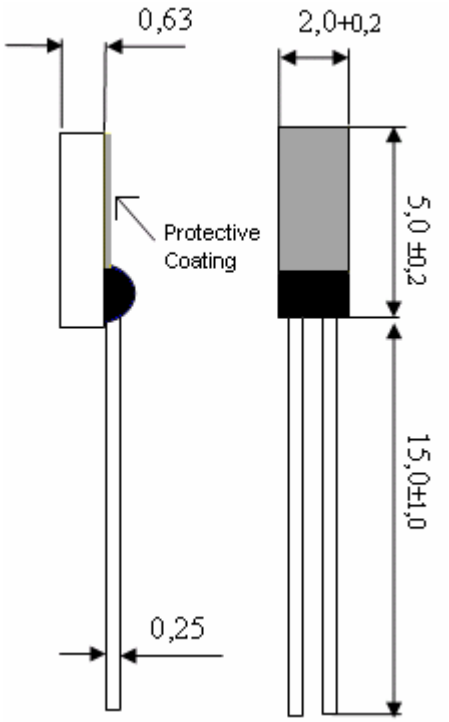
Nickel Thin Film Temperature Sensor

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 = 0,2m/sec.) $t_{0,9}$ = 0,3 sec. Air (v= 1m/sec.) $t_{0,9}$ = 9 sec.
Operating Current, Maximum	5 mA



Polynomial of the resistive characteristic:

$R(\vartheta) = R_0 \times (1 + 5{,}6547\times10^{-3}\times\vartheta + 6{,}814\times10^{-6}\times\vartheta^2 + 1{,}49\times10^{-9}\times\vartheta^3 + 2{,}000\times10^{-11}\times\vartheta^4)$

Maximum permissible tolerance as a function of temperature:
ϑ<0°C: F = ±(0,8 + 0,056 x ϑ) °C
ϑ>0°C: F = ±(0,8 + 0,014 x ϑ) °C

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