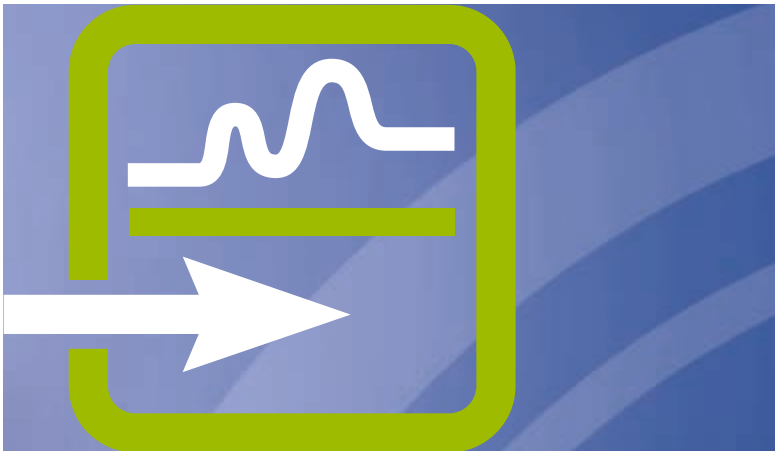
More than sensors + automation

Recording

Innovative solutions for the toughest requirements



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Dear Reader,

To acquire, record, archive, and evaluate process data, devices are used in the industrial sector that can generally be described as recorders or printers for measured values.

A special device group here consists of paperless recorders in which the formerly-used recorder paper is now replaced by a TFT color screen and an electronic data storage unit. JUMO LOGOSCREEN paperless recorders belong to this device group. To a very large extent they fulfill the needs of the users in terms of faster and more secure data recording, tamper-proof archiving, and convenient data evaluation on the PC.

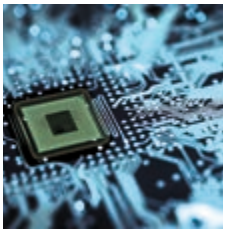
For decades JUMO has been offering proven solutions for the safe and reliable monitoring of plants and production processes with its recording products.

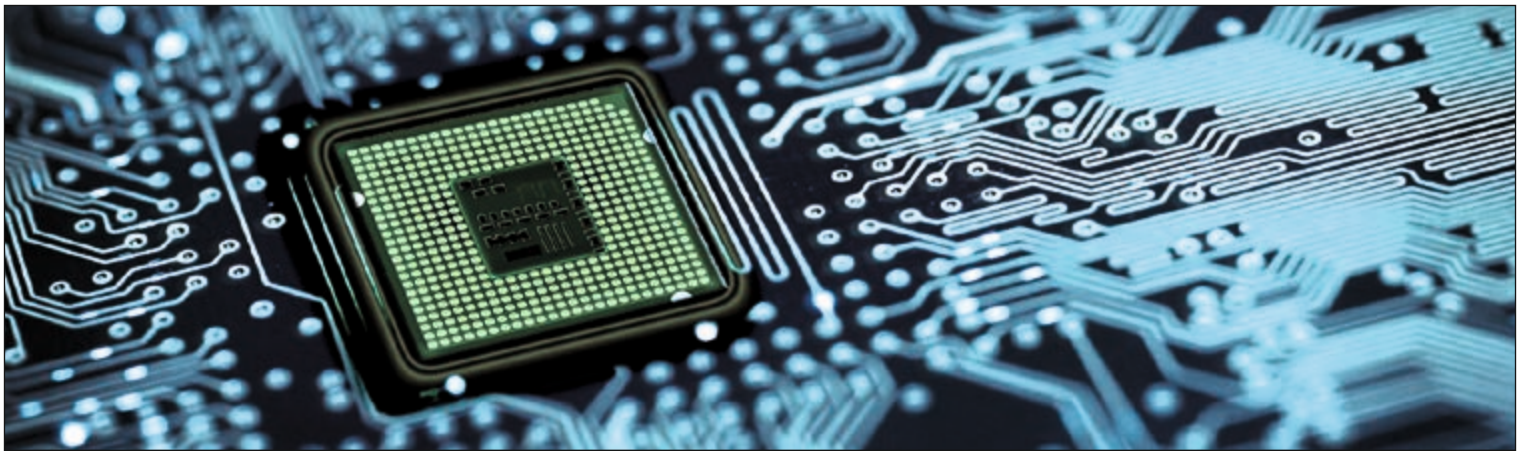
So how do we do it? Through long-standing experience and expertise. For more than 70 years JUMO has been one of the leading manufacturers in the field of measurement and control technology and consequently the company is also a professional partner for recording. We place great value on regular new developments, 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.

This brochure provides an overview of JUMO's products and systems from the field of recording. Other than the paperless recorders we also introduce our JUMO mTRON T modular measured value recording system that can be expanded to a complete automation solution upon request.

Detailed information about our products can be found using the given type number at www.jumo.net.

Table of contents



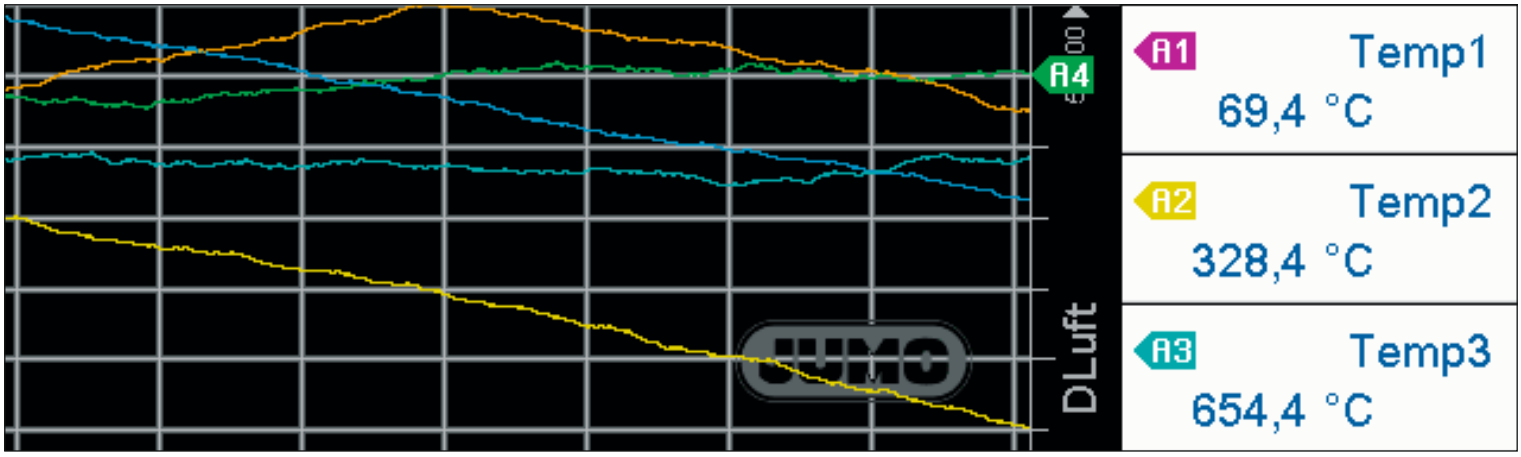


Recording

Today, process-related recording is an essential part of many production processes. For on-site documentation, JUMO offers reliable process data recording through the paperless recorder family JUMO LOGOSCREEN and the measured value recording system JUMO mTRON T. All devices have an integrated lifecycle data management (LDM) which enables a quick and easy-to-use evaluation of the recorded data.

The most important industries

Today, paperless recorders have replaced paper recorders in most areas of process technology. Among other areas, paperless recorders are used in chemical production, power plants, water and wastewater engineering, as well as plant and apparatus engineering.



Paperless recorders

The paperless recorders of the JUMO LOGOSCREEN series offer you a wide range of options for recording your process data. From the paperless recorder in the entry level to the complete automation system with integrated measurement data acquisition, JUMO supports you with every registration task by providing the appropriate solution.

FDA 21 CFR Part 11

c UL us

Paperless recorders

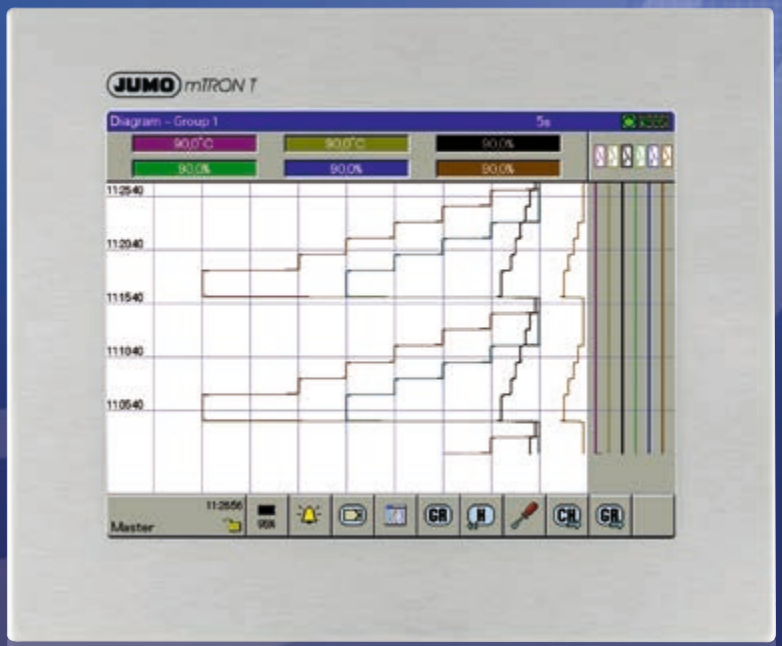
The JUMO LOGOSCREEN 601 is the entry-level model in the JUMO paperless recorder series. It has up to 6 measuring inputs, a 5.7" TFT color screen, and the option of monitoring limit values. Network-capability, batch reporting, and report functions are also part of the standard version. The JUMO LOGOSCREEN 700, on the other hand, is exceptionally well suited for demanding recording tasks. It offers a high level of scalability with up to 18 universal measurement inputs as well as up to 120 external analog and digital measurement channels. These can be acquired as required through the communication interfaces. Both devices have a PROFINET interface and meet the requirements of AMS2750 and CQI-9 as well as FDA 21 CFR Part 11 for electronic recording of process data.

Technical data

Designation	JUMO LOGOSCREEN 601	JUMO LOGOSCREEN 700
Data sheet	706521	706530
Display	5.7" TFT color screen (640 × 480 pixels, 16-bit color depth)	
Operation	Resistive touchscreen	
Front panel	Die-cast zinc with decor foil, (144 × 144 mm format)	
Protection type on the front	IP65	
Inputs and outputs	Up to 6 analog inputs; up to 6 digital inputs, up to 2 analog outputs; up to 12 digital inputs/outputs, including up to 2 high-speed counting inputs (up to 12.5 kHz); 1 relay output (changeover contact)	Up to 18 measurement inputs (universal analog inputs); up to 3 analog outputs; up to 18 digital inputs; up to 24 individually switchable digital inputs/outputs, including up to 8 high-speed counting inputs (up to 12.5 kHz); up to 7 relay outputs (changeover contacts)
Inputs via interface	24 external analog inputs and 24 external digital inputs as well as 14 external texts (10 batch texts, 4 event texts)	120 external analog inputs and 120 external digital inputs as well as 74 external texts (64 batch texts, 10 event texts)
Internal channels	Standard: 6 counters/integrators; 4 group reports (min./max./average) Optional: 6 math channels, 6 logic channels, 2 high-speed counter channels, ST code with 40 input and 40 output variables each	Standard: 30 counters/integrators, 10 group reports (min./max./average) Optional: 20 math channels, 20 logic channels, up to 8 high-speed counter channels, ST code with 40 input and 40 output variables each
Recording channels	Up to 24 analog and digital channels	Up to 60 analog and digital channels
Memory cycle	Variable cycle time as of 125 ms	
Internal memory	1 GB	
External storage media	USB flash drive for data export	
Voltage supply	AC 110 to 240 V +10/-15 %, 48 to 63 Hz or AC/DC 20 to 30 V, 48 to 63 Hz	
Interfaces	Standard: RS232/485 for barcode scanner or Modbus master/slave; Ethernet (Modbus TCP master/slave); USB (host/device); optional: PROFINET IO device	
Approvals	cULus; FDA compliant according to 21 CFR Part 11; AMS2750 and CQI-9 compliant	
Configuration	On the device or via easy-to-use setup program	
Special features	Max. 4 measuring groups with 6 analog and 6 digital channels; batch protocol with automatic batch printout; up to 6 process screen displays; library with up to 100 images; up to 2 auxiliary lines per measuring channel in horizontal or vertical diagram; individual adaptation to user applications and batch control via ST code; up to 2 counting inputs (12.5 kHz) for flow measurement, etc.; user web server configuration possible	Max. 10 measuring groups with 6 analog and 6 digital channels; 5 adaptable batch protocols with automatic batch printout; up to 10 process screen displays; library with up to 100 images; up to 2 auxiliary lines per measuring channel in horizontal or vertical diagram; individual adaptation to user applications and batch control via ST code; up to 8 counting inputs (12.5 kHz), for flow measurement, etc.; user web server design possible; measuring cards with highly insulating measuring inputs (optional)

Measured value recording system JUMO mTRON T

The JUMO mTRON T measured value recording system combines JUMO's extensive process expertise with a simple, application-oriented, and user-friendly configuration concept. JUMO mTRON T has modular design, uses an Ethernet-based system bus, and can, if required, be expanded to a complete control and automation system including PLC. As a result, the device is also suitable for the implementation of decentralized automation tasks.



JUMO measured value recording system – JUMO mTRON T

The JUMO mTRON T measured value recording system is made up of a central processing unit (CPU) type 705001, a multifunction panel (HMI) type 705060, as well as controller, input, and output modules (I/O modules). Up to 30 I/O modules can be connected per CPU. A router module (type 705040) is available for decentralization. The system has a DC 24 V voltage supply. Up to 54 analog and digital measured values can be recorded with the recording function in the multifunction panel (HMI). If more than 54 analog and digital process values are to be recorded and protocolled then the plant visualization software JUMO SVS3000 (type 700755) is used to carry out this task.

Modules	Analog input module 4-channel	Analog input module 8-channel	Digital input or output module
Type	705020	705021	705030
Measurement inputs	4 universal analog inputs; 1 digital input; universal analog inputs for RTD temperature probe, thermocouple, and standard signals	8 analog inputs for RTD temperature probes in two-wire circuit; 1 digital input	12 channels that can be configured individually as DC 24 V digital input or as DC 24 V digital output, max. 500 mA
Interfaces	A USB device interface (setup), a LAN connection (Ethernet), and 2 system bus connections are available per default (in CPU and HMI). As an option, (in CPU and HMI) up to 2 interfaces can be used for fieldbus applications. Furthermore, USB host interfaces (e.g. for a USB flash drive) are available in HMI.		
Special features	HMI with recording function for up to 9 groups with 6 analog and 6 digital inputs respectively. Each recording group has batch reporting available. Batch data can be entered by touchscreen or loaded via interface (e.g. by barcode scanner). Integrated web server, math function in the optional controller modules, PLC CODESYS V3 in the central processing unit for the monitoring of measuring signals, and further calculations.		

JUMO mTRON T – Your System

The scalable measuring, control, and automation system

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. Tamper-proof data recording is just one of its outstanding features. Control and data recording therefore meet the requirements of the AMS 2750 and CQI-9 specifications.

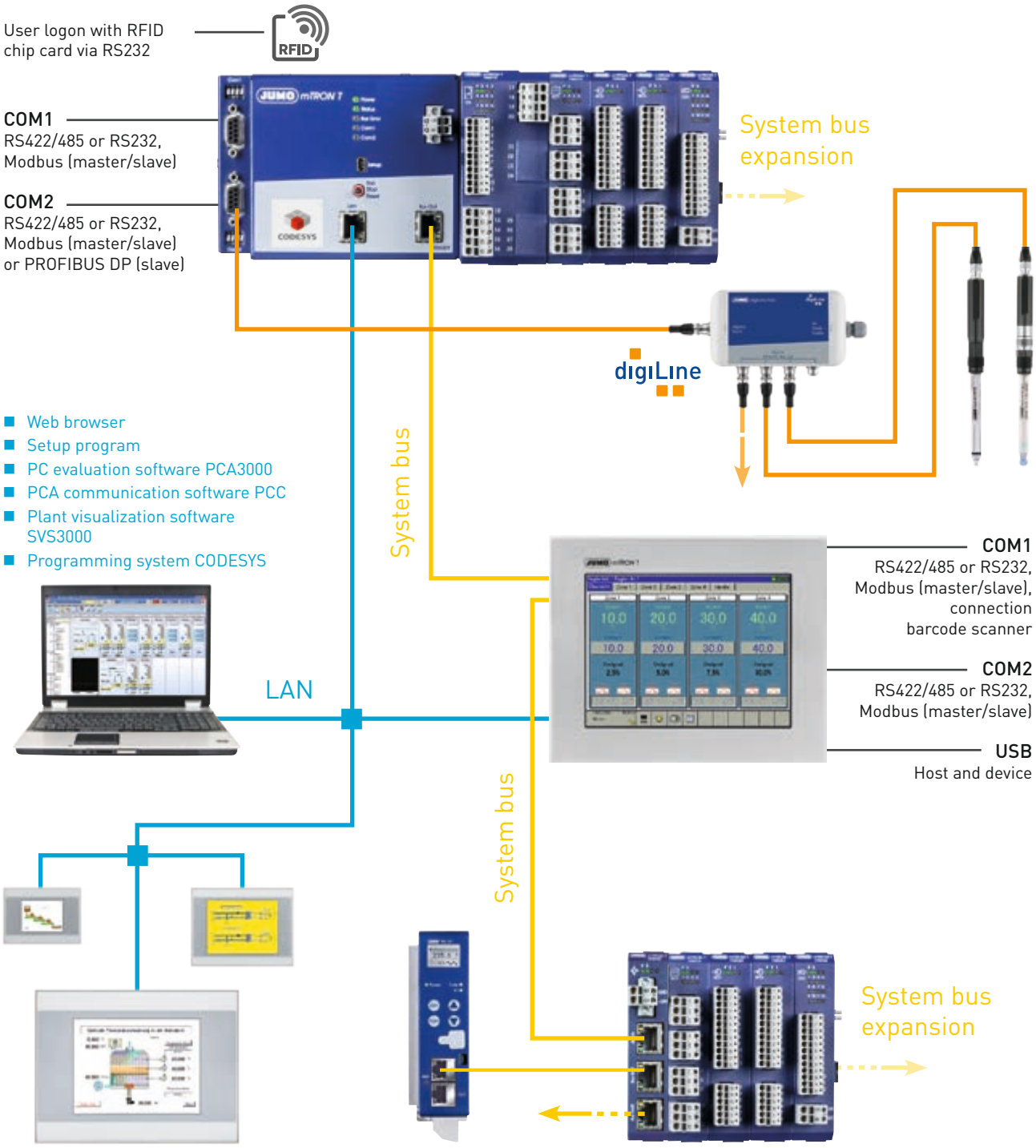
The heart of the JUMO mTRON T is a **central processing unit** with a process map for up to 30 input and output modules. The CPU has superordinated communication interfaces including web server functionality. For individual control applications, the system has a **PLC (CODESYS V3)**, program generator,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

Various components are available as **input and 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 4 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**, such as those of the JUMO TYA 200 series, 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**.

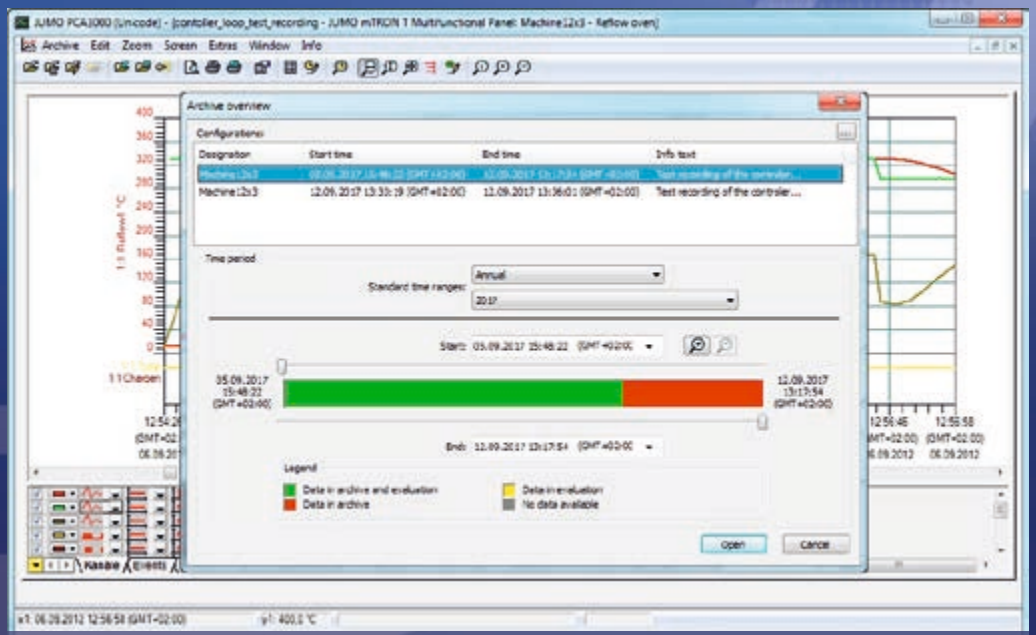
A setup program is used for **hardware and software configuration** as well as for project planning of the measured value recording and control tasks. Users can also develop their own highly efficient automation solutions with CODESYS editors according to IEC 61131-3. Last but not least, **JUMO digiLine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

System structure

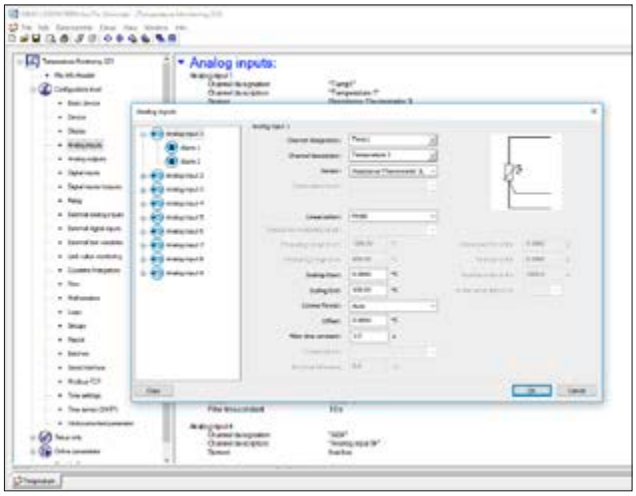


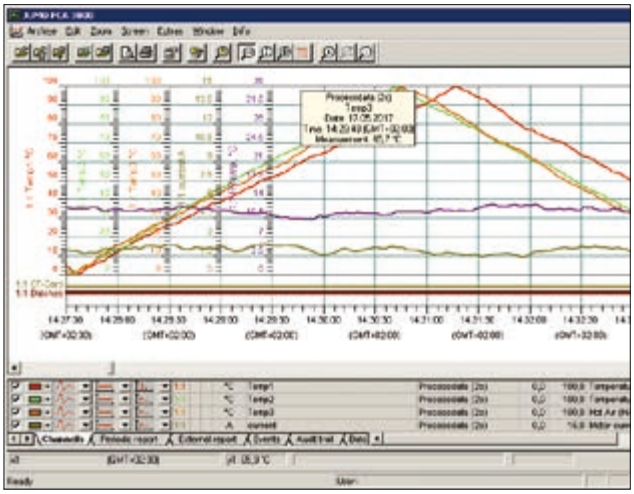
Software

For all JUMO paperless recorders as well as for the JUMO mTRON T measured value recording system, PC software components are available for configuration, communication, and data evaluation. Simple operation, fast evaluation, and secure archiving of measured data are the criteria that define these software components.



PC software components





JUMO setup program

You can use the JUMO setup program – conveniently on your PC – to carry out project planning and configuration of the respective device. Integrated auxiliary functions assist you in adjusting the device function in your process or your application.

- User-friendly configuration, parameterization, and startup
- Diagnosis function (display of the process data)
- Input of math or logic formulas
- ST editor with easy-to-use online debug function*
- Process screen editor
- Simple printout of the configuration for documentation purposes**

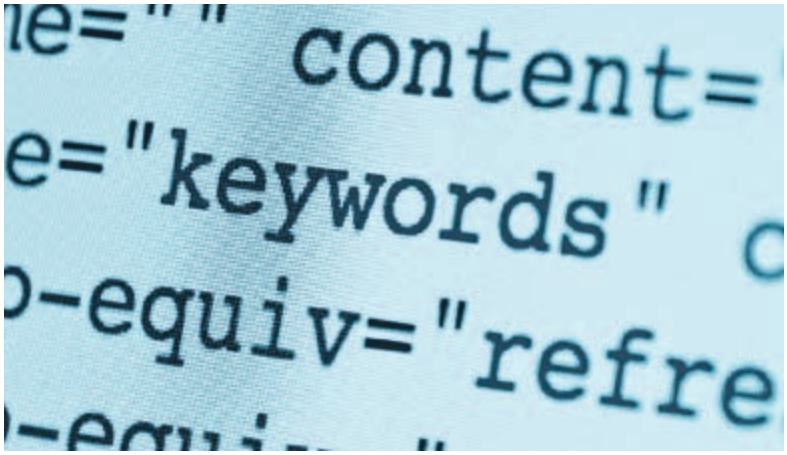
JUMO PCA3000 – evaluation software

The PC-based, professional evaluation software JUMO PCA3000 can be used to manage, archive, visualize, and evaluate historical process data (measurement data, batch data, notifications, etc.). The data can be read via USB flash drive or made available for central data processing using the JUMO PCC communication software.

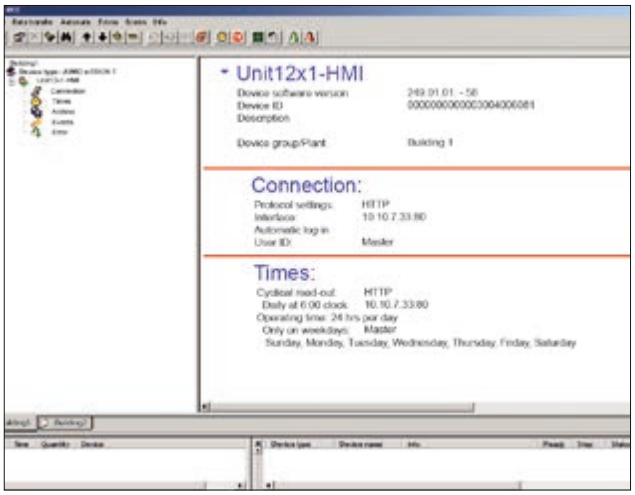
- Easy, straightforward archiving of all process data in a file
- Archived data can be directly read and visualized from the CD-ROM or DVD
- Graphical measured value processing: evaluation of the measurement data using min./max. search and zoom function (magnifying glass)
- Data export is possible with the JUMO PCA3000 form output (optionally with automatic printout) in various formats (CSV, HTML, PDF)

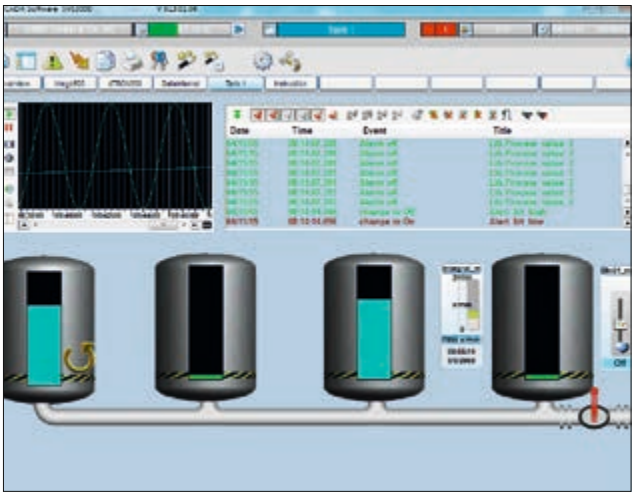
* Only for JUMO LOGOSCREEN 601 and 700

** Printout of configuration with setup only for JUMO LOGOSCREEN 601 and 700; is in preparation for JUMO mTRON T measured value recording system



PC software components





JUMO PCC – PCA communication software

PCC communication software is ideally geared towards PCA3000 and allows for easy data extraction via Ethernet and USB interface.

- Time-controlled, automatic data extraction via Ethernet interface
- Easy, straightforward archiving of all process data in a file on a hard disk drive or a network server
- Automatic time synchronization with the connected paperless recorders
- Can be launched as a Windows system service
- Email notification in the event of communication failure

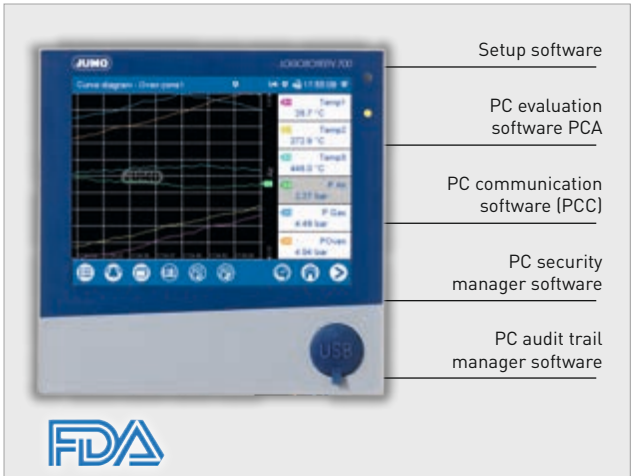
JUMO SVS3000 – plant visualization software

The visualization software 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. Thanks to preprogrammed graphical objects, plant-specific components and processes can be easily visualized in the form of group and process screens. You have the option of processing 75, 250, 1000, or 5000 process variables.

- Comprehensive library with graphic elements for individual process screens
- Preprogrammed graphic objects for depicting JUMO devices
- Quick and simple creation of customized group screens and trend screens
- Plant operation via group screens and process screens
- Extensive documentation function with continuous and batch related evaluation
- Search function for date and time, plant and user-definable batch criteria
- Automatic printout and data export

FDA-compliant data recording

Data recording during sterilization



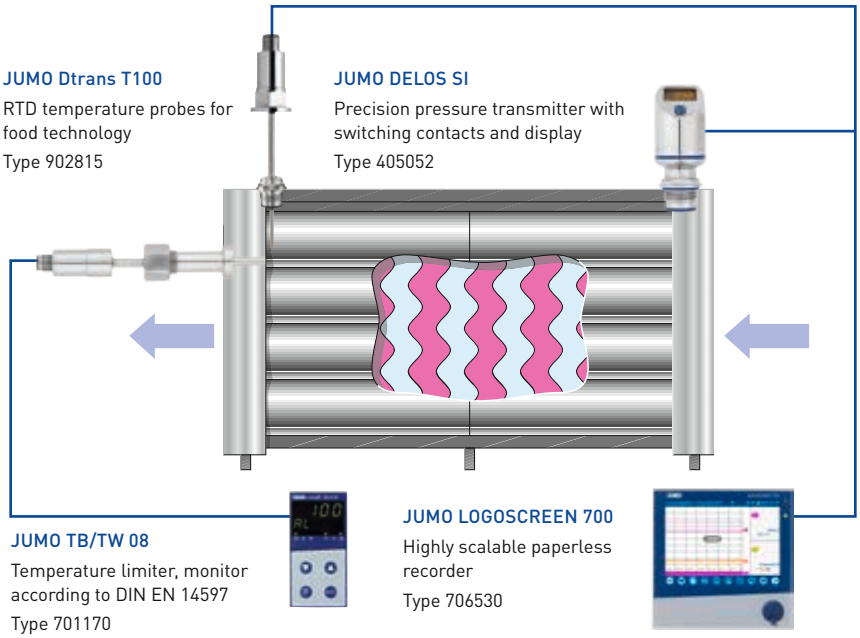
FDA software package

In the pharmaceutical and food industry, product manufacturing is subject to a mandatory record keeping requirement. In the past, people used paper-based recorders for recording process data. To protect the consumer, the parameter values recorded on paper were archived for decades to ensure complete proof of production and traceability in the event of deviations. The introduction of paperless process recording technology has led to a shift away from paper-based recording. For the proper and clearly traceable recording of electronic process data, USA's Food & Drug Administration (FDA) passed 21 CFR Part 11 (Code of Federal Regulations) in 1997.

This law defines the requirements for Electronic Records and Electronic Signature. It regulates the paperless logging of production processes as well as the electronic signature, which corresponds to the signature by hand. Today, the observation of the 21 CFR Part 11 requirements forms the foundation for the global acceptance of products from the pharmaceutical and food industry. The JUMO LOGOSCREEN 601 and JUMO LOGOSCREEN 700 paperless recorders, the associated PC software components, and their functional features meet the FDA requirements according to 21 CFR Part 11 with regard to Electronic Records and Electronic Signature.

Milk heating application

You want to reliably record and monitor your data over the long term? The JUMO LOGOSCREEN paperless recorder series and the JUMO mTRON T automation system can be used specifically in hygienically-sensitive areas so that all data can be recorded batch-based and tamper-proof.



Ultra-modern and absolutely precise

The EU regulations for food hygiene EC no. 852/2004 and specific hygiene rules for food of animal origin EC no. 853/2004 obligate food processors – in the context of the HACCP concept – to name and monitor critical control points in the process chain. Producing flawless products is always the goal here. The JUMO LOGOSCREEN series and the JUMO mTRON T automation system help ensure that your process chain is monitored reliably. The devices of both series fulfill the requirements and regulations for heating plants. They also offer 60 analog and digital inputs with which you can monitor your complete processes and record them with a memory cycle of 125 ms. To ensure tamper-proof data recording the devices have batch reporting up to 5 batches for the JUMO LOGOSCREEN series and up to 9 batches for the JUMO mTRON T automation system. The functional capacity is rounded off through the integrated web server with online-visualization, which always keeps you up-to-date. The described devices can monitor and fully document all heat treatment processes. As a result, the devices are perfectly suited to meet the requirements that food processors face.

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 appreciated. 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 Web site 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 5 continents available to all of our customers so that we can offer professional support for everything concerning our product portfolio. Whether you need assistance in a consultation, with product selection, engineering, or optimum usage of our products – a team of professional JUMO employees is near you, ready to help. Even after our devices are commissioned you can count on us. Our telephone support line is available to give you answers quickly. If a malfunction needs to be repaired on site, our Express Repair Service and our 24-hour replacement part service are available to you. That provides peace of mind.

Maintenance & Calibration

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

www.jumo.net

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