

## Technical Data

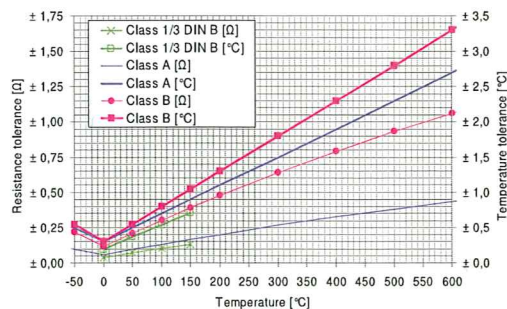
Resistance at 0 °C	100 Ω
Temperature coefficient (0 °C up to 100 °C)	$3.85 \cdot 10^{-3} \text{ K}^{-1}$
Tolerance classes to DIN EN 60751	½ DIN B (0 °C - +150 °C), A, B
Operating temperature range depending on lead material:	
AgPd5	-50 °C up to +400 °C
Pt-coated Ni-wire	-50 °C up to +550 °C
Pt	-50 °C up to +600 °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)	$T_{0.5} = 0.05 \text{ s}, T_{0.9} = 0.2 \text{ s}$
Flowing air (v = 1 m/s)	$T_{0.5} = 3 \text{ s}, T_{0.9} = 10 \text{ s}$
Resistance value [Ω] at	
Temperature	Tolerance class
	½ DIN B [Ω]    A [Ω]    B [Ω]
0 °C	100 ± 0.04    100 ± 0.06    100 ± 0.12
+100 °C	138.51 ± 0.10    138.51 ± 0.13    138.51 ± 0.30

Maximal Resistance Change at UCT 250 h	< 0.1 %					
Specification	DIN EN 60751					
Operating conditions	Unprotected application only in dry environments without any contamination					
Technology	Advanced thin-film-technology (ceramic carrier with a structured platinum layer, covered with a passivating layer)					
Conformity	2002/95/EC Restriction of the use of Hazardous Substances Directive (RoHS)					
Dimensions [mm]						
h1	1.0 ± 0.2	1.3 ± 0.2	Leads	AgPd5	NiPt	Pt
h2	0.4 ± 0.06	0.65 ± 0.06	a	15 ± 1	10 ± 1	7 ± 1
			d	0.15	0.2	0.2



## Functional performance

according to DIN EN 60751



Picture 1: Resistance and temperature tolerances of FMC 2108 (Pt-Leads)

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 to DIN EN 60751:

Class ½ DIN B (0 °C - +150 °C):  $\Delta T = \pm (0.1 + 0.0017 \cdot |T|)$

Class A:  $\Delta T = \pm (0.15 + 0.002 \cdot |T|)$

Class B:  $\Delta T = \pm (0.3 + 0.005 \cdot |T|)$

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	Height	Lead material	Temperature range [°C]
FMC 2108	A	1.0	AgPd5	- 50/400
FMC 2108	B	1.3	NiPt	- 50/550

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

