

## Technical data

Resistance at 0°C	200 Ω
Temperature coefficient (0 °C up to +100 °C)	$3.85 \cdot 10^{-3} \text{ K}^{-1}$
Tolerance class according to DIN EN 60751	F 0,6 (up to +600 °C) (sensor element)
Operating temperature range	-50 °C up to +850 °C
Measurement current (DC) at 25 °C	1.0 mA
Insulation resistance	> 10 MΩ
Self-heating at 0 °C	< 0.2 K/mW
Thermal response time	
Flowing air	$T_{0,5} \leq 5 \text{ s}, T_{0,9} \leq 9 \text{ s}$
Thermal shock resistance	280 °C
Resistance value of Pt temperature sensor element at 0 °C (class F 0,6)	$200.00 \Omega \pm 0.48 \Omega$
at 100 °C (class F 0,6)	$277.01 \Omega \pm 1.21 \Omega$ (each resistance value plus lead resistance)
Leads	
Material	NiSi
Ø d	0.3 mm
Resistivity at 20°C	$34 \mu\Omega \cdot \text{cm}$
	(Sources: Product information of the lead manufacturer)

### Operating conditions

Unprotected application only in dry environments without any contamination. Any compressive and tensile stresses of the leads have to be avoided.

### Remark

For high temperature applications the sensor element has to be protected applicable against contaminations of substances (heavy metals, Si, P, Cl, Na, Ka etc.) which could destroy for example the pattern structure caused by chemical or electro-chemical reactions.

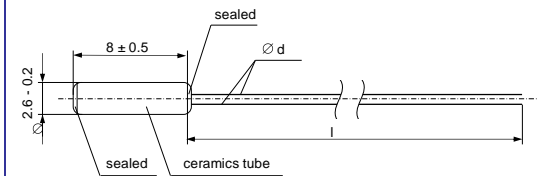
### Technology

Chip - advanced thin-film-technology (ceramic carrier with a structured platinum layer, covered with a passivating layer), assembled in a sealed ceramic protective tube

### Conformity

2002/95/EC Restriction of the use of Hazardous Substances Directive (RoHS)

### Dimensions [mm]

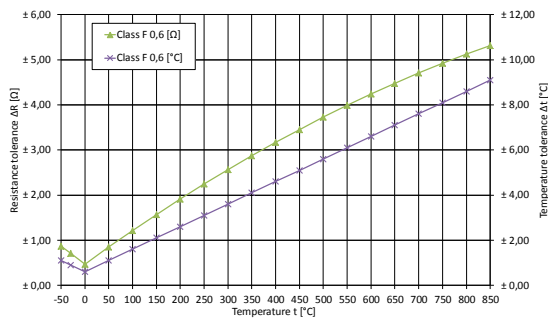


Ø d: 0.3 mm  
l: 1500 mm ± 10 mm

## Functional performance

(Platinum temperature sensor element)

according to DIN EN 60751 (-50 °C up to 600 °C)



Picture 1: Resistance and temperature tolerances of HTS Pt200 HT850°C Ø2.6x8

Temperature range from -50 °C up to 0 °C:

$$R_t = R_0 \cdot (1 + A \cdot t + B \cdot t^2 + C \cdot (t - 100 \text{ °C}) \cdot t^3)$$

Temperature range from 0 °C up to +850 °C:

$$R_t = R_0 \cdot (1 + A \cdot t + B \cdot t^2)$$

Tolerance class (-50 °C up to 600 °C):

$$\text{Class F 0,6: } \Delta t = \pm 2 \cdot (0.3 + 0.005 \cdot |t|)$$

whereby:

$R_t$  ... Resistance [Ω] at temperature  $t$

$R_0$  ... Resistance [Ω] at 0 °C

$t$  ... Temperature [°C]

$\Delta t$  ... Permissible temperature deviation at  $t$  [°C]

$$A = 3.9083 \cdot 10^{-3} \text{ °C}^{-1}$$

$$B = -5.775 \cdot 10^{-7} \text{ °C}^{-2}$$

$$C = -4.183 \cdot 10^{-12} \text{ °C}^{-4}$$

### Fields of application

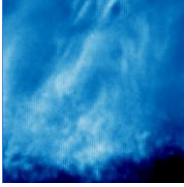
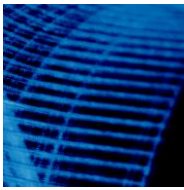
- Automotive electronics
- Industrial electronics
- Building automation
- Energy and environmental engineering
- Safety and medical engineering

### Ordering example

Please use the following code/article description:

HTS Pt200, HT850°C, class F 0,6, ceramics tube sealed on both sides (ctss) Ø2.6x8 mm, Leads NiSi Ø0,3 mm, variant l=1500 mm

(Other wire lengths are available on request.)



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