Composite Platinum Bendable Tube Thermocouples

Vulcan Electric Composite Platinum Bendable Tube Thermocouples offer an excellent alternative when an extra long probe is required with only a short section of the tube exposed to the extreme heat sensing environment. The design incorporates a protective Platinum sheath tube located at the sensing end of the thermocouple assembly in combination with an adjoining second sheath tube that extends to the termination. A proprietary welding process is utilized to produce a seamless transition between the two adjoining sheath materials. An example of a common Composite Thermocouple construction is a Platinum/10% Rhodium alloy at the sensing end transitioned to a nickel alloy sheath. In addition to the unique composite metal sheath construction, the conductors are insulated with premium grade, highly compacted 99.4% magnesium oxide powder, providing a durable and robust assembly with the additional benefit of flexibility and bendability. Most of the thermocouples are fabricated in precious metals calibrations with the most common consisting of type R, S, or B. Base metal types K and N are also available. Manufactured tube diameters range from .032” to .188” with optional metric sizes available. We also offer reduced diameter tips. Thermocouples junction options include grounded and ungrounded types.

**Typical Construction**
- Thermocouple Tube Diameters .032" to .188"
- Thermocouple Platinum Types R, S, or B
- Grounded or Ungrounded Thermocouple Junction
- High Temperature Termination Plugs
- Protective Braid Over Leads
- Platinum/Rhodium 10% or 20% Protective Sheath

**Features**
- Robust Seamless Transition Between Tubes
- Platinum Protective Tip for High Temperature Environments
- Premium Grade Compacted MgO Insulation
- Bendable Small Diameter Thermocouple Tube
- Wide Selection of Tube Compositions
- Optional Reduced Diameter Tips Available

**Benefits**
- High Accuracy Temperature Measurement and Repeatability
- Robust Construction for Longevity
- Sensing Tips Designed for Optimum Performance
- Tube Can Be Formed to Fit Application Shapes
- Significant Savings Compared to Full Length Platinum Tube
- Recyclable as a Partial Trade-In for New Thermocouples

**Application Examples**
- Gas Turbine Combustion Discharge
- Glass Melting and Working
- Crystal Growth
- Refractory Erosion Monitoring
- Research and Development Projects
- Jet Engine Test Cells