

M 310, Platinum Temperature Sensor according to DIN EN 60751

Temperature range $-70\text{ }^{\circ}\text{C}$ to $+500\text{ }^{\circ}\text{C}$, short-term up to $+550\text{ }^{\circ}\text{C}$

M series PRTDs are designed for large volume applications where long-term stability, interchangeability and accuracy over a large temperature range are vital. The products are typically used in white goods, HVAC, energy management, medical and industrial equipment. In principle, the products can also be used in automotive applications; in this case Heraeus will check upon the request of the customer, whether additional requirements can be met (e.g. IMDS, PPAP).

Nominal Resistance R_0	Tolerance	Order Number	Packaging
100 Ohm at $0\text{ }^{\circ}\text{C}$	F 0.15 (Class A) F 0.3 (Class B)	50 142 54 / 32 208 725 50 142 52 / 32 208 721	Plastic bag / Blister reel
1000 Ohm at $0\text{ }^{\circ}\text{C}$	F 0.15 (Class A) F 0.3 (Class B)	50 142 55 / 32 208 727 50 142 53 / 32 208 723	Plastic bag / Blister reel

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

Temperature and tolerance range

Tolerance class F 0.3 (B): $-70\text{ }^{\circ}\text{C}$ to $+500\text{ }^{\circ}\text{C}$
 Tolerance class F 0.15 (A): $-50\text{ }^{\circ}\text{C}$ to $+300\text{ }^{\circ}\text{C}$
 Continuous operation (temporary use to $+550\text{ }^{\circ}\text{C}$ possible)

Temperature coefficient

TCR = 3850 ppm/K

Response time

Water current ($v = 0,4\text{ m/s}$):
 $t_{0.5} = 0.04\text{ s}$
 $t_{0.9} = 0.12\text{ s}$
 Air stream ($v = 2\text{ m/s}$):
 $t_{0.5} = 2.5\text{ s}$
 $t_{0.9} = 8.0\text{ s}$

Measuring current

100 Ω : 0.3 to 1.0 mA
 1000 Ω : 0.1 to 0.3 mA
 (self-heating has to be considered)

Long-term stability

R_0 -Drift 0.04 % after 1000 hours at $500\text{ }^{\circ}\text{C}$

Self-heating

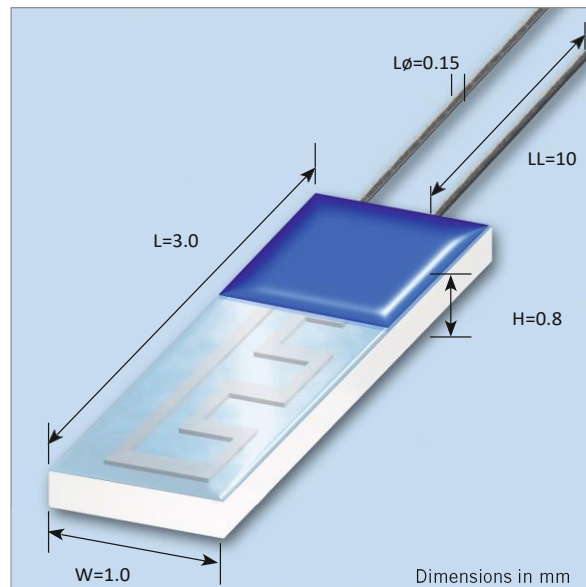
0.4 K/mW at $0\text{ }^{\circ}\text{C}$

Insulation resistance

> 100 M Ω at $20\text{ }^{\circ}\text{C}$
 > 2 M Ω at $500\text{ }^{\circ}\text{C}$

Vibration resistance

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



The information provided in this data sheet describes certain technical characteristics of the product, but shall not be qualified or construed as quality guarantee (Beschaffenheitsgarantie) in the meaning of sections 443 and 444 German Civil Code. The information provided in this data sheet regarding measurement values (including, but not limited to, response time, long-term stability, vibration and shock resistance, insulation resistance and self-heating) are average values that have been obtained under laboratory conditions in tests of large numbers of the product. Product results or measurements achieved by customer or any other person in any production, test, or other environment may vary depending on the specific conditions of use. The customer is solely responsible to determine whether the product is suited for the customer's intended use; in this respect Heraeus cannot assume any liability. The sale of any products by Heraeus is exclusively subject to the General Terms of Sale and Delivery of Heraeus in their current version at the time of purchase, which is available under www.heraeus.com/gtc or may be furnished upon request. This data sheet is subject to changes without prior notice.

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Shock resistance

At least 100 g acceleration with 8 ms half sine wave, depends on installation

Leads

Pt clad Ni-wire

Lead lengths (LL)

10 mm \pm 1 mm

Connection technology

Suitable for welding, brazing and crimping

Tensile strength of leads

$\geq 7\text{ N}$

Packaging

Alternative packaging forms on request.

Storage life

Min. 12 months (in original packaging)

Note

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

California Proposition 65



WARNING:

This product can expose you to chemicals including lead oxide, which is known to the State of California to cause cancer and birth defects or other reproductive harm, and including cobalt oxide, nickel and cobalt, which are known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.



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