

JUMO GmbH & Co. KG

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JUMO Process Control, Inc.

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PCW-M-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

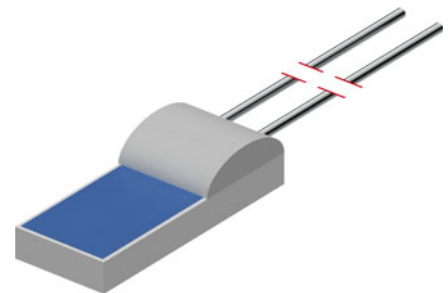
Description

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 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. Due to their large measuring range, high measuring accuracy, and robust structure, the sensors are suitable for many additional applications.

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 906130

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Technical data

Temperature range	-70 to +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 +550 °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 of 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 (height 0.9)	0.57	3	8
2.0 × 2.5 (height 1.3)	0.35	3	8
2.0 × 5.0	0.25	3	9
2.0 × 10.0	0.15	3	10

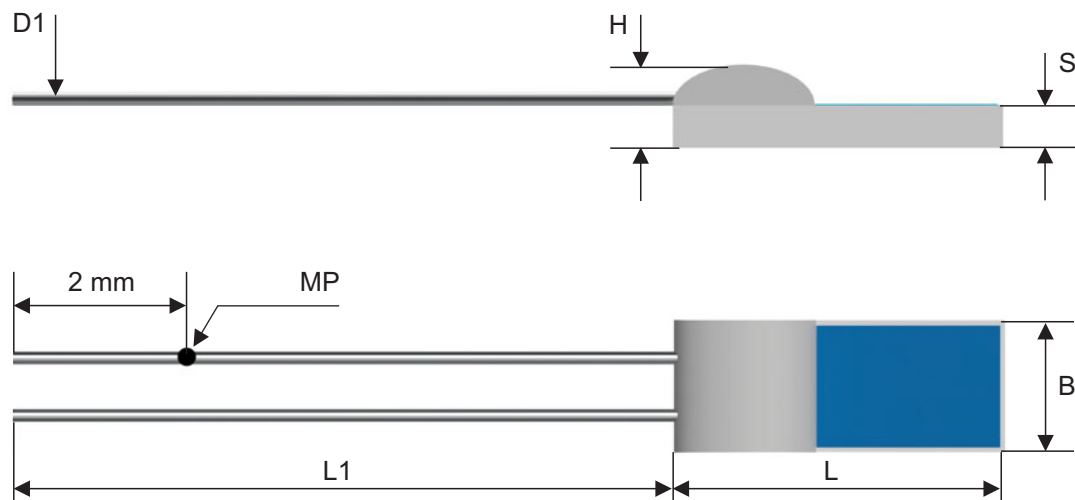
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Dimensions



MP Measuring point
 B Width (tolerance +0.2 mm)
 H Height (tolerance ± 0.2 mm)
 L Length (tolerance ± 0.5 mm)

D1 Diameter of connection wire (tolerance ± 0.01 mm)
 L1 Wire length (tolerance ± 0.5 mm)
 S Substrate height (tolerance ± 0.1 mm)

Order details

	(1) Basic type
906130	PCW-M-PtNi – platinum-chip temperature sensors with connection wires
	(2) Version
0	Standard
1	Special version
	(3) Width B
1.5	1.5 mm
2	2.0 mm
	(4) Length L
2.5	2.5 mm
5	5.0 mm
10	10.0 mm
	(5) Height H
0.9	0.9 mm
1	1.0 mm
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

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Order code		/	-	-	-	-	-	-	-
Order example	906130	/ 0	- 1.5	- 5	- 1	- 100	- 10	- 1	- 030

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Stock versions

Size 1.5 × 5.0 mm (B × L)

Order code	Size H in mm	Substrate height S in mm	Diameter of connection wire D1 in mm	Nomi- nal value R ₀ in Ω	Wire length L1 in mm	Tolerance class	Part no.
906130/0-1.5-5-1-100-10-1-030	1.0	0.38	0.2	100	10	F 0.3	00409840
906130/0-1.5-5-1-100-10-1-015						F 0.15	00409841
906130/0-1.5-5-1-100-10-1-010						F 0.1	00409843
906130/0-1.5-5-1-100-15-1-030	1.0	0.38	0.2	100	15	F 0.3	00430391
906130/0-1.5-5-1-100-15-1-015						F 0.15	00430393
906130/0-1.5-5-1-100-15-1-010						F 0.1	00430392
906130/0-1.5-5-1-500-10-1-030	1.0	0.38	0.2	500	10	F 0.3	00409844
906130/0-1.5-5-1-500-10-1-015						F 0.15	00409845
906130/0-1.5-5-1-500-10-1-010						F 0.1	00409847
906130/0-1.5-5-1-1000-10-1-030	1.0	0.38	0.2	1000	10	F 0.3	00409848
906130/0-1.5-5-1-1000-10-1-015						F 0.15	00409849
906130/0-1.5-5-1-1000-10-1-010						F 0.1	00409850
906130/0-1.5-5-1-1000-15-1-030	1.0	0.38	0.2	1000	15	F 0.3	00425409
906130/0-1.5-5-1-1000-15-1-015						F 0.15	00625677
906130/0-1.5-5-1-1000-15-1-010						F 0.1	00625678

Size 2.0 × 2.5 mm (B × L)

Order code	Size H in mm	Substrate height S in mm	Diameter of connection wire D1 in mm	Nomi- nal value R ₀ in Ω	Wire length L1 in mm	Tolerance class	Part no.
906130/0-2-2.5-0.9-100-10-1-030	0.9	0.38	0.2	100	10	F 0.3	00776420
906130/0-2-2.5-0.9-100-10-1-015						F 0.15	00776421
906130/0-2-2.5-0.9-100-10-1-010						F 0.1	00776422
906130/0-2-2.5-0.9-1000-10-1-030	0.9	0.38	0.2	1000	10	F 0.3	00776409
906130/0-2-2.5-0.9-1000-10-1-015						F 0.15	00776412
906130/0-2-2.5-0.9-1000-10-1-010						F 0.1	00776413
906130/0-2-2.5-1.3-100-10-1-030	1.3	0.64	0.2	100	10	F 0.3	00489994
906130/0-2-2.5-1.3-100-10-1-015						F 0.15	00700540
906130/0-2-2.5-1.3-100-10-1-010						F 0.1	00526951
906130/0-2-2.5-1.3-1000-10-1-030	1.3	0.64	0.2	1000	10	F 0.3	00592065
906130/0-2-2.5-1.3-1000-10-1-015						F 0.15	00623367
906130/0-2-2.5-1.3-1000-10-1-010						F 0.1	00623370

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Size 2.0 × 5.0 mm (B × L)

Order code	Size H in mm	Substrate height S in mm	Diameter of connection wire D1 in mm	Nomi- nal value R ₀ in Ω	Wire length L1 in mm	Tolerance class	Part no.
906130/0-2-5-1.3-100-10-1-030	1.3	0.64	0.2	100	10	F 0.3	00387456
906130/0-2-5-1.3-100-10-1-015						F 0.15	00387455
906130/0-2-5-1.3-100-10-1-010						F 0.1	00387454
906130/0-2-5-1.3-500-10-1-030	1.3	0.64	0.2	500	10	F 0.3	00387465
906130/0-2-5-1.3-500-10-1-015						F 0.15	00387449
906130/0-2-5-1.3-500-10-1-010						F 0.1	00387453
906130/0-2-5-1.3-1000-10-1-030	1.3	0.64	0.2	1000	10	F 0.3	00412307
906130/0-2-5-1.3-1000-10-1-015						F 0.15	00412311
906130/0-2-5-1.3-1000-10-1-010						F 0.1	00412308

Size 2.0 × 10.0 mm (B × L)

Order code	Size H in mm	Substrate height S in mm	Diameter of connection wire D1 in mm	Nomi- nal value R ₀ in Ω	Wire length L1 in mm	Tolerance class	Part no.
906130/0-2-10-1.3-100-10-1-030	1.3	0.64	0.2	100	10	F 0.3	00412339
906130/0-2-10-1.3-100-10-1-015						F 0.15	00412337
906130/0-2-10-1.3-100-10-1-010						F 0.1	00412338
906130/0-2-10-1.3-1000-10-1-030	1.3	0.64	0.2	1000	10	F 0.3	00387460
906130/0-2-10-1.3-1000-10-1-015						F 0.15	00387459
906130/0-2-10-1.3-1000-10-1-010						F 0.1	00387458