

### Pyromation Standard RTD Element Specifications

ELEMENT MATERIAL <sup>[1]</sup>	RESISTANCE @ 0 °C	TEMPERATURE COEFFICIENT	OPERATING RANGE <sup>[2]</sup>	AVAILABLE ACCURACIES @ 0 °C	CATALOG ORDER CODES
Platinum	100 Ω	$\alpha = 0.00385 \text{ } ^\circ\text{C}^{-1}$	(-200 to 600) °C [-328 to 1112] °F	± 0.1% ± 0.03% ± 0.01%	R1T R3T R5T
Platinum	100 Ω	$\alpha = 0.00392 \text{ } ^\circ\text{C}^{-1}$	(-200 to 600) °C [-328 to 1112] °F	± 0.1% ± 0.03%	R1T R3T
Platinum	100 Ω	$\alpha = 0.00385 \text{ } ^\circ\text{C}^{-1}$	(-40 to 200) °C [-40 to 400] °F	± 0.12%	RBF
Platinum	100 Ω	$\alpha = 0.00385 \text{ } ^\circ\text{C}^{-1}$	(-40 to 200) °C [-40 to 400] °F	± 0.06%	RAF
Platinum	200 Ω	$\alpha = 0.00385 \text{ } ^\circ\text{C}^{-1}$	(-200 to 600) °C [-328 to 1112] °F	± 0.1% ± 0.03% ± 0.01%	R1T R3T R5T
Platinum	200 Ω	$\alpha = 0.00392 \text{ } ^\circ\text{C}^{-1}$	(-200 to 600) °C [-328 to 1112] °F	± 0.1% ± 0.03%	R1T R3T
Platinum	500 Ω	$\alpha = 0.00385 \text{ } ^\circ\text{C}^{-1}$	(-40 to 500) °C [-40 to 932] °F	± 0.12%	RBF
Platinum	1000 Ω	$\alpha = 0.00385 \text{ } ^\circ\text{C}^{-1}$	(-40 to 500) °C [-40 to 932] °F	± 0.12%	RBF
Copper	10 Ω	$\alpha = 0.00427 \text{ } ^\circ\text{C}^{-1}$	(-200 to 204) °C [-328 to 400] °F	± 0.2%	RCT
Nickel	120 Ω	$\alpha = 0.00672 \text{ } ^\circ\text{C}^{-1}$	(-200 to 204) °C [-328 to 400] °F	± 0.5%	RDT
Nickel-Iron	604 Ω	$\alpha = 0.00518 \text{ } ^\circ\text{C}^{-1}$	(-200 to 204) °C [-328 to 400] °F	± 0.5%	RDT

[1] Sensing elements of other materials, base values, and temperature coefficients are available upon request.

[2] Stated operating ranges are typical values and are dependant upon the sensing element, element substrate, and the construction style of the total sensor assembly. Sensor assemblies to exceed the stated limits may be available upon request.

### Typical 100 OHM Platinum Element Tolerances

TEMPERATURE		CLASS B (0.12%) <sup>[1]</sup> TOLERANCE ±[0.30 + 0.0050  t ] °C		BAND 1 (0.1%) <sup>[1]</sup> TOLERANCE ±[0.26 + 0.0042  t ] °C		CLASS A (0.06%) <sup>[1]</sup> TOLERANCE ±[0.15 + 0.0020  t ] °C		BAND 3 (0.03%) <sup>[1]</sup> TOLERANCE ±[0.08 + 0.0017  t ] °C		BAND 5 (0.01%) <sup>[2]</sup> TOLERANCE ±[0.03 + 0.0017  t ] °C	
°C	[°F]	°C	[°F]	°C	[°F]	°C	[°F]	°C	[°F]	°C	[°F]
-200	[-328]	1.30	[2.34]	1.10	[1.98]	0.55	[0.99]	0.42	[0.76]	0.37	[0.67]
-100	[-148]	0.80	[1.44]	0.68	[1.22]	0.35	[0.63]	0.25	[0.45]	0.20	[0.36]
0	[32]	0.30	[0.54]	0.26	[0.47]	0.15	[0.27]	0.08	[0.14]	0.03	[0.05]
100	[212]	0.80	[1.44]	0.68	[1.22]	0.35	[0.63]	0.25	[0.45]	0.20	[0.36]
200	[392]	1.30	[2.34]	1.10	[1.98]	0.55	[0.99]	0.42	[0.76]	0.37	[0.67]
300	[572]	1.80	[3.24]	1.52	[2.74]	0.75	[1.35]	0.59	[1.06]	0.54	[0.97]
400	[752]	2.30	[4.14]	1.94	[3.49]	0.95	[1.71]	0.76	[1.37]	0.71	[1.28]
500	[932]	2.80	[5.04]	2.36	[4.25]	1.15	[2.07]	0.93	[1.67]	0.88	[1.58]
600	[1112]	3.30	[5.94]	2.78	[5.00]	1.35	[2.43]	1.10	[1.98]	1.05	[1.89]

where: |t| = value of temperature without regard to sign, °C

[1] The equations represent values for 3 and 4-wire PRTs. Caution must be exercised with 2-wire PRTs due to lead resistance.

[2] This tolerance can only be met with a 4-wire PRT.