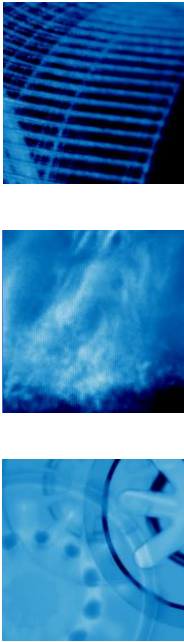


## Technical Data

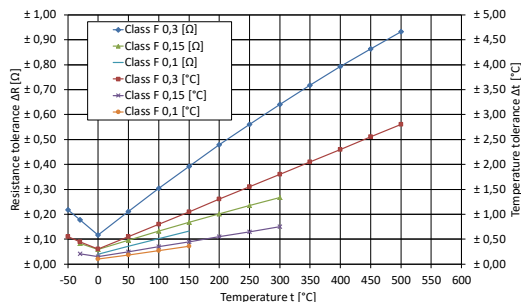
Resistance at 0°C	100 Ω
Temperature coefficient (0 °C up to +100 °C)	$3.85 \cdot 10^{-3} \text{ K}^{-1}$
Tolerance classes according to DIN EN 60751	<ul style="list-style-type: none"> <li>• F 0,1 (0°C - +150°C)</li> <li>• F 0,15 (-30°C - +300°C)</li> <li>• F 0,3 (-50°C - +500°C)</li> </ul>
Operating temperature range depending on lead material:	
AgPd5	-50 °C up to +400 °C
Pt-coated Ni-wire	-50 °C up to +500 °C (short-time up to +550°C)
Pt	-50 °C up to +600 °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)	$T_{0,5} = 0.05 \text{ s}, T_{0,9} = 0.2 \text{ s}$
Flowing air (v = 1 m/s)	$T_{0,5} = 4 \text{ s}, T_{0,9} = 10 \text{ s}$
Resistance value [Ω] at	
Temperature	Tolerance class
	F 0,1 [Ω]    F 0,15 [Ω]    F 0,3 [Ω]
0 °C	100 ± 0.04    100 ± 0.06    100 ± 0.12
+100 °C	138.51 ± 0.1    138.51±0.13    138.51 ± 0.3

$R_t$ , measuring point	2 mm from wire end																								
Maximal Resistance Change at UCT 250 h	< 0.1 %																								
Specification	DIN EN 60751																								
Type	Film sensor																								
<b>Technology:</b> Advanced thin-film-technology (ceramic carrier with a structured platinum layer, covered with a passivating layer)																									
<b>Operating conditions:</b> Unprotected application only in dry environments without any contamination																									
<b>Conformity:</b> 2011/65/EU Restriction of the use of Hazardous Substances Directive (RoHS)																									
Dimensions [mm]																									
	<table border="1"> <thead> <tr> <th></th> <th>Pt100 FMC 0.8x5x0.7 axial</th> <th>Pt100 FMC 0.8x5x1 axial</th> <th>Pt100 FMC 0.8x5x1.3 axial</th> <th>Leads</th> <th>AgPd5</th> <th>NiPt 1)</th> <th>Pt</th> </tr> </thead> <tbody> <tr> <td>H1 [mm]</td> <td>0.7 ± 0.2</td> <td>1 ± 0.2</td> <td>1.3 ± 0.2</td> <td>l [mm]</td> <td>15 ± 1</td> <td>10 ± 1</td> <td>7 ± 1</td> </tr> <tr> <td>H2 [mm]</td> <td>0.27</td> <td>0.4</td> <td>0.65</td> <td>d [mm]</td> <td>0,15</td> <td>0,15</td> <td>0,15</td> </tr> </tbody> </table>		Pt100 FMC 0.8x5x0.7 axial	Pt100 FMC 0.8x5x1 axial	Pt100 FMC 0.8x5x1.3 axial	Leads	AgPd5	NiPt 1)	Pt	H1 [mm]	0.7 ± 0.2	1 ± 0.2	1.3 ± 0.2	l [mm]	15 ± 1	10 ± 1	7 ± 1	H2 [mm]	0.27	0.4	0.65	d [mm]	0,15	0,15	0,15
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1) not available with H1 = 0.7 mm and H2= 0.27 mm																									



## 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 0,1 (0°C - +150°C):  $\Delta t = \pm (0.1 + 0.0017 \cdot |t|)$

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

$R_0$  ... 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

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

## Ordering examples

Construction	Class of accuracy	Leads (ø d x l [mm] lead material)	Operating temperature range [°C]
Pt100 FMC 0.8x5x1 axial	F 0,15	0.15x15 AgPd5	- 50/+400
Pt100 FMC 0.8x5x1.3 axial	F 0,3	0.15x10 NiPt	- 50/+500

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