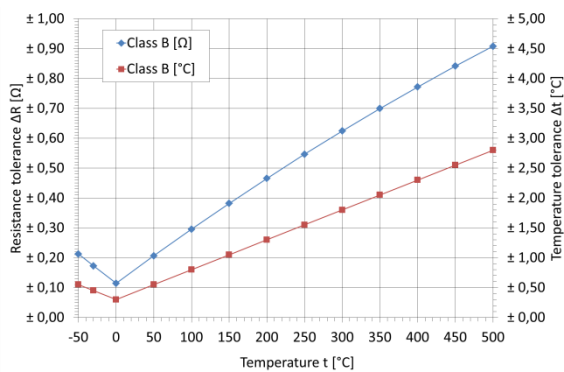


## Technical Data

Resistance at 0°C (R <sub>0</sub> )	100 Ω
Temperature coefficient (0°C up to +100°C)	3750 ppm/K ± 50 ppm/K
Tolerance class	B (-50 °C - +500 °C)
Operating temperature range depending on lead material:	
Pt-coated Ni-wire	-50 °C up to +500 °C (short-time up to +550°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 <sub>0,5</sub> = 0,07s, T <sub>0,9</sub> = 0,2s
Flowing air (v = 1 m/s)	T <sub>0,5</sub> = 4 s, T <sub>0,9</sub> = 10 s
Resistance values [Ω] at Temperature t	
t	Tolerance class B [Ω]
0 °C	100 ± 0,12
+100°C	137,5 ± 0,30
R <sub>t</sub> measuring point	2 mm from wire end
Maximal Resistance Change at UCT 250 h	< 0,1 %

Specification	customized		
Type	Film sensor		
<b>Technology:</b> Advanced thin-film-technology (ceramic carrier with a structured platinum layer, covered with a passivation 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]			
Nicht maßstabgerecht / not to scale			
	FMC2105 2x2,3x1,3	Leads	NiPt
H1 [mm]	1,3 ± 0,2	l [mm]	10 ± 1
H2 [mm]	0,65	d [mm]	0,2

## Functional performance



Picture 1: Resistance and temperature tolerances of Pt100 TC3750 ppm/K (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 class:

Class B (-50°C - +500°C):  $\Delta t = \pm (0,3 + 0,005 \cdot |t|)$

Whereby:

R<sub>t</sub> ... Resistance [Ω] at temperature t

R<sub>0</sub> ... Resistance [Ω] at 0 °C

t ... Temperature [°C]

Δt ... Permissible temperature deviation at t [°C]

$$A = 3,806800278 \cdot 10^{-3} \text{ °C}^{-1}$$

$$B = -5,62502 \cdot 10^{-7} \text{ °C}^{-2}$$

$$C = -4,07437 \cdot 10^{-12} \text{ °C}^{-4}$$

## Fields of application

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

## Ordering example

Construction	Class of accuracy	Leads (ø d x l [mm] lead material)	Operating temperature range [°C]
FMC 2105 TC3750 2x2,3x1,3	B	0,2x10 NiPt	-50/+500

Other wire lengths are available on request.