EXOTIC THERMOCOUPLE SELECTIONS

JMS Southeast can provide a variety of exotic thermocouple designs and materials. The following information explains some of our capabilities. Please contact JMS Southeast for ordering information on these assemblies.

SENSOR TYPES

TYPE	THERMOELEMENTS	MAX. TEMP.°C
S	Platinum/Platinum 10% Rhodium	1600
B	Platinum 6% Rhodium/Platinum 30% Rhodium	1600
R	Platinum/Platinum 13% Rhodium	1600
W5 (C) ┐ Not	Tungsten 5% Rhenium/Tungsten 26% Rhenium	2200
W3 (D) ┘ ANSI	Tungsten 3% Rhenium/Tungsten 26% Rhenium	2200
W (G)	Tungsten/Tungsten 26% Rhenium	2200

(See Pg. 1-1 for standard materials.)

SHEATH MATERIAL

SHEATH MATERIALS	RECOMMENDED* TEMPERATURE °C	°F	MELTING** POINT °C	°F	WORKING ENVIRONMENT
Aluminum	427	800	660	1220	I
Boron Nitride	2000	3632	3000	5432	I, V, O***
Brass	371	700	1000	1832	I, V
Columbium (Niobium)	1981	3600	2468	4474	V
Copper	316	600	1083	1981	I, V
Graphite	3000	5425	3652	6606	I, V
Hastelloy X	1204	2200	1260-1354	2300-2470	O, I, V
Hastelloy C	1093	2000	1149	2100	O, R, I, V
Inconel 702	1204	2200			O, I
Molybdenum	2204	4000	2610	4730	I, V, R
Platinum	1677	3050	1760	3200	O, I, V
Silicon Nitride	1750	3182	1900	3452	I, V
Silicon Carbide	2200	3992	2700	4892	I, V
S/S 310	1149	2100	1399	2550	O, I, V
Tantalum	2483	4500	3000	5425	I, V
Titanium	850	1562	1675	3047	I, V
Tungsten	3000	5425	3315+	6000+	I, V, R

V=Vacuum I=Inert O=Oxidizing R=Reducing-Hydrogen

*Recommended temperatures indicated are for supported vertical installations and may be reduced if used in an unsupported horizontal direction.

**The melting points listed may not be always considered accurate as some materials sublime before melting.

**Boron Nitride may be used to 850°C in an oxidizing environment.

INSULATION MATERIAL

INSULATION MATERIALS		RECOMMENDED* TEMPERATURE °C	°F	MELTING** POINT °C	°F	WORKING ENVIRONMENT
Magnesium Oxide	MgO	2300	4172	2800	5072	I, O
Alumina Oxide	Al_2O_2	1900	3452	2050	3722	V, I, O
Hafnia Oxide	HfO_2	2400	4352	2812	5094	O, V, I
Boron Nitride	Bn	2000	3632	3000	5432	V, I, O