

# ELEMENT CONSTRUCTION

JMS Southeast offers the choice of single, dual, or triple element thermocouples. A single element thermocouple is used when a single signal is required. If two inputs are required, we offer dual element sensors. Dual isolated elements are frequently used for two different monitoring systems such as a recorder and controller. Although not as commonly used as single or dual elements, JMS also manufactures triple element sensors for applications that require three inputs. It is possible to parallel outputs from a thermocouple to any number of instruments, but this is not a recommended practice. The use of dual or triple elements should also specify isolated junctions. See page 1-1.

SUGGESTED UPPER LIMIT FOR OUTSIDE DIAMETER (SINGLE ELEMENT) °C (°F)						
Sheath		Thermocouple Type				
In.	mm	T	J	E	K	N
1/25"	1.0	260° (500°)	260° (500°)	300° (570°)	700° (1290°)	700° (1290°)
1/16"	1.6	260° (500°)	440° (825°)	510° (950°)	920° (1690°)	920° (1690°)
1/8"	3.2	315° (600°)	520° (970°)	650° (1200°)	1070° (1960°)	1070° (1960°)
3/16"	4.8	370° (700°)	620° (1150°)	730° (1350°)	1150° (2100°)	1150° (2100°)
1/4"	6.3	370° (700°)	720° (1330°)	820° (1510°)	1150° (2100°)	1150° (2100°)
3/8"	9.5	370° (700°)	720° (1330°)	820° (1510°)	1150° (2100°)	1150° (2100°)

TEMPERATURE INFORMATION FOR SHEATH MATERIAL				
MATERIAL SYMBOL	SHEATH MATERIAL	MELTING POINT (°F)	MAX. TEMP. IN AIR (°F)	ATMOSPHERE*
H	304SS	2550	1650	ORNV
J	310SS	2550	2100	ORNV
L	316LSS	2550	1650	ORNV
O	446SS	2700	2100	ORNV
M	Inconel 600	2500	2100	ONV
P	Inconel 702	2620	1500	ONV
Q	Platinum	3216	3000	ON
R	Molybdenum	4750	1000	VNR
S	Tantalum	5440	750	V
T	Titanium	3300	600	V
V	STABALLOY	2552	2220	ORNV

\*KEY  
 O=Oxidizing R=Reducing N=Neutral V=Vacuum

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For high temperature applications 1000°F to 2300°F, new proprietary materials have been developed to perform better than the alloys used in the past.

V = STABALLOY: "...can be used at ultra high temperatures for prolonged periods with little degradation to the thermocouple wires."