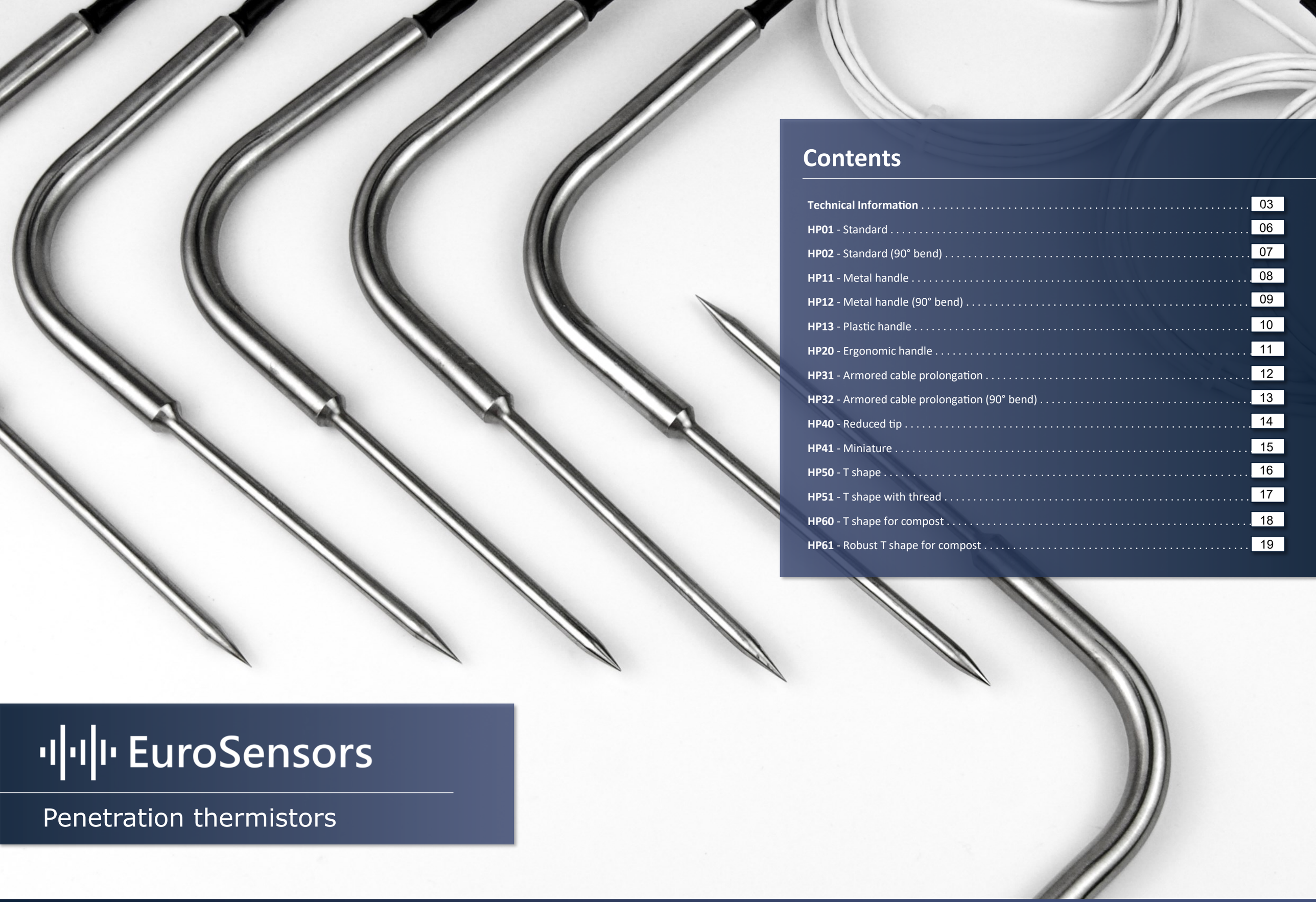


Contents

Technical Information 03

HP01 - Standard 06

HP02 - Standard (90° bend) 07

HP11 - Metal handle 08

HP12 - Metal handle (90° bend) 09

HP13 - Plastic handle 10

HP20 - Ergonomic handle 11

HP31 - Armored cable prolongation 12

HP32 - Armored cable prolongation (90° bend) 13

HP40 - Reduced tip 14

HP41 - Miniature 15

HP50 - T shape 16

HP51 - T shape with thread 17

HP60 - T shape for compost 18

HP61 - Robust T shape for compost 19

EuroSensors

Penetration thermistors

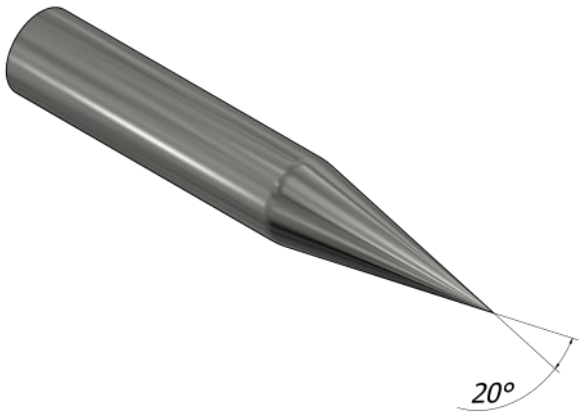
8 chemin des Grandes Combes 69360 Ternay, France
+33 472 669 234

contact@eurosensors.eu
www.eurosensors.eu

Penetration thermistors - Technical information

What are the characteristics of penetration thermistors ?

What sets penetration thermistors apart is their ability to measure the internal temperature of objects with pinpoint accuracy. Penetration probes are slender, pointed sensors designed for insertion into materials such as food, liquids, or even soil.



Here are some key applications where they prove invaluable:

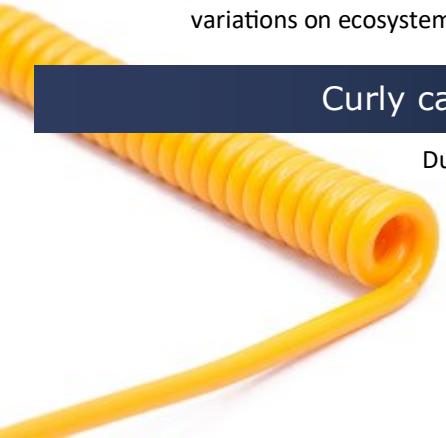
Food safety and culinary arts: In the culinary world, achieving the perfect level of doneness and ensuring food safety go hand in hand. Penetration probes allow chefs and food inspectors to measure the core temperature of dishes, ensuring they are both delicious and safe to eat.

Industrial processes: From chemical reactions to metallurgical processes, knowing the temperature within materials or substances is crucial. Penetration probes provide real-time insights into the temperature profiles of these processes, aiding in quality control and optimization.

Medical applications: In the healthcare sector, penetration probes are used for patient monitoring, particularly during surgeries where monitoring body temperature accurately is vital for patient safety.

Environmental research: Environmental scientists utilize penetration probes to measure soil temperature accurately, helping them understand the impact of temperature variations on ecosystems.

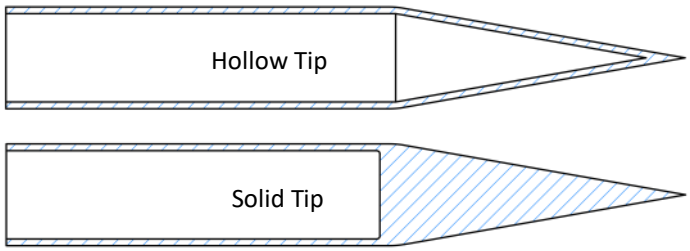
Curly cable



Due to the frequent movement of the cable while using penetration probes, there is a option to put a curly cable that will ensure a easier and more comfortable way of use.

Types of penetration probes

There are two types of penetration probes with hollow tip and solid tip. Hollow tip probes provides a faster response while solid tip probe is used in places where it is required to break through harder materials



What is an RTD sensor ?

An RTD (Resistance Temperature Detector) is a type of sensor used to measure temperature. RTDs are used for accurate, stable and reliable temperature measurements in generally high temperature ranges.

RTDs advantages

RTDs have several advantages over other types of temperature sensors:

High precision

RTDs have high temperature sensitivity, typically in the range of 0.1% to 0.2% per °C, allowing for accurate temperature measurement.

Long term stability

RTDs have long-term stability and longer life than thermistors, making them more reliable for long-term applications.

Wide operating temperature range

RTDs can operate in a temperature range of -200 to +850°C, making them suitable for many industrial applications.

Low ohmic resistance

RTDs have a low ohmic resistance compared to thermistors, which makes them easier to use with electronic circuits.

How does an RTD work ?

An RTD is a sensor that measures temperature using the variation of the electrical resistance of a conductive material. RTDs are usually made from platinum, gold or nickel. The operating principle of RTDs is based on Ohm's law of electrical resistance, which establishes a relationship between the electrical resistance of a conductor and its temperature.

According to this law, the electrical resistance of a conductor generally increases when its temperature increases.

Penetration thermistors - Technical information

What is a thermistor ?

A thermistor is an electrical component that changes its resistance according to temperature. It consists of a conductive material that is wrapped in an insulating material. As the temperature increases, the resistance of the conductive material decreases (NTC), or increases (PTC), which can be detected and measured.

What are the two types of thermistor ?

NTC (*Negative Temperature Coefficient*) are made of a conductive material based on transition metals and are used to measure temperatures up to 300 °C.
PTC (*Positive Temperature Coefficient*) are made of a conductive material based on polymer or ceramic and are used to measure temperatures up to 200 °C.

What is the difference between an NTC and a PTC?

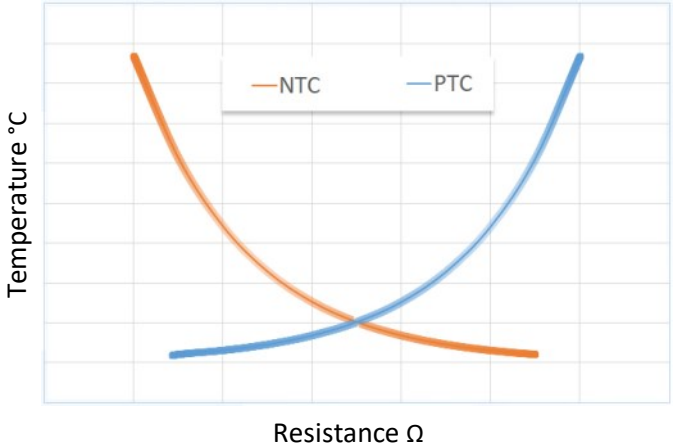
NTCs and PTCs are both thermistors, i.e. temperature sensors that change resistance depending on the temperature.
However, there is a major difference between these two types of thermistors:

NTC thermistors

NTCs have a resistance that decreases as the temperature increases. They are commonly used in thermostats and temperature control devices to measure room temperature.

PTC thermistors

PTCs have a resistance that increases as the temperature rises. They are commonly used in thermostatic fuses and overcurrent protection devices to shut off power in the event of overheating.



Thermistor wiring configurations

The cable has certain resistance which adds to the RTD resistance. Thus, the total resistance is the sum of the RTD resistance and the lead wire resistance. This causes more voltage drop across the RTD measurement system and as a result causes inaccuracy in measurement. This is the reason why we use 2 wire, 3 wire, and 4 wire RTD configurations.

Thermistor connectors

Due to the lack of standardization in RTD connectors, our company takes pride in its ability to produce a wide range of RTD connectors. We understand that different industries and applications have unique requirements when it comes to temperature measurement, and that includes the connectors used. With our expertise and advanced manufacturing capabilities, we have the flexibility to design and produce various types of RTD connectors.

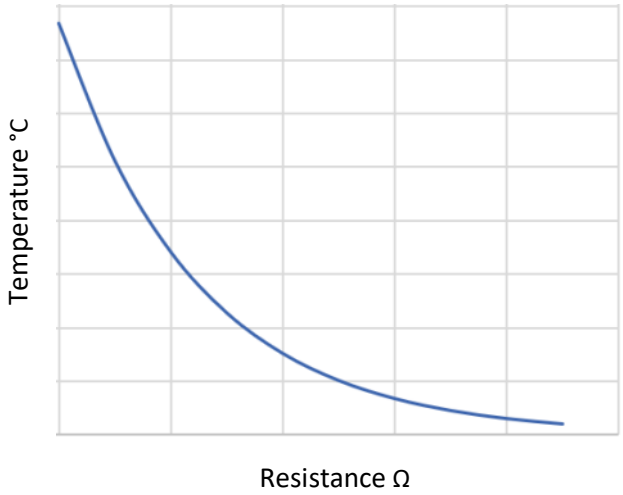
Global cable insulation characteristics

	PVC	Silicone	Teflon	Fiberglass
Abrasion resistance	Very good	Fair	Good	Fair
Chemical resistance	Very good	Poor	Excellent	Good
Moisture resistance	Good	Good	Excellent	Poor
Fire resistance	Good	Good	Excellent	Excellent

Penetration thermistors - Technical information

The β beta value

A thermistor's "β" value, or beta value, is an indication of the shape of the curve representing the relationship between resistance and temperature of an NTC thermistor. Calculating the beta value is a vital step in the component selection process as it gives the characteristic at a given temperature vs the resistance for a specific application.



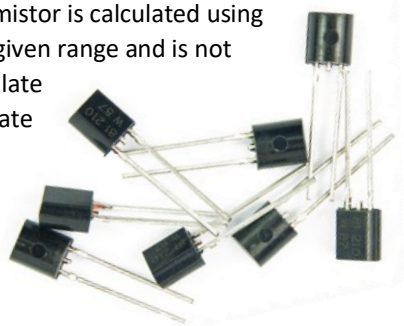
NTC thermistors are non-linear resistors that alter their resistance characteristics with temperature. Simply put, as temperature increases the thermistor's resistance decreases.

The manner in which the resistance of a thermistor decreases is related to a constant known in the thermistor industry as beta (β). Beta is measured in degrees Kelvin (K) and is computed based on the formulation given below.

Where:
Rt1 = Resistance at Temperature 1
Rt2 = Resistance at Temperature 2
T1 = Temperature 1 (K)
T2= Temperature 2 in (K)

$$\beta = \frac{\ln(\frac{R_{T1}}{R_{T2}})}{(\frac{1}{T_1} - \frac{1}{T_2})}$$

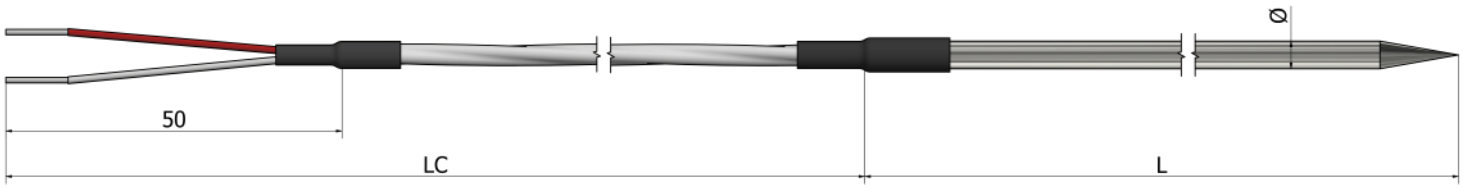
The beta value of an NTC Thermistor is calculated using only two temperatures over a given range and is not the most accurate way to calculate the R vs. T curve. A more accurate method is to use the Steinhart and Hart method, which uses three temperatures over a given range.



Types of thermistors

Type	Resistance	Beta value	Temperature
PTC KTY81/121	990Ω at 25°C	/	T° (-55/+150°C)
NTC	3,3kΩ at 100°C	β=3970	T° (-40/+200°C)
NTC	10kΩ at 25°C	β=3977	T° (-40/+125°C)
NTC	10kΩ at 25°C	β=3435	T° (-40/+150°C)
NTC	20kΩ at 25°C	β=4260	T° (-40/+125°C)

HP01 – Penetration thermistors
Standard



Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle diameter Ø: *(material **Stainless steel 316L**)*

☐ Ø3 mm ☐ Ø4 mm ☐ Ø5 mm

☐ Ø6 mm ☐ Other:

4. Needle length L (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

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

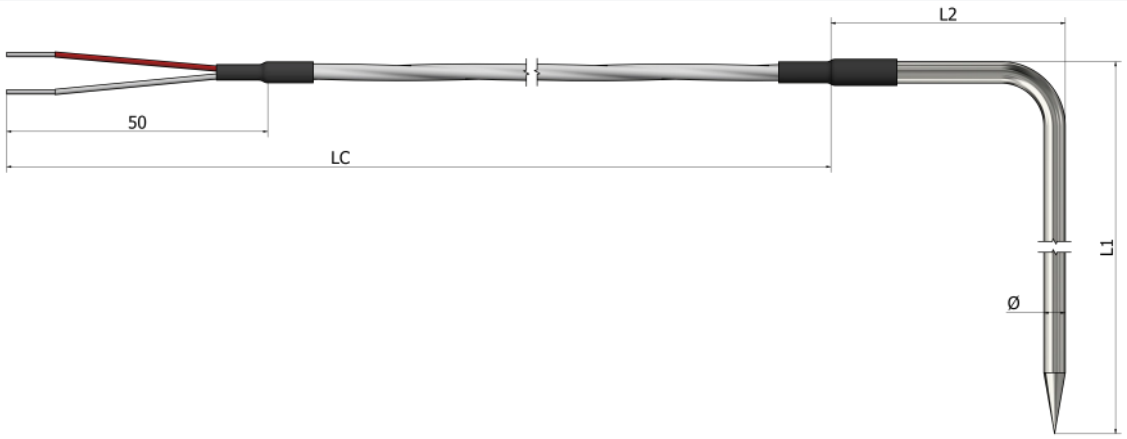
Quantity:

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.

HP02 – Penetration thermistors
Standard (90° bend)



Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle diameter Ø: *(material **Stainless steel 316L**)*

☐ Ø3 mm ☐ Ø4 mm ☐ Ø5 mm

☐ Ø6 mm ☐ Other:

4. Needle lengths (mm):

L1 _____ L2 _____

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

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

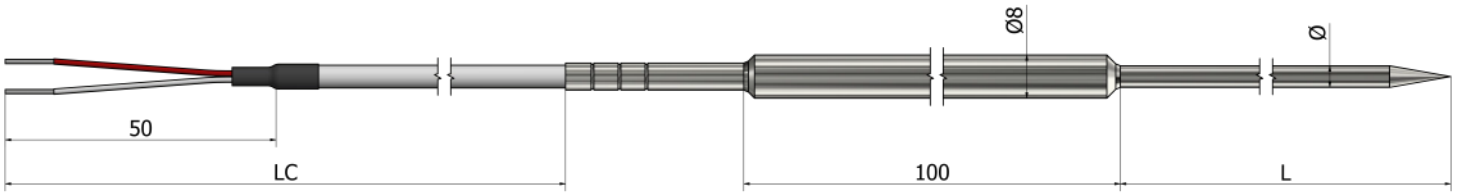
Quantity:

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.

HP11 – Penetration thermistors
Metal handle



*Handle material **Stainless steel 316L***

Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle diameter Ø: *(material **Stainless steel 316L**)*

☐ Ø3 mm ☐ Ø4 mm ☐ Ø5 mm

☐ Ø6 mm ☐ Other:

4. Needle length L (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

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

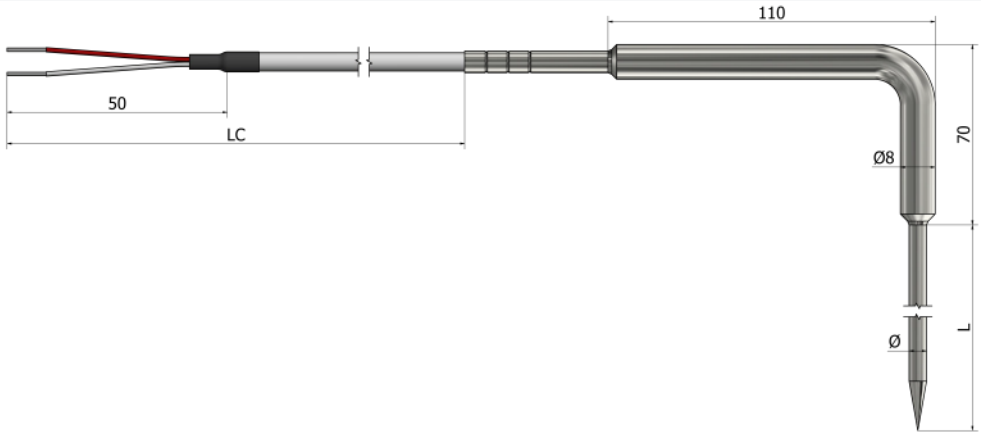
Quantity:

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.

HP12 – Penetration thermistors
Metal handle (90° bend)



*Handle material ***Stainless steel 316L***

Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle diameter Ø: *(material **Stainless steel 316L**)*

☐ Ø3 mm ☐ Ø4 mm ☐ Ø5 mm

☐ Ø6 mm ☐ Other:

4. Needle length L (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

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

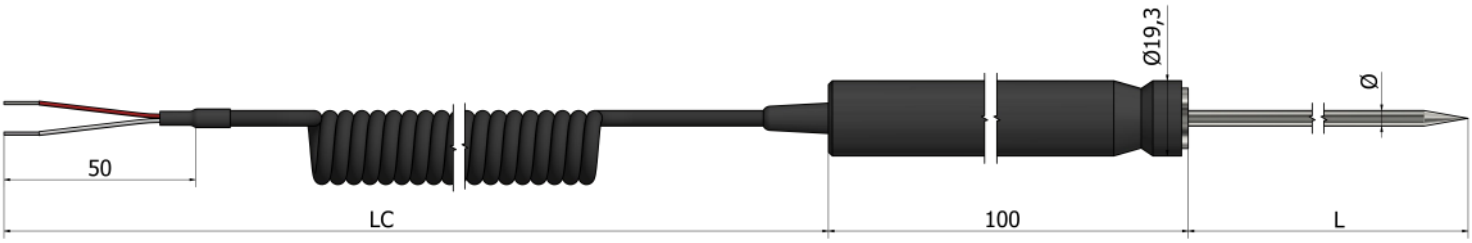
Quantity:

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.

HP13 – Penetration thermistors
Plastic handle



*Handle material ***Plastic***

Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle diameter Ø: *(material **Stainless steel 316L**)*

☐ Ø3 mm ☐ Ø4 mm ☐ Ø5 mm

☐ Ø6 mm ☐ Other:

4. Needle length L (mm):

5. Cable prolongation:

☐ PVC (105°C) ☐ Silicone (180°C) ☐ Teflon (260°C)

☐ Fiberglass (400°C) ☐ Curly polyurethane (105°C)

☐ Other:

6. Cable length LC (mm):

7. Crimp protection:

☐ Spring ☐ Heat shrink sleeve ☐ Without

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

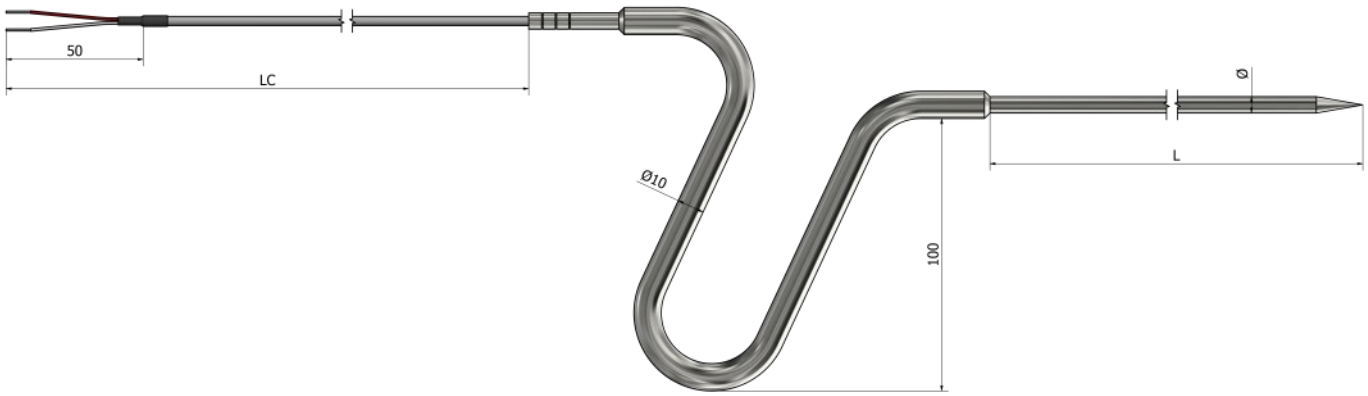
Quantity:

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.

HP20 – Penetration thermistors
Ergonomic handle



*Handle material ***Stainless steel 316L***

Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle diameter Ø: *(material **Stainless steel 316L**)*

☐ Ø3 mm ☐ Ø4 mm ☐ Ø5 mm

☐ Ø6 mm ☐ Other:

4. Needle length L (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

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

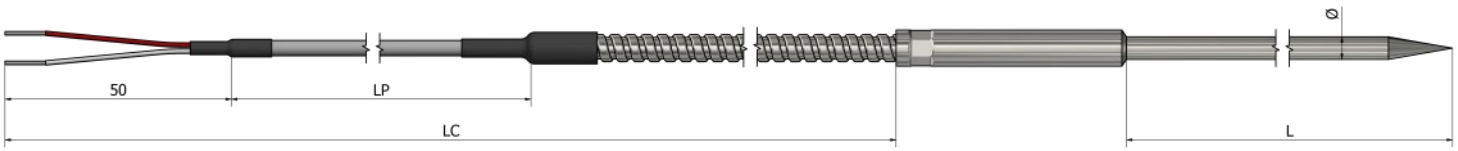
Quantity:

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.

HP31 – Penetration thermistors
Armored cable prolongation



*Handle material ***Stainless steel 316L***
*Armored cable material ***Stainless steel 304***

Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle diameter Ø: *(material **Stainless steel 316L**)*

☐ Ø3 mm ☐ Ø4 mm ☐ Ø5 mm
☐ Ø6 mm ☐ Other:

4. Needle length L (mm):

5. Cable prolongation:

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

8. Cable lengths (mm):

LC _____ LP _____

9. Crimp protection:

☐ Spring ☐ Heat shrink sleeve ☐ Without

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

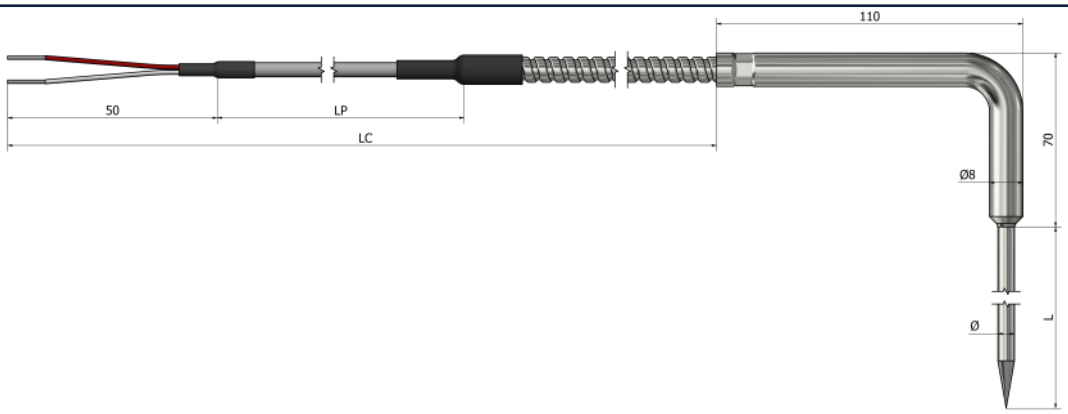
Quantity:

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.

HP32 – Penetration thermistors
Armored cable prolongation



*Handle material ***Stainless steel 316L***
*Armored cable material ***Stainless steel 304***

Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle diameter Ø: *(material **Stainless steel 316L**)*

☐ Ø3 mm ☐ Ø4 mm ☐ Ø5 mm
☐ Ø6 mm ☐ Other:

4. Needle length L (mm):

5. Cable prolongation:

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

6. Cable lengths (mm):

LC _____ LP _____

7. Crimp protection:

☐ Spring ☐ Heat shrink sleeve ☐ Without

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

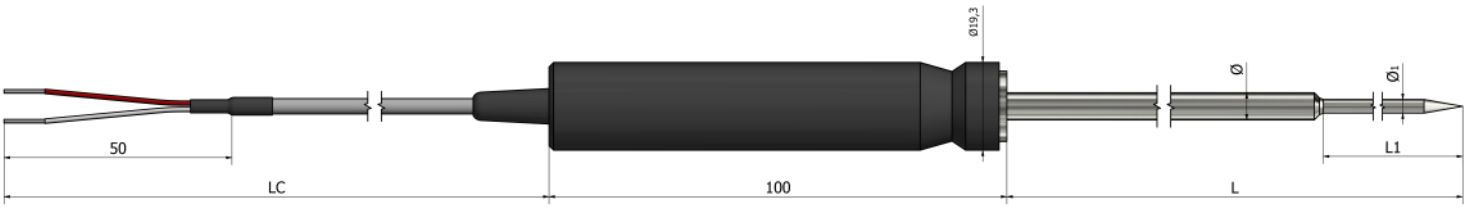
Quantity:

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.

HP40 – Penetration thermistors
Reduced tip



*Handle material ***Plastic***

Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle tip diameter Ø1: *(material **Stainless steel 316L**)*

☐ Ø3 mm ☐ Ø4 mm ☐ Ø5 mm

☐ Ø6 mm ☐ Other:

4. Needle diameter Ø (mm):

5. Needle lengths (mm):

L _____ L1 _____

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

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

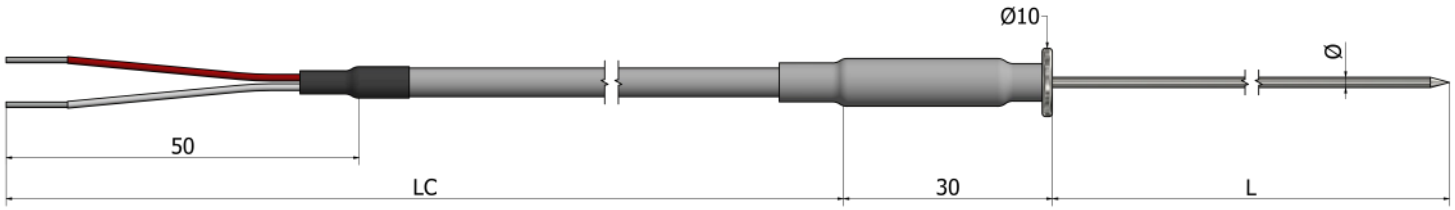
Quantity:

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.

HP41 – Penetration thermistors
Miniature



*Handle material ***Stainless steel 316L with rubber***

Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle diameter Ø: *(material **Stainless steel 316L**)*

☐ Ø1,5 mm ☐ Ø2 mm

☐ Other:

4. Needle length L (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

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

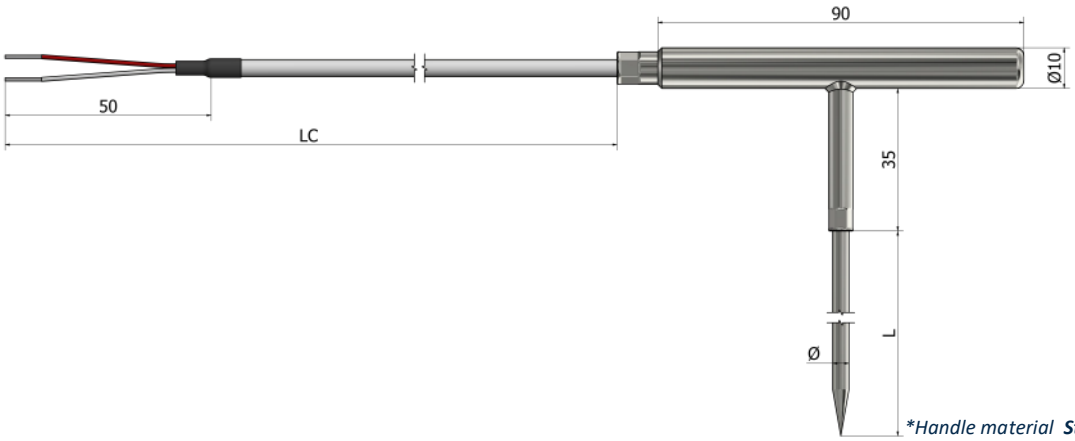
Quantity:

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.

HP50 – Penetration thermistors
T shape



*Handle material ***Stainless steel 316L***

Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle diameter Ø: *(material **Stainless steel 316L**)*

☐ Ø3 mm ☐ Ø4 mm ☐ Ø5 mm

☐ Ø6 mm ☐ Other:

4. Needle length L (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

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

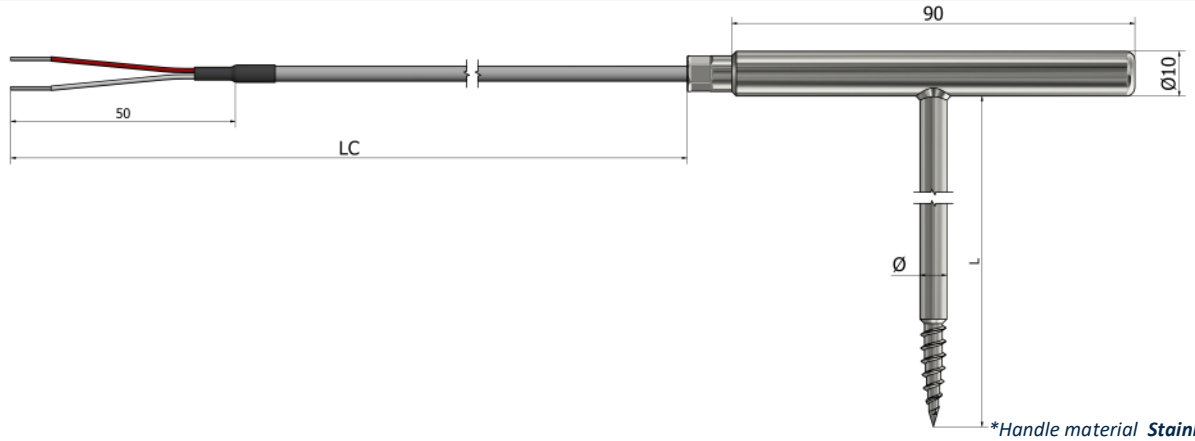
Quantity:

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.

HP51 – Penetration thermistors
T shape with thread



*Handle material ***Stainless steel 316L***

Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle diameter Ø: *(material **Stainless steel 316L**)*

☐ Ø3 mm ☐ Ø4 mm ☐ Ø5 mm

☐ Ø6 mm ☐ Other:

4. Needle length L (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

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

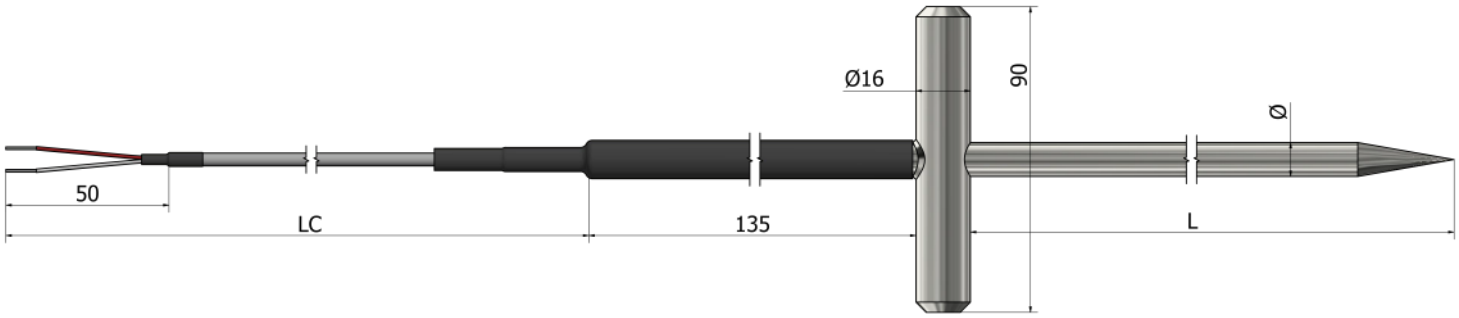
Quantity:

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.

HP60 – Penetration thermistors
T shape for compost



*Handle material ***Stainless steel 316L with rubber***

Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle diameter Ø: *(material **Stainless steel 316L**)*

☐ Ø3 mm ☐ Ø4 mm ☐ Ø5 mm

☐ Ø6 mm ☐ Other:

4. Needle length L (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

Additional:

Application:

Operating temperature (min/max):

Type of environment:

Accessories:
See the part "Accessories"

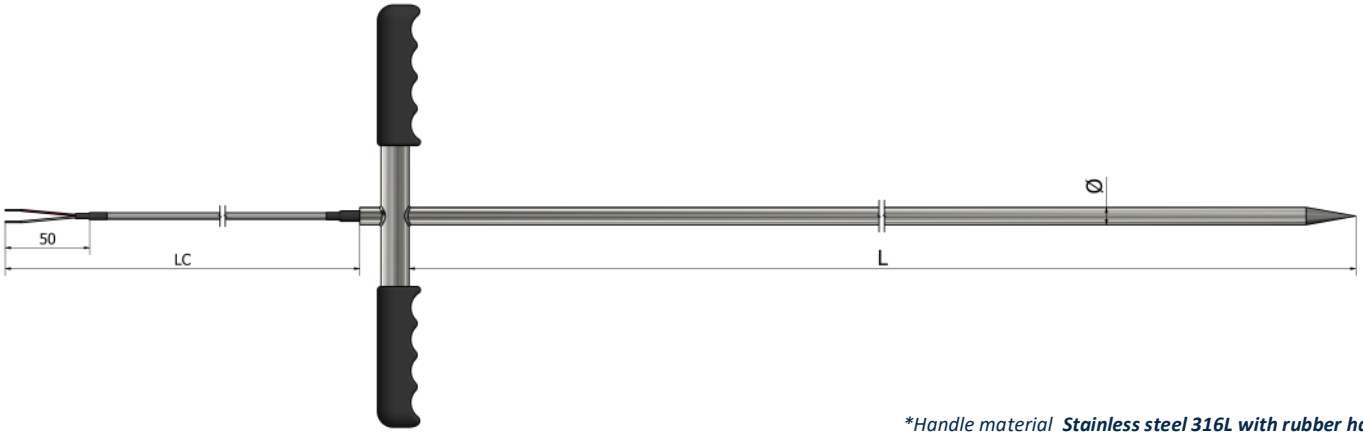
Quantity:

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.

HP61 – Penetration thermistors
Robust T shape for compost



*Handle material ***Stainless steel 316L with rubber hand***

Ordering information

1. Element type:

- ☐ PTC KTY 81/110 (-40°C / +150°C)
- ☐ PTC KTY 81/121 (-40°C / +150°C)
- ☐ NTC 10kΩ at 25°C ß3977 (-40°C / +125°C)
- ☐ NTC 20kΩ at 25°C ß4260 (-40°C / +125°C)
- ☐ NTC 3,3kΩ at 100°C ß3970 (-40°C / +200°C)
- ☐ Other:

(NTC / PTC , T° (min / max) , ß value, tolerance)

2. Wiring configuration: *(number of wires)*

☐ 2 ☐ Other:

3. Needle diameter Ø: *(material **Stainless steel 316L**)*

☐ Ø3 mm ☐ Ø4 mm ☐ Ø5 mm

☐ Ø6 mm ☐ Other:

4. Needle length L (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

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.