Tempco manufactures many styles of industrial thermocouple assemblies for a wide range of industries, from petrochemical to textile applications, where one or more protection tubes may be necessary to protect the thermocouple.

**Thermowell Assemblies**

- **Style TCS – 1 with Thermowell**

- **Style TCS – 3 with Thermowell**

**Ceramic Tube Assemblies**

- **Style TCS – 7**

- **Style TCS – 8**

**Metal Protecting Tube Assemblies**

- **Style TCS – 4**

- **Style TCS – 5**

- **Style TCS – 6**

View Product Inventory @ www.tempco.com
Temperature Sensing
Industrial Thermocouple Assemblies

Thermocouples for Thermowells and Protection Tubes

<table>
<thead>
<tr>
<th>Style TCS – 0</th>
<th>Insulator Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shown with Cast Iron Head</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Style TCS – 1</th>
<th>Insulator Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shown with Cast Iron Head</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Style TCS – 2</th>
<th>Insulator Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shown with Standard Aluminum Head</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Style TCS – 3</th>
<th>Insulator Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shown with Standard Aluminum Head</td>
<td></td>
</tr>
</tbody>
</table>

**Design Features**
- Ceramic Insulator to Insulate Wires
- Galvanized 1/2" Pipe Nipple & Union
- Cast Iron or Aluminum Head
- Used with protection tubes and thermowells shown on pages 14-76 through 14-86

**Ordering Information**
Thermocouples are offered with the options listed in the worksheet below. Create an ordering code by filling in the boxes with the appropriate number and/or letter designation for your requirements, and a part number will be assigned.

**Ordering Code:**
- **Style**: BOX 1
  - 0 = Plain
  - 1 = with Nipple
  - 2 = with Nipple and Union
  - 3 = with Nipple, Union and Nipple

**Calibration Code**: BOX 2
- J = Type J
- K = Type K
- X = Other (Specify)

**Wire Gauge and Insulator Size**: BOX 3
- B = 20 ga. (.172" x .118" insulator)
- C = 14 ga. (.375" x .217" insulator)
- D = 8 ga. (.437" x .250" insulator)
- X = Other (Specify)

**“A” Dimension** (TCS –1, TCS –2 & TCS –3 only) BOX 5
- 01 to 99 inches or use Codes below for standard length
- Enter 00 for TCS – 0 Style
  - TCS1: S1 = 1"
  - TCS2: S1 = 2-1/2"
  - TCS3: S1 = 3-1/2"
  - S2 = 2-1/2"
  - S2 = 4"
  - S2 = 6-1/2"
  - S3 = 5-1/2"
  - S3 = 7"
  - S3 = 12-1/2"

**Connection Head**: BOX 6
- A = Standard Size Aluminum
- H = Standard Cast Iron
- S = Stainless Steel
*Note*: All have 1/2" conduit connection (3/4" available). For overall dimensions see pages 14-98 through 14-100.

**Special Requirements**: BOX 7
- X = Specify
- 0 = None

**“L” Dimension**: BOX 4
- Whole inches
- 00 to 99

⚠️ **WARNING**: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

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**Industrial Thermocouple Assemblies**

**Metal Protection Tube Thermocouple Assemblies**

Shown with Standard Die Cast Aluminum Head

Shown with Cast Iron Tube

**Ordering Information**

Thermocouples are offered with the options listed in the worksheet below. Create an ordering code by filling in the boxes with the appropriate number and/or letter designation for your requirements, and a part number will be assigned.

**Design Features**
- Widely used in high temperature industrial process heating applications such as furnaces, ovens; and petrochemical and textile applications up to 2200°F (1204°C)
- Pipe size protection tubes made with schedule 40 pipe in various steel and nickel alloys
- Optional process mounting bushing welded on protection tube
- Thermocouple heads are available in aluminum, cast iron or stainless steel. Explosion proof heads are also available in aluminum or stainless steel.

**Ordering Code:**

Pipe Size Sch. 40 BOX 1
- H = 1/2" Pipe (.84" OD x .62" ID)
- M = 3/4" Pipe (1.05" OD x .82" ID)
- N = 1" Pipe (1.31" OD x .05" ID)
- R = 1-5/8" OD x 7/8" ID (Cast Iron Only)
- X = Other (Specify)

Wire Gauge BOX 4
- B = 20 ga.
- C = 14 ga.
- D = 8 ga.
- X = Other (Specify)

"U" Dimension BOX 7
Whole inches 01 to 99
Enter 00 for cast iron tube or if no bushing required

"L" Dimension BOX 5
Whole inches 12 to 96
(in 6-inch increments)
Cast Iron is available in limited lengths.

Connection Head BOX 8
- A = Standard Size Aluminum
- H = Standard Cast Iron
- S = Stainless Steel

Note: All have 1/2" conduit connection (3/4" available). For overall dimensions see pages 14-98 through 14-100.

Process Mounting Bushing BOX 6
- 0 = No Bushing Required
  Enter 0 for Cast Iron Tube
- M = 3/4" NPT (For 1/2" pipe only)
- N = 1" NPT (For 1/2 and 3/4" pipe only)
- P = 1-1/4" NPT
- X = Other (Specify)

Special Requirements BOX 9
- X = Specify
- 0 = None

**Calibration Code** BOX 3
- J = Type J
- K = Type K
- X = Other (Specify)

**WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

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**Design Features**
- Right Angle for Over-the-Side Application
- Cast Iron or Aluminum Head
- Available with Metal Pipe or Silicon Carbide (Carbon Bonded) 2300°F (1260°C)

**Ordering Information**
Thermocouples are offered with the options listed in the worksheet below. Create an ordering code by filling in the boxes with the appropriate number and/or letter designation for your requirements, and a part number will be assigned.

**Ordering Code:**

<table>
<thead>
<tr>
<th>Elbow Type</th>
<th>Wire Gauge</th>
<th>“L1” Dimension</th>
<th>“L2” Dimension</th>
<th>Connection Head</th>
<th>Special Requirements</th>
</tr>
</thead>
</table>
| 5 = Standard Fixed Elbow | B = 20 ga.  
C = 14 ga.  
D = 8 ga. | Whole inches 12 to 96  
(in 6-inch increments) | Whole inches 12 to 96  
(in 6-inch increments) | A = Standard Size Aluminum  
H = Standard Cast Iron  
S = Stainless Steel  
**Note:** All have 1/2” conduit connection (3/4” available). See overall dimensions on pages 14-98 through 14-100. | X = Specify  
0 = None

**Sheath Material**

| 1 = Carbon Steel (Black Pipe)  
2 = 304 SS  
3 = 316 SS  
4 = 446 SS  
5 = Cast Iron (1-5/8” OD × 7/8” ID Only)  
6 = Alloy 601  
7 = Silicone Carbide (2-1/16” OD Only)  
X = Other (Specify) |

**Pipe and Tube Size**

| H = 1/2” Pipe (.84” OD × .62” ID)  
M = 3/4” Pipe (1.05” OD × .82” ID)  
N = 1” Pipe (1.31” OD × 1.05” ID)  
R = 1-5/8” OD × 7/8” ID (Cast Iron Only)  
S = 2-1/16” OD (Silicone Carbide Only)  
X = Other (Specify) |

**Calibration Code**

| J = Type J  
K = Type K  
X = Other (Specify) |

**Note:** All have 1/2” conduit connection (3/4” available). See overall dimensions on pages 14-98 through 14-100.