

JUMO GmbH & Co. KG

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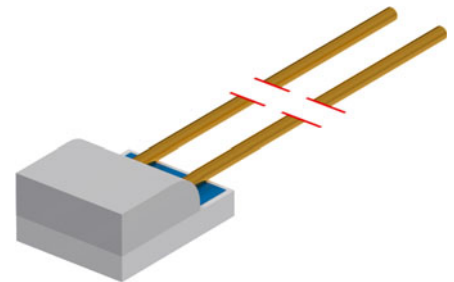
PCWR-M-AuNi

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



Type 906138

Special features

- Connection wires extending toward the center of the temperature sensor (reverse)
- For confined spaces
- 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.

The PCWR-M-AuNi design type has connection wires running out to the center of the sensor and is suitable for use in designs with limited space or a special installation situation.

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](#)

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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 0.3	-50 to +500 °C
Measuring current Pt100 Pt1000	Recommended 1.0 mA, maximum 7.0 mA 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 Series resistance Temperature coefficient	Gold-plated nickel wire (NiAu) 4.4 m Ω /mm $5.5 \times 10^{-3} \text{ } ^\circ\text{C}^{-1}$
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	4 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 m/s, t = 22 °C)	Response times in s in air (v = 3 m/s)	
		t _{0,5}	t _{0,9}
1.7 × 2.2	0.4	2	5

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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
906138	PCWR-M-AuNi – platinum-chip temperature sensors with connection wires
	(2) Version
0	Standard
1	Special version
	(3) Width B
1.7	1.7 mm
	(4) Length L
2.2	2.2 mm
	(5) Height H
1	1.0 mm
	(6) Nominal value of resistance R₀
100	100 Ω (Pt100)
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
030	F 0.3

Order code (1) (2) (3) (4) (5) (6) (7) (8) (9)
 Order example 906138 / 0 - 1.7 - 2.2 - 1 - 100 - 10 - 1 - 030

Stock versions

Size 1.7 × 2.2 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		
906138/0-1.7-2.2-1-100-10-1-030	1.0	0.38	0.15	100	10	F 0.3	00722609
906138/0-1.7-2.2-1-1000-10-1-030	1.0	0.38	0.15	1000	10	F 0.3	00722565