

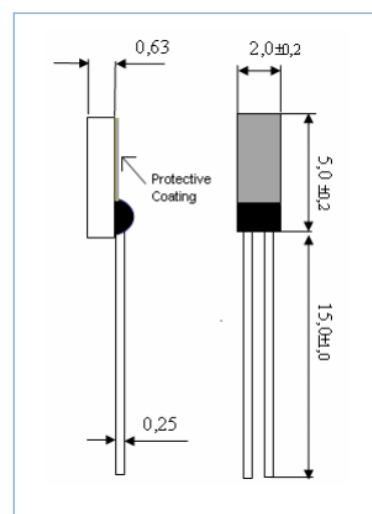
# Nickel Thin Film Temperature Sensor

## Temperature range -60 °C to +250 °C

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.

Nominal Resistance $R_0$	Tolerance	Order number
120 Ohms @ 0 °C	As per 2 X DIN 43760	5117711

<b>Nominal Resistance</b>	120 Ohms @ 0 °C
<b>Specification</b>	ANSI
<b>Temperature Range</b>	-60 °C to +250 °C*
<b>Temperature Coefficient</b>	6720 ppm/K
<b>Lead wire material</b>	Nickel
<b>Protective coating</b>	high-temperature epoxy
<b>Self-heating</b>	0,3K/mW in air
<b>Response time</b>	Water ( $v = 0,2\text{m/sec.}$ ) $t_{0,9} = 0,3 \text{ sec.}$ Air ( $v = 1\text{m/sec.}$ ) $t_{0,9} = 9 \text{ sec.}$
<b>Operating Current, Maximum</b>	5 mA



### Polynomial of the resistive characteristic:

$$R(\vartheta) = R_0 \times (1 + 5,88 \times 10^{-3} \times \vartheta + 7,872 \times 10^{-6} \times \vartheta^2 + 4,71 \times 10^{-9} \times \vartheta^3)$$

### Maximum permissible tolerance as a function of temperature (accuracy defined as 2 x DIN 43760):

$$\vartheta < 0^\circ\text{C}: F = \pm (0,8 + 0,056 \times \vartheta) ^\circ\text{C}$$

$$\vartheta > 0^\circ\text{C}: F = \pm (0,8 + 0,014 \times \vartheta) ^\circ\text{C}$$

### California Proposition 65

**WARNING:** This product can expose you to chemicals including lead oxide, which is known to the State of California to cause cancer and birth defects or other reproductive harm, and including cobalt oxide, nickel and cobalt, which are known to the State of California to cause cancer. For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov).

\*At temperatures above 180 Deg. C. tensile loads on connection wires must be avoided for proper function.



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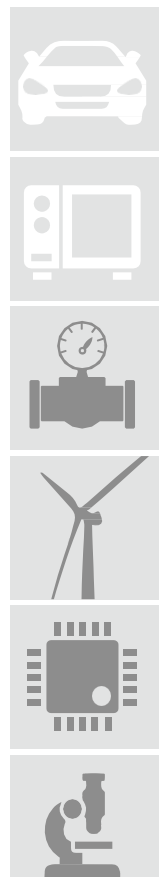
The information provided in this data sheet regarding measurement values (including, but not limited to, response time, long-term stability, vibration and shock resistance, insulation resistance and self-heating) are average values that have been obtained under laboratory conditions in tests of large numbers of the product. Product results or measurements achieved by customer or any other person in any production, test, or other environment may vary depending on the specific conditions of use.

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