

JUMO GmbH & Co. KG

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JUMO Process Control, Inc.

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PCB-B-Au

Measuring inserts with platinum-chip temperature sensors

according to DIN EN IEC 60751

Areas of application

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



Type 906143: Example version

Special features

- Pre-finished measuring insert
- Automated processing available
- Standardized nominal values and tolerances
- High measuring accuracy
- High long-term stability
- Quick response behavior

Description

Temperature sensors of the PCB-B-Au design type are pre-assembled measuring inserts, which are equipped with platinum-chip temperature sensors in SMD design type. They are connected via gold-plated solder contacts.

The sensors are mainly used as measuring inserts in RTD temperature probes. For example, these types of measuring inserts are used in heat meters.

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	-40 to +150 °C
Temperature coefficient	$\alpha = 3.851 \times 10^{-3} \text{ } ^\circ\text{C}^{-1}$ (between 0 and 100 °C)
Temperature range of validity ^a Class F 0.3	-40 to +150 °C
Measuring current and maximum current Pt100 Pt500 Pt1000	Recommended 1.0 mA, maximum 7.0 mA Recommended 0.7 mA, maximum 3.0 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" for values
Long-term stability	Max. R ₀ drift of 0.05 % per year
Connection	Chemical nickel – gold IPC-4552
Base material	FR-4
Storage	Can be stored for at least 24 months after delivery in the original packaging
Packaging	Due to the design, the measuring inserts can only be delivered as a complete panel. The individual circuit boards are wrapped in film and are delivered packaged in a cardboard box. A panel contains 192 individual circuit boards for the listed stock versions
Compliant with RoHS 2011/65/EU and RoHS 2015/863/EU	Yes
Compliant with REACH 1907/2006	Yes

^a Note: The accuracy class refers to the SMD platinum-chip temperature sensor used. The line resistance of the connection wires must be taken into consideration.

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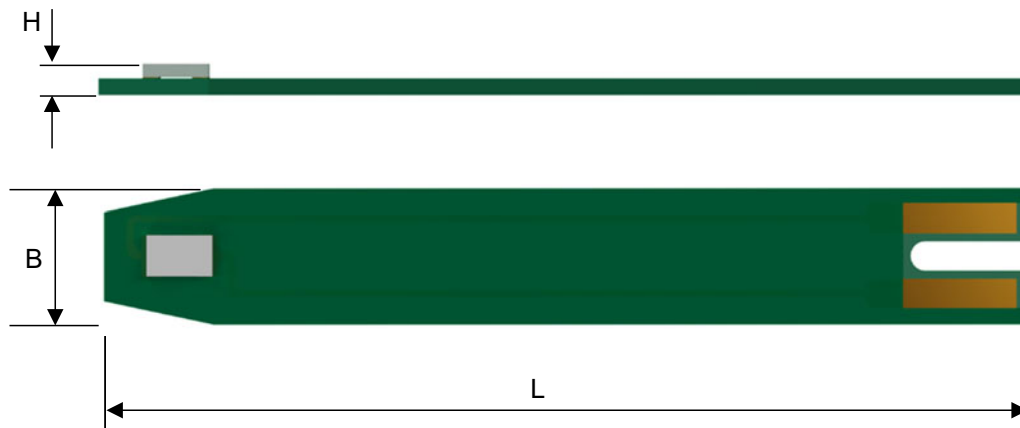
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Self-heating and response times

Version	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}
Circuit board assembled with flip chip SMD size 0805 (Order code feature 3 – version 7)	0.3	4	11

Dimensions



- B Width (tolerance ±0.1 mm)
- L Length (tolerance ±1.0 mm)
- H Height (tolerance ±0.15 mm)

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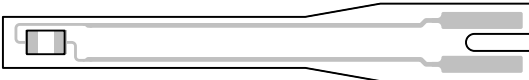


Design type and contact type

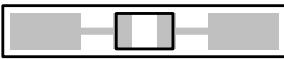
(1) Single-sided circuit board, two connections – S2



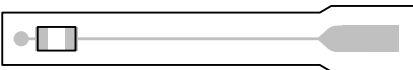
(2) Single-sided circuit board, tapered point, two connections – SRT2



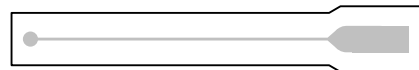
(3) Single-sided circuit board, axial version, two connections – SA2



(4) Double-sided circuit board, two connections – D2



Side A

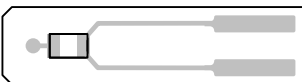


Side B

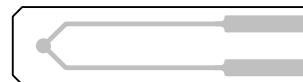
(5) Single-sided circuit board, four connections – S4



(6) Double-sided circuit board, four connections – D4



Side A



Side B

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Order details

(1) Basic type	
906143	PCB-B-Au – measuring inserts with platinum-chip temperature sensors in SMD design type
(2) Version	
0	Standard
1	Special version
(3) Used temperature sensor (JUMO product group/SMD size)	
1	906145/1206
2	906145/0805
3	906141/1206
5	906141/0805
6	906141/0603
7	906142/0805
8	906142/0603
(4) Width B	
4.1	4.1 mm
(5) Length L	
16	16 mm
28	28 mm
(6) Height H	
1	1 mm
(7) Nominal value of resistance R₀	
100	100 Ω (Pt100)
500	500 Ω (Pt500)
1000	1000 Ω (Pt1000)
(8) Design type and contact type	
1	Single-sided circuit board, two connections (S2)
2	Single-sided circuit board, tapered point, two connections (SRT2)
3	Single-sided circuit board, axial version, two connections (SA2)
4	Double-sided circuit board, two connections (D2)
5	Single-sided circuit board, four connections (S4)
6	Double-sided circuit board, four connections (D4)
(9) Tolerance class of SMD temperature sensor	
010	F 0.1
015	F 0.15
030	F 0.3
060	F 0.6

Order code (1) (2) (3) (4) (5) (6) (7) (8) (9)
 Order example 906143 / 0 - 7 - 4.1 - 16 - 1 - 1000 - 1 - 030

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Stock versions

Design type, single-sided circuit board, two connections (S2)

Order code	Width B in mm	Length L in mm	Height H in mm	Nominal value R ₀ in Ω	Tolerance class of SMD platinum temperature sensor	Part no.
906143/0-7-4.1-16-1-100-1-030	4.1	16	1.0	100	F 0.3	00699811
906143/0-7-4.1-16-1-500-1-030	4.1	16	1.0	500	F 0.3	00699810
906143/0-7-4.1-16-1-1000-1-030	4.1	16	1.0	1000	F 0.3	00699808
906143/0-7-4.1-28-1-100-1-030	4.1	28	1.0	100	F 0.3	00714656
906143/0-7-4.1-28-1-500-1-030	4.1	28	1.0	500	F 0.3	00714686
906143/0-7-4.1-28-1-1000-1-030	4.1	28	1.0	1000	F 0.3	00714690

Design type, single-sided circuit board, tapered point, two connections (SRT2)

Order code	Width B in mm	Length L in mm	Height H in mm	Nominal value R ₀ in Ω	Tolerance class of SMD platinum temperature sensor	Part no.
906143/0-7-4.1-28-1-100-2-030	4.1	28	1.0	100	F 0.3	00723243
906143/0-7-4.1-28-1-500-2-030	4.1	28	1.0	500	F 0.3	00714536
906143/0-7-4.1-28-1-1000-2-030	4.1	28	1.0	1000	F 0.3	00723242