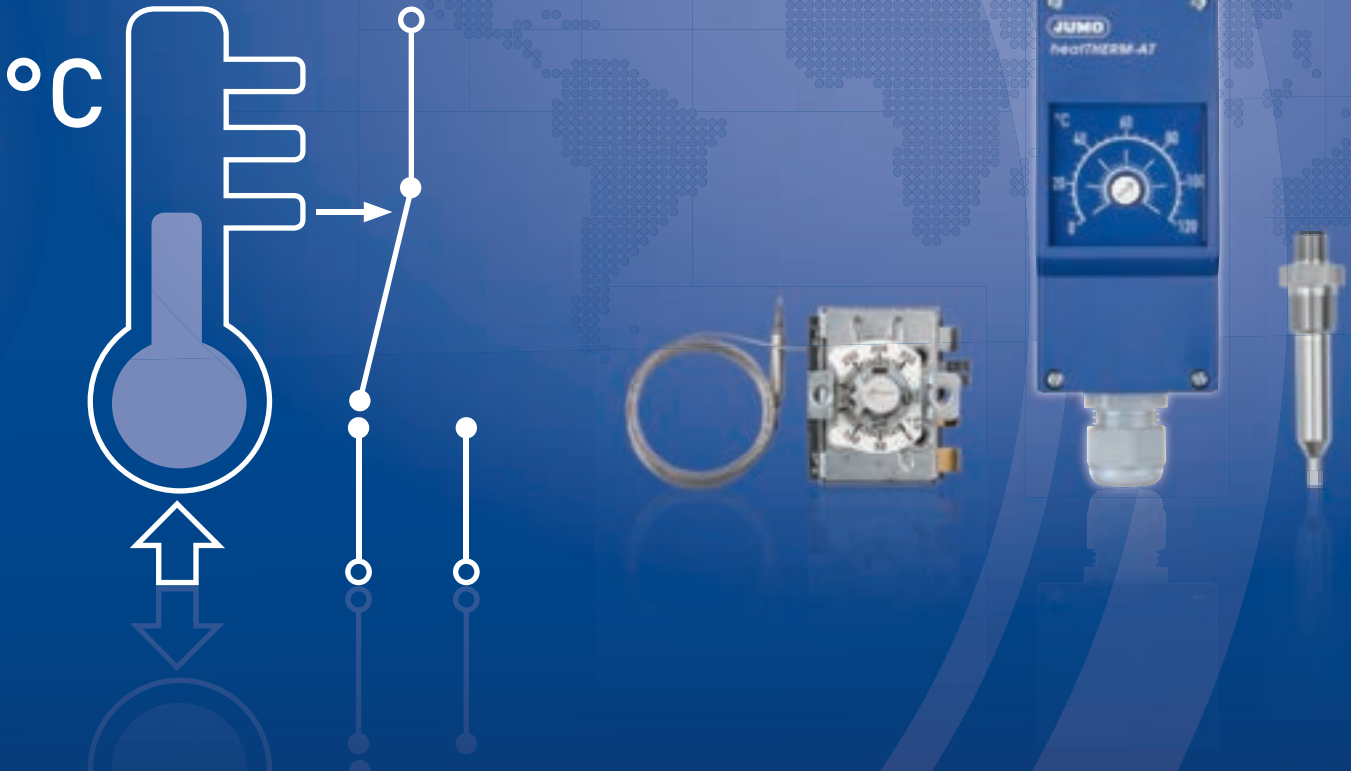




More than **sensors + automation**



Thermostats

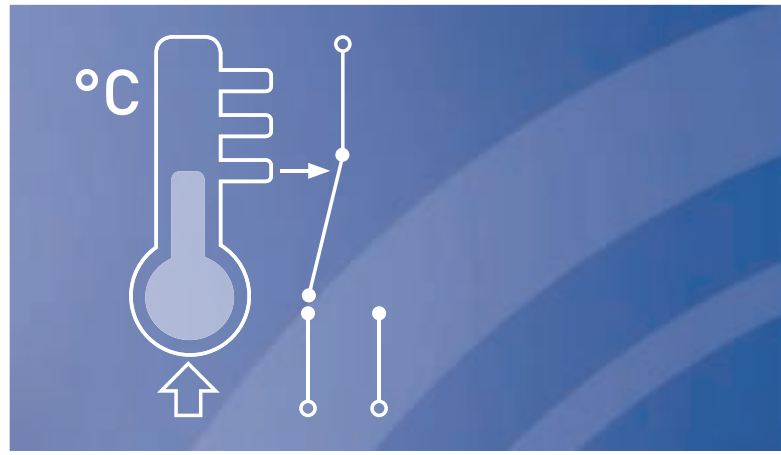
Innovative solutions for the highest requirements



Contact:

Phone: +49 661 6003-716

Email: thermostats@jumo.net



Dear Reader,

The production of electromechanical thermostats has a long tradition at JUMO. We have been manufacturing thermostats for the world market for more than 50 years. Development focuses on continuous improvements to remain on the cutting edge of technology. Consistently improving our products is the only way we can be ready to respond to the requirements of markets in the future.

Thermal processes frequently require monitoring and control. Electromechanical thermostats allow you to monitor and control a process reliably without expending any additional auxiliary power. In many sectors of industry, maximum and minimum temperatures must be guaranteed. That's why companies in heating and air conditioning, the plastics industry, compressor construction, and many other branches of industry – such as medical technology and the food industry – choose electromechanical products for reliable monitoring and control of their processes. Another

advantage that contributes to choosing electromechanical thermostats is that they are insensitive to electromagnetic interference. Our products have demonstrated through decades of practical applications that they meet high quality requirements.

This brochure will give you an overview of the various product series covered by electromechanical thermostats and bimetal temperature switches.

You're sure to find the right product in our range of services and products. If by chance you don't, you can also take advantage of one of our strengths – adapting products to your individual processes and needs.

Further information about our products can also be found at www.jumo.net.

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Thermostat production

JUMO thermostats are valued worldwide as high-quality, reliable devices. One reason for this is surely our high rate of internal manufacturing. This feature enables us to have a direct effect on the production of the critical elements of our thermostats. We further employ a wide range of consistent measures to ensure our suppliers are well qualified, which also has a decisive effect on the quality of our products.

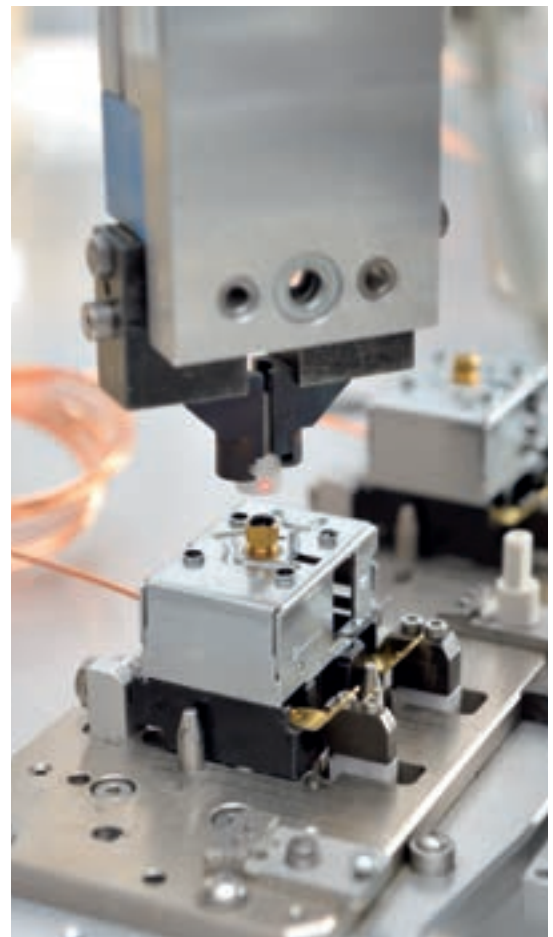


Thermostat manufacturing

Thermostat manufacturing at our location in Fulda, Germany fulfills all the criteria for meeting market requirements today and in the future. Depending on the thermostat series, customized manufacturing of customer-specific versions or economical large-scale series production is possible. Of course we offer short delivery times and an excellent on-time delivery track record for the entire manufacturing process thanks to our stable processes. We ensure that our products can be adapted to changing conditions through continuous improvements in all areas.



Automated filling station for measuring systems



Automated adjustment of thermostats in large-scale series production

Sophisticated measuring system manufacturing

The core element of every electromechanical thermostat is the measuring system. As a result the manufacturing process for our measuring systems is subject to the highest requirements to ensure the quality of our products. Automated processes such as membrane production or adding the filling medium have integrated monitoring systems. Measuring systems are not released for further use until they have successfully completed all test steps.

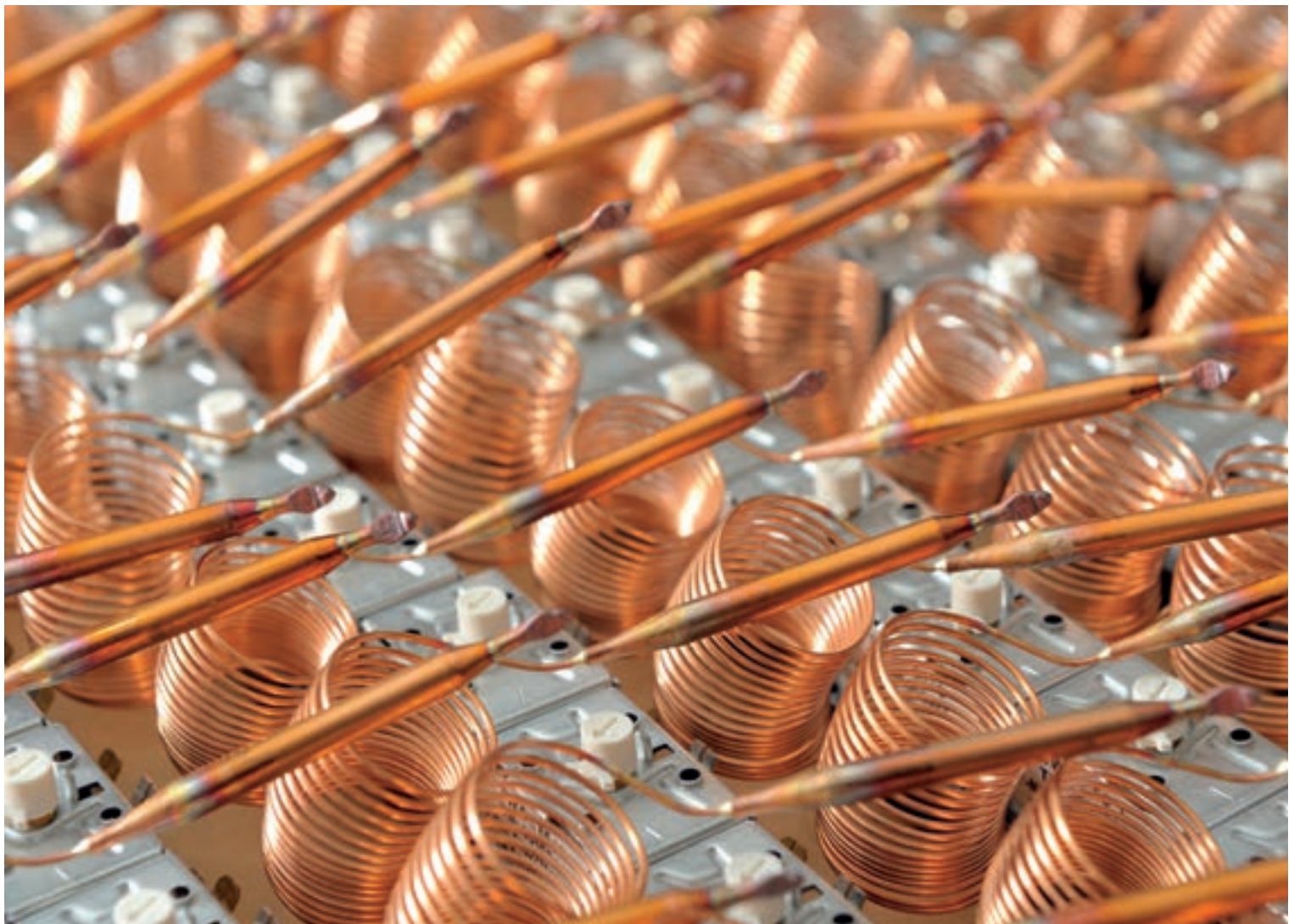
Reliable adjustment through automation

The introduction of the JUMO heatTHERM series several years ago was based on the very latest production technology. Devices are adjusted economically by an automatic adjusting mechanism that has now taken over numerous steps which were previously performed manually. Processes are reproducible and subject to continuous monitoring. They are also continuously adapted to the latest state of the art through ongoing development.

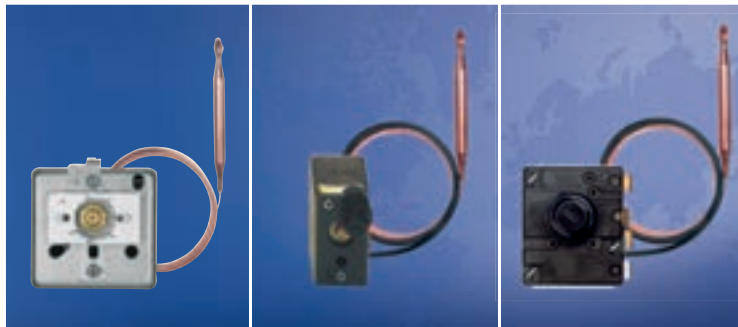
Thermostats

Panel-mounted and surface-mounted thermostats

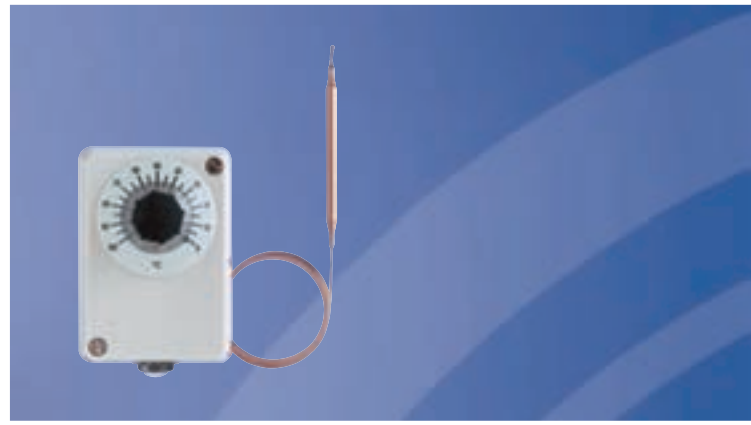
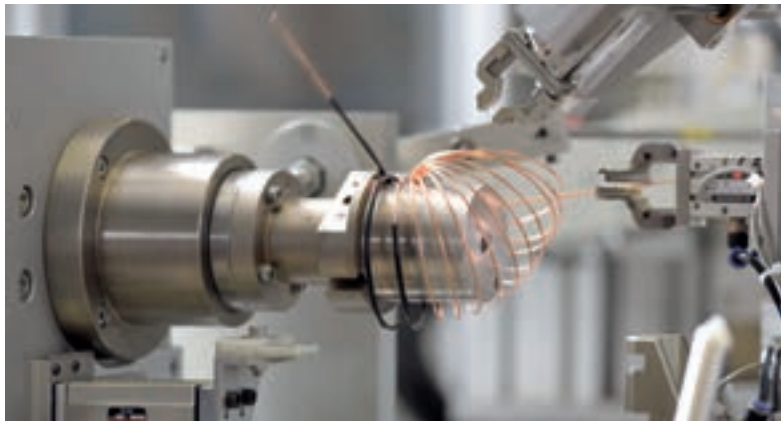
With a wide variety of product groups featuring different enclosure dimensions, technical features, and manufacturing batch sizes you're sure to find the right thermostat for your application in the JUMO product portfolio.



Panel-mounted thermostats



General	Description	Panel-mounted thermostat, EM series	Panel-mounted thermostat, EM series	Panel-mounted thermostat, JUMO heatTHERM
	Type	602021, 602025	602026	602030, 602031
	Features	Batch size according to customer specification, temperature ranges up to 650 °C	Batch size according to customer specification	Economical large-scale series production, temperature compensation as standard feature
	Application ranges	Heating industry, air-conditioning, heating chambers, plastics industry, furnace construction, general mechanical engineering		
	Versions	Temperature controller (TR), temperature monitor (TW), temperature limiter (TB), safety temperature monitor (STW), safety temperature limiter (STB)	Safety temperature monitor (STW), safety temperature limiter (STB)	Temperature controller (TR), temperature monitor (TW), safety temperature monitor (STW), safety temperature limiter (STB)
Technical data	Switching element	1, 2, 3, or 4 single-pole snap-action switches	Single-pole snap-action switch	Single-pole snap-action switch
	Switching capacity	16 A, 230 V	10 A, 230 V	16 A, 230 V
	Maximum control range / limit value	500 °C (type 602021) 650 °C (type 602025)	300 °C	350 °C
	Approvals	DIN, UL, DGRL, EAC DVGW (up to 500 °C)	DIN, UL, DGRL, DVGW, EAC	DIN, UL, DGRL, EAC



Surface-mounted thermostats



	Description	Surface-mounted thermostat, ATH series	Surface-mounted thermostat, ATH series	Surface-mounted thermostat, ATH-SE series
General	Type	603021, 603035	603026, 603035	603031
	Features	Single thermostat	Double thermostat	Single thermostat
	Application ranges	Heating industry, air-conditioning, general mechanical engineering		Shipbuilding
	Versions	Temperature controller (TR), temperature monitor (TW), safety temperature monitor (STW), safety temperature limiter (STB)		Temperature monitor (TW), safety temperature monitor (STW), safety temperature limiter (STB)
Technical data	Switching element	Single-pole snap-action switch	Single-pole snap-action switch	Single-pole snap-action switch
	Switching capacity	10 A, 230 V	10 A, 230 V	10 A, 230 V
	Maximum control range/limit value	500 °C	500 °C	300 °C
	Protection type	IP54 IP65 (type 603035)	IP54 IP65 (type 603035)	IP54
	Approvals	DIN, (DGRL, EAC; type 603021, 603026)		Det Norske Veritas, GL, Bureau Veritas, DIN, DGRL, EAC



Surface-mounted thermostats



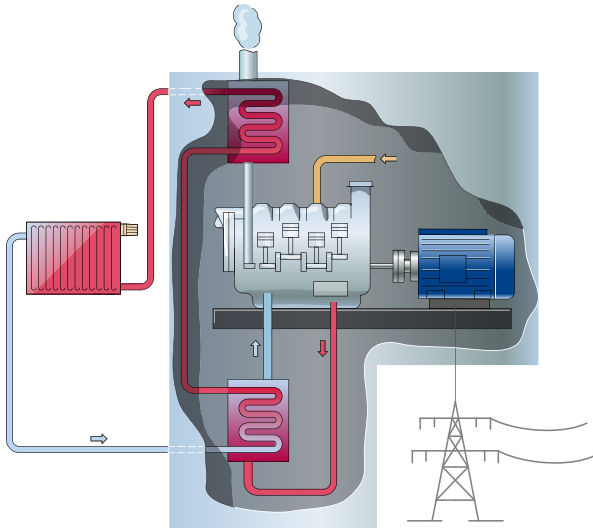
	Description	Surface-mounted thermostat, JUMO heatTHERM-AT/DR	Surface-mounted frost protection thermostat, JUMO frostTHERM-AT/DR	Surface-mounted electronic frost protection thermostat, JUMO frostTHERM-ATE	Explosion-protected surface-mounted thermostat, JUMO exTHERM-AT
General	Type	603070	604100	604170	605055
	Features	Single and double thermostat, room thermostat, thermostat for mounting rail installation, flue gas temperature monitor	Probe lead available in lengths of 3 m, 6 m, and 12 m	Single thermostat, voltage supply 24 V (SELV), probe lead available in length of 2 m and 6 m	Single and double thermostats
	Application ranges	Building automation, heating industry, air conditioning, control cabinets (DR), general mechanical engineering	Air conditioning and refrigeration system construction, chiller units, mechanical, and plant engineering		Potentially explosive areas zones 1 and 2 or 21 and 22; operation in zone 0 with corresponding thermowell
	Versions	Temperature controller (TR), temperature monitor (TW), safety temperature monitor (STW), safety temperature limiter (STB)	Safety temperature monitor (STW), safety temperature limiter (STB)	Temperature monitor (TW), temperature limiter (TB)	Temperature monitor (TW), temperature limiter (TB), safety temperature monitor (STW), safety temperature limiter (STB)
Technical data	Switching element	Single-pole snap-action switch	Single-pole snap-action switch	Relay output, analog output	Explosion-proof panel-mounted thermostat
	Switching capacity	16 A, 230 V	16 A, 230 V	Relay output 6 A, 230 V, analog output 0 to 10 V	16 A, 230 V, optionally 25 A, 230 V
	Maximum control range/limit value	350 °C	+15 °C	+10 °C	500 °C
	Protection type	IP40, IP54 optional	IP40, IP65 optional	IP42	IP65, IP67 optional
	Approvals	DIN, UL, DGRL, EAC	EAC	-	ATEX, RTN, EAC, DIN, IEC Ex

Thermostats in the heating industry

The heating industry has been facing new challenges for several years now. Efforts to achieve greater efficiency have promoted numerous alternative technologies. In addition to conventional heating fuels such as oil and gas, the use of solid fuels or pellets to heat entire units is available today. Heat pump technology is also being used more widely and provides an energy-efficient way to produce heat.



Application examples

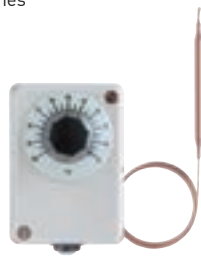


Schematic representation of a combined heat and power plant

JUMO heatTHERM
Panel-mounted thermostat
Type 602031

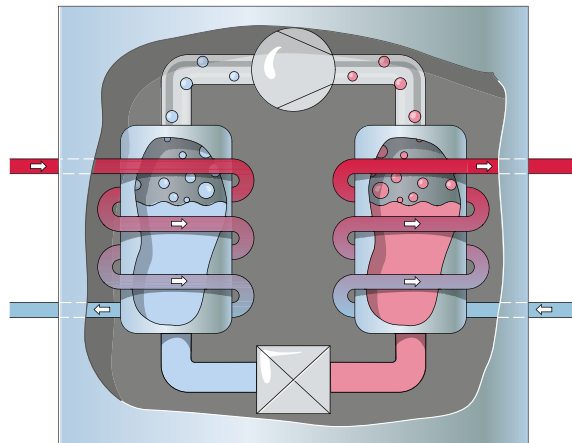


Surface-mounted thermostat
ATH type series
Type 603021



Temperature monitoring in cooling circuits of combined heat and power plants

To ensure safe and reliable operation of motors in combined heat and power plants, the temperature of the lubricating oil used in the cooling circuit must not exceed the optimum working point. To exclude the possibility of overheating, JUMO safety temperature limiters ensure that the plant is switched off safely and reliably if the set temperature value of the plant is exceeded. Regardless of which plant malfunctions is responsible for the temperature increase, the plant always switches off because our thermostats operate without auxiliary power and independent of other components.



Schematic representation of a heat pump/air conditioner

JUMO frostTHERM-AT
Type 604100

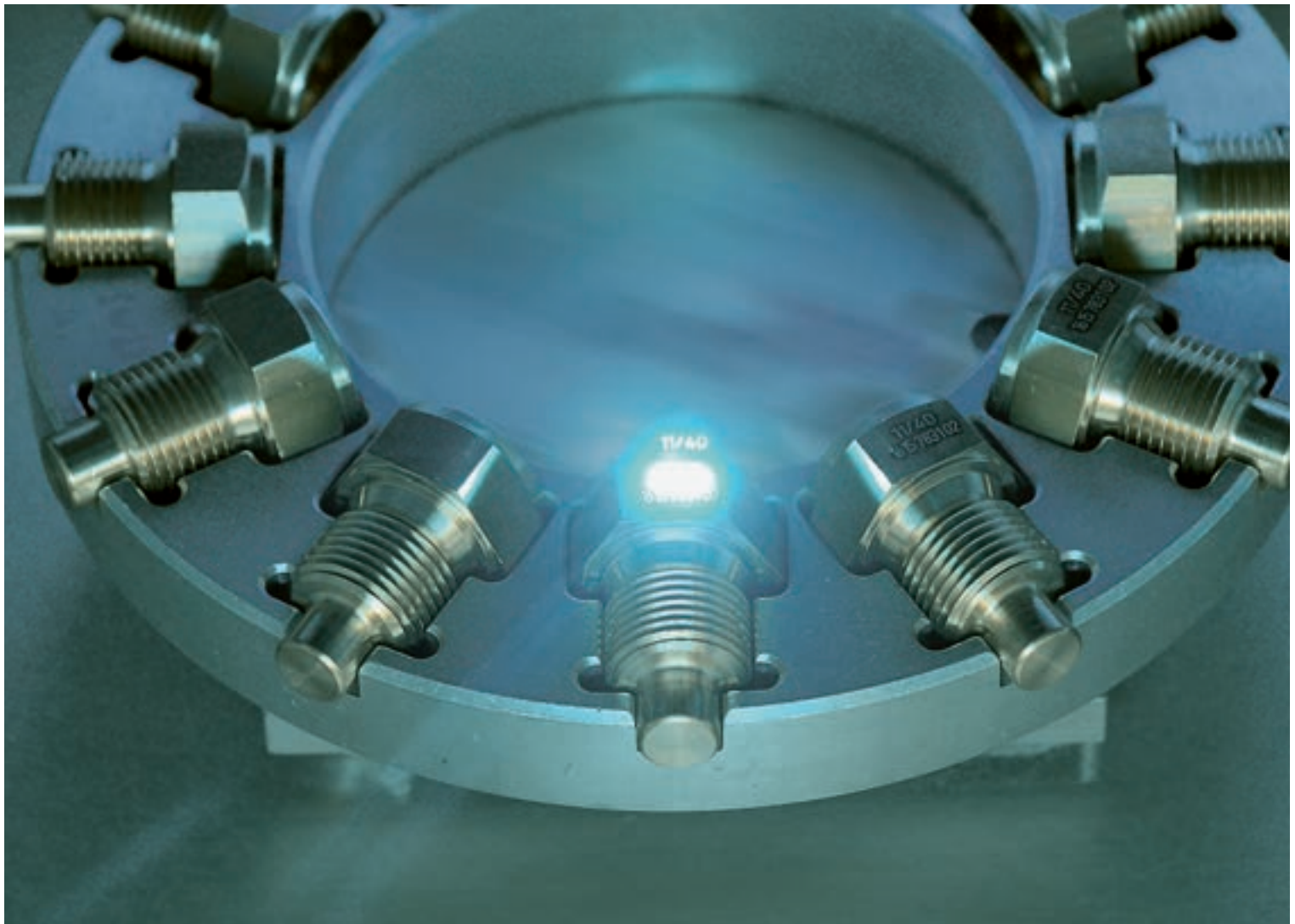


Temperature monitoring on the outdoor unit of a heat pump/air conditioner

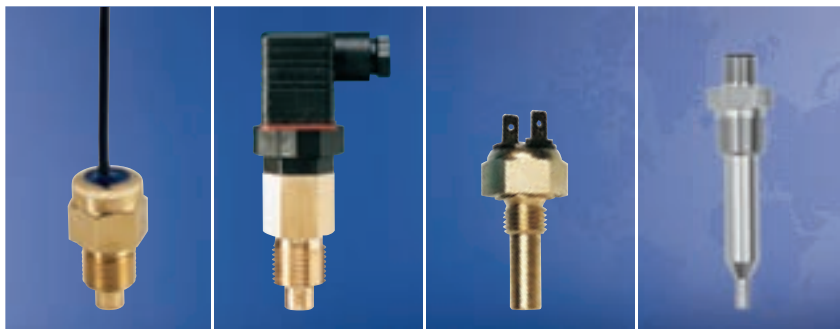
Keeping the outdoor unit free of frost damage is important when a heat pump or air conditioner is in operation. The JUMO frostTHERM-AT is used to detect when outside temperatures are around the freezing point and to introduce appropriate countermeasures. The probe lead of the frost protection thermostat, which is active along its entire length, is arranged on the air intake of the outdoor unit in a meandering pattern. The probe lead is available in lengths up to 12m, which ensures temperature monitoring on a large surface without auxiliary power.

Bimetal temperature switches

Bimetal temperature switches can be used universally in temperature monitoring applications. The bimetal temperature switch has a fixed switching point and is often used in cooling and heating circuits. Due to its sturdy and resistant design, it is frequently used in compressors and motors. The stability of the switching point is always ensured, even with vibrations. A combination consisting of a bimetal temperature switch and a Pt1000 sensor is also possible.



Bimetal temperature switches in different versions



	Description	Bimetal temperature switch with encapsulated connecting cable	Bimetal temperature switch with plug for cable connection according to EN 175301-803	Bimetal temperature switch with tab connector A 6.3-08	Bimetal temperature switch with optional Pt1000 sensor
General	Type	608301	608301	608301	608301
	Electrical connection	11	61	01	30
	Features	<ul style="list-style-type: none"> - Fittings made of brass, aluminum or stainless steel - Various threads and designs are available - Different electrical connections are available - Optionally available with Pt1000 sensor for electrical connection 30 - M12 connector for easy connection option - Protection type IP67 or IP68 available 			
	Application ranges	<ul style="list-style-type: none"> - Compressor construction - Motor control - General industrial applications 			
Technical data	Switching element	<ul style="list-style-type: none"> - Snap-action switch - Slow-action switch - Compact temperature switch with optional Pt1000 sensor 			
	Switching capacity	10 to 100 mA, 12V (PLC application), 16 A, 230V (resistive load)			

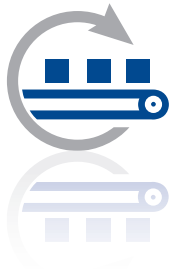


Services & Support

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 valued. Let us introduce you to the key services we provide for our innovative JUMO products. You can count on them – anytime, anywhere.

JUMO Services & Support – so that it all comes together!

Manufacturing Service



Are you looking for a competitive and efficient system or component supplier? Regardless of whether you seek electronic modules or perfectly fitting sensors – either for small batches or mass production – we are happy to be your partner. From development to production we can provide all the stages from a single source. In close cooperation with your business our experienced experts search for the optimum solution for your application and incorporate all engineering tasks. Then JUMO manufactures the product for you.

As a result you profit from state-of-the-art manufacturing technologies and our uncompromising quality management systems.

Customer-specific sensor technology

- Development of temperature probes, pressure transmitters, conductivity sensors, or pH and redox electrodes according to your requirements
- A large number of testing facilities
- Incorporation of the qualifications into application
- Material management
- Mechanical testing
- Thermal test



Electronic modules

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



Metal technology

- Toolmaking
- Punching and forming technology
- Flexible sheet metal machining
- Production of floats
- Welding, jointing, and assembly technology
- Surface treatment technology
- Quality management for materials



More than **sensors + automation**



Information & Training



Would you like to increase the process quality in your company or optimize a plant? Then use the offers available on the JUMO website and benefit from the know-how of a globally respected manufacturer. For example, under the menu item "Services and Support" you will find a broad range of seminars. Videos are available under the keyword "E-Learning" about topics specific to measurement and control technology. Under "Literature" you can learn valuable tips for beginners and professionals. And, of course, you can also download the current version of any JUMO software or technical documentation for both newer and older products.

Product Service



We have an efficient distribution network on all continents available to all of our customers so that we can offer professional support for everything concerning our product portfolio. Our team of professional JUMO employees is near you ready to help with consultations, product selection, engineering, or optimum use of our products. Even after our devices are commissioned you can count on us. Our telephone support line is available to give you answers quickly. If a malfunction needs to be repaired on site our Express Repair Service and our 24-hour replacement part service are available to you. That provides peace of mind.

Maintenance & Calibration



Our maintenance service helps you to maintain optimum availability of your devices and plants. This prevents malfunctions and downtime. Together with the responsible parties at your company we develop a future-oriented maintenance concept and are happy to create all required reports, documentation, and protocols. Because we know how important precise measurement and control results are for your processes we naturally also professionally calibrate your JUMO devices – on site at your company or in our accredited DAkkS calibration laboratory for temperature. We record the results for you in a calibration certificate according to EN 10 204.



www.jumo.net