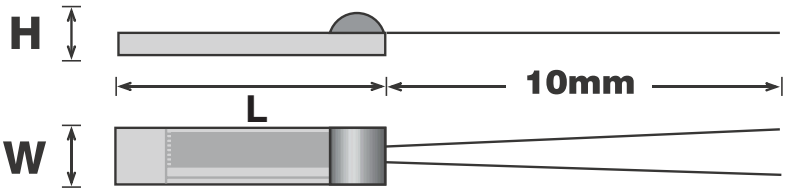
Sensor Scientific, Inc.

PLATINUM THIN FILM RTD ELEMENTS



- Available in 100, 500, 1000, and 2000 ohm resistance values
- Standard DIN EN 60751, ASTME1137 & non-standard tolerances available
- Custom 2, 3, and 4 wire extension leads available
- Custom-Engineered Temperature Probe Assemblies

Sensor Scientific, Inc. Platinum Thin Film RTD Elements are fabricated using state-of-the-art thin film processing techniques, resulting in an element of exceptional quality and stability. The wide choice of resistance, tolerance, and size options allows for complete design flexibility.

RTD elements are available with extension leads, and incorporated in complete temperature probe assemblies. Please contact Sensor Scientific for additional information.

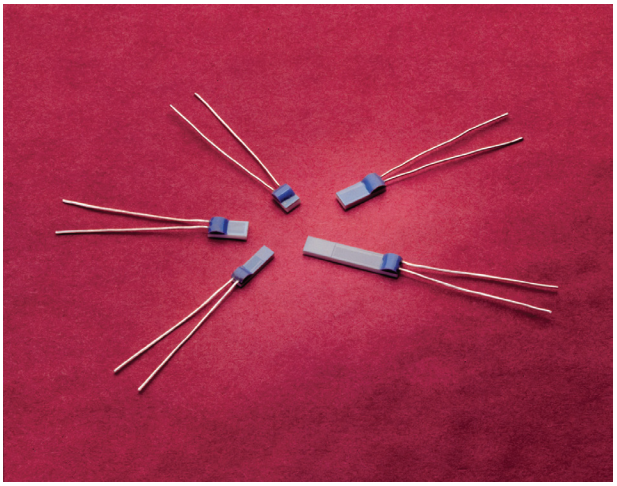
RTD Temperature Sensor Assemblies: Generally, thin film RTD elements are incorporated into some type of assembly for protection. Extension leads may be attached via soldering, crimping, brazing or welding. The attachment method must be capable of withstanding the intended maximum operating temperature.

1) Avoid straining the element leads.

2) If extension leads are attached via soldering or brazing, all flux residue must be removed.

3) The resistance of extension leads must be taken into consideration. Resistance value at 0°C calibrated 1mm from end of lead wire.

4) If elements are encapsulated in a potting compound, insure that the compound will not induce pressure loads, resulting in a strain-gage effect.



"Response Time and Self Heating" table on page 2 of http://www.sensorsci.com/pdfs/PtRTDElements.pdf and http://www.sensorsci.com/response.htm

Recommended Storage Conditions:

- Temperature 10-30 C, Humidity less than 60% RH (without dewing)
- After unpacking, reseal and/or store product in a dry environment
- Do not store near corrosive materials or direct sunlight

Resistance at 0 Deg C.	L	W	H	Part Number	Temperature Range	Tolerance CLASS
100	3.9	1.5	1	P010BLH	FROM -50 TO 400	B
100	2.3	1.9	1	P010BLJ	FROM -50 TO 400	B
100	1.7	1.25	0.8	P010BMA	FROM -70 TO 500	B
100	2.3	2.1	0.9	P010BMB	FROM -70 TO 500	B
100	3.9	1.5	1	P010ALH	FROM -50 TO 300	A
100	2.3	2.1	0.9	P010AMB	FROM -50 TO 300	A
100	1.7	1.25	0.8	P0103MA	FROM 0 TO 150	1/3 din
1000	2.3	2.1	0.9	P100BMB	FROM -70 TO 500	B
1000	1.7	1.25	0.8	P100BMA	FROM -70 TO 500	B
1000	3.9	2.0	1	P100BLL	FROM -50 TO 400	B
1000	9.5	1.9	1	P100BLF	FROM -50 TO 400	B
1000	3.9	2.1	0.9	P100ALL	FROM -50 TO 300	A
1000	2.3	2.1	0.9	P100AMB	FROM -50 TO 300	A

Call us toll-free at 800-524-1610 (in the US) — or check us out on the web at www.sensorsci.com

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Reference Table For Pt RTD Elements

°C	Ω	°C	Ω	°C	Ω
-200	18.52	+160	161.05	+510	284.30
-190	22.83	+170	164.77	+520	287.62
-180	27.10	+180	168.48	+530	290.92
-170	31.34	+190	172.17	+540	294.21
-160	35.54	+200	175.86	+550	297.49
-150	39.72	+210	179.53	+560	300.75
-140	43.88	+220	183.19	+570	304.01
-130	48.00	+230	186.84	+580	307.25
-120	52.11	+240	190.47	+590	310.49
-110	56.19	+250	194.10	+600	313.71
-100	60.26	+260	197.71		
-90	64.30	+270	201.31		
-80	68.33	+280	204.90		
-70	72.33	+290	208.48		
-60	76.33	+300	212.05		
-50	80.31	+310	215.61		
-40	84.27	+320	219.15		
-30	88.22	+330	222.68		
-20	92.16	+340	226.21		
-10	96.09	+350	229.72		
0	100.00	+360	233.21		
+10	103.90	+370	236.70		
+20	107.79	+380	240.18		
+30	111.67	+390	243.64		
+40	115.54	+400	247.09		
+50	119.40	+410	250.53		
+60	123.24	+420	253.96		
+70	127.08	+430	257.38		
+80	130.90	+440	260.78		
+90	134.71	+450	264.18		
+100	138.51	+460	267.56		
+110	142.29	+470	270.93		
+120	146.07	+480	274.29		
+130	149.83	+490	277.64		
+140	153.58	+500	280.98		

Reference Tables are available in 5°C and 1°C increments upon request

Nominal Resistance: 100 ohms @ 0°C

For Nominal resistance values other than 100 Ω @ °C resistance values from the table are corrected using the equation $R_0 X10^{-2}$ where R_0 = nominal resistance at 0°C.

TEMPERATURE COEFFICIENT 385

- Mean temperature coefficient between 0 and 100°C = 3.85 x 10^{-3} x K^{-1} (in accordance with IEC 751,2:1995-07 [DIN EN 60751;1996-07])
- Calculation of Resistance values:
  Equations acc. to IEC 751,2: 1995-07 (DIN EN 60751: 1996-07)
  Temperature range from -200 to 0°C:
  $R_t + R_0 (1 + A t + B t^2 + C(t - 100°C) t^3]$
  Temperature range from 0 to +850°C:
  $R_t + R_0 (1 + A t + B t^2)$
  Where: A = 3.9083 x 10^{-3} °C^{-1}; B=-5.775 x 10^{-7} °C^{-2}; C=-4.183 x 10^{-12} °C^{-4}
  R_t is the resistance in Ω at temperature t
  t is the temperature in °C
- Resistance values from -200 to -250°C were obtained by our own fixed point measurement

The permissible deviations for platinum resistance elements are determined by the following equations (in accordance with IEC 751,2: 1995- 07 [DIN EN 60751: 1996-07]):

Tolerance - B Class = ± 0.3°C at nominal resistance (0°C)

Tolerance - A Class = ± 0.15°C at nominal resistance (0°C)

Tolerance - 1/3 DIN Class B = ± 0.1°C at nom. resistance (0°C)

Tolerance

	Class A		Class B	
temp°C	Ω	°C	Ω	°C
-200	±0.24	±0.55	±0.56	±1.3
-100	±0.14	±0.35	±0.32	±0.8
0	±0.06	±0.15	±0.12	±0.3
100	±0.13	±0.35	±0.30	±0.8
200	±0.20	±0.55	±0.48	±1.3
300	±0.27	±0.75	±0.64	±1.8
400	±0.33	±0.95	±0.79	±2.3
500	±0.38	±1.15	±0.93	±2.8
600	±0.43	±1.35	±1.06	±3.3
650	±0.46	±1.45	±1.13	±3.6
700	-	-	±1.17	±3.8
800	-	-	±1.28	±4.3
850	-	-	±1.34	±4.6