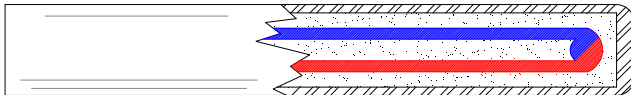


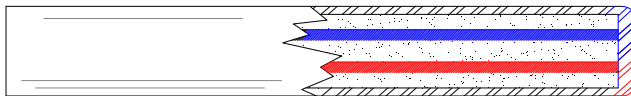
## MEASURING JUNCTION SELECTION GUIDE

Although there are a variety of types of measuring junction configurations ranging from the simplest twisted bare wire type to a reduced tip and weld pad types there are mainly 3 types of junctions available used in the majority of Mineral Insulated type of thermocouple construction. Below is a general description of the 3 major types of junctions but as stated many other styles are available upon request.



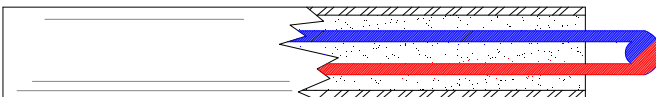
### UNGROUNDED JUNCTION

In the Ungrounded construction the thermocouple conductors are welded together to form the junction which is insulated from the external sheath within the mineral insulation. The response time for an ungrounded junction is longer than it is for a grounded junction thermocouple of the same outside diameter. In ungrounded junction thermocouples, however, conductors are electrically insulated from the sheath; a feature advantageous in applications where thermocouples are used in conductive solutions, or when used isolation of the measuring circuitry is required. It also offers element protection from corrosive contaminants.



### GROUNDING JUNCTION

In the Grounded construction the mineral insulation is completely sealed from contaminants and the measuring junction becomes an integral part of the tip of the thermocouple. The response time approaches that of an exposed junction thermocouple, and in addition, the junction conductors are completely protected from harsh environmental conditions. Smaller diameter thermocouples may be selected to match or better the response time of exposed junction thermocouples. Recommended for use in the presence of moisture, gas or high pressure and where stray electrical noise is not present.



### EXPOSED JUNCTION

The Exposed junction construction offers a faster thermal response time than the other two types of junctions. However, this type of junction is limited to mild environmental conditions as it is unprotected from corrosive conditions and is also limited in maximum temperature exposures.