

## HD421, Pt Temperature Sensor according to DIN EN 60751

Temperature range -70 °C to +850 °C

- Large operation window up to 850 °C
- High accuracy over a wide temperature range
- High vibration and shock resistance
- Optimized for welding and brazing

HD 421 Pt-RTDs are characterized by long-term stability, precision over a broad temperature range and compatibility. HD421 elements are used to monitor high temperature processes in Energy&Power generation, PetroChemistry and others. In principle, the products can also be used in automotive applications, in this case YAGEO Nexensos will check upon the request of the customer, whether additional requirements can be met (e.g. IMDS, PPAP).

Nominal Resistance R <sub>0</sub> [Ω]	Tolerance Class	Order Number	Packaging
Pt100	F 0.6 (2B)	32208228	Slide blister

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

### Temperature Range of Tolerance Class

Validity of Class F 0.6 (2B) -70 °C to +850 °C

Explanation:

Tolerance F 0.3 (B) -70 °C to +650 °C

Tolerance F 0.6 (2B) +650 °C to +850 °C

### Temperature Coefficient

TCR = 3850 ppm/K

### Response Time

Water (v = 0.4 m/s):  
t<sub>0.5</sub> = 0.05 s  
t<sub>0.9</sub> = 0.17 s

Air (v = 2 m/s):  
t<sub>0.5</sub> = 3.3 s  
t<sub>0.9</sub> = 13 s

### Measuring Current

Pt100 Ω: -70 °C to 20 °C max. 1 mA,  
above 20 °C max. 1 mA  
(self-heating has to be considered)

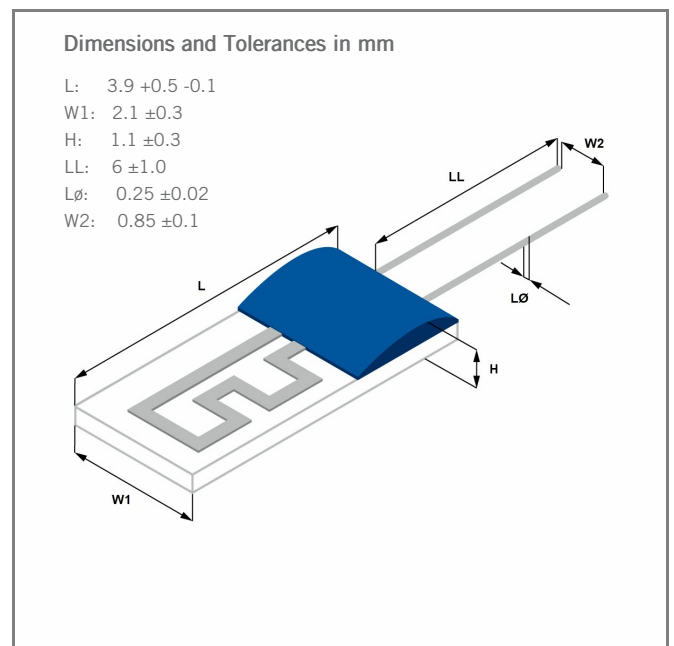


Image for illustration purposes only  
Color, shape and forming of fixing drop may vary

## HD421, Pt Temperature Sensor according to DIN EN 60751

Temperature range -70 °C to +850 °C

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### Long-Term Stability

Ro-drift < then the allowed deviation according to DIN F 0.3 (B) after 1000 hours at 850 °C (energized, open)

Ro-drift < then the allowed deviation according to DIN F 0.3 (B) after 1000 hours at 650 °C (under current as clean MI-type)

### Self-Heating

0.2 K/mW at 0 °C

### Insulation Resistance

> 100 MΩ at 20 °C

> 2 MΩ at 650 °C

### Vibration Resistance

Depends on installation

### Shock Resistance

Depends on installation

### Connection Technology

Welding, Brazing

### Lead Type

Platinum

### Tensile Strength of Leads

≥ 9 N

### Packaging

Slide blister

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.

Due to random sample measurements, a bending of connection wires may occur (called V-shape). This bending is batch-dependent and has no influence on the functionality of the platinum measuring resistor.



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## HDA420, Pt Temperature Sensor

Temperature range -40 °C to +900 °C, temporary up to +950 °C

- Large operation window up to 900 °C
- Automotive certified
- High accuracy and stability
- High vibration resistance
- Optimized for welding and brazing

HDA 420 Pt-RTDs are designed and tested to measure high temperatures with great performance and long life-time. The HDA 420 is setting standards for temperature detection in automotive exhaust gas systems. In addition HDA420 elements are used to monitor high temperature processes in industry, wood burning and other areas.

Nominal Resistance R <sub>0</sub> [Ω]	Tolerance Class	Order Number	Packaging
Pt200	-40 °C to +278 °C: ±2.5 K >+278 °C to +900 °C: ±0.9 % of temperature	32208775 5052797	Plastic bag Blister reel
Pt200	-40 °C to +278 °C: ±4.5 K >+278 °C to +900 °C: ±1.8 % of temperature	32208771	Plastic bag

The measuring point for the nominal resistance is 2 mm from the end of the sensor body.

### Specification

HNE (Heraeus Nexensos)

### Temperature Range of Tolerance Class

-40 °C to +900 °C, temporary up to 950 °C  
The specified tolerance range refers to the delivery condition of the sensor.

### Temperature Coefficient

TCR = 3770 ppm/K

### Response Time

Water (v = 0.4 m/s):                    t0.5 = 0.05 s  
    t0.9 = 0.17 s

Air (v = 2 m/s):                            t0.5 = 3 s  
    t0.9 = 11 s

### Measuring Current

Pt200 Ω: -40 °C to 20 °C max. 5.0 mA;  
above 20 °C max. 2.8 mA  
(self-heating has to be considered)

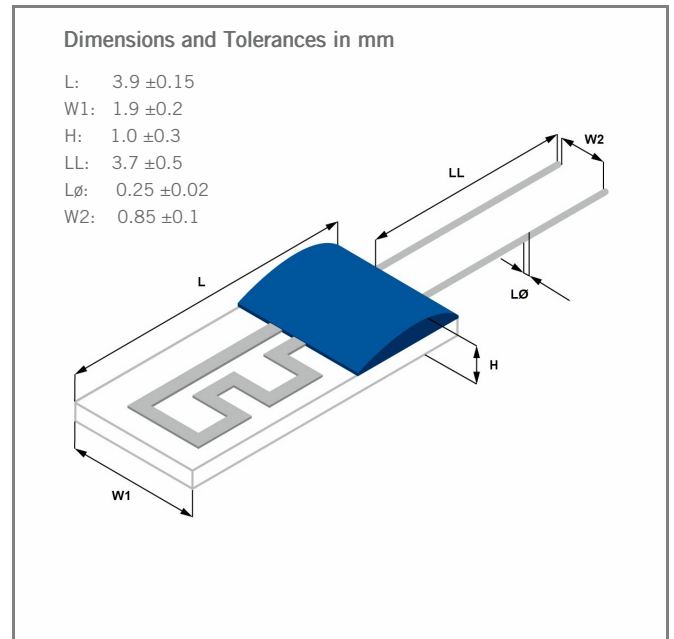


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## HDA420, Pt Temperature Sensor

Temperature range -40 °C to +900 °C, temporary up to +950 °C

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### Long-Term Stability

500 hours at +900 °C (5V, pullup resistor 1000 Ω) or 500 cycles at +900 °C/< 40 °C:

32208775:

Post test tolerance -40 °C to +278 °C: ±5 K  
>+278 °C to +900 °C: ±1.8 % of temperature

32208771:

Post test tolerance -40 °C to +278 °C: ±9 K  
>+278 °C to +900 °C: ±3.6 % of temperature

### Self-Heating

0.2 K/mW at 0 °C

### Insulation Resistance

> 100 MΩ at 20 °C

### Vibration Resistance

Depends on installation

### Shock Resistance

Depends on installation

### Lead Type

Platinum

### Tensile Strength of Leads

≥ 9N

### Connection Technology

Brazing, Welding

### Environmental Conditions

Unhoused for dry environment only. Up to 650 °C in housings also as MI-cable type possible, above 650 °C no reducing atmosphere, free air admission necessary

### Packaging

Blister reel, Plastic bag

### Storage Life

Min. 12 months (in original packaging)

### Note

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

Due to random sample measurements, a bending of connection wires may occur (called V-shape). This bending is batch-dependent and has no influence on the functionality of the platinum measuring resistor.



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## HL220, Pt Temperature Sensor according to DIN EN 60751

Temperature range -70 °C to +750 °C

- Large operation window up to 750 °C
- High accuracy over a wide temperature range
- High vibration and shock resistance
- Optimized for welding and brazing
- Small footprint

HL 220 Pt-RTDs are characterized by long-term stability, and precision over a broad temperature range. They are used in automotive industry and process control. In principle, the products can also be used in automotive applications, in this case YAGEO Nexensos will check upon the request of the customer, whether additional requirements can be met (e.g. IMDS, PPAP).

Nominal Resistance $R_0$ [ $\Omega$ ]	Tolerance Class	Order Number	Packaging
Pt1000	F 0.6 (2B)	32208779	Plastic bag

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

### Temperature Range of Tolerance Class

Validity of Class F 0.6 (2B) -70 °C to +750 °C

### Temperature Coefficient

TCR = 3850 ppm/K

### Response Time

Water ( $v = 0.4$  m/s):  
 $t_{0.5} = 0.05$  s  
 $t_{0.9} = 0.14$  s

Air ( $v = 2$  m/s):  
 $t_{0.5} = 3$  s  
 $t_{0.9} = 10$  s

### Measuring Current

Pt1000  $\Omega$ : 0.1 to 0.3 mA  
 (self-heating has to be considered)

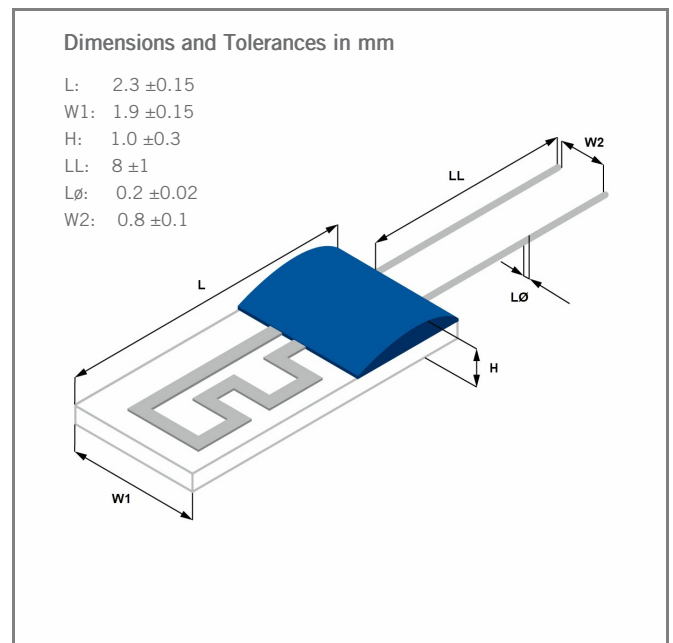


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 Color, shape and forming of fixing drop may vary

## HL220, Pt Temperature Sensor according to DIN EN 60751

Temperature range -70 °C to +750 °C

### Long-Term Stability

Ro- Drift < 0.24 % after 1000 hours at 750 °C (energized)  
(unhoused chip in standard atmosphere)

### Self-Heating

0.4 K/mW at 0 °C

### Insulation Resistance

> 100 MΩ at 20 °C  
> 1 MΩ at 650 °C

### Vibration Resistance

Depends on installation

### Shock Resistance

Depends on installation

### Connection Technology

Welding, Brazing

### Lead Type

NiCr-Pt-jacket

### Tensile Strength of Leads

≥ 9 N

### Packaging

Plastic bag  
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.

Due to random sample measurements, a bending of connection wires may occur (called V-shape). This bending is batch-dependent and has no influence on the functionality of the platinum measuring resistor.

### California Proposition 65



## WARNING

WARNING: This product can expose you to chemicals including 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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