



## MEAS MICRO-THERMOCOUPLES

- Welded or soldered
- Encapsulated or bare
- Bifilar construction
- Moisture seal (encapsulated only)
- Flexible tip
- High volume, low cost
- Custom packaging

Our Micro-Thermocouples (MTC) are flexible fine gage thermocouples used whenever fast, accurate temperature measurements are required. The thermocouple consists of two dissimilar metals, joined together at one end. A small voltage is produced by the two metals, which can be measured and interpreted by a control system. The dissimilar metals are individually insulated, and an overcoat is present to maintain an intimate bifilar configuration.

### Features

- Junction Types:
  - » Welded, Soldered
- Joint Encapsulation Types:
  - » Polymer Encapsulated, Bare
- Thermocouple Gauges:
  - » 44 AWG, 40 AWG, 38 AWG, 36 AWG
- Wire Insulation
  - » Polyesterimide, Polyimide

### Applications

- Medical



Individual Packaging on Spools

## Dimensions

### Model 600 Soldered, Non-Insulated Junction



### Model 601 Welded, Non-Insulated Junction



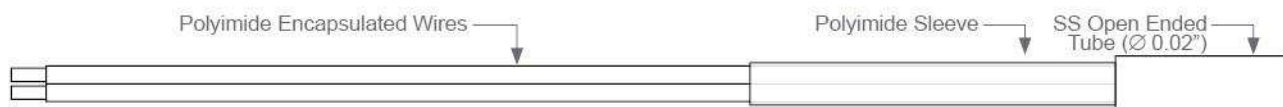
### Model 605 Soldered, Insulated Junction



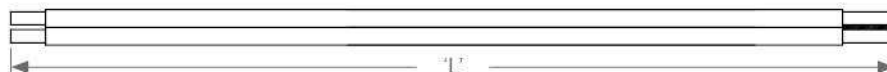
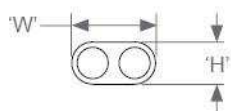
### Model 606 Soldered Welded, Insulated Junction



### Model 602 Welded Junction, Hypo Tube



### Model 607 Soldered Junction, Polyimide Tube



### Performance Specifications

**Wire Strip Length (Tail):** 0.50"  $\pm$  0.25"

**Solder Joint Length:** 0.10" Max.

**Encapsulation Length:** 0.25" Max.

**Encapsulation Profile:**

0.010" Max. for 44 AWG

0.013" Max. for 40 AWG

0.015" Max. for 38 AWG

0.017" Max. for 36 AWG

**Wire length tolerance:**  $\pm$  3.0"

**Packaging:** Sensors wrapped on white plastic spools

**Note:**

Specifications listed above are standard.

Other options are available upon request. Consult factory for details.

#### Commonly Stocked Wire

| Type | AWG | Insulation Type | Insulation Color | Limits of Error |
|------|-----|-----------------|------------------|-----------------|
| T    | 40  | Polyesterimide  | Green/Red        | Special         |
| T    | 40  | Polyesterimide  | Gold/Red         | Special         |
| T    | 44  | Polyesterimide  | Green/Red        | Special         |
| T    | 44  | Polyesterimide  | Black/Red        | Special         |
| T    | 36  | Polyesterimide  | Green/Red        | Special         |
| K    | 40  | Polyimide       | Amber/Black      | Special         |

## Ordering Information

| Micro-Thermocouples |  |                           |                                |        |   |
|---------------------|--|---------------------------|--------------------------------|--------|---|
| Model               | Junction Type  | Junction Insulation       | Profile                        | Common | Notes   |
| 600                 | Soldered (Lead Free)   | Non-Encapsulated (Bare)   | Low Profile (Flat)             | Yes    | Type T Only.  |
| 601                 | Welded   | Non-Encapsulated (Bare)   | Round Profile                  | Yes    | Type K Only.  |
| 605                 | Soldered (Lead Free)   | Insulated                 | Low Profile (Flat)             | Yes    | Type T Only. Encapsulation Rated to 200°C.                            |
| 606                 | Welded   | Insulated                 | Round Profile                  | Yes    | Type K Only. Encapsulation Rated to 200°C.                            |
| 602                 | Welded   | Insulated                 | Round Profile                  | No     | Type K Only. Junction Epoxy Potted in SS Hypo Tube. Rated to 140°C.   |
| 607                 | Soldered   | Insulated                 | Round Profile                  | Yes    | Type T Only. Junction Epoxy Potted in Polyimide Tube. Rated to 150°C. |
| Model               | Thermocouple Type  | Stocked Wire Gauges       | Special Order Gauges           | Common |   |
| T                   | T [Constantan/Copper]  | 40 AWG, 44 AWG, 36AWG     | 38 AWG                         | Yes    |   |
| K                   | K [Alumel/Chromel]   | 40 AWG                    | 44 AWG, 38 AWG, 36 AWG         | Yes    |   |
| Model               | Thermocouple Gauge   | Bare Conductor Diameter   | Bifilar Insulated Wire Profile | Common |   |
| 44                  | 44 AWG   | 0.002"                    | 0.0030" x 0.0060" (H x W) Max. | Yes    |   |
| 40                  | 40 AWG   | 0.003"                    | 0.0041" x 0.0081" (H x W) Max. | Yes    |   |
| 38                  | 38 AWG   | 0.004"                    | 0.0052" x 0.0104" (H x W) Max. | No     |   |
| 36                  | 36 AWG   | 0.005"                    | 0.0065" x 0.0128" (H x W) Max. | Yes    |   |
| Model               | Wire Insulation Type   | Max. Temp                 |                                | Common |   |
| PE                  | Polyesterimide   | 180°C                     | Nylon Bond Coat                | Yes    |   |
| PI                  | Polyimide  | 240°C                     | Nylon Bond Coat                | No     |   |
| Model               | Wire Length 'L'  |                           |                                |        |   |
| ---                 | Define 'L' length in inches<br>Example: (72.0 = 72.0"; 24.5 = 24.5") |                           |                                |        |   |
| Model               | Limits of Error  | Limits for Type T         | Limits for Type K              | Common |   |
| ST                  | Standard   | ± 1.0°C                   | ± 2.2°C                        | Yes    |   |
| SP                  | Special  | ± 0.5°C                   | ± 1.1°C                        | Yes    |   |
| C                   | Custom   | ± 0.2°C (Consult Factory) | Consult Factory                | No     |   |

\*Consult factory for availability.

| Standard Part Numbers* |                     |   |
|------------------------|---------------------|---|
| Part Number            | Model Number        | Description   |
| R-12454-13             | 605-T-40-PE-71.0-SP | Type T, 40 AWG, 71", Polymer Insulated Tip, Solder Junction |
| R-12167-17             | 600-T-44-PE-71.0-SP | Type T, 44 AWG, 71", Bare, Soldered Junction                |
| R-12167-21             | 605-T-44-PE-71.0-SP | Type T, 44 AWG, 71", Polymer Insulated Tip, Solder Junction |
| R-13022-1              | 600-T-40-PE-72.0-ST | Type T, 40 AWG, 72", Bare, Solder Junction                  |

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