

ECONOMICAL RTD ELEMENTS

PLATINUM, NICKEL, NICKEL IRON

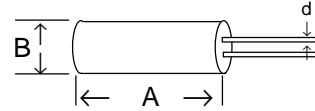
TEMPERATURE RATING UP TO 500°C

PTC SERIES

FEATURES

- Inherent wirewound stability
- Standard tolerance: $\pm 1\%$ (available to $\pm 0.1\%$)
- Resistance range: 1Ω to 1000Ω
- High-temperature ceramic encased construction
- Operating temperature range: -55°C to maximum listed
- Thin-film platinum elements available (see PTF Series)

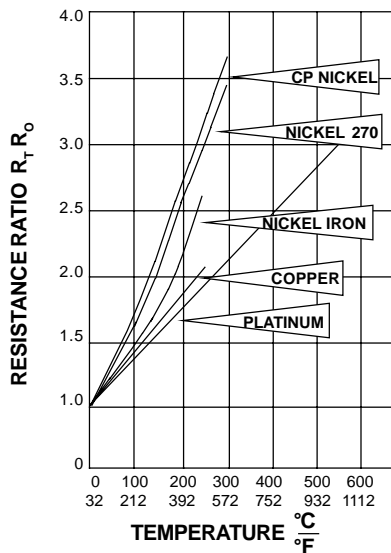
High temperature RTD (Resistance Temperature Detector) elements are designed for the toughest industrial applications. PTC sensors feature an all-welded construction for increased durability under stress and vibration. Wirewound element results in exceptional stability and uniformity. Series PTC elements can be used to sense or regulate air environments and can be assembled into immersion probes for liquid environments (refer to PTS Series).



RCD Type	Resistance Wire	Temperature Coefficient 0° to 100°C	TC 3-digit code	Max. Resistance (Ohms)	A $\pm .060$ [1.5]	B $\pm .01$ [.25]	C* Typ. [.05]
PTC100PT	Platinum	3850ppm	392	200	.575 [14.6]	.096 [2.44]	.016 [.4] Lead Length 0.5 [12.7] min.
PTC100CPN	Chem. Pure Nickel	6720ppm	672	120			
PTC100N	Nickel 270	6000ppm	603	120			
PTC100NF	Nickel Iron	5150ppm	522	500	.575 [14.6]	.125 [3.18]	.016 [.4] Lead Length 0.5 [12.7] min.
PTC150PT	Platinum	3850ppm	392	400			
PTC150CPN	Chem. Pure Nickel	6720ppm	672	200			
PTC150N	Nickel 270	6000ppm	603	200			
PTC50NF	Nickel Iron	5150ppm	522	1000	.675 [17.1]	.170 [4.32]	.020 [.5] Lead Length 1.0 [25.4] min
PTC200PT	Platinum	3850ppm	392	400			
PTC200CPN	Chem. Pure Nickel	6720ppm	672	200			
PTC200N	Nickel 270	6000ppm	603	200			
PTC200NF	Nickel Iron	5150ppm	522	1000			

* Lead material is nickel for minimal oxidation at high temperature on platinum elements, tinned copperweld is standard on others.

LINEARITY



WIRE COMPARISON

Wire Alloy	Cost	Max. Temp.	Linearity	R/T Curve Repeatability
Platinum	Medium	500°C	Excellent	Excellent
CP Nickel	High	300°C	Fair	Good
Nickel 270	Low	300°C	Fair	Fair
Nickel Iron	Low	260°C	Fair	Good

THERMAL RESPONSE (TIME CONSTANT) varies with different element sizes, resistance values, and wire alloy. Typical time constant for PTC 150 PT 100 ohm is 2.2 seconds in water moving 3ft./sec. Consult factory for particular specifications.

SELF-HEATING is contingent upon resistance value, alloy, and element size. Typical self-heating for PTC 150 PT 100 ohm is 65 mW/°C in water moving at 3ft./sec. Consult factory for particular specifications.

INTERCHANGEABILITY - The strain-free design of RCD sensors insures maximum repeatability. This characteristic is degraded by lot-to-lot inconsistencies of the various wire alloys. Platinum being extremely constant allows the best interchangeability characteristics. Consult factory for specific data based on particular alloy and tolerance.

SHOCK AND VIBRATION - PTC elements withstand 100 G's sinewave shock for 3 cycles at 10 milliseconds, and withstand vibration 10Hz to 2200Hz at 20 G's.

P/N DESIGNATION:

PTC150PT - 1000 - F B 392

RCD Type _____

4-Digit Resis. Code: 3 signif. digits _____
& multiplier (1R00=1Ω, 10R0=10Ω, 1000=1000Ω, etc.)

Tolerance Code: F=1%, D=0.5%, C=0.25%, B=0.1% _____

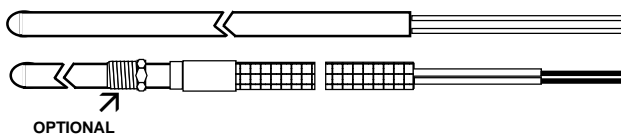
Packaging: B = Bulk _____

Temp. Coefficient: 3 digit code--rounded to nearest 100 (392=3850ppm, 603=6000ppm, etc.) _____

RTD PROBES

TEMPERATURE RATING UP TO 500°C

PTS SERIES



PTC ceramic encased elements can be assembled into stainless steel sheaths for severe environmental requirements. These probes (PTS Series) are moistureproof and pressure tight and in many instances may be directly inserted into process lines or thermowells for precise temperature readings. Series PTS are available in any standard PTC resistance value and temperature coefficient, in .125 [3.18], .187 [4.75], .250 [6.35] diameters. Teflon insulated leads are standard. Other insulations available for highest temperature requirements, 3-terminal, 4-terminal configurations available. Probe lengths available from 0.5 [12.7] to 18 [457]. **Consult factory for list of standard probe styles including surface measurement, flange mount, screw mount, etc.**

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FA specifications subject to change without notice