ISOTEMP®

Platinum Resistance Temperature Detector

Mseries PRTDs 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, HVAC, Energy management, Medical and Industrial equipment.

Nominal Resistance R_0	Class	Error ranges
100 Ohm at 0℃	DIN EN 60751, class B	**± (0,3 + 0,005 • |temperature|)**
	DIN EN 60751, class A	± (0,15 + 0,002 • |temperature|)
	DIN EN 60751, class 1/3 DIN	**± (0,1 + 0,0017 |temperature|)**
	DIN EN 60751, class 1/10 DIN	**± (0,03 + 0,0005 • |temperature|**)
500 Ohm at 0℃	DIN EN 60751, class B	
1000 Ohm at 0℃	DIN EN 60751, class B	
	DIN EN 60751, class A	
	DIN EN 60751, class 1/3 DIN	

The measuring point for the nominal resistance is defined at 8 mm from the end of the sensor body.

Specification DIN EN 60751 (according to IEC 751)

Temperature range -70℃ to +500℃ (continuous operation)
(temporary use to 550 ℃ possible)
Tolerance class B: - 70 ℃ to + 500 ℃
Tolerance class A: - 50 ℃ to + 300 ℃
Tolerance class 1/3 DIN: 0 ℃ to + 150 ℃
Tolerance class 1/10 DIN: 0 ℃ to + 150 ℃

Temperature coefficient TCR = 3850 ppm/K

Leads Pt clad Ni wire
Recommend connection technology:
Welding, Crimping and Brazing

Lead lengths (L) 10 mm +- 1 mm

Long-term stability max. R_0-drift 0.04% after 1000 h at 500℃

Vibration resistance at least 40 g acceleration at 10 to 2000 Hz, depends on installation

Shock resistance at least 100 g acceleration with 8ms half sine wave, depends on installation

Environmental conditions unhoused for dry environments only

Insulation resistance > 100 MΩ at 20℃; > 2 MΩ at 500℃

Self heating 0.4 K/mW at 0℃

Response time
water current (v = 0.4 m/s): $t_{0.5}$ = 0.05 s, $t_{0.9}$ = 0.15 s
air stream (v = 2 m/s): $t_{0.5}$ = 3.0 s, $t_{0.9}$ = 10.0 s

Measuring current
100 Ω: 0.3 to 1.0 mA
500 Ω: 0.1 to 0.7 mA
1000 Ω: 0.1 bis 0.3 mA
(self heating has to be considered)

Note Other tolerances, values of resistance and wire lengths are available on request.