

Thermocouple Wire Colour Codes

North American Colour Codes								
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	NICKEL-CHROMIUM Ni-Cr	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% 1.1°C or 0.4% Below 0°C	
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% 0.5°C or 0.4% Below 0°C	
E	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% 1.0°C or 0.4% Below 0°C	
N	NICROSIL Ni-Cr-Si	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% 2.0°C or 0.4% Below 0°C	
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%	

International Colour Codes							
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
T							Mild Oxidising, Reducing Vacuum or Inert. Good Where Moisture is Present, Low Temperature and Cryogenic Applications
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