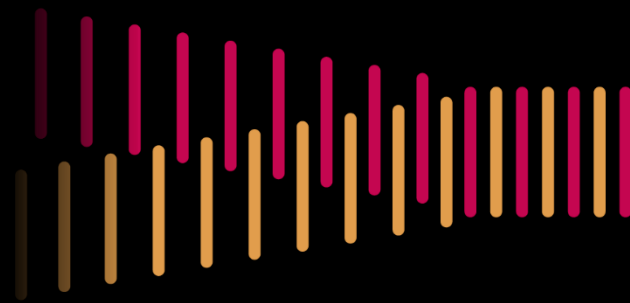




NEXTHERM

S E N S I N G

High Flux. High Value.

Specifications

Disc thermocouples

Table of Contents

Introduction	3
1. Sensor description.....	4
2. Installation	4
3. Product reference	5

Introduction

Disc thermocouples (Type K) are designed to be mounted directly onto a surface in order to measure its temperature as close as possible to the point of contact, particularly in cases where a conventional thermocouple cannot be inserted into the material.

They are typically used in the following situations:

- On flat or slightly curved metal surfaces
- On moving parts or components that are difficult to drill
- In thermal R&D testing (fire resistance tests, prototypes, battery testing)
- For industrial thermal monitoring (fluid lines, hot-spot monitoring)

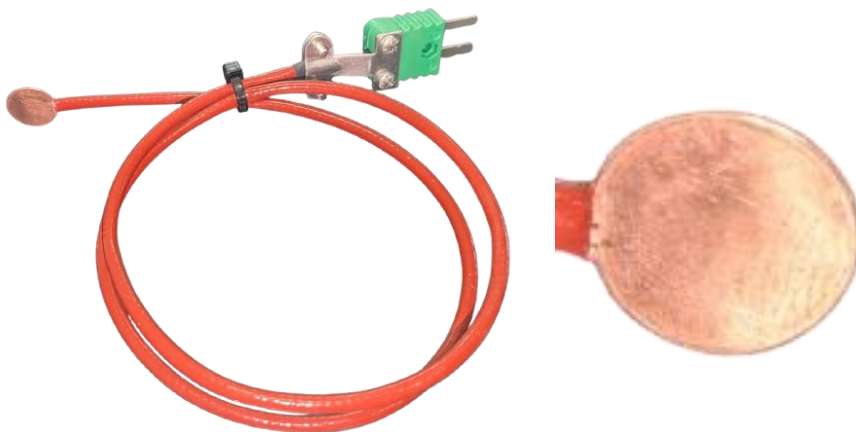


Fig.1 An example of copper disc thermocouple

They offer the following advantages:

- Very low thermal inertia (fast response time)
- Easy installation without machining
- High robustness in harsh environments

Nextherm Sensing provides standard models, but also offers a custom design service (shape, thermocouple type) tailored to your specific requirements.

1. Sensor description

Disc thermocouples are available in standard versions with the following characteristics:

- 12 mm diameter disc
- Type K thermocouple
- Solid single-core conductors, 0.35 mm, twisted pair
- Cable length: 2.5 m
- Glass silk insulation (high-temperature silicone outer sheath available as an option)
- Termination with standard flat-pin connector (green plug)

Two disc versions are available:

- **Semi-rigid copper discs:** with a standard thickness of 0.2 mm, copper discs can be used up to +650°C. They can be mounted using refractory adhesive or cementing. The Type K thermocouple is brazed on the rear face of the disc, with the +/- conductors positioned diametrically opposite each other. This configuration enables measurement of an average disc temperature. On request, the thermocouple junction can be brazed at the center of the disc.
- **Flexible Kapton® (polyimide) discs:** with a thickness of 0.14 mm, polyimide discs can be used continuously up to 260°C (300°C peak). Their flexibility allows bonding onto curved surfaces (e.g., pipes). The thermocouple hot junction is encapsulated at the center of the disc between two polyimide layers.

For custom requirements (disc thickness and diameter, conductor type, connector type, etc.), please contact us.

2. Installation

Disc thermocouples are designed to be bonded to surfaces or embedded in an adhesive layer (cementing). They can be fixed using:

- High-temperature bonding (e.g., refractory ceramic adhesive)
- Mechanical fastening / clamping
- Spot welding
- Thermal adhesive tape

The quality of the bond directly affects the sensor response (thermal contact quality). Users should therefore pay close attention to the choice of mounting method. Applying pressure during curing improves thermal contact, in particular by reducing bond-line thickness and removing trapped air.

It can also be beneficial to shield the disc thermocouple (ceramic foam, glass fiber, etc.) in order to reduce heat losses by convection and radiation from the exposed face of the sensor.

CONFORMS to NF EN 1363-1 & 1363-2 standards for fire resistance testing.

3. Product reference

To order a Type K disc thermocouple, please use the following part number:

TC-TK-0.35-XX

Where :

 **XX** : CU (copper) ou PI (polyimide)

For any other configuration, please contact us.

Sales contact

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UE declaration of conformity



We,

Nextherm Sensing SAS
Registered office: 6 Impasse Louis Bentajou
31410 Longages
France

In accordance with the requirements of the following directive:

2011/65/EU Restriction of the use of certain hazardous substances in electrical and electronic equipment

We hereby declare under our sole responsibility that:

Product model: TC-TK-0.35-CU & TC-TK-0.35-PI
Product type: Disc thermocouple
Brand: Nextherm Sensing

complies with the following applicable European Union harmonization legislation:

Directive 2011/65/EU of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), including Amendment **(EU) 2015/863**.

Product conformity has been assessed based on internal production controls. The product is designed for use under normal operating conditions in accordance with its technical documentation.



Nicolas Pelletier
Chief Executive Officer
Longages, le 15 Janvier 2026

About Nextherm Sensing

Nextherm Sensing is an innovative French company with roots in aerospace Research, specializing in heat flux measurement. Founded in 2022, it offers a wide range of sensors to address a diverse array of academic and industrial challenges.

Attentive to your needs and application constraints, we provide end-to-end support throughout the sensor selection process, from user training and the provision of analysis tools to after-sales service. We also offer a unique recalibration service based on a high-precision laser source.

Founded by two passionate researchers, Nextherm Sensing has innovation and continuous improvement in its DNA. That's why we dedicate a significant portion of our resources to developing new, increasingly robust and high-performing products.

Find us at www.nextherm-sensing.com

Or contact us directly at contact@nextherm-sensing.com

