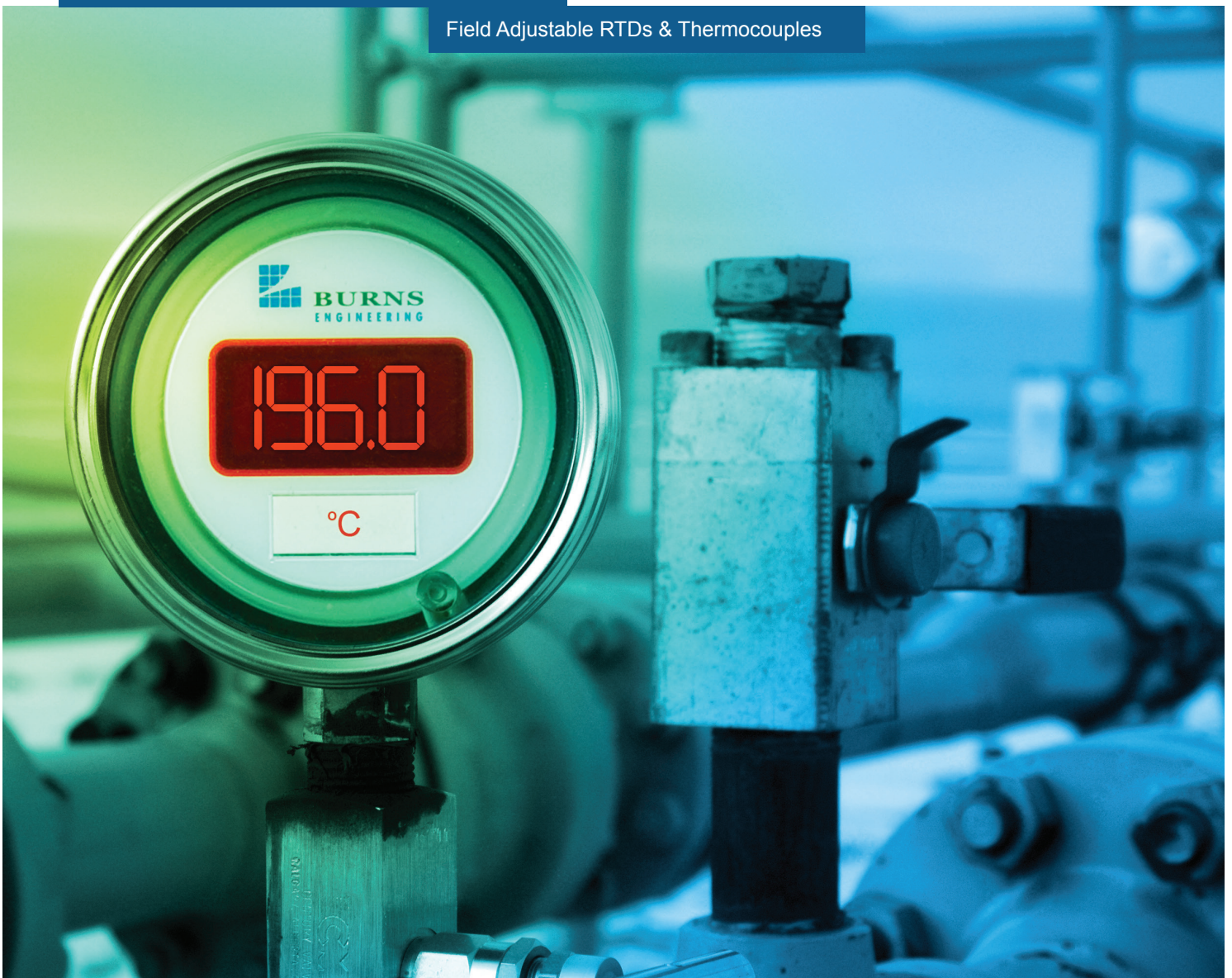


Series E

Field Adjustable RTDs & Thermocouples



Temperature Measurement Experts®

Since 1960 Burns Engineering has been an industry leader in the design and manufacture of temperature sensors. Accuracy, reliability and consistency are hallmarks of the Burns brand. At Burns, we focus on the measurement. We understand the subtleties of temperature measurement, from selection through installation, and how they can impact your processes and ultimately your success. We worry about the details so you don't have to. When you select Burns you're getting more than a sensor, you're getting your own team of Temperature Measurement Experts.

Series E Field Adjustable Sensor

Series E sensors provide the ultimate in adaptability for emergency replacement situations and in-the-field customization. Offered in both RTD and Thermocouple designs, the Series E provides the flexibility needed to address a variety of applications without compromising temperature measurement accuracy and reliability. Common sizes are stocked and ready for quick delivery to get you back up and running. For stocked configurations see the highlighted selections in the ordering tables.

Finding a match for your specific application is easy with the Series E. Designed for flexibility, the options include:

- Variable Length Direct Immersion Design
- Spring Loaded Thermowell Designs
- Multiple Process Connections
- Connection Head and Cable Versions
- Armored Version
- Flexible or Bendable to Fit in Tight Spaces
- Cut-to-Length/Adjustable Designs for In-the-Field Customization
- Temperature Range: -50°C to 200°C
- 100 Ohm RTDs – 3 and 4 Wire; Standard and Precision, Single and Dual Elements
- Special Limits Thermocouples – Type E, J, K and T; Grounded and Ungrounded

The Series E is also ideal for situations where minimizing inventory is important. The ability to customize in-the-field allows for a single sensor to be used in a variety of applications allowing for fewer inventoried sensors. Just cut or adjust the sensor to length to fit the specific application.

As flexible and adaptable as the Series E is, it's not right for every application. If you don't see something that meets your needs, give us a call and we'll customize for your specific application.

Create a Quote Request:

Visit www.BurnsEngineering.com to configure your Field Adjustable Sensor.

Here's how:

1. Register or sign-in for access to the product configurator
2. Select "View Products/Request a Quote"
3. Select the model of interest
4. Click on "Configure My Part"
5. Select the parameters that support your application
6. Click "Finish" in the upper or lower left of the configuration screen
7. Click "Submit Quote for Confirmation"
8. Done – We will be in touch shortly.

Specification Information:

RTDs:

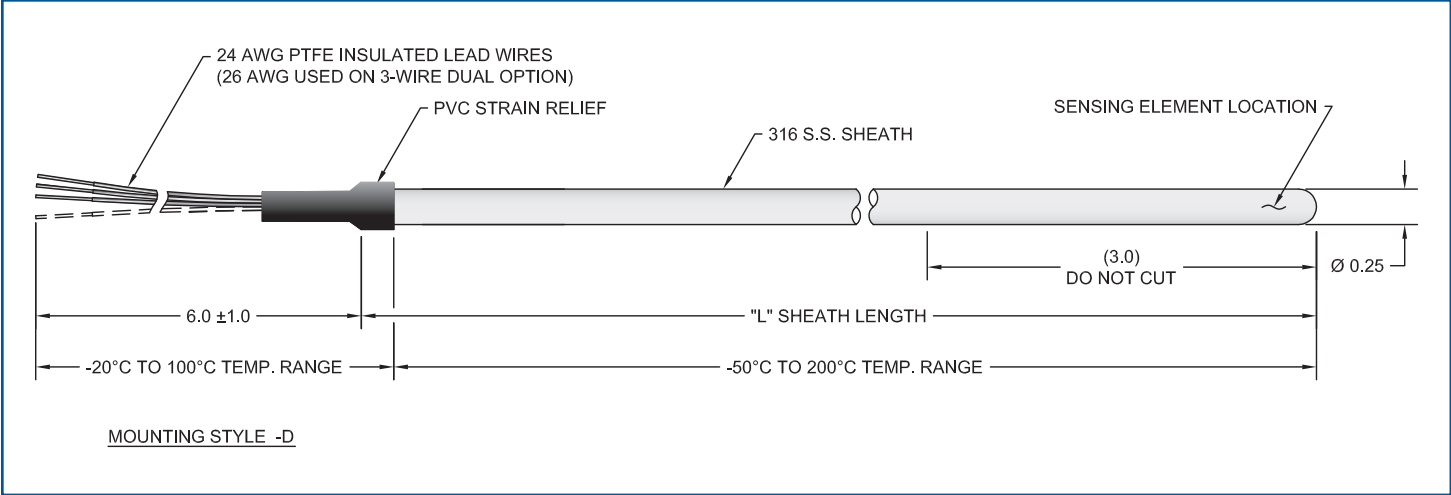
Element Resistance:	100 ohms at 0°C
Interchangeability:	Code 10: $\pm 0.10\%$ Code 05: $\pm 0.05\%$
Temperature Coefficient:	0.00385 ohms/ohm/°C
Temperature Range:	-50°C to 200°C (-58°F to 392°F)
Time Constant:	6 seconds (63.2% response to step change in water at 3 fps)

Thermocouples:

Accuracy:	Type E: -50°C to 125°C: $\pm 0.5^\circ\text{C}$, 125°C to 200°C: $\pm 0.4\%$ Type J: 0°C to 200°C: $\pm 1.1^\circ\text{C}$ Type K: 0°C to 200°C: $\pm 1.1^\circ\text{C}$ Type T: -50°C to 125°C: $\pm 0.5^\circ\text{C}$, 125°C to 200°C: $\pm 0.4\%$
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E01 | Cut-To-Length RTD

Ordering Information



E01- Cut to length RTD Sensor

Accuracy

10	Standard RTD 100 Ohms ±0.10 Ω at 0° C
05	Precision RTD 100 Ohms ±0.05 Ω at 0° C

Element/Lead Wire Configuration

A	Three Wire Single Element
B	Four Wire Single Element

Mounting Style

-D	Plain Sheath, No Fitting
-A	Direct Immersion Hex Fitting
-C	Spring Loaded
-K	Spring Loaded With Bayonet Fitting
-L	Spring Loaded Hex Fitting

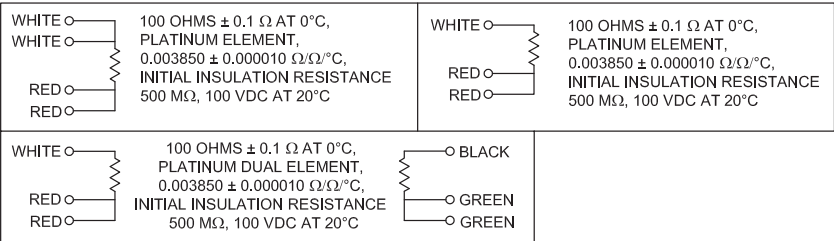
"L" - Sheath Length

12	12.0"
24	24.0"
36	36.0"
48	48.0"

Note: All configurations are available for quick delivery.

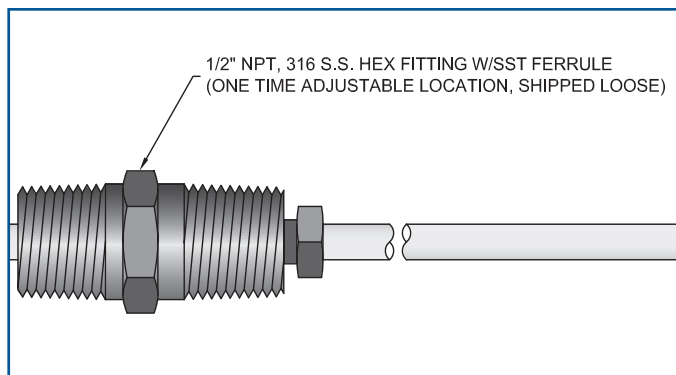
E01-				
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Example Part Number: E01-10B-D12

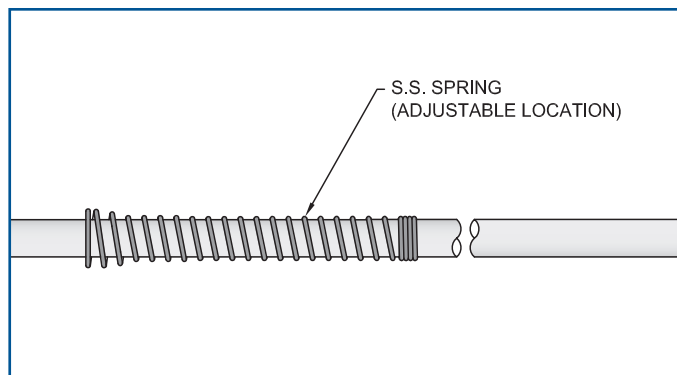


E01 | Cut To Length RTD

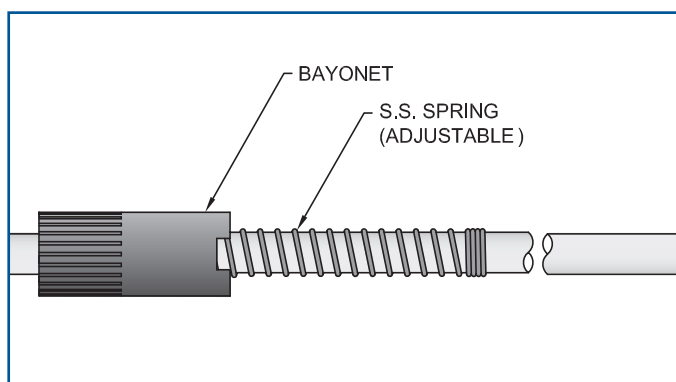
Mounting Styles



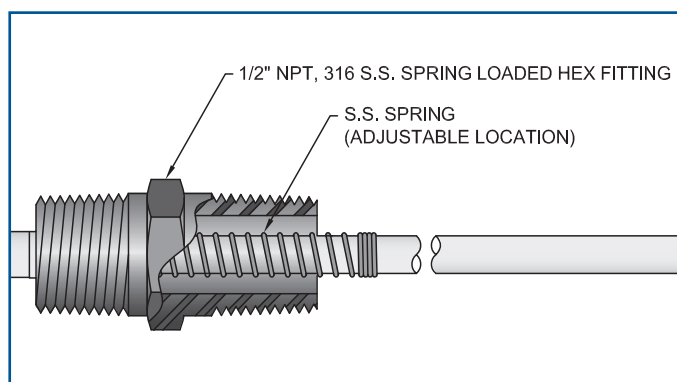
Mounting Style -A



Mounting Style -C
(Requires Connection Head and Terminal Block)



Mounting Style -K
(Requires Burns #3 or #5 Connection Head)

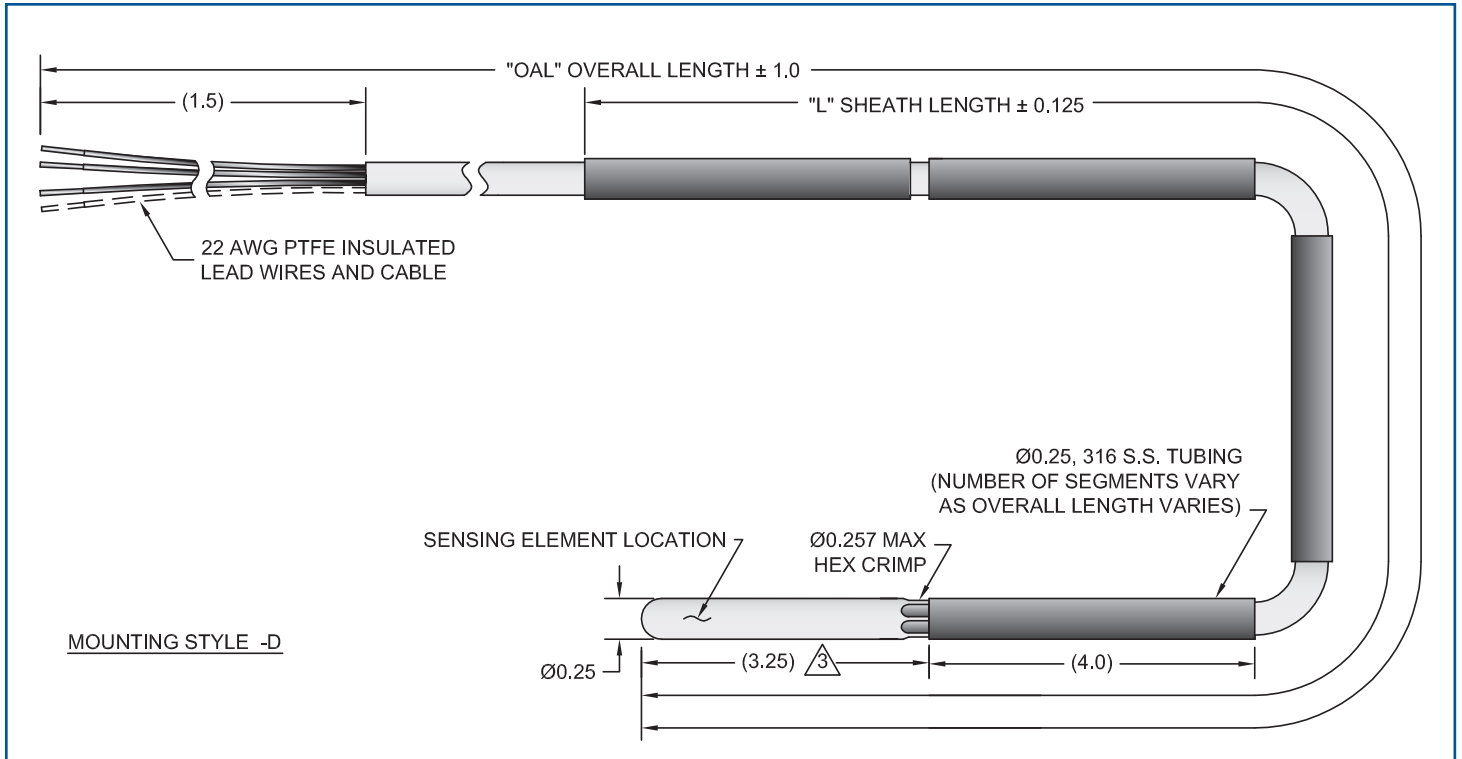


Mounting Style -L

Length Adjustment Instructions:

1. Remove PVC strain relief and set aside.
2. Determine desired sheath length. Use a tubing cutter to shorten the sheath if necessary. Avoid damaging the internal wires.
3. Determine external lead wire length desired. Trim wires to desired length and strip insulation on the ends.
4. Reinstall the PVC strain relief boot.
5. Install fittings (if applicable) at desired mounting location. Twist the spring while sliding down the sheath to ease installation.

E02 | Segmented RTD



E02- Segmented RTD Sensor

Accuracy

10	Standard RTD 100 Ohms $\pm 0.10\ \Omega$ at 0°C
05	Precision RTD 100 Ohms $\pm 0.05\ \Omega$ at 0°C

Element/Lead Wire Configuration

A	Three Wire Single Element
B	Four Wire Single Element

Mounting Style

-C	Spring Loaded
-D	Segmented Sheath, No Fitting
-F	Compression Fitting With Spring
-K	Spring Loaded With Bayonet Fitting
-L	Spring Loaded Hex Fitting

“L” - Sheath Length

12	12.0"
24	24.0"
48	48.0"

“OAL” - Overall Length

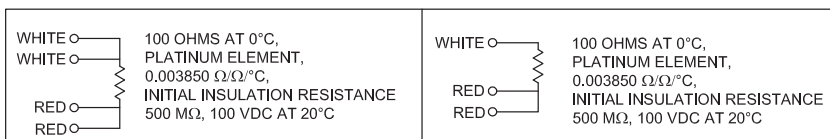
-240	240 Inches
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Note: All configurations are available for quick delivery.

E02-					
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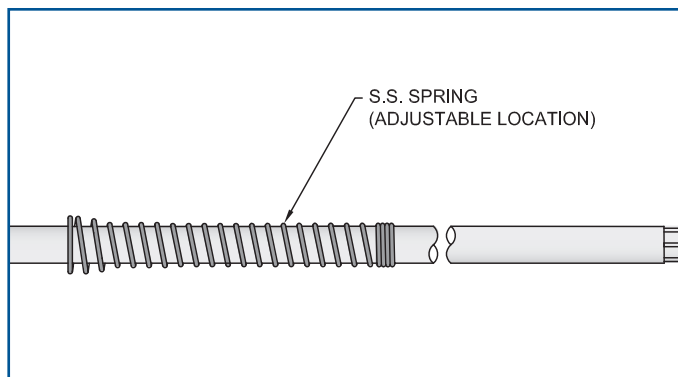
Example Part Number: E02-10B-D12-240

Note: All configurations are available for quick delivery.

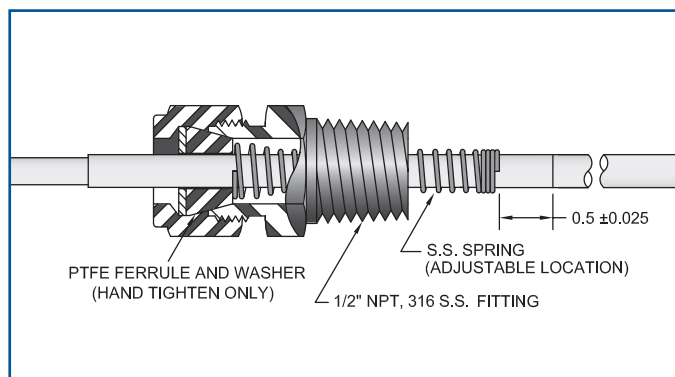


E02 | Segmented RTD

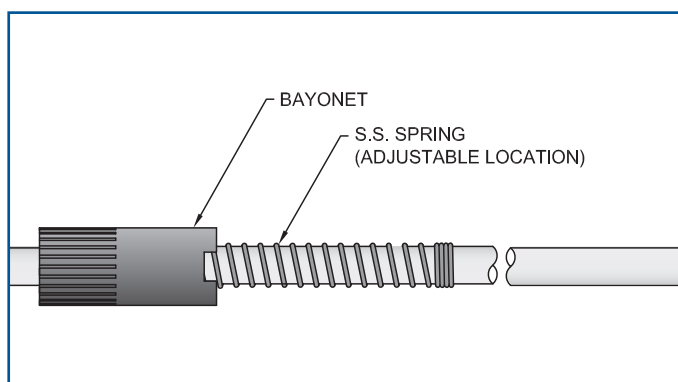
Mounting Styles



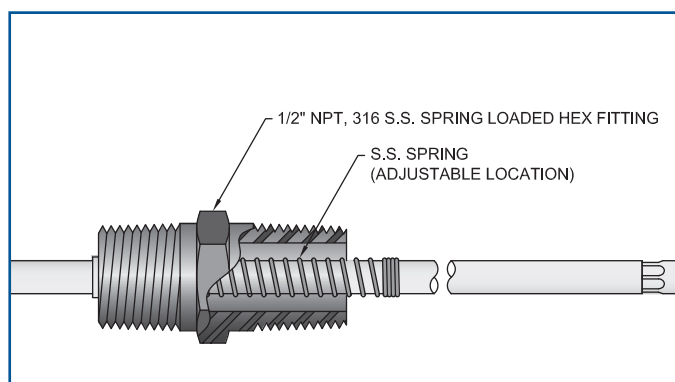
Mounting Style -C
(Requires Connection Head and Terminal Block)



Mounting Style -F



Mounting Style -K
(Requires Burns #3 or #5 Connection Head)



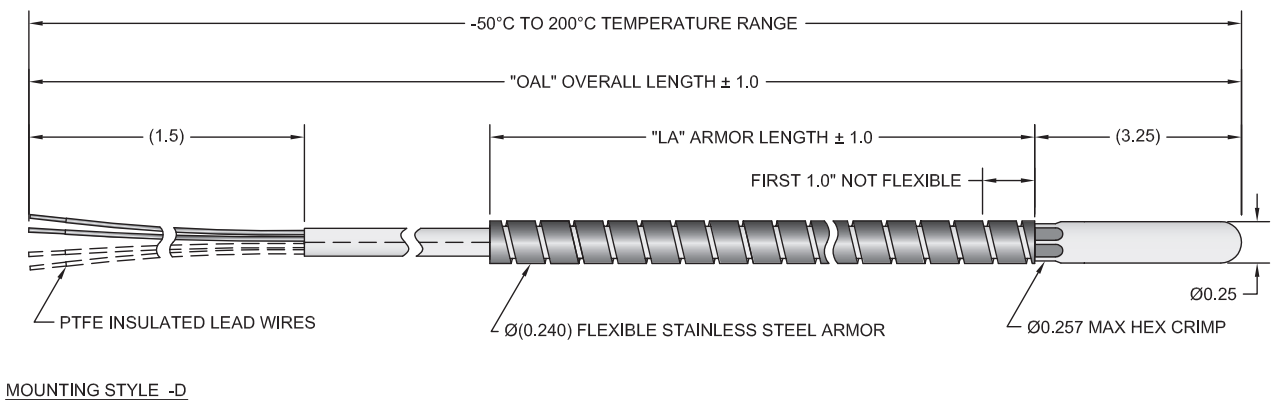
Mounting Style -L

Length Adjustment Instructions:

1. Determine desired sheath length. Remove all 4" sections of tubing and trim one to obtain the desired sensor length. Deburr cut end.
2. Reinstall tubing sections starting with the length that was cut.
3. Determine external lead wire length desired. Trim wires to desired length and strip insulation on the ends.
4. Install fittings (if applicable) at desired mounting location.

E03 | Armored RTD/Thermocouple

Ordering Information



E03- Armored RTD Sensor

Accuracy

10	Standard RTD 100 Ohms ±0.10 Ω at 0° C, 0.003850 ± 0.000010 Ω/Ω/°C
05	Precision RTD 100 Ohms ±0.05 Ω at 0° C, 0.003850 ± 0.000005 Ω/Ω/°C

Thermocouple (Type)

E	Chromel™/Constantan, 0 to 200°C Temperature Range
J	Iron/Constantan, 0 to 200°C Temperature Range
K	Chromel™/Alumel™, 0 to 200°C Temperature Range
T	Copper/Constantan, -50 to 200°C Temperature Range

Element/Lead Wire Configuration

A	Three Wire Single Element (22 Awg)
B	Four Wire Single Element (22Awg)

Thermocouple Junction Configuration

D	Single Ungrounded (20 Awg)
E	Single Grounded (20 Awg)
F	Dual Ungrounded (24 Awg)
G	Dual Grounded (24 Awg)

Mounting Style

-C	Spring Loaded
-D	Armored Sensor, No Fitting
-E	Spring Loaded With Bayonet Fitting
-L	Spring Loaded Hex Fitting

"LA" - Armor Length

024	24.0"
120	120.0"
***	Specify in Inches - 6.0" Minimum, 120.0" Maximum

"OAL" - Overall Length

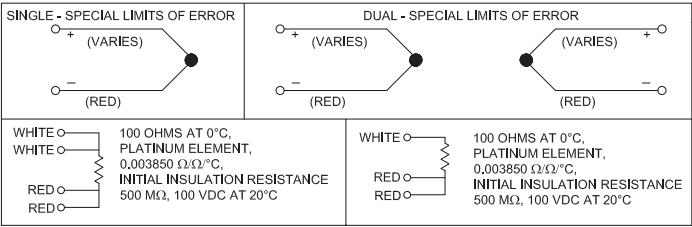
-240	240 Inches
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Note: Configurations using highlighted selections are All available for quick delivery.



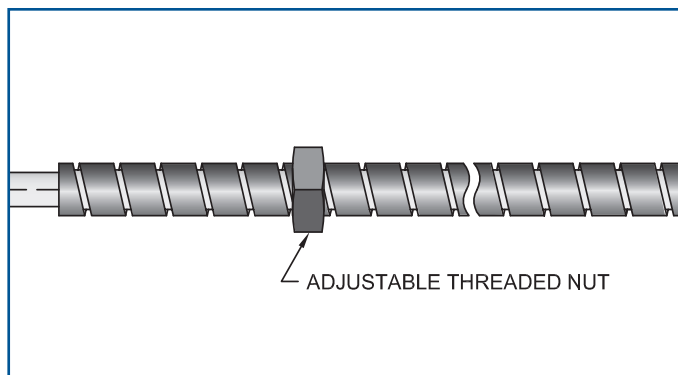
E03-

Example Part Number: E03-10B-C024-240

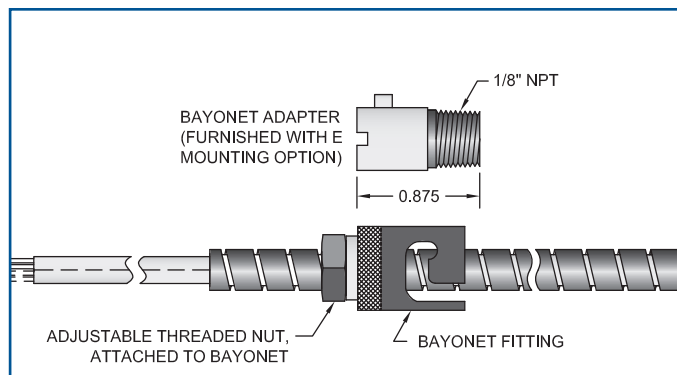


E03 | Armored RTD/Thermocouple

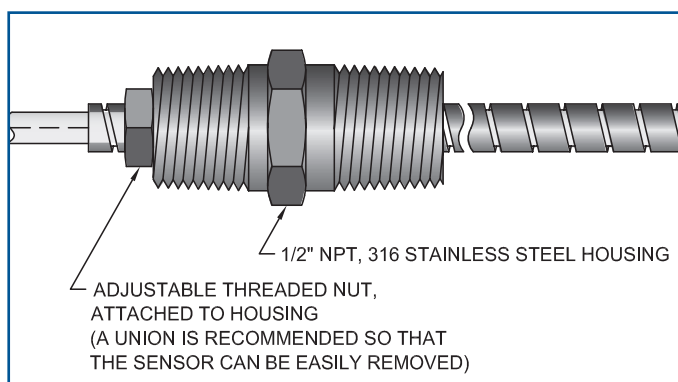
Mounting Styles



Mounting Style -C
(Requires Connection Head and Terminal Block)



Mounting Style -E
(Requires Connection Head and Terminal Block)



Mounting Style -L

Length Adjustment Instructions:

1. Thread the adjustable fitting around the armor to obtain the desired mounting length. This length should be slightly longer than the thermowell depth, so that the armor compression holds the sensor in place at the tip of the thermowell.
4. Install fittings (if applicable) at desired mounting location.

Other Burns Products Catalogs available

Series 100 Thermocouples

- Available in type E, J, K, N, and T
- Accuracy - Special Limits
- Various mounting configurations
- Sensors or full assemblies
- Hazardous Environments



Series 200/300 RTDs

- Available in standard and precision accuracy
- Various mounting configurations
- Sensors or full assemblies
- Hazardous Environments



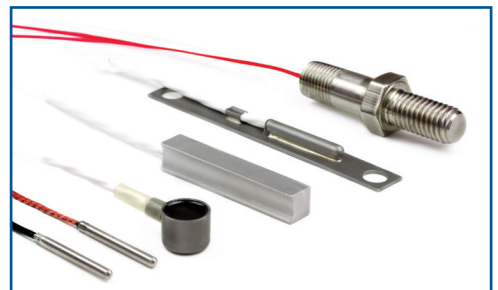
Series A Miniature RTDs

- Available in standard and precision accuracy
- Diameters from 0.080" to 0.25"



Series B Surface Sensors

- Available as RTDs and Thermocouples
- Various mounting configurations



Series S Sanitary Sensors

- Available as RTDs and Thermocouples
- Direct and indirect immersion
- Non-intrusive designs



Burns Products Catalogs, continued

Series S Autoclave Sensors

- Available in standard to extreme duty styles



Temperature Metrology

- Secondary Standard PRTs
- Accredited Calibration Service



Temperature Transmitters

- Digital and analog transmitters
- Loop and battery powered Indicators
- Programming kits for field adjustability



Thermowells

- Available in threaded, welded and flanged
- Industrial and sanitary applications



Connection Heads

- Stainless steel, aluminum, and polypropylene
- Select heads explosive environment rated
- Epoxy coating available



Custom solutions designed for your specific needs.

Burns Engineering has a long history of designing and building temperature sensors to meet the measurement needs of unique and varied applications. The products in this catalog were specifically developed to meet field requirements and allow for configured-to-order flexibility. Not sure what product is right for your application? Our application engineering group is here to help you select, configure, and/or custom design the right product for your specific needs.

Burns Engineering is a leading supplier of temperature measurement solutions for all your process and metrology applications.

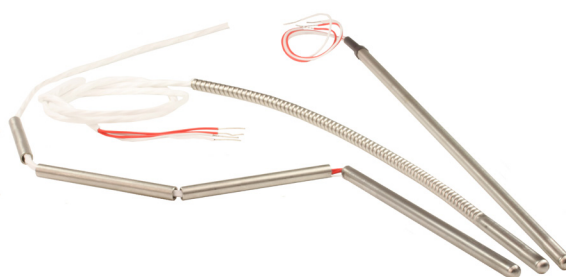
Your processes require temperature measurement solutions that you can depend on. We understand that measurement accuracy, reliability and consistency are important to your success.

Your measurement is our mission.

**Turn to Burns as your
Temperature Measurement Experts.®**

What will your solution BE?

Series E



RTDology® Temperature Training Complementary Online Education



RTDology® - learn how to build confidence
in your temperature measurements.

RTD vs.
Thermocouple



To learn more about our
online sessions snap or visit

RTDology.com

RTD Selection
& Application



RTD Accuracy



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