# Data sheet

## Nickel Thin Film Temperature Sensor

**Ni 1000 RT TC 6374**
**Part number: 100 439**

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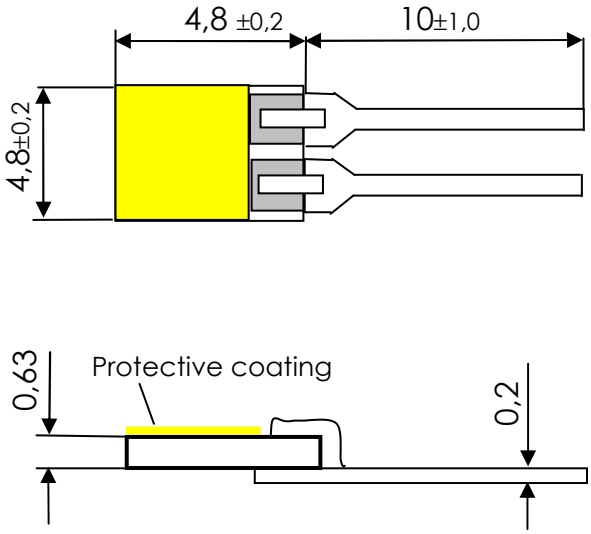
Nickel thin film elements are characterized by a relatively high temperature coefficient. Typical applications include bearing temperature monitoring, HVAC temperature monitoring, and stator winding temperature monitoring.




Dimensions in mm

| | |
|---|---|
| Nominal resistance R at 21°C | 1000 ohm |
| Characteristic | TC 6370 |
| Temperature coefficient 0°C/100°C | 6370 ppm/K |
| Tolerance | DIN 43760 * |
| Operating temperature range | -60°C to 200°C |
| Self heating in air | 0,3 K/mW |
| Thermal response time $t_{0,9}$ (Water 0,2 m/sec) | 0,3 sec |
| Thermal response time $t_{0,9}$ (air 1 m/sec) | 9 sec |
| Operation current max. | 5 mA |
| Connector pin | phosphor bronce, preplated Tin/Ag finish |
| Protective coating | high-temperature epoxy |

Polynomial of a nickel resistor as a function of temperature:
$R(\vartheta) = R_0 \times (1 + 5{,}6547\times10^{-3}\times\vartheta + 6{,}814\times10^{-6}\times\vartheta^2 + 1{,}49\times10^{-9}\times\vartheta^3 + 2{,}000\times10^{-11}\times\vartheta^4)$

* Maximum permissible tolerance as a function of temperature (DIN 43760):
$\vartheta$<0°C: $F = \pm(0{,}4 + 0{,}028 \times \vartheta)$ °C
$\vartheta$>0°C: $F = \pm(0{,}4 + 0{,}007 \times \vartheta)$ °C