

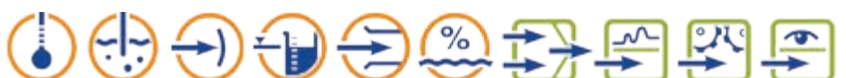


More than **sensors + automation**



# Product Range

Sensor and automation solutions for your success





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# True quality leads to success

Since its founding in Fulda in 1948, JUMO has developed into a successful global player. Today, our company is represented on all 5 continents.

Anyone wishing to make a name for themselves in the competitive markets of the world with products and services must bring all their expertise to the table. The most important factors here are an innovative development department, products of superior quality, and reliable service. To achieve all of this, you must have one thing: highly motivated employees.












Today, our strong teams in all areas allow us to be placed among the leading manufacturers of industrial sensor and automation technology. We have over 2000 employees in 5 branch offices and 1 subsidiary in Germany as well as 24 subsidiaries and more than 50 agencies abroad.

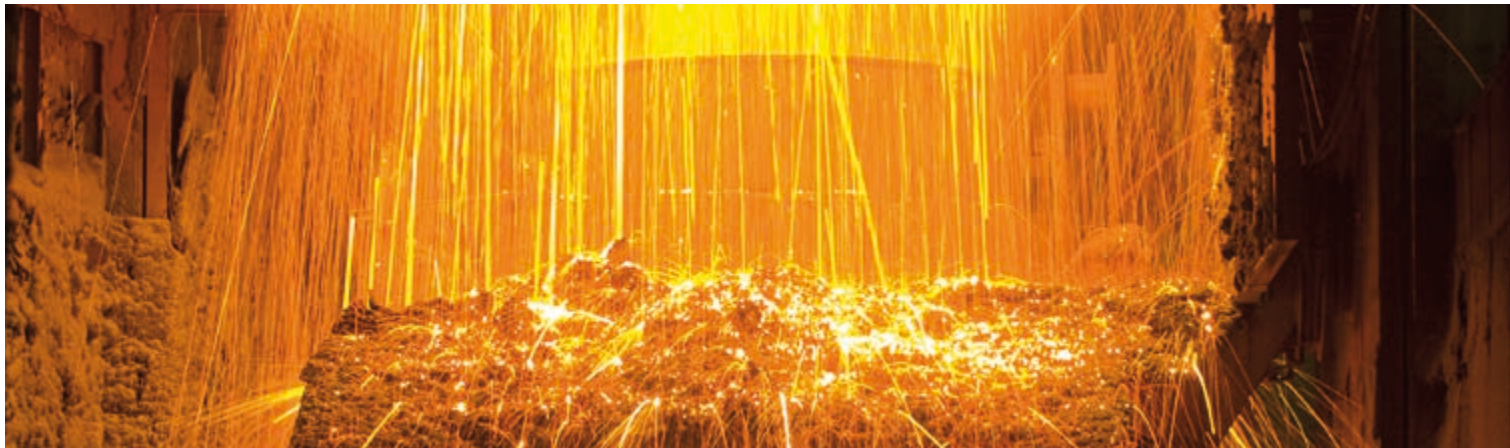
The cornerstone of our corporate philosophy is our holistic approach. At JUMO we provide all-in-one solutions – from product development and production to Services & Support. This way, we have full control over all processes at all times and are able to make use of synergistic effects which benefit our customers.

The result is a product portfolio covering all aspects of measuring, controlling, and analyzing which is unparalleled in its scope and range. This brochure provides a clear introduction to this product spectrum. Please feel free to contact us for further information.



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# Temperature

Temperature is one of the most important measurands in a number of industrial areas. JUMO, your partner for precision temperature measurement, offers a wide range of products in this segment – from room temperature measurement in building technology to high-temperature measurements in furnace construction. The highest quality and reliability of our products is maintained by continuously developing them. We always focus on the customer in everything we do. Customer satisfaction and long-term collaboration are the driving forces that keep us achieving outstanding performance time and time again.

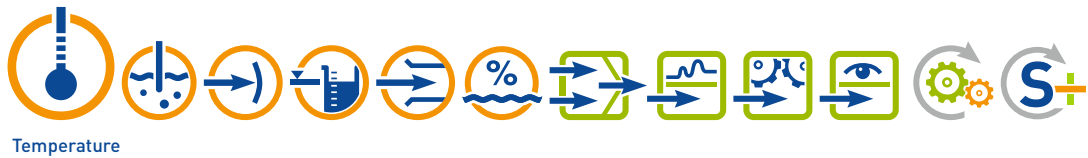
## Portfolio:

- DAkkS calibration service
- Panel-mounted and surface-mounted thermostats
- Plastic temperature probes
- Temperature probes for
- Thermocouples
- Platinum-chip temperature sensors
- RTD temperature probes
- Dial thermometers



## Approvals:





## Temperature sensors for industry, plant engineering, and vehicle engineering

JUMO has been producing high-quality RTD temperature probes and thermocouples since the mid-1960s. Temperatures up to approximately 500 °C are generally measured using RTD temperature probes. The platinum temperature sensor has established itself by ensuring a high degree of measuring accuracy and long-term stability. Thermocouples are suitable for measuring higher temperatures. Here, thermocouples of type L, J, K, N, S, or B are used depending on the requirement. The in-house DAkkS lab and our own temperature sensor thin film production facilities enhance JUMO's expertise and offer our customers ultimate flexibility. JUMO is now one of the world's leading manufacturers in this field.

## Electromechanical temperature monitoring

JUMO's decades of experience in manufacturing electromechanical thermostats and dial thermometers has made it a reliable partner. The ease with which our devices enable temperatures to be acquired and controlled without using auxiliary power has allowed these devices to become standard in various industry sectors. The array of products ranges from mass-produced products to individual customer solutions in small-scale production.

### Thermocouples and RTD temperature probes with terminal head or connecting cable

Type 901020, 901030, 901120, 902020, 902023, 902030, 902120, 902123, 902820, 901150, 901190, 901210, 902050, 902150, 902153, 902190, 902210, 902350



### RTD temperature probes with wireless data transmission

Type 902930, 902931, 707060



### RTD temperature probes with plug connector

Type 902040, 902044



### RTD temperature probes for industrial solutions

Type 902424, 902425, 902434, 902435, 902810, 902815, 902915, 902940



### Indoor, outdoor, and channel RTD temperature probes

Type 902520



### JUMO plastoSENS T01/02/03

Vibration-resistant, surge proof, and steam-tight plastic temperature probes  
Type 904001, 904002, 904003



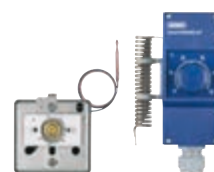
### Platinum chip temperature sensors according to DIN EN 60751

Type 906121, 906122, 906123, 906124, 906125



### Panel-mounted and surface-mounted thermostat

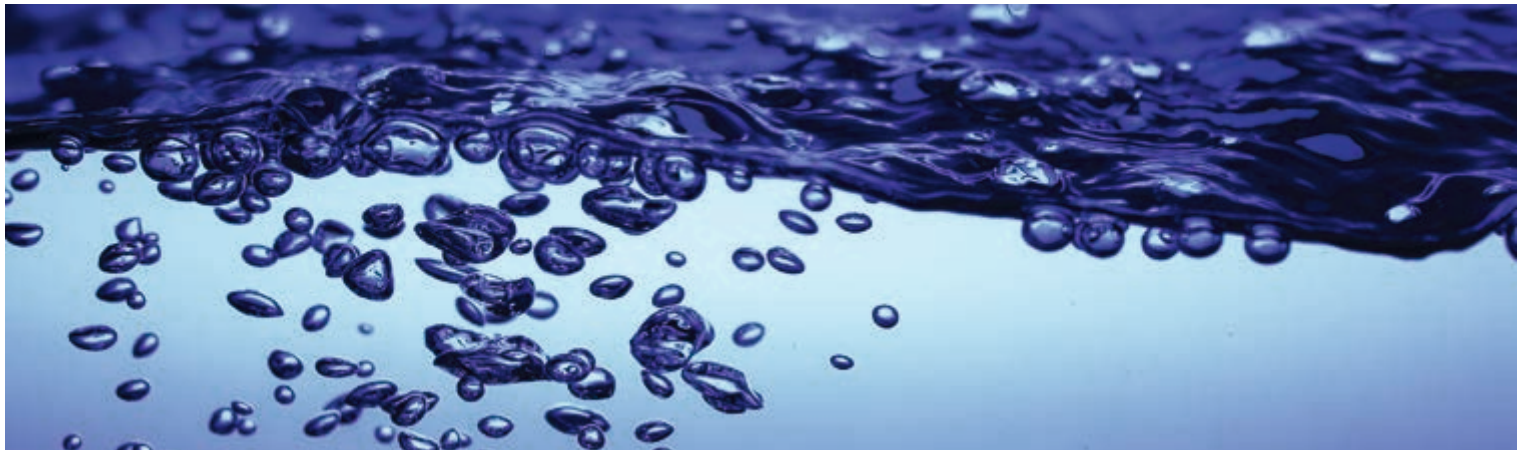
EM series, heatTHERM series  
Type 602021, 603070



### Dial thermometer

Type 608002





# Liquid analysis

The JUMO range of analytical measurement products focuses on the most important chemical and electrochemical measurands in liquid media. This includes the pH value, redox potential, and ammonia as well as the electrolytic conductivity, dissolved oxygen, turbidity, free chlorine, total chlorine, chlorine dioxide, ozone, hydrogen peroxide, and peracetic acid. Sensors and measuring devices from JUMO are used in a variety of areas including drinking, service, and process water preparation. Today, JUMO is one of the leading manufacturers of measuring devices and sensors (including accessories) for electrochemical measurands.

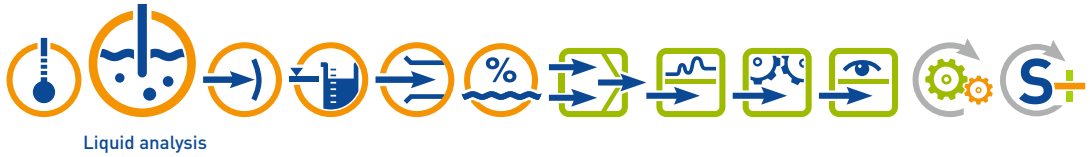
## Portfolio:

- Fittings
- Digital sensors
- Dissolved oxygen sensors
- Conductive and inductive conductivity sensors
- Transmitters and controllers
- pH and redox electrodes
- Sensors for chlorine, chlorine dioxide, bromine, ozone, hydrogen peroxide, and peracetic acid
- Turbidity sensors



## Approvals:





## From sensors to the modular multichannel measuring device

Water is the basis of all life on the planet. It is sufficiently available when you consider that approximately 70 percent of the Earth's surface is covered with seawater. The water, however, is not evenly distributed and is not suitable for immediate use in every state. This places a wide range of demands on measurement technology. Whether dealing with drinking water, swimming pool water, tap water, ultra-pure water, service water, process water, or cooling water – every sector has its own requirements when it comes to the sensors and devices for measuring key quality parameters.

Before water can be used, it often needs to be treated or brought to a desired state using chemical additives. The JUMO analytical measurement sensors and controllers help with these procedures in an established manner. From a simple top-hat rail transmitter to the multichannel controller and recorder, the user has a wide range of options from which to select.

The JUMO CTI-500 and JUMO CTI-750 series of inductive conductivity measuring devices have allowed JUMO to earn a permanent spot with the plant manufacturers and operators in the food and beverages industry. Here, JUMO consistently meets the special hygienic requirements.

**JUMO ecoLine/BlackLine/tecLine/tecLine HD**  
pH and redox electrodes  
Type 201005, 201020, 201021, 201030, 201050



**Membrane-covered and optical sensors**  
For measuring free chlorine, total chlorine, chlorine dioxide, ozone, hydrogen peroxide, peracetic acid, ammonia, bromine, turbidity, and dissolved oxygen  
Type 201040, 202610, 202613, 202630, 202631, 202634, 202636, 202637, 202670



**JUMO ecoTRANS Lf 01/02/03, JUMO ecoTRANS pH 03**  
Transmitter and switching devices  
Type 202723, 202731, 202732



**JUMO dTRANS pH/CR/AS 02**  
Transmitters and controllers  
Type 202551, 202552, 202553



**JUMO ecoLine/BlackLine/tecLine/digiLine**  
Conductivity sensors – conductive and inductive  
Type 202706, 202707, 202708, 202709, 202922, 202923, 202924, 202925, 202930, 202941, 202942, 202943



**JUMO CTI-500/750**  
Inductive conductivity and concentration transmitters  
Type 202755, 202756



**JUMO AQUIS 500 pH/CR/Ci/AS**  
Transmitters and controllers in surface-mounted case  
Type 202560, 202565, 202566, 202568



**JUMO AQUIS touch P/S**  
Modular multichannel measuring device with integrated controllers and recording function  
Type 202580, 202581





# JUMO digiLine

## Intelligent, bus-compatible connection system for digital sensors used in liquid analysis

With JUMO digiLine, JUMO presents a bus-compatible connection system for digital sensors used in liquid analysis which also offers Plug and Play functionality. JUMO digiLine allows for the simple creation of sensor networks by connecting a wide array of sensors in various bus topologies (linear,

star). A single shared signal line is used for communication with the next evaluation unit or controller. This way plants in which several parameters need to be measured at the same time in different places can be wired efficiently and quickly.

### Measure various liquid analysis measurands with just one system

- Measurands: pH value, temperature, redox potential, conductivity, oxygen concentration, turbidity, disinfection measurands
- For industrial applications in the process, food, pharmaceutical, and water industry
- Fail-safe digital data transfer for optimal process monitoring
- Modular system: for both individual measuring points and for setting up sensor networks
- Plug and Play function for connection to transmitters from the JUMO AQUIS touch series: facilitates the replacement of expended sensors or the brief exchange of sensors for calibration purposes
- The digiLine electronics can continue to be used even when the sensor becomes worn
- Simple and reliable calibration of sensors and comprehensive measuring point management can be completed easily on a PC with the JUMO DSM (Digital Sensor Management) software tool

### Ready for measurement in just 3 steps – thanks to Plug and Play

1. Connect sensor

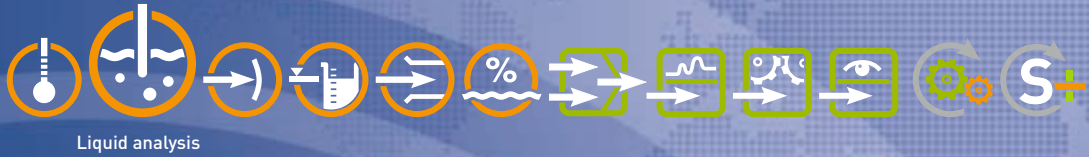
2. Sensor is detected automatically

3. Sensor is linked and ready for measurement

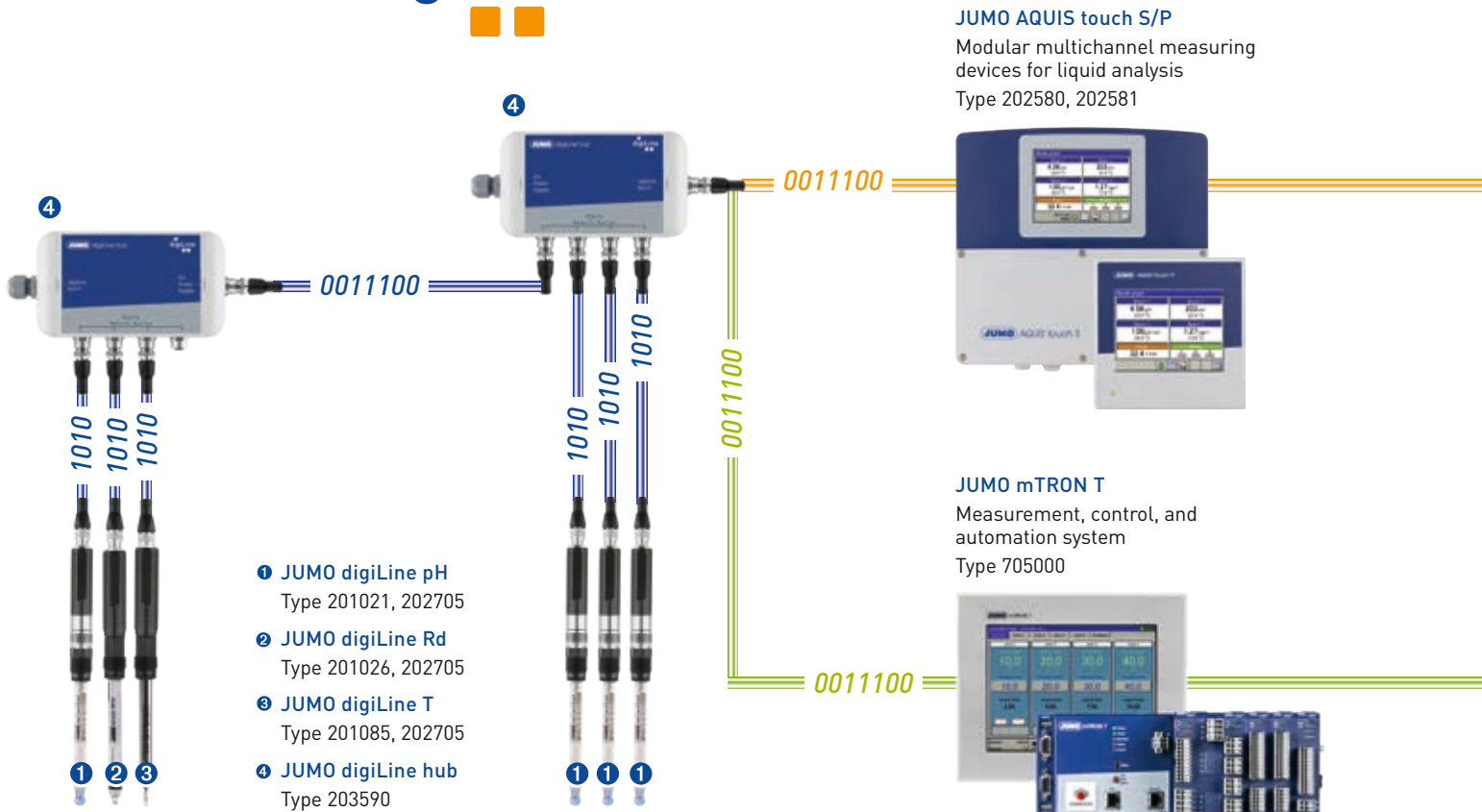
Bezeichnung	Parameter	
1 digitaler Sensor 1	pH	
2 digitaler Sensor 2	pH	
3	kein Sensor	
4	kein Sensor	
5	kein Sensor	
6	kein Sensor	

Sensor	HW-Adresse	
pH	00001 A	
pH	00001 B	





## System structure digiLine



### Connection option 1

The multichannel measuring devices in the JUMO AQUIS touch series were designed especially for liquid analysis. They are ideal as a central platform for the display and further processing of measurement data. Up to 6 digiLine sensors can be connected to the modular devices and as many as 25 sensors can be connected in total using corresponding input modules and interfaces. In addition to measured value recording up to 4 independent control loops can be implemented and process values can be recorded in a tamper-proof manner with an integrated paperless recorder.

### Connection option 2

In addition, JUMO digiLine sensors can also be connected to the universal measuring, control, and automation system JUMO mTRON T. This means that entire automation solutions can be implemented. Thanks to its scalability, the system also allows individual adaptation to a particular task. An integrated PLC is used to integrate up to 62 JUMO digiLine sensors.

# Pressure

Pressure measurement is one of the most important tasks in almost all industrial sectors. High-quality pressure measuring devices ensure reliable and safe measuring results regardless of whether you are dealing with high-precision solutions for the process industry, hygienic solutions for the food and pharmaceutical sectors, or universal solutions for mechanical and plant engineering. JUMO also has the right solution for your specific application. We supply special solutions based on customer requirements for the OEM market.

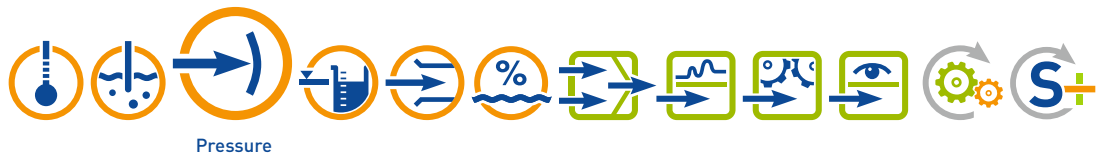
## Portfolio:

- Differential pressure transmitters
- Pressure transmitters
- Pressure transmitters for wireless data transmission
- Pressure measuring cells (analog and digital)
- Diaphragm seals and accessories
- Pressure switches
- Process pressure transmitters



## Approvals:





## Quality through attention to detail

A key part of automation technology focuses on recording process pressure with a high degree of accuracy and reliability. With a host of applications, continuous pressure monitoring can guarantee process reliability and therefore increase product quality.

Our sophisticated production depth allows us to ensure all quality processes and results in increased flexibility. This in turn enables us to give special consideration to customer requirements and application-orientated conditions. In addition to low measured values in the Pascal range, pressures up to 600 bar can also be recorded. We provide various outputs for this including analog signals as well as HART® or CAN interfaces. The wide variety of possible electrical and process connections allows the pressure transmitters to be adjusted to almost every application.

Pressure transmitters from JUMO are frequently used in the compressor industry, autoclave equipment, the heating/cooling/air-conditioning industry, the food and chemical industry, and in cleanrooms.

Depending on the operating conditions in the various industries, the devices offer application-oriented approvals such as ATEX or DNV GL.

**Pressure measuring cells**  
Type 404410, 405101



**JUMO MIDAS series**  
Pressure transmitters  
Type 401002, 401005, 401008, 401009, 401010, 401011, 401012, 401020, 401021, 401050, 404710



**JUMO DELOS series**  
Pressure transmitters  
Type 405052, 405054



**JUMO dTRANS p30 series**  
Pressure transmitters  
Type 402050, 402058, 404366, 404753



**JUMO dTRANS p20 series**  
Pressure and differential pressure transmitters  
Type 403022, 403023, 403025, 403026



**JUMO Wtrans p**  
Pressure transmitter with wireless data transmission  
Type 402060



**Diaphragm seal**  
Type 409772, 409774, 409776, 409778, 409780, 409782, 409784



# 250

## Level

Our decades of experience with pressure measurement technology forms the basis for our developments in the field of hydrostatic level measurement. We offer solutions for pressurized and depressurized containers, wells, and waterbodies. You can record the level with level probes or pressure transmitters depending on the application.

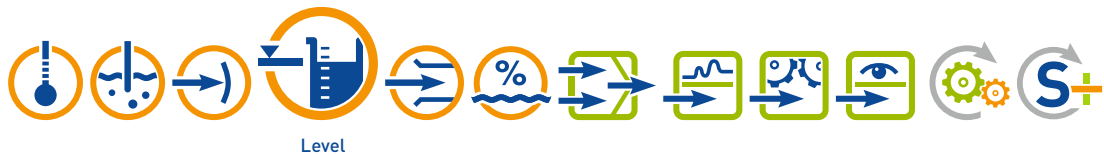
### Portfolio:

- Differential pressure transmitters (hydrostatic)
- Pressure measuring devices (hydrostatic)
- Level probes (hydrostatic)
- Floats (mechanical)
- Float switches and level transmitters



### Approvals:





## Hydrostatic level measurement: pressure as a means to an end

When taking level measurements, pressure measuring devices operate according to the hydrostatic principle. The hydrostatic pressure is created in a liquid by a liquid column located above a sensor and always behaves in proportion to the sensor's immersion depth.

The pressure measuring device is selected depending on the measuring task. Level probes and pressure measuring devices developed especially for determining the level are available for depressurized tanks or open bodies of water. The rack purification plant of a water works is one example of an application.

JUMO MIDAS DP10 or JUMO dTRANS p20 DELTA differential pressure measuring devices are the preferred solution for use on pressurized tanks. For hygienic reasons, the level can also be recorded from the outside using a relative pressure or differential pressure measuring device.

Float switches are used for point value measurement and level transmitters via floats are used for quasi-continuous level measurement of liquids. The measurement takes place according to Archimedes' principle and is suitable for unpressurized and pressurized tanks.

In addition to end devices, JUMO also offers mechanical floats for producing float switches.

### JUMO MAERA series

Level probes

Type 401015, 402090, 404391, 404392, 404393



### JUMO dTRANS p30 series

Pressure transmitters

Type 404366, 404753



### JUMO DELOS SI and JUMO dTRANS p20

Pressure transmitters with a display for mounting on depressurized tanks

Type 405052, 403025, 403026



### JUMO MIDAS DP10 and dTRANS p20 DELTA

Differential pressure transmitters for mounting on pressurized tanks

Type 401050, 403022, 403023



### JUMO NESOS series

Float switches and level transmitters

Type 408301, 408302, 408303, 408320





# Flow

JUMO offers you products with various features for flow measurement. In addition to differential pressure transmitters, JUMO's product range also includes paddle-wheel flow sensors and electromagnetic flowmeters. The result is that we have the right solution for all your applications, regardless of whether you're measuring the flow of gas, liquids, or slurry.

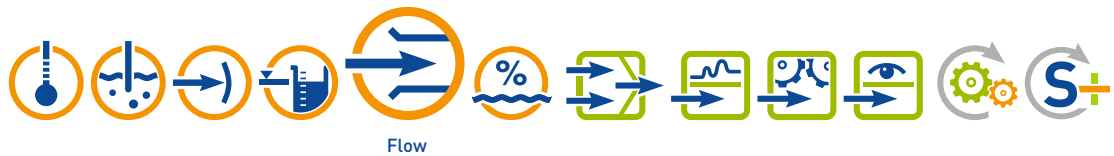
## Portfolio:

- Differential pressure transmitters
- Flowmeters for vapors, gases, and liquids
- Paddlewheel flow sensors
- Electromagnetic flowmeters
- Flow sensors



## Approvals:





## Precision flow measurement for

JUMO helps you safely design your process technology with sensors known for their long-term stability and precision. Depending on the application, we can provide the right flow sensors for liquids, gases, or vapors. If adjusted to the corresponding evaluation devices and controllers, the devices allow the flow to be measured, displayed, controlled, or recorded.

The JUMO product range comprises a wide range of devices. Orifice plates and Pitot probes offer the greatest device variety. When these are combined with differential pressure transmitters they also provide the best measuring accuracy.

We offer electromagnetic flowmeters especially for flow measurements in liquids. The devices were developed for industrial and hygienic applications. They are particularly flexible and available with a large variety of nominal widths, measuring tube linings, materials, and process connections.

### JUMO flowTRANS MAG S01

Electromagnetic flowmeter for industrial applications  
Type 406012



### JUMO flowTRANS MAG H01

Electromagnetic flowmeter for hygienic applications  
Type 406015



### JUMO dTRANS p02/p20

Differential pressure transmitters  
Type 404382, 403022, 403023



### JUMO PINOS L02

Calorimetric flow sensor  
Type 406041



### JUMO flowTRANS MAG I02

MID flow transmitter  
Type 406011



### Fittings for flow sensors

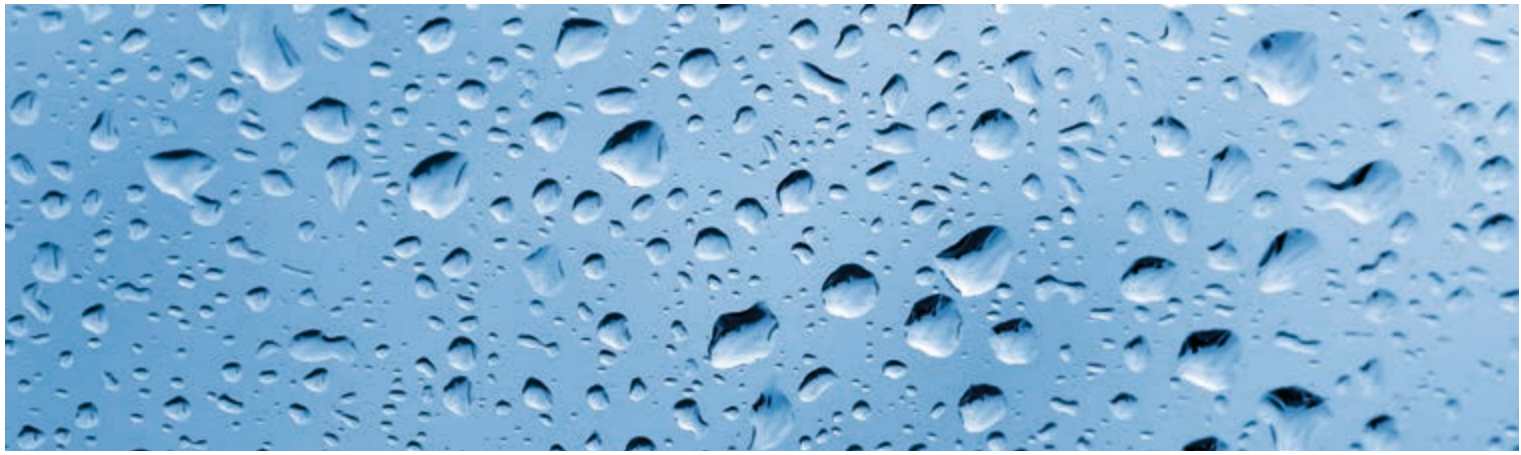
Type 406090



### Paddle wheel sensor

Type 406020





# Humidity

For several decades, JUMO has been offering a very comprehensive and cutting-edge range of devices for measuring relative humidity and the measurands associated with air humidity. The devices are designed for most applications in air-conditioning and ventilation technology as well as for sophisticated industrial applications.

## Portfolio:

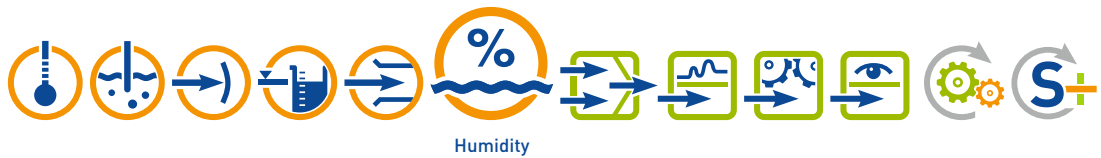
- Intrinsically safe industrial measuring probes (ATEX)
- Hygrometric humidity measuring probes
- Hygrostats
- Capacitive humidity measuring probes
- Measuring probes for wireless data transmission



## Approvals:







## Measuring probes for humidity

As a leading manufacturer of measurement and control technology, JUMO also offers a comprehensive range of measurement technology products designed for air humidity and carbon dioxide measurement in the air-conditioning and ventilation sector as well as for building automation. Depending on the application, various measuring probes are available with both capacitive and hygrometric sensor technology. Hygrostats as pure switching devices are also available. CO<sub>2</sub> measuring probes use a proven infrared technology.

Very high-quality and robust micro-processor-controlled measuring probes are available for sophisticated industrial measuring tasks. They can also be used to output additional measurands such as absolute humidity, dew point temperature, mixing ratio, etc. The outstanding features include stable and reliable measurements, high measuring accuracy, traceable measuring results, and a wide range of configuration options directly on the measuring probe.

Devices equipped with intelligent interchangeable probes, devices with intrinsically safe measuring probes for applications in Ex-areas, and devices with wireless data transmission round off the product range.

A reliable after-sales service for maintenance and calibration purposes completes the range. With JUMO as your partner in humidity measurement technology you are in the best hands possible.

### Hygro and hygrothermal transducer (capacitive) for air-conditioning applications

Type 907020



### Hygro and hygrothermal transducer and CO<sub>2</sub> measuring probe for climate monitoring

Type 907021



### Humidity and temperature measuring probe for industrial applications

Type 907023



### Intrinsically safe industrial measuring probe for humidity, temperature, and derived variables

Type 907025



### Capacitive hygrothermal transducer with intelligent interchangeable probes

Type 907027



### Hygro and hygrothermal transducer hygrostats (hygrometric)

Type 907031, 907032

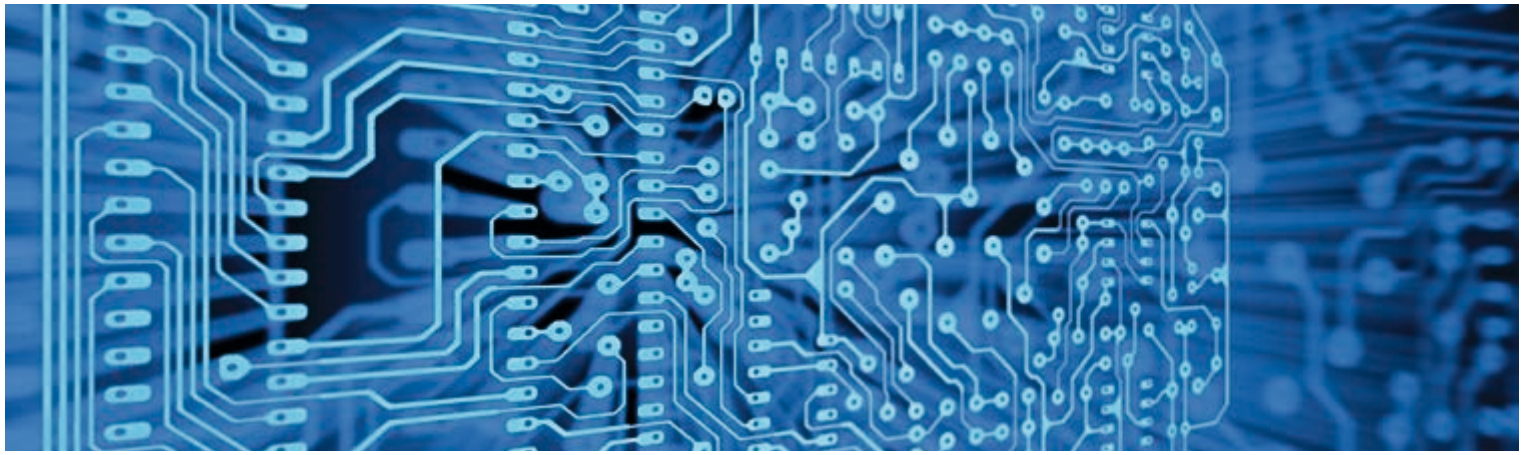


### JUMO Wtrans E01

Measuring probe for humidity, temperature, and CO<sub>2</sub> with wireless data transmission

Type 902928





# Control

However different the production processes in various industries may be, they all have in common that process variables such as temperature, pressure, humidity, flow, and level often need to be controlled with the highest levels of accuracy. You will be sure to find the right controller for your application in the JUMO product range, which spans from inexpensive electromechanical and electronic thermostats to digital compact controllers and multichannel automation systems.

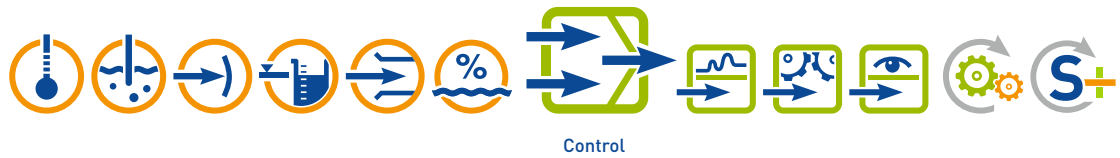
## Portfolio:

- Surface-mounted thermostats
- Panel-mounted thermostats
- Single channel and multichannel controllers
- Frost protection thermostats
- Process and program controllers
- Contact dial thermometers



## Approvals:





## Programmable electronic controllers

Precision control of a wide range of measured values such as temperature, pressure, humidity, level, and many other measured values is crucial in today's industrial and process applications for consistently-high product quality. With our array of electronic controller products ranging from single channel controllers to multichannel screen controllers we provide the right solutions for your control requirements. The integrated self-optimization function ensures fast startup and cost savings at the same time. The universal measurement input enables the connection of a wide range of sensors while providing a high level of application flexibility. The optional interface technology allows for integration into the management and control systems and thereby reduces the load placed on the control technology.

## Electromechanical thermostats

Electromechanical thermostats are used in both the heating and air-conditioning industry as well as in building automation. Temperatures in a variety of processes can be controlled without using auxiliary energy. Explosion-protected surface-mounted thermostats enable the maximum temperature control of electrical heating cables in industrial applications. Here, the thermostat stands out with its resistance to electromagnetic interference.

### JUMO IMAGO 500

Multichannel process and program controller  
Type 703590



### JUMO DICON touch

Two-channel process and program controller with paperless recorder and touchscreen  
Type 703571



### JUMO dTRON

Compact controller with program function  
Type 703041, 703042, 703043, 703044



### JUMO diraTRON

Compact controllers  
Type 702110, 702111, 702112, 702113, 702114



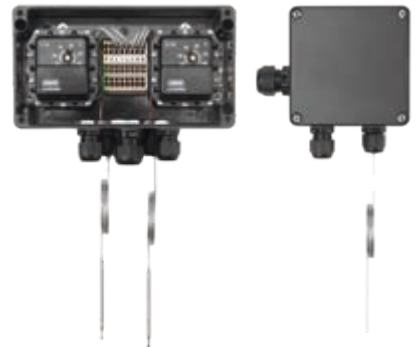
### JUMO heatTHERM

Surface-mounted and panel-mounted thermostat  
Type 602031, 603070



### JUMO exTHERM-AT

Explosion-protected surface-mounted thermostat  
Type 605055



### Panel-mounted thermostat

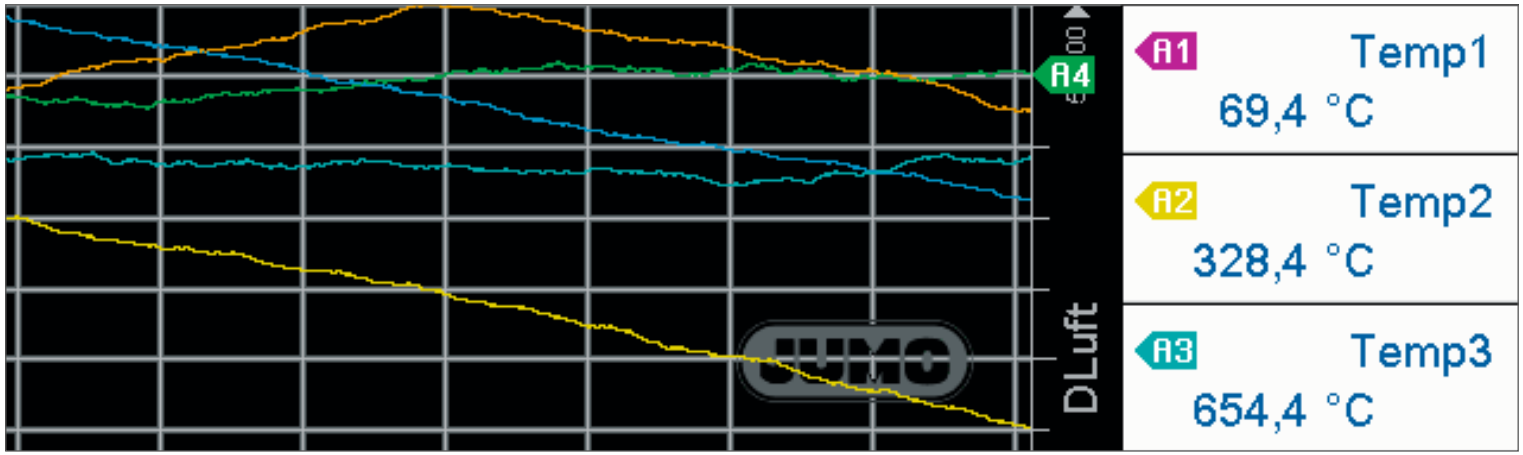
EM series  
Type 602021



### JUMO frostTHERM-AT/-DR/-ATE

Frost protection thermostats  
Type 604100, 604170





# Recording

Are you familiar with the JUMO LOGOSCREEN type series? With the devices in this family of paperless recorders you are ideally equipped to acquire, archive, and evaluate measured values that must be verified in a tamper-proof manner. The numerous approvals that the devices have received allow them to be used in any number of ways in nearly every industry.

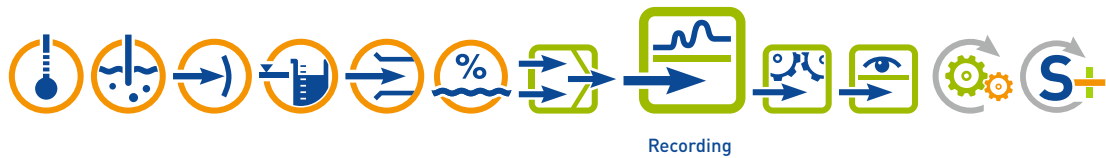
## Portfolio:

- Paperless recorders
- Paperless recorders with ATEX approval
- Paperless recorders with FDA approval



## Approvals:





## Recording, archiving, and evaluating...

... are well-known concepts in measurement technology, defined by the recorder device group. JUMO paperless recorders quickly and securely record process data, save and archive it, and make it accessible to the PC for tamper-proof evaluation.

### JUMO LOGOSCREEN 600

Paperless recorder with touchscreen  
Type 706520



### JUMO LOGOSCREEN 700

Highly-scalable paperless recorder  
Type 706530



## JUMO LOGOSCREEN 600 and 700 ...

... was designed as a high-quality replacement for paper recorders and is the basic device in the JUMO paperless recorder series. It features a maximum of 6 universal inputs, a 5.7" TFT color display with touchscreen operation, and the option to monitor limit values. The paperless recorder is also network compatible.

### JUMO LOGOSCREEN nt/fd

Paperless recorder with TFT display, CompactFlash® card, USB interfaces, stainless steel front, and sensor control panel; FDA-compliant data recording with fd type  
Type 706581, 706585



## JUMO LOGOSCREEN nt and fd ...

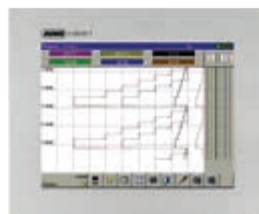
... fulfills demanding recording tasks such as batch reporting, creates mathematical and logical links between process data, and can visualize data online via a web server. The "fd" version fulfills the requirements of FDA 21 CFR Part 11 concerning electronic recording of process data.

## JUMO mTRON T ...

... enables the construction of a decentralized system for acquiring and archiving a maximum of 54 analog measuring channels and 54 digital channels.

### JUMO mTRON T – Multifunction panel 840

Measuring, control, and automation system  
Type 705060



### JUMO mTRON T – Central processing unit

Measuring, control, and automation system with controller module as well as input and output modules  
Type 705000





# Automation

To ensure smooth process and production procedures you need dependable systems that JUMO can provide. These range from thyristor power switches, temperature transmitters, and digital indicators to our JUMO mTRON T automation system. JUMO meets all your automation and visualization demands.

## Portfolio:

- Indicating devices
- Automation software
- Power controllers and solid state relays
- Transmitters
- Measuring, control, and automation system
- Transmitters for wireless data transmission
- Software and accessories
- System technology



## Approvals:





## Thyristor power controllers and solid state relays

In many electrically operated heating systems, solid state relays ensure wear-free switch operations with large currents and therefore play a key role in ensuring a high degree of heater availability. Using the JUMO TYA 200 series provides key advantages in thermal applications for which the precise dose of electrical heat output is vital for product quality and also for ensuring energy efficiency.

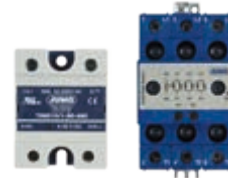
### JUMO TYA 200 series

Single-phase and three-phase thyristor power controllers  
Type 709061, 709062, 709063



### JUMO TYA 432

Thyristor power switch  
Type 709010, 709020

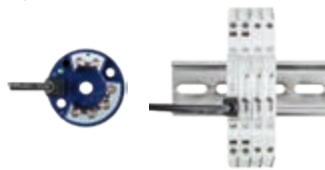


## Temperature transmitter

The JUMO dTRANS T series offers the right transmitter for your specific application. Whether for head or mounting rail installation, the converter transforms the temperature determined by the connected temperature sensor into a precise standard signal for further processing in your production plant. In Ex applications, the Ex-i repeater power supply and input isolating amplifier ensures secure separation of the Ex and non-Ex area.

### JUMO dTRANS T05

Programmable two-wire transmitters  
Type 707050, 707051



### Ex-i repeater power supply and input isolating amplifier

Type 707530



### JUMO dTRANS T06

Multifunctional four-wire transmitter in mounting rail case  
Type 707071



### JUMO dTRANS T01 HART/Ex

Programmable two-wire transmitters  
Type 707013, 707016



## Digital indicators

Digital indicators enable a precise on-site display of process values and allow you to keep an eye on values that are important for a smooth production process.

## JUMO mTRON T automation system

With the JUMO mTRON T system you can flexibly control your production system. The integrated PLC (CODESYS V3) allows you to create customized PLC programs according to IEC 61 131-3.

### JUMO mTRON T

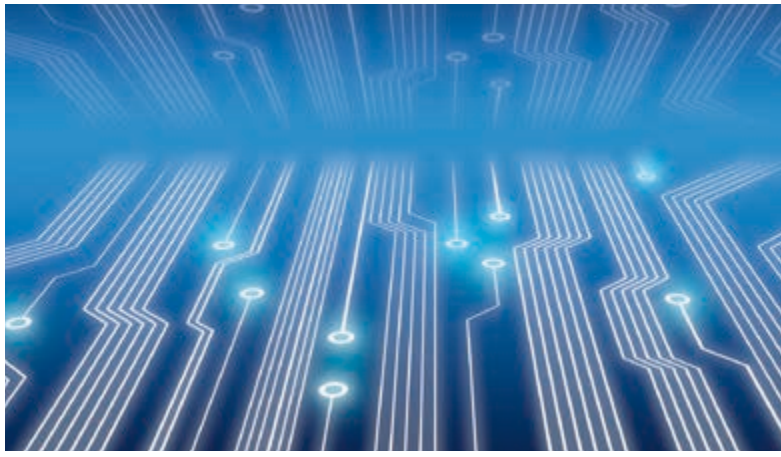
Measuring, control, and automation system  
Type 705000



### JUMO diraVIEW

Digital indicators  
Type 701510, 701511, 701512, 701513, 701514





# JUMO mTRON T – Your System

## The scalable measuring, control, and automation system

JUMO mTRON T combines a universal measured value recording system with a precise control system offering intuitive operation. It can also be expanded into a complete automation solution. The scalability of the JUMO mTRON T allows it to be individually adapted to a particular task. Tamper-proof data recording is just one of its outstanding features. Control and data recording therefore meet the requirements of the AMS2750 and CQI-9 specifications.

The heart of the JUMO mTRON T is a **central processing unit** with a process map for up to 30 input/output modules. The CPU has superordinated communication interfaces including web server functionality. For individual control applications, the system has a **PLC (CODESYS V3)**, program generator, and limit value monitoring functions as well as math and logic modules.

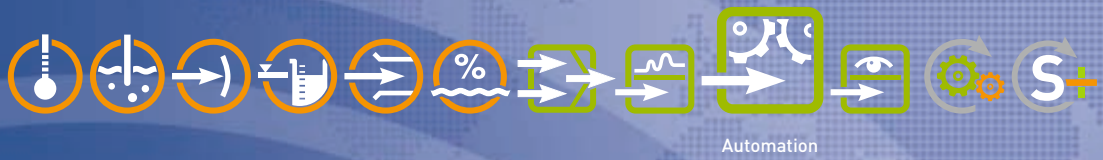
Various components are available as **input/output modules** (e.g. **analog input modules** with galvanically isolated universal analog inputs for thermocouples, RTD temperature probes, and standard signals). As a result the same hardware can be used to precisely record and digitize a highly diverse range of process variables. Every **multichannel controller module** supports up to four PID control loops with a fast cycle time and proven control algorithms. The control loops here operate fully independently which means that they do not require resources from the central processing unit. Overall

the system allows for simultaneous operation of up to 120 control loops so that it can also be used for sophisticated processes. Through expansion slots the inputs and outputs of each controller module can be individually expanded and adapted. **Power controllers** can also be connected directly via the system bus.

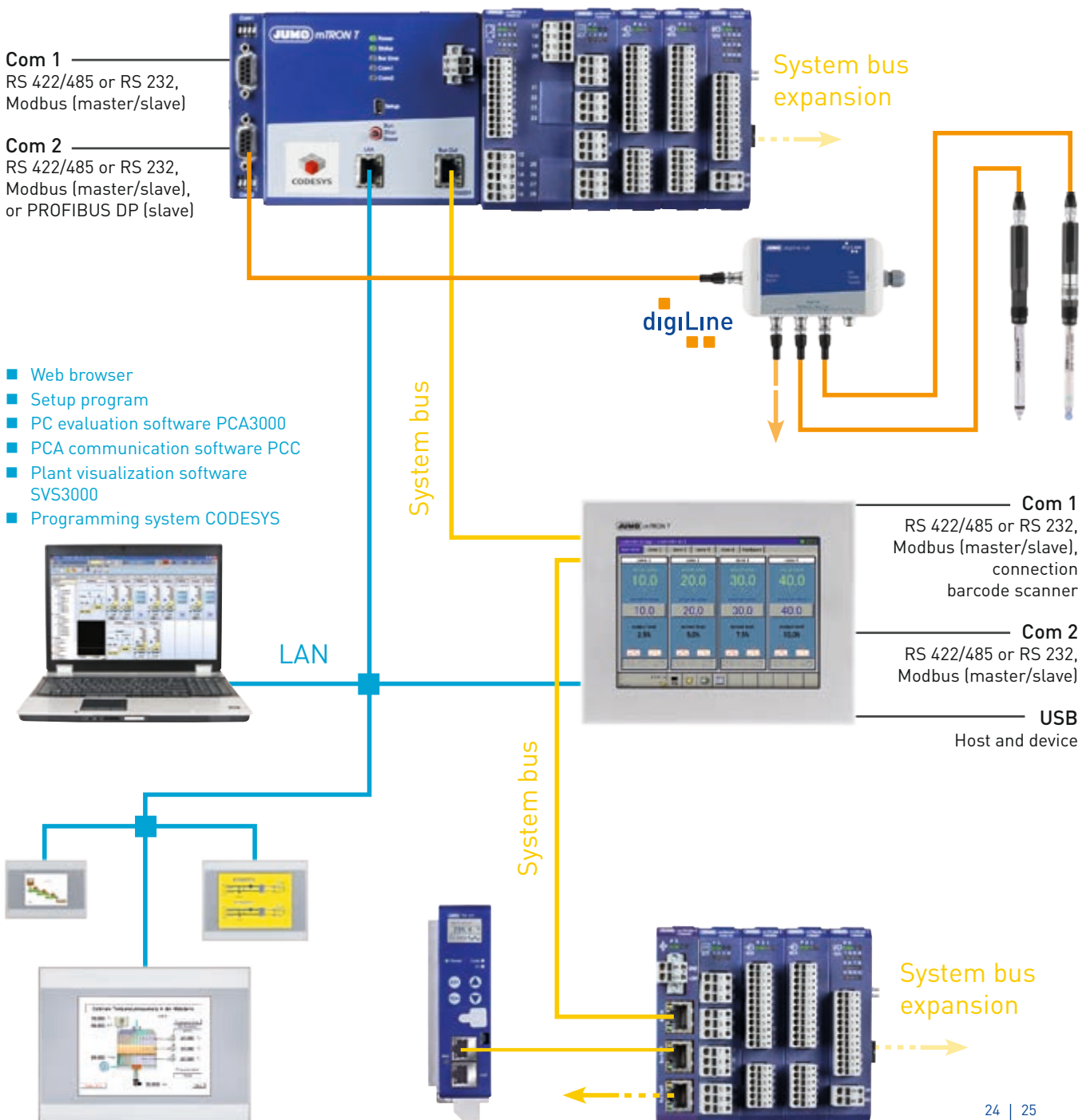
A **multifunction panel** visualizes the measured values and enables convenient operation of the overall system. User-dependent access to parameter data and configuration data can also be set up. Using standard predefined screen masks, startup times are considerably reduced. The recording functions of a fully-fledged paperless recorder, including additional web server functionality, are also implemented in the multifunction panel. The data recording function is tamper-proof and also provides comprehensive batch reporting. Proven PC programs are available for extracting and evaluating historical data. If required, the JUMO mTRON T can be made even more flexible with **additional operating panels**.

A setup program is used for **hardware and software configuration** as well as for project planning of the measurement and control tasks. Users can also develop their own highly efficient automation solutions with CODESYS editors according to IEC 61131-3. And last but not least, **JUMO digiLine sensors for liquid analysis** can also be connected directly to the JUMO mTRON T via PLC application.





## System structure





# Monitoring

To protect people, the environment, the plant, and the product, monitoring temperature limit values is especially important in numerous technical areas of plants and even required by legal regulations in many cases. With JUMO you can operate your plant safely using either electronic or electromechanical products.

## Portfolio:

- Surface-mounted thermostats
- Bimetal temperature switches
- Electronic thermostats
- Panel-mounted thermostats
- Safety temperature limiters and monitors according to DIN 14597
- Dial thermometers

## Approvals:





## Monitoring with electronic safety temperature limiters and monitors as well as electromechanical thermostats

Electronic temperature monitoring is vital in many applications. This is particularly so with safety-related temperature monitoring of special system equipment which can pose an enormous hazard to people, the environment, the product, and production system when defined limit values are breached. The safetyM product line allows JUMO to offer sophisticated electronic temperature limiters and monitors to avoid such hazards. The advantage of SIL-certified devices: in case the plant's defined maximum or minimum temperature is exceeded or not reached, the electronics ensure that the plant is switched off with the utmost precision.

In applications in which no auxiliary energy can be supplied to power the electronic components, the electromechanical thermostats reliably perform their tasks and thereby play a crucial role in ensuring a safe production plant or equipment design. The thermostats operate according to the liquid expansion principle: the liquids in the measuring system expand when heated and transmission mechanics activate a microswitch which then safely shuts down the system.

### JUMO safetyM STB/STW Ex

Safety Temperature limiters and monitors according to DIN EN 14597 and ATEX approval  
Type 701150, 701155



### JUMO safetyM TB/TW 08

Temperature limiter and monitor according to DIN EN 14597 as built-in and DIN-rail device  
Type 701160, 701170



### Surface-mounted thermostat

ATH series  
Type 603021



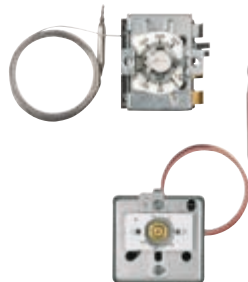
### JUMO heatTHERM-AT

Surface-mounted thermostat  
Type 603070



### Panel-mounted thermostats

EM series, heatTHERM series  
Type 602021, 602030, 602031



### JUMO frostTHERM-AT/-ATE

Frost protection thermostats  
Type 604100, 604170



### Bimetal temperature switch

Type 608301



### Dial thermometer

Type 608002





# JUMO Safety Performance

## The new brand for increased safety

JUMO Safety Performance is a new brand from JUMO. Products marked with this brand are suitable for safety-related plants. Included here are devices that are SIL and PL certified, but also passive elements that are suitable for use in SIL and PL measuring chains. These are labeled with "SIL qualified" and "PL qualified".



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**Functional Safety – Hassle-Free!**

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## Advantages of the new JSP (JUMO Safety Performance) brand

- Certified measuring chain protection up to SIL 3 and PL e possible
- Highest degree of flexibility for the configuration of the SIL components through comprehensive delivery program
- Safe monitoring and shutoff of systems
- Selectable security features (e.g. limiter or monitor function according to DIN 14597)
- Suitable for different measurands such as temperature, pressure and level
- Variable, manufacturer-independent selection of sensor technology and actuators
- Certified measuring chain individually adaptable to the process requirement
- SIL calculation is no longer necessary by the user when the JUMO safetyM is used in combination with JUMO temperature probes
- Also available as explosion-protected compact solution according to ATEX directive in different ignition protection types such as [Ex i] and [Ex e]
- Individual assessment of the safety chain by the experienced JUMO Safety Performance team of experts



## Safety-related switch-off up to SIL 3 (also in ATEX version)

### Certified compact system for temperature



JUMO thermocouples and  
RTD temperature probes

JUMO safetyM STB/STW  
Type 701150



### Compact system for temperature



JUMO thermocouples and  
RTD temperature probes



JUMO dTRANS T07 B SIL  
Type 707081



JUMO safetyM STB/STW  
Type 701150



### Compact system for pressure



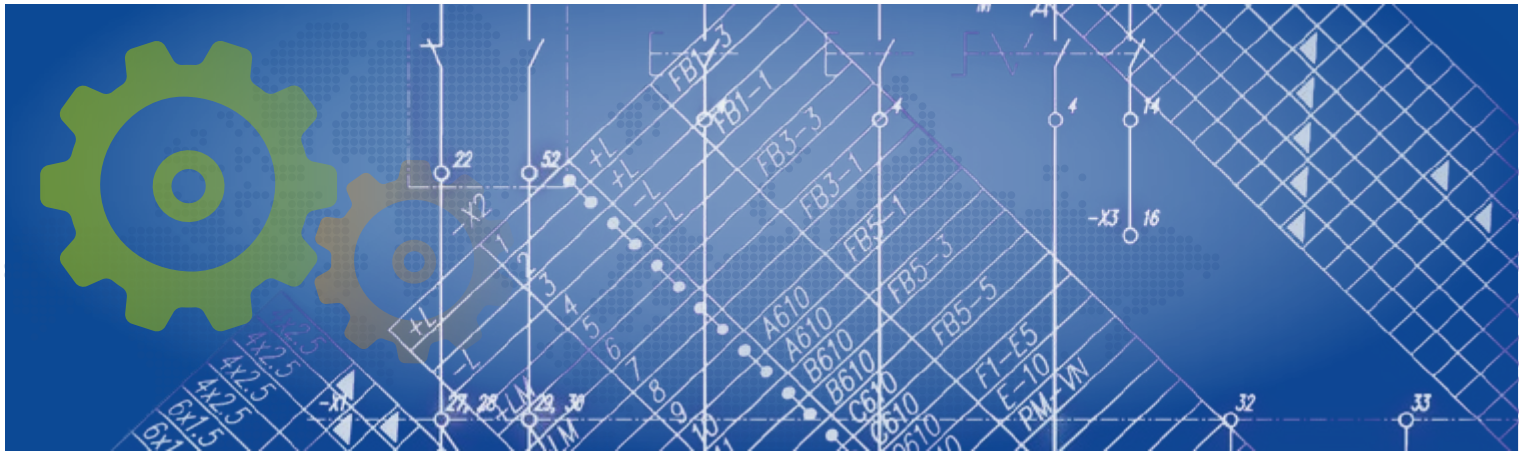
JUMO dTRANS p20  
Type 403025



JUMO safetyM STB/STW  
Type 701150



- The JUMO safetyM STB/STW has an output signal to control the downstreamed safety actuator systems.
- Additional output signal suitable for downstreamed visualization, controlling, and documentation.



# JUMO Engineering

JUMO Engineering, the service area from JUMO GmbH & Co. KG, combines expertise and industry-specific experience in one team. Our engineers and technicians develop customized solutions that are strictly based on your specific requirements. The JUMO Engineering team strongly believes in personalized support and consulting for its customers – from initial contact and the development of a customized solution to its series production. When carrying out the many different industry applications we always strive for optimum results with maximum customer benefits. Our innovative engineering services allow us to achieve this goal.





## Innovative system solutions which specific expertise

We always draw on the feedback from our customers around the world to improve our products. This strategy is reflected in our new developments. We view complex tasks as challenges that allow us to develop tailored solutions for you and at the same time improve our product portfolio. JUMO Engineering with its range of services completes this comprehensive approach.

### Our services

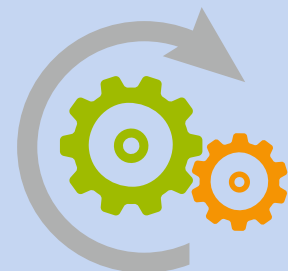
- Feasibility analysis
- Creating a technical concept including product requirements specifications and specification sheet
- Complete project planning and documentation
- Project planning including PLC programming, visualization, network technology, etc.
- Continuous project management
- On-site startup
- Training and support

### Your advantages

- As a central contact partner JUMO develops technical system solutions
- Extensive expertise with all measurement and automation devices
- Global support through experienced specialists
- Flexible, tailored solutions to suit your individual needs and applications

### In a nutshell

- Precise and prompt communication channels:  
This saves you time and prevents mistakes!
- Highly developed expertise for maximum flexibility:  
For fully reliable and secure project planning!
- Technology that has proven itself over decades reduces downtimes:  
For excellent plant and process reliability!





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

