

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
1000 ohms at 70 °F	Per DIN 43760	100 439-3

Specification	GFS	
Temperature Range	-60 °C to +200 °C	
Temperature Coefficient	6370ppm/K	
Lead wire material	nickel	
Protective coating	high-temperature epoxy	
Self-heating	0,3K/mW in air	
Response time	Water ($v = 0,2\text{m/sec.}$)	$t_{0,9} = 0,3 \text{ sec.}$
	Air ($v = 1\text{m/sec.}$)	$t_{0,9} = 9 \text{ sec.}$
Operating Current, Maximum	5 mA	

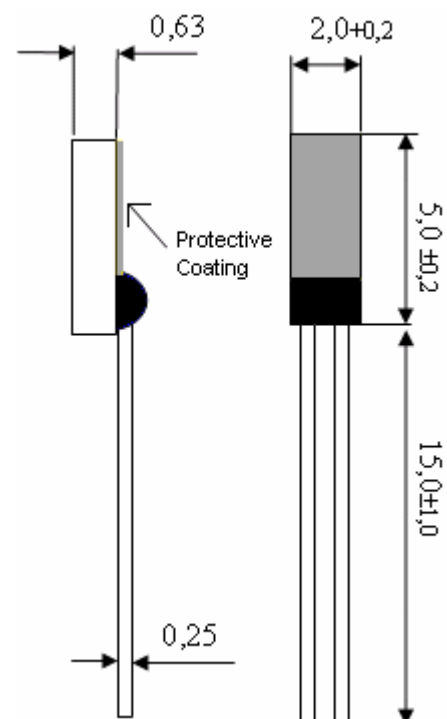
Polynomial of the resistive characteristic:

$$R(\vartheta) = R_0 \times (1 + 5,6547 \times 10^{-3} \times \vartheta + 6,814 \times 10^{-6} \times \vartheta^2 + 1,49 \times 10^{-9} \times \vartheta^3 + 2,000 \times 10^{-11} \times \vartheta^4)$$

Maximum permissible tolerance as a function of temperature:

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

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



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

Heraeus Sensor Technology USA

1901 Route 130
 North Brunswick, NJ 08902
 Phone 732-940-4400 Fax 732-940-4445
 Email info.hst-us@heraeus.com
www.hst-us.com