This double tube construction allows the use of a alumina primary tube which protects the element and a silicon carbide secondary (or outer) tube which protects the alumina tube from the thermal shock associated with startup conditions.

The alumina inner tube is attached to the upper fitting (between head and union) with a high temperature cement. The silicon carbide outer tube is cemented to the process fitting. Grooves for the tube are machined into the fittings provide additional holding strength. The thermocouple is equipped with a collar seated in the inner fitting to prevent the measuring junction from being crushed.

Assemblies can be used in an oxidizing atmosphere up to 1900°F (1600°C) and 3600°F (2000°C) in a reducing atmosphere. This unique design seals the thermocouples and prevents breakage by restricting movement of the tubes. Protection tubes are field replaceable.

**SPECIFICATIONS**

Calibration: R, S or B  
Element Size: 24 gauge  
Element Insulator: 2 or 4 hole Alumina Beads  
Stop Collar: Mullite Bead  
Upper Fitting  
Size: 1/2" by 3/4"NPT  
Material: Stainless Steel  
Union  
Size: 3/4"NPT  
Material: Steel, (Stainless Steel Available)  
Process Fitting  
Size: 3/4" by 1 1/4"NPT  
Material: Stainless Steel  
Primary Tube  
Size: 7/16"OD by 5/16"ID  
Material: High purity Alumina  
Secondary Tube  
Size: 1"OD by 9/16"ID  
Material: Recrystallized Silicon Carbide

**Notes:**

(1) Rated NEC class 1, Groups B, C and D.  
(2) ATEX approved Ex d IIC, T6.  
(4) For an item that does not fall within the catalog description an (SP) can be added to the ordering code as part of a custom construction.