

HDZ420, Pt Temperature Sensor

Temperature range -40 °C to +1000 °C, temporary up to 1100 °C

- Large operation window up to 1000 °C
- TCR = 3850 ppm/K
- High accuracy and stability
- Optimized for welding

HDZ 420 Pt-RTDs are designed and tested to measure highest temperatures with great performance and long life-time. The HDZ 420 is setting new standards for temperature detection in automotive exhaust gas systems up to 1000 °C. Heraeus will check upon the request of the customer, whether additional requirements can be met.

Nominal Resistance R ₀ [Ω]	Tolerance Class	Order Number	Packaging
Pt200	-40 °C to +280 °C: ±2.5 K >+280 °C to +1000 °C: ±0.9 % of temperature. The specified tolerance range refers to the delivery condition of the sensor	5118189	Blister reel

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 +1000 °C,
temporary up to +1050 °C (up to 50 hours)
temporary up to +1100 °C (up to 10 hours)

Temperature Coefficient

TCR = 3850 ppm/K

Response Time

Water (v < 0.4 m/s): t_{0.5} = 0.1 s
 t_{0.9} = 0.4 s

Air (v = 3 m/s): t_{0.5} = 3 s
 t_{0.9} = 8 s

Measuring Current

Pt200 Ω: 20 °C max. 5.0 mA; to 1000 °C max. 2.7 mA
(self-heating has to be considered)

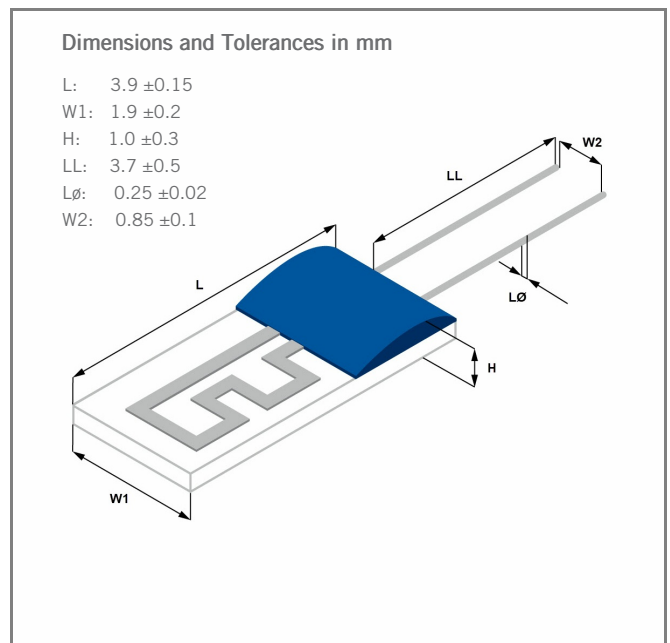


Image for illustration purposes only
Color, shape and forming of fixing drop may vary

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Long-Term Stability

1000 hours at +1000 °C (5V, pullup resistor 1000 Ω) or
5000 cycles at +1000 °C/< 40 °C:
Post test tolerance -40 °C to +280 °C: ±5 K
At 1000 °C: ±13 K

Self-Heating

0.58 K/mW (room temperature air stream, $v = 3$ m/s)

Insulation Resistance

> 500 MΩ at 20 °C (100V)

Vibration Resistance

Depends on installation

Shock Resistance

Depends on installation

Lead Type

Pt

Tensile Strength of Leads

≥ 9 N

Connection Technology

Welding

Thermal expansion of connected materials has to be considered.

Environmental Conditions

Dry environment only, no reducing atmosphere, free air admission necessary

Process Instructions

All components of the hot-end housing must be oxidized at the maximum working temperature before assembly. Sufficient oxygen has to be available.

Packaging

Blister reel

Storage Life

Min. 12 months (in original packaging)

Note

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.



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.

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