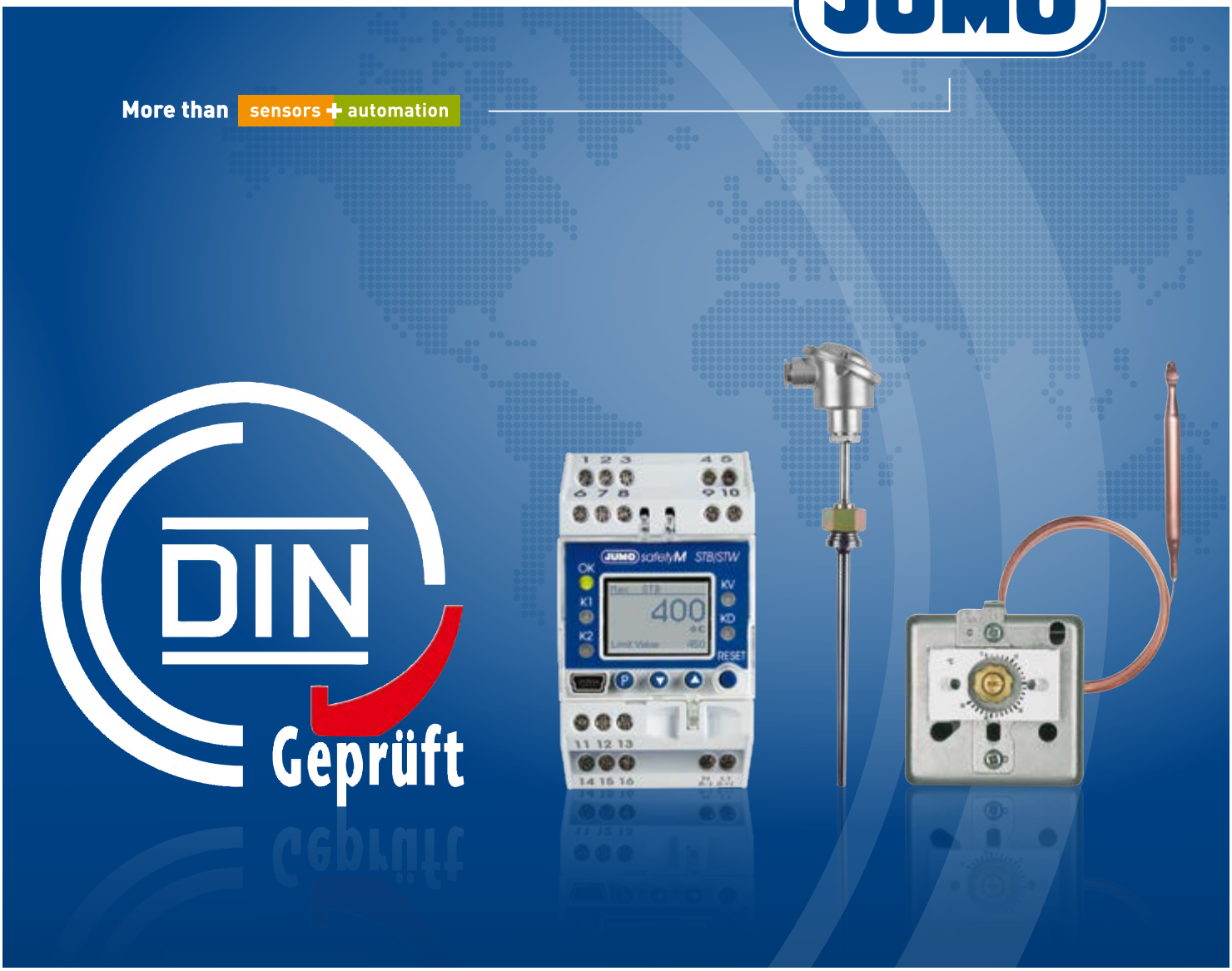
JUMO

More than sensors + automation



Safety technology/equipment

Reliable electronic and electro-mechanical products
according to DIN EN 14597

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Dear Readers,

Safety and reliability are crucial for devices such as thermostats, temperature monitors, and temperature limiters. At JUMO, rigorous development and testing of our electronic and electro-mechanical products ensures they thoroughly satisfy the requirements of DIN EN 14597. For over 30 years we have been conducting these tests in our own dedicated laboratories, and supplying the resulting quality product to every continent.

We have always placed particular emphasis on close cooperation with the various inspection authorities and test bodies, ongoing improvement of our extensive range of products and, of course, our own calibration service. This is the only way to ensure continuous innovation.

This catalog provides an overview of our products and systems certified according to DIN EN 14597. We are especially proud of our newly developed safety temperature limiters and monitors that feature clear displays, 1oo2D structure, polarization protection and numerous international approvals. Our thermostats meet established quality standards, are tailored to your specific requirements, and have been performing dependably in the field for decades.

PS: Detailed information concerning our products can be found using the given type/product group number at **www.jumo.net**.

Contents

If you want safety and reliability then we have the right products fo

Approvals.

We think big at JUMO. Our global presence requires the expertise to meet the demands of international markets. With our subsidiaries across the globe and the countless thermostats in use in almost every country in the world we are familiar with many regional requirements and regulations. Our thermostats meet numerous standards and have a large range of approvals for many industries, countries, and applications.

r you.

Our modern and well equipped laboratories, including our own DKD calibration facility, provide a solid foundation. JUMO products undergo numerous inspections and stress tests and we work very closely with various external certification and standardization offices. The results speak for themselves: JUMO's products meet the standards DIN EN 61508, DIN EN ISO 13849-1, and DIN EN 14597 and accordingly the Machinery Directive 2006/42/EC.

By making reliability the norm, we are going beyond current practice and breaking new ground.

Innovative electronic temperature monitors and limiters of the safetyM series.

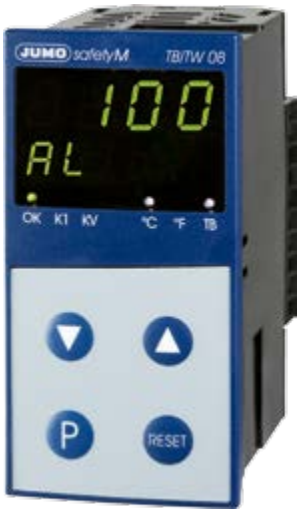
The electronic temperature limiters and monitors, safety temperature limiters, and safety temperature monitors of the safetyM series unite exceptional reliability with maximum flexibility, accuracy, and state-of-the-art technology.

How do we do it?

We have decades of experience and the motivation to unite state-of-the-art technologies with outstanding reliability. This ambition drives the development and production of our modern safety solutions. We combine useful and extensive features with user-friendly operation, and high performance digital technology with robust function. Thanks to comprehensive certifications, we are setting quality standards in accuracy, flexibility, and reliability that are recognized worldwide.

The facts speak for themselves: some of the products boast redundant features and a high-level user interface for absolute reliability. They are easy to operate and equipped with a large number of useful and practical additional functions, and clear displays. And they feature particularly convenient configuration and parameterization via our external setup program.

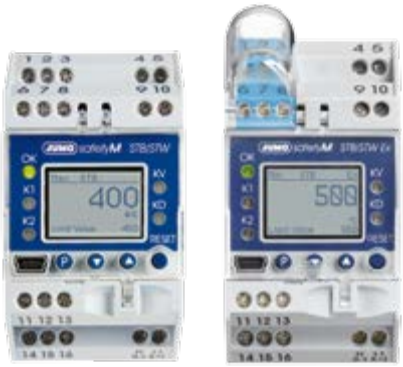
The quality also lives up to our tradition. High-quality components guarantee maximum safety and durability – and reflect the values that have made our "Made in Germany" quality standard so successful in numerous industries and applications for decades.



Always one step ahead:

Electronic products

JUMO safetyM STB/STW and STB/STW Ex according to DIN EN 14597 type 701150/701155



Use of the compact and freely configurable STB/STW and STB/STW Ex on DIN rail ensures that hazards which could cause injuries, harm the environment, or cause destruction of factories and products are reliably detected and averted at an early stage, even in the Ex-area. The primary task of safety temperature limiters is to reliably monitor thermal processes and switch the plants to an operationally safe status in the event of malfunctions.

Analog inputs

RTD temperature probe:
Pt 100 DIN EN 60751, Pt 1000 DIN EN 60751

Thermocouples:
Fe-CuNi "L" DIN 43710, Fe-CuNi "J" DIN EN 60584, Cu-CuNi "U" DIN 43710, Cu-CuNi "T" DIN EN 60584, NiCr-Ni "K" DIN EN 60584, NiCrSi-NiSi "N" DIN EN 60584, Pt10Rh-Pt "S" DIN EN 60584, Pt13Rh-Pt "R" DIN EN 60584, Pt30Rh-Pt6Rh "B" DIN EN 60584, W3Re-W25Re "D"

Direct current:
4 to 20 mA

Analog inputs: can be freely configured

Analog output

Current:
4 to 20 mA
0 to 20 mA

Voltage:
2 to 10 V
0 to 10 V

Analog output: can be used as actual value output for main measured value, measured value 1, measured value 2, differential value

Binary input

Connection: 1 potential-free contact – for unlocking, key inhibit, level inhibit

Relay outputs

Relay output KV – can be used as a pre-alarm
Relay output alarm – limit value alarm evaluated for temperature limiter

Voltage supply

AC/DC 20 to 30 V, 48 to 63 Hz,
AC 110 to 240 V +10 %/–15 %, 48 to 63 Hz

Sensor variants for STB/STW Ex type 701155

1-sensor variant:
Ex II (1) (2) (3) G (b1) [Ex ia Ga] [e pz] IIC
Ex II (1) (2) (3) D (b1) [Ex ia Da] [p Dc] IIIC

2-sensor variant:
Ex II (1) (1) (2) G (b2) [Ex ia Ga] [e py] IIC
Ex II (1) (1) (2) D (b2) [Ex ia Da] [p Db] IIIC

For further information: data sheet 701150/701155

JUMO safetyM TB/TW
DIN EN 14597 – type 701160

The JUMO safetyM TB/TW is a freely programmable temperature limitation device for DIN rail mounting with a design width of 22.5 mm. The measuring input is freely configurable for RTD temperature probes and thermocouples as well as current and voltage signals. TB/TWs are used to monitor thermal processes in the plant for a set limit value. A PC setup program is available as an accessory, which can be used to configure and save the probe type, measuring range, output behavior, and inhibits.

Analog inputs

RTD temperature probe:
Pt 100 DIN EN 60751,
KTY11-6 PTC,
Pt 1000 DIN

Connection type:
2-wire, 3-wire circuit

Sampling rate:
210 ms

Special features:
2xPt 100 for differential measurement,
Display can also be programmed in °F

Analog inputs: can be freely configured

Thermocouples:
Fe-CuNi "L" DIN 43710, Fe-CuNi "J" DIN EN60584,
Cu-CuNi "U" DIN 43710, Cu-CuNi "T" DIN EN60584,
NiCr-Ni "K" DIN EN60584, NiCrSi-NiSi "N"
DIN EN60584, Pt10Rh-Pt "S" DIN EN60584,
Pt13Rh-Pt "R" DIN EN60584, Pt30Rh-Pt6Rh "B"
DIN EN60584, W3Re-W25Re "D"

Sampling rate:
210 ms

Direct voltage, direct current:
0 to 20 mA, voltage drop < 2 V,
4 to 20 mA, voltage drop < 2 V
0 to 10 V, input resistance > 100 kΩ,
2 to 10 V, input resistance > 100 kΩ

Scaling
Can be freely programmed within the limits

Sampling rate:
210 ms

Binary input

Connection:
1 potential-free contact

Function:
Unlocking, key inhibit,
level inhibit can be configured

Binary outputs

Limit value relay:
100,000 operations at a contact rating of
3.15 A/250 V 50 Hz ohmic load

Contact protection circuit:
Fuse cut-out 3.15AT installed in the N/O contact
arm within the device

Binary output:
DC 24 V/20 mA logic signal, short-circuit proof,
can be used as pre-alarm

Voltage supply

AC/DC 20 to 30 V, 48 to 63 Hz
AC 110 to 240 V +10% / -15%

For further information: data sheet 701160

JUMO safetyM TB/TW08 DIN EN 14597 – type 701170

The JUMO safetyM TB/TW 08 is a freely programmable temperature limitation device for front panel mounting in 48 x 96 mm. The measuring input is freely configurable for RTD temperature probes and thermocouples as well as current and voltage signals. TB/TWs are used to monitor thermal processes in the plant for a set limit value. If this value is exceeded, the installed relay (with fuse cut-out) switches the plant to an operationally safe status, the green OK LED extinguishes and the red K1 LED is lit.

Analog inputs

RTD temperature probe:
Pt 100 DIN EN 60751,
KTY11-6 PTC,
Pt1000 DIN EN 60751

Connection type:
2-wire, 3-wire circuit

Sampling rate:
210 ms

Special features:
2xPt 100 for differential measurement,
Display can also be programmed in °F

Analog inputs: can be freely configured

Thermocouples:
Fe-CuNi "L" DIN 43710, Fe-CuNi "J" DIN EN60584,
Cu-CuNi "U" DIN 43710, Cu-CuNi "T" DIN EN60584,
NiCr-Ni "K" DIN EN60584, NiCrSi-NiSi "N"
DIN EN60584, Pt10Rh-Pt "S" DIN EN60584,
Pt13Rh-Pt "R" DIN EN60584, Pt30Rh-Pt6Rh "B"
DIN EN60584, W3Re-W25Re "D"

Sampling rate:
10 ms,
420 ms with double thermocouples (C112=1)

Direct voltage, direct current:
0 to 20 mA, voltage drop < 2 V,
4 to 20 mA, voltage drop < 2 V
0 to 10 V, input resistance > 100 kΩ,
2 to 10 V, input resistance > 100 kΩ

Scaling
Can be freely programmed within the limits

Sampling rate:
210 ms

Analog output

Current:
4 to 20 mA
0 to 20 mA

Voltage:
2 to 10 V
0 to 10 V

Analog output: can be used as actual value output for main measured value, measured value 1, measured value 2, differential value

Binary input

Connection:
1 potential-free contact

Function:
Unlocking, key inhibit,
level inhibit can be configured

Relay outputs

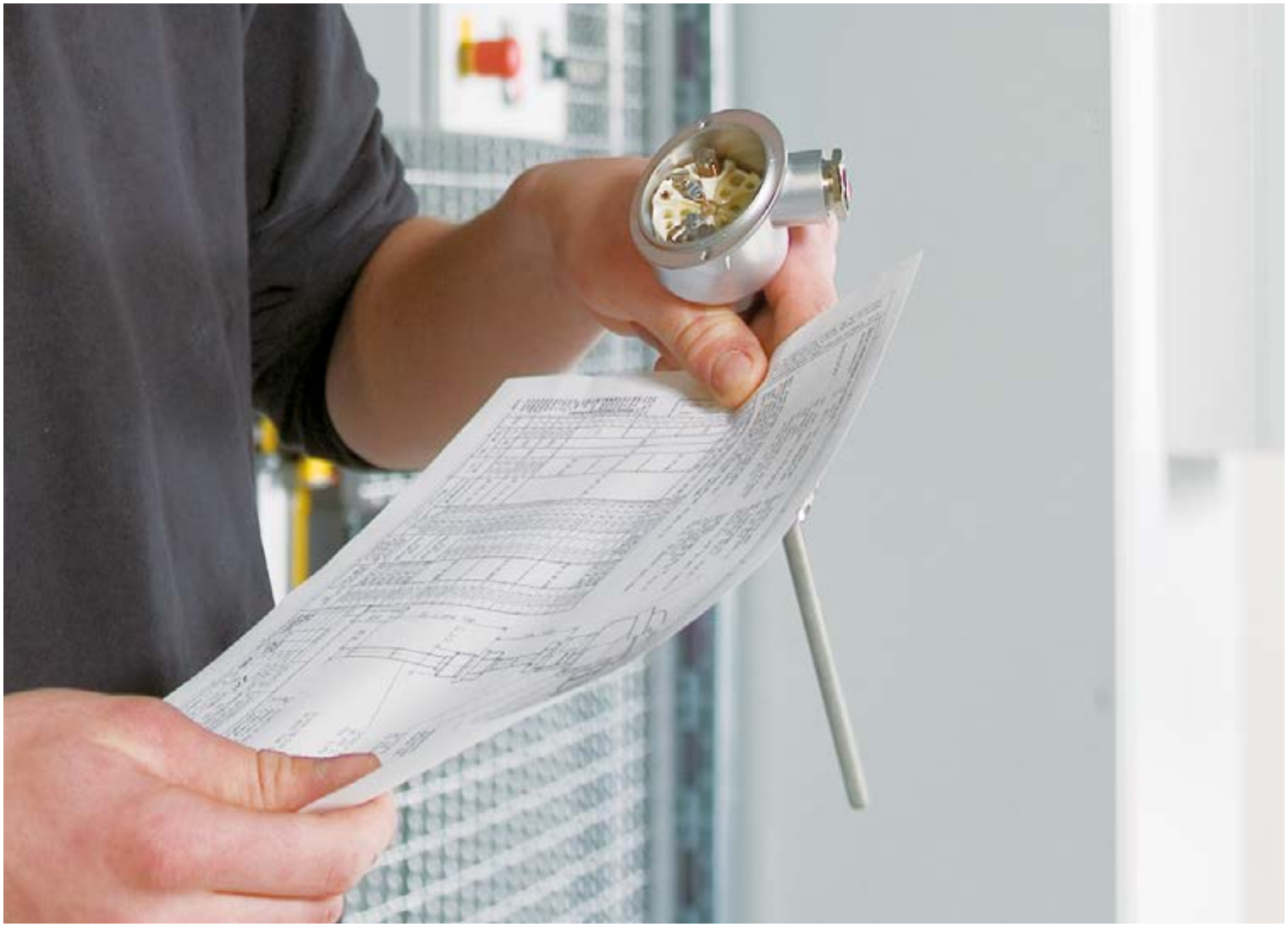
Relay output KV – can be used as a pre-alarm
Relay output alarm - limit value alarm evaluated for temperature limiter

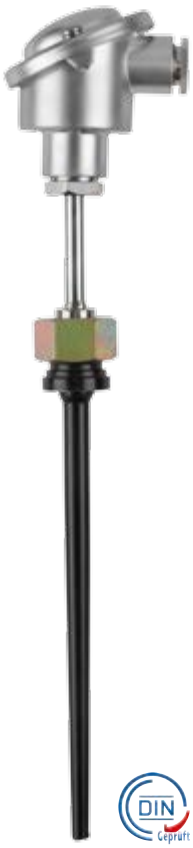
Voltage supply

AC/DC 20 to 30 V, 48 to 63 Hz,
AC 110 to 240 V +10% / -15%, 48 to 63 Hz

For further information: data sheet 701170

Accessories for electronic products





Certified thermocouples and RTD temperature probes

Thermocouples and RTD temperature probes are predominantly used for measuring temperatures in liquids and gasses. Application areas include heating, furnace/kiln, and apparatus engineering. Form B terminal heads are suitable for ambient temperatures up to 100 °C. Sheaths made of various materials protect the measuring insert against chemical influences and mechanical damage. The selection of a suitable sheath material depends on the conditions on site.

Thermocouples for devices and plants inspected/tested according to DIN EN 14597– type 901006

Special features:

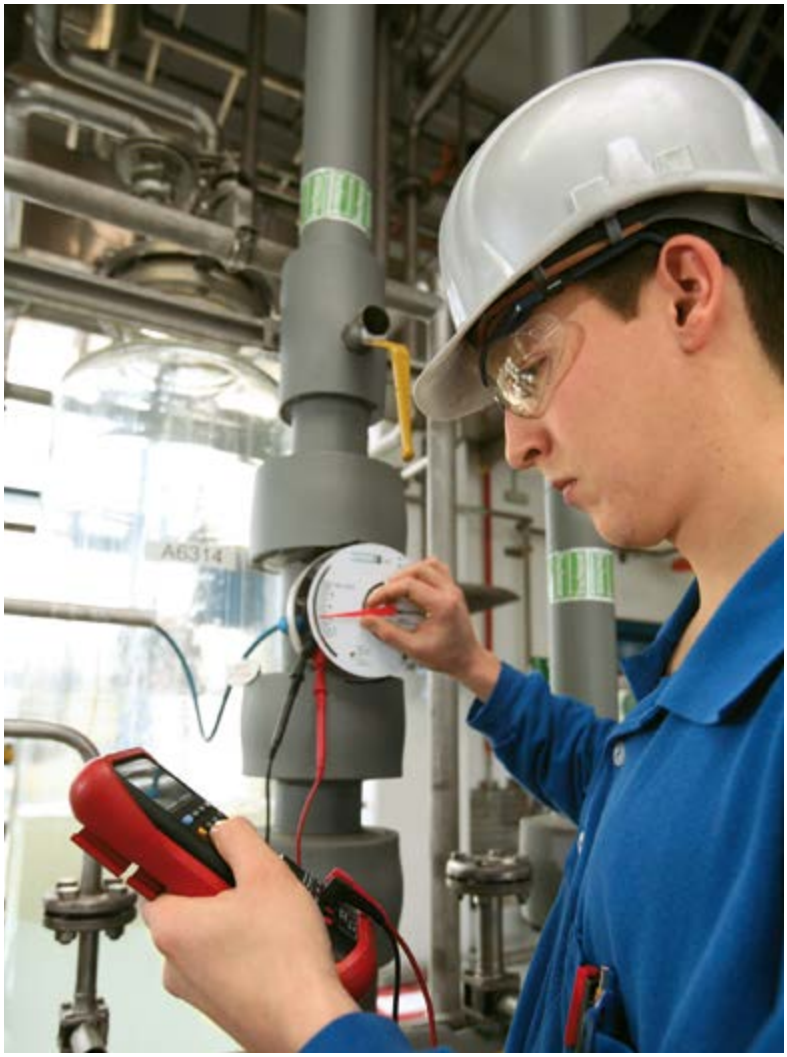
- For heat transmission plants according to DIN 4754
- For temperatures up to 1500 °C
- As single or double thermocouples
- For water, oil, or air
- For tested control and limitation devices
- Thermocouple can be used with JUMO safetyM STB/STW Ex.
  Appropriate on-site zone separation is required for this purpose.

RTD temperature probe for devices and plants inspected/tested according to DIN EN 14597 – type 902006

Special features:

- For heat transmission plants according to DIN 4754
- For temperatures up to 700 °C
- As single, double, or triple RTD temperature probes
- For water, oil, or air
- For tested control and limitation devices
- RTD temperature probes can be used with JUMO safetyM STB/STW Ex.
  Appropriate on-site zone separation is required for this purpose.

For further information: data sheets 901006, 902006



Proven electro-mechanical thermostats.

Users of electro-mechanical thermostats require maximum reliability. What could be better than to rely on a company that has proven its capabilities for more than 50 years by supplying countless thermostats throughout the world?

The secret of this success?

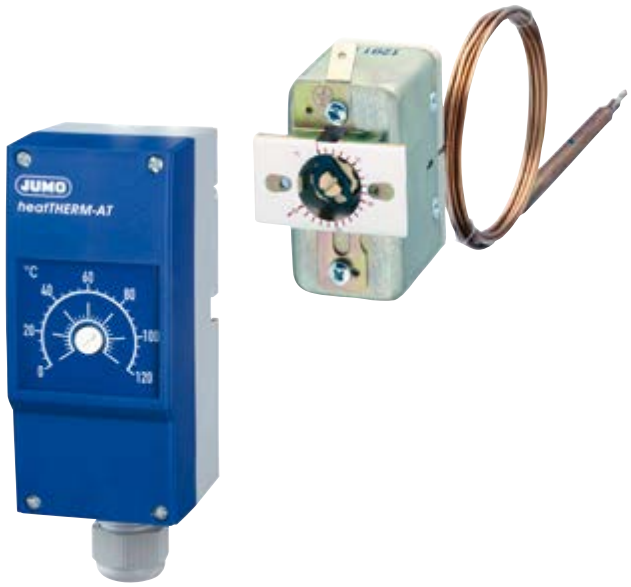
The pursuit of perfection ensures that the comprehensive expertise of the capable development department achieves the highest quality. The thermostats only enter production when they have passed all laboratory tests and inspections, and withstood months of continuous stress testing.

The production puts reliability and quality first. That is why we manufacture all relevant components ourselves and attach just as much importance to the quality of the components as to maximum manufacturing precision. We embrace the "Made in Germany" quality standard. It follows that we have state-of-art production facilities and significant vertical integration.

This strategy not only explains the quality of the thermostats, it also makes JUMO particularly flexible. Short delivery/lead times and versions for virtually all areas of application are just as much a matter of course as individual solutions that are perfectly tailored to your requirements.

Through decades of experience, we have developed an eye for perfection.

This flexibility is complemented by the customer support and consultation service to assist you with your day-to-day work. Of course JUMO also ensures that the devices are easy to install by using the Push-In® terminal technology (patented by Weidmüller GmbH & Co. KG, Detmold). We offer a large number of product variations to ensure that our thermostats are suitable and reliable.



Tried and tested for decades:

Electro-mechanical products

Panel-mounted thermostats

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❶ Panel-mounted thermostats, series ETH – type 602010

Special features:

- Safety temperature limiters STB, monitors STW (STB)
- max. probe temperature (nominal value) 500 °C
- max. switching capacity 230 V, 10 A

DGRL

❷ Panel-mounted thermostats, type EM with 1, 2, 3, or 4 1-pole snap switches – type 602021

Special features:

- Temperature controllers TR, monitors TW, limiters TB
- max. probe temperature (nominal value) 500 °C
- max. switching capacity 230 V, 16 A
- Production variables according to customer requirements

c UL us DGRL

❸ Panel-mounted thermostat, series EM – type 602026

Special features:

- Safety temperature monitor STW (STB), limiter STB
- max. probe temperature (nominal value) 500 °C
- max. switching capacity 230 V, 16 A

c UL us DGRL

❹ Panel-mounted thermostats JUMO heatTHERM – type 602031

Special features:

- Temperature controllers TR, monitors TW
- Safety temperature monitor STW (STB), limiter STB
- max. probe temperature (nominal value) 350 °C
- max. switching capacity 230 V, 16 A
- economic large-scale production

c UL us DGRL

For further information: data sheets 602010, 602021, 602026, 602031

Surface-mounted thermostats

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❺ Surface-mounted thermostat, series ATH – type 603021

Special features:

- Single thermostat
- max. probe temperature (nominal value) 500 °C
- max. switching capacity 230 V, 10 A
- Protection type IP54

DGRL

❻ Surface-mounted thermostat, series ATH – type 603026

Special features:

- Double thermostat
- max. probe temperature (nominal value) 500 °C
- max. switching capacity 230 V, 10 A
- Protection type IP54

DGRL

❼ Surface-mounted thermostat, series ATH-SW – type 603035

Special features:

- Single thermostat or double thermostat
- max. probe temperature (nominal value) 500 °C
- max. switching capacity 230 V, 10 A
- Protection type IP65

DGRL

For further information: data sheets 603021, 603026, 603035

Surface-mounted thermostats

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❽ JUMO heatTHERM-AT and heatTHERM-DR – type 603070

Special features:

- Single thermostat or double thermostat
- Room thermostat with spiral probe
- Flat surface/cylindrical surface or DIN rail mounting
- max. probe temperature (nominal value) 350 °C
- Switching capacity 230 V, 16 A
- Protection type IP40 or IP54
- DIN-tested flue gas temperature monitor

❾ Hot air thermostats, series WTHc – type 604514

Special features:

- Device combination consisting of 3 individual devices (TR, TW, STB)
- Device combination consisting of 3 individual devices
- max. probe temperature (nominal value) 500 °C
- max. switching capacity 230 V, 10 A
- Protection type IP40 or IP54

For further information: data sheets 603070, 604514

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