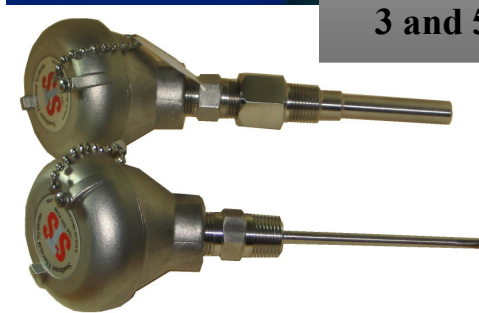


STS Southeast Thermal Systems L.L.C. Temperature Sensors **INNOVATIVE SENSOR SOLUTIONS**

We supply quality standard and custom sensor products and accessories. With a pledge to provide responsive customer service. Complete satisfaction is your guarantee.



- The STS Solution:**
- Standard & Custom-designed RTDS and Thermocouples
 - NIST traceable laboratory & calibration services
 - Transmitter: isolated, non-isolated and indicating
 - Connectors and connector panels
 - Corrosion-resistant, Teflon® encapsulated sensors
 - Thermowell assemblies and thermowells
 - Insulated wire and cable
 - European (metric) retrofit sensors & components
 - Expedited delivery: next day, 3 and 5 day services



STS Southeast Thermal Systems LLC Temperature Sensors

Standard and Custom RTD's:

Southeast Thermal Systems LLC offers a full line of Resistance Temperature Detectors (RTDs) for almost any application. From food and dairy applications to high tech process applications, we have a sensor for your needs. Temperature ranges go from -200°C all the way up to 650°C. We utilize both thin film and wire wound technology in our RTD assemblies to maximize your options. We also have several accuracy ranges to work with today's demanding processes.

Benefits:

- Wide temperature ranges
- Excellent stability and accuracy
- Built rugged for the harshest environments
- Several styles and configurations available
- Competitively priced

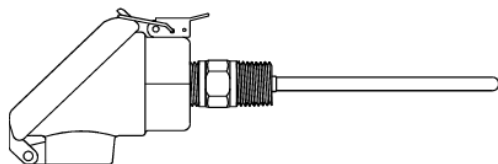


Standard and Custom Thermocouples:

We offer three basic types of thermocouples: Mineral Insulated (MgO), Tube & Wire, and industrial thermocouples. We will work with you regarding your application to determine the best type for your needs.

Key Benefits:

- Custom assemblies available
- Wide variety of configurations
- Several types available (J,K,E,T,R,S and more)
- Competitively priced

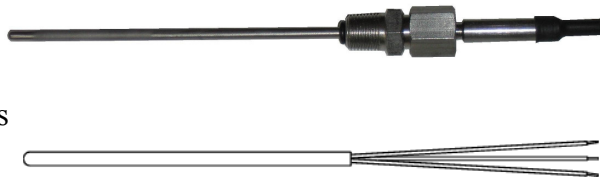


Specialty Probes:

Southeast Thermal Systems LLC offers a full line of RTD and Thermocouple thermowell assemblies. We can build a sensor for your existing thermowell or provide the entire assembly. From standard threaded thermowells to large flanged thermowells and from common metals to exotic metals, we can provide you with the assembly you are looking for.

Key Benefits:

- Built to fit to your needs
- Several metals and configurations available
- Assemblies built to fit your existing thermowells
- Competitively priced



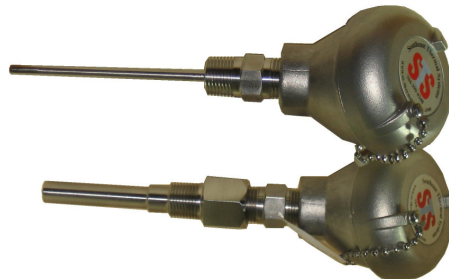
Thermocouple and RTD Accessories and

Thermocouple and RTD Wires:

Southeast Thermal Systems LLC offers a complete line of accessories from standard plugs and jacks to thermocouple and RTD wire. We also carry standard plastic accessories such as bayonet fittings and compression fittings. Please call us to discuss your accessory needs.

Key Benefits:

- In stock for immediate shipment
- Large product offering



Transmitters:

We have a wide offering of head-mount transmitters in stock for immediate shipment. We have everything from a low cost solder link style to intelligent microprocessor based transmitters. Southeast Thermal Systems LLC has a transmitter that will fit your application. ALL of our transmitters come with a **5 YEAR WARRANTY**.

"Q" Series Transmitters:

Q2 Transmitter

- T/C or RTD Input
- Programmable
- Isolated Input/Output

Q3 Transmitter

- Universally Mountable (DIN or Oval Style Heads)
- T/C or RTD Input
- Programmable
- Non-Isolated Input/Output

Q4 Transmitter

- Hart Protocol

Standard Features:

- Standard and Custom Designed RTD's and Thermocouples
- NIST Traceable Laboratory and Calibration Services
- Transmitters: Isolated, Non-isolated, and indicating
- Connectors and Connector Panels

Ordering Information:

- Sheath Termination
- Element Type
- Accuracy and Temperature Coefficient
- Temperature Range
- Sheath Diameter
- Sheath Material
- Lead Wire Terminations
- Lead Wire Length
- Lead Wire Type (J, K, RTD)
- Sheath Mounting Fitting
- Sheath Length

- T/C or RTD Input
- Programmable
- Isolated Input/Output

Q5 Transmitter

- T/C Input
- Programmable
- Isolated Input/Output

Q7 Transmitter

- T/C or RTD Input
- Solder Pad Adjustable
- Non-Isolated Input/Output

Q9 Transmitter

- RTD Input
- Programmable
- Non-Isolated Input/Output

Key Benefits:

- Full application coverage
- Competitively priced
- In stock for immediate shipment
- Pricing includes ranging
- Additional units available (DIN rail, intrinsically safe...)

- Expedited Delivery: Next Day, 3 and 5 Day Services
- European (metric) Retrofit Sensors and Components
- Corrosion Resistant, Teflon Encapsulated Sensors
- Thermowell Assemblies and Thermowells
- Insulated Wire and Cables
- Specialized Contract Assembly Services

Industries That Use

Temperature Sensors:

- Dairy
- Beverage
- Meat Processing
- Chemical and Petrochemical
- Plastics
- Medical
- Pharmaceutical
- Confectionary
- Energy/Alternative energy
- Heat Treating
- Packaging
- Laboratory/Research and Development
- Adhesive Systems
- Customized applications

Thermocouple Identification

| ANSI CODE | ALLOY COMPOSITION | | COLOR OF INSULATION | | | | | | | | | | | |
|-----------|-------------------------------|------------------------------|-------------------------------|--------|--------|-------------------|--------|--------|-----------------|--------|--------|--------------------------|--------|--------|
| | | | AMERICAN: ISA-RP1 (ASA-C96-1) | | | BRITISH (BS 1843) | | | GERMAN DIN43714 | | | JAPANESE JIS C 1610-1981 | | |
| | + WIRE | - WIRE | OUTER SHEATH | + WIRE | - WIRE | OUTER SHEATH | + WIRE | - WIRE | OUTER SHEATH | + WIRE | - WIRE | OUTER SHEATH | + WIRE | - WIRE |
| J | IRON Fe | CONSTANTAN Cu-Ni | BLACK | WHITE | RED | BLACK | YELLOW | BLUE | BLUE | RED | BLUE | YELLOW | RED | WHITE |
| K | CHROMEL Ni-Cr | ALUMEL Ni-Al | BROWN | YELLOW | RED | RED | BROWN | BLUE | GREEN | RED | GREEN | BLUE | RED | WHITE |
| T | COPPER Cu | CONSTANTAN Cu-Ni | BROWN | BLUE | RED | BLUE | WHITE | BLUE | BROWN | RED | BROWN | BROWN | RED | WHITE |
| E | CHROMEL Ni-Cr | CONSTANTAN Cu-Ni | BROWN | PURPLE | RED | BROWN | BROWN | BLUE | BLACK | RED | BLACK | PURPLE | RED | WHITE |
| B | PLATINUM-30% RHODIUM Pt-30%Rh | PLATINUM-6% RHODIUM Pt-13%Rh | GREY | GREY | RED | — | — | — | GREY | RED | GREY | GREY | RED | GREY |
| R | PLATINUM-13% RHODIUM Pt-13%Rh | PLATINUM Pt | GREEN | BLACK | RED | GREEN | WHITE | BLUE | WHITE | RED | WHITE | BLACK | RED | BLACK |
| S | PLATINUM-10% RHODIUM Pt-10%Rh | PLATINUM Pt | GREEN | BLACK | RED | GREEN | WHITE | BLUE | WHITE | RED | WHITE | BLACK | RED | BLACK |
| N | NICROSIL Ni-Cr-Si | NISIL Ni-Si-Mg | BROWN | ORANGE | RED | — | — | — | — | — | — | — | — | — |

Input Specifications

| Sensor | Input | Max. Range F | Accuracy F | Max. Range C | Accuracy C |
|--------|--------------------|---------------|------------|---------------|------------|
| J | Iron Constantan | -58 to 1830 | ±3.6 | -50 to 999 | ±2 |
| K | Chromel-Alumel | -58 to 2500 | ±3.6 | -50 to 1370 | ±2 |
| T | Copper-Constantan | -454 to 752 | ±3.6 | -270 to 400 | ±2 |
| E | Chromel-Constantan | -58 to 1382 | ±3.6 | -50 to 750 | ±2 |
| B | PT 30% RH/Pt 6% RH | 572 to 3272 | ±5.4 | 300 to 1800 | ±3 |
| R | Pt 10% RH/Pt | 32 to 3182 | ±3.6 | 0 to 1750 | ±2 |
| S | Pt 10% RH/Pt | 32 to 3182 | ±3.6 | 0 to 1750 | ±2 |
| N | Nicrosil-Nisil | -58 to 2372 | ±3.6 | -50 to 1300 | ±2 |
| RTD | PT 100 ohms (DIN) | -328 to 932 | ±0.72 | -200 to 500 | ±0.4 |
| RTD | PT 100 ohms (JIS) | -328 to 932 | ±0.72 | -200 to 500 | ±0.4 |
| Linear | -10mV to 60MV | -1999 to 9999 | ±0.05 | -1999 to 9999 | ±0.05 |

Type J and K Adjustable Thermocouples

Spring Adjustable Thermocouples With Spade Lugs



| Thermocouple Lead Length | Grounded Part Number | Un-Grounded Part Number |
|--------------------------|----------------------|-------------------------|
| 48" | (J)(K)-ASTC48 | (J)(K)-UASTC48 |
| 72" | (J)(K)-ASTC72 | (J)(K)-UASTC72 |
| 96" | (J)(K)-ASTC96 | (J)(K)-UASTC96 |
| 120" | (J)(K)-ASTC120 | (J)(K)-UASTC120 |

Spring Adjustable Thermocouples With Standard Male Plug

| Thermocouple Lead Length | Grounded Part Number | Un-Grounded Part Number |
|--------------------------|----------------------|-------------------------|
| 48" | (J)(K)-ASTC48P | (J)(K)-UASTC48P |
| 72" | (J)(K)-ASTC72P | (J)(K)-UASTC72P |
| 96" | (J)(K)-ASTC96P | (J)(K)-UASTC96P |
| 120" | (J)(K)-ASTC120P | (J)(K)-UASTC120P |

Armor Cable Adjustable Thermocouples With Spade Lugs



| Thermocouple Lead Length | Grounded Part Number | Un-Grounded Part Number |
|--------------------------|----------------------|-------------------------|
| 48" | (J)(K)-AATC48 | (J)(K)-UAATC48 |
| 72" | (J)(K)-AATC72 | (J)(K)-UAATC72 |
| 96" | (J)(K)-AATC96 | (J)(K)-UAATC96 |
| 120" | (J)(K)-AATC120 | (J)(K)-UAATC120 |

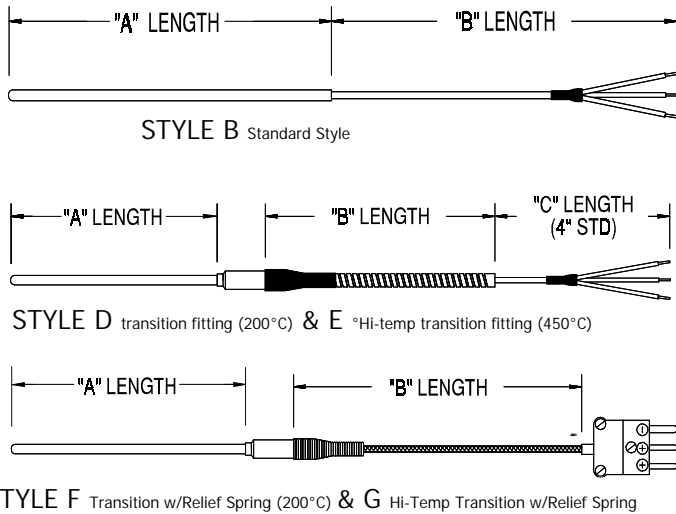
Armor Cable Adjustable Thermocouples With Standard Male Plug

| Thermocouple Lead Length | Grounded Part Number | Un-Grounded Part Number |
|--------------------------|----------------------|-------------------------|
| 48" | (J)(K)-AATC48P | (J)(K)-UAATC48P |
| 72" | (J)(K)-AATC72P | (J)(K)-UAATC72P |
| 96" | (J)(K)-AATC96P | (J)(K)-UAATC96P |
| 120" | (J)(K)-AATC120P | (J)(K)-UAATC120P |

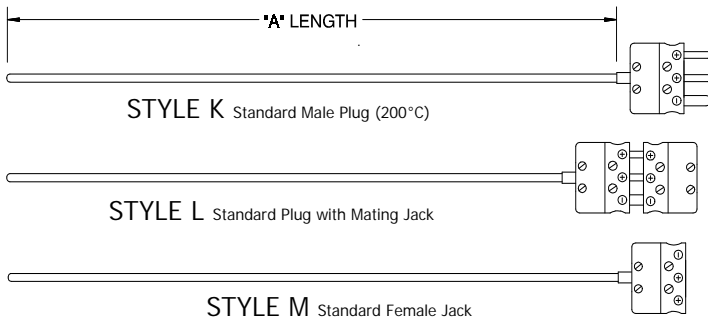
RTD HIGH TEMP MgO ELEMENTS



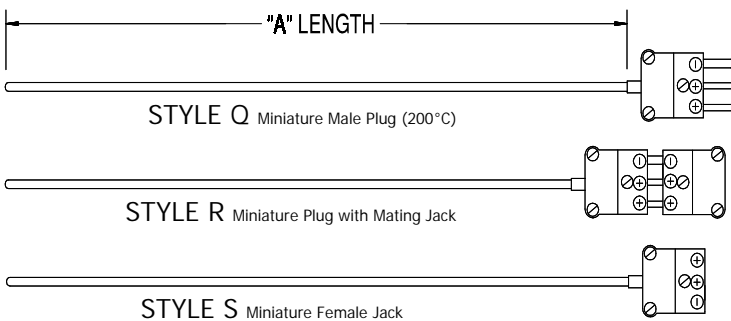
LEADWIRE STYLE RTD's



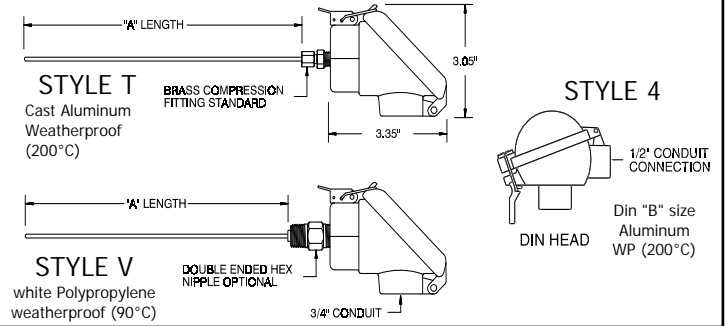
STANDARD CONNECTOR RTD's



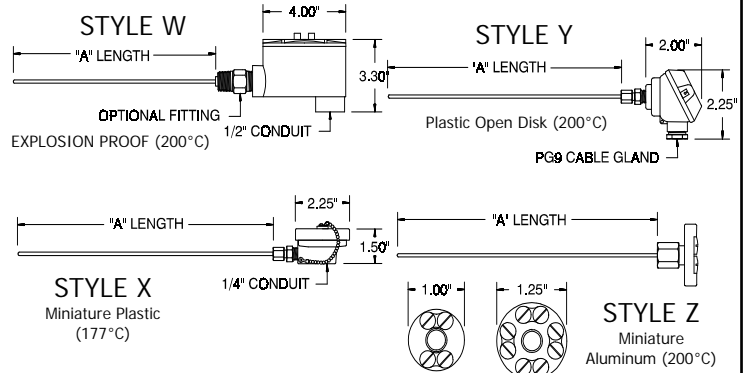
MINIATURE CONNECTOR RTD's



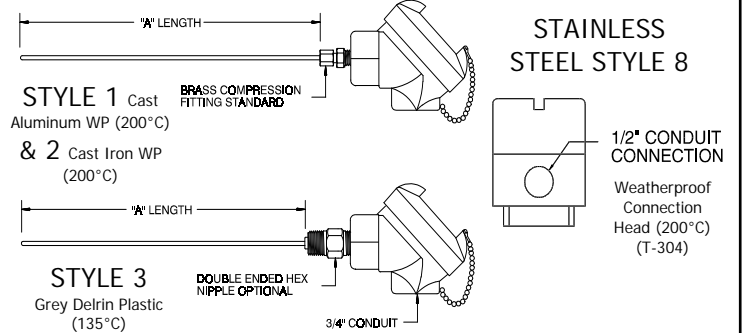
SNAP-COVER CONNECTION HEAD RTD's



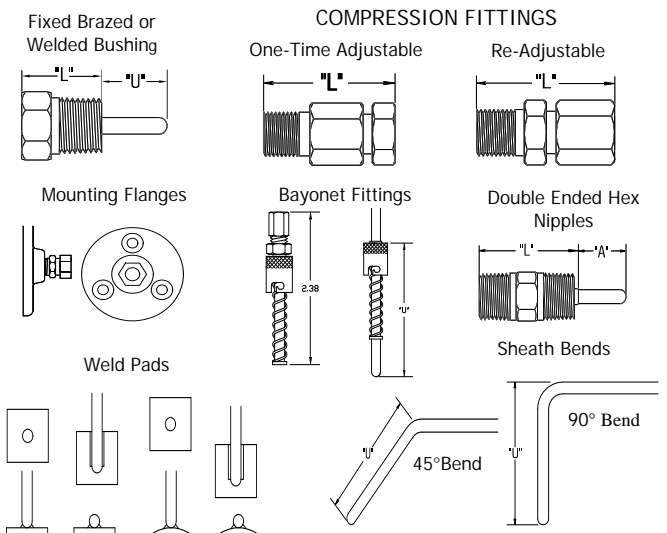
MISCELLANEOUS CONNECTION HEAD RTD's



SCREW-COVER CONNECTION HEAD RTD's



SHEATH MOUNTING FITTINGS



Customer Name: _____
 Completed by: _____ Date: _____
 Contact Number: _____ Quantity: _____
 Job Number: _____ Part Number: _____

MgO RTD Temperature Sensor Product Data Sheet

Construction Style: (see previous page)

RA ☐ F ☐ M ☐ T ☐ X ☐ 2 ☐
 B ☐ G ☐ Q ☐ V ☐ Y ☐ 3 ☐
 D ☐ K ☐ R ☐ 4 ☐ Z ☐ 8 ☐
 E ☐ L ☐ S ☐ W ☐ 1 ☐

Element Type:

Resistance @ 0°C

☐ Platinum 100Ω Single ☐ Platinum 500Ω Single
☐ 2 wire ☐ 3 ☐ 4 ☐ 2 wire ☐ 3 ☐ 4
☐ Platinum 100Ω Dual ☐ Platinum 1000Ω Single
☐ 2 wire ☐ 3 ☐ 4 ☐ 2 wire ☐ 3 ☐ 4

Accuracy & Temperature Coefficient:

Accuracy @ 0°C

☐ Class B (.12%) ☐ 1/3 RD (.04%)
☐ Din .00385 ☐ Jis .00392 ☐ Din .00385 ☐ Jis .00392
☐ Class A (.06%) ☐ 1/10th (.01%)
☐ Din .00385 ☐ Jis .00392 ☐ Din .00385

Temperature Range:

☐ -50 to +200°C ☐ -50 to +450°C ☐ -200 to +650°C

Sheath Material (Inch) 316SS:

☐ 1/8 (.125) ☐ 3/16 (.188) ☐ 1/4 (.250) ☐ 3/8 (.375)

Sheath Length: _____ inches

Termination:

☐ Stripped Length _____ inches

☐ Leadwire:

Length _____ inches

Leadwire Type: (All stranded- specify below)

☐ Fiberglass Cable (450°C) ☐ FG w/SS Flex Armor Cable ☐ FG w/SS Overbraid
☐ Teflon Cable (200°C) ☐ TC w/ SS Flex Armor Cable ☐ TC w/SS Overbraid
☐ Shielded Teflon ☐ PVC (105°C) ☐ Teflon Singles ☐ Fiberglass Singles

Leadwire Termination:

☐ NONE ☐ Standard Male Plug (200°C) ☐ Standard Plug w/Mating Jack
☐ 2 1/2" Split ☐ Standard Female Jack ☐ Miniature Male Plug
☐ 2 1/2" Split w/#8 spade lugs ☐ Miniature Plug Mating Jack
☐ 2 1/2 Split" w/#8 spade lugs & BX Connector ☐ Miniature Female Jack
☐ 2 1/2 Split" w/1/4" Push-On Connectors

Termination Options Continued:

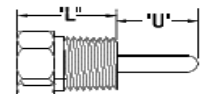
☐ Sheath Mounting Fittings:

☐ Fixed Braze or Welded Bushings: NPT: _____

☐ 316 SS

☐ Brass

"L" Length: _____



☐ Compression Fittings:

☐ Re-Adjustable

☐ Stainless Steel

"L" Length

NPT: _____

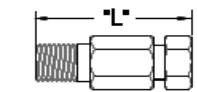
☐ One-time Adjustable

☐ Stainless Steel

☐ Brass

"L" Length

NPT: _____



☐ Mounting Flanges (Not available with teflon coated sheath!)

☐ w/Adjustable Brass Compression

☐ w/Adjustable SS Compression



☐ Double Ended Hex Nipples:

☐ Steel, brazed on

☐ 316 SS

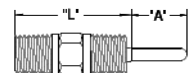
NPT: _____

☐ SS, spring loaded

☐ Steel, spring loaded

☐ SS, self contained spring loaded (1/4")

"L" Length: _____



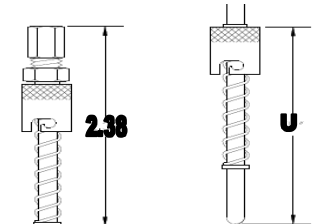
☐ Bayonet Fitting:

☐ Adjustable (1/8)

☐ Re-Adjustable (1/8)

☐ Fixed (1/8, 3/16, 1/4)

"U" LENGTH



Special Options:

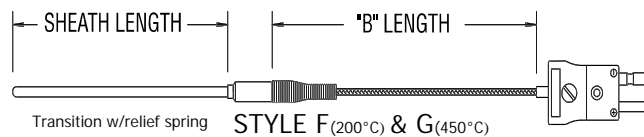
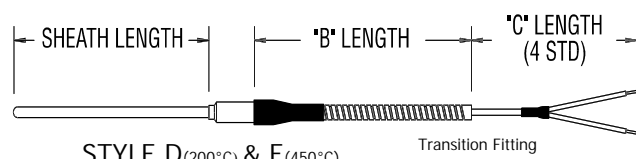
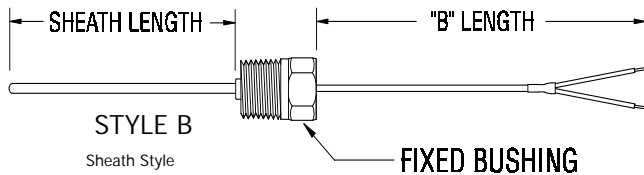
☐ BX Connector on leads ☐ PVC Coated Flex Armor
☐ Teflon Coated Flex Armor ☐ Teflon Encapsulated Sheath
☐ Grounding Screw

OTHER: _____

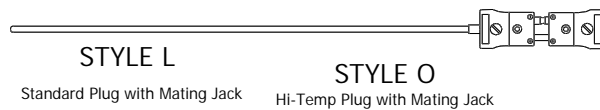
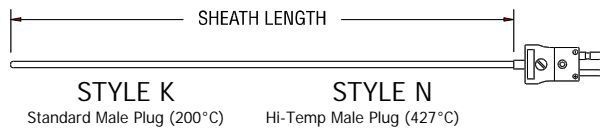
THERMOCOUPLE ELEMENTS



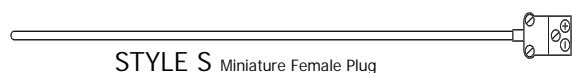
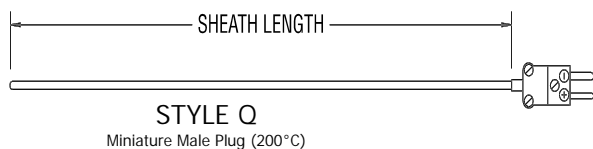
LEADWIRE STYLE THERMOCOUPLES



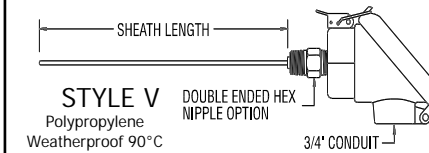
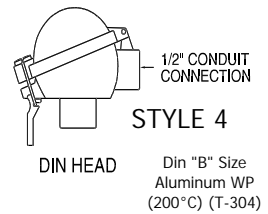
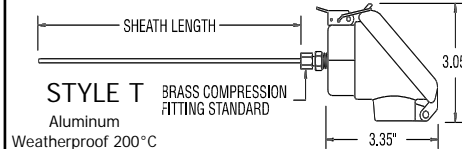
STANDARD CONNECTOR THERMOCOUPLES



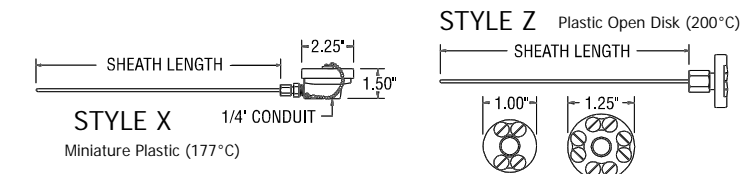
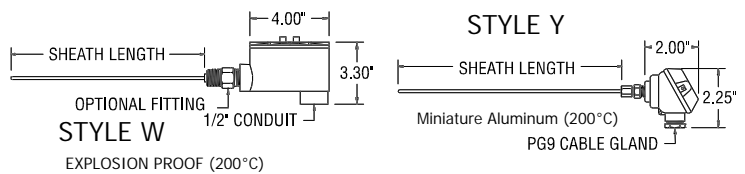
MINIATURE CONNECTOR THERMOCOUPLES



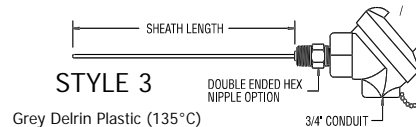
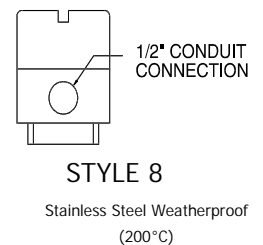
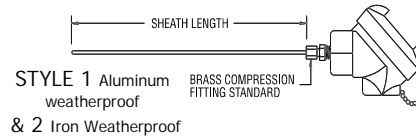
SNAP-COVER CONNECTION HEAD THERMOCOUPLES



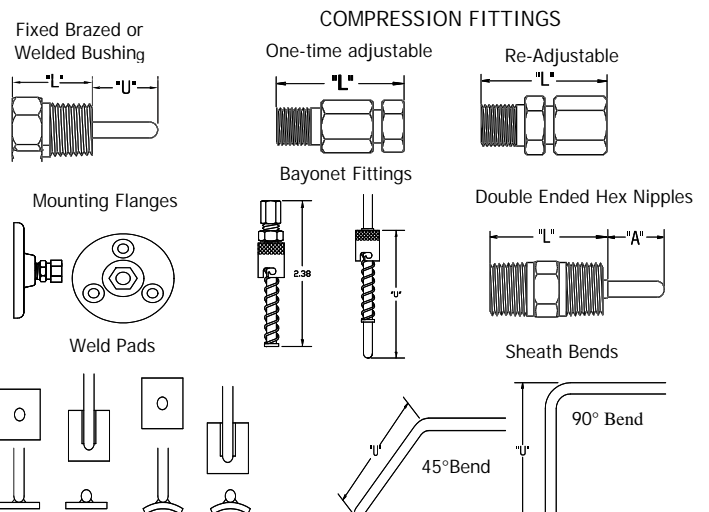
MISC. CONNECTION HEAD STYLE THERMOCOUPLES



SCREW-COVER CONNECTION HEAD THERMOCOUPLES



SHEATH MOUNTING FITTINGS



Customer Name: _____
 Completed by: _____ Date: _____
 Contact Number: _____ Quantity: _____
 Job Number: _____ Part Number: _____

MgO Thermocouple Temperature Sensor Product Data Sheet

Construction Style: (see previous page)

A ☐ G ☐ P ☐ V ☐ Z ☐
 B ☐ K ☐ Q ☐ 4 ☐ 1 ☐
 D ☐ N ☐ R ☐ W ☐ 2 ☐
 E ☐ L ☐ S ☐ Y ☐ 3 ☐
 F ☐ M ☐ T ☐ X ☐ 8 ☐

Calibration:

Type J ☐ Type K ☐ Type E ☐ Type T ☐

Type/Option:

Single 2 Wire ☐ Duplex 4 Wire ☐

☐ with special limits of error _____

Junction Type:

Exposed ☐



Grounded Roundtip ☐



Ungrounded Roundtip ☐



Sheath Diameter (Inch):

.040" ☐ .063" ☐ .125" ☐

3/16" ☐ 1/4" ☐ 3/8" ☐

Sheath Material:

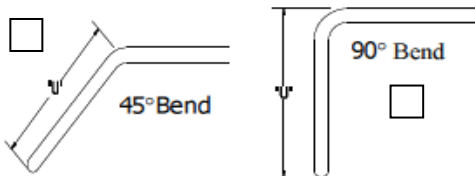
Inconel 600 ☐ 446 SS ☐ 304 SS ☐

310 SS ☐ 316 SS ☐

Sheath Length: _____ inches

Sheath Bends:

Straight ☐



"U" Length (inches) _____

Termination:

☐ Stripped Length _____ inches

☐ Leadwire: Length _____ inches

Type: _____

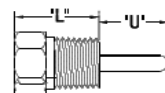
Leadwire Termination: _____

☐ Sheath Mounting Fittings:

☐ Fixed Brazed or Welded Bushings: NPT: _____

◇ 316 SS

◇ Brass



"L" Length: _____

☐ Compression Fittings:

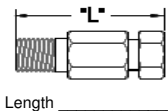
◇ Re-Adjustable ☐ Stainless Steel



"L" Length _____

◇ One-time Adjustable NPT: _____

☐ Stainless Steel ☐ Brass

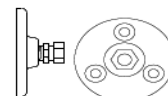


"L" Length _____

☐ Mounting Flanges

◇ w/Adjustable Brass Compression

◇ w/Adjustable SS Compression



☐ Double Ended Hex Nipples:

◇ Steel, brazed on

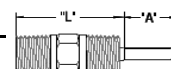
◇ 316 SS

◇ Steel, spring loaded

◇ SS, spring loaded

◇ SS, self contained spring loaded (1/4" sheath)

NPT: _____ "L" Length: _____

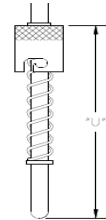
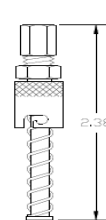


☐ Bayonet Fitting:

◇ Adjustable

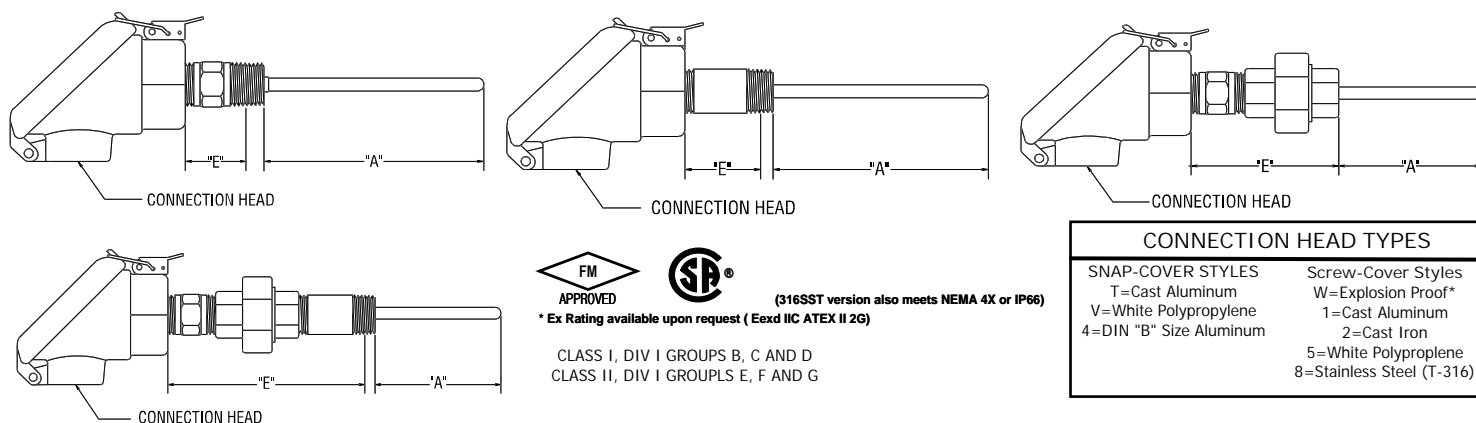
◇ Re-Adjustable

◇ Fixed

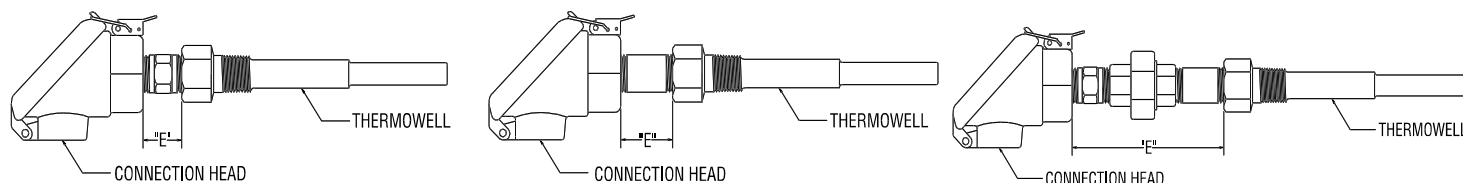


Please fax to Southeast Thermal Systems at 1-704-399-4167

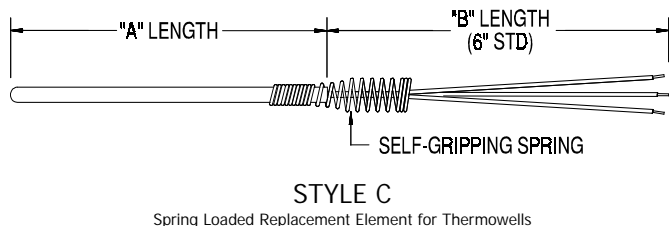
RTD'S & THERMOCOUPLES FOR THERMOWELLS



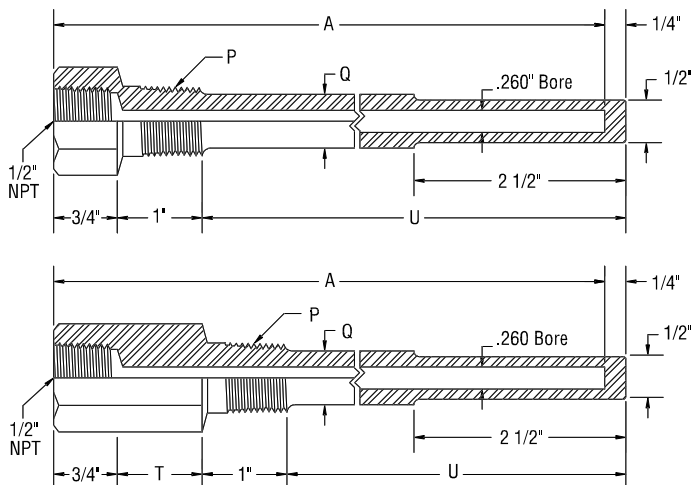
RTD'S & THERMOCOUPLES WITH THERMOWELLS



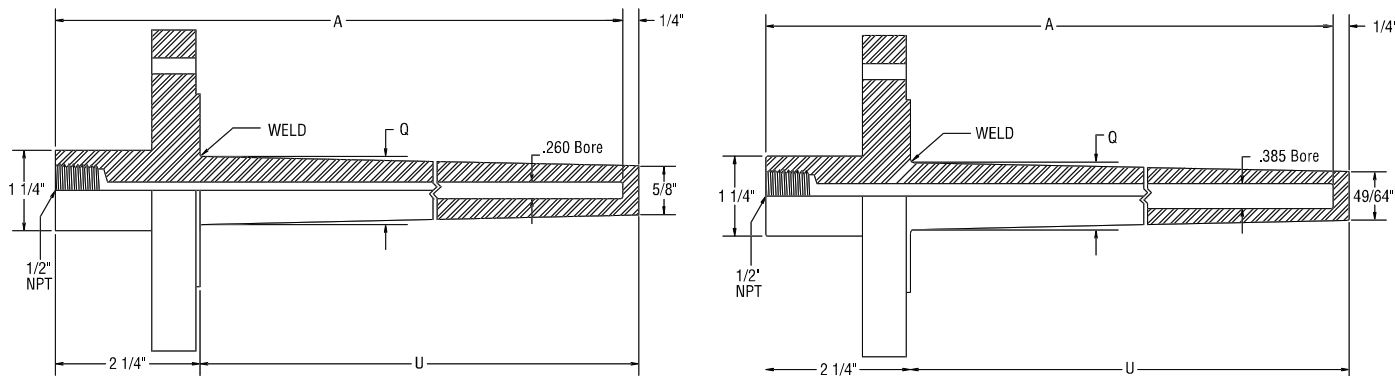
REPLACEMENT RTDS/THERMOCOUPLES FOR THERMOWELLS



STANDARD / HEAVY DUTY THREADED THERMOWELLS

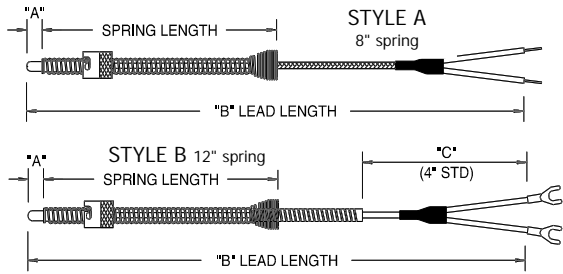


STANDARD / HEAVY DUTY FLANGED THERMOWELLS

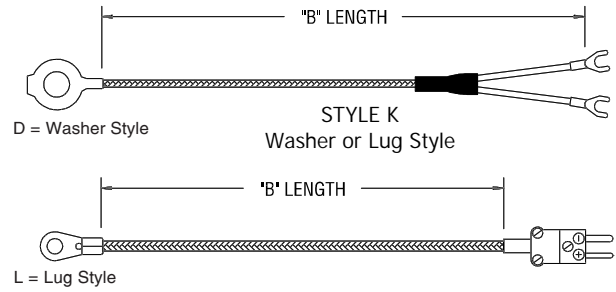




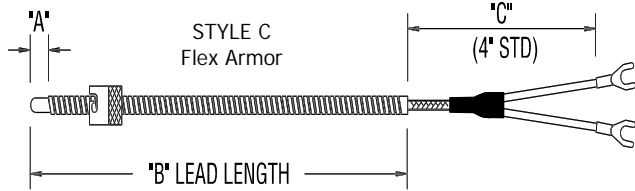
SPRING ADJUSTABLE DEPTH THERMOCOUPLES



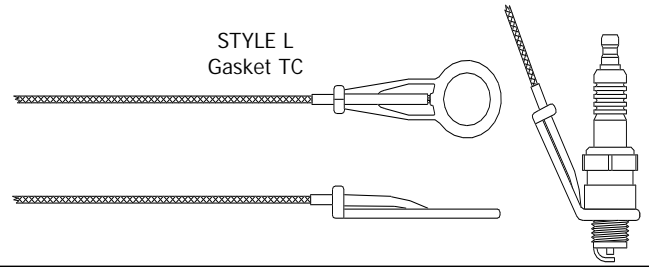
WASHER/LUG THERMOCOUPLES



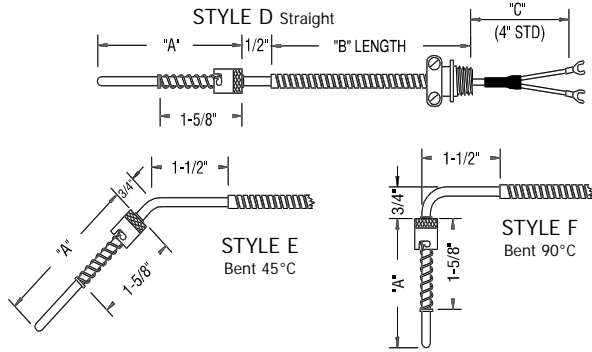
FLEX ARMOR ADJUSTABLE DEPTH THERMOCOUPLES



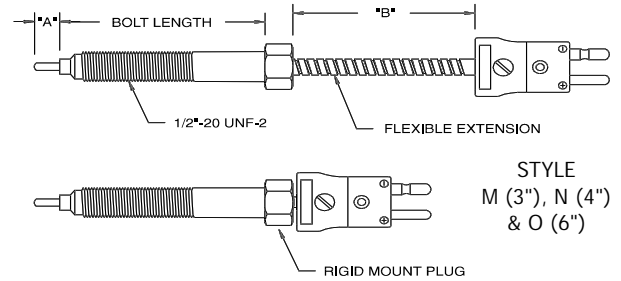
SPARK PLUG GASKET THERMOCOUPLES



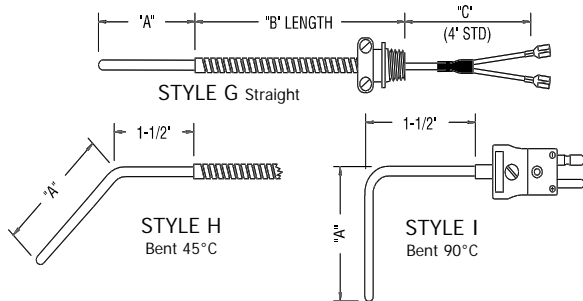
FIXED BAYONET THERMOCOUPLES



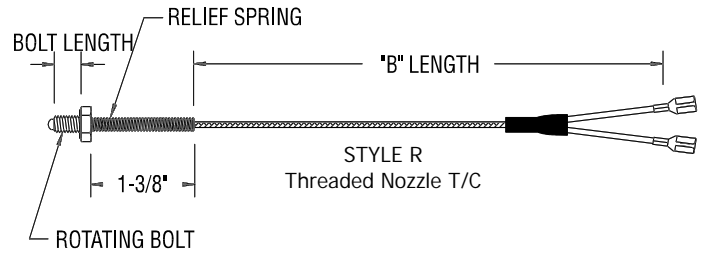
MELT BOLT THERMOCOUPLES



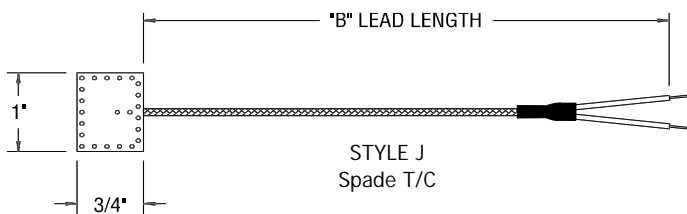
RIGID TUBE THERMOCOUPLES



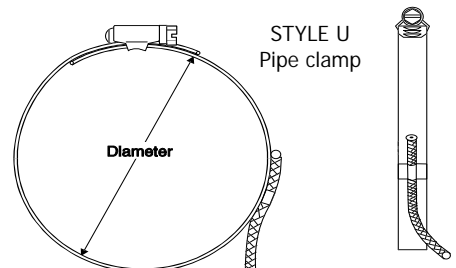
THREADED NOZZLE BOLT THERMOCOUPLES



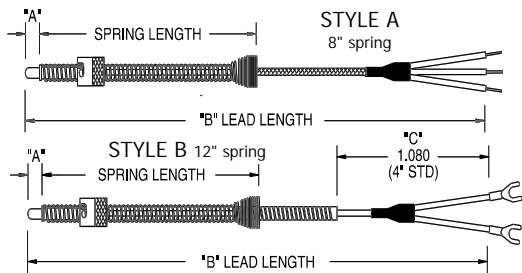
SPADE THERMOCOUPLES



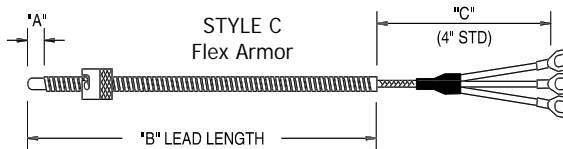
PIPE CLAMP THERMOCOUPLES



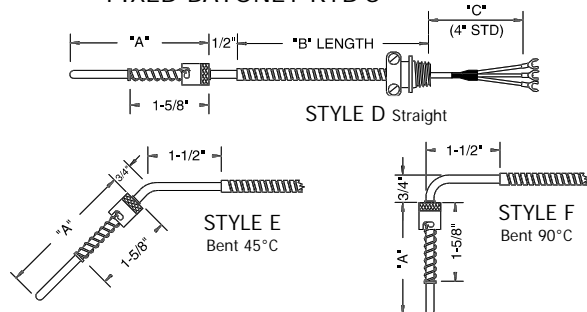
SPRING ADJUSTABLE DEPTH RTDS



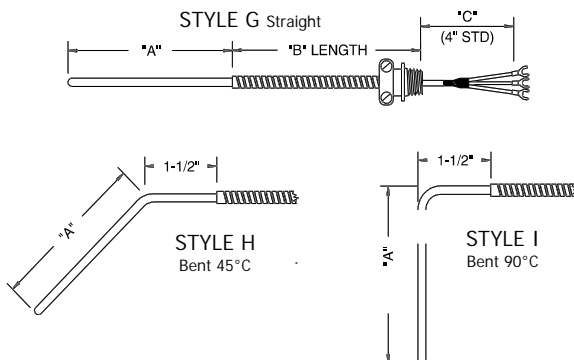
FLEX ARMOR ADJUSTABLE DEPTH RTDS



FIXED BAYONET RTD'S

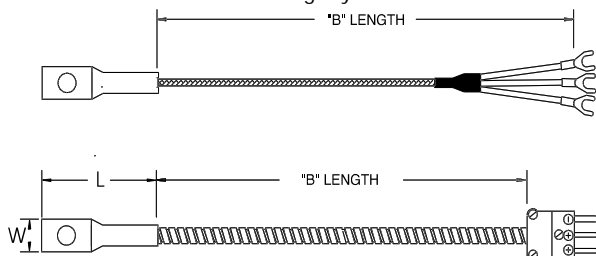


RIGID TUBE RTD'S

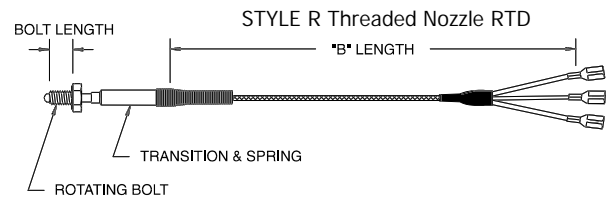


LUG STYLE RTDS

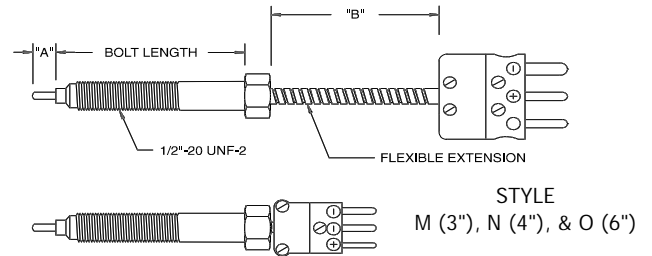
STYLE K Lug Style RTD



THREADED NOZZLE BOLT RTDS

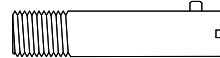


MELT BOLT RTDS

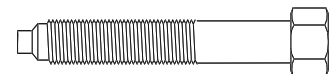


ACCESSORIES FOR TUBE WIRE THERMOCOUPLES/RTDS

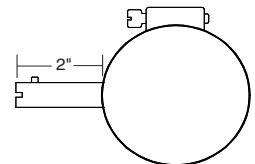
BAYONET ADAPTERS NICKEL PLATED OR STAINLESS STEEL



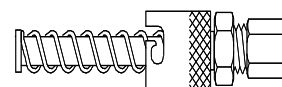
BLANK MELT BOLTS



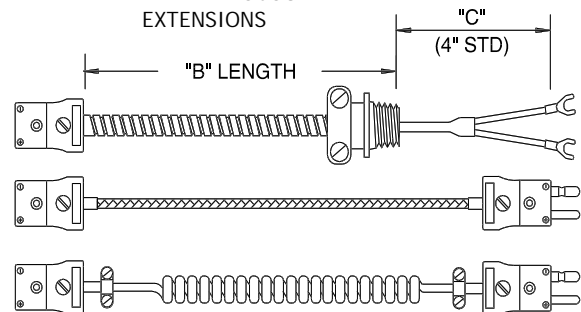
PIPE CLAMP ADAPTERS



ADJUSTABLE BAYONET FITTING



FLEXIBLE THERMOCOUPLE EXTENSIONS



FLEXIBLE RTD EXTENSIONS

