

US/CAN






ANSI Code	Alloy Combination		Thermocouple Color Coding		Maximum Temperature Useful Range	EMF (mV) Over Max. Temperature Range	Limits of Error** (Whichever is Greater)	
	+Lead	-Lead	Thermocouple Grade	Extension Grade			Standard	Special
J	±IRON Fe (magnetic)	CONSTANTAN COPPER-NICKEL Cu-Ni			0 to 750°C (32 to 1382°F) Therm. Grade 0 to 200°C (32 to 392°F) Ext. Grade	-8.095 to 69.553	0 to 750°C (32 to 1382°F) 2.2° C or 0.75% 1.1° C or 0.4%	
K	CHROMEGA NICKEL-CHROMIUM Ni-Cr	ALOMEGA NICKEL-ALUMINIUM Ni-Al (magnetic)			-200 to 1250°C (-328 to 2282°F) Therm. Grade 0 to 200°C (32 to 392°F) Ext. Grade	-6.458 to 54.886	-200 to 1250°C (-328 to 2282°F) 2.2°C or 0.75% Above 0°C 2.2°C or 2.0% Below 0°C 1.1°C or 0.4%	
V*	COPPER Cu	CONSTANTAN COPPER-NICKEL Cu-Ni	NONE ESTABLISHED	NONE ESTABLISHED	0 to 80°C (32 to 176°F) Ext. Grade			
T	COPPER Cu	CONSTANTAN COPPER-NICKEL Cu-Ni			-200 to 350°C (-328 to 662°F) Therm. Grade -60 to 100°C (-76 to 212°F) Ext. Grade	-6.528 to 20.872	-200 to 350°C (-328 to 662°F) 1.0°C or 0.75% Above 0°C 1.0°C or 1.5% Below 0°C 0.5°C or 0.4%	

ANSI CODE	International IEC 584-3	International IEC 584-3 Intrinsicly Safe	CZECH BRITISH to BS 1843	NETHERLANDS GERMAN to DIN 43710	JAPANESE to JIS C 1610-1981	FRENCH to NFC 42-324	Comments Environment - Bare Wire
J							Reducing, Vacuum, Inert. Limited Use in Oxidising at High Temperatures Not Recommended for Low Temperatures
K							Clean Oxidising and Inert. Limited Use in Vacuum or Reducing. Wide Temperature Range. Most Popular Calibration
V*							Alternative to KX Type Extension Wire for Low Temperatures; Not Recommended for General Use
T							Mild Oxidising, Reducing Vacuum or Inert. Good Where Moisture is Present, Low Temperature and Cryogenic Applications









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E	CHROMEGA NICKEL- CHROMIUM Ni-Cr	CONSTANTAN COPPER- NICKEL Cu-Ni			-200 to 900°C (-328 to 1652°F) Therm. Grade 0 to 200°C (32 to 392°F) Ext. Grade	-9.835 to 76.373	-200 to 900°C (-328 to 1652°F) 1.7°C or 0.5% Above 0°C 1.7°C or 1.0% Below 0°C	1.0°C or 0.4%
N	OMEGA-P NICROSIL Ni-Cr-Si	OMEGA-N NISIL Ni-Si-Mg			-270 to 1300°C (-450 to 2372°F) Therm. Grade 0 to 200°C (32 to 392°F) Ext. Grade	-4.345 to 47.513	2.2°C or 0.75% Above 0°C 2.2°C or 2.0% Below 0°C	1.1°C or 0.4%
R	PLATINUM 13% RHODIUM Pt-13% Rh	PLATINUM PT	NONE ESTABLISHED		0 to 1450°C (32 to 2642°F) Therm. Grade 0 to 150°C (32 to 300°F) Ext. Grade	-0.226 to 21.101	0 to 1450°C (32 to 2642°F) 1.5°C or 0.25%	0.6°C or 0.1%
S	PLATINUM 10% RHODIUM Pt-10% Rh	PLATINUM PT	NONE ESTABLISHED		0 to 1450°C (32 to 2642°F) Therm. Grade 0 to 150°C (32 to 300°F) Ext. Grade	-0.236 to 18.693	0 to 1450°C (32 to 2642°F) 1.5°C or 0.25%	0.6°C or 0.1%

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E							Oxidising or Inert. Limited Use in Vacuum or Reducing. Highest EMF Change per Degree
N				No Standard Use American Color Codes			Alternative To Type K More Stable at High Temps
R							Oxidising or Inert. Do Not Insert in Metal Tubes. Beware of Contamination. High Temperature
S							Oxidising or Inert. Do Not Insert in Metal Tubes. Beware of Contamination. High Temperature

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	+Lead	-Lead	Thermocouple Grade	Extension Grade			Standard	Special
U*	COPPER Cu	COPPER- LOW NICKEL Cu-Ni	NONE ESTABLISHED		0 to 50°C (32 to 122°F) Ext. Grade			
B	PLATINUM 30% RHODIUM Pt-30% Rh	PLATINUM 6% RHODIUM Pt-6% Rh	NONE ESTABLISHED		0 to 1700°C (32 to 3092°F) Therm. Grade 0 to 100°C (32 to 212°F) Ext. Grade	0 to 13.820	0 to 1700°C (32 to 3092°F)	0.5% over 800°C Not Established
G* (W)	TUNGSTEN W	TUNGSTEN- 26% RHENIUM W-26% Re	NONE ESTABLISHED		0 to 2320°C (32 to 4208°F) Therm. Grade 0 to 260°C (32 to 500°F) Ext. Grade	0 to 38.564	4.5°C to 425°C 1.0% to 2320°C	Not Established
C* (W5)	TUNGSTEN- 5% RHENIUM W-5% Re	TUNGSTEN- 26% RHENIUM W-26% Re	NONE ESTABLISHED		0 to 2320°C (32 to 4208°F) Therm. Grade 0 to 870°C (32 to 1600°F) Ext. Grade	0 to 37.066	4.5°C to 425°C 1.0% to 2320°C	Not Established
D* (W3)	TUNGSTEN- 3% RHENIUM W-3% Re	TUNGSTEN- 25% RHENIUM W-25% Re	NONE ESTABLISHED		0 to 2320°C (32 to 4208°F) Therm. Grade 0 to 260°C (32 to 500°F) Ext. Grade	0 to 39.506	4.5°C to 425°C 1.0% to 2320°C	Not Established

*Not Official Symbol or Standard #Extension Grade **ASTM Standard E230-87, 1992 Annual Book of ASTM Standards

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U*							Extension Grade Connecting Wire for R & S Thermocouples; Also Known as RX and SX Extension Wire
B			No Standard Use Copper Wire			No Standard Use Copper Wire	Oxidising or Inert. Do Not Insert in Metal Tubes. Beware of Contamination. High Temperature. Common Use in Glass Industry
G* (W)				No Standard Use American Color Codes			Vacuum, Inert, Hydrogen. Beware of Embrittlement. Not Practical Below 399°C (750°F). Not for Oxidising Atmosphere
C* (W5)				No Standard Use American Color Codes			Vacuum, Inert, Hydrogen. Beware of Embrittlement. Not Practical Below 399°C (750°F). Not for Oxidising Atmosphere
D* (W3)				No Standard Use American Color Codes			Vacuum, Inert, Hydrogen. Beware of Embrittlement. Not Practical Below 399°C (750°F). Not for Oxidising Atmosphere