / 0.16 ²⁾	3 / 0.12
	¼" NPT ²⁾	9 / 0.35	7 / 0.28	6 / 0.24
	M14x1.5 ²⁾	11 / 0.43	7 / 0.28	6 / 0.24
	–	12 / 0.47	7 / 0.28	6 / 0.24
	G ¾ B (¾" BSP) ²⁾ G 1 B (1" BSP)	14 / 0.55	9 / 0.35	6 / 0.24 ³⁾

E	K1	i2	D1	SW
G ¼ B (¼" BSP)	12 / 0.47	–	18 / 0.71	19 / 0.75
¼" NPT	13 / 0.51	5.79 / 0.23	–	19 / 0.75
M14x1.5	12 / 0.47	–	19 / 0.75	19 / 0.75
G ½ B (½" BSP)	14 / 0.55 ⁴⁾	–	26 / 1.02	27 / 1.06
½" NPT	19 / 0.75	8.13 / 0.32	–	27 / 1.06
M20x1.5	14 / 0.55	–	25 / 0.98	27 / 1.06
G ¾ B (¾" BSP)	16 / 0.63	–	27 / 1.06	32 / 1.26
G 1 B (1" BSP)	18 / 0.71 ⁴⁾	–	39 / 1.54	41 / 1.61



Tapered measuring tip²⁾

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⁾ Deviating lengths available – please specify when ordering.

²⁾ No version according to DIN 43 772.

³⁾ 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.

⁴⁾ Deviating from DIN 43 772, we manufacture the length of the thread spigot according to DIN 3852-2.

Ordering Information

Basic Model:	Resistance Thermometer with Fabricated Thermowell		TPtSrA	
Transmitter:	without		without code letter	
	with fitted transmitter		T	
Measuring resistor:	Pt100 DIN EN 60 751, class AA		AA	
	Pt100 DIN EN 60 751, class A		A	
	Pt100 DIN EN 60 751, class B		B	
No. of measuring resistors:	1		1	
	2 ¹⁾		2	
Connection method:	2-wire connection ²⁾		2L	
	3-wire connection		3L	
	4-wire connection ¹⁾		4L	
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	
	type BUZ-H-W, aluminum, high lid with LED display		BUZ-H-W	
	type BEG, stainless steel, screw-on lid		BEG	
	type NS, polyphenylene oxide, screw-on lid		NS	
	type GG, grey cast iron, screw-on lid		GG	
Process connection:	form 2, without thread (plain)		2	
	form 2F, blind flange according to DIN 2527, DN 25 PN 40		2F	
	form 2G, thread spigot		2G	
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:	form according to DIN 43 772 (other lengths upon request)	2 280, 370, 520 mm (11.02, 14.57, 20.47") 2F 225, 315, 465 mm (8.86, 12.4, 18.31") 2G 160, 250, 400 mm (6.3, 9.84, 15.75")	e.g.	U1 = 250 mm
With fitted transmitter:	TT5331: 4...20 mA		5331-A, 5331-D	
	TT5333: 4...20 mA ³⁾		5333-A, 5333-D	
	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:	neck tube length h	other lengths, min. 20 mm (0.79")		
	instrument tag	stainless steel plate 12 x 55 mm (0.47 x 2.17") sticker on the case		
Example:	TPtSrAT, B, 1, 2L, F1 = 9 mm, BUZ, 2G, G ½ B, U = 250 mm, L = 400 mm, 5333-A, 0 °C to +250 °C			
Special Versions: Please describe your requirements in cleartext!				

¹⁾ For the dual measuring resistor, a 4-wire connection is not applicable.

²⁾ Only applicable for accuracy class B.

³⁾ Only 3-wire connection applicable.