High Temperature Sensor Pt100 HT1000°C FMR Ø2.6x8 ctbs

Technical data

Resistance at 0°C	100 Ω
Temperature coefficient (0 °C up to +100 °C)	3.85 · 10^{-3} K^{-1}
Tolerance class according to DIN EN 60751	F 0,3 (-50°C - +500°C) F 0,6 (-50°C - +600°C) (sensor element)
Operating temperature range	-50 °C up to +1000 °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	$T_{0.5} \leq 5$ s, $T_{0.9} \leq 9$ s

Resistance values of Platinum temperature sensor element (each resistance value plus lead resistance)

	F 0,3 [Ω]	F 0,6 [Ω]
0 °C	100 ± 0.12	100 ± 0.24
+100 °C	138.51± 0.3	138.51± 0.61

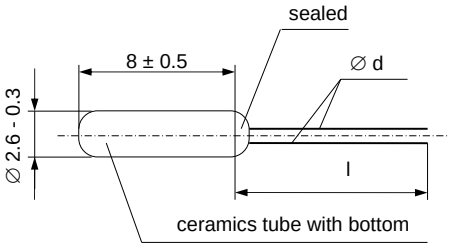
Operating conditions: Unprotected application only in dry environments without any contamination. Any compressive and tensile stresses of the leads have to be avoided.

Remark: For high temperature applications the sensor element has to be protected applicable against contaminations of substances (heavy metals, Si, P, Cl, Na, K 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 passivation layer), assembled in a sealed ceramic protective tube

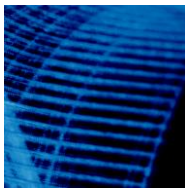
Conformity: 2011/65/EU: Restriction of the use of Hazardous Substances Directive (RoHS)

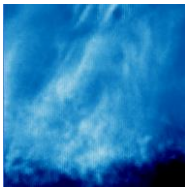
Dimensions [mm]



Leads:

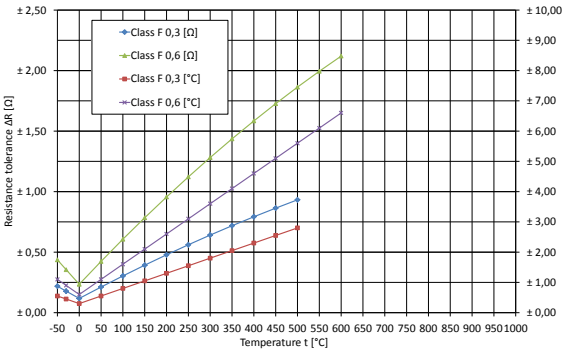
Ht-Pt, Ø d: 0.2 mm; l: variable, e.g. 7 ± 1





Functional performance
(Platinum temperature sensor element)

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



Picture 1: Resistance and temperature tolerances of Pt100 HT1000°C Ø2.6x8 (Platinum temperature sensor element)

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

$R_t = R_o \cdot (1 + A \cdot t + B \cdot t^2 + C \cdot (t - 100\ °C) \cdot t^3)$

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

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

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

Class F 0,3 (-50°C - +500°C): $\Delta t = \pm (0.3 + 0.005 \cdot |t|)$

Class F 0,6: (-50°C - +600°C): $\Delta t = \pm (0.6 + 0.01 \cdot |t|)$

whereby:

R_t … Resistance [Ω] at temperature t

R_o … Resistance [Ω] at 0 °C

t … Temperature [°C]

Δt …Permissible temperature deviation at t [°C]

A = 3.9083 · 10^{-3} °C^{-1}

B = - 5.775 · 10^{-7} °C^{-2}

C = - 4.183 · 10^{-12} °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 e.g.:

Pt100 HT1000°C, FMR, ceramics tube with bottom/sealed (ctbs) Ø2.6x8 mm, Leads Ht-Pt Ø 0,2 mm, variant l=7 mm

(Other wire lengths are available on request.)

UST Umweltsensortechnik GmbH is certified according to

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