

**Element Resistance:** 100 Ohms at 0°C nominal

**Temperature Coefficient of Resistance:** 0.00385 ohms/ohm/°C nominal

**Temperature Range:** -200°C to 500°C

**Accuracy:** Available with accuracy of ±0.10% and ±0.05% of resistance at 0°C with typical alpha accuracy of 0.00385 ±0.000005 ohms/ohm/°C

**Interchangeability:** For 100 ohm elements the tolerance values at any temperature for these specifications are given by: Tolerance °C = ±(0.13 + 0.00185|t|) for accuracy code 05, Tolerance °C = ±(0.26 + 0.0037|t|) for accuracy code 10 (|t|=absolute value of temperature in °C i.e. -100 becomes 100)

**Time constant:** Four seconds maximum for 63.2% response to step change in water moving at 3 fps.

**Insulation resistance:** Will remain greater than 500 megohms @ 500VDC, 20°C for at least 30 days at 100% relative humidity.

**Repeatability:** Less than ±0.04% change between ice point resistance after 10 consecutive cycles between -200 and 500°C.

**Long term stability:** Less than ±0.05% (±0.13°C for a 100 ohm RTD) ice point resistance shift after 1000 hours at 400°C. (See figure 1)

**Vibration resistance:** Less than ±0.03% (±0.075°C for a 100 ohm RTD) ice point shift for 30 minutes at 21g peak vibration; 5-350Hz continuous sweep, at 20°C for unsupported stem lengths of 5.5 inches or less. (See figure 2.)

**Long term temperature cycling:** Less than ±0.1% (±0.25°C for a 100 ohm RTD) change in ice point resistance after 1000 cycles from 20 to 500°C (See figure 3.)

**Self heating:** 18mW/°C in water moving at 3 fps.

**Bending radius:** Sheath is bendable on a minimum radius of 0.75 inch except for the 2" sensitive area of the sheath near the tip.

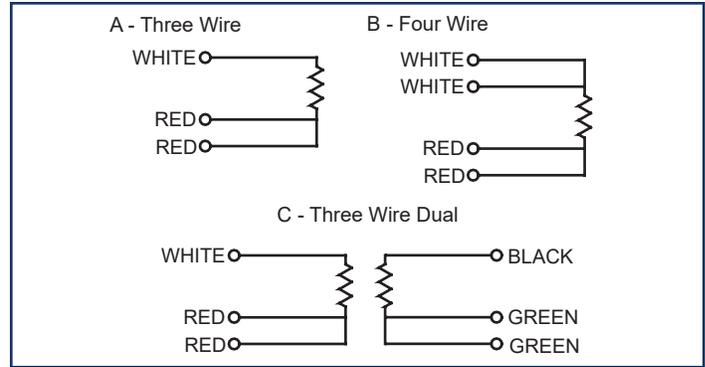
**Hysteresis:** 0.04% maximum between -200 and 500°C

**Lead wire:** Teflon™ insulated nickel-plated stranded copper, 22 AWG standard (24AWG for dual). Also available in fiberglass and Kapton™.

**Sheath material:** High purity compacted ceramic insulation with 316 stainless steel sheath.

### Proof Tests to Prove Reliability

**100% Tested** for accuracy at 0°C and insulation resistance.



Use Temperature	Max. Drift 1000 Hours	Avg. Drift 1000 hours
To 300°C	0.06°C	0.03°C
To 400°C	0.13°C	0.06°C
To 500°C	0.38°C	0.19°C

Temperature		Interchangeability			
C°	F°	0.05%		0.10%	
-200	-328	±0.50°C	(0.90)	±1.00°C	(1.80)
-100	-148	±0.32°C	(0.57)	±0.64°C	(1.15)
0	32	±0.13°C	(0.23)	±0.26°C	(0.46)
100	212	±0.32°C	(0.57)	±0.64°C	(1.15)
200	392	±0.50°C	(0.90)	±1.00°C	(1.80)
300	572	±0.69°C	(1.24)	±1.38°C	(2.48)
400	752	±0.87°C	(1.56)	±1.74°C	(3.13)
500	932	±1.06°C	(1.90)	±2.12°C	(3.82)

