

Screw-in Resistance Thermometer Form B, (DIN 43765) with terminal head Form B (DIN 43729)

Screw-in Resistance Thermometers can be used for measuring the temperature of liquid and gaseous media.

Typical areas of application include air conditioning and cooling engineering in the heating, oven and apparatus building industries as well in the Chemical Industry.

The connecting head without transmitter is suitable for environments with a temperature of up to 100° C. Additional designs other than Modell B includes types with a BUZ, BBK, BGT, BVA or a BUZH head.

The protective tubes are normally made of 1.4571 stainless steel but other protective tube materials or coatings can be delivered on request.

The measuring insert contains as standard a PT100 sensor according to DIN EN 60751, Class B in a 2-wire circuit PT500 or PT1000 can be delivered on request. Connection is also possible in a 3-wire circuit or a 4-wire circuit. Tolerance classes A or 1/3 DIN.

- Temperature range -200...+ 600° C
- Measuring inserts standard up to 600° C also available: vibration resistant and mineral insulated
- Protective tubes made out of various materials
- The measuring insert is replaceable
- As a single or a double resistance Thermometer
- Transmitter:
 - analog
 - digital
 - digital, galvanically separated (indirect coupled)
 - digital, galvanically separated with LCD-display
 - Profibus-DP-protocol
 - CAN-open-protocol
 - HART-protocol
- Temperature-limit-switch for terminal

Postal address:
Postfach 1261

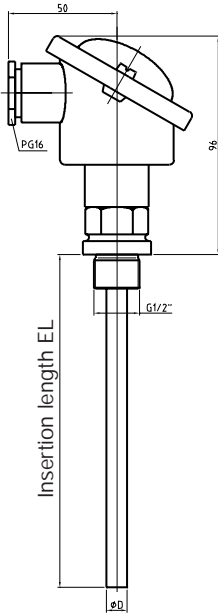
House address
Löhestr. 37

Fon (+49) 0 22 42-8703-0
Fax (+49) 0 22 42-8703-20
http:// www.tematec.de
e-mail: team@tematec.de

53759 Hennef

53773 Hennef

WT 7 0 3 1



1 **Sensortype**

1 = PT 100 ●
other of request!

2 **Number of sensors**

1 = single ●
2 = double
other on request!

3 **Toleranzclass**

1 = Class B DIN EN 60751 ●
2 = Class A by 0°C
3 = 1/3 DIN by 0°C
other on request! } not 2-wire circuit for these options

4 **Sensor conection**

2 = 2 - wire circuit ●
3 = 3 - wire circuit
4 = 4 - wire circuit

5 **Temperature range**

1 = -40°C to +250°C ●
2 = -40°C to +400°C
3 = -40°C to +600°C other on request!

6 **Connection head** **Material** **Degree of protection**

1 = Form B	Aluminium	IP 54 ●
2 = Form BUS	Aluminium	IP 65
3 = Form BUZ	Aluminium	IP 65
4 = Form BUZ-H	Aluminium	IP 65
5 = Form BVA	stainless steel	IP 65
6 = Form BBK	plastic	IP 54

7 **8** **9** **10**

Insertion length EL (mm)

0050 = 50 mm
0100 = 100 mm ●
0150 = 150 mm
0200 = 200 mm
0250 = 250 mm
Please quote any other length!

11 **Thermowell diameter (mm) D x wall thickness (mm)**

1 = 6 x 1,0 with measuring insert Ø 3,0 mm
2 = 8 x 1,0 with measuring insert Ø 4,5 mm
3 = 9 x 1,0 with measuring insert Ø 6,0 mm ●
4 = 11 x 1,0 with measuring insert Ø 8,0 mm
5 = 11 x 2,0 with measuring insert Ø 6,0 mm
6 = 12 x 2,0 with measuring insert Ø 6,0 mm
7 = 14 x 2,5 with measuring insert Ø 8,0 mm
other on request!

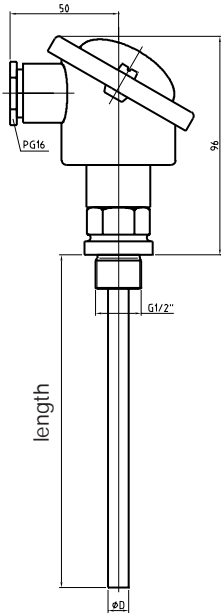
Order example next page 3/4

Postal address:
Postfach 1261
53759 Hennef

House address
Löhestr. 37
53773 Hennef

Fon (+49) 0 22 42-8703-0
Fax (+49) 0 22 42-8703-20
http:// www.tematec.de
e-mail: team@tematec.de

WT 7 0 3 1



12 Projection tube material

1 = 1.4571 (stainless steel/V4A) ● Standard
other on request!

13 Process connection

1 = G 3/8" up to diameter Ø 9,0 mm
2 = G 1/2" up to diameter Ø 14,0 mm ●
3 = G 3/4"
4 = G 1"
other on request!

14 Transmitter

For environmental temperatures of the electronics > 75°C at the connecting head we recommend the use of a measurement transmitter in the field housing or the assembly of a mountain rail.

- 0 = without ●
- 1 = analog, non isolated
- 2 = digital, programable non isolated
- 3 = digital, programable isolated
- 4 = digital, isolated, with LCD-display
(only connection head BGT)
- 5 = Profibus-DP-protocol
- 6 = CAN-open-protocol (only with field housing)
- 7 = HART-protocol
- 8 = Temperature-limit-switch for connectin head mounting

measuring rage: from °C to °C
output signal: 4–20 mA!

Attention:
Transmitter number 5, 7 and 8 can be mounted in conection head modell BUZ-H only
Transmitter with explosion protection EEx ia configured to customer specification.
See Register 4, Measurement Transmitter, for further technical information.

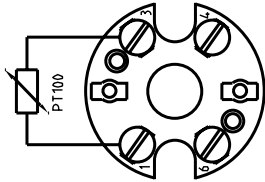
WT 7 0 3 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1	1	2	1	1	0	1	0	0	3	1	2	0

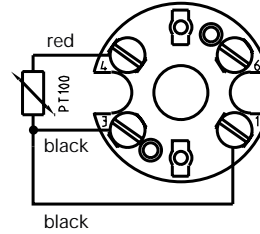
● Order example

Resistance Thermometer Connection

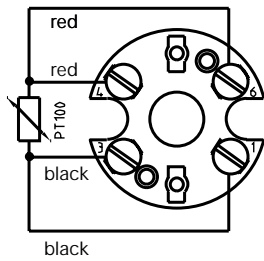
1xPT100-2 wire circuit



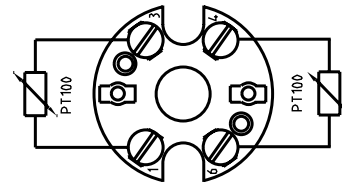
1xPT100-3 wire circuit



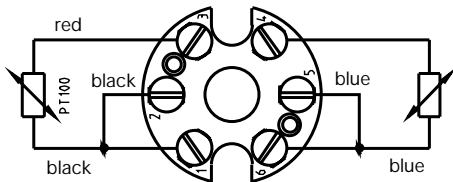
1xPT100- 4 wire circuit



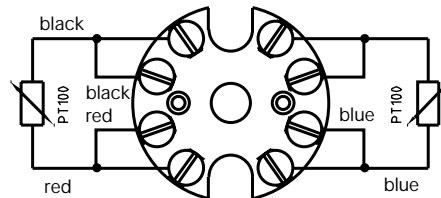
2xPT100-2 wire circuit



2xPT100-3 wire circuit



2xPT100-4 wire circuit



Basic values, deviations from platinum measuring resistances according to DIN EN 60751

Temperature	0° C	100° C	200° C	300° C	400° C	500° C	600° C	
Basic value (ohm)	100,00	138,50	175,84	212,02	247,04	280,90	313,59	
Tolerance (K)	Class B	0,3	0,8	1,3	1,8	2,3	2,8	3,3
	Class A	0,15	0,35	0,75	0,75	0,95	1,15	-

Elementart Temperature	PT 100	PT 500	PT 1000
0° C	100,000	500,000	1000,000
50° C	119,397	596,986	1193,971
100° C	138,506	692,528	1385,055
150° C	157,325	786,626	1573,251
200° C	175,856	879,280	1758,560
250° C	194,098	970,491	1940,981
300° C	212,052	1060,258	2120,515
350° C	229,716	1148,581	2297,161
400° C	247,092	1235,460	2470,920
450° C	264,179	1320,896	2641,791
500° C	280,978	1404,888	2809,775
550° C	297,487	1487,436	2974,871
600° C	313,708	1568,540	3137,080
650° C	329,640	1648,201	3296,401
700° C	345,284	1726,418	3452,835
750° C	360,638	1803,191	3606,381
800° C	375,704	1878,520	3757,040