

# Useful Information/Data

	Thermocouple Types	Temperature Range (continuous)	Accuracy	
			Class 1	Class 2
<b>K</b>	Nickel Chromium Vs. Nickel Aluminium	0 to 1100°C	-40 to 375°C ±1.5 °C 375 to 1000°C ±0.004 x t.	-40 to 333°C ±2.5 °C 333 to 1200°C ±0.0075 x t.
<b>N</b>	Nicrosil Vs. Nisil	0 to 1200°C	-40 to 375°C ±1.5 °C 375 to 1000°C ±0.004 x t.	-40 to 333°C ±2.5 °C 333 to 1200°C ±0.0075 x t.
<b>T</b>	Copper Vs. Constantan	-200 to 350°C	-40 to 125°C ±0.5 °C 125 to 350°C ±0.004 x t.	-40 to 133°C ±1.0 °C 133 to 350°C ±0.0075 x t.
<b>E</b>	Nickel Chromium Vs. Constantan	-200 to 900°C	-40 to 375°C ±1.5 °C 375 to 800°C ±0.004 x t.	-40 to 333°C ±2.5 °C 333 to 900°C ±0.0075 x t.
<b>J</b>	Iron Vs. Constantan	-50 to 750°C	-40 to 375°C ±1.5 °C 375 to 750°C ±0.004 x t.	-40 to 333°C ±2.5 °C 333 to 750°C ±0.0075 x t.
<b>R</b>	Platinum 13% Rhodium Vs. Platinum	0 to 1600°C	0 to 1100°C ±1.0°C 1100°C to 1600°C ±(1 + 0.003(t-1100)) °C	0°C to 600°C ± 1.5°C 600°C to 1600°C ±0.0025 x t.
<b>S</b>	Platinum 10% Rhodium Vs. Platinum	0 to 1550°C	0 to 1100°C ±1.0°C 1100°C to 1600°C ±(1 + 0.003(t-1100)) °C	0°C to 600°C ± 1.5°C 600°C to 1600°C ±0.0025 x t.
<b>B</b>	Platinum 30% Rhodium Vs. Platinum 6% Rhodium	100 to 1600°C		600°C to 1700°C ± 0.0025 x t.
<b>G</b> (W)	Tungsten Vs. Tungsten 26% Rhenium	20 to 2320°C		0°C to 425°C ±4.5°C 426°C to 2320°C ±1.0%
<b>C</b> (WS)	Tungsten 5 % Rhenium Vs. Tungsten 26% Rhenium	20 to 2320°C		0°C to 425°C ±4.4°C 426°C to 2320°C ±1.0%
<b>D</b> (WS)	Tungsten 3% Rhenium Vs. Tungsten 25% Rhenium	20 to 2320°C		0°C to 400°C ±4.5°C 401°C to 2320°C ±1.0%

Metal Sheath Materials	Temperature Range	Application/Suitability Notes
321 Stainless Steel	0 to 800°C	<ul style="list-style-type: none"> <li>✓ Very good corrosion resistance</li> <li>✓ High Ductility</li> </ul>
310 Stainless Steel	0 to 1100°C	<ul style="list-style-type: none"> <li>✓ Very good high temperature corrosion resistance</li> <li>✓ Can be used in Sulphur bearing atmospheres</li> </ul>
Inconel 600	0 to 1100°C	<ul style="list-style-type: none"> <li>✓ Very good high temperature corrosion resistance</li> <li>✓ Good Oxidation resistance</li> <li>✗ Do not use in Sulphur bearing atmospheres above 500°C</li> </ul>
Nicrosil D	0 to 1300°C	<ul style="list-style-type: none"> <li>✓ Very good high temperature strength</li> <li>✓ Can be used in Oxidising, Carburising, Reducing and Vacuum applications</li> <li>✗ Do not use in Sulphur bearing atmospheres</li> </ul>

Standard Wire Gauge (SWG)	Gauge Number	American Wire Gauge (AWG)
3.25	10	2.488
2.03	14	1.628
1.63	16	1.290
1.22	18	1.024
1.02	19	0.912
0.914	20	0.813
0.813	21	0.724
0.711	22	0.643
0.376	28	0.320
0.315	30	0.254
0.274	32	0.203
0.193	36	0.127
0.152	38	0.102
0.102	42	0.063

Grade of Element BS EN 60751: 1996 (FI 38.5Q)	Accuracy at 0°C	Accuracy at 100°C	Please Note: The accuracies quoted are for the element and may not be the actual accuracy of the completed assembly.
<b>B</b>	±0.30°C	±0.80°C	
<b>A</b>	±0.15°C	±0.35°C	
<b>1/3</b>	±0.08°C	±0.19°C	
<b>1/5</b>	±0.05°C	±0.15°C	
<b>1/10</b>	±0.03°C	±0.12°C	

$^{\circ}\text{C} = (^{\circ}\text{F} - 32) / 1.8$	$^{\circ}\text{F} = 1.8^{\circ}\text{C} + 32$
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Temperature and Process Measurement

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