



## THERMOCOUPLE TYPES & EMF VS TEMPERATURE

### THERMOCOUPLE TYPES

Thermocouple Type	Useful/General Application Range	Notes
B	2500-3100°F (1370-1700°C)	Easily contaminated, require protection.
C <sup>1</sup>	3000-4200°F (1650-2315°C)	No oxidation resistance. Vacuum, hydrogen or inert atmospheres.
E <sup>2</sup>	200-1650°F (95-900°C)	Highest output of base metal thermo- couples. Not subject to corrosion at cryogenic temperatures.
J	200-1400°F (95-760°C)	Reducing atmosphere recommended. Iron leg subject to oxidation at elevated temperatures--use larger gauge to compensate.
K <sup>2</sup>	200-2300°F (95-1260°C)	Well suited for oxidizing atmospheres.
N	1200-2300°F (650-1260°C)	For general use, better resistance to oxidation and sulfur than Type K.
R	1600-2640°F (870-1450°C)	Oxidizing atmosphere recommended. Easily contaminated, require protection.
S	1800-2640°F (980-1450°C)	Laboratory standard, highly reproducible. Easily contaminated, require protection.
T <sup>2</sup>	-330-660°F (-200-350°C)	Most stable at cryogenic temperatures ranges. Excellent in oxidizing and reducing atmospheres within temperature range.

<sup>1</sup>an ANSI symbol

<sup>2</sup>Also suitable for cryogenic applications from -328 to 32°F (-200 to 0°C)

### POPULAR THERMOCOUPLE GENERIC AND TRADE NAMES

ANSI Letter	Description	Popular Generic and Trade Names
B	BP BN	Platinum 30% Rhodium Platinum 6% Rhodium
C <sup>1</sup>	CP CN	(Tungsten 5% Rhenium) W26Re (Tungsten 26% Rhenium)
E	EP EN	Chromel®, Tophel®, HAI-KP® Constantan, Cupron®, Advance®
J	JP JN	Iron Constantan, Cupron, Advance
K	KP KN	Chromel, Tophel, HAI-KP Alumel®, Nial®, HAI-KN®
N	NP NN	Nicrosil Nisil
R	RP RN	Platinum 13% Rhodium Pure Platinum
S	SP SN	Platinum 10% Rhodium Pure Platinum
T	TP TN	Copper Constantan, Cupron, Advance

<sup>1</sup>Not an ANSI symbol.

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