

## M 1020, 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 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)	32 208 427 / 32 208 428 32 208 734 / 32 208 429 32 208 180 / 32 208 280	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)	32 208 482 / 32 208 483 32 208 438 / 32 208 439 32 208 191 / 32 208 286	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

### Response time

Water current ( $v = 0.4\text{ m/s}$ ):  $t_{0.5} = 0.10\text{ s}$   
 $t_{0.9} = 0.30\text{ s}$   
 Air stream ( $v = 2\text{ m/s}$ ):  $t_{0.5} = 4.0\text{ s}$   
 $t_{0.9} = 12.0\text{ s}$

### Measuring current

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

### Long-term stability

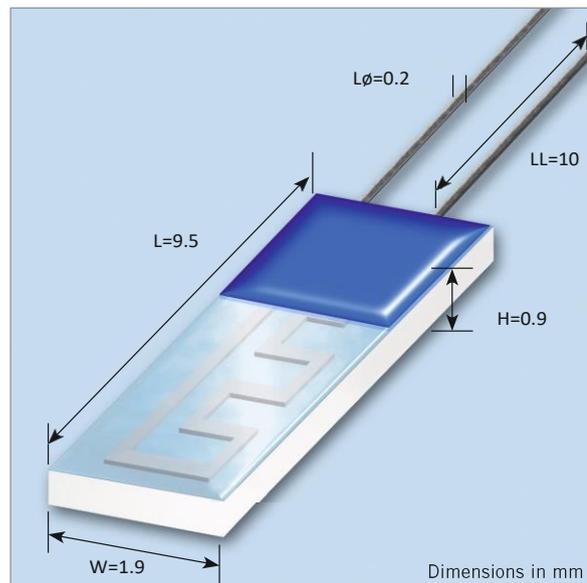
$R_0$ -Drift 0.04 % after 1000 hours at  $500\text{ °C}$

### Self-heating

0.2 K/mW at  $0\text{ °C}$

### Insulation resistance

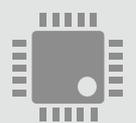
> 100 M $\Omega$  at  $20\text{ °C}$   
 > 2 M $\Omega$  at  $500\text{ °C}$



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Heraeus Nexensos GmbH, Reinhard-Heraeus-Ring 23, 63801 Kleinostheim, Germany

Web: [www.heraeus-nexensos.com](http://www.heraeus-nexensos.com)



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### 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

$\geq 9\text{ N}$

### 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](http://www.p65warnings.ca.gov).



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