

# Heraeus



## **Platinum thin film sensor elements High Temperature Range (-70°C to +850°C)**



**Heraeus Sensor Technology**  
Dependable sensor technology

## Platinum Resistance Temperature Detector

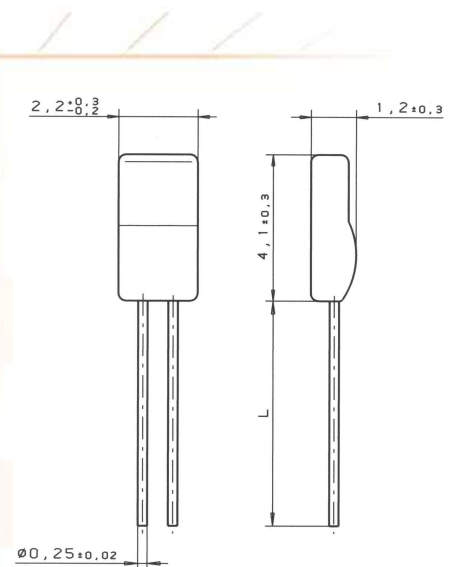
## HD 421

HD 421 Pt 100-type platinum temperature sensors are characterized by long-term stability, precision over a broad temperature range and compatibility. Main application area is the process technology.

Nominal Resistance $R_0$	Tolerance Up to 650°C	Tolerance Up to 850°C	Order No. Blister box
100 Ohm at 0°C	DIN EN 60751, class B	DIN EN 60751, class 2B	32 208 228

The measuring point for the nominal resistance is defined at 4 mm from the end of the sensor body.

<b>Specification</b>	DIN EN 60751	
<b>Temperature range</b>	- 70°C up to + 850°C	
<b>Temperature coefficient</b>	TCR= 3850 ppm/K	
<b>Leads</b>	Pt	
<b>Lead length (L)</b>	6 mm +- 1mm	
<b>Long-term tests</b>	1000 h at 850°C (energized, open) smaller then the allowed deviation according to DIN B. 1000 h at 650°C (under current as clean MI-type) smaller then the allowed deviation according to DIN B.	
<b>Vibration resistance</b>	at least 40g acceleration with 8ms half sine wave signal, depends on the installation	
<b>Shock resistance</b>	at least 100g acceleration at frequencies from 10Hz up to 2000Hz, depends on the installation	
<b>Environmental conditions</b>	Unhoused for dry environment only, Up to 650°C in housings also as clean MI-type possible, above 650°C no reducing atmosphere, free air admission necessary	
<b>Insulation resistance</b>	>100 MOhm at 20°C; >2 MOhm at 650°C	
<b>Self heating</b>	0.2 K/mW	
<b>Response time</b>	Water current (v = 0.4 m/s):	$t_{0,5} = 0.05$ s $t_{0,9} = 0.17$ s
	Air stream (v = 2 m/s):	$t_{0,5} = 3.3$ s $t_{0,9} = 13.0$ s
<b>Measuring current</b>	up to 5 mA (self heating has to be considered)	
<b>Note</b>	Other tolerances, values of resistance and wire lengths are available on request.	



We reserve the right to make alterations and technical data printed. All technical data serves as a guideline and does not guarantee particular properties to any products.

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## Platinum Resistance Temperature Detector

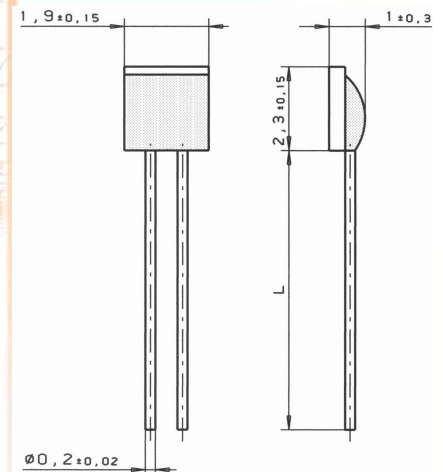
## HL 220

HL 220 type platinum sensors are characterised by long-term stability, precision over a broad temperature range and compatibility. The main feature is the small design. They are used in particular for applications with high consumption volumes, e.g. white goods and heating power.

Nominal Resistance $R_0$	Tolerance up to 750°C	Order No.
1000 Ohm at 0°C	DIN EN 60751, Class 2B	32 208 779
Sensor up to 650°C in tolerance class B on request available.		

The measuring point for the nominal resistance is defined at 6 mm from the end of the sensor body.

<b>Specification</b>	DIN EN 60751
<b>Temperature range</b>	- 70°C up to + 750°C
<b>Temperature coefficient</b>	TCR = 3850 ppm/K
<b>Leads</b>	NiCrPt
<b>Lead lengths (L)</b>	8 mm +- 1mm
<b>Long-term tests</b>	$R_0$ - Drift after 1000h at 750°C (energized) < 0,24% (Unhoused chip in standard atmosphere.)
<b>Environmental conditions</b>	Unhoused for dry environmental only, above 500°C no reducing atmosphere, free air admission is necessary. Assembly can influence the long term stability!
<b>Vibration resistance</b>	at least 40 g acceleration at 10 to 2000 Hz, depends on installation
<b>Shock resistance</b>	at least 100 g acceleration with 8ms half sine wave, depends on installation
<b>Insulation resistance</b>	> 100 MOhm at 20 °C; > 2 MOhm at 650 °C
<b>Self heating</b>	0.2 K/mW
<b>Response time</b>	Water current ( $v = 0.4$ m/s): $t_{0,5} = 0.05$ s; $t_{0,9} = 0.14$ s Air stream ( $v = 2$ m/s): $t_{0,5} = 3.0$ s ; $t_{0,9} = 10$ s
<b>Measuring current</b>	0.1 to 1mA (self heating has to be considered)
<b>Packaging</b>	Plastic bag
<b>Note</b>	Other tolerances, values of resistance and wire lengths are available on request.



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