

## M 422, Platinum Temperature Sensor according to DIN EN 60751

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

M series PRTDs are especially robust and 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 $0\text{ °C}$	F 0.1 (Class 1/3 B) F 0.15 (Class A) F 0.3 (Class B)	32 208 500 / 32 208 522 32 208 498 / 32 208 521 32 208 392 / 32 208 520	Plastic bag / Blister reel
500 Ohm at $0\text{ °C}$	F 0.1 (Class 1/3 B) F 0.15 (Class A) F 0.3 (Class B)	32 208 502 32 208 501 / 32 208 524 32 208 414 / 32 208 523	Plastic bag Plastic bag / Blister reel Plastic bag / Blister reel
1000 Ohm at $0\text{ °C}$	F 0.1 (Class 1/3 B) F 0.15 (Class A) F 0.3 (Class B)	32 208 537 32 208 503 / 32 208 527 32 208 499 / 32 208 526	Plastic bag Plastic bag / Blister reel 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):  $-70\text{ °C}$  to  $+500\text{ °C}$   
 Tolerance class F 0.15 (A):  $-50\text{ °C}$  to  $+300\text{ °C}$   
 Tolerance class F 0.1 (1/3 B):  $0\text{ °C}$  to  $+150\text{ °C}$   
 Continuous operation (temporary use to  $+550\text{ °C}$  possible)

### Temperature coefficient

TCR = 3850 ppm/K; 3750 ppm/K available on request

### Response time

Water current ( $v = 0.4\text{ m/s}$ ):  $t_{0.5} = 0.07\text{ s}$   
 $t_{0.9} = 0.20\text{ s}$   
 Air stream ( $v = 2\text{ m/s}$ ):  $t_{0.5} = 3.2\text{ s}$   
 $t_{0.9} = 11.0\text{ s}$

### Measuring current

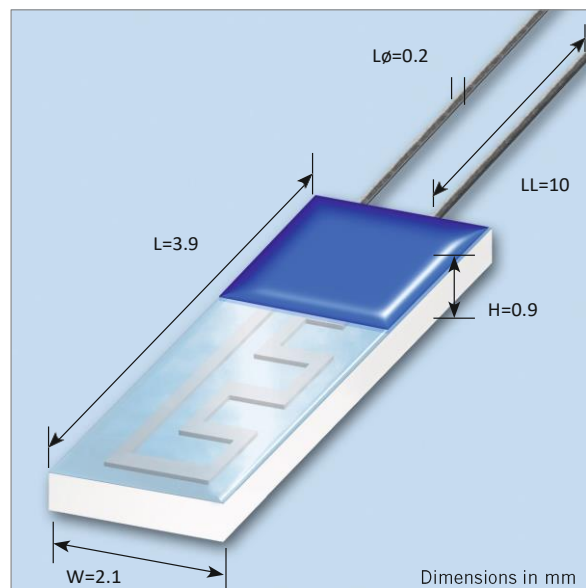
100  $\Omega$ : 0.3 to 1.0 mA  
 500  $\Omega$ : 0.1 to 0.7 mA  
 1000  $\Omega$ : 0.1 to 0.3 mA  
 (self-heating has to be considered)

### Long-term stability

$R_0$ -Drift 0.04 % after 1000h at  $500\text{ °C}$

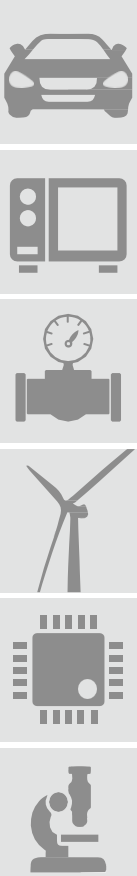
### Self-heating

0.3 K/mW at  $0\text{ °C}$



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](http://www.heraeus.com/gtc) or may be furnished upon request. This data sheet is subject to changes without prior notice.

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### Insulation resistance

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

### Vibration resistance

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

### 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

$\geq$  9 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](http://www.p65warnings.ca.gov).



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