

## Nickel Thin Film Temperature Sensor

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 $R_0$	Accuracy	Part Number
120 ohms at 0 °C	2 X DIN 43760	100 485-4

<b>Specification</b>	ANSI
<b>Temperature Range</b>	-60 °C to +250 °C
<b>Temperature Coefficient</b>	6720ppm/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 = 0,2m/sec.) $t_{0,9} = 0,3$ sec. Air (v= 1m/sec.) $t_{0,9} = 9$ sec.
<b>Operating Current, Maximum</b>	5 mA

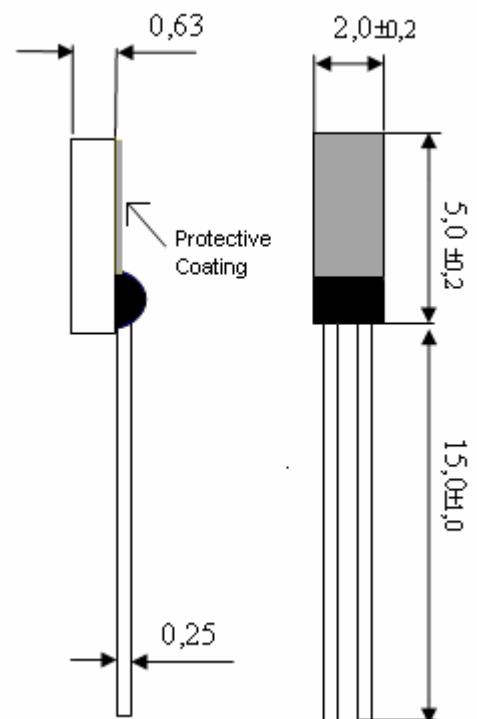
**Polynomial of the resistive characteristic:**

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

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

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

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



All technical data serves as a guideline and does not guarantee any particular properties to the product.

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