

ANSI and IEC Color Codes[†] for Thermocouples, Wire and Connectors

All OMEGA® Thermocouple Wire, Probes and Connectors are available with either ANSI or IEC Color Codes. In this Handbook, model numbers in the To Order tables reflect the ANSI Color-Coded Product. Please see the next pages for instructions on how to order IEC Color-Coded products.

| Connectors | | | | Connectors | | | | | | |
|------------|---------------------------|-----------------|---------------------------------|---|--|----------------------------------|--------------------------------|---------------------------------|--------------------|-----------|
| ANSI Code | ANSI MC 96.1 Color Coding | | Alloy Combination | | Comments Environment Bare Wire | Maximum T/C Grade Temp. Range | EMF (mV) Over Max. Temp. Range | IEC 584-3 Color Coding | | IEC Code |
| | Thermocouple Grade | Extension Grade | + Lead | - Lead | | | | Thermocouple Grade | Intrinsically Safe | |
| J | | | IRON Fe (magnetic) | CONSTANTAN COPPER-NICKEL Cu-Ni | Reducing, Vacuum, Inert. Limited Use in Oxidizing at High Temperatures. Not Recommended for Low Temperatures. | -210 to 1200°C -346 to 2193°F | -8.095 to 69.553 | | | J |
| K | | | CHROMEQA® NICKEL-CHROMIUM Ni-Cr | ALOMEGA® NICKEL-ALUMINUM Ni-Al (magnetic) | Clean Oxidizing and Inert. Limited Use in Vacuum or Reducing. Wide Temperature Range, Most Popular Calibration | -270 to 1372°C -454 to 2501°F | -6.458 to 54.886 | | | K |
| T | | | COPPER Cu | CONSTANTAN COPPER-NICKEL Cu-Ni | Mild Oxidizing, Reducing Vacuum or Inert. Good Where Moisture Is Present. Low Temperature & Cryogenic Applications | -270 to 400°C -454 to 752°F | -6.258 to 20.872 | | | T |
| E | | | CHROMEQA® NICKEL-CHROMIUM Ni-Cr | CONSTANTAN COPPER-NICKEL Cu-Ni | Oxidizing or Inert. Limited Use in Vacuum or Reducing. Highest EMF Change Per Degree | -270 to 1000°C -454 to 1832°F | -9.835 to 76.373 | | | E |
| N | | | OMEGA-P® NICROSIL Ni-Cr-Si | OMEGA-N® NISIL Ni-Si-Mg | Alternative to Type K. More Stable at High Temps | -270 to 1300°C -450 to 2372°F | -4.345 to 47.513 | | | N |
| R | NONE ESTABLISHED | | PLATINUM-13% RHODIUM Pt-13% Rh | PLATINUM Pt | Oxidizing or Inert. Do Not Insert in Metal Tubes. Beware of Contamination. High Temperature | -50 to 1768°C -58 to 3214°F | -0.226 to 21.101 | | | R |
| S | NONE ESTABLISHED | | PLATINUM-10% RHODIUM Pt-10% Rh | PLATINUM Pt | Oxidizing or Inert. Do Not Insert in Metal Tubes. Beware of Contamination. High Temperature | -50 to 1768°C -58 to 3214°F | -0.236 to 18.693 | | | S |
| U | NONE ESTABLISHED | | COPPER Cu | COPPER-LOW NICKEL Cu-Ni | Extension Grade Connecting Wire for R & S Thermocouples, Also Known as RX & SX Extension Wire. | | | | | U |
| B | NONE ESTABLISHED | | PLATINUM-30% RHODIUM Pt-30% Rh | PLATINUM-6% RHODIUM Pt-6% Rh | Oxidizing or Inert. Do Not Insert in Metal Tubes. Beware of Contamination. High Temp. Common Use in Glass Industry | 0 to 1820°C 32 to 3308°F | 0 to 13.820 | | | B |
| G* (W) | NONE ESTABLISHED | | TUNGSTEN W | TUNGSTEN-26% RHENIUM W-26% Re | Vacuum, Inert, Hydrogen. Beware of Embrittlement. Not Practical Below 399°C (750°F). Not for Oxidizing Atmosphere | 0 to 2320°C 32 to 4208°F | 0 to 38.564 | NO STANDARD USE ANSI COLOR CODE | | G (W) |
| C* (W5) | NONE ESTABLISHED | | TUNGSTEN-5% RHENIUM W-5% Re | TUNGSTEN-26% RHENIUM W-26% Re | Vacuum, Inert, Hydrogen. Beware of Embrittlement. Not Practical Below 399°C (750°F). Not for Oxidizing Atmosphere | 0 to 2320°C 32 to 4208°F | 0 to 37.066 | NO STANDARD USE ANSI COLOR CODE | | C (W5) |
| D* (W3) | NONE ESTABLISHED | | TUNGSTEN-3% RHENIUM W-3% Re | TUNGSTEN-25% RHENIUM W-25% Re | Vacuum, Inert, Hydrogen. Beware of Embrittlement. Not Practical Below 399°C (750°F)-Not for Oxidizing Atmosphere | 0 to 2320°C 32 to 4208°F | 0 to 39.506 | NO STANDARD USE ANSI COLOR CODE | | D (W3) |

* Not official symbol or standard designation

[†] JIS color code also available.