

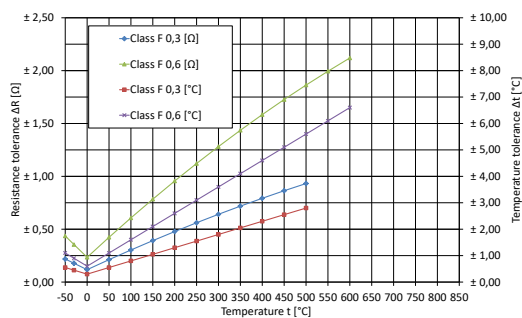
Technical Data

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	F 0,3 (-50 °C - +500 °C) 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	1.0 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)	$T_{0.5} = 0.07 \text{ s}$, $T_{0.9} = 0.3 \text{ s}$
Flowing air (v = 1 m/s)	$T_{0.5} = 6 \text{ s}$, $T_{0.9} = 20 \text{ s}$
Resistance value [Ω] at	
Temperature	Tolerance class
	F 0,3 [Ω] F 0,6 [Ω]
0 °C	100 ± 0.12 100 ± 0.24
+100 °C	138.51 ± 0.3 138.51 ± 0.61

R_t measuring point	2 mm from wire end
Maximal Resistance change at UCT 250 h	< 0.1 %
Operating conditions	Unprotected application only in dry environments without any contamination
Technology	Chip - advanced thin-film-technology (ceramic carrier with a structured platinum layer, covered with a passivating layer), assembled in a sealed ceramics tube
Conformity	2011/65/EU Restriction of the use of Hazardous Substances Directive (RoHS)
Dimensions [mm]	
Leads	HT-Pt
l [mm]	7 ± 1
Ø d [mm]	0,2

Functional performance

according DIN EN 60751



Picture 1: Resistance and temperature tolerances of FMR 2103

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:

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

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

Whereby:

R_t ... Resistance [Ω] at temperature t

R_0 ... 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 (Ø d x l [mm] lead material)	Operating temperature range [°C]
FMR2103 HT850 ctss	F 0,3	0.2x7 HT-Pt	-50/+850

1) Class of accuracy according to DIN EN 60751

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

Made in Germany