

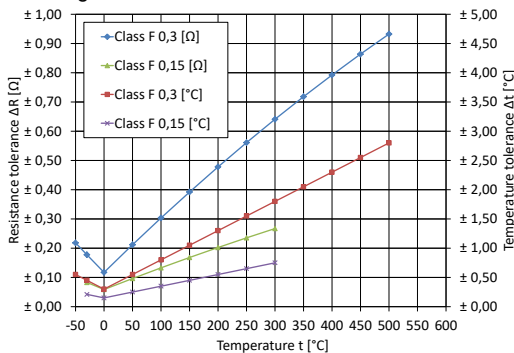
Technical Data

Resistance at 0°C (R ₀)	100 Ω	
Temperature coefficient (0°C up to +100°C)	3.85 · 10 ⁻³ K ⁻¹	
Tolerance classes according to DIN EN 60751	<ul style="list-style-type: none"> • F 0,15 (-30°C - +300°C) • F 0,3 (-50°C - +400°C) 	
Operating temperature range depending on lead material:		
AgPd5	-50 °C up to +400 °C	
Measurement current (DC) at 25 °C	1.0 mA	
Maximal permissible peak current (DC) at 25 °C	3.0 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} = 0.05 s, T _{0.9} = 0.2 s	
Flowing air (v = 1 m/s)	T _{0.5} = 3 s, T _{0.9} = 10 s	
Resistance value [Ω] at		
Temperature	Tolerance class	
	F 0,15 [Ω]	F 0,3 [Ω]
0 °C	100 ± 0.06	100 ± 0.12
+100 °C	138.51 ± 0.13	138.51 ± 0.30
R _t measuring point	13 mm from chip 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 structured platinum layer, covered with a passivating layer)																					
Operating conditions: Unprotected application only in dry environments without any contamination																					
Conformity: 2011/65/EU Restriction of the use of Hazardous Substances Directive (RoHS)																					
Dimensions [mm]																					
	<table border="1"> <thead> <tr> <th></th> <th>Pt100 FMC 1,15x5x1.3</th> <th>Pt100 FMC 1,15x5x1.0</th> <th>Leads</th> <th>AgPd5</th> </tr> </thead> <tbody> <tr> <td>H1 [mm]</td> <td>1.3 ± 0.2</td> <td>1 ± 0.2</td> <td>l [mm]</td> <td>100</td> </tr> <tr> <td>H2 [mm]</td> <td>0.65</td> <td>0.4</td> <td>d1 [mm]</td> <td>0,15</td> </tr> <tr> <td></td> <td></td> <td></td> <td>d2 [mm]</td> <td>0,25</td> </tr> </tbody> </table>		Pt100 FMC 1,15x5x1.3	Pt100 FMC 1,15x5x1.0	Leads	AgPd5	H1 [mm]	1.3 ± 0.2	1 ± 0.2	l [mm]	100	H2 [mm]	0.65	0.4	d1 [mm]	0,15				d2 [mm]	0,25
	Pt100 FMC 1,15x5x1.3	Pt100 FMC 1,15x5x1.0	Leads	AgPd5																	
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Functional performance

according to DIN EN 60751



Picture 1: Resistance and temperature tolerances of Pt100 (Please note - the operating temperature range depends on lead material!)

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 +600°C:

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

Tolerance classes according to DIN EN 60751:

Class F 0,15 (-30°C - +300°C): $\Delta t = \pm (0.15 + 0.002 \cdot |t|)$

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

Whereby:

R_t ... Resistance [Ω] at temperature t

R₀ ... Resistance [Ω] at 0 °C

t ... Temperature [°C]

Δt ... 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

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

Ordering example

Construction	Class of accuracy	Leads (extension) ∅ d x l [mm] lead material	Operating temperature range [°C]
P100 FMC1,15x5x1.3	F 0,15	0,25x100 AgPd5	-50/+400

Other classes of accuracy and wire lengths are available on request.