**CONNECTION HEAD WITH BEADED THERMOCOUPLE AND MOUNTING HARDWARE**

**How to build a part number:**

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don’t see exactly what you need? Give us a call!

<table>
<thead>
<tr>
<th>SENSOR TYPE</th>
<th>ASSEMBLY STYLE</th>
<th>CONNECTION</th>
<th>CONNECTION LENGTH</th>
<th>WIRE GAUGE</th>
<th>BEAD SHAPE</th>
<th>CALIBRATION</th>
<th>HOT JUNCTION</th>
<th>INSULATOR MATERIAL</th>
<th>BEAD LENGTH</th>
<th>OPTIONS</th>
</tr>
</thead>
</table>

**SENSOR TYPE**
BTC – Beaded thermocouple

**ASSEMBLY STYLE**
80 – Sheath with cast aluminum head and beaded base-metal thermocouple; head conforms to NEMA 4 requirements; 3/4" NPT conduit connection; ceramic terminal block; 1/2" NPT carbon steel process connection; gasketed screw cover with stainless steel chain; maximum head temperature 100°C

**CONNECTION**
H – Head only, no mounting hardware; 1/2" NPT (female) instrument connection
N – 1/2" NPT carbon steel nipple
NU – 1/2" NPT carbon steel nipple and union
NUN – 1/2" NPT carbon steel nipple, union and nipple
   Add suffix “15” for 304 stainless steel
   Add suffix “25” for 316 stainless steel
   See chart below for restrictions

**CONNECTION LENGTH**
### (e.g., 006 = 6 inch)
(See chart below for standard available lengths)

**WIRE GAUGE**
14 – 0.064" diameter
08 – 0.128" diameter (K & KK calibrations only)

**BEAD SHAPE**
R – Round

**CALIBRATION** – Standard limits
J – Single J
JJ – Dual J
K – Single K
KK – Dual K

**HOT JUNCTION**
U – Underground junction
E – Exposed junction
TE – Twisted exposed

**INSULATOR MATERIAL**
M – Mullite

**BEAD LENGTH** (96" maximum)
L# – (e.g., L6 = 6 inch sheath, L12.5 = 12.5 inch length)

**OPTIONS** – see back page

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![Diagram](image-url)
### AVAILABLE OPTIONS and MODIFICATIONS

#### ASSEMBLY OPTIONS

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAG1</td>
<td>Stainless steel tag and wire</td>
</tr>
<tr>
<td>CAL1</td>
<td>NIST traceable calibration [specify point(s)]</td>
</tr>
<tr>
<td>CRT1</td>
<td>Certificate of conformance</td>
</tr>
<tr>
<td>WC20</td>
<td>Wiring cable gland for 0.187 - 0.312 diameter cables, for terminal heads with 1/2&quot; NPT conduit connections</td>
</tr>
<tr>
<td>WC21</td>
<td>Wiring cable gland for 0.125 - 0.187 diameter cables, for terminal heads with 1/2&quot; NPT conduit connections</td>
</tr>
</tbody>
</table>

#### NEMA 4 OR 4X TERMINAL HEAD OPTIONS

<table>
<thead>
<tr>
<th>Head without ground screw</th>
<th>Head with internal ground screw</th>
<th>Process Connection</th>
<th>Conduit Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cast aluminum, screw cover with chain, NEMA 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HD10 HD11</td>
<td>Std. HD13</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>HD50 HD51</td>
<td>Std. HD53</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>Epoxy-coated aluminum, screw cover with chain, NEMA 4X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HD20 HD21</td>
<td>Std. HD23</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>HD22 HD23</td>
<td>Std. HD23</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>Cast iron, screw cover with chain, NEMA 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HD40 HD41</td>
<td>Std. HD41</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
</tr>
</tbody>
</table>

Notes:
1. See Accessories for additional information

#### EXTENSION WIRE

A selection of extension-grade thermocouple wire is available to connect the sensor to its input device. Consult Accessories section.

#### THERMOWELLS & PROTECTION TUBES

For a complete offering of metal, ceramic and composite material thermowells and protection tubes, please see the Thermowell and Protection Tube sections.

#### REPLACEMENT ELEMENT

- **Style 50**

- **Replacement Element** – see Style 50

- **Style 50** – Beaded replacement for base-metal thermocouple

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Note: Many non-standard options, including additional sheath diameters and materials, may also be available - consult AST for specific requirements.