

TECHNICAL DATA

ANSI COLOR CODE & ISA LIMITS OF ERROR FOR THERMOCOUPLES - REFERENCE JUNCTION 0°C (ANSI MC 96.1 - 1975).

| ANSI TYPE | WIRE ALLOYS | POLARITY | INDIVIDUAL T/C WIRE COLOR | LIMITS OF ERROR in °C | | | LIMITS OF ERROR in °F** | | |
|-----------|---|------------------|---------------------------|-------------------------|-----------------------------------|--------------------------------|--------------------------|---------------------------------------|--------------------------------|
| | | | | TEMPERATURE RANGE °C | STANDARD (whichever is greater) | SPECIAL (whichever is greater) | TEMPERATURE RANGE °F | STANDARD (whichever is greater) | SPECIAL (whichever is greater) |
| T* | COPPER VS CONSTANTAN | +TP -TN | BLUE RED | 0 to 350 -200 to 0 | ±1°C or ±0.75% ±1°C or ±1.5% | ±0.5°C or ±0.4% | 32 to 660 -330 to 32 | ±1.8 °F or ±0.75% ±1.8 °F or ±1.5% | ±0.9°F or ±0.4% |
| J | IRON VS CONSTANTAN | +JP -JN | WHITE RED | 0 to 750 | ±2.2°C or ±0.75% | ±1.1°C or ±0.4% | 32 to 1380 | ±4°F or ±0.75% | ±2°F or ±0.4% |
| E* | CHROMEL VS CONSTANTAN | +EP -EN | PURPLE RED | 0 to 900 -200 to 0 | ±1.7°C or ±0.5% ±1.7°C or ±1% | ±1°C or ±0.4% | 32 to 1650 -330 to 32 | ±3°F or ±0.5% ±3°F or ±1% | ±1.8°F or ±0.4% |
| K* | CHROMEL VS ALUMEL® | +KP -KN | YELLOW RED | 0 to 1250 -200 to 0 | ±2.2°C or ±0.75% ±2.2°C or ±2% | ±1.1°C or ±0.4% | 32 to 2300 -330 to 32 | ±4°F or ±0.75% ±4°F or ±2% | ±2°F or ±0.4% |
| N | NICROSIL VS NISIL | +NP -NP | ORANGE RED | 285 to 1250 0 to 285 | ±2.2°C or ±0.75% | ±1.1°C or ±0.4% | 545 to 2300 32 to 545 | ±4°F or ±0.75% | ±2°F or ±0.4% |
| R,S | PLATINUM-RHODIUM VS PLATINUM | +RP,SP -RN,SN | | 0 to 1450 | ±1.5°C or ±0.25% | ±0.6°C or ±0.1% | 32 to 2650 | ±2.7°F or ±0.25% | ±1.1°F or ±0.1% |
| B | PLATINUM-30% RHODIUM VS PLATINUM-6% RHODIUM | +BP -BN | | 800 to 1700 | ±0.5% | ±0.25% | 1475 to 3100 | ±0.5% | ±0.25% |

*Thermocouples and thermocouple materials are normally supplied to meet the limits of error specified in the table for temperatures above 0°C. The same materials, however, may not fall within the sub-zero limits of error given in the table. If materials are required to meet the sub-zero limits, the purchase order must so state. Selection of materials usually will be required. There will be a substantial charge to select and calibrate thermocouples or materials at temperatures below 0°C if required.

**Percent limits apply directly to temperatures in °C units, but for °F equivalents are applied to the number of °F above or below the ice point(+32 °F).
(i.e., Limit (°F)=(Temp. °F-32 °F) x Percentage.



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