



Design Features

- Pt 100 connection with 2, 3 or 4-wire circuitry
- Measuring insert 1 x Pt 100 or 2 x Pt 100
- can be supplied in different protection tube designs, optionally
- design for ex-operating

Application

The screw-in resistance thermometer serves as a temperature pick-up and is designed for connection to a Pt 100 transmitter. Because of its robust design (protection tube from stainless steel), it is suitable for use in a great number of technological processes. The resistance thermometer can be supplied with a built-in transmitter, techn. data and order code see data sheet T4-032.

Design and Function

The resistance thermometer consists of protection tube, connection head and measuring insert. The measuring insert has optionally one or two Pt 100 measuring resistors, which are connected to the terminal socket in the connection head with 2, 3 or 4-wire circuitry. The change in resistance, dependant on the measurement temperature, can be detected by a transmitter and converted into a standardized signal.

Technical Data

Mechanical design

measuring insert with connection head and optionally with protection tube

Connection head

standard: Aluminium with screw cap and cable gland conduit thread 16, see order details for other designs

Protection tube

screw-in protection tube:

- stainless steel material no. 1.4571
- immersion length see order details

weld-in protection tube

- stainless steel material no. 1.4571
- immersion length see order details

flange protection tube:

- upon request

further designs upon request

Application area

-200...max. +400 °C

see order details, other values upon request

Measuring resistor

Pt 100 per DIN 43760

Accuracy of the measuring resistor

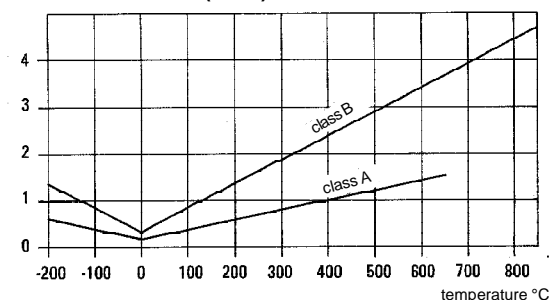
optionally, class A or class B per DIN 43760 see diagram for allowed deviations

To be continued on page 2

Fundamental values in ohms from 10 to 10 °C in negative range											
°C	0	-10	-20	-30	-40	-50	-60	-70	-80	-90	Ohm/K
-200	18.49	-	-	-	-	-	-	-	-	-	-
-100	60.25	56.19	52.11	48.60	43.87	39.71	35.53	31.32	27.08	22.80	4.17
0	100.00	96.09	92.16	88.22	84.27	80.31	76.33	72.33	68.33	64.30	3.97

Fundamental values in ohms from 10 to 10°C in positive range											
°C	0	10	20	30	40	50	60	70	80	90	Ohm/K
0	100.00	103.90	107.79	111.67	115.54	119.40	123.24	127.07	130.89	134.70	3.85
100	138.50	142.29	146.06	149.82	153.58	157.31	161.04	164.76	168.46	172.16	3.73
200	175.84	179.51	183.17	186.82	190.45	194.07	197.69	201.29	204.88	208.45	3.62
300	212.02	215.57	219.12	222.65	226.17	229.67	233.17	236.65	240.13	243.59	3.50
400	247.04	250.48	253.90	257.32	260.72	264.11	267.49	270.86	274.22	277.56	3.37
500	280.90	284.22	287.53	290.83	294.11	297.39	300.65	303.91	307.15	310.38	3.29
600	313.59	316.80	319.99	323.18	326.35	329.51	332.66	335.79	338.92	342.03	3.15
700	345.13	348.22	351.30	354.37	357.42	360.47	363.50	366.52	369.53	372.52	3.03
800	375.51	378.48	381.45	384.40	387.34	390.26	-	-	-	-	2.95

allowed deviations (in °C)



The allowed deviations can have positive or negative values.

Technical Data (continued)

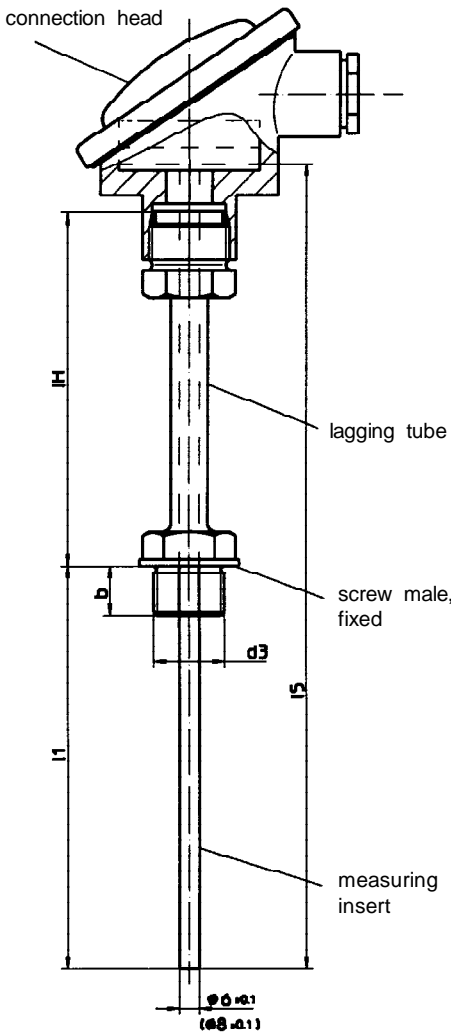
Measuring insert

Pt 100 with terminal socket, measuring element optionally 1 x Pt 100 or 2 x Pt 100

Electrical connection
terminal screws

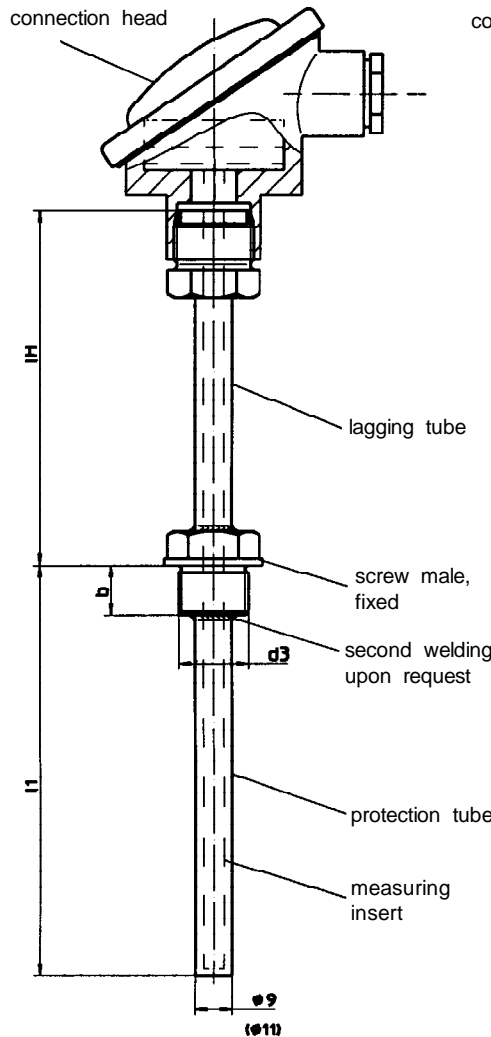
Information on other models upon request or see order details

Dimensions



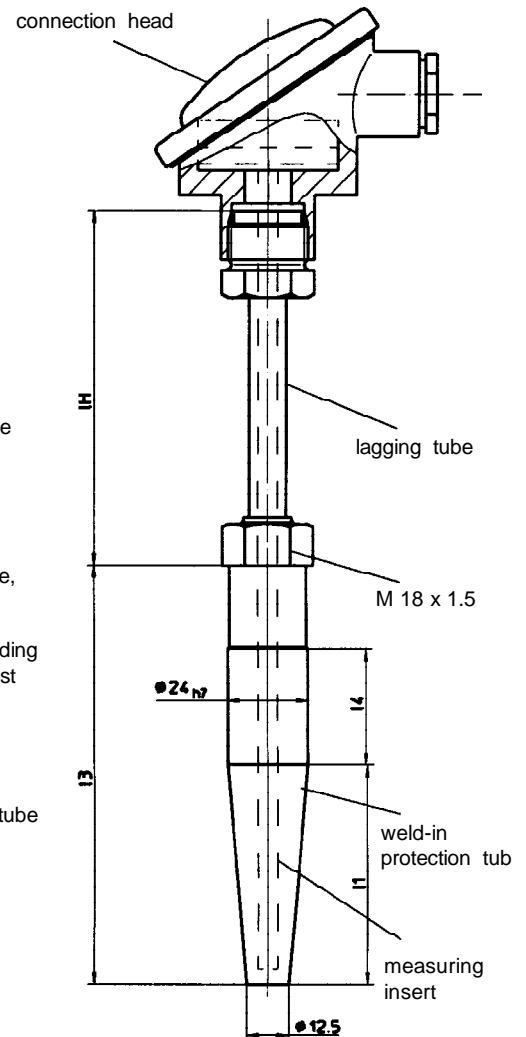
**without protection tube
type GA 2500/1**

Dimensions(mm)					
design	d3	b	LH	d1	L1
with lagging tube and screw male	G 1/2 A	15	145	6 (8)	160 250 400
without lagging tube with screw male	G 1/2 A	15	-	6 (8)	160 250 400
without lagging tube without screw male	-	-	-	6 (8)	280 370 520



**with screw-in protection tube
type GA 2510/1**

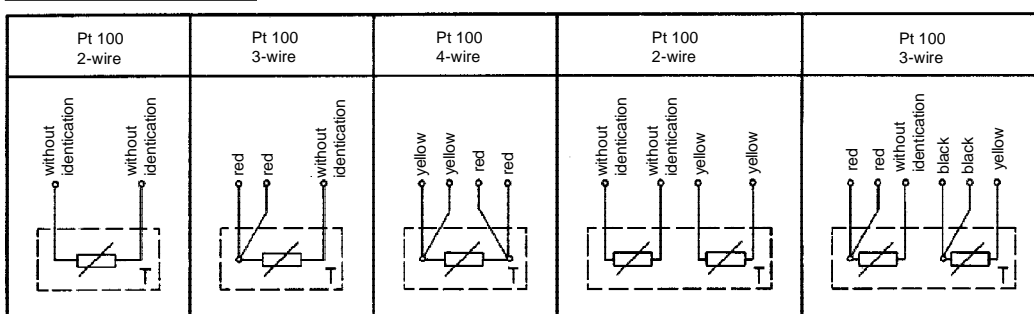
Dimensions (mm)				
d3	b	LH	d1	L1
G 1/2 A	15	145	9	160 250 400
G 1 A	30	145	11	160 250



**with weld-in protection tube
type GA 2520/1**

Dimensions (mm)			
L3	L1	L4	LH
140	65	50	165
200	65	110	165
200	125	50	165
260	125	110	165

Connection diagram



Order Details - please give additional specifications for models not listed -

Resistance thermometer Pt 100							
special design	· with screw-in protection tube		GA251				
	· with weld-in protection tube		GA252				
	· without protection tube		GA250				
design	· standard		0				
	· ex-protection		1				
screw-in protection tube ¹ (for measuring insert Ø 6 mm) GA 2510/1	· lagging tube welded at screw male (standard)				A3		
	· protection tube additional welded at screw male (second welding)				A4		
	G 1/2 A ³ 9 x 1	· model B1 similar DIN 43763, L1 = 160 mm				111	
		· model B2 similar DIN 43763, L1 = 250 mm				121	
		· model B3 similar DIN 43763, L1 = 400 mm				131	
		· model B similar DIN 43763, L1 ... ²				199	
	G 1 A ³ 11 x 2	· model C1 similar DIN 43763, L1 = 160 mm				211	
		· model C2 similar DIN 43763, L1 = 250 mm				221	
· model C similar DIN 43763, L1 ... ²				299			
weld-in protection tube ¹ (for measuring insert Ø 6 mm) GA 2520/1	· model D1 similar DIN 43763, L3 = 140 mm				B3111		
	· model D2 similar DIN 43763, L3 = 200 mm				B3121		
	· model D4 similar DIN 43763, L3 = 200 mm				B3131		
	· model D5 similar DIN 43763, L3 = 260 mm				B3141		
without protection tube GA 2500/1	· measuring insert Ø 6 mm				D2		
	· measuring insert Ø 8 mm				D4		
	with lagging tube 12 x 1,5 mm LH = 145 mm	· L1 = 160 mm				321	
		· L1 = 250 mm				322	
	with screw male G 1/2 A	· L1 = 400 mm				323	
		LH and L1 ²				399	
	without lagging tube with screw male G 1/2 A	· L1 = 160 mm				311	
		· L1 = 250 mm				312	
		· L1 = 400 mm				313	
	without lagging tube without screw male	L1 ²				319	
		· L1 = 280 mm				211	
		· L1 = 370 mm				212	
		· L1 = 520 mm				213	
	· per specification				299		
tolerance per DIN	· class B (standard)				M11		
	· class A				M21		
	· class B, 1/3 DIN				M31		
measuring insert	· 1 x Pt 100 in 2-wire circuitry				N1		
	· 1 x Pt 100 in 3-wire circuitry				N2		
	· 1 x Pt 100 in 4-wire circuitry				N3		
	· 2 x Pt 100 in 2-wire circuitry				N4		
	· 2 x Pt 100 in 3-wire circuitry				N5		
connection head	· model B, material aluminium, IP 54, standard				T11		
	· model B, spring cover with slotted screws, mat. aluminium, IP 65				T12		
	· model B, spring cover with quick lock, mat. aluminium, IP 54				T13		
	· model B, screw cap, material plastic, IP 54				T31		
	· field housing, material stainless steel 1.4301, IP 67				T41		
Order code (example):			GA2510	A3111	M11	N1	T11

¹ further designs upon request

² per specification

³ protection tube