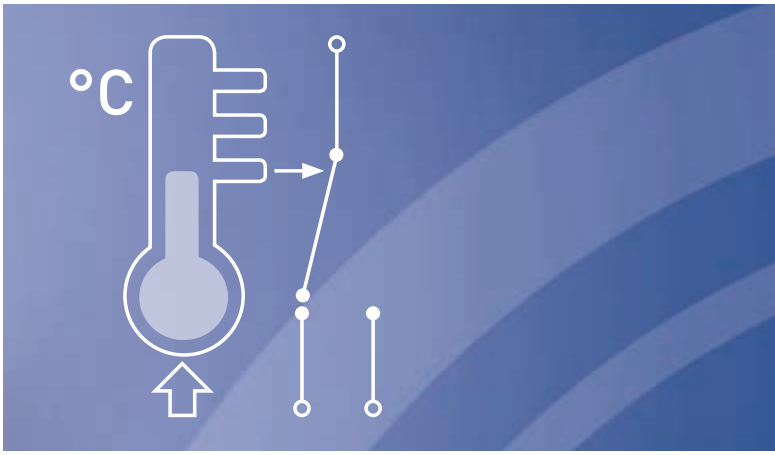
More than sensors + automation

Thermostats

Innovative solutions for the toughest requirements



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Email: automation@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 so that we 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 future markets.

Thermal processes frequently require monitoring and control. Electromechanical thermostats allow you to reliably monitor and control a process without expending any additional auxiliary power. In many sectors of industry, maximum and minimum temperatures must be guaranteed. That is why companies in heating and air conditioning, the plastics industry, compressor construction, 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 impervious 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 product range. You can also take advantage of our strength to adapt our products to your processes and requirements.

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

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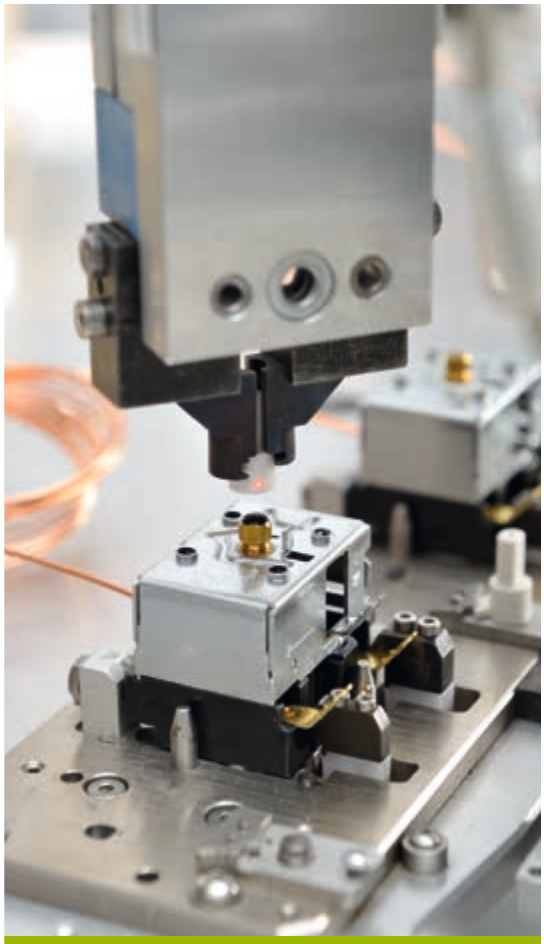
Thermostat production

JUMO thermostats are valued worldwide as high-quality, reliable devices. One reason for this is 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.

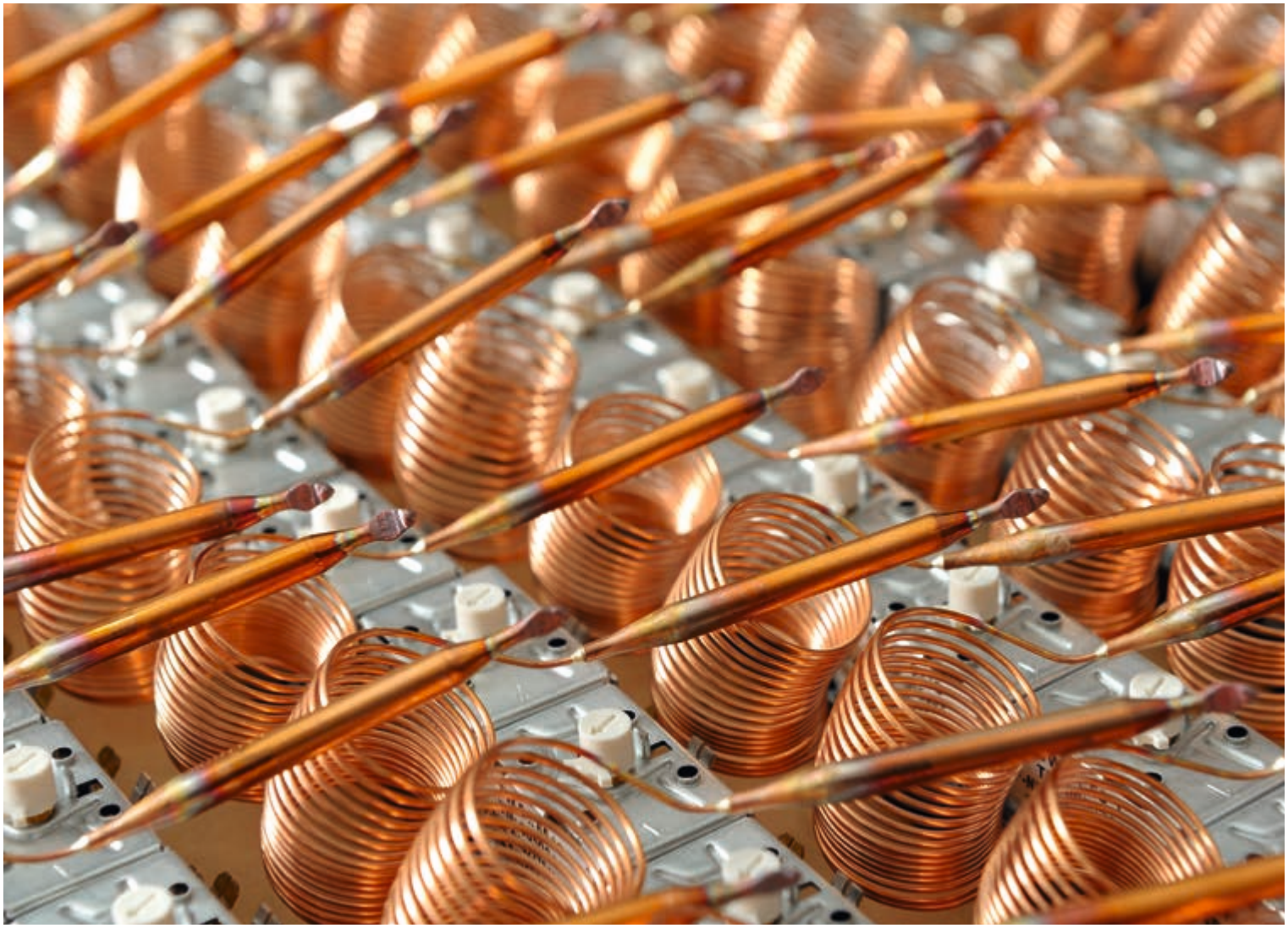
Reliable adjustment through automation

The introduction of the JUMO heatTHERM series several years ago was based on the very latest production technology. Devices are adjusted in an economic fashion by an automatic adjusting mechanism that has now taken over numerous steps which were previously performed manually. The reproducible processes are subject to constant control and further development. Additionally, they are always adapted to technical progress.

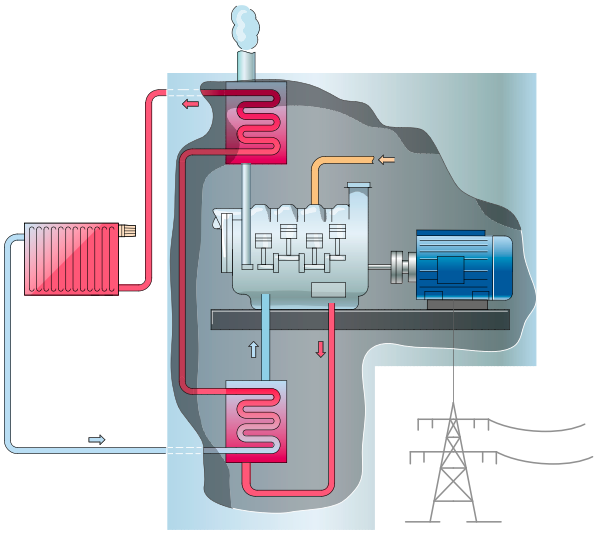
Thermostats

Panel-mounted and surface-mounted thermostats

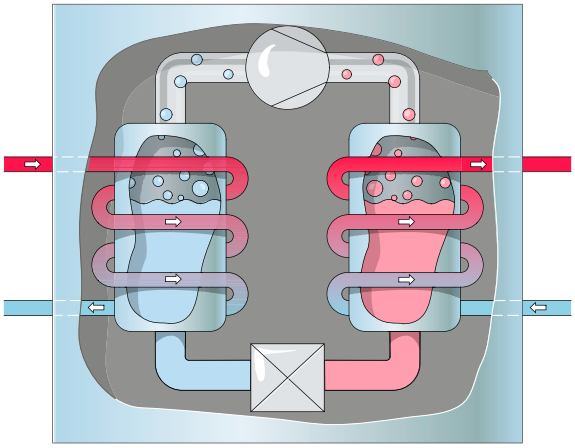
With a wide variety of product groups featuring different enclosure dimensions, technical features, and manufacturing batch sizes you're sure to find the right thermostat for your application in the JUMO product portfolio.



Application examples



Schematic view of a combined heat and power plant



Schematic view of a heat pump or air conditioner

JUMO heatTHERM
Panel-mounted thermostat
Type 602031

Surface-mounted single thermostat, ATH type series
Type 603021

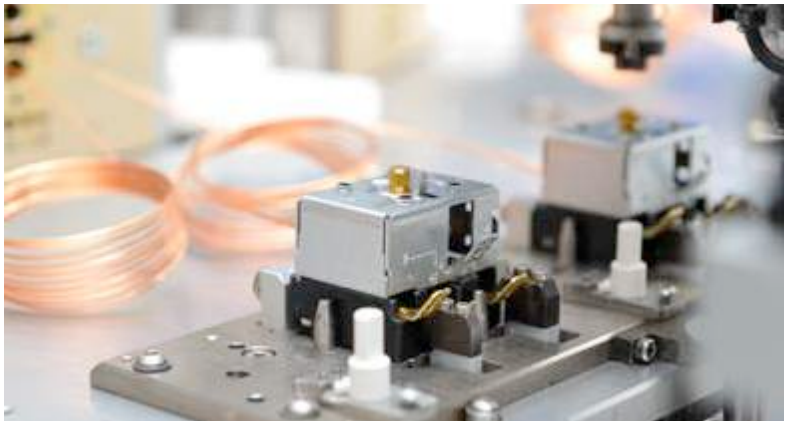
JUMO frostTHERM-AT
Type 604100

Temperature monitoring in cooling circuits of combined heat and power plants

To ensure safe and reliable motor operation in combined heat and power plants, the temperature of the lubricating oil that is 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 malfunction is responsible for the temperature increase, the plant always switches off because our thermostats operate without auxiliary power and because they are independent of other components.

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

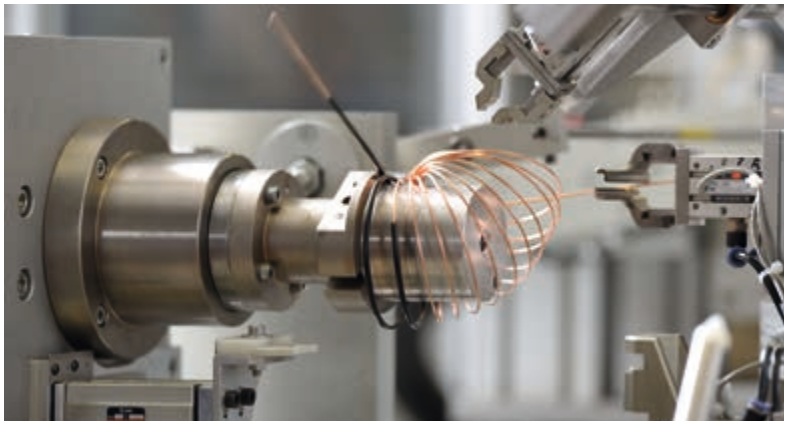
Keeping the outdoor unit free of frost damage is important when a heat pump or air conditioner is in operation. The JUMO frostTHERM-AT is used to detect when outside temperatures are around the freezing point and to introduce appropriate countermeasures. The probe line of the frost protection thermostat, 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 12 m, which ensures temperature monitoring on a large surface without auxiliary power.

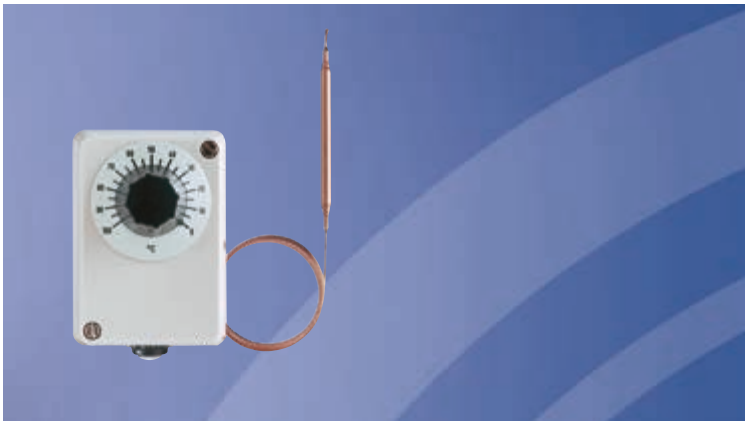


Panel-mounted thermostats

	Designation	Panel-mounted thermostat, EM series	Panel-mounted thermostat, EM series	JUMO heatTHERM Panel-mounted thermostat
General information	Type	602021, 602025	602026	602030, 602031
	Features	Batch size according to customer specification, temperature ranges up to 650 °C possible	Batch size according to customer specification,	Economic large-scale production, standard temperature compensation
	Areas of application	Heating industry, air-conditioning, heating cabinets, 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 and limit value	500 °C (type 602021) 650 °C (type 602025)	300 °C	350 °C
	Approvals	DIN, UL, DGRL, EAC DVGW (to 500 °C)	DIN, UL, DGRL, DVGW, EAC	DIN, UL, DGRL, EAC

	Designation	**JUMO heatTHERM P100 Panel-mounted thermostat**	**JUMO heatTHERM P300 3-phase panel-mounted thermostat**
General information	**Type**	602051	602090
	Features	Entry-level class thermostat	3-phase panel-mounted thermostat
	Areas of application	Electric heat generators, heating devices, heating elements, canteen kitchen technology	Screw-in heaters, electric heaters, food industry, canteen kitchen technology and catering sector, electric heat generators, heating devices, heating elements
	Versions	Temperature controller (TR)	Temperature limiter (STB)
Technical data	**Switching element**	Snap-action switch	Switching mechanism which disconnects all contacts at the same time
	Switching capacity	Normally closed contact 1-2 (NC): AC 230 V, 16 (2.5) A Normally open contact 1-4 (NO): AC 230 V, 4 (1) A	Normally closed contact (NC): 40 to 480 V 0.5 to 30 A (5.0 A) Normally open contact (NO): AC 40 to 480 V 0.5 to 2 A (0.3 A)
	Maximum control range and limit value	30 to 90 °C 30 to 120 °C	Limit value permanently set, upon request
	Approvals	–	VDE, UL





Surface-mounted thermostats

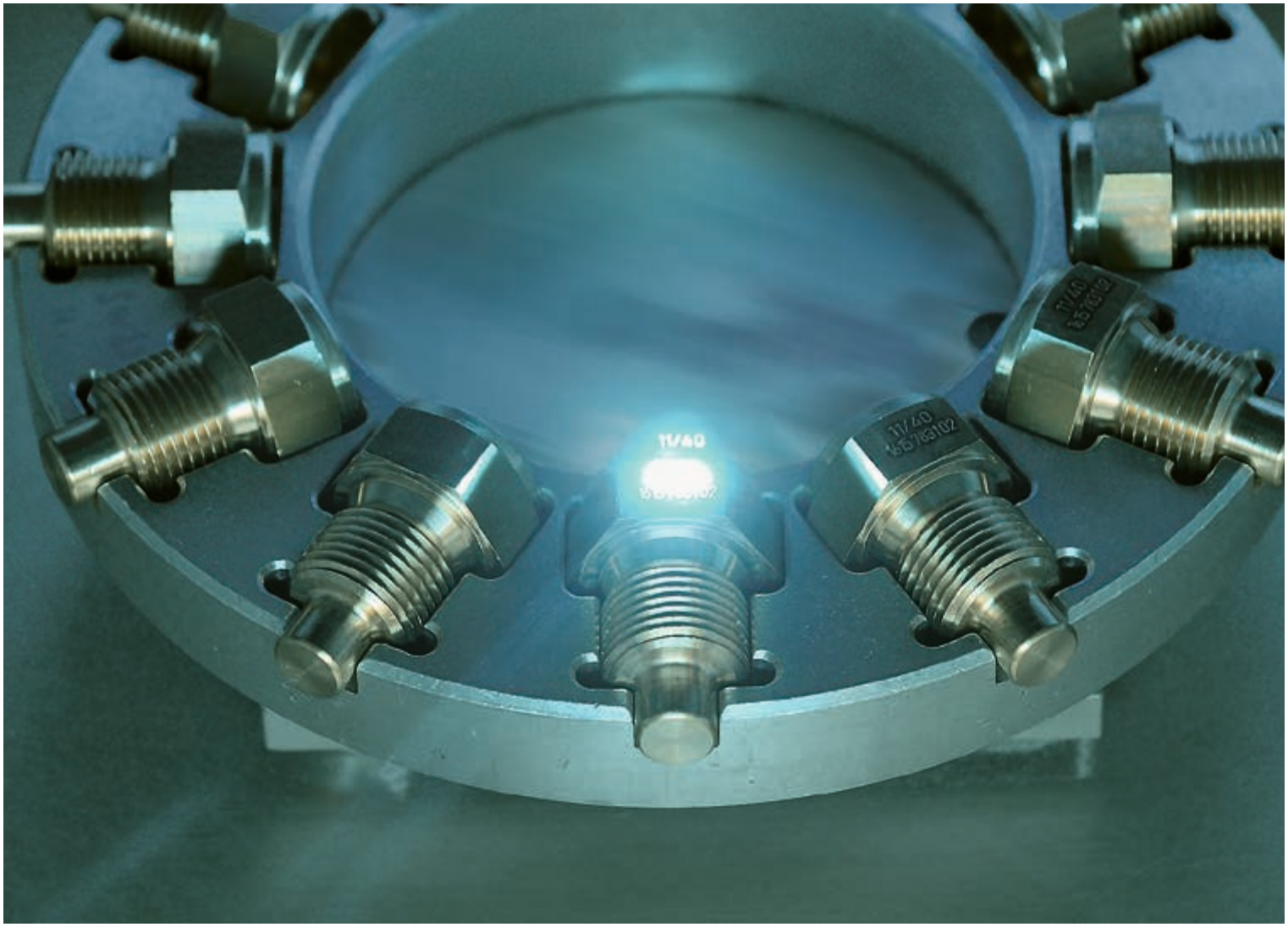
	Designation	Surface-mounted single thermostat, ATH type series	Surface-mounted double thermostat, ATH series	Surface-mounted thermostat, ATH-SE series	JUMO heatTHERM S600 Surface-mounted double thermostat
General information	Type	603021, 603035	603026, 603035	603031	603045
	Features	Single thermostat	Double thermostat	Single thermostat	Double thermostat
	Areas of application	Heating industry, air-conditioning industry, general mechanical engineering		Shipbuilding	Heating, ventilation, and air-conditioning industry, industrial applications
	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)	Temperature monitor (TW) with safety temperature limiter (STB) (adjustable)
Technical data	Switching element	Single-pole snap-action switch	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	AC 24 to 230 V, 0.1 to 10 A
	Maximum control range and limit value	500 °C	500 °C	300 °C	300 °C
	Protection type	IP54 IP65 (Type 603035)	IP54 IP65 (Type 603035)	IP54	IP54 (DIN EN 60529)
	Approvals	DIN, (DGRL, EAC; type 603021, 603026),		Det Norske Veritas, GL, Bureau Veritas, DIN, DGRL, EAC	–



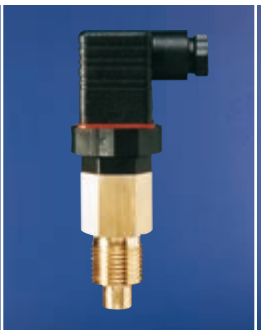

	Designation	JUMO heatTHERM-AT/DR Surface-mounted thermostat	JUMO frostTHERM-AT/DR Frost protection thermostat	JUMO frostTHERM-ATE Electronic frost protection thermostat	JUMO exTHERM-AT Explosion-protected surface-mounted thermostat
General information	Type	603070	604100	604170	605055
	Features	Single and double thermostat, room thermostat, thermostat for DIN-rail mounting, exhaust gas temperature monitor	Probe line available in 3 m, 6 m, and 12 m	Single thermostat, voltage supply 24 V (SELV), probe line available in lengths of 2 m and 6 m	Single and double thermostats
	Areas of application	Building automation, heating industry, air-conditioning industry, control cabinets (DR), general mechanical engineering	Air conditioning and refrigeration system construction, cooling 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	Flameproof enclosed 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 and 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

Bimetal temperature switch

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. Its sturdy and resistant design is responsible for its frequent use in compressors and motors. The stability of the switching point is always ensured, even when vibrations occur. A combination consisting of a bimetal temperature switch and a Pt1000 sensor is also possible.



Bimetal temperature switches in different versions

	Designation	Bimetal temperature switch with potted connecting cable	Bimetal temperature switch with plug connector for cable connection according to EN 17 5301-803	Bimetal temperature switch with tab connector A 6.3-08	Bimetal temperature switch with optional Pt1000 sensor
General information	Type	608301	608301	608301	608301
	Electrical connection	11	61	01	30
	Features	Fittings made from brass, aluminum, or stainless steel, Various threads and designs possible, Different electrical connections are available, Also available with Pt1000 sensor for electrical connection 30, Simple connection through M12 connector, Protection type IP67 or IP68 available			
	Areas of application	Compressor engineering, Motor control, General industrial applications			
Tech. data	Switching element	Snap-action switch, Slow-action switch, Compact temperature switch with optional Pt1000 sensor			
	Switching capacity	10 to 100 mA, 12 V (PLC application), 16 A, 230 V (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

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.

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