

# ANSI Letter Designations

Thermocouple and extension wires are specified by ANSI letter designations for calibration. Positive and negative legs are identified by the appropriate letter suffixes P and N, respectively.

ANSI Letter	Description	Popular Generic & Trade Names*
T	TP	Copper
	TN	Constantan, Cupron, Advance
J	JP	Iron
	JN	Constantan, Cupron, Advance
E	EP	Chromel, Tophel, T1
	EN	Constantan, Cupron, Advance
K	KP	Chromel, Tophel, T1, Thermokanthal KP
	KN	Alumel, Nial, T2, Thermokanthal KN
R	RP	Platinum 13% Rhodium
	RN	Pure Platinum
S	SP	Platinum 10% Rhodium
	SN	Pure Platinum
B	BP	Platinum 30% Rhodium
	BN	Platinum 6% Rhodium
N	NP	Nicrosil
	NN	Nisil

\*Trade Names: Cupron, Nial and Tophel—AMAX; Advance, T1 and T2—Driver-Harris Co.; Chromel and Alumel—Hoskins Mfg. Co.; Thermokanthal KP and Thermokanthal KN—Kanthal Co.

## Limits of Error for Thermocouples & Thermocouple Wire

Thermocouple Type	Temperature Range		Limits of Error	
	°C	°F	Standard °C (whichever is greater)	Special °C (whichever is greater)
T	0 to 350	32 to 700	±1.0 or ±0.75%	±0.5 or 0.4%
J	0 to 750	32 to 1400	±2.2 or ±0.75%	±1.1 or 0.4%
E	0 to 900	32 to 1600	±1.7 or ±0.50%	±1.0 or 0.4%
K	0 to 1250	32 to 2300	±2.2 or ±0.75%	±1.1 or 0.4%
N	0 to 1250	32 to 2300	±2.2 or ±0.75%	±1.1 or 0.4%
R or S	0 to 1450	32 to 2700	±1.5 or ±0.25%	±0.6 or 0.1%
B	800 to 1700	1600 to 3100	±0.50%	—

## Limits Of Error For Thermocouple Extension Wires

Extension Wire Type	Temperature Range		Limits of Error	
	°C	°F	Standard °C	Special °C
KX	0 to 200	32° to 392°	±2.2	±1.1
JX	0 to 200	32° to 392°	±2.2	±1.1
EX	0 to 200	32° to 392°	±1.7	±1.1
TX	-60 to +100	-76° to +212°	±1.0	±0.5
NX	0 to 200	32° to 392°	±2.2	—

## Thermocouple Wire

Cat No.	Size of Wire		Insulations		Nominal Over-all Size, Inches Minor x Major	Continuous Temperature Rating (°F)
	B & S Gauge	Type of Wire	Each Conductor	Over-all		
<b>DUPLEX-ANSI TYPE K</b>						
K20-1-304	20	Solid	Glass Braid	Glass Braid	.056 x .096	900
K20-3-302	20	Stranded	Double Glass Braided	Glass Braid	.068 x .120	900
K24-1-304	24	Solid	Glass Braid	Glass Braid	.045 x .077	900
K24-1-508	24	Solid	Fused Teflon (TFE) Tape	Fused Teflon (TFE) Tape	.048 x .080	500
K20-1-507	20	Solid	Teflon Extruded	Teflon Extruded	.070 x .120	400
K20-3-S-302	22	Stranded	Double Glass Braid	Glass/Stainless Braid	.100 x .162	900
K20-1-350	20	Solid	Ceramic Fiber	Ceramic Fiber	.096 x .147	2600
<b>DUPLEX-ANSI TYPE T</b>						
T24-1-304	24	Solid	Glass Braid	Glass Braid	.045 x .077	900
T24-1-508	24	Solid	Fused Teflon	Fused Teflon	.048 x .080	500