

JUMO GmbH & Co. KG

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JUMO Process Control, Inc.

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PCW-M-AuNi

Platinum-chip temperature sensors with connection wires

according to DIN EN IEC 60751

Areas of application

- Heating, air conditioning, and ventilation technology
- Medical and laboratory technology
- White goods
- Motor and commercial vehicles
- Mechanical engineering
- Industrial technology

Special features

- Standardized nominal values and tolerances
- High measuring accuracy
- High long-term stability
- Quick response behavior
- Good vibration resistance

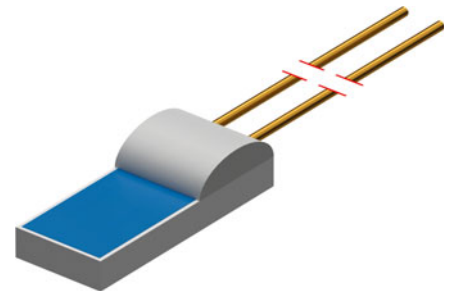
Description

Platinum-chip temperature sensors belong to the category of temperature sensors that are made using thin film technology. The measuring principle is based on a temperature-dependent resistance, the curve and admissible tolerance of which is defined in the international standard DIN EN IEC 60751.

The temperature sensors are mainly used in industrial electrical temperature measurement in RTD temperature probes. The sensors are suitable for many additional applications due to their large measuring range, high measuring accuracy, and robust structure. Because the connection wires are made from gold-plated nickel wire, most further processing methods can be used.

JUMO platinum-chip temperature sensors are available in different versions. You can find a summary and further information on our website.

⇒ [Platinum-chip temperature sensors](#)



Type 906133

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Technical data

Temperature range	-70 to +500 °C (temporarily 550 °C)
Temperature coefficient	$\alpha = 3.851 \times 10^{-3} \text{ } ^\circ\text{C}^{-1}$ (between 0 and 100 °C)
Temperature range of validity	
Class F 0.1	0 to 150 °C
Class F 0.15	-30 to +300 °C
Class F 0.3	-50 to +500 °C
Class F 0.6	-50 to +500 °C
Measuring current	
Pt100	Recommended 1.0 mA, maximum 7.0 mA
Pt500	Recommended 0.7 mA, maximum 3.0 mA
Pt1000	Recommended 0.1 mA, maximum 1.0 mA
Operating conditions	Do not use platinum-chip temperature sensors unprotected in a humid environment or in aggressive atmospheres. Direct immersion into liquids is not admissible. Refer to the installation instructions "Application notes for platinum-chip temperature sensors", which can be found on the website.
Self-heating	$\Delta t = I^2 \times R \times E$ Δt : Self-heating or measurement error I : Measuring current E : Self-heating coefficient, see the table "Self-heating and response times"
Connection wires	Gold-plated nickel wire (NiAu)
Series resistance	2.4 m Ω /mm
Temperature coefficient	$5.5 \times 10^{-3} \text{ } ^\circ\text{C}^{-1}$
Wire length	10 mm (standard) Other wire lengths are available upon request.
Processing	Crimping, welding, hard-soldering, soft-soldering Avoid lateral stress on the connection wires and unnecessary bending.
Tensile strength	8 N on a single connection wire
Measuring point	2 mm in front of open wire end with wire length 10 mm (standard) Take into account the line resistance when the wire length is changed.
Long-term stability	Max. R_0 drift of 0.05 % per year
Storage	Can be stored for at least 24 months after delivery in the original packaging.
Compliant with RoHS 2011/65/EU and RoHS 2015/863/EU	Yes
Compliant with REACH 1907/2006	Yes

Self-heating and response times

Size (B × L) in mm	Self-heating coefficient E in °C/mW in air ($v = 3 \text{ m/s}$, $t = 22 \text{ } ^\circ\text{C}$)	Response times in s in air ($v = 3 \text{ m/s}$)	
		$t_{0.5}$	$t_{0.9}$
1.5 × 5.0	0.30	2	6
2.0 × 2.5	0.35	3	8
2.0 × 5.0	0.25	3	9
2.0 × 10.0	0.15	3	10

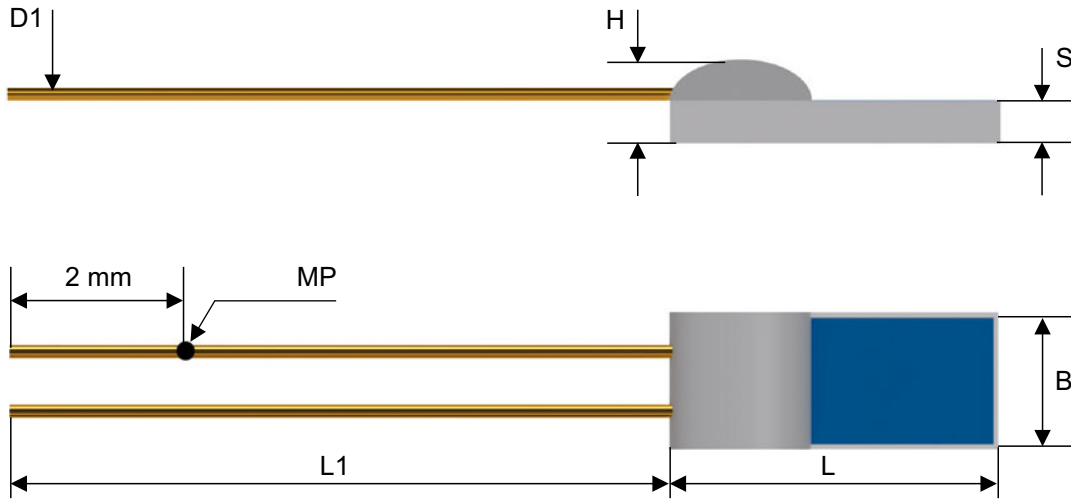
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Dimensions



MP	Measuring point	D1	Diameter of connection wire (tolerance $\pm 0.01\text{ mm}$)
B	Width (tolerance $+0.2\text{ mm}$)	L1	Wire length (tolerance $\pm 0.5\text{ mm}$)
H	Height (tolerance $\pm 0.2\text{ mm}$)	S	Substrate height (tolerance $\pm 0.1\text{ mm}$)
L	Length (tolerance $\pm 0.5\text{ mm}$)		

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Stock versions

Size 1.5 × 5.0 mm (B × L)

Order code	Size	Substrate height	Diameter of connection wire	Nominal value	Wire length	Tolerance class	Part no.
	H in mm	S in mm	D1 in mm	R ₀ in Ω	L1 in mm		
906133/0-1.5-5-1-100-10-1-030	1.0	0.38	0.2	100	10	F 0.3	00693651
906133/0-1.5-5-1-100-10-1-015						F 0.15	00693654
906133/0-1.5-5-1-100-10-1-010						F 0.1	00693656
906133/0-1.5-5-1-1000-10-1-030	1.0	0.38	0.2	1000	10	F 0.3	00693658
906133/0-1.5-5-1-1000-10-1-015						F 0.15	00693662
906133/0-1.5-5-1-1000-10-1-010						F 0.1	00693663

Size 2.0 × 2.5 mm (B × L)

Order code	Size	Substrate height	Diameter of connection wire	Nominal value	Wire length	Tolerance class	Part no.
	H in mm	S in mm	D1 in mm	R ₀ in Ω	L1 in mm		
906133/0-2-2.5-1.3-100-10-1-030	1.3	0.64	0.2	100	10	F 0.3	00663850
906133/0-2-2.5-1.3-100-10-1-015						F 0.15	00663905
906133/0-2-2.5-1.3-100-10-1-010						F 0.1	00692526
906133/0-2-2.5-1.3-1000-10-1-030	1.3	0.64	0.2	1000	10	F 0.3	00665252
906133/0-2-2.5-1.3-1000-10-1-015						F 0.15	00692527
906133/0-2-2.5-1.3-1000-10-1-010						F 0.1	00692528

Size 2.0 × 5.0 mm (B × L)

Order code	Size	Substrate height	Diameter of connection wire	Nominal value	Wire length	Tolerance class	Part no.
	H in mm	S in mm	D1 in mm	R ₀ in Ω	L1 in mm		
906133/0-2-5-1.3-100-10-1-030	1.3	0.64	0.2	100	10	F 0.3	00692053
906133/0-2-5-1.3-100-10-1-015						F 0.15	00692061
906133/0-2-5-1.3-100-10-1-010						F 0.1	00692062
906133/0-2-5-1.3-500-10-1-030	1.3	0.64	0.2	500	10	F 0.3	00720946
906133/0-2-5-1.3-500-10-1-015						F 0.15	00720944
906133/0-2-5-1.3-1000-10-1-030	1.3	0.64	0.2	1000	10	F 0.3	00691984
906133/0-2-5-1.3-1000-10-1-015						F 0.15	00691986
906133/0-2-5-1.3-1000-10-1-010						F 0.1	00691992

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Size 2.0 × 10.0 mm (B × L)

Order code	Size	Substrate height	Diameter of connection wire	Nominal value	Wire length	Tolerance class	Part no.
	H in mm	S in mm	D1 in mm	R ₀ in Ω	L1 in mm		
906133/0-2-10-1.3-100-10-1-030	1.3	0.64	0.2	100	10	F 0.3	00733509
906133/0-2-10-1.3-100-10-1-015						F 0.15	00733607
906133/0-2-10-1.3-100-10-1-010						F 0.1	00733609
906133/0-2-10-1.3-1000-10-1-030	1.3	0.64	0.2	1000	10	F 0.3	00733508
906133/0-2-10-1.3-1000-10-1-015						F 0.15	00733603
906133/0-2-10-1.3-1000-10-1-010						F 0.1	00733605