Platinum Temperature Sensor **Pt200 FMC 1.5x3.5 HT850 cc TC 3.85·10^{-3}K^{-1}**

Technical Data

Resistance at 0°C (R_0)	200 Ω
Temperature coefficient (TC), 0°C up to +100°C	3.85 · 10^{-3} K^{-1}
Tolerance class according to DIN EN 60751	F 0,6 (-50°C - +600°C)
Operating temperature range depending on lead material:	
HT-Pt	-50°C up to +850°C
Measurement current (DC) at 25°C	1 mA
Maximal permissible peak current (DC) at 25°C	3 mA
Insulation resistance	> 10 MΩ
Self-heating at 0°C	< 0.5 K / mW
Thermal response time	
Flowing water (v = 0.2 m/s)	$T_{0.5}$ = 0.07 s, $T_{0.9}$ = 0.2 s
Flowing air (v = 1 m/s)	$T_{0.5}$ = 4 s, $T_{0.9}$ = 10 s

Resistance value [Ω] at

Temperature	Tolerance F 0,6 / HT [Ω]
0°C	200 ± 0.48
+100°C	277.01 ± 1.21

R_t measuring point	2 mm from wire end
Maximal Resistance Change at UCT 250 h	< 0.1 %

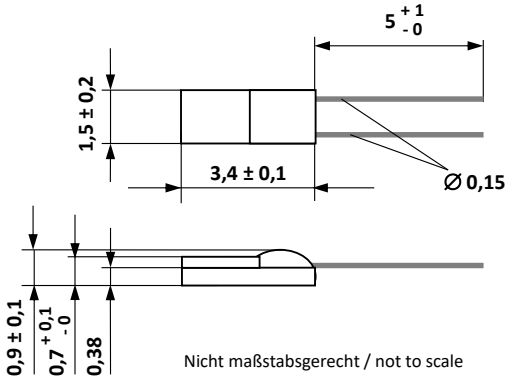
Specification	DIN EN 60751
Type	Film sensor

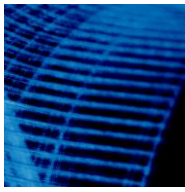
Technology: Advanced thin-film-technology - ceramic carrier with a micro-structured platinum layer and specific ceramic covering

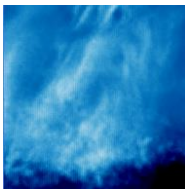
Operating conditions: Unprotected application only in dry environments without any contamination. Any compressive and tensile stresses of the leads have to be avoided.

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

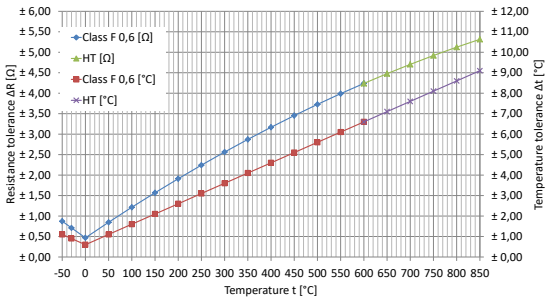
Dimensions [mm]







Functional performance



Picture 1: Resistance and temperature tolerances of Pt200

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 +600°C/+850°C:

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

Tolerance class according to DIN EN 60751:

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

Tolerance

HT: (-50°C - +850°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

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

Ordering example

Construction	Accuracy	Leads (ø d x l [mm] lead material)	Operating temperature range [°C]
Pt200 FMC 1.5x3.5 HT850, TC 3850, cc	**HT**	**0.15x5 HT-Pt**	**-50/+850**

Other classes of accuracy, wire lengths, TC, e.g. 3.77·10^{-3} K^{-1} are available on request.

Made in Germany

UST Umweltsensortechnik GmbH, Dieselstr. 2 und 4,
99331 Geratal OT Geschwenda, Germany
Tel. +49 36205 713-0 info@umweltsensortechnik.de
Fax +49 36205 713-10 www.umweltsensortechnik.de