

DATA SHEET

Thin Films Platinum Temperature Sensors

Application

These thin film Platinum resistance temperature sensors (PRTD) are designed for large volume applications where long term stability, interchangeability and accuracy over a large temperature range are vital. Typical applications are Automotive, White Goods, Heating-Ventilation and Air Conditioning, Energy management, Medical and Industrial equipment.

Technical Data

Properties	
Norm	DIN EN 60751
Range	- 70°C to + 500°C (permanent) (short exposure up to 550 °C)
Accuracy	Class B: $\pm(0.3 + 0.005 \times T)$ °C Class A: $\pm(0.15 + 0.002 \times T)$ °C 1/3 of Class DIN B
Classes Validity Range	Class B: - 70°C to + 500°C Class A: - 50°C to + 300°C Class 1/3 DIN: 0°C to + 150°C
Temperature coefficient	TCR = 3850 ppm/K
Dimensions	2.3 x 2.1 x 1.5 mm (Art.-No. 0364 0048, 0364 0102-10), 2.3 x 2.1 x 0.9 mm (0364 0018-20), 2.5 x 2.0 x 1.3 mm (Art.-No. 0364 0037, 0364 0102-30), 2.3 x 2.1 x 1.5 mm (Art.-No. 0364 0025), 10 x 2 x 1.3 mm (Art.-No. 0364 0015)
Leads	Pt clad Ni wire. Recommended connection technology: Welding, Crimping and Brazing
Lead length L	10 mm \pm 1, \varnothing 0.2 mm
Mechanical Properties	
Durability	Max. R0-Drift 0,04% after 1000 h at 500°C
Vibration Resistance	Min. 40 g acceleration at 10 to 2000 Hz, depending on the installation type
Shock Resistance	Min. 100 g acceleration with 8ms half-Sinus-Wave, depending on the installation type
Environmental	Unprotected, only in dry environments
Electrical Properties	
Insulation Resistance	> 100 M Ω at 20°C; > 2 M Ω at 500°C
Measuring Current	100 Ω : 0,3 to 1,0 mA 500 Ω : 0,1 to 0,7 mA 1000 Ω : 0,1 to 0,3 mA (Pay attention to self heating!)

Self heating	0,4 K/mW at 0°C 0,2 K/mW at 0°C (Art.-No. 0364 0015)
Response time	Water flow ($v = 0,4$ m/s): $t_{0,5} = 0,05$ s; $t_{0,9} = 0,15$ s; Air flow ($v = 2$ m/s): $t_{0,5} = 3,0$ s; $t_{0,9} = 10,0$ s; At Art.-No. 0364 0015: Water flow ($v = 0,4$ m/s): $t_{0,5} = 0,10$ s; $t_{0,9} = 0,30$ s; Air flow ($v = 2$ m/s): $t_{0,5} = 4,0$ s; $t_{0,9} = 12,0$ s;
Note	Other accuracies, Other resistances and lead lengths available under request

Order information		
Pt100	Class B	0364 0037
	Class B	0364 0015
	Class A	0364 0025
	1/3 DIN	0364 0048
Pt500	Class B	0364 0018-20
Pt1000	Class B	0364 0102-10
	Class A	0364 0102-30

