

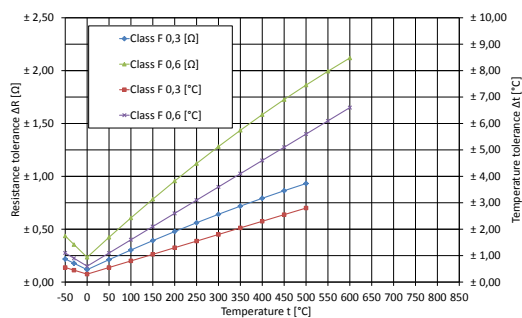
## Technical Data

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	2002/95/EC 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]

$\Delta t$  ... 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

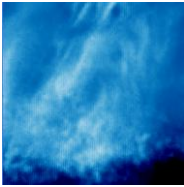
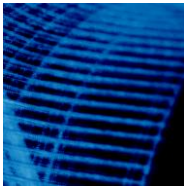
## Ordering example

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



UST Umweltsensortechnik GmbH is certified according to

