



Temperature measurement, sensor technology
and overheating protection in industry and household

**Safety for machines,
systems and installations**

Automation, electrification, and miniaturization permeate almost all areas of life today. This is associated with more and more electric drives, more small and miniature motors, and more electrically powered heating elements - in industrial applications as well as in products for the end consumer. Integrated temperature sensors from Microtherm Sentronic protect these from overheating.

We analyze applications of our customers with the aim to implement the most economical solution regarding temperature measurement and temperature monitoring. With these customized solutions, based on our modular standard products, we customize the specific needs of our customers, thus reducing the cost of their assemblies and assembly of the sensors.

We support many existing customers in complying with the continuously changing specifications, exploit the opportunities of miniaturization and expand the scope of services. With comprehensive application, process, and system expertise as well as decades of experience in component manufacturing, we supply OEMs and suppliers in a wide range of industries.

Our temperature sensor technology serves as overheating protection and temperature management

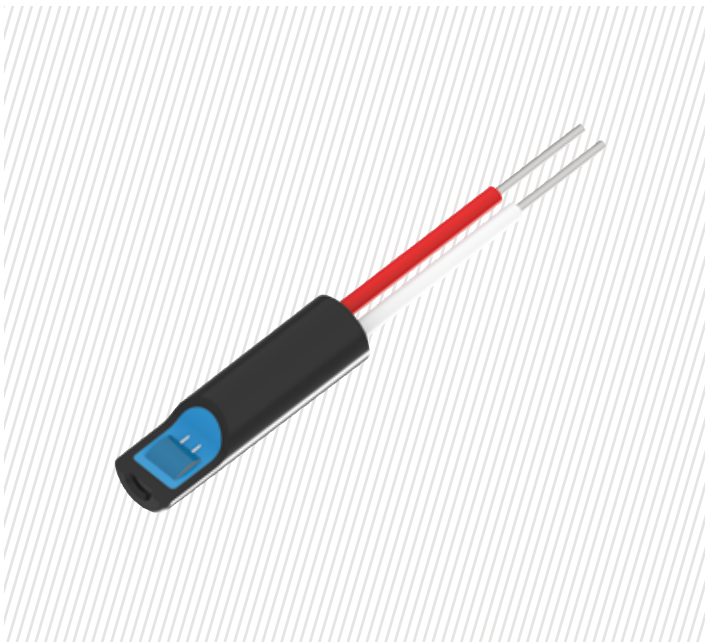
- in industry on increasingly sophisticated electric motors and electric heaters,
- in building technology for controlling fire dampers and roller shutter motors,

- in white goods on pumps of machines and compressors of refrigerators and freezers,
- in drive technology on pump and fan motors,
- in household appliances on motors and electric heating systems, such as in coffee machines and fan heaters,
- and in many other areas

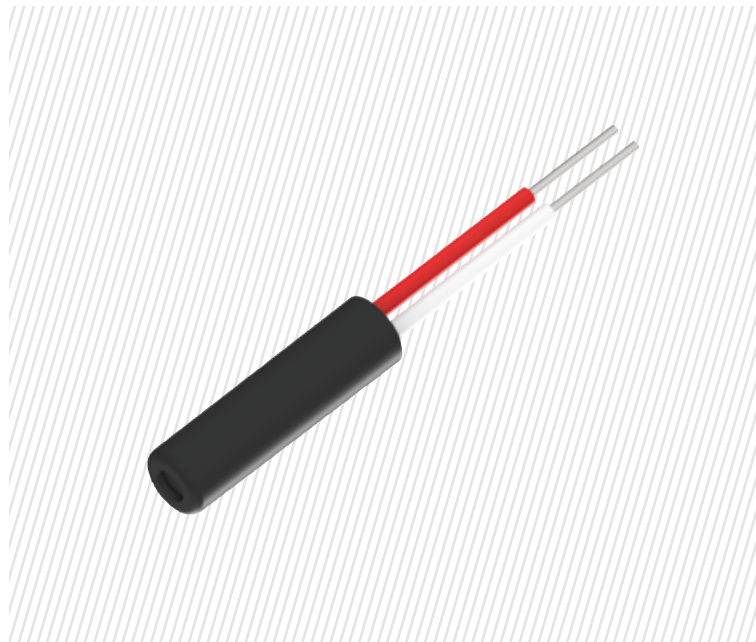
With temperature sensors, we not only safeguard and protect electric motors and/or electric heaters by switching them off, but also provide signals for temperature indication, power reductions or other functions. With the help of our diverse manufacturing processes, we embed sensor elements in customer-specific assemblies. In this way, we create added value to a pure sensor element and build cost-effective measurement systems.

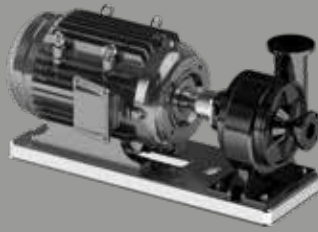
SENSORIC

PT1000 temperature sensor (sectional view)



Temperature sensor as NTC/PTC/PT1000/STS





TEMPERATURE PROTECTION IN CUSTOMISED ASSEMBLIES



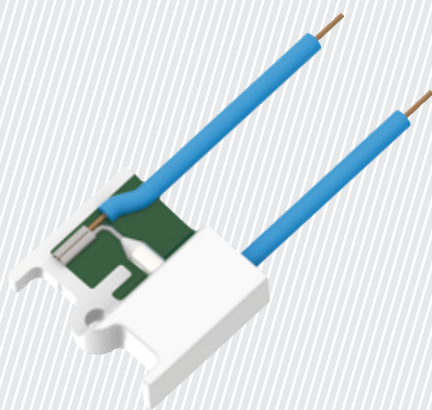
Building services engineering: Duct sensors for ventilation systems

Application

- / Installation as fire detection unit in ventilation ducts of buildings
- / Triggering for closing fire dampers in case of fire
- / Equipped with temperature sensors and/or temperature fuses
- / Sealed construction on directly overmoulded circuit board
- / Customer-specific maintenance button, LED lamp, plug connection or other

Project data

- / Development, prototype construction and planning of tools and equipment at Microtherm Germany
- / Series production as well as EOL test at Microtherm Czech Republic



Household appliances: Overtemperature protection for refrigerators

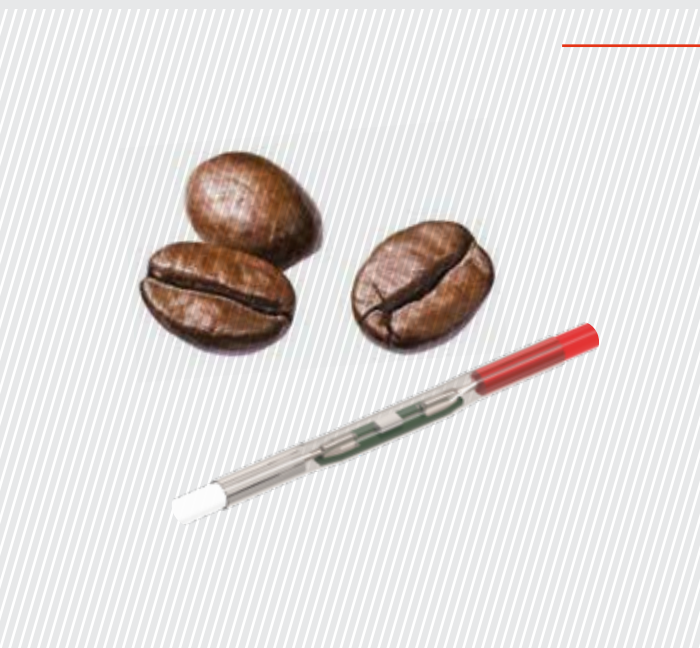
Application

- / Overtemperature protection for defrosting systems of refrigerators
- / Equipped with temperature fuses for triggering in case of protection
- / Sealed design in encapsulated housing

Project data

- / Development, prototype construction and planning of tools and equipment at Microtherm Germany
- / Series production as well as EOL test at Microtherm Czech Republic

TEMPERATURE PROTECTION AND TEMPERATURE MEASUREMENT FOR SMALL MOTORS



Electric motors: Mini temperature sensor PT1000

Application

- / Very small sensor diameter for installation in the stator slot of small electric motors
- / Application in synchronous and asynchronous motors, often electronically speed-controlled
- / Robust design on mini circuit board as a carrier for the PT1000 sensor chip

Project data

- / Development, prototype construction and planning of tools and equipment at Microtherm Germany
- / Series production at Microtherm China
- / Various trial and test cycles

By miniaturizing, we bring the temperature measurement closer to the potential heat source. This allows the sensor to respond more quickly to temperature changes. By responding more quickly to temperature changes, manufacturers of the high-performance motors to be protected can set the limits of the load capacity higher and increase the peak performance of the motors.

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