JUMO

More than sensors + automation

Meat Processing Industry

Innovative solutions for your success

Dear Reader,

Food, including sausages and meat, is an integral part of our everyday lives. But only manufacturers know just how much the production and processing of food depends on reliable processes and accurate measurement technology.

Here, JUMO is at your side as a reliable partner to help when you have questions and to provide you with quick solutions. We do so regardless of whether you monitor your process through temperature, humidity, or pH value. We're also at your side for controlling the cleaning process or reducing production costs.

So how do we do it? By applying years of experience and professional expertise. JUMO has been a leading manufacturer of measurement and control technology for more than 60 years. This background has helped us to become an expert partner for the meat processing industry.

We place great value on regular new developments, constant improvement of existing products, and on increasingly economic production methods because only this path allows us to achieve the highest degree of innovation for you.

We at JUMO offer you only the best in the meat processing industry – in particular a multitude of solutions for the most varied applications.

Our solutions support you in implementing HACCP concepts or the IFS standard.

This brochure provides an overview of JUMO's products and systems for the meat processing industry. Of course, we will also work with you to develop individual solutions that are completely customized to your requirements.

The ultimate result of these solutions is consistently high quality!

PS: For detailed information about our products arranged by type and product group number, please visit www.industry.jumo.info.

Contents

Measurement and control technology

Optimal solutions in the production of dry, cooked, and boiled sausages can only be ensured if the measurement and control technology is precisely tailored to the processes. JUMO systems are perfectly suited for this task.

Sensors

Temperature sensors

Temperature is a key aspect to consider in the meat processing industry. JUMO offers a wide range of sensors to measure and monitor temperature. Our temperature sensors are tailored to the processes in meat processing and provide optimal process reliability.

Humidity sensors

In addition to temperature, humidity is another key element to consider when maturing, drying, and storing sausage products. JUMO offers hygrometric sensors to monitor the storage and maturing process as well as to ensure consistent product quality. JUMO humidity transducers equipped with a hair measuring element are sturdy, washable, and available with standardized current and voltage outputs as well as passive resistance outputs.

Pressure transmitters

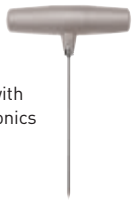
We can offer you the perfect pressure transmitter for your process, regardless of whether that involves vacuum cutting or autoclaving. JUMO offers a variety of proven and reliable pressure measuring devices with different front-flush process connections to meet your requirements.

JUMO screw-in RTD temperature probe
With connecting cable
Type 902050

JUMO FOODtemp
Insertion RTD temperature probe
Type 902350

JUMO Wtrans receiver
For RTD temperature probe with wireless data transmission
Type 902931

JUMO Wtrans T
RTD temperature probe with wireless data transmission, with temperature-resistant electronics deployable up to 125 °C
Type 902930



JUMO dial thermometer
Industry version
Type 608002

JUMO STEAMtemp
Push-in RTD temperature probe in steam-tight version
Type 902830

JUMO hygro transducer and hygro-thermal transducer
Hygrometric
Type 907031

JUMO psychrometer
Humidity measuring device
Type 903562

JUMO DELOS SI
Precision pressure transmitter with switching contacts and display
Type 405052

JUMO dTRANS p30
Pressure transmitter
Type 404366

Measurement and control technology

Controllers, recorders, and indicating devices

Control

Other than temperature and humidity measurement devices, many processes also require control devices. JUMO offers a wide selection of models in this field as well. A particular highlight is the JUMO mTRON T measurement, control, and automation system, which was developed specifically for the processes in the meat processing industry. In addition, the JUMO product portfolio covers the entire measuring chain for process engineering – ranging from transmitters and temperature monitors to multifunctional process controllers.

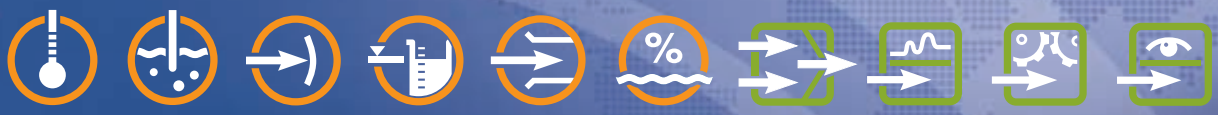
JUMO portable pH measuring device
Microprocessor-controlled
Type 202710

JUMO AQUIS 500 pH
Transmitter/controller for pH value
Type 202560

JUMO mTRON T
Measurement, control, and automation system
Type 705000

JUMO diraTRON
Compact controllers
Types 702110, 702111, 702112, 702113, 702114

JUMO diraVIEW
Digital indicators
Types 701510, 701511, 701512, 701513, 701514



Recording, archiving, and evaluating

With the JUMO LOGOSCREEN paperless recorder range, measured values that require verification can be recorded, archived, and evaluated in an easy and tamper-proof manner. The new generation JUMO LOGOSCREEN nt features an integrated web server (online visualization on the PC) and remote alarm in the event of a malfunction. In addition, this generation includes batch documentation.

Visualizing with JUMO SVS3000

The visualization software JUMO SVS3000 enables you to visualize process data in real time or as a historical trend on your PC. The diverse reporting functions with batch-related protocol creation make the evaluation of archived production data easier. Prefabricated library elements ensure a simplified application creation of the objects to be visualized.

JUMO IMAGO F3000

Process controller for cooking, smoking, and air-conditioning systems

Type 700101

JUMO LOGOSCREEN nt

Paperless recorder with stainless steel front, TFT display, CompactFlash® card, USB ports, and Ethernet with integrated web server

Type 706581

JUMO SVS3000

Process visualization software with batch-related data reporting and evaluation in the network

Type 700755

JUMO IMAGO 500

Multichannel process and program controller

Type 703590

JUMO safetyM TB/TW

Temperature limiter and monitor according to DIN EN 14597, mounted on DIN-rail

Type 701160

JUMO DICON touch

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

Type 703571

Steps in meat processing

The procedures in meat processing and sausage production can essentially be reduced to a small number of basic processes. Acquiring and controlling temperature is crucial here. We hope that you'll be inspired by our solutions for this industry which we will explain on the following pages.

Meat processing

After slaughtering and cutting up the animal, the next crucial step is to cool the meat until it is processed further. Depending on the local circumstances, the meat is transported to the next processing station in either cooled or frozen form. There, the processes of mincing, cutting, smoking, simmering, and maturing (depending on whether dry sausage, boiled sausage, or cooked sausage is being produced) play differing roles. For example, a cooking stage when producing dry sausage does not exist.

The product is handled and stored depending on the type of sausage and required shelf life. In this context, it is important to ensure the correct storage temperature. For example, sausages that have been autoclaved in jars or tins do not require any cooling. In contrast, cooling is crucial when storing boiled sausage. When it comes to smoked sausage, the smoking duration and the sausage type determine whether or not cooling is required.

Cooling

- Temperature
- pH value
- Indicator
- Controller

Mincing

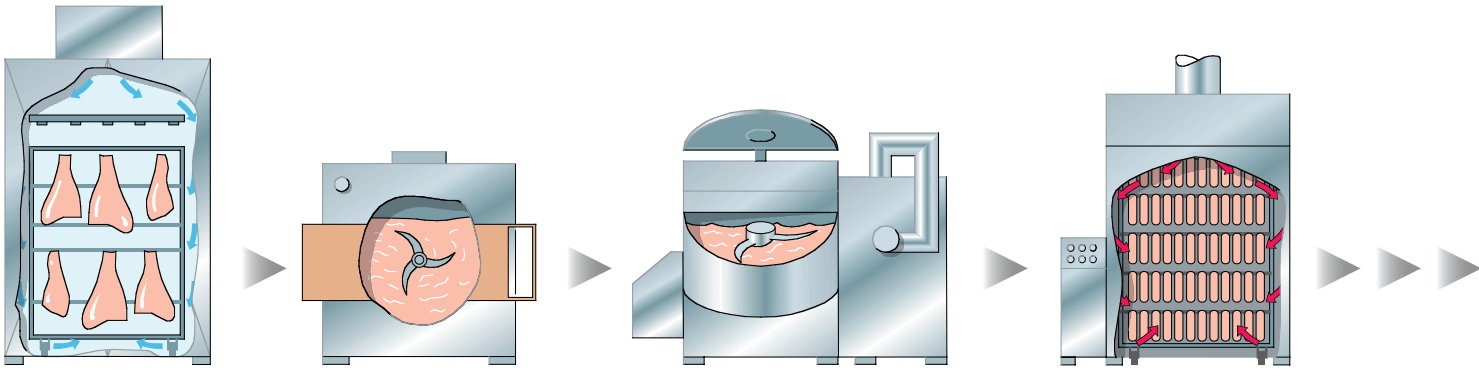
- Temperature
- Indicator
- Controller

Cutting

- Temperature
- Pressure
- Indicator
- Controller

Boiling/simmering/cooking

- Temperature
- Indicator
- Controller



Smoking

- Temperature
- Indicator
- Controller

Maturing/storing

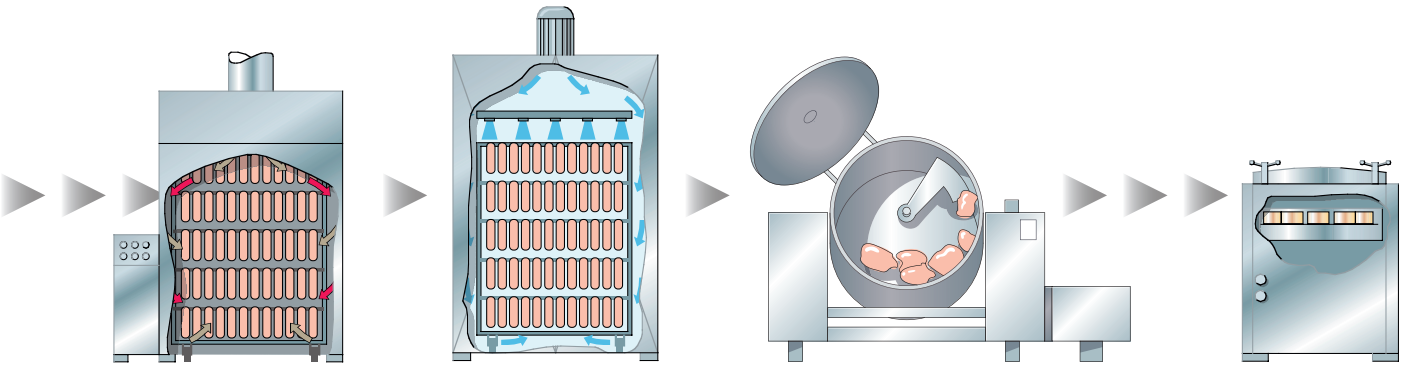
- Temperature
- Humidity
- pH value
- Indicator
- Controller

Tumbling

- Temperature
- Pressure
- Controller

Autoclaving

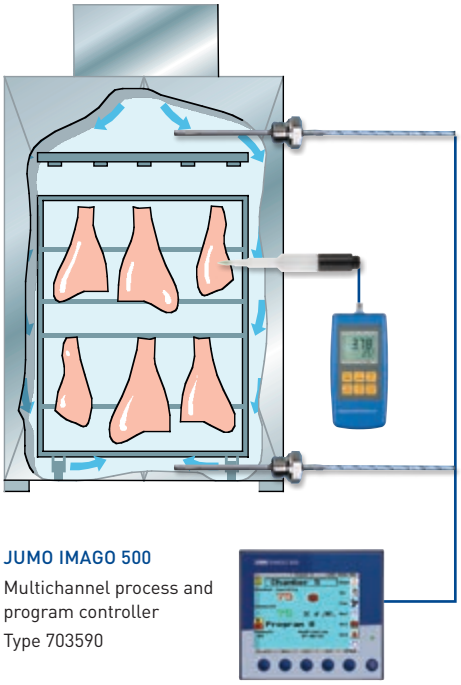
- Temperature
- Pressure
- Indicator
- Controller



Cooling

Measuring the pH value of fresh meat using the JUMO pH insertion electrode

The pH value of meat is considered to be so important because it has a major effect on the meat's quality factors. The pH value allows conclusions to be drawn on the color, softness, taste, water binding capacity, and shelf life. This is because, once the animal has been slaughtered, biochemical processes start to break down the meat which will influence the pH value. Measuring this value allows you to obtain information about the speed of these processes and the quality of the meat.



JUMO screw-in RTD temperature probe
With connecting cable
Type 902050

JUMO pH insertion electrode
For taking measurements in solid substances
Type 201030/62

JUMO portable pH measuring device
Microprocessor-controlled
Type 202710

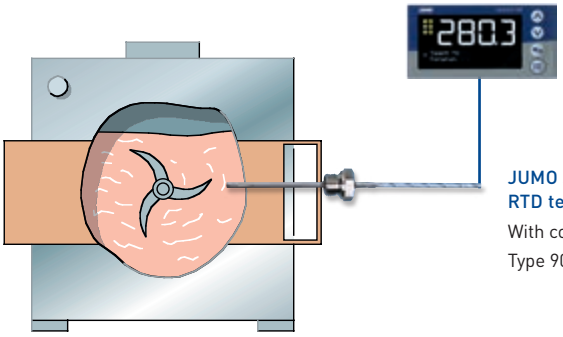
JUMO IMAGO 500
Multichannel process and program controller
Type 703590

Mincing

Monitoring the temperature in the cooled mincer using JUMO diraVIEW while mincing the meat

Mincing is a fundamental process in the meat processing industry. It is carried out using special devices of different sizes, ranging from manually operated mincers to large industrial versions. It is important that meat is not exposed to major temperature fluctuations, particularly not in the range above 7 °C. This is why the cooling chain needs to be observed when mincing and additional cooling must be provided if required.

JUMO diraVIEW
Digital indicators
Types 701510, 701511, 701512, 701513, 701514



JUMO screw-in RTD temperature probe
With connecting cable
Type 902050

Cutting

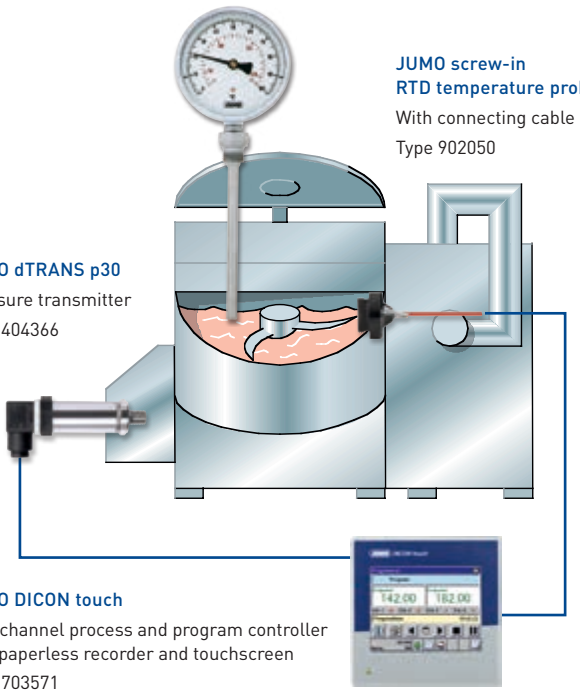
Monitoring the temperature and pressure in vacuum cooking cutters

Vacuum cutters are ideal for ensuring meat has a better color and for cutting the meat more effectively. The use of a vacuum cooking cutter also means that the separate simmering of the meat is unnecessary (e.g. when producing cooked sausage). Temperature plays a key role in these devices since it is instrumental in determining the ultimate quality of the sausage.

JUMO dial thermometer
With bimetal measuring system
Type 608002

JUMO screw-in RTD temperature probe
With connecting cable
Type 902050

JUMO dTRANS p30
Pressure transmitter
Type 404366

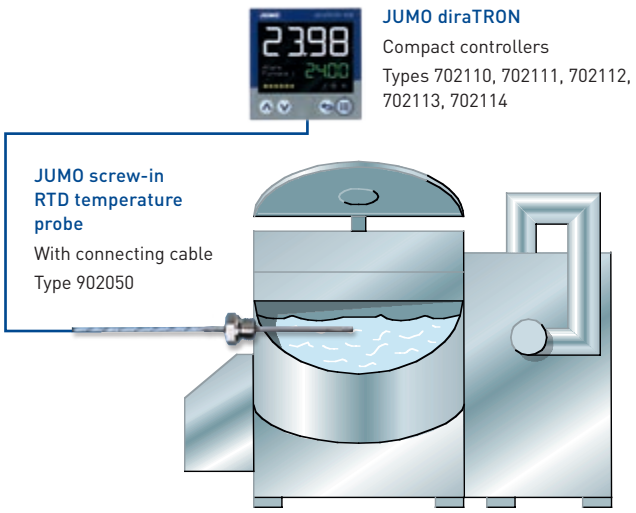


JUMO DICON touch
Two-channel process and program controller with paperless recorder and touchscreen
Type 703571

Cooking

Monitoring the temperature in cooking boilers

The temperature of the water needs to be monitored when cooking or boiling sausages in cooking boilers. The core temperature of the boiled product can also be acquired here using steam-tight insertion probes.



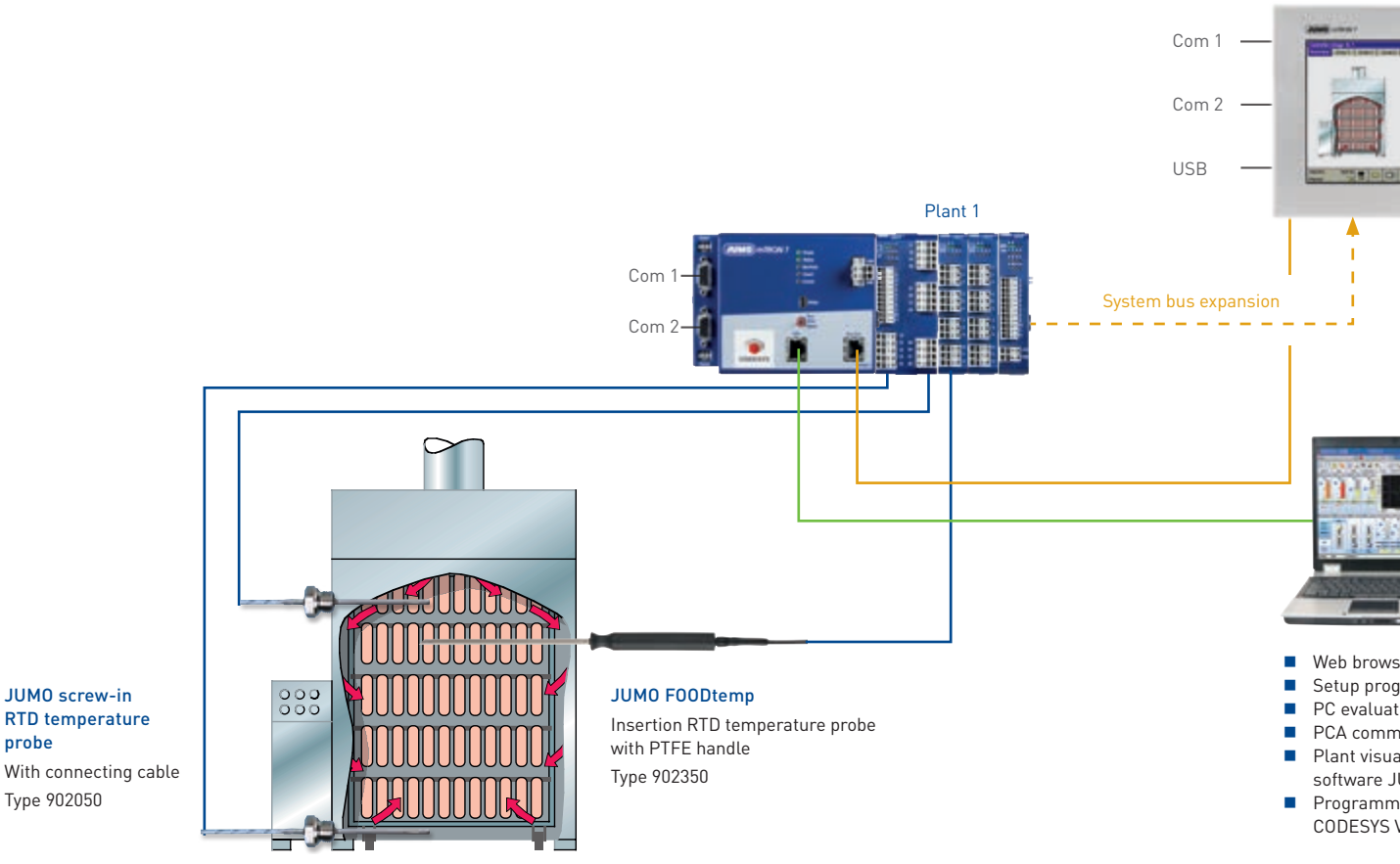
JUMO diraTRON
Compact controllers
Types 702110, 702111, 702112, 702113, 702114

JUMO screw-in RTD temperature probe
With connecting cable
Type 902050

Boiling and simmering

Controlling cooking and smoking processes using the JUMO mTRON T

Cooking and smoking are two essential processes in sausage production. In most cases, chambers designed for either cooking or smoking are used. In large industrial plants, however, these two processes are now often also combined in what are known as continuous or semi-continuous plants. Here, the JUMO mTRON T with its special solution for the meat processing industry is the ideal candidate. With the JUMO mTRON T system, up to nine individual maturing, cooking, smoking, and air-conditioning systems can be operated and controlled while the measured values for the processes are documented for quality assurance. The central processing unit – the heart of the JUMO mTRON T – provides nine asynchronous program generators with a pool of 90 programs. Furthermore, the multifunction panel (HMI) integrates nine recording groups, including batch reporting, to ensure the assignment of the recorded process data. The measured values from the processes are documented in a tamper-proof manner, which is very importance in the meat processing industry. With its modular system structure and the integrated PLC, the JUMO mTRON T automation system can be optimally adapted to control applications for maturing, cooking, smoking, and air-conditioning facilities.



JUMO screw-in RTD temperature probe
With connecting cable
Type 902050

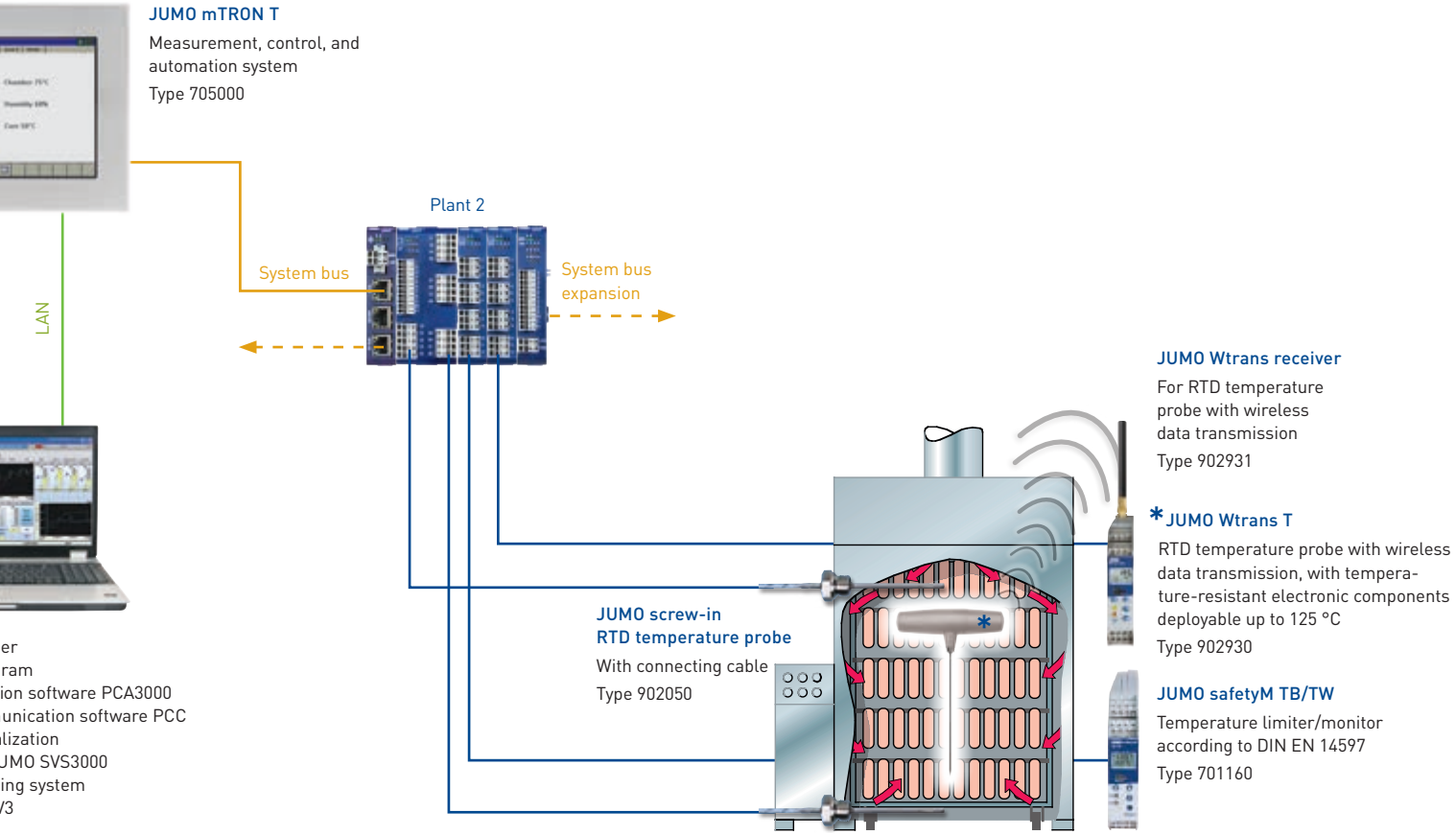
JUMO FOODtemp
Insertion RTD temperature probe with PTFE handle
Type 902350

Smoking and hot smoking

Acquiring the core temperature in continuous plants

Ideally, the products are equipped with a JUMO Wtrans radio transmitter to acquire the core temperature. This device allows the temperature to be measured wirelessly on an ongoing basis. As such, continuous plants can precisely determine the temperature without interruption, which is highly beneficial for documentation and plant control.

Thanks to its wireless installation, the use of a JUMO Wtrans radio transmitter reduces the costs for new installations, maintenance work, and repairs. Electronic components that are resistant to high temperatures can be used in temperatures up to 125 °C.



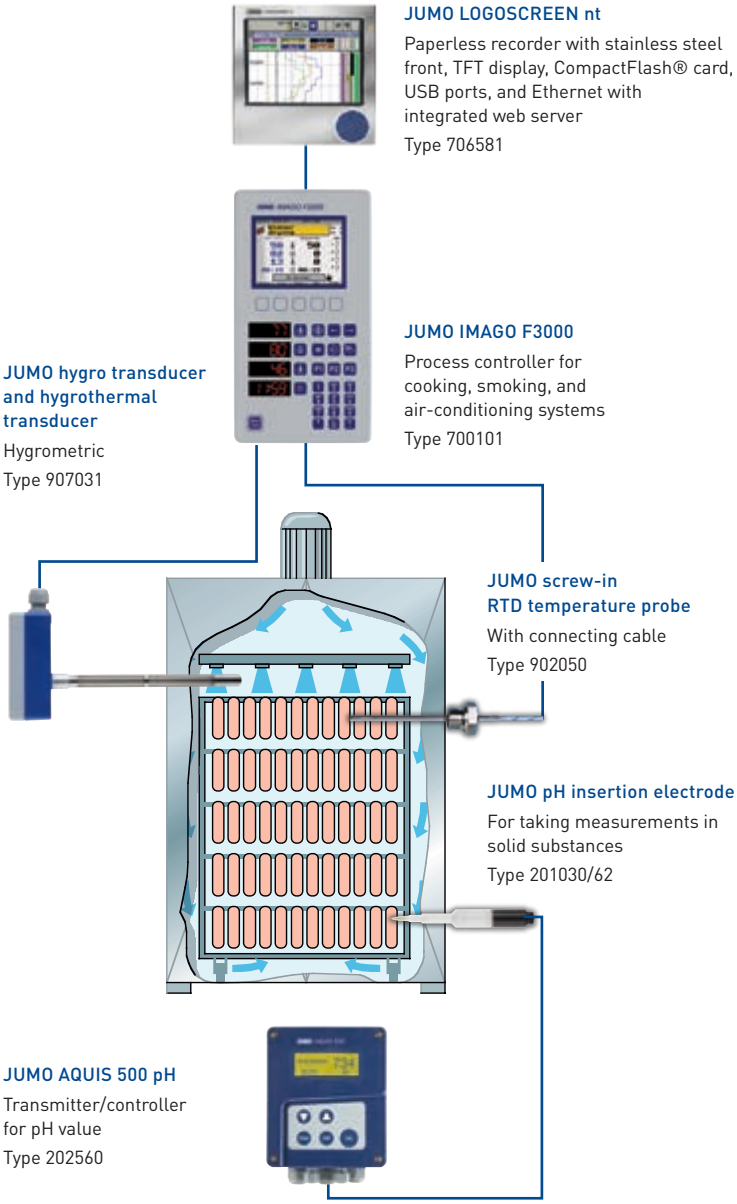
Maturing, storing, and drying

Controlled maturation when producing dry sausages

When producing dry sausages, the maturation/drying phase plays the most important role of all. The products must be dried until they have a residual water content that complies with food regulations. Here, it is important that the water is released evenly and not too quickly, otherwise a high-quality end product cannot be guaranteed. To prevent drying errors, the relative humidity must be in balance with the a_W value of the dry sausage when drying starts. In addition, the relative humidity must only be lowered slowly to allow the water to escape from the inside to the outside of the sausage. The JUMO IMAGO F3000 and JUMO IMAGO 500 program controllers are ideally suited to this task.

Measuring the pH value in meat and sausages

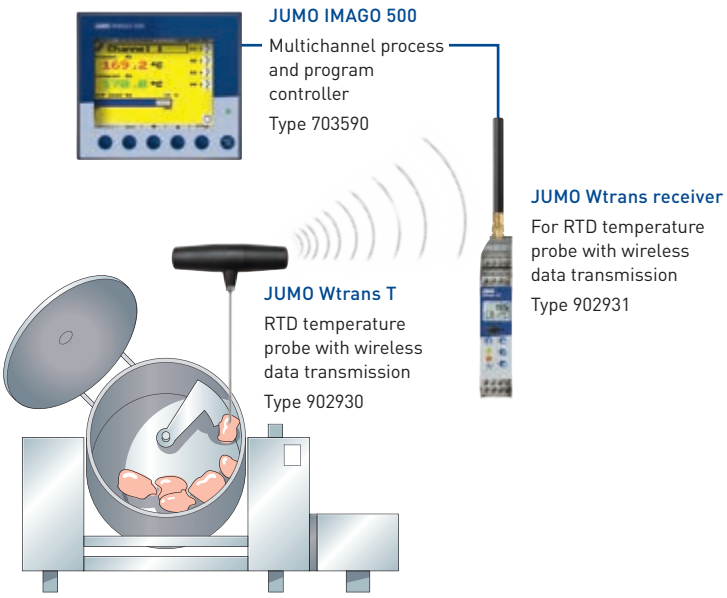
The pH value of meat is linked to its water binding capacity. Meat has the lowest water binding capacity when the pH value is around 5. A standardized optimum value for producing sausages does not exist as it differs from end product to end product. When producing dry sausages, for example, the meat must have a low water binding capacity so that the meat can dry evenly.



Tumbling

Measuring temperature and pressure in tumblers

Tumbling is a process that mixes and moves the meat. This process generally needs to be performed below a certain threshold temperature. In the meat processing industry – particularly so for producing cooked ham – the correct temperature is essential to guarantee that the end product has the best possible quality. When it comes to measuring the temperature and pressure in the tumbler, our two wireless solutions JUMO Wtrans T for measuring temperature and JUMO Wtrans p for measuring pressure are the perfect choice. The devices can be mounted anywhere on the tumbler because no cumbersome cable interfere.



JUMO IMAGO 500
Multichannel process and program controller
Type 703590

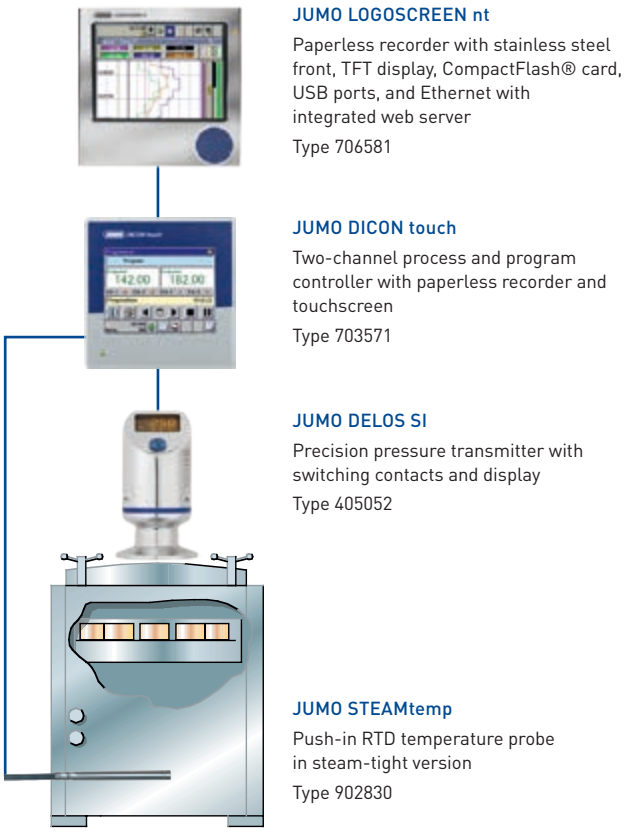
JUMO Wtrans receiver
For RTD temperature probe with wireless data transmission
Type 902931

JUMO Wtrans T
RTD temperature probe with wireless data transmission
Type 902930

Autoclaving

Monitoring the temperature time curve using the JUMO LOGOSCREEN nt when preserving sausages

A long-established method of preservation is boiling or conserving of sausages. Such sausage types are inserted into sealed containers (glass/jar). They are then conserved in an autoclave. Ideally, even several autoclaves can be controlled using the JUMO mTRON T system. This solution for the meat processing industry allows you to control different autoclaves in parallel or independently of one another.



JUMO LOGOSCREEN nt
Paperless recorder with stainless steel front, TFT display, CompactFlash® card, USB ports, and Ethernet with integrated web server
Type 706581

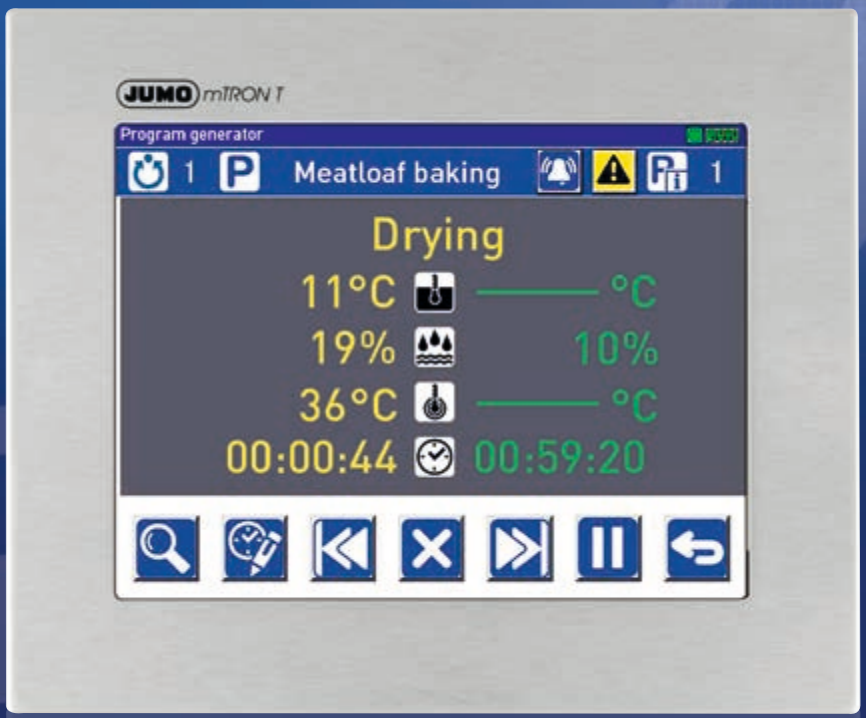
JUMO DICON touch
Two-channel process and program controller with paperless recorder and touchscreen
Type 703571

JUMO DELOS SI
Precision pressure transmitter with switching contacts and display
Type 405052

JUMO STEAMtemp
Push-in RTD temperature probe in steam-tight version
Type 902830

JUMO mTRON T – process engineering

JUMO mTRON T combines a universal measured value acquisition 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. The system was expanded to include process engineering functions for the meat processing industry. These enable plant engineers to automate functions that are required for meat processing (such as reddening, drying, and smoking) for each specific plant. This approach means that complex functions and processes can be provided for users in a clear and understandable manner.



Ultra-modern and absolutely precise

Process engineering steps are considered to be any technical process in which raw or source material is converted into an end product using chemical-physical or biological processes.

For the meat processing industry the firmware of the JUMO mTRON T automation system was enhanced with new functionality. This is how, along with the process engineering application which is configured in the JUMO mTRON T setup, solutions that are tailored to customers' specific requirements are created.

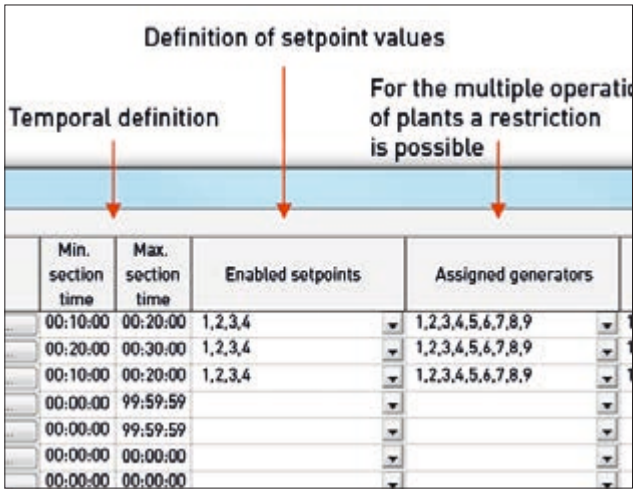
Predefined process engineering steps known as process steps are available to the user. They can be used to select different basic functions and, together with the programs, create a process engineering workflow for producing a range of products. A process step defines the setpoint values, minimum and maximum program section time, and process contacts that are available in each case.

Plant engineers can use the process steps in the system to ensure that end users cannot tamper with the components of their plants.

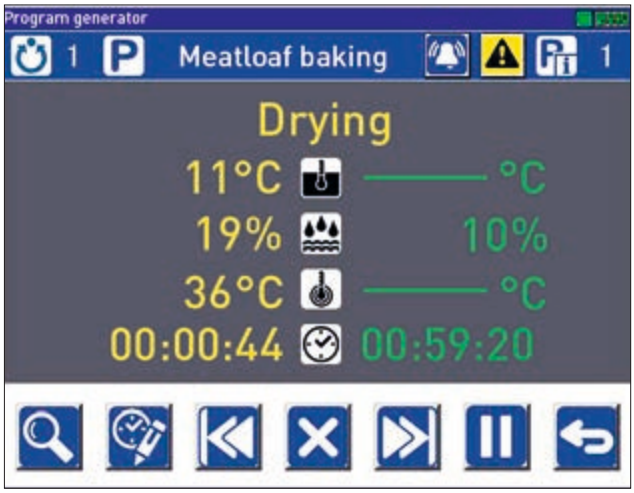
The JUMO mTRON T multifunction panel can be used to control plants. As a result, a program can be started and stopped as well as created and modified. Temporary changes can also be made using the multifunction panel. The management of batches and the associated data has also been taken into account in the overall application. The option to connect additional operating panels in the application has been provided from the very outset, thereby allowing the relevant hygiene requirements to be met for each specific plant.

Your benefits:

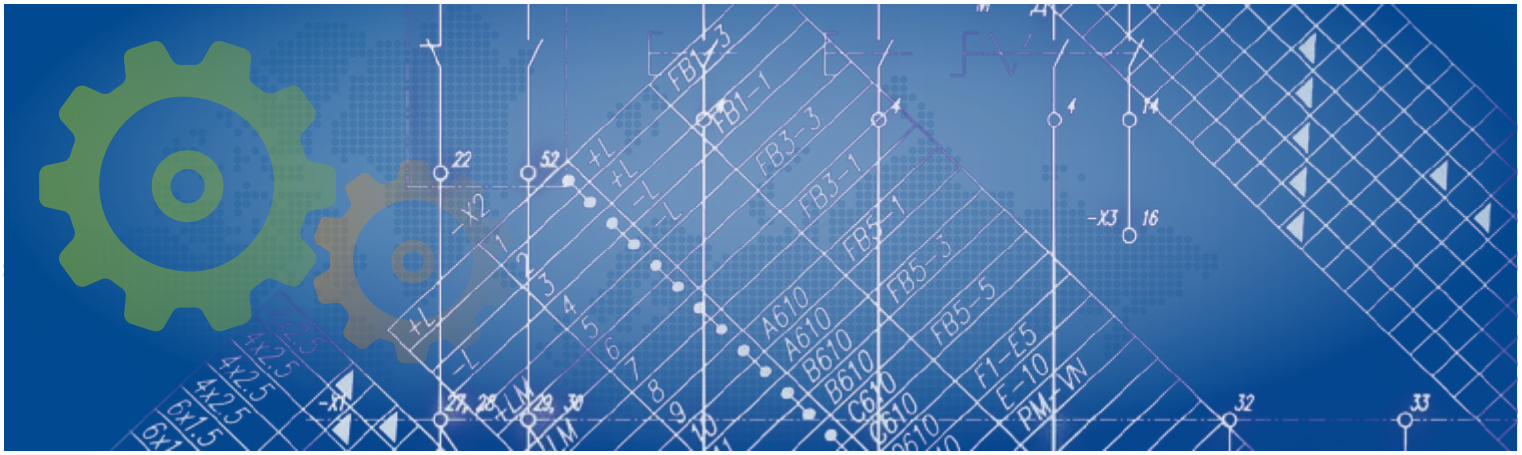
- You have maximum flexibility for your plant as the functions and design can easily be amended
- You have outstanding process reliability thanks to tamper-proof data recording and individual operating rights
- Special customer requests can be implemented thanks to the modular hardware and PLC functions



Process step editor



Process engineering



JUMO Engineering

JUMO Engineering, the new 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 from the experts

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

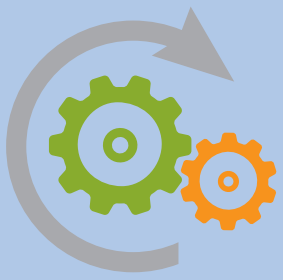
- Feasibility analysis
- Creating a technical concept including product requirements specifications/specification sheet
- Complete project planning and documentation
- Project planning including PLC programming, visualization, network technology, etc.
- Continuous project management
- On-site startup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

Your advantages

- JUMO, as the central contact partner, develops a technical system solution for you
- You benefit from our extensive expertise with regard to 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:
  You benefit from fully reliable and secure project planning!
- Technology that has proven itself over decades reduces downtimes:
  As a result you get excellent plant availability and process reliability!



OneTemp pty ltd

measure | control | record

1300 768 887

www.onetemp.com.au

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