

Thermocouple colour codes

Temperature Ranges



Type	Temperature Range °C (continuous)	Temperature Range °C (short-term)	Tolerance Class 1 (°C)	Tolerance Class 2 (°C)	IEC Colour Code	Application
K	0 to +1100	-180 to +1300	-40 to +375 ± 1.5 °C 375 to 1000 $\pm 0.004*[t]$ °C	-40 to +333 ± 2.5 °C 333 to 1200 $\pm 0.0075*[t]$ °C		The most common sensor, wide range, good in oxidising atmosphere.
J	0 to +700	-180 to +800	-40 to +375 ± 1.5 °C 375 to 750 $\pm 0.004*[t]$ °C	-40 to +333 ± 2.5 °C 333 to 750 $\pm 0.0075*[t]$ °C		Good in dry & reducing atmospheres.
N	0 to +1100	-270 to +1300	-40 to +375 ± 1.5 °C 375 to 1000 $\pm 0.004*[t]$ °C	-40 to +333 ± 2.5 °C 333 to 1200 $\pm 0.0075*[t]$ °C		High stability
R	0 to +1600	-50 to +1700	-40 to +375 ± 1.5 °C 375 to 1000 $\pm 0.004*[t]$ °C	0 to +600 ± 1.5 °C 600 to 1600 $\pm 0.0025*[t]$ °C		High temperatures. Used in UK. Usually in ceramic sheath.
S	0 to +1600	-50 to +1750	0 to +1100 ± 1.0 °C 1100 to 1600 $\pm (1+0.003(t-1100))*[t]$ °C	0 to +600 ± 1.5 °C 600 to 1600 $\pm 0.0025*[t]$ °C		High temperatures. Usually in ceramic sheath.
T	-185 to +300	-250 to +400	-40 to +125 ± 0.5 °C 125 to 350 $\pm 0.004*[t]$ °C	-40 to +333 ± 1.0 °C 133 to 350 $\pm 0.0075*[t]$ °C		Cryogenic sensor. Copes with water present.
E	0 to +800	-40 to +900	-40 to +375 ± 1.5 °C 375 to 800 $\pm 0.004*[t]$ °C	-40 to +333 ± 2.5 °C 333 to 900 $\pm 0.0075*[t]$ °C		High EMF output.