

JUMO GmbH & Co. KG

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JUMO Process Control, Inc.

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PCW-S-PtNi

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

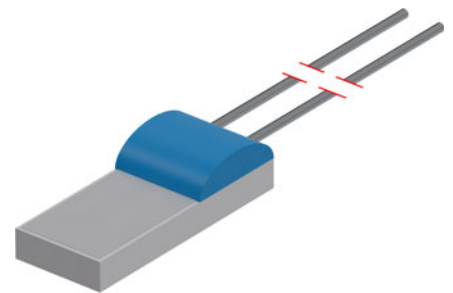
Description

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 are defined in the international standard DIN EN IEC 60751.

Temperature sensors of the PCW-S-PtNi design type are mainly used in industrial electrical temperature measurement in RTD temperature probes under dry environmental influences

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 906135

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Technical data

Temperature range	-70 to +400 °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 +400 °C
Class F 0.6	-50 to +400 °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	Platinum wrapped wire with nickel core (PtNi)
Series resistance	2.7 m Ω /mm
Temperature coefficient	$5.9 \times 10^{-3} \text{ } ^\circ\text{C}^{-1}$
Wire length	10 mm (standard) Other wire lengths are available upon request.
Processing	Crimping, welding, hard-soldering Avoid lateral stress on the connection wires and unnecessary bending.
Tensile strength	10 N on a single connection wire
Measuring point	2 mm in front of open wire end with wire length 10 mm (standard) Take the line resistance into account 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 ($v = 3 \text{ m/s}$)	
		$t_{0.5}$	$t_{0.9}$
2.0 × 2.5	0.35	3	8
2.0 × 5.0	0.25	3	9
2.0 × 10.0	0.15	3	10

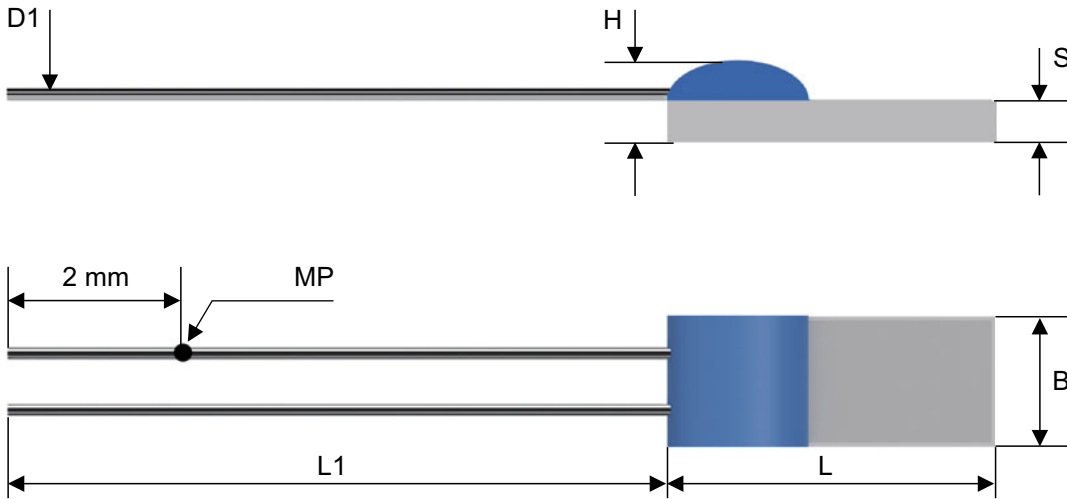
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Dimensions



MP	Measuring point	D1	Diameter of connection wire (tolerance ± 0.01 mm)
B	Width (tolerance ± 0.2 mm)	L1	Wire length (tolerance ± 0.5 mm)
H	Height (tolerance ± 0.2 mm)	S	Substrate height (tolerance ± 0.1 mm)
L	Length (tolerance ± 0.5 mm)		

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Order details

	(1) Basic type
906135	PCW-S-PtNi – platinum-chip temperature sensors with connection wires
	(2) Version
0	Standard
1	Special version
	(3) Width B
2	2.0 mm
	(4) Length L
2.5	2.5 mm
5	5.0 mm
10	10.0 mm
	(5) Height H
1.3	1.3 mm
	(6) Nominal value of resistance R₀
100	100 Ω (Pt100)
500	500 Ω (Pt500)
1000	1000 Ω (Pt1000)
	(7) Wire length L1
10	10.0 mm (standard)
99	Other lengths are available upon request
	(8) Type of packaging
1	Clamshell packaging (standard), packaging unit 100 pieces, loose
2	Grip seal bags, loose
4	Blister belt (upon request)
5	Cardboard packaging, for temperature sensors with connection wires > 30 mm
6	On film (upon request); underdelivery or overdelivery ±3 %
	(9) Tolerance class
010	F 0.1
015	F 0.15
030	F 0.3
060	F 0.6

Order code / - - - - - - -

Order example 906135 / 0 - 2 - 2.5 - 1.3 - 100 - 10 - 1 - 030

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Stock versions

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		
906135/0-2-2.5-1.3-100-10-1-030	1.3	0.64	0.2	100	10	F 0.3	00358363
906135/0-2-2.5-1.3-100-10-1-015						F 0.15	00358365
906135/0-2-2.5-1.3-100-10-1-010						F 0.1	00358368
906135/0-2-2.5-1.3-1000-10-1-030	1.3	0.64	0.2	1000	10	F 0.3	00678873
906135/0-2-2.5-1.3-1000-10-1-015						F 0.15	00701259
906135/0-2-2.5-1.3-1000-10-1-010						F 0.1	00701261

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		
906135/0-2-5-1.3-100-10-1-030	1.3	0.64	0.2	100	10	F 0.3	00089206
906135/0-2-5-1.3-100-10-1-015						F 0.15	00089225
906135/0-2-5-1.3-100-10-1-010						F 0.1	00309664
906135/0-2-5-1.3-100-20-1-030	1.3	0.64	0.2	100	20	F 0.3	00357968
906135/0-2-5-1.3-100-20-1-010						F 0.1	00364145
906135/0-2-5-1.3-500-10-1-030	1.3	0.64	0.2	500	10	F 0.3	00089207
906135/0-2-5-1.3-500-10-1-015						F 0.15	00089226
906135/0-2-5-1.3-500-10-1-010						F 0.1	00309666
906135/0-2-5-1.3-1000-10-1-030	1.3	0.64	0.2	1000	10	F 0.3	00358358
906135/0-2-5-1.3-1000-10-1-015						F 0.15	00358359
906135/0-2-5-1.3-1000-10-1-010						F 0.1	00358360
906135/0-2-5-1.3-1000-20-1-030	1.3	0.64	0.2	1000	20	F 0.3	00358285
906135/0-2-5-1.3-1000-20-1-010						F 0.1	00504777

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		
906135/0-2-10-1.3-100-10-1-030	1.3	0.64	0.2	100	10	F 0.3	00089203
906135/0-2-10-1.3-100-10-1-015						F 0.15	00089222
906135/0-2-10-1.3-100-10-1-010						F 0.1	00309674
906135/0-2-10-1.3-500-10-1-030	1.3	0.64	0.2	500	10	F 0.3	00089204
906135/0-2-10-1.3-500-10-1-015						F 0.15	00089223
906135/0-2-10-1.3-1000-10-1-030	1.3	0.64	0.2	1000	10	F 0.3	00089205
906135/0-2-10-1.3-1000-10-1-015						F 0.15	00089224
906135/0-2-10-1.3-1000-10-1-010						F 0.1	00309681