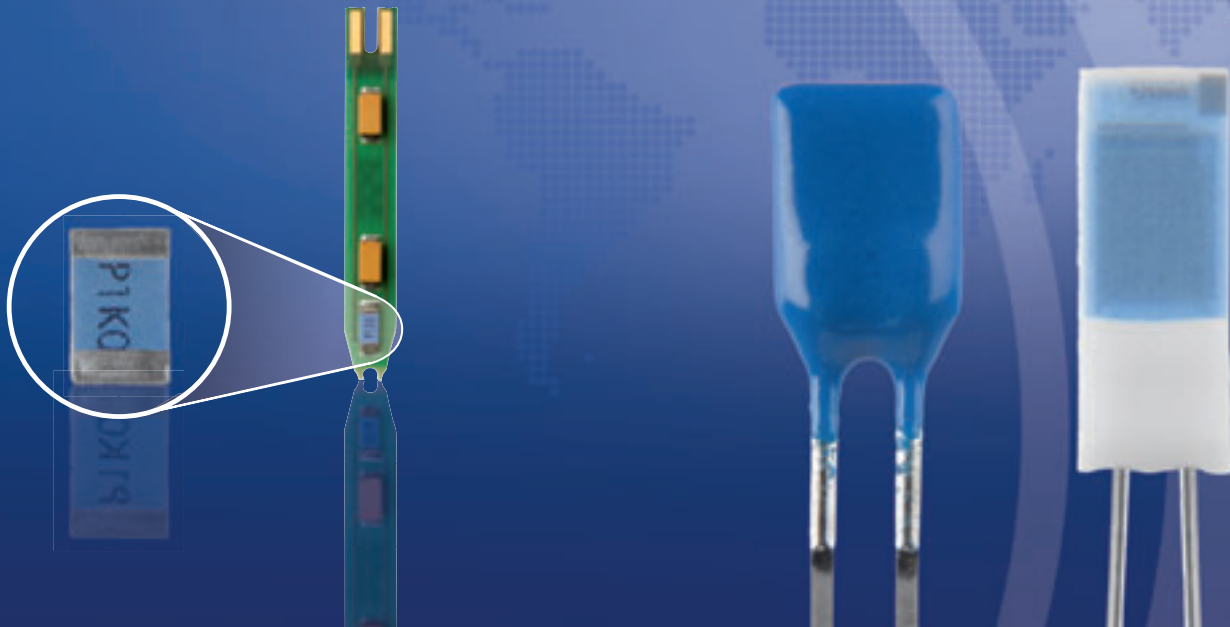


**JUMO**

More than **sensors + automation**



# Platinum Temperature Sensors in Thin-Film Technology

Your competent partner for sensor applications





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## Dear Reader,

Temperature is one of the most commonly measured physical parameters in the world.

JUMO is a market leader in the area of temperature sensors. We have been manufacturing platinumchip temperature sensors in complex production processes for 30 years. High standards are imposed starting with the design process. This leads to innovative, economical solutions that are right for the market. Another important factor is extensive qualification measures for our products. Especially in series production, we conduct these measures together with our customers. We keep our products at the state of the art through continuous new and ongoing development.

Our competence is further highlighted by our DAkkS laboratory. Tracing the measurement results back to national standards is the main criterion for all calibrations.

Today JUMO temperature sensors are used in many areas of industry and services where they guarantee consistent, high quality in products.

The customer is always the focus of attention in all we do. Customer satisfaction and long-term collaboration are matters of prime concern for us. They are the driving force for our continued top-class performance.

This brochure will give you an overview of our products. Of course we would also be happy to develop individual solutions for you, completely customized to your requirements.

Peter Deiß

You can find detailed information about our products under the specified type/product group number at [www.jumo.net](http://www.jumo.net).

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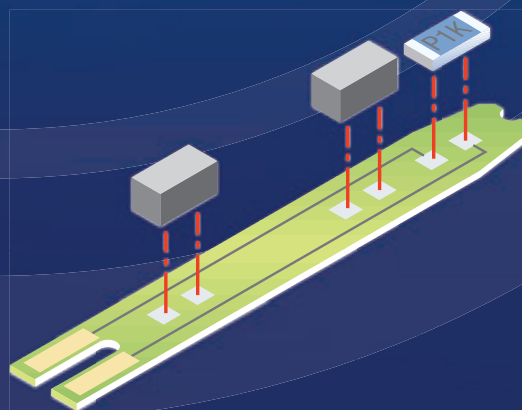
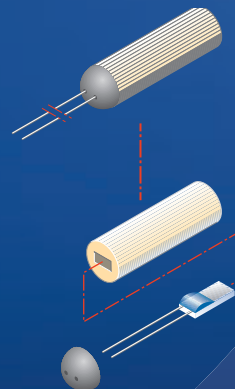
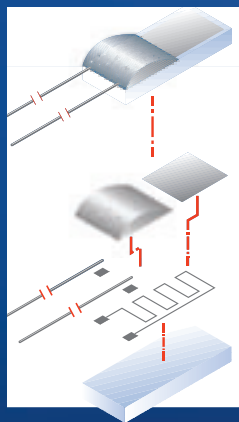
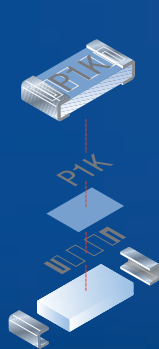
RoHS Compliant  
Directive 2002/95/EC

# Platinum Temperature Sensors in Thin-Film Technology

JUMO offers a diverse assortment of platinum temperature sensors.

With an annual production of several million temperature sensors, we are one of the most important global suppliers.

From our clean room emerges precision with long-term stability. Tolerances from  $\pm 0.1\text{K}$  are produced in series. Since the 1980s, modified processes from semiconductor manufacturing have been adapted to Pt100 production. Further customer benefits include economical mass production combined with the highest quality standards.



# Platinum Temperature Sensors

Platinum Temperature sensors

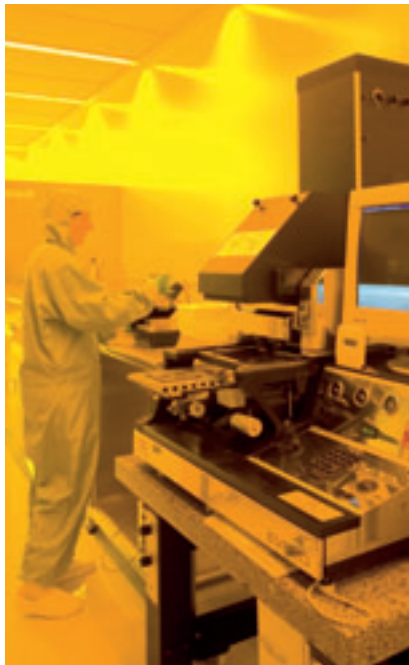
Platinum-Chip Temperature sensors with connection wires

Platinum Temperature Sensors in special design types

## JUMO – your competent partner for sensor applications



Mechanical processes:  
welding, sawing



Photolithography: generating  
the structure on the substrate



Laser calibration of platinum  
chip temperature sensors

### **JUMO relies on quality, that is combined with fair market prices**

Platinum Temperature Sensors in Thin-Film Technology promise excellent accuracy and long-term stability. To make this promise a reality, JUMO relies exclusively on Germany with its top-rate production location. The tough demands are met by qualified employees and an efficient QM system. Our modern production facilities are highly automated. This not only ensures great efficiency but also optimizes the price-to-performance ratio. However, our system still allows for a high level of flexibility so that we can respond to special customer applications.

### **More than 50 years of experience for our customers**

Experience from our own temperature probe production is incorporated directly into the development of new temperature sensors. JUMO provides competent support for preparing and assembling temperature sensors.

### **Customized modifications**

Customers and their application requirements are always the focus of attention, particularly when OEM applications are involved. Much in demand are not only mechanical and geometric system solutions, but also special selections with a low tolerance class.





# Platinum-Chip Temperature Sensors with connection wires acc. to DIN EN 60 751

JUMO has the right solution for every application. An extensive assortment is available in stock for almost all applications.

We also offer customers system solutions specifically tailored to the requirements of their special and OEM applications.

For example, size 1.2×4 mm (PCA 1.1204.1S) provides maximum convenience for installation situations with limited space. This size also features an especially fast-response time.

Size 2×5 mm (PCA 1.2005.1E), which offers an excellent price-to-performance ratio, is ideally suited for virtually all manual fitting tasks. One final feature in response to the product requirement for manual handling is resealable packaging.

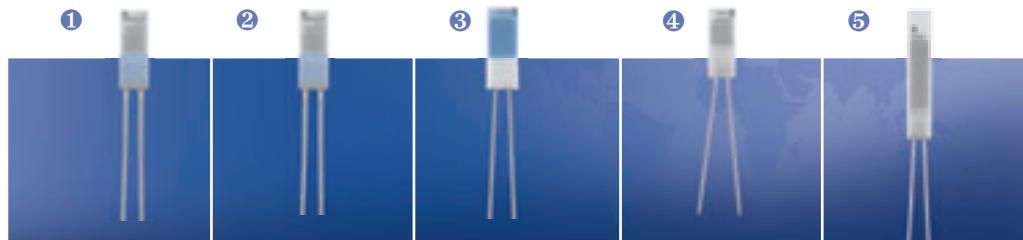


# Platinum Temperature Sensors

Platinum Temperature Sensors

Platinum-Chip Temperature Sensors with connection wires

Platinum Temperature Sensors in special design types



Designation		Design type PCA/L	Design type PCA/S	Design type PCA/E	Design type PCA/M	Design type PCA/H
Type/data sheet		906121				
Application	Features	Wide selection of types, the right sensor for every application				
	Application ranges	Measurement and control, heating, air conditioning and ventilation, industrial electronics, vehicle manufacturing				
Technical data	Wires	Ag 0.2 × 0.3	Pt-Ni 0.2 mm	Ni 0.25 mm	Pt-Ni 0.2 mm	Pd 0.25 mm
	Operating temperature	−70 to +250 °C	−70 to +400 °C	−70 to 500 C	−70 to +550 °C	−70 to +600 °C
	Processing	Soft-soldering	Crimping, welding, hard-soldering			Welding
	Sizes	2 × 2.5 × 1.3 mm 2 × 5 × 1.3 mm 2 × 10 × 1.3 mm 4 × 5 × 1.3 mm	2 × 2.5 × 1.3 mm 2 × 5 × 1.3 mm 2 × 10 × 1.3 mm 1.2 × 4 × 1.1 mm	1.5 × 2.5 × 1.0 mm 2 × 2.5 × 1.3 mm 2 × 5 × 1.3 mm	1.5 × 2.5 × 1.0 mm 1.5 × 5 × 1.0 mm 2 × 2.5 × 1.3 mm 2 × 5 × 1.3 mm 2 × 10 × 1.3 mm 4 × 5 × 1.3 mm	2 × 10 × 1.3 mm
	Nominal values	Pt 100, Pt 500, Pt 1000	Pt 100, Pt 500 Pt 1000, Pt 2000	Pt 100, Pt 200 Pt 1000	Pt 100, Pt 200 Pt 500, Pt 1000	Pt 100, Pt 500 Pt 1000

## ① Design type PCA/L

The "L" version is the preferred choice for assembling probes with a connecting cable. It is especially well suited for an electrical connection with a soft solder connection. The connections are made of pure silver.

## ② Design type PCA/S

The "S" version is the preferred choice for applications with operating temperatures above 180 °C. It is especially well suited for an electrical connection with a welded, crimped or hardsoldered connection.

## ③ Design type PCA/E

The "E" version can be used universally and is designed for a wide range of applications in the low and high temperature ranges. The connection wires are especially well suited

for an electrical connection with a welded, crimped or hard-soldered connection.

## ④ Design type PCA/M

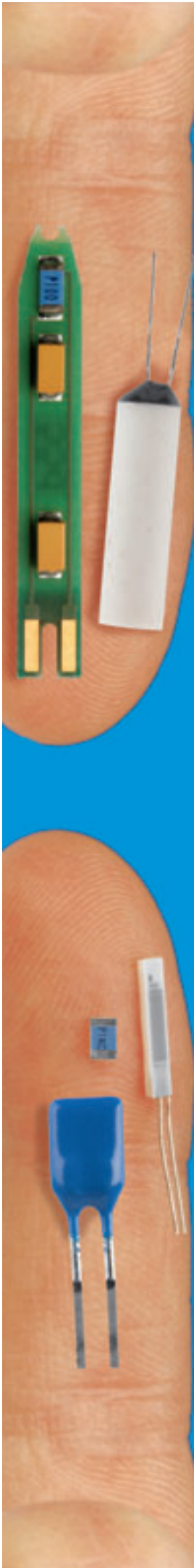
The "M" version is the last word in available options for most applications. The sensors have an especially wide temperature measuring range. Their stabilized long-term behavior guarantees reproducible measured value, designed for thousands and thousands of cycles.

## ⑤ Design type PCA/H

The "H" version is the preferred choice for applications with especially high continuous operating temperatures. It is ideal for an electrical connection created with the reflow or laser welding method or with a hard-solder connection.

# Platinum Temperature Sensors in four special designs acc. to DIN EN 60 7511

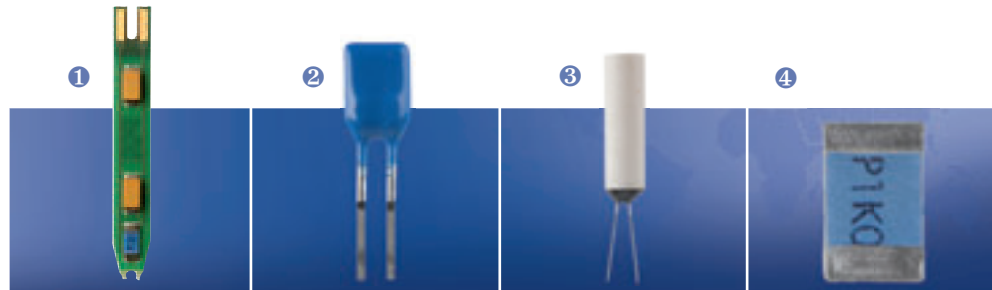
Production processes used to manufacture platinum-chip temperature sensors are derived from semi-conductor technology successively modified by JUMO since the early 1980s. Part of this process has been progressive miniaturization, a trend that continues today in two different directions: decreasing size and increasing nominal values.





# Platinum Temperature Sensors

Platinum Temperature Sensors    Platinum-Chip Temperature Sensors with connection wires    Platinum Temperature Sensors in special design types



	Designation	Platinum-chip temperature sensor on epoxy card	Platinum-chip temperature sensors with terminal clamps	Platinum-chip temperature sensors in cylindrical style	Platinum-chip temperature sensors in SMD style
	Type/data sheet	906122	906123	906124	906125
Application	Features	Prefabricated measuring insert, automated processing is possible, SMD temperature sensors offer a price advantage	Sturdy and protected against moisture, coated with an additional protective varnish, stable terminal clamps, High moisture content suitable	readily adaptable to protection tubes or fittings, high mechanical strength Wires from Pt-Ni 0,2mm	Excellent linear characteristic curve and high long-term stability, galvanic wrap-around contact, for insertion in automatic large-scale production
	Application ranges	Measurement and control, heating, air conditioning and ventilation, industrial electronics, "white goods", Solar Thermal Energy			
Technical data	Solder connections	-			Galvanized all-around contact with diffusion lock
	Operating temperature	-20 to +150 °C	-30 to +105 °C	-70 to +300 °C	-50 to +150 °C
	Processing	Soft-soldering		Crimping, welding, hard-soldering	Reflow soldering, wave soldering
	Sizes	4.3 × 15 × 2.2 mm 4.1 × 28 × 2.2 mm	3.9 × 5 × 1.5 mm	3.8 × 15 mm 4.8 × 15 mm	1.3 × 2.0 × 0.5 mm, 0815 1.5 × 3.1 × 0.8 mm, 1206
	Nominal values	Pt 100, Pt 500, Pt 1000	Pt 100, Pt 1000	Pt 100, Pt 500, Pt 1000	Pt 100, Pt 500, Pt 1000

## ① Design type PCSE

The design type features a prefabricated measuring insert. An epoxy PCB is fitted with a platinum SMD temperature sensor.

That makes the sensor especially robust to environmental influences and mechanically resistant.

## ② Design type PCKL

In contrast to standard temperature sensors, these sensors have directionally stable terminal clamps.

## ④ SMD design type PCS

SMD sensors are designed for fully automatic fitting of modules. They are packaged on a conveyor belt for delivery. The all-around contact ensures a reliable, lead-free solder connection.

## ③ Design type PCR

The round design is based on the use of a PCA temperature sensor hermetically encased in ceramic.



# Services & Support

It is the quality of our products that is responsible for such a high level of customer satisfaction. But our reliable after-sales service and comprehensive support are also appreciated. Let us introduce you to the key services we provide around our innovative JUMO products. You can count on them – anytime, anywhere.

**JUMO services & support – so that it all comes together!**

## Production Service



Are you looking for a competitive and efficient system or component supplier? Whether you seek metal technology, electronic modules or perfectly fitting sensors, whether small batches or mass production, – we will gladly be your partner. From development to production, we can provide all the stages from a single source. Our experts will work together closely with your company to find the optimum solution for your application, and will take on all the engineering. JUMO will then make the product for you. You will benefit from state-of-the-art production technologies, as well as our uncompromising quality assurance systems.

### Customized Sensor Technology

- Development of temperature probes, pressure transmitters, conductivity sensors or pH and redox electrodes as per your requirements
- Numerous test and inspection systems
- Taking over qualification for the application
- Materials management
- Mechanical testing
- Thermal testing



### Electronic modules

- Development
- Design
- Test concept
- Materials management
- Production
- Logistics and distribution
- After-sales service



### Metal production

- Tool manufacture
- Stamping and forming systems
- Flexible sheet metal working
- Float production
- Welding, jointing, and assembly systems
- Surface engineering
- Material testing service





## Information & Training



Would you like to improve your process quality, or optimize one of your company plants? Then take us up on our offer on the JUMO homepage and participate in the know-how of a globally respected manufacturer. Under the “Services & Support” menu item, for example, you will find a highly diverse range of seminars. Available under the keyword “eLearning” are videos on specific measurement and control system topics, and under “Literature”, you can find important information for beginners and practitioners. It goes without saying that you can also download the latest version of the JUMO software you require, as well as technical documentation for old and new products.

## Product Service

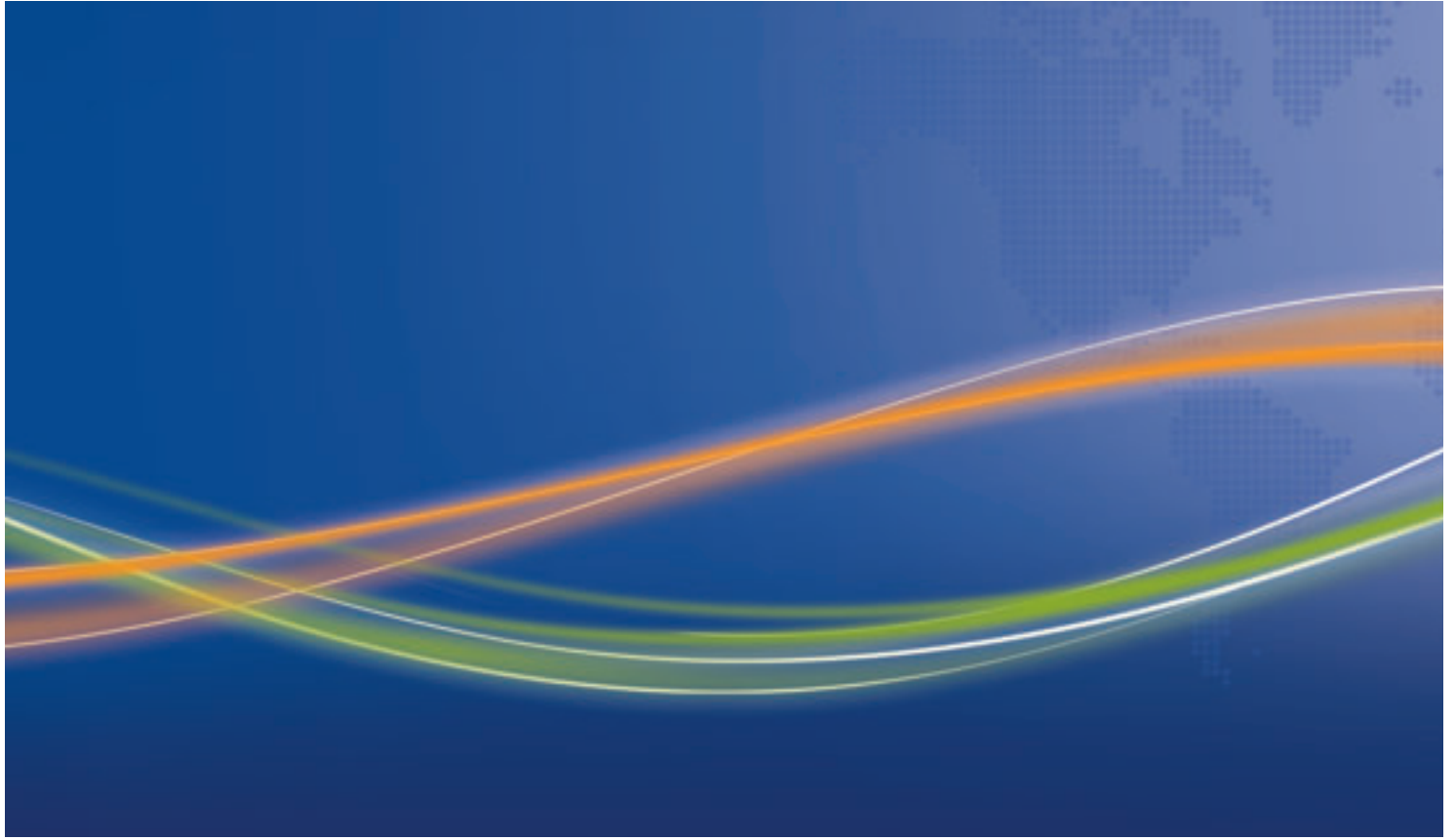


For competent support right across our product portfolio, our customers have recourse at any time to the efficient sales network we maintain on all five continents. Whether you seek advice, a selection of products, engineering or making optimum use of our products, there is always a team of competent JUMO colleagues somewhere nearby, ready to answer your questions. You can count on us after commissioning, as well. You will get a fast response from our telephone support hotline. If an on-site fault has to be eliminated, our express repair service and our 24-hour spare part service are at your disposal. That is real security.

## Maintenance & Calibration



Our maintenance service helps you to maintain optimum system and equipment availability. In this way you prevent failure and downtime. We will work out a far-sighted maintenance concept together with your company officers, and will willingly prepare all the requisite reports, documentation and protocols. Because we know how important precise measurement and control results are for your processes, we naturally also undertake the professional calibration of your JUMO instruments on site, at your company premises. We then record the result in a calibration certificate, as defined by EN 10204.



[www.jumo.net](http://www.jumo.net)