



Thermocouples with thread connection

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What are the characteristics of thermocouples with thread connection ?

Thermocouples are widely used temperature measurement devices that rely on the principle of the Seebeck effect to generate a voltage proportional to the temperature difference between two different metals or alloys. These devices find applications across various industries, including manufacturing, automotive, aerospace, and research. One common variation of thermocouples is those equipped with thread connections, which offer unique characteristics and advantages for specific applications. Thermocouples with thread connections are designed with a threaded housing that allows them to be easily installed in a variety of environments. The threaded connection provides a secure and reliable method of attachment to surfaces, pipelines, equipment, and other components, ensuring accurate temperature sensing in challenging conditions.

Key Characteristics

Ease of installation: One of the most notable characteristics of thermocouples with thread connections is their ease of installation. The threaded housing allows these thermocouples to be quickly and securely screwed into place, reducing installation time and minimizing the need for complex mounting hardware.

Resistance to vibration and mechanical stress: Threaded connections provide a strong and stable attachment, making them particularly resistant to vibrations, mechanical stress, and other external forces. This characteristic is crucial in industrial settings where equipment might undergo frequent movements or vibrations.

Sealing and protection: Many threaded thermocouples come with additional features such as integrated sealing elements or compression fittings. These features enhance the device's ability to provide accurate readings by preventing moisture, dust, or other contaminants from affecting the temperature measurement.

Thermocouple classes

Classes of thermocouples have certain tolerance values and temperature limits of validity. The most common classes are **class 1** and **class 2**.

With **class 1** you get more precise measurement values while **class 2** provides a wider tolerance values.

Types of thermocouples

Thermocouples are adapted to specific applications depending on the temperature range to be measured, the accuracy required and the environment in which they will be used. They are differentiated by letters (Type K, J, N, T, etc....) which correspond to the presence of materials that can measure a certain temperature range.

The most commonly used is the type K which is capable of measuring temperatures from -40°C to $+1200^{\circ}\text{C}$. It is made from a chrome and an aluminum wire.

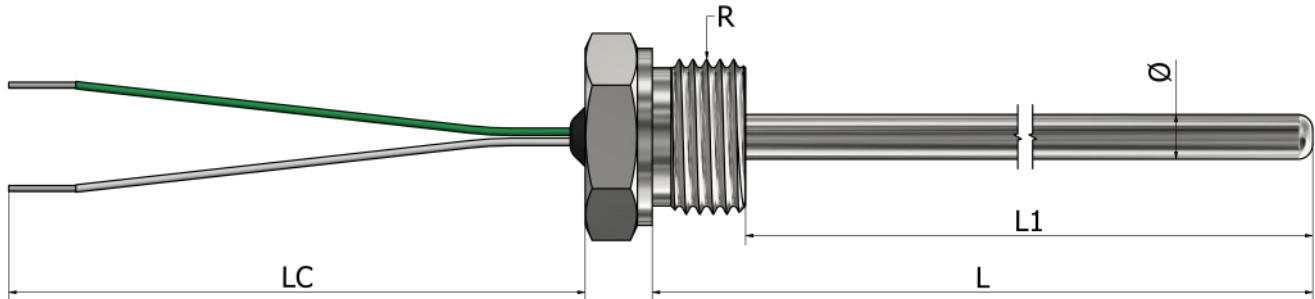


Note that connector colors vary by standard and country. Check the *"International Color Codes applied to temperature measuring engineering"*.



TR01 – Thermocouples with thread connection

Fixed thread with free leads (type 1)



*Tube material *Stainless steel 316L*
 *Thread material *Stainless steel (304 / 304L / 316 / 316L)*

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
 See the part "Accessories"

Quantity:

Note:

2. Class:

- Class 1 Class 2

3. Length L or L1 (mm):

4. Diameter Ø (mm):

5. Free leads length LC (mm):

6. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

How to order?

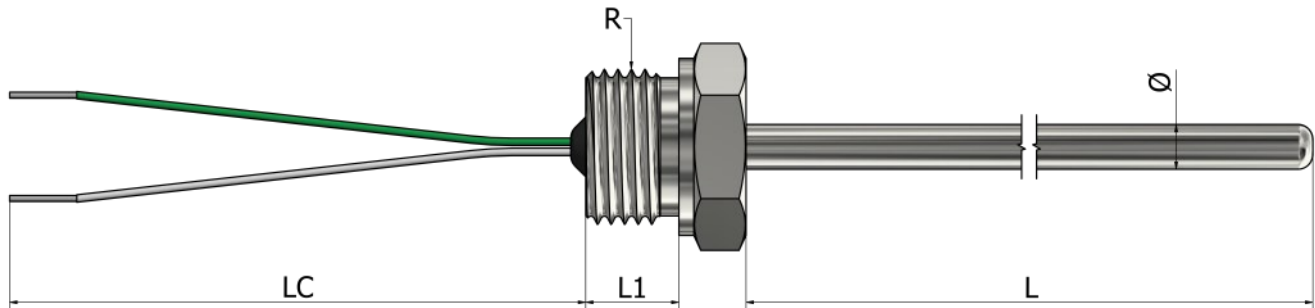


Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.



TR02 – Thermocouples with thread connection

Fixed thread with free leads (type 2)



*Tube material *Stainless steel 316L*
 *Thread material *Stainless steel (304 / 304L / 316 / 316L)*

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
 See the part "Accessories"

Quantity:

Note:

2. Class:

- Class 1 Class 2

3. Length L (mm):

4. Diameter Ø (mm):

5. Free leads length LC (mm):

6. Thread length L1 (mm):

7. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

How to order?

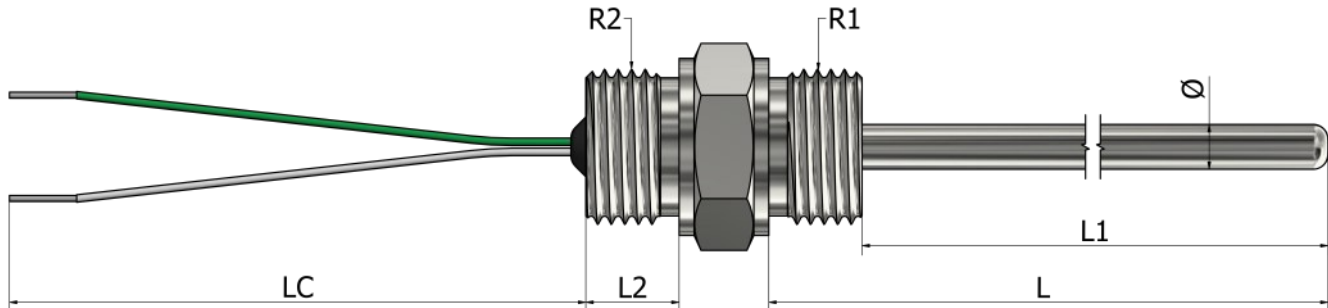


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TR03 – Thermocouples with thread connection

Fixed thread with free leads (type 3)



*Tube material *Stainless steel 316L*
 *Thread material *Stainless steel (304 / 304L / 316 / 316L)*

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
 See the part "Accessories"

Quantity:

Note:

2. Class:

- Class 1 Class 2

3. Diameter Ø (mm):

4. Free leads length LC (mm):

5. Length L or L1 (mm):

6. Thread R1:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

7. Thread length L2 (mm):

8. Thread R2:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

How to order?



Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.



TR10 – Thermocouples with thread connection

Fixed thread with cable prolongation



*Tube material *Stainless steel 316L*
 *Thread material *Stainless steel (304 / 304L / 316 / 316L)*

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

2. Class:

- Class 1 Class 2

3. Length L or L1 (mm):

4. Diameter Ø (mm):

5. Cable prolongation:

- PVC (105°C) Silicone (180°C) Teflon (260°C)
 Fiberglass (400°C) Other:

6. Cable length LC (mm):

7. Crimp protection:

- Spring Heat shrink sleeve Without

8. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
 See the part "Accessories"

Quantity:

Note:

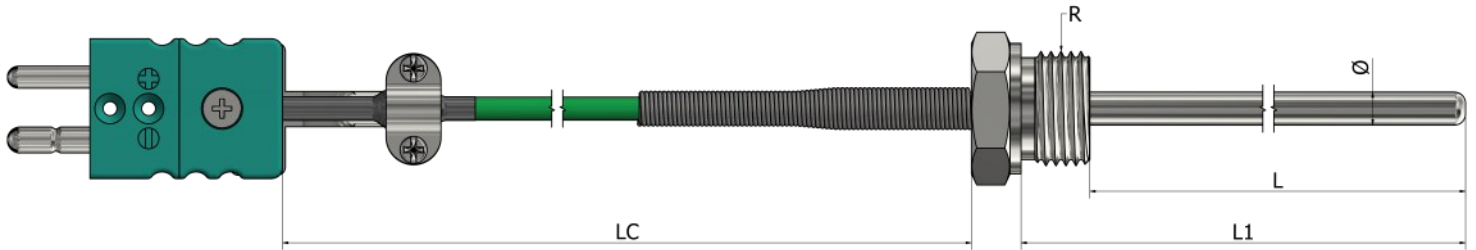
How to order?

Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.



TR11 – Thermocouples with thread connection

Fixed thread with cable prolongation and connector



*Tube material **Stainless steel 316L**
 *Thread material **Stainless steel (304 / 304L / 316 / 316L)**

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

2. Class:

- Class 1 Class 2

3. Length L or L1 (mm):

4. Diameter Ø (mm):

5. Cable prolongation:

- PVC (105°C) Silicone (180°C) Teflon (260°C)
 Fiberglass (400°C) Other:

6. Cable length LC (mm):

7. Crimp protection:

- Spring Heat shrink sleeve Without

8. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

9. Connector:

- Miniature Plug Miniature Socket Standard Plug Standard Socket

10. Connector temperature:

- 200°C 350°C 650°C

11. Option:

- Cable clamp Custom ID label Without

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

Quantity:

Note:

How to order?

Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.





TR12 – Thermocouples with thread connection

Fixed thread with double cable prolongation



*Tube material **Stainless steel 316L**
 *Thread material **Stainless steel (304 / 304L / 316 / 316L)**

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

9. Connector:

- Miniature Plug Miniature Socket Standard Plug Standard Socket Without

2. Class:

- Class 1 Class 2

10. Connector temperature:

- 200°C 350°C 650°C

3. Length L or L1 (mm):

4. Diameter Ø (mm):

5. Cable prolongation:

- PVC (105°C) Silicone (180°C) Teflon (260°C)
 Fiberglass (400°C) Other:

11. Option:

- Cable clamp Custom ID label Without

6. Cable length LC (mm):

7. Crimp protection:

- Spring Heat shrink sleeve Without

8. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

Quantity:

Note:

How to order?

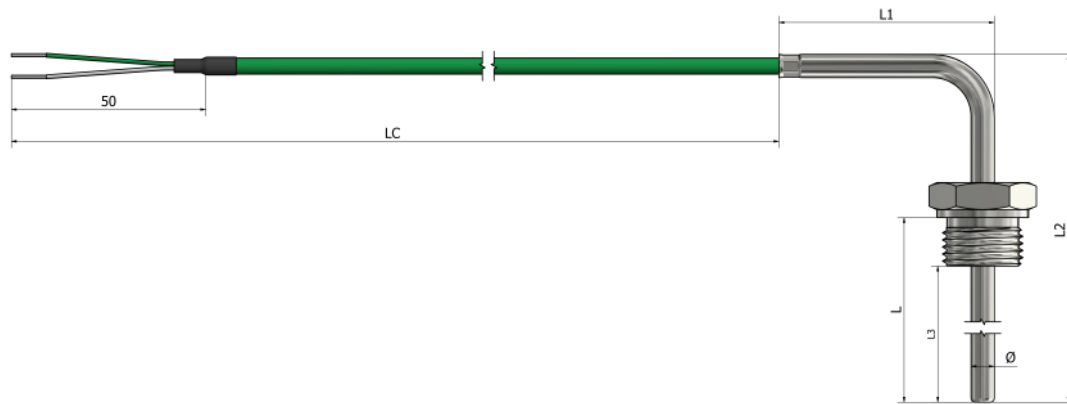
Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.





TR13 – Thermocouples with thread connection

Fixed thread (90° bend) (type 1)



*Tube material **Stainless steel 316L**

*Thread material **Stainless steel (304 / 304L / 316 / 316L)**

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

2. Class:

- Class 1 Class 2

3. Lengths (mm):

L1 _____ L2 _____

4. Length L or L3 (mm):

5. Diameter Ø (mm):

6. Cable prolongation:

- PVC (105°C) Silicone (180°C) Teflon (260°C)
 Fiberglass (400°C) Other:

7. Cable length LC (mm):

8. Crimp protection:

- Spring Heat shrink sleeve Without

9. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

10. Connector:

- Miniature Plug Miniature Socket Standard Plug Standard Socket Without

11. Connector temperature:

- 200°C 350°C 650°C

12. Option:

- Cable clamp Custom ID label Without

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

Quantity:

Note:

How to order?

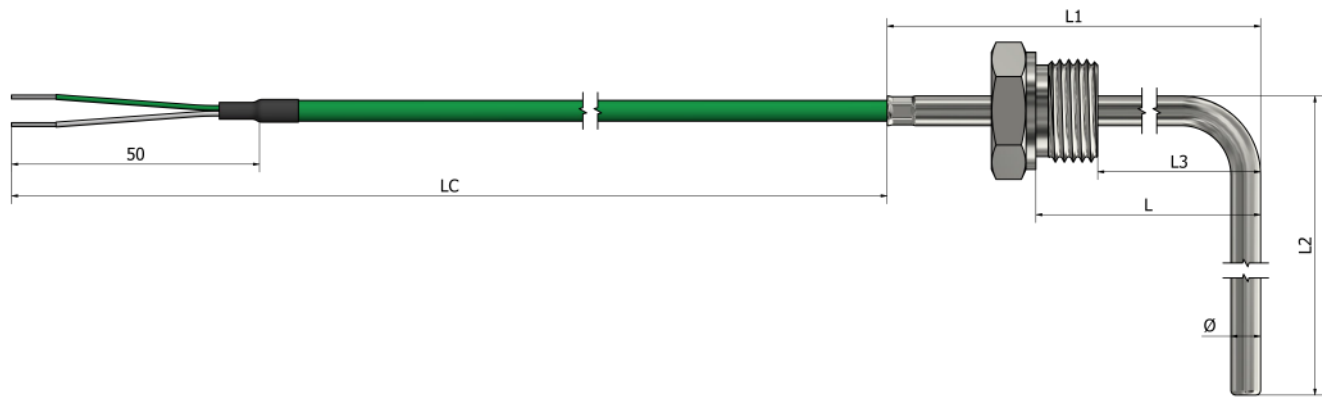
Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.





TR14 – Thermocouples with thread connection

Fixed thread (90° bend) (type 2)



*Tube material **Stainless steel 316L** *Thread material **Stainless steel (304 / 304L / 316 / 316L)**

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

2. Class:

- Class 1 Class 2

3. Lengths (mm):

L1 _____ L2 _____

4. Length L or L3 (mm):

5. Diameter Ø (mm):

6. Cable prolongation:

- PVC (105°C) Silicone (180°C) Teflon (260°C)
 Fiberglass (400°C) Other:

7. Cable length LC (mm):

8. Crimp protection:

- Spring Heat shrink sleeve Without

9. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

10. Connector:

- Miniature Plug Miniature Socket Standard Plug Standard Socket Without

11. Connector temperature:

- 200°C 350°C 650°C

12. Option:

- Cable clamp Custom ID label Without

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

Quantity:

Note:

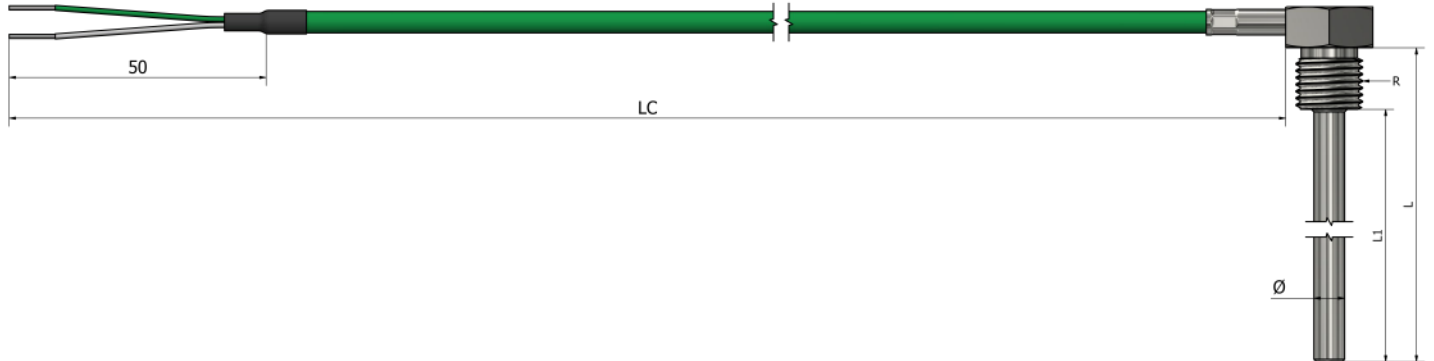
How to order?

Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.



TR15 – Thermocouples with thread connection

Fixed thread with 90° cable prolongation



*Tube material **Stainless steel 316L** *Thread material **Stainless steel (304 / 304L / 316 / 316L)**

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

2. Class:

- Class 1 Class 2

3. Length L or L1 (mm):

4. Diameter Ø (mm):

5. Cable prolongation:

- PVC (105°C) Silicone (180°C) Teflon (260°C)
 Fiberglass (400°C) Other:

6. Cable length LC (mm):

7. Crimp protection:

- Spring Heat shrink sleeve Without

8. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

9. Connector:

- Miniature Plug Miniature Socket Standard Plug Standard Socket Without

10. Connector temperature:

- 200°C 350°C 650°C

11. Option:

- Cable clamp Custom ID label Without

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

Quantity:

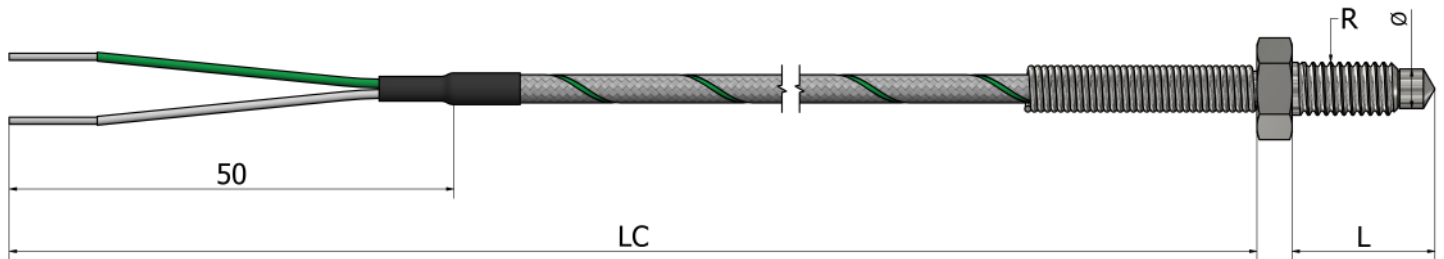
Note:

How to order?

Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.



TR20 – Thermocouples with thread connection Nozzle



*Nozzle and thread material **Stainless steel (304 / 304L / 316 / 316L)**

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

2. Class:

- Class 1 Class 2

3. Length L (mm):

4. Diameter Ø (mm):

5. Cable prolongation:

- PVC (105°C) Silicone (180°C) Teflon (260°C)
 Fiberglass (400°C) Other:

6. Cable length LC (mm):

7. Crimp protection:

- Spring Heat shrink sleeve Without

8. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

9. Connector:

- Miniature Plug Miniature Socket Standard Plug Standard Socket Without

10. Connector temperature:

- 200°C 350°C 650°C

11. Option:

- Cable clamp Custom ID label Without

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

Quantity:

Note:

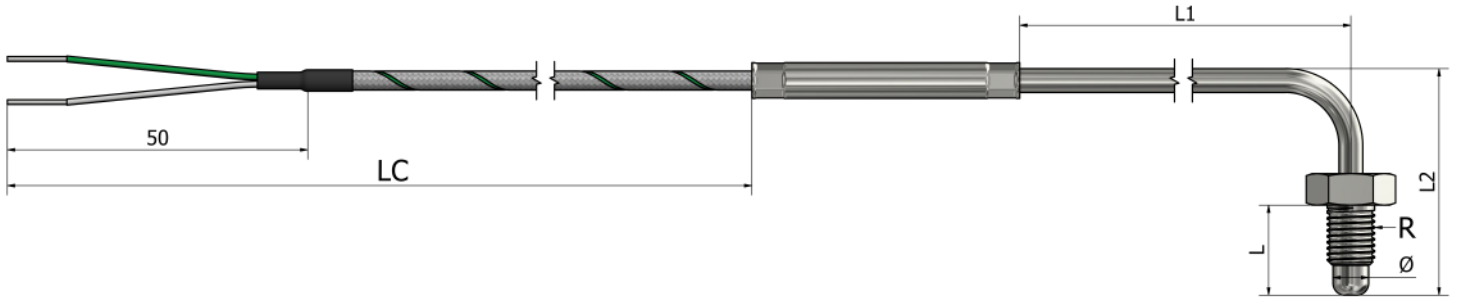
How to order?

Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.



TR21 – Thermocouples with thread connection

Nozzle (90° bend)



*Tube material **Stainless steel 316L**

*Nozzle and thread material **Stainless steel (304 / 304L / 316 / 316L)**

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

10. Connector:

- Miniature Plug Miniature Socket Standard Plug Standard Socket Without

2. Class:

- Class 1 Class 2

11. Connector temperature:

- 200°C 350°C 650°C

3. Lengths (mm):

L1 _____ L2 _____

12. Option:

- Cable clamp Custom ID label Without

4. Length L (mm):

5. Diameter Ø (mm):

6. Cable prolongation:

- PVC (105°C) Silicone (180°C) Teflon (260°C)
 Fiberglass (400°C) Other:

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

Quantity:

Note:

7. Cable length LC (mm):

8. Crimp protection:

- Spring Heat shrink sleeve Without

9. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

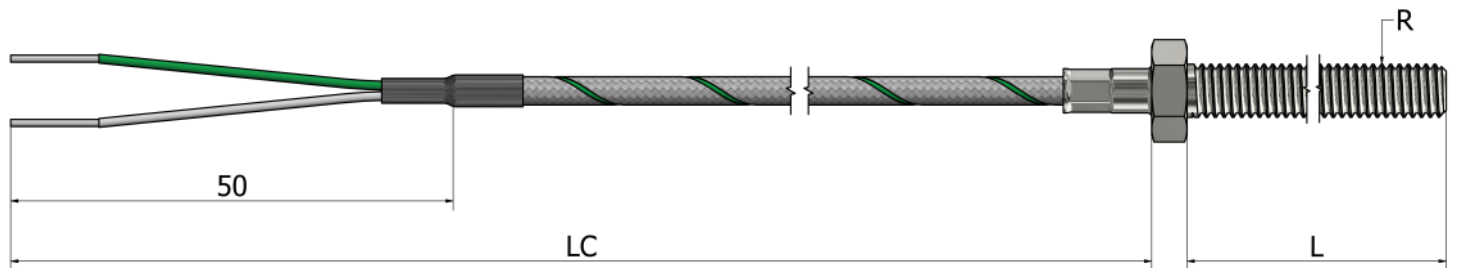
How to order?



Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.



TR22 – Thermocouples with thread connection Bolt



*Bolt material *Stainless steel (304 / 304L / 316 / 316L)*

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

2. Class:

- Class 1 Class 2

3. Length L (mm):

4. Cable prolongation:

- PVC (105°C) Silicone (180°C) Teflon (260°C)
 Fiberglass (400°C) Other:

5. Cable length LC (mm):

6. Crimp protection:

- Spring Heat shrink sleeve Without

7. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

8. Connector:

- Miniature Plug Miniature Socket Standard Plug Standard Socket Without

9. Connector temperature:

- 200°C 350°C 650°C

10. Option:

- Cable clamp Custom ID label Without

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

Quantity:

Note:

How to order?

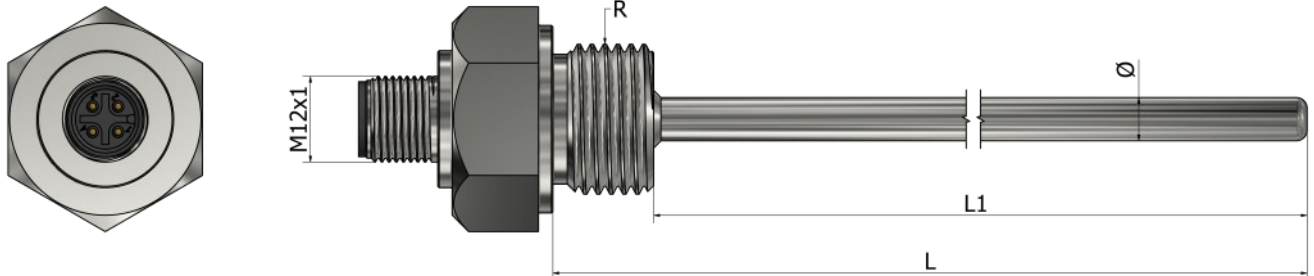


Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.



TR30 – Thermocouples with thread connection

Integrated M12 connector



*Tube material **Stainless steel 316L**

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

Quantity:

Note:

2. Class:

- Class 1 Class 2

3. Length L or L1 (mm):

4. Diameter Ø (mm):

5. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

How to order?

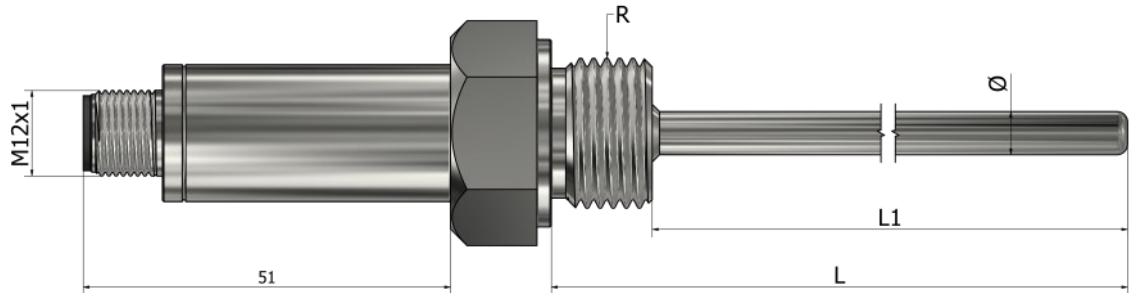


Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.



TR31 – Thermocouples with thread connection

Integrated M12 connector with transmitter



*Tube material **Stainless steel 316L**

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

2. Class:

- Class 1 Class 2

3. Length L or L1 (mm):

4. Diameter Ø (mm):

5. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

6. Transmitter (°C):

Specify temperature range

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

Quantity:

Note:

How to order?

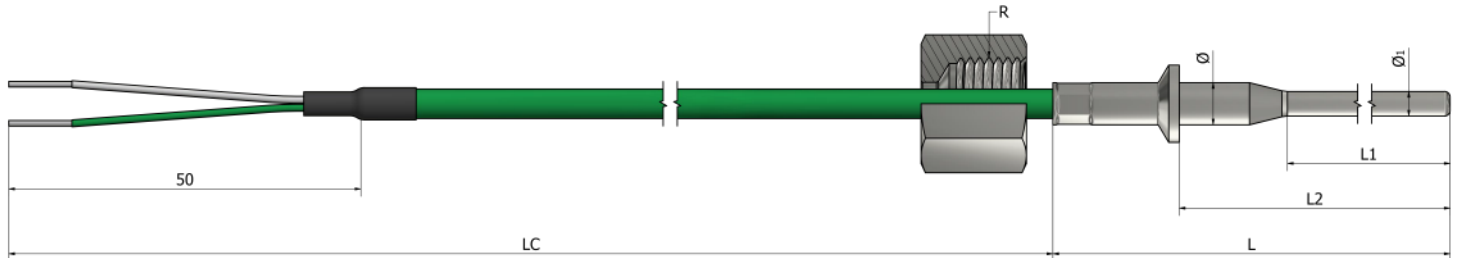


Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.



TR40 – Thermocouples with thread connection

Screw-on fixed thread



*Tube material **Stainless steel 316L** *Thread material **Stainless steel (304 / 304L / 316 / 316L)**

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

2. Class:

- Class 1 Class 2

3. Lengths (mm):

L _____ L1 _____ L2 _____

4. Diameters (mm):

Ø _____ Ø1 _____

5. Cable prolongation:

- PVC (105°C) Silicone (180°C) Teflon (260°C)
 Fiberglass (400°C) Other:

6. Cable length LC (mm):

7. Crimp protection:

- Spring Heat shrink sleeve Without

8. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

9. Connector:

- Miniature Plug Miniature Socket Standard Plug Standard Socket Without

10. Connector temperature:

- 200°C 350°C 650°C

11. Option:

- Cable clamp Custom ID label Without

Additional:

Application: _____

Operating temperature (min/max): _____

Type of environment: _____

Accessories:

See the part "Accessories"

Quantity: _____

Note: _____

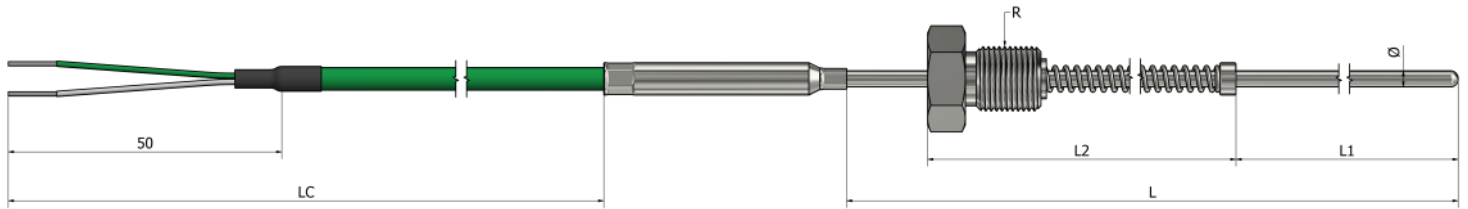
How to order?

Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.



TR50 – Thermocouples with thread connection

Thread connection (spring loaded)



*Tube material **Stainless steel 316L** *Thread material **Stainless steel (304 / 304L / 316 / 316L)**

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

2. Class:

- Class 1 Class 2

3. Lengths (mm):

L _____ L1 _____ L2 _____

4. Diameter Ø (mm):

5. Cable prolongation:

- PVC (105°C) Silicone (180°C) Teflon (260°C)
 Fiberglass (400°C) Other:

6. Cable length LC (mm):

7. Crimp protection:

- Spring Heat shrink sleeve Without

8. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

9. Connector:

- Miniature Plug Miniature Socket Standard Plug Standard Socket Without

10. Connector temperature:

- 200°C 350°C 650°C

11. Option:

- Cable clamp Custom ID label Without

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

Quantity:

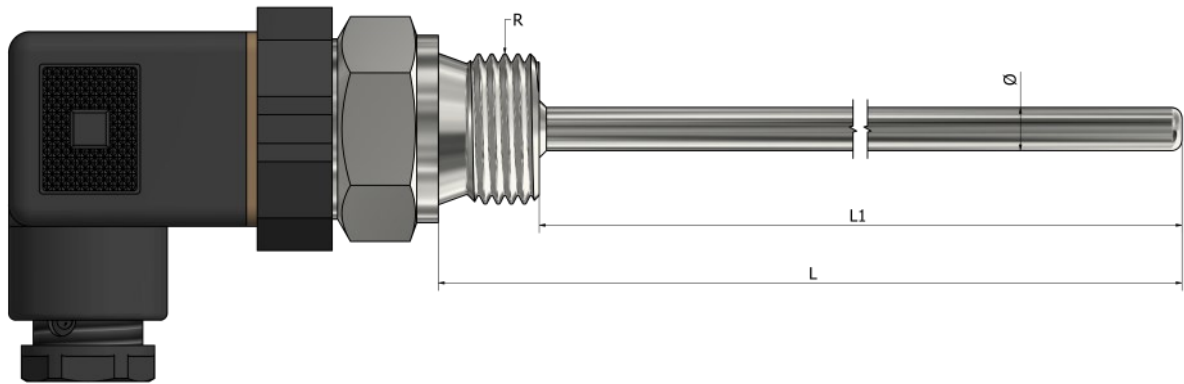
Note:

How to order?

Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.



TR60 – Thermocouples with thread connection DIN43650 connector



*Tube material **Stainless steel 316L** *Thread material **Stainless steel (304 / 304L / 316 / 316L)**

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

2. Class:

- Class 1 Class 2

3. Length L or L1 (mm):

4. Diameter Ø (mm):

5. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

Quantity:

Note:

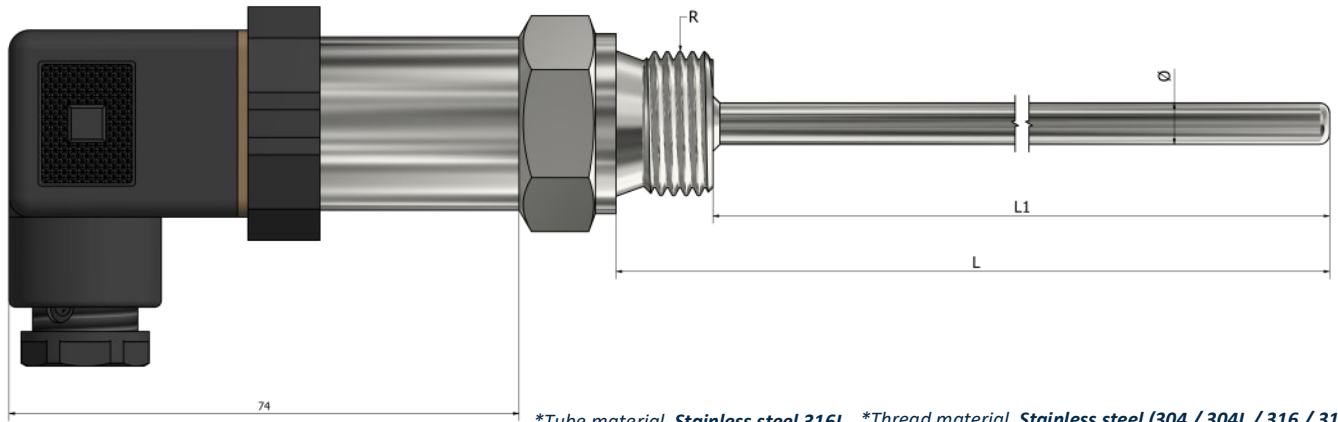
How to order?



Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.



TR61 – Thermocouples with thread connection DIN43650 connector with transmitter



*Tube material **Stainless steel 316L** *Thread material **Stainless steel (304 / 304L / 316 / 316L)**

Ordering information

1. Thermocouple:

- Type K Type N Type J Type T Type E
 Type R Type S Type B Other:

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

Quantity:

Note:

2. Class:

- Class 1 Class 2

3. Length L or L1 (mm):

4. Diameter Ø (mm):

5. Thread:

- 1/2" BSPP 1/4" BSPP 1/4" BSPT M10
 1/2" NPT Other:

6. Transmitter (°C):

Specify temperature range

How to order?

Choose the desired characteristics of your sensor by marking the checkboxes and by filling up the text. You can provide sketches, images, personal notes, special requirements or any important data. For additional questions and assistance, feel free to contact us.