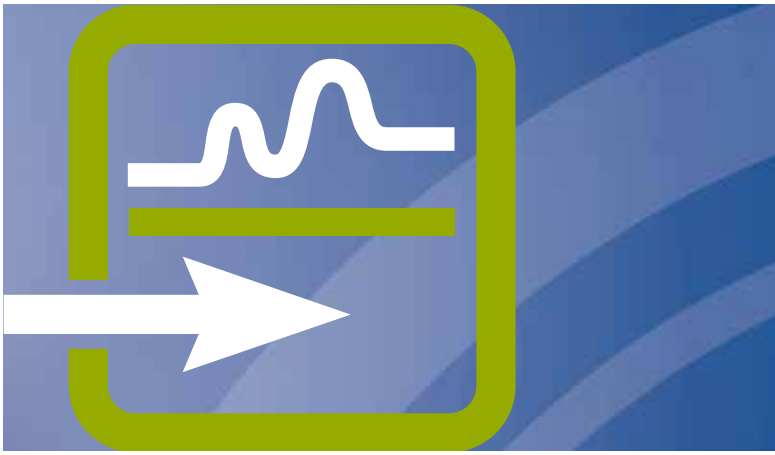
More than sensors + automation

Recording

Innovative solutions for the highest requirements



Contact
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Dear Reader,

To record, register, 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.

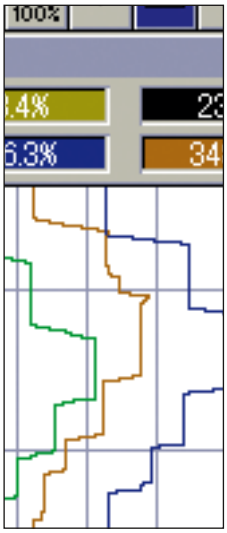
With its products from the field of recording, JUMO has been offering established solutions for secure and reliable monitoring of plants and production processes for decades.

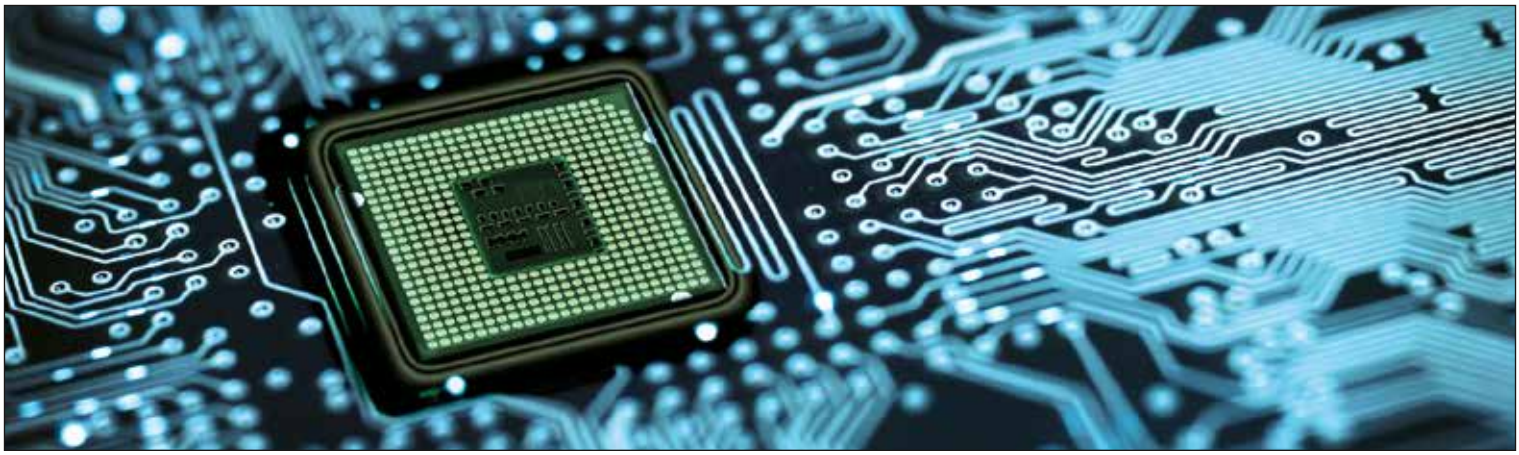
So how do we do it? Through long-standing experience and expertise. For more than 60 years JUMO has been one of the leading manufacturers in the field of measurement and control technology and consequently the company is also a professional partner for recording. We place great value on regular new developments, 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.

Contents



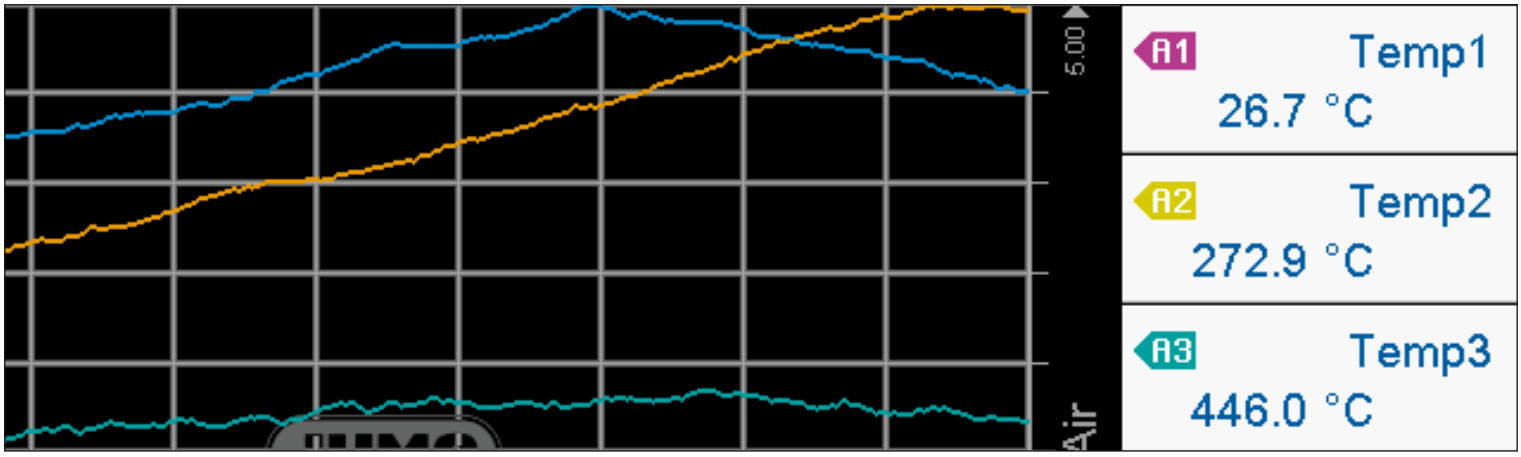


Recording

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

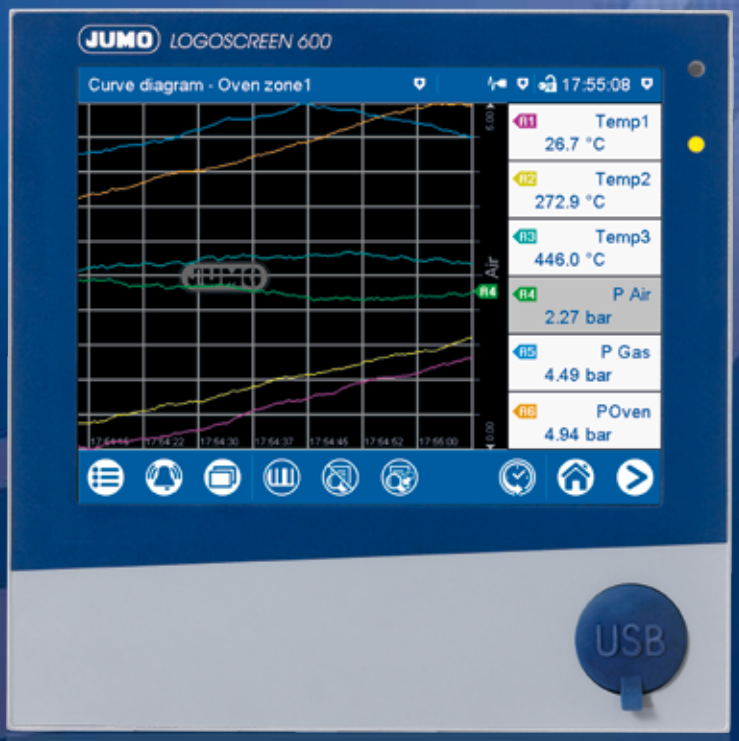
The most important industries

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, and plant and apparatus engineering.



Paperless recorders

The paperless recorders of the JUMO LOGOSCREEN series offer you a diverse 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.



Paperless recorders

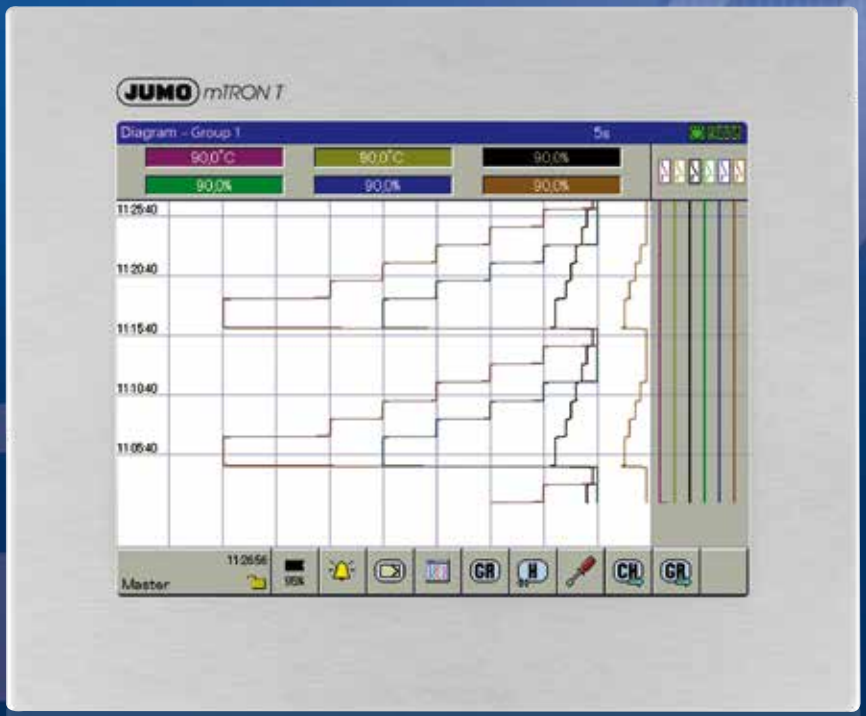
The JUMO LOGOSCREEN 600 is the entry-level model in the JUMO paperless recorder series. It has up to six measuring inputs, a 5.7" TFT touchscreen, and the option of monitoring limit values. Network-capability, batch reporting, and report functions are also part of the standard version. The JUMO LOGOSCREEN nt and fd models are exceptionally well suited for demanding recording tasks. They offer higher accuracy with up to 18 measuring inputs as well as up to 54 external analog and digital measuring channels. These can be recorded as required through the communication interfaces. In addition, the JUMO LOGOSCREEN 600 and the JUMO LOGOSCREEN fd fulfill the requirements of the FDA 21 CFR Part 11 for electronic recording of process data.

Technical data

Description	JUMO LOGOSCREEN 600	JUMO LOGOSCREEN nt	JUMO LOGOSCREEN fd
Data sheet	706520	706581	706585
Display	5.7 inch TFT color screen	5.5 inch TFT color screen	
Operation	Touchscreen	Rotary knob	Sensor control panel
Front panel	Die-cast zinc with decor foil (144 × 144 mm format)	Die-cast zinc, stainless steel (144 × 144 mm format)	
Protection type on the front	IP65	IP65/NEMA 4X	
Measuring inputs	0/3/6 configurable analog inputs for RTD temperature probes, thermocouples, current 0(4) to 20 mA, voltage -10 to 10 V, support of up to 24 external channels respectively (analog and digital)	0/3/6/9/12/15/18 configurable analog inputs for RTD temperature probes, thermocouples, current 0(4) to 20 mA, voltage 0(2) to 10 V, support of up to 54 external channels respectively (analog and digital)	
Digital inputs/outputs (switchable)	12 digital inputs/outputs (optional), including 1 counter input (12.5 kHz)	0/8/16/24 digital inputs/outputs (8 Hz), from that 0/2/4/6 counting inputs (10 kHz)	
Digital inputs (solid)	0/3/6 digital inputs (8 Hz)	–	
Analog outputs	0/1/2 analog outputs, voltage 0 to 10 V or current 0(4) to 20 mA	–	–
Memory cycles	125 ms to 32 000 s		
Internal memory	1 GB	256 MB	
External storage media	USB flash drive	USB flash drive, CF memory card	USB flash drive
Relay (changeover contact)	1 (standard)	1 (standard), 6 more optionally	
Voltage supply	AC 110 to 240 V +10/-15 %, 48 to 63 Hz or AC/DC 20 to 30 V, 48 to 63 Hz	AC 100 to 240 V +10/-15%, 48 to 63Hz or AC/DC 20 to 30 V, 48 to 63 Hz (ELV)	
Interfaces	RS232/485 for barcode reader, Ethernet, USB (host/device), Modbus master/slave (RS485/TCP)	RS232 for barcode reader, Ethernet, USB (host/device), RS232/485, PROFIBUS DP (optional) Modbus master/slave (RS485)	
Approvals	cULus, FDA compliant according to 21 CFR Part 11 (available with extra code 888 as an optional extra)	Metrological certificate, cULus, "milk approval", ATEX: Ex II 2G Ex px IIC, Ex II 2D Ex px IIIC (only with stainless steel front)	Metrological certificate, cULus, "milk approval", FDA compliant according to 21 CFR Part 11, ATEX: Ex II 2G Ex px IIC, Ex II 2D Ex px IIIC (only with stainless steel front)
Special features	Lifecycle data management, web server function with visualization on the device, integrator/counter, math/logic functions (optional), SNTP time synchronization		
	1 batch report, up to 6 customer-specific and editable process screens, intuitive icon-based operation and visualization concept, mounting depth < 119 mm, up to 5/50users, display of the process values on smartphones and tablets via app, manipulation detection with digital certificate (extra code 887)	Batch reporting (up to 3 batches at the same time), up to 9 customer-specific editable process screens	
		Up to 2 users	Up to 50 users possible, electronic signature

JUMO mTRON T measured value recording system

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

Modules	Analog input module Four-channel	Analog input module Eight-channel	Digital input/output module
Type	705020	705021	705030
Measuring 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	Per default (in CPU and HMI), a USB device interface (setup), a LAN connection (Ethernet), and 2 system bus connections are available. 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 registration function for up to 9 groups with 6 analog and 6 digital inputs respectively. Each recording group has available batch reporting. Batch data can be entered by touchscreen or imported by 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 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 AMS 2750 and CQI-9 specifications.

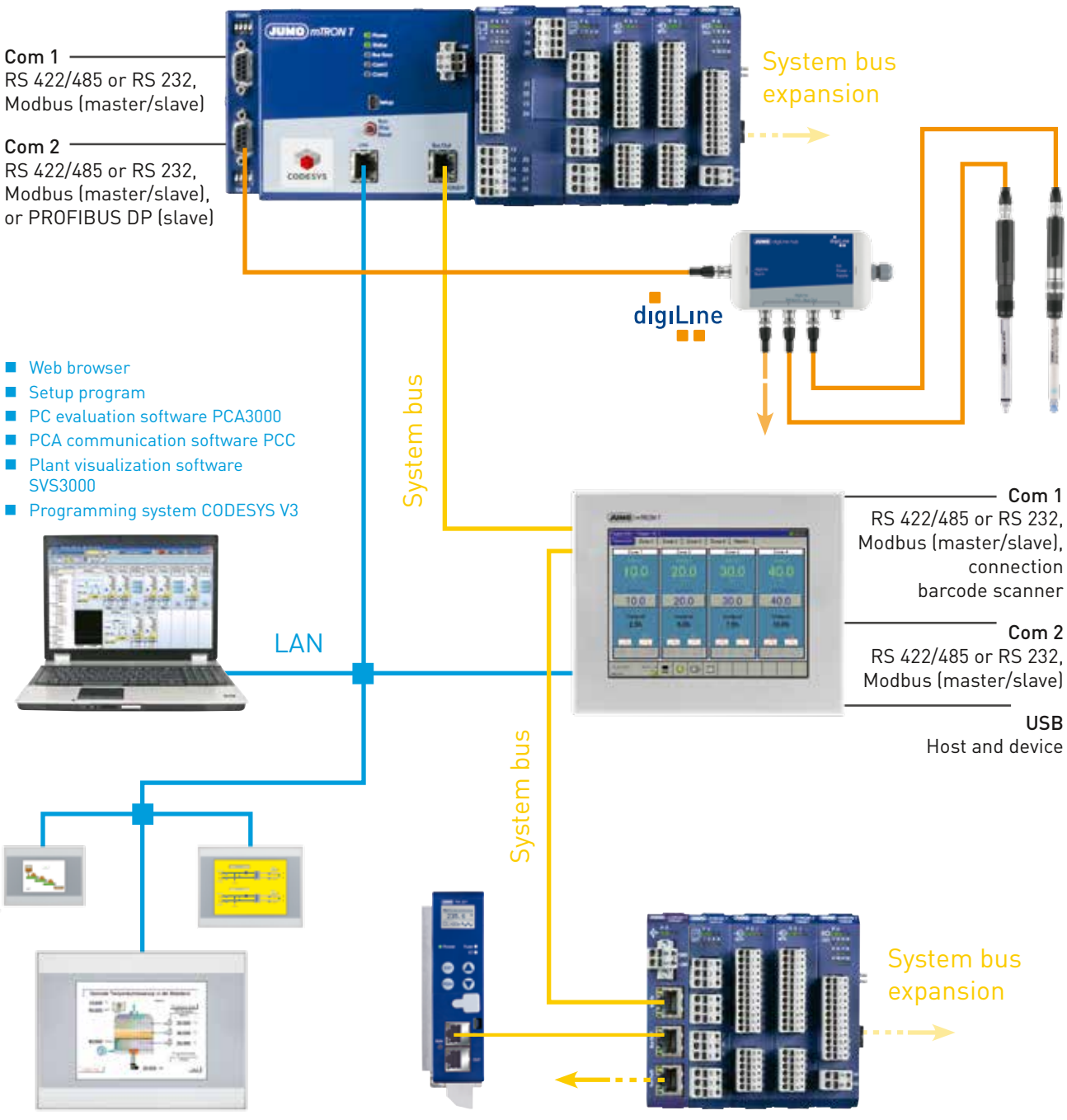
The heart of the JUMO mTRON T is a **central processing unit** with a process map for up to 30 input/output modules. The CPU has superordinated communication interfaces including web server functionality. For individual control applications, the system has a **PLC (CODESYS V3)**, program generator, and 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. The use of standard predefined screen masks considerably reduces startup times. 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 used with even greater flexibility due to **additional operating panels**.

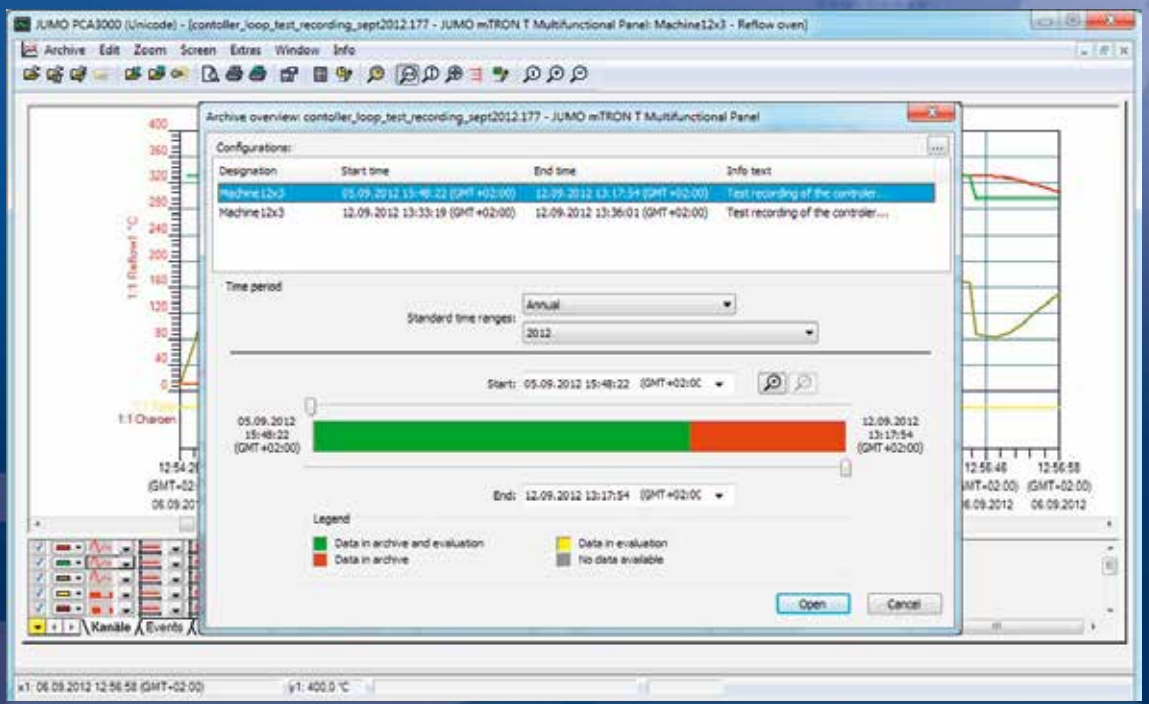
A setup program is used for **hardware and software configuration** as well as for project planning of the measurement and control tasks. Users can also develop their own highly efficient automation solutions with CODESYS V3 editors according to IEC 61 131-3. And last but not least, **JUMO digiLine sensors for liquid analysis** can also be connected directly to the JUMO mTRON T via PLC application.

System structure

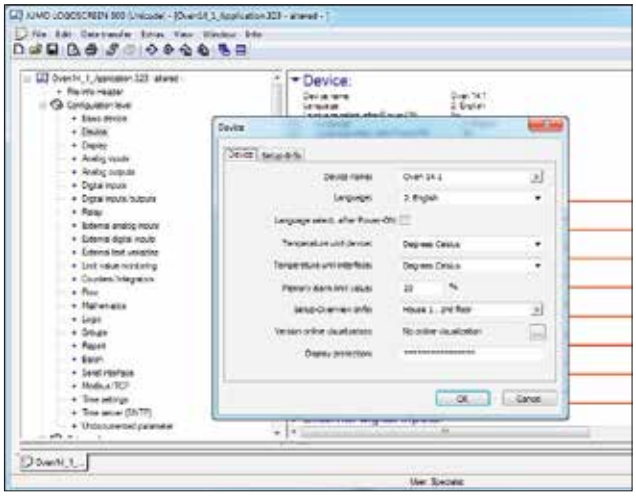


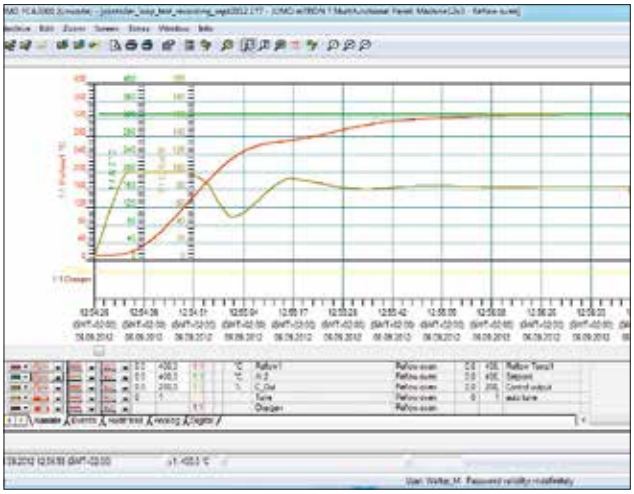
Software

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





Setup program

You can use the 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 and/or logic formulas
- Process screen editor
- Simple printout of the configuration for documentation purposes*

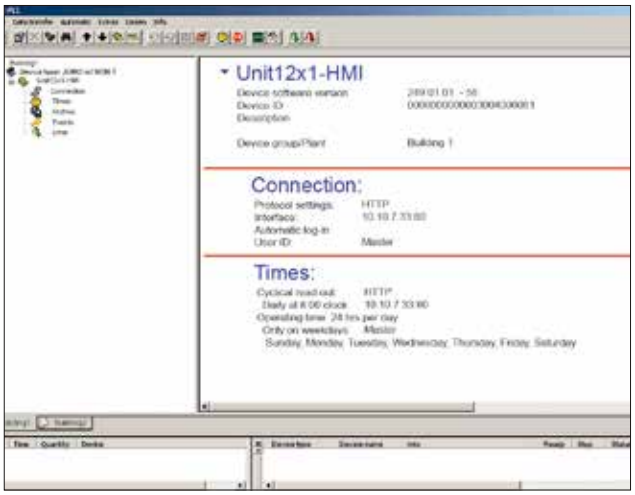
Evaluation software PCA3000

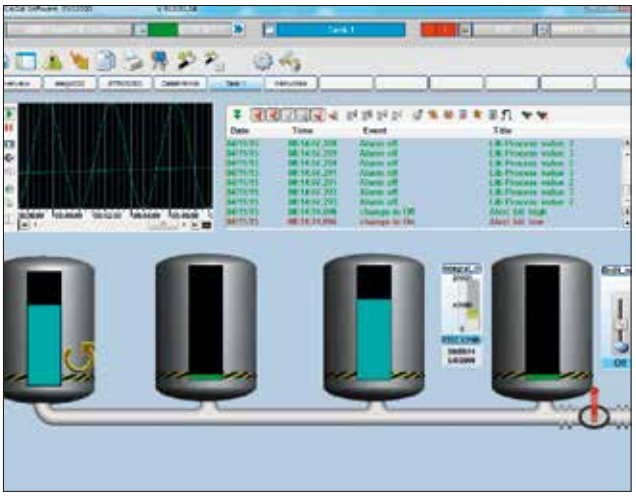
The PC-based, professional evaluation software PCA3000 can be used to manage, archive, visualize, and evaluate historical process data (measurement data, batch data, notifications, etc.). The data can be read via USB flash drive/memory card or made available for central data processing using the PCC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

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

*When using JUMO LOGOSCREEN 600, nt, or fd, the configuration can be printed out via setup.
In preparation for measured value recording system JUMO mTRON T.

PC software components





PCA communication software (PCC)

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 data 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

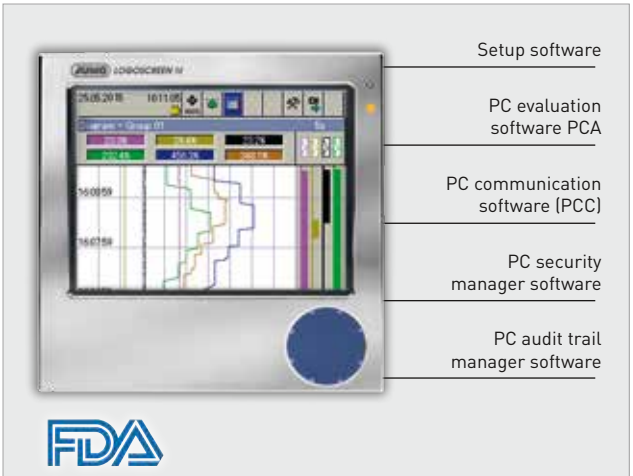
Plant visualization software SVS3000

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 facilitate the evaluation of archived production data. Thanks to preprogrammed graphic objects, it is easy to visualize plant-specific components and processes in the form of group screens and process screens. You have the option of processing 75, 250, 1,000, or 5,000 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/or process screens
- Extensive documentation function with continuous and batch related evaluation
- Search function for date/time, plant and freely-definable batch criteria
- Automatic printout and data export

FDA compliant data recording

Data recording during sterilization

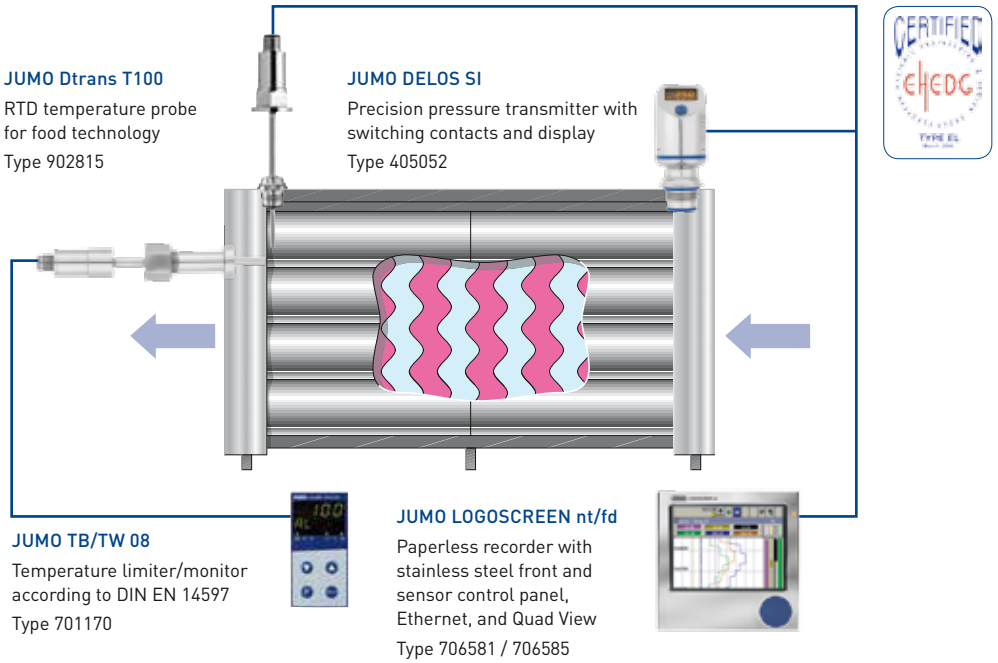


FDA software package

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 and Drug Administration (FDA) passed 21 CFR Part 11 (Code of Federal Regulations) in 1997. This law defines the requirements for Electronic Records and Electronic Signatures, i.e. the paperless protocoling of production processes, as well as electronic signatures that correspond to a handwritten signature. Today, the observation of the requirements of 21 CFR Part 11 forms the foundation for the global acceptance of products from the pharmaceutical and food industry. The paperless recorders JUMO LOGOSCREEN 600 and JUMO LOGOSCREEN fd as well as the associated PC software components setup, PC evaluation software (PCA3000), PC communication software (PCC), security manager software, audit trail manager software, and their associated functional features allow JUMO to fulfill the FDA requirements of 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 safely. The devices of both series fulfill the requirements and regulations for heating plants. They also offer 54 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 three batches for the JUMO LOGOSCREEN series and up to nine 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 valued. Let us introduce you to the key services we provide for our innovative JUMO products. You can count on them – anytime, anywhere.

JUMO Services & Support – so that it all comes together!

Manufacturing Service

Are you looking for a competitive and efficient system or component supplier? Regardless of whether you seek electronic modules or perfectly fitting sensors – either for small batches or mass production – we are happy to be your partner. From development to production we can provide all the stages from a single source. In close cooperation with your business our experienced experts search for the optimum solution for your application and incorporate all engineering tasks. Then JUMO manufactures the product for you.
As a result you profit from state-of-the-art manufacturing technologies and our uncompromising quality management systems.

Customer-specific sensor technology

- Development of temperature probes, pressure transmitters, conductivity sensors, or pH and redox electrodes according to your requirements
- A large number of testing facilities
- Incorporation of the qualifications into application
- Material management
- Mechanical testing
- Thermal test

Electronic modules

- Development
- Design
- Test concept
- Material management
- Production
- Logistics and distribution
- After-sales service

Metal technology

- Toolmaking
- Punching and forming technology
- Flexible sheet metal machining
- Production of floats
- Welding, jointing, and assembly technology
- Surface treatment technology
- Quality management for materials

Information & Training

Would you like to increase the process quality in your company or optimize a plant? Then use the offers available on the JUMO website and benefit from the know-how of a globally respected manufacturer. For example, under the menu item “Services and Support” you will find a broad range of seminars. Videos are available under the keyword “E-Learning” about topics specific to measurement and control technology. Under “Literature” you can learn valuable tips for beginners and professionals. And, of course, you can also download the current version of any JUMO software or technical documentation for both newer and older products.

Product Service

We have an efficient distribution network on all continents available to all of our customers so that we can offer professional support for everything concerning our product portfolio. Our team of professional JUMO employees is near you ready to help with consultations, product selection, engineering, or optimum use of our products. Even after our devices are commissioned you can count on us. Our telephone support line is available to give you answers quickly. If a malfunction needs to be repaired on site our Express Repair Service and our 24-hour replacement part service are available to you. That provides peace of mind.

Maintenance & Calibration

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

www.jumo.net

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