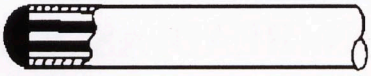
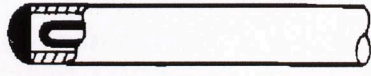
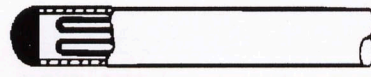
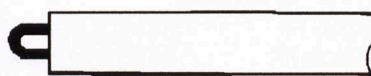
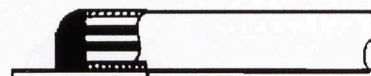


| <b>MEASURING JUNCTIONS</b>  |   |
|---|---|
| <p>ALL MEASURING JUNCTIONS ARE WELDED BY THE TUNGSTEN INERT GAS METHOD TO PREVENT CONTAMINATION AND INSURE PREMIUM PERFORMANCE. AS A GENERAL RULE, THE GREATER THE MASS OF THE JUNCTION, THE GREATER THE RESPONSE TIME.</p> |   |
|    | <p>In this construction, the thermocouple conductors are welded directly to the sheath material. This allows the conductors to be completely sealed from contaminants and the measuring junction then becomes an integral part of the thermocouple tip. This type of junction provides good thermocouple protection against moisture, mechanical damage and pressure while retaining excellent response characteristics.</p>                                |
|    | <p>In this construction, the thermocouple conductors are welded together to form a junction, which is fully insulated from the external sheath with mineral insulation. This type of junction is ideal for use in conductive solutions, averaging or series applications. The response time is considerably longer than that of a grounded junction.</p>  |
|    | <p>This type of junction is limited to dual MTI thermocouples only. A dual element provides for two circuits to simultaneously respond from a single thermal point. In the ungrounded/isolated style, each thermocouple is isolated from each other as well as the outer sheath. The minimum sheath O.D. is .125" for this type of junction. Dual grounded or exposed loop junctions are available in smaller diameters.</p>                                |
|    | <p>Where fast response time is a major consideration and corrosive conditions are not present, the exposed junction is an ideal choice. The bare thermocouple conductors are butt welded to form a junction that extends beyond the sheath for a distance equal to the sheath diameter. The user should limit this style of junction to applications existing in a mild environmental condition(s).</p>   |
|    | <p>"WELD PAD" thermocouple junctions are available in both the grounded or ungrounded style. Standard pad size is 1" x 1" x 1/8" and is normally welded to an alloy pad similar to the sheath material of the thermocouple. This style is available parallel, perpendicular or tube skin design. This junction provides an excellent method of attaching MTI thermocouples to measure surface temperature of boiler tubes, superheater tubes and pipes.</p> |

\*TYPICAL RESPONSE TIMES FOR 1/4" O.D.:  
 EXPOSED LOOP .08 SECONDS  
 GROUNDED 1.7 SECONDS  
 UNGROUNDED 4.5 SECONDS

| <b>TEMPERATURE LIMIT (F°) RECOMMENDATIONS **</b> |             |      |                   |      |     |      |
|--|-------------|------|-------------------|------|-----|------|
| SHEATH DIAMETER                                  | A.W.G. SIZE |      | TEMPERATURE LIMIT |      |     |      |
|  | SINGLE      | DUAL | J                 | K    | T   | E    |
| .020   | 38          | -    | 700               | 1600 | 400 | 800  |
| .032   | 34          | -    | 700               | 1600 | 400 | 800  |
| .040   | 33          | -    | 700               | 1600 | 400 | 800  |
| .062   | 28          | 30   | 700               | 1600 | 400 | 800  |
| .125   | 22          | 24   | 700               | 1600 | 400 | 800  |
| .188   | 20          | 21   | 700               | 2000 | 500 | 1000 |
| .250   | 16          | 18   | 900               | 2000 | 600 | 1000 |
| .313   | 16          | -    | 1000              | 2000 | 600 | 1100 |
| .375   | 15          | -    | 1000              | 2000 | 700 | 1200 |

\*\* - For continuous grounded junction thermocouples in respected sheath materials.

## MTI - INDUSTRIAL TEMPERATURE SENSORS