

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
100	DIN 43760	100 064-3

Specification	DIN 43760	
Temperature Range	-60 °C to +250 °C	
Temperature Coefficient	6180 ppm/K	
Lead wire material	nickel	
Protective coating	high-temperature epoxy	
Self-heating	0,3K/mW in air	
Response time	Water (v = 0,2m/sec.)	$t_{0,9} = 0,3$ sec.
	Air (v= 1m/sec.)	$t_{0,9} = 9$ sec.
Operating Current, Maximum	5 mA	

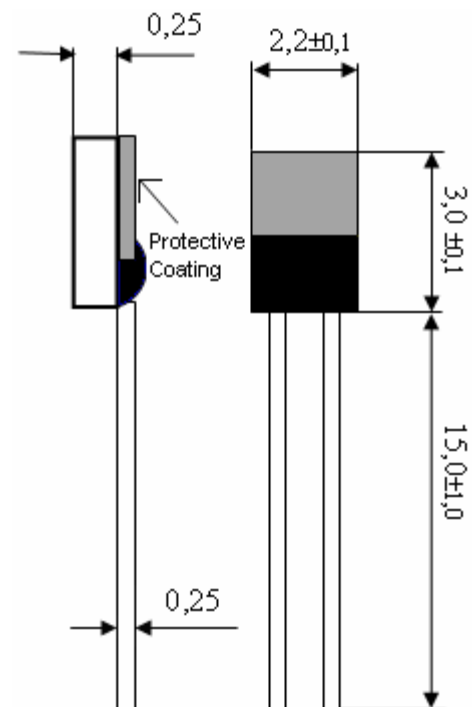
Polynomial of a nickel resistor in accordance with DIN 43760:

$$R(\vartheta) = R_0 \times (1 + 5,481 \times 10^{-3} \times \vartheta + 6,650 \times 10^{-6} \times \vartheta^2 + 2,805 \times 10^{-11} \times \vartheta^4 + 2,000 \times 10^{-17} \times \vartheta^6)$$

Maximum permissible tolerance as a function of temperature (DIN 43760):

$$\vartheta < 0^\circ\text{C}: F = \pm(0,4 + 0,028 \times \vartheta) \text{ } ^\circ\text{C}$$

$$\vartheta > 0^\circ\text{C}: F = \pm(0,4 + 0,007 \times \vartheta) \text{ } ^\circ\text{C}$$



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

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