

Accessories

Connector Systems

Many varieties of thermocouple connectors are available from Watlow. Whether you're looking for high impact strength, fast installation, or high temperature capabilities, you'll find the right connector system for your application at Watlow.

Listed below are the various connectors and systems from which to choose:

- Standard thermocouple connectors
- Quick-attach thermocouple connectors
- High temperature connectors
- Three-pole connectors for RTD applications
- Miniature thermocouple connectors

Watlow's standard line of connector systems are lightweight, rugged and accurate and features a clamping mechanism that is unique in the industry.

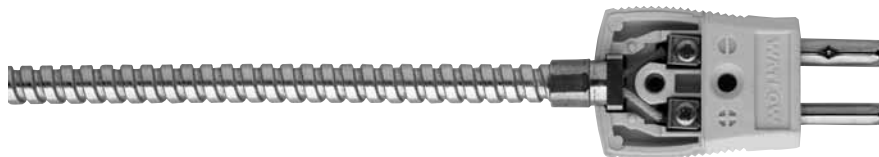
The new, easy-to-use clamping connection will replace the traditional screw and wire wrap. This new device allows a straight-in application, which squeezes the wire and forms a tight connection assuring a clean, strong signal.

US Patent Number D424016, additional patent pending.

Applications and Technical Data

To eliminate measuring errors, all Watlow connectors are made exclusively of matching metal alloys. If the connector material had different thermal EMF characteristics from the thermocouple or lead wire, a uniform temperature would have to be maintained across the connector. This is not always easily obtainable, nor is it practical.

Note: All accessories subject to minimum purchase quantities.



If a temperature gradient did exist across the connector made of a third metal, unwanted EMFs generated between the thermoelectric materials and the extremities of the connectors would cause an error appearing at the thermocouple output. The larger the gradient the larger the error. In some cases and depending on the calibration, net errors may occur that are even larger than the gradient.

Features and Benefits

ASTM color coded

- Assures easy identification

Compensated alloys

- Provides accuracy in readings

Glass-filled thermoplastic

- Provides high impact strength

Captive cap screws

- Secure connection

Connection hardware

- Redesigned to eliminate a number of components

Meets requirements for ASTM E1129

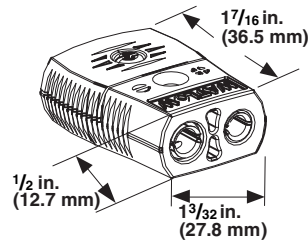
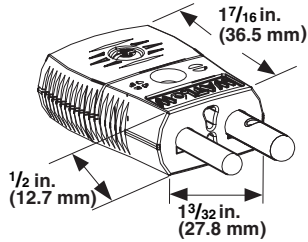
- Ensures adequate pin spacing, dimensions and contact resistance

Rated to 215°C (425°F)

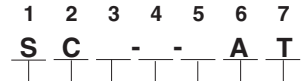
Accessories

Connector Systems

“S” SERIES Standard Connectors, 425°F



Ordering Information—To order, complete the part number on the right with the information below:



1-2. “S” SERIES Standard Connector, 215°C (425°F)

3. Style

- M = Male (plug)
- F = Female (jack)

4. Calibration

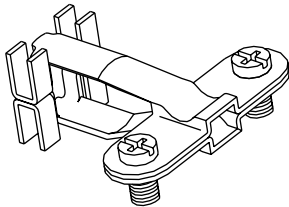
- E = Type E
- J = Type J
- K = Type K
- S = Type S/Type R
- T = Type T
- U = Uncompensated

5. Name Plate

- W = With Watlow name
- N = Without name label (For J and K calibrations only)

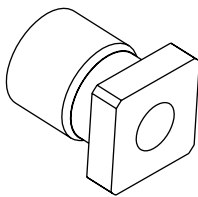
6-7. Color Code

- AT = ASTM E 230 color code/uncompensated = white

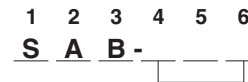


Cable Clamp Style for Male or Female

SAC-220

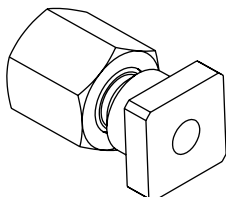


Crimp/Braze Style

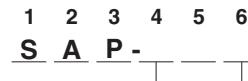


4-6. Sheath size

- 040 = 0.040 inches
- 063 = 0.063 inches
- 090 = 0.090 inches
- 125 = 0.125 inches
- 188 = 0.188 inches
- 250 = 0.250 inches
- 30M = 3.0 mm
- 60M = 6.0 mm



Compression Style



4-6. Sheath size

- 063 = 0.063 inches
- 125 = 0.125 inches
- 188 = 0.188 inches
- 250 = 0.250 inches
- 30M = 3.0 mm
- 60M = 6.0 mm

Note: All accessories subject to minimum purchase quantities.

Accessories

Connector Systems

Quick-Attach Thermocouple Connectors, 425°F

Watlow's time-saving thermocouple connectors are fast and convenient to use. No loose parts, no cap removal, no need to wrap wires around terminal screws. Simply insert stripped wire ends into plug or jack, tighten down two terminal screws, and you're finished. There is no need to remove Watlow cable clamp, either.

Accepts solid or stranded wires to 16 gauge. Available in Type J, K and T calibrations, ASTM E 230 color-coded. The connector is made of a high impact strength, 215°C (425°F) rated glass filled thermoplastic with matching thermocouple materials throughout. Other features and specifications are identical to standard Watlow "S" SERIES quick-disconnect connectors.

Ordering Information—To order, complete the part number on the right with the information below:

1 2 3 4 5 6 7 8 9 10 11
S K - -W A T-A S S Y

1-2. "S" SERIES Standard Connector, 215°C (425°F)

3. **Style**
 M = Male (plug)
 F = Female (jack)

4. **Calibration**
 J = Type J
 K = Type K
 T = Type T

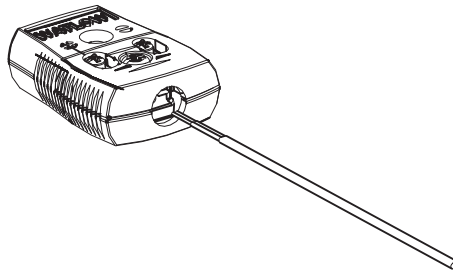
5. **Name Plate**
 W = With Watlow name

6-7. **Color Code**
 AT = ASTM E 230 color code

8, 9, 10-11. **ASSY** = Comes with cap assembly on body

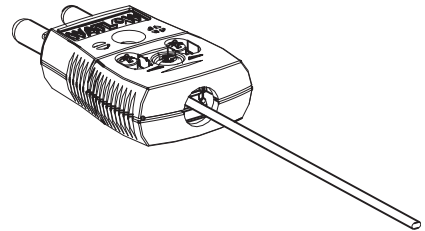
Step 1.

Simply insert stripped wires into connector.



Step 2.

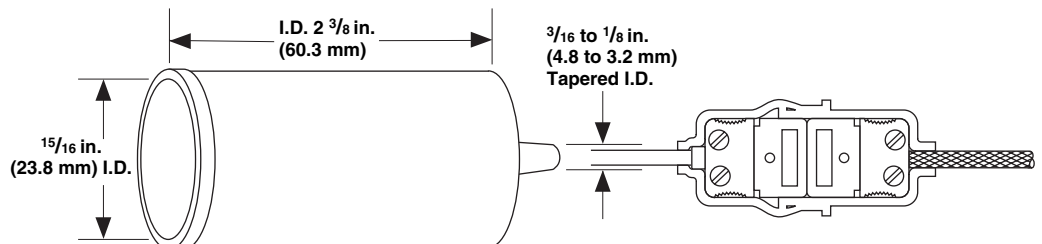
Tighten down two terminal screws, and you are finished.



Weatherproof Boots

Part No. 943

Used in pairs as illustrated, these flexible neoprene rubber boots add moisture protection to standard plug-to-jack connections.



Note: All accessories subject to minimum purchase quantities.

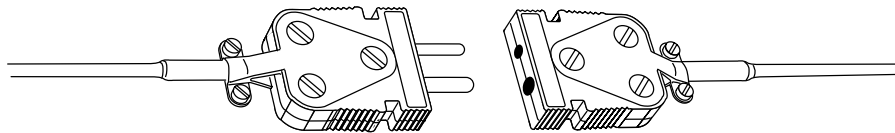
Accessories

Connector Systems

High Temperature Connectors, 1000°F

The ASTM E 230 color-coded bodies of these high temperature ceramic connectors are practical for temperatures up to 540°C (1000°F). Colors are permanent and will not fade even after exposure to temperature. The positive-locking screw type terminals are captive for easy assembly. Solid plug pins and collet inserts are made of thermocouple alloys (except Types R/S which are compensated).

Calibration must be specified when ordering. Both plug and jack are marked for polarity. Standard 7/16 inch pin spacing.

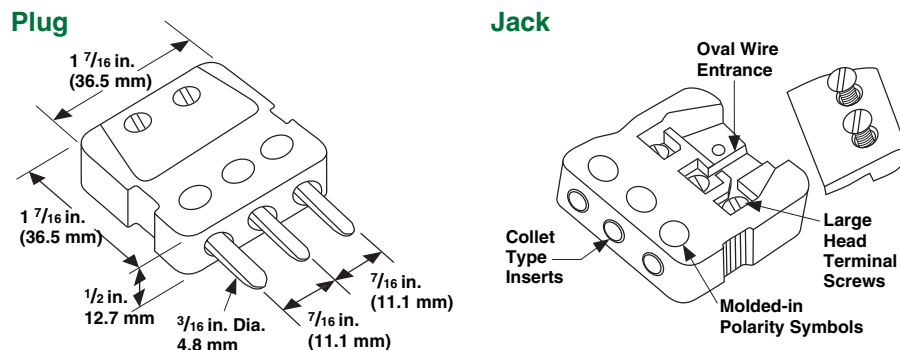


| Code Number | Description |
|-------------|---|
| 912-* | Ceramic plug (specify calibration J, K, R/S or E) |
| 913-* | Ceramic jack (specify calibration J, K, R/S or E) |
| Part Number | Description |
| 925-125 | XACTPAK adapter for plug or jack (0.125 inch sheath O.D.) |
| 925-188 | XACTPAK adapter for plug or jack (0.188 inch sheath O.D.) |
| 925-250 | XACTPAK adapter for plug or jack (0.250 inch sheath O.D.) |
| 926 | Cable clamp for ceramic plug or jack |

* Insert calibration letter for full part number 912-J

Three-Pole Connectors for RTD Applications, 400°F

- Three pins to accommodate most RTD sensor applications
- Rated to 200°C (400°F) continuous
- Jacks have spring-loaded inserts for positive contact
- Larger diameter negative pin prevents user from reversing polarity



| Part Number | Description |
|-------------|--|
| TH-335 | 3-pole connector plug with copper pins |
| TH-336 | 3-pole connector jack with copper inserts |
| TH-337-125 | Compression-type adapter for 0.125 inch tube |
| TH-337-188 | Compression-type adapter for 0.188 inch tube |
| TH-337-250 | Compression-type adapter for 0.250 inch tube |
| 80701201 | Cable clamp for 3-pole connector |

Note: All accessories subject to minimum purchase quantities.

Accessories

Connector Systems

Miniature Thermocouple Connector System, 400°F

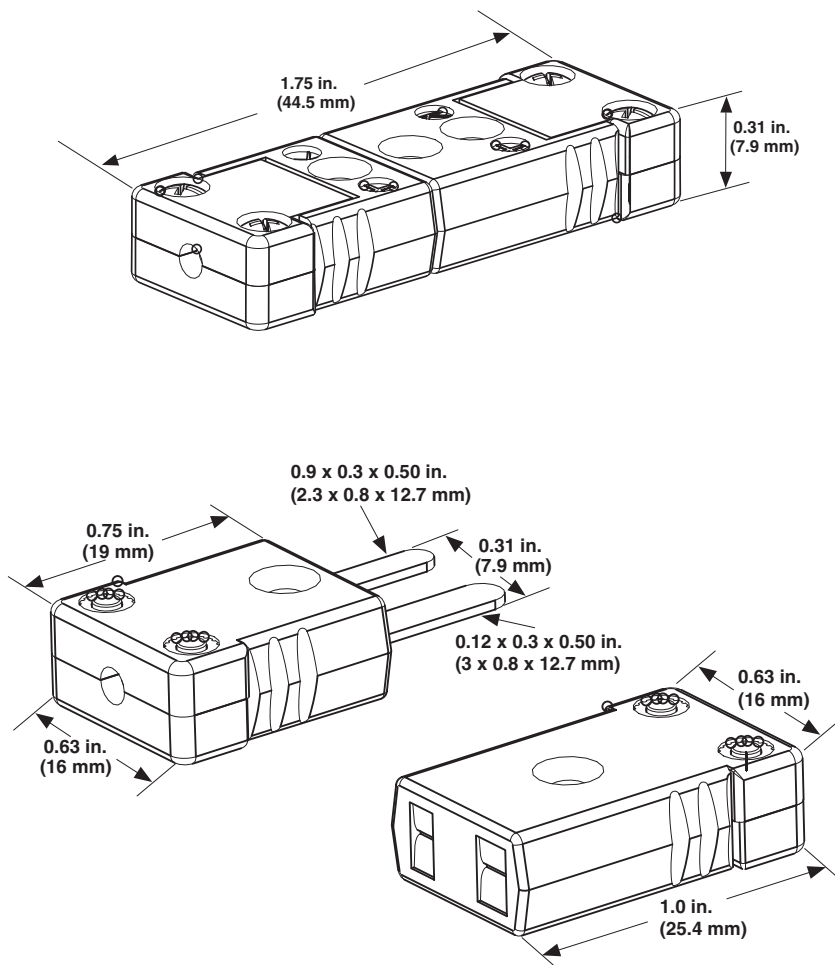
- Miniature design—mates with other miniature size thermocouple connectors
- Molded-in pin contacts assure precise alignment (no loose, wobbly parts)
- Rugged, high quality, high performance connectors
- Employ matching thermocouple alloy materials
- Available in all standard calibrations and copper-copper, ASTM E 230 color-coded
- Exclusive channel design isolates the wires for clean, strong signals.

Connection Method

Simply insert the stripped ends of your thermocouple wire between contact base and washer, tighten down the two terminal screws and you're finished. There are no loose parts to contend with. Do not wrap conductors around the terminal screws.

Watlow miniature connectors can accommodate wire sizes up to 20 AWG, stranded. The connector is made of high impact strength, 200°C (400°F) rated, glass-filled thermoplastic. To maintain the highest measurement accuracy, matching thermocouple alloy materials are employed throughout. The same fine features and high quality performance characteristics found in Watlow's standard connectors also apply with the miniature connectors.

Miniature Connectors Compared with Standard Connectors

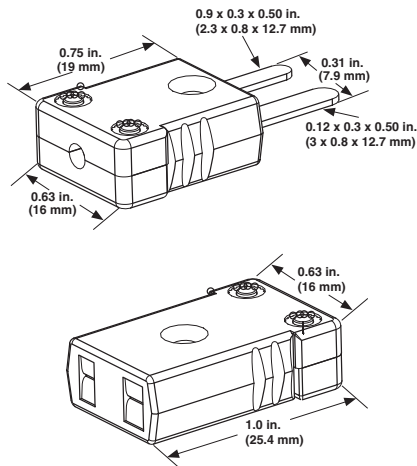


Note: All accessories subject to minimum purchase quantities.

Accessories

Connector Systems

Miniature Thermocouple Connector System, 400°F



Ordering Information—To order, complete the part number on the right with the information below:

1 2 3 4 5 6 7
M C - - A T

1-2. "M" SERIES Miniature Connector, 204°C (400°F)

3. Style

- M = Male (plug)
- F = Female (jack)

4. Calibration

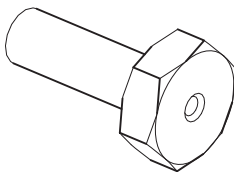
- E = Type E
- J = Type J
- K = Type K
- N = Type N
- R = Type R
- S = Type S
- T = Type T
- U = Uncompensated

5. Name Plate

- W = With Watlow name
- N = Without name label

6-7. Color Code

- AT = ASTM E 230 color code/uncompensated = white

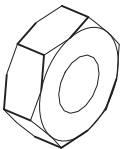


Crimp Style

1 2 3 4 5 6
M B C - - -

4-6. Sheath size

- 040 = 0.040 inches
- 063 = 0.063 inches



Braze Style

1 2 3 4 5 6
M B B - - -

4-6. Sheath size

- 040 = 0.040 inches
- 063 = 0.063 inches
- 125 = 0.125 inches

Note: All accessories subject to minimum purchase quantities.

Accessories

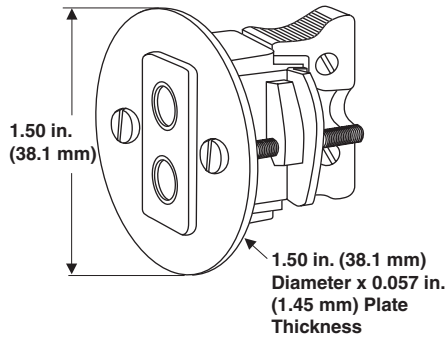
Connector Systems

Panel Mount Hardware

Single Panel Mount Hardware, 425°F

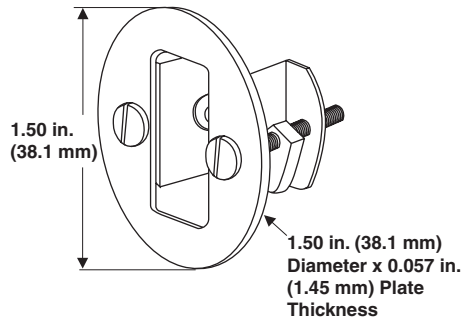
Designed for use with Watlow's "S" standard thermocouple connectors, these units fit panels up to 7/16 inch thick. Panel cutout: 1 1/8 inch to 1 5/32 inch hole. Units fit into standard 3/4 inch knockouts.

SKP Style



Single circuit panel mount with quick-disconnect jack included. Available calibrations J, K, T, R/S and Cu/cu.

SNP Style



Panel mount hardware only without Watlow name.*

Ordering Information—To order, complete the part number on the right with the information below:

1 2 3 4 5 6 7
S K P - -W A T

1-2-3. "SKP" SERIES Single Panel Mount Standard Connector, 218°C (425°F)

4. Calibration

J = Type J

K = Type K

T = Type T

5. Name Plate

W = With Watlow name

6-7. Color Code

AT = ASTM E 230 color code

Note: All accessories subject to minimum purchase quantities.