

THERMOCOUPLE ELEMENTS

Choose among types J, K, T, E, N, R, S and B thermocouples in standard assembly or order your required version for special applications. The standard assembly consists of an electrically insulated thermocouple element housed in a stainless steel sheath. Different sheath materials, thermowells, thermocouple heads, ceramic blocks, head-mounted thermocouple transmitters and compression fittings are available to suit your applications.

Type J: The versatile J is a widely used thermocouple due to its low cost and relatively high EMF.

Type K: Thermocouple K is generally used to measure high temperature up to 1260 °C. It is widely used because of its low cost.

Type T: Thermocouple T is not subject to corrosion in moist atmospheres and is commonly used for temperatures up to 370 °C. Due to its fairly linear sub-zero mV-to-temperature relationship, thermocouple T is frequently used for cryogenic applications.

Type E: Thermocouple E has the highest EMF output among all standard thermocouples. It performs well in low temperatures because it does not corrode in sub-zero atmospheres and has low thermal conductivity. Type E thermocouples are preferred for computer applications.

Type N: Thermocouple N has better EMF stability and corrosion resistance than type K thermocouple at elevated temperatures.

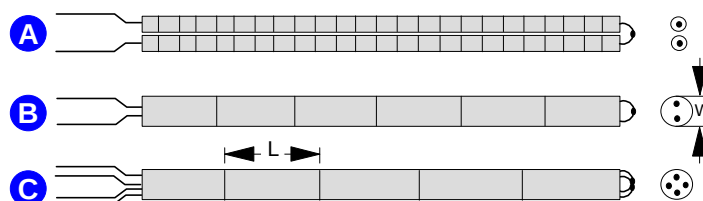
Type R & Type S: These thermocouples should always be protected with ceramics or protection tubes. Continuous use at high temperature causes grain growth to develop which may lead to mechanical failure of the assembly. Negative calibration drift may also occur due to rhodium diffusion as well as rhodium volatilization. Type R is frequently used in industrial applications, while type S is widely used in laboratories.

Type B: Thermocouple B is the same as types R and S but with lower output and less subject to grain growth and drift. The flatness of the temperature-mV curve at normal reference junction ambient temperature permits the use of copper extension wire.

THERMOCOUPLE INSULATORS

Hard-fired ceramic insulators are to separate bare thermocouple wires. Depending upon your application, you can choose among Single-Hole Ceramic Insulator (Type A), 2-Hole Ceramic Insulator (Type B), and 4-Hole Ceramic insulator (Type C). To order please specify the required material, thermocouple type, wire gauge, W and L.

CERAMIC INSULATORS ALUMINA / MULLITE



T/C TYPE	COMPOSITION		GENERALLY USED TEMPERATURE RANGE (°C)	RECOMMENDED MAX. TEMPERATURE LIMITS			
	POSITIVE	NEGATIVE		8 GAUGE (0.125")	14 GAUGE (0.064")	20 GAUGE (0.032")	24 GAUGE (0.020")
J	Iron	Constanta	-20...760	760°C	600°C	480°C	370°C
K	Chromel	Alumel	0...1260	1260°C	1100°C	980°C	870°C
T	Copper	Constanta	-185...370	)	370°C	260°C	200°C
E	Chromel	Constanta	-100...870	870°C	650°C	540°C	430°C
N	Nicosil	Nisil	0...1200	1200°C	1100°C	980°C	870°C
R	Pt-13% Rh	Platinum	540...1480	)	)	)	1480°C
S	Pt-10% Rh	Platinum	540...1480	)	)	)	1480°C
B	Pt-30% Rh	Pt-6% Rh	870...1700	)	)	)	1700°C