



More than **sensors + automation**



Automation

Innovative solutions for the highest requirements



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Dear Reader,

The automation of machines and plants is the basis for planning and optimizing production processes. The aim is to lastingly increase product quality, productivity, and energy efficiency.

For decades now JUMO has been offering established solutions for a secure, reliable, and profitable plant operation and production process with its products from the field of automation.

How do we do it? Through long-term experience and expertise: because for more than 60 years JUMO has been one of the leading manufacturers in the field of measurement and control technology. Consequently JUMO is also an expert partner for the automation 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.

This brochure provides an overview of JUMO's products and systems from the field of automation.

Further information about our products can be found using the given type/product group number at www.jumo.net.

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Automation

For automation JUMO offers a cleverly combined product spectrum of temperature transmitters, digital indicators, SCR power controllers / power switches via a complete measurement, control, and automation system through to plant visualization software. Thanks to a flexible configuration by a PC setup program, the individual device functions can be rapidly and conveniently adjusted for a wide range of applications. This enables a cost-neutral configuration for many applications in the industry.



The most important industries

For every task the right solution: our wide range of different devices offers the right solution for classic plant construction and mechanical engineering as well as for the process industry or for the OEM-sector.

In addition to the standard devices, JUMO offers individual customized versions for special applications.

Plastics and packaging industry

Oil and gas industry

Food and beverages industry

Industrial furnace construction and the thermal industry

Plant construction and mechanical engineering

Power plants

Pharmaceutical industry

Water and wastewater engineering



Transmitters

A secure, economical, and precise signal adjustment of temperature sensors, as well as other sensor elements, is achieved by electronic transmitters of the JUMO dTRANS T series. Depending on the type of transmitter, these can be supported by the universal measuring input of a wide range of sensor types. In terms of output, they provide a correspondingly linearized current/voltage and/or HART® signal for further processing to subsequent devices. JUMO offers a well rounded range of transmitters that are available as head transmitters or as space-saving mounting rail transmitters. For cable-free and mobile use a wireless-head transmitter is available that enables a recording of temperature process values on movable or hard-to-access plants.



Head transmitters

The head transmitters of the JUMO dTRANS T series are designed for installing in the terminal head form B or for terminal head form J. The big advantage in the head installation is the higher measuring accuracy due to the conversion of the sensitive sensor signal to a stable output signal (e.g. 4 to 20 mA or HART® signal) in the direct vicinity of the

sensor. The fully-sealed head electronics also offers increased protection against adverse environmental conditions. Combined with such a device as the JUMO PROCESStemp RTD temperature probe for applications in the process technology, the head transmitters provide the exact measurement of your process temperature.



Technical data	Description	dTRANS T01 Ex dTRANS T01/HART® Ex* dTRANS T01 Junior	dTRANS T03 J dTRANS T03 B dTRANS T03 BU	dTRANS T05 B
	Data sheet	707010	707030	707050
	Input RTD temperature probe	Pt100, Pt500, Pt1000 [Junior only Pt100/Pt1000], 2/3/4 wire circuit	Pt100, 2/3 wire circuit	Pt100, Pt500, Pt1000, resistance transmitter, 2/3/4 wire circuit
	Input thermocouple	L, J, U, T, K, E, N, S, R, B, D, C [junior only J, K, N, S, R]	–	R, S, B, J, T, E, K, N, L, U, A1, C, D, 100 to +1100 mV
	Output	4 to 20 mA	4 to 20 mA, 0 to 10 V	4 to 20 mA
	Calibration accuracy	± 0.05 %	± 0.2 %	± 0.05 %
	Galvanic isolation	3.75 kV, 2 kV, 1 kV	–	3.75 kV
	Special features	Customer-specific linearization	Analog signal path, can be digitally adjusted/configured	USB interface, customer-specific linearization, control LED (red/green), memory min/max sensor tempera- ture via drag indicator function
	NAMUR-compliant	NE21	NE21	NE21
	Approval	ATEX/IECEx	–	–
	Configuration	Via PC interface, HART® version via HART® modem	Via PC interface	Via standard USB cable without auxiliary voltage
	Voltage supply	DC 11,5 to 30 V	DC 7,5 to 30 V, DC 15 to 30 V (BU)	DC to 35 V
	Ambient temperature	–40 to +85 °C	–40 to +85 °C	–40 to +85 °C
	Installation	In terminal head, form B	In terminal head, form B or form J	In terminal head, form B

* no IECEx



Mounting rail transmitter



Technical data	On mounting rail/DIN rail 35 mm x 7.5 mm	dTRANS T01 HART® T	dTRANS T02 J, PCP, LCD, Ex	dTRANS T03 T, TU dTRANS T03 TU	dTRANS T04	dTRANS T05 T
	Data sheet	707010	707020	707030	707040	707050
	Input RTD temperature probe	Pt100, Pt500, Pt1000, 2/3/4 wire circuit	Pt100, Pt500, Pt1000, potentiometer/resi- stance transmitter, 2/3/4 wire circuit	Pt100, 2/3 wire circuit	Pt100, Pt1000, potentiometer	Pt100, Pt500, Pt1000, 2/3/4 wire circuit
	Input Thermocouple	J, K (further ones upon request)	L, J, U, T, K, E, N, S, R, B, D, C, -10 to +10V, -20 to +20V	-	-	R, S, B, J, T, E, K, N, L, U, A1, C, D, -100 to +1100 mV
	Output	4 to 20 mA	0 (4) to 0 mA, 0 (2) to 10V	4 to 20 mA, 0 to 10V	0 (4) to 20 mA, 0 to 10V	4 to 20 mA, 0 to 10V
	Calibration accuracy	± 0.05 %	± 0.075 %	± 0.2 %	± 0.3 %	± 0.05 %
	Galvanic isolation	2 kV	50V (triple isolation)	-	Up to 3.7 kV (against supply voltage)	1.875 kV
	Special features	Customer-specific linearization	Universal transmitter, customer-specific linearization, open-collector output, alarm output	Analog signal path, can be digitally adjusted	Measuring ranges and current or voltage output can also be configured via the DIP switch, sensor-related hard- ware version	USB interface, customer-specific linearization, control LED (red/ green), memory min/max sensor temperature via drag indicator function
	NAMUR-compliant	NE21				
	Approval	-	ATEX/IECEX	-	-	-
	Configuration	Via HART® modem	Via PC interface or keys (LCD version)	Via PC interface	Via PC interface or DIP switch	Via mini USB cable without auxiliary voltage
	Voltage supply	DC 11,5 to 30V (2-wire transmitter)	DC 24V, AC 110 to 230V (4-wire transmitter)	DC 15 to 35V (2-wire/3-wire trans- mitter)	AC 110 to 240V, AC/DC 20 to 53V (4-wire transmitter)	DC 1 to 35V (2-wire/3-wire trans- mitter)
	Ambient temperature	-25 to +70 °C	-10 to +60 °C	-25 to +70 °C	-25 to +55 °C	-10 to +70 °C
	Installation	On mounting rail/DIN rail 35 x 7.5 mm				

Wireless head transmitter



Technical data	Description	Wtrans B	Wtrans receiver T01
	Data sheet	707060	902931
	Input	Pt100, Pt500, Pt1000, resistance transmitter, (2/3/4 wire circuit), R, S, B, J, T, E, K, N, L, U, A1, C, D, -100 to +1100 mV, 0(4) to 20 mA (via external shunt)	For up to 16 receivers per receiver (wireless frequency 868.4 MHz)
	Output	Wireless-based with open air range of max. 300 m (transmission frequency 868.4 MHz)	2 x 4 to 20 mA/0 to 10 V, 2 x relay or 4 x 4 to 20 mA/0 to 10 V
	Calibration accuracy	±0.1 %	
	Galvanic isolation	> 10 kV	50 V
	Special features	Transmission interval 1 to 3600 s, customer-specific linearization	LCD display, RS485 interface (Modbus)
	NAMUR-compliant	NE21	
	Approval	–	
	Configuration	Via PC interface	Via PC interface or keys on the front
	Voltage supply	3.6 V Li battery (battery size AA)	AC 110 to 240 V, AC/DC 20 to 30 V
	Ambient temperature	–30 to +85 °C	–20 to +50 °C
	Installation	In terminal head, form B	On mounting rail / DIN rail 35 x 7.5 mm

Isolation amplifier



Technical data	Description	Ex-i power supply/input isolating amplifier
	Data sheet	707530
	Input	0(4) to 20 mA, supply isolating amplifier operation or input isolating amplifier operation
	Output	0(4) to 20 mA, 0(1) to 5 V
	Calibration accuracy	±0.1 %
	Galvanic isolation	375 V _{peak}
	Special features	HART®-compatible, active/passive current output, LED for power status, universal power supply
	Approval	ATEX: Ex ia, SIL2, UL
	Configuration	Via DIP switch
	Voltage supply	AC/DC 24 to 230 V
	Ambient temperature	–20 to +60 °C
	Installation	On mounting rail / DIN rail 35 x 7.5 mm



Digital indicators

Digital indicators enable a precise on-site display of process values and monitor the values that are important for a smooth production process.

Limit value monitoring functions ensure an automatic monitoring of important process variables.

JUMO offers a complete indicator range of the "di" series from the one-channel compact format to the two-channel version with text display and moving script.



Digital indicators and handheld thermometers



Technical data	Description	di 32 di 08	di eco	di 308	Description	TDA-300/TDA-3000
	Data sheet	701530	701540	701550	Data sheet	702540
	Display	4-figure segment display (red, figure height 10/20 mm)	3-figure segment display (red, figure height 13 mm)	5-figure LCD display (two-line, figure height 18/7 mm), text display as moving script with color change	Display	LCD display with date/time
	Input	Multifunction input: RTD temperature probe, thermocouple, standard signal, 0 to 20 mA/0 to 10 V	Pt100/Pt1000/KTY2X-6, thermocouples J, L, K, 0(4) to 20 mA, 0 to 10 V	Up to two channels with multifunction input: RTD temperature probe, thermocouple, standard signal, 0 to 20 mA/0 to 10 V	Sensor input	Pt100, thermocouple K, J
	Output	1 or 2 relays (3 A), logic output	Relay (10 A)	2 relays (can be expanded by optional board)	Calibration accuracy	0.1 %
	Calibration accuracy	0.1 %/0.4 %	0.1 %/0.4 %	0.1 %/0.25 %	Special features	Data logger, 99/9999 measured values, TDA-3000 with USB interface for reading, min/max value recording
	Galvanic isolation	500 V (measuring input for supply)	None	500 V (measuring input for supply)	Approval	–
	Special features	Minimum, maximum and hold function, switch-on delay and alarm suppression configurable	Switch-on delay and alarm suppression configurable, sensor-related hardware version	Can be optionally expanded with analog output, RS485, Profibus, math-function, up to 4 limit values	Configuration	Menu navigation with keys
	Configuration	Via PC interface or keys on the front	Via PC interface or keys on the front	Via PC interface or keys on the front	Protection type	IP67 (TDA-300), IP54 (TDA-3000)
	Approval	–	cULus	cULus	Voltage supply	1.5 V alkaline battery (battery size AA)
	Protection type	IP65 (front side), IP20 (rear side)	IP65 (front side), IP20 (rear side)	IP65 (front side), IP20 (rear side)	Ambient temperature	–20 to +50 °C
	Voltage supply	AC/DC 20 to 53 V, AC 110 to 240 V	DC 24 V, AC 110 V/230 V	AC/DC 20 to 30 V, AC 110 to 240 V		
	Ambient temperature	0 to +55 °C	0 to +55 °C	0 to +55 °C		
	Installation	In the front panel cut-out 48 x 24 mm, 96 x 48 mm	In the front panel cut-out 76 x 36 mm	In the front panel cut-out 96 x 48 mm		



Solid state switches and SCR power controllers

Wherever electrical energy is converted to heat and/or used for industrial heat generation, SCR power controllers are used. To develop practical products for this sector that have established themselves on the market, a close cooperation with the user is very important. JUMO offers you products that provide you with an energy-efficient, sustainable, and cost-oriented production.



Solid state switches



	Description	❶ TYA 432-45/25, 230 ❷ TYA 432-45/50, 600	❸ TYA 432-100/25, 230 ❹ TYA 432-100/50, 600	TYA 432-100/40, 600	TYA 432-100/60, 600	TYA 432-100/3, 20, 600	
	Data sheet	709010	709020				
Technical data	Load type	One-phase					Three-phase
	Dimensions	45 x 58.2 x 29mm	17.8 x 110 x 98.5mm	35.6 x 110 x 140.5mm	70 x 110 x 140.5mm	54 x 110 x 102.5 mm	
	Load voltage	❶ 24 to 265V AC ❷ 42 to 660V AC	❸ 24 to 240V, ❹ 42 to 600V	42 to 660V AC			
	Load current (max)	❶ 25A _{eff} ❷ 50A _{eff}	25A _{eff} (at 40 °C)	40A _{eff} (at 40 °C)	60A _{eff} (at 40 °C)	20A _{eff} (at 40 °C)	
	Load current (min)	❶ 150 mA AC ❷ 250 mA AC	250 mA AC	400 mA AC			250 mA AC
	Control voltage	❶ 3 to 32V DC ❷ 4 to 32V DC	❸ 3 to 32V DC ❹ 4 to 32V DC	4 to 32V DC			5 to 32V
	Peak reverse voltage	❶ >= 650Vp ❷ >= 1400Vp	❸ > = 800Vp ❹ > = 1200Vp	1600Vp			1200Vp
	Operating mode	Zero-voltage switching					
	Galvanic isolation	Between the control and power section through optocouplers; insulation voltage 4 kV					
	Ambient temperature	-20 to +70 °C	-40 to +80 °C				
	Electrical connection	Screw terminals					
	Protection type	IP20					
	Weight	60 g	260 g	515 g	972 g	850 g	
	Approvals	cULus/CSA					
Special features	Overvoltage protection by integrated varistor, LED display for control input						



SCR power controllers



Description		TYA 201 Single-phase SCR power controller	TYA 202 Three-phase SCR power controller in economy circuit	TYA 203 Three-phase SCR power controller
Data sheet		709061	709062	709063
Technical data	Load currents	20, 32, 50, 100, 150, 200, 250 A		
	Load voltage	24, 42, 115, 230, 400, 460, 500 V		
	Control voltage	Control voltage = load voltage		
	Configuration	Setup/USB-powered Plain text display on the device		
	Operating modes	Phase-angle control, burst firing mode, half-wave control, SSR logic operation, fast logic operation, alpha start, soft start	Burst firing mode, SSR logic operation, fast logic operation, Alpha start, soft start	Phase-angle control, burst firing mode, half-wave control, SSR logic operation, fast logic operation, alpha start, soft start
	Load types	Resistive load, resistive inductive load, cold-warm ratio 1:16, transformer load, infrared emitter (short, medium, long-wave)	Resistive load, resistive inductive load, transformer load, infrared emitter (short, medium, long-wave)	Resistive load, resistive inductive load, cold-warm ratio 1:16, transformer load, infrared emitter (short, medium, long-wave), carbon emitter
	Approval	cULus		
	System interfaces	Modbus, PROFIBUS-DP, system bus JUMO mTRON T		Modbus, PROFIBUS-DP, system bus JUMO mTRON T
	Ambient temperature	-20 to +70 °C		
	Subordinate control loop	U, U ² control loop (comes as standard), I, I ² , P control loop (optional)		
Special features		Current limiting	Economy circuit	Current limiting
		Mains load optimization, dual energy management, "Teach-In" function (partial load failure detection), "R-control" (resistance limitation), intelligent diagnosis system, integrated semiconductor fuse, device configuration without auxiliary voltage, vibrant display, "True RMS" (Root Mean Square)		

Application example



Foto: Heraeus

Infrared automobile tunnel

SCR power controllers are important function blocks of heat treatment plants. Special advantages of JUMO SCR power controllers are provided, among other things, by the integrated subordinate control loop. The devices are used to eliminate or compensate for external disturbances such as mains voltage fluctuations and changes in resistance that would negatively impact the control path. Varying mains voltages result in power changes in the process that can be noticed by changes in temperature. If the power controller has a subordinate control loop, the fluctuation in the energy supply is directly balanced out in the power controller, which results in the provision of a constant amount of power. This achieves high quality and continuity in the process. A distinction is made between U^2 , I^2 , and P control loops that also positively affect the control quality. Application areas include control of heating elements with non-linear temperature profiles. These include all types

of MoSi and SiC heating elements. High starting currents that occur very frequently with short-waved IR emitters can be limited by soft start function or current limiting. Transformers can be controlled without steps through the phase-angle control.

The SCR power controller of the JUMO TYA 200 series provide significant advantages due to a reliable and flexible technology and many user-friendly functions such as dual energy management, partial load failure detection, and resistance limitation.

Automation system JUMO mTRON T

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



JUMO automation system

The modular JUMO mTRON T uses an Ethernet-based system bus and an integrated PLC – even for decentralized automation tasks. The automation system can be used universally and combines JUMO's extensive process expertise with a simple, application-oriented, and user-friendly configuration concept.



Multifunction panel 840, type 705060

The panel with 8.4" TFT-touchscreen (640 x 480 pixels, 256 colors) displays data and process statuses. Among other features, the panel's pre-defined screen masks for service, controller, program generator, and recording functions make the overall system easy to use.

Features:

- Comprehensive user management: up to 16 user groups with individual rights allocation/up to 50 different users
- Individually-generated process screens in which measured value displays and input fields can be integrated
- Integrated paperless recorder for tamper-proof data recording of up to 54 analog and 54 digital process values including batch reporting
- Integrated web server
- Alarm and event lists
- Comprehensive interface connections: Ethernet/LAN, RS232, RS422/485, Modbus RTU and Modbus TCP (master/slave), USB host, USB device
- Robust metal case (die-cast aluminum), stainless steel option, protection type (front): IP67

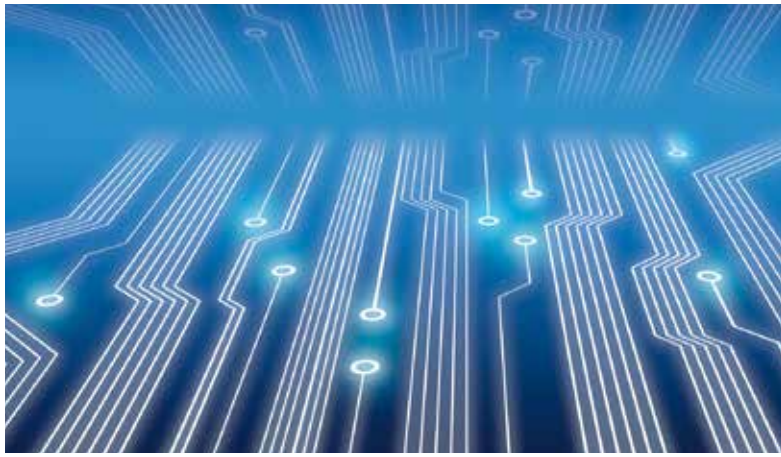


Central processing unit, type 705001

The central processing unit contains the process screen for your application with up to 30 input/output modules (including controller modules and power controllers but not including any router modules) and at the same time manages the configuration and parameter data of your system. A setup program is used for quick and convenient hardware/software configuration as well as project planning of the measured value recording tasks and control tasks.

Features:

- CODESYS V3 PLC
- Nine program generators including process step function
- 64 limit values are monitored
- Math and logic modules
- Comprehensive interface connections: Ethernet/LAN, RS232, RS422/485, Modbus RTU and Modbus TCP (master/slave), PROFIBUS-DP (slave), USB device
- Integrated web server
- Email functions (e.g. alarm for limit value violation)
- JUMO digiLine sensors for liquid analysis can be connected via PLC application



Additional operating panels Input/output modules

Type 705065

The multifunction panel 840 is the standard human-machine interface for the JUMO mTRON T. When required, the automation system can be made even more flexible with additional operating panels.

Features:

- Display sizes of 3.5" to 15"
- Direct access to PLC variables
- Up to four operating panels can be connected to each JUMO mTRON T central processing unit



Various modular components are available as input/output modules. These can include an analog input module with universal inputs for thermocouples, RTD temperature probes, and voltage or current standard signals. As a result the same hardware can be used to precisely record and digitize a highly diverse range of process variables.

JUMO mTRON T enables 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. The control loops here operate fully independently, which means they do not make demands on the central processing unit resources. Power controllers can also be connected via the system bus.

In addition, JUMO digiLine sensors for liquid analysis can be connected directly to the central processing unit.

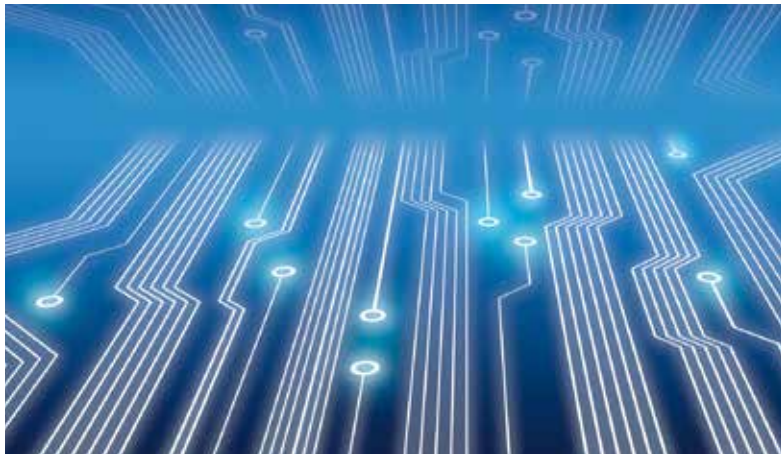




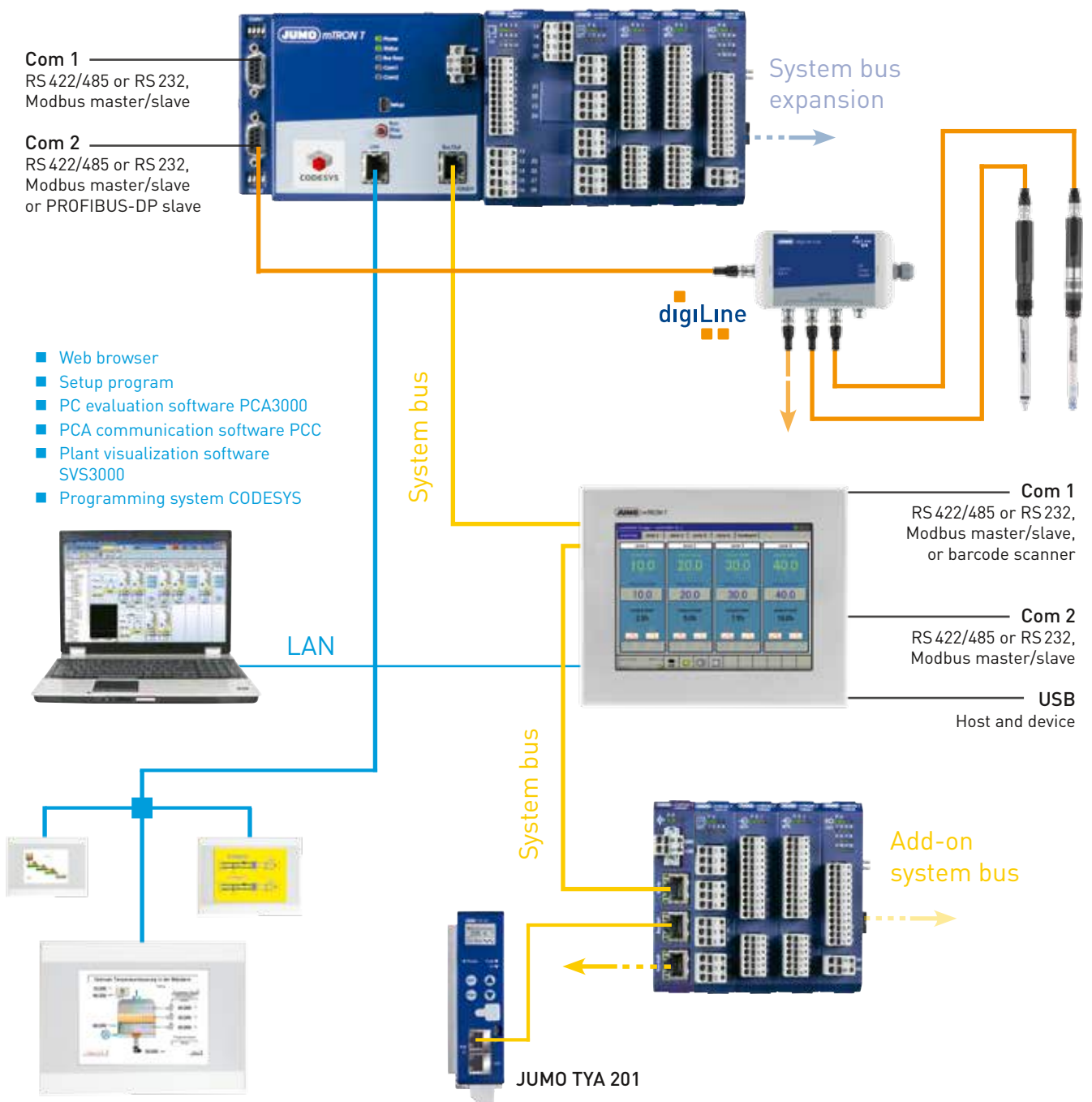
Modules	Multichannel controller module	Relay module four-channel	Analog input module four-channel	Analog input module eight-channel
Data sheet	705010	705015	705020	705021
Features	- Up to four independently configurable PID control loops with a fast cycle time and proven control algorithms - Independent operation - Math and logic functions - Counter input up to 10 kHz	- Four relay outputs controlled via the system bus by digital signals - Changeover contact in each case (230 V / 3 A) - The switching statuses are displayed with LEDs	- Four high-quality, configurable analog inputs for RTD temperature probes, resistance transmitters, thermocouples, current 0(4) to 20 mA, voltage 0(2) to 10 V - All inputs are galvanically isolated from each other - Customer-specific linearization possible - Limit value monitoring - Additional digital input	- Eight high-quality analog inputs for RTD temperature probes Pt100, Pt500, Pt1000 in two-wire circuit - Limit value monitoring - Additional digital input



Modules	Analog output module	Digital input/output module	Router module	Power controller JUMO TYA 200 series
Data sheet	705025	705030	705040	709061, 709062, 709063
Features	- Four configurable analog outputs 0(4) to 20 mA or 0(2) to 10 V - Adjustable output behavior in case of malfunction	- 12 digital inputs or outputs - Each channel can be configured as an input DC 0/24 V or output DC 24 V - Capacity per output: 500 mA - Switching statuses are displayed with LEDs	Input/output modules can be divided between several supporting rails or control cabinets using a router module. Decentralized automation solutions are therefore simple to implement	- For one-phase and three-phase operation - Continuous load current up to max. 250 A, load voltage up to max. 500 V - Different circuit variants, load types and operating modes can be implemented



System structure

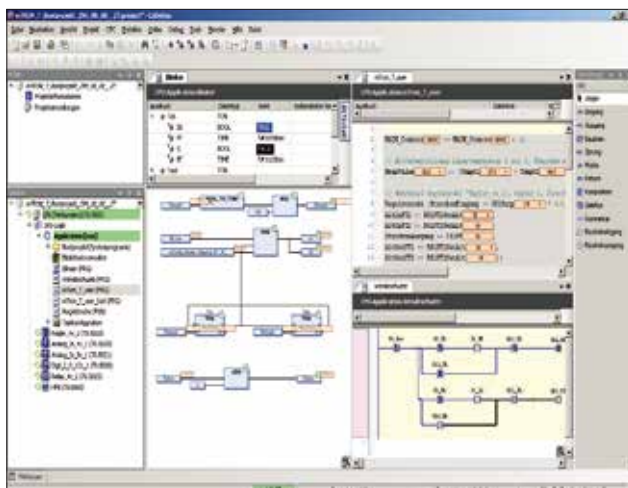


Configuration

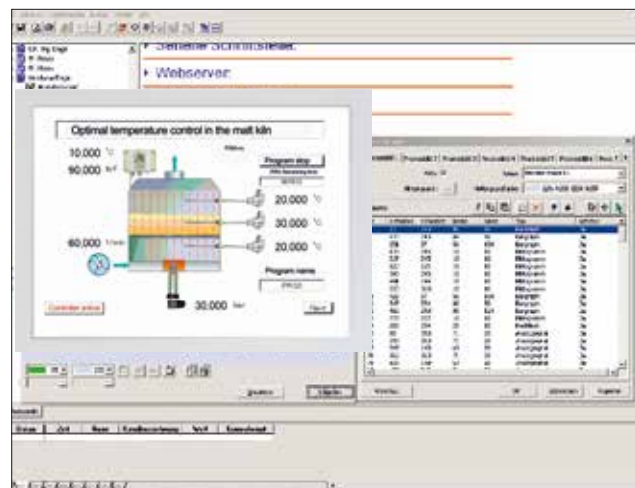
The option of individually presenting the plants, including their processes and individual sections, is very important to an automation system. For this purpose up to 18 process screens can be individually generated in the multifunction panel. In turn up to 150 objects can be presented per process screen on up to 16 different levels.

Other than the necessary system functionality, project planning software that is as simple and intuitive to operate as possible was at the heart of JUMO's product development. For this reason, hardware/software configuration and project planning of the measured value recording tasks as well as control tasks using the setup program are carried out for the JUMO mTRON T with the same look and feel as other JUMO devices. To ensure an automation solution according to IEC 61131-3, access to the CODESYS V3 programming system has been integrated in the JUMO setup program. This means that the hardware assignment and the description of the physical inputs/outputs are adopted automatically. Project variables can then, for example, be defined and

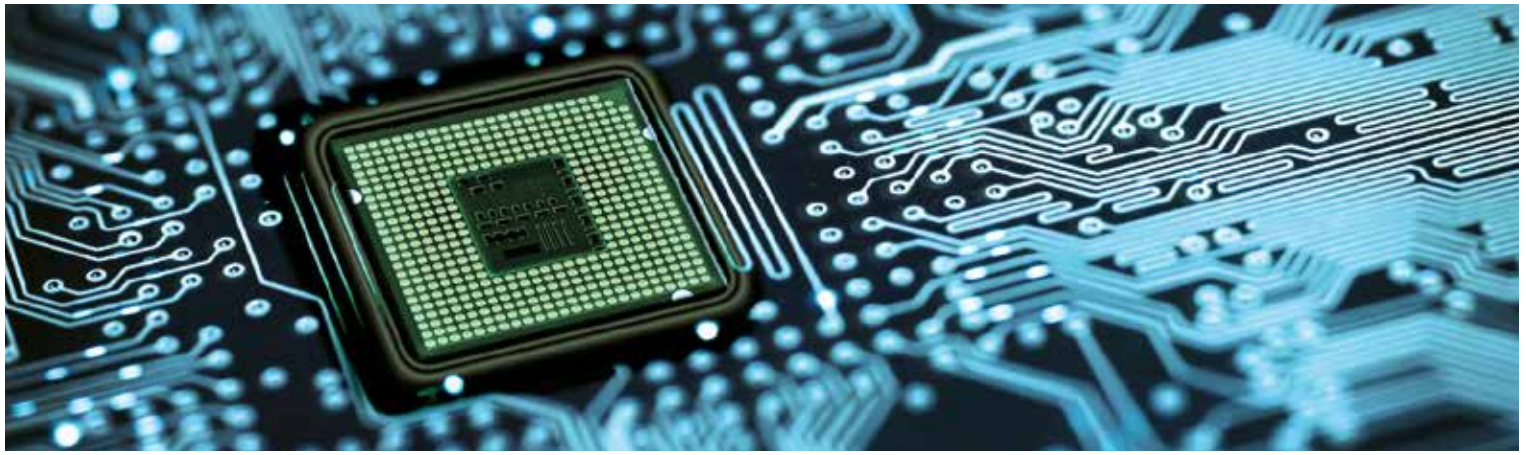
linked to a particular input or output address of the hardware assignment that appears in the device tree. All editors for programming the control application that are defined in the IEC 61131-3 standard are available in CODESYS. After programming of the automation solution with CODESYS the project data is transferred from the setup program again. As a result the complete application can be recorded in a project file, which greatly simplifies project management and version maintenance.



PLC programming system CODESYS V3

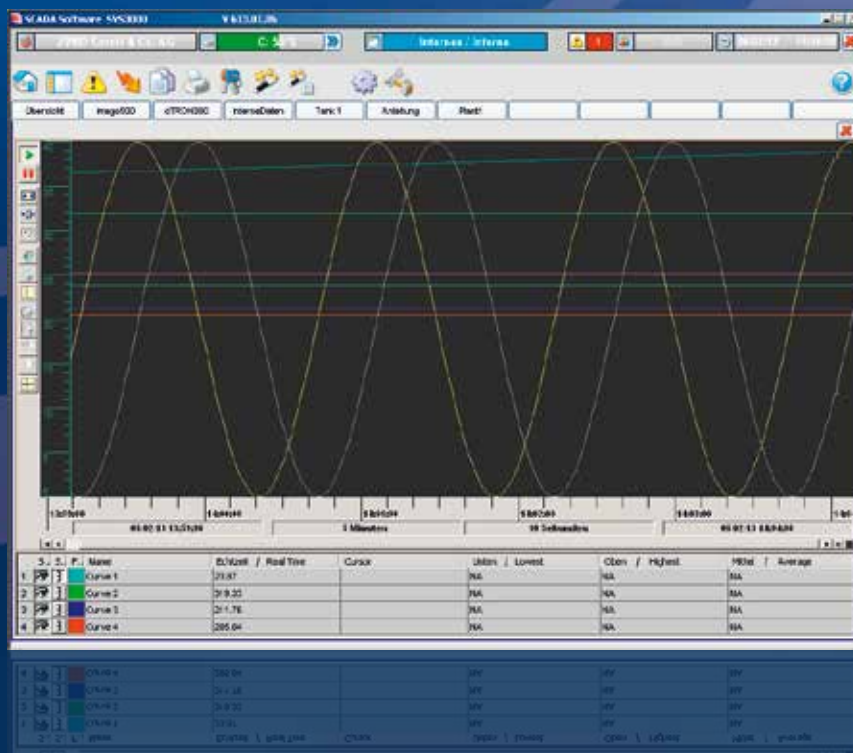


Setup program with process screen editor including process screen preview

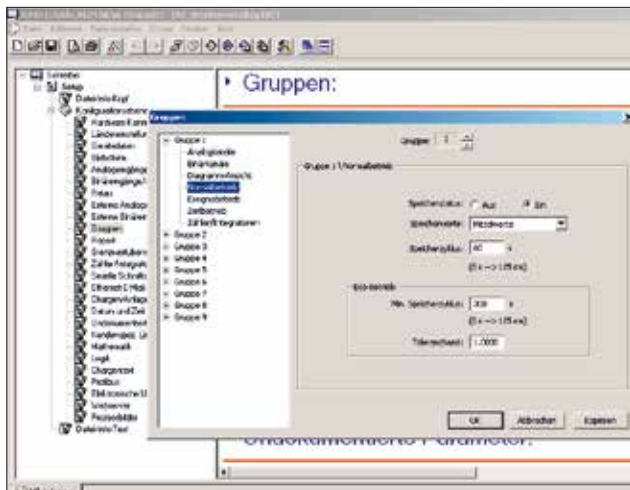


Software

JUMO offers intuitive PC-based setup software for all digital compact controllers, supporting the user during device configuration and parameterization. It also simplifies the optimization of the control of plants or processes so that you can implement good control in terms of energy efficiency. The startup tool contained in the setup software is particularly helpful during startup. The professional PC evaluation software PCA3000 can be used for administration, archiving, visualization, and evaluation of the historical process data recorded by a paperless recorder integrated into a digital controller or by the JUMO mTRON T automation system. The plant visualization software SVS3000, which is also PC-based, enables online-visualization and reporting of important process values; this can also be performed in a batch-related manner if required. Pre-programmed graphic elements make it easier to create a customized process screen. In addition, the JUMO mTRON T automation system is equipped with the PLC programming system CODESYS, which is easy to program via the development environment embedded in the setup program.



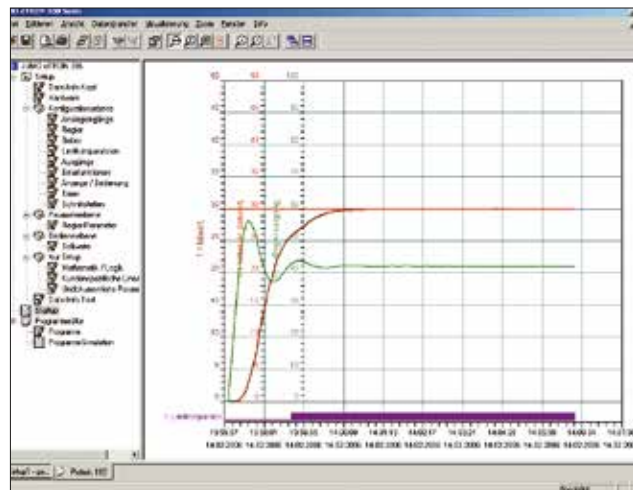
PC software components



Setup program

You can use the setup program to conveniently carry out project design and configuration of the respective digital compact controller on your PC. Integrated auxiliary functions assist you in adjusting the controller to 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*)
- Program editor*)
- Process screen editor*)
- Simple printout of the configuration for documentation purposes**)



Startup software**)

This software tool* included in the setup program enables real-time visualization and storage of analog and binary signals during a startup or optimization phase after a tool change for example. A visual display of the key process data in real-time is particularly useful when carrying out demanding processes.

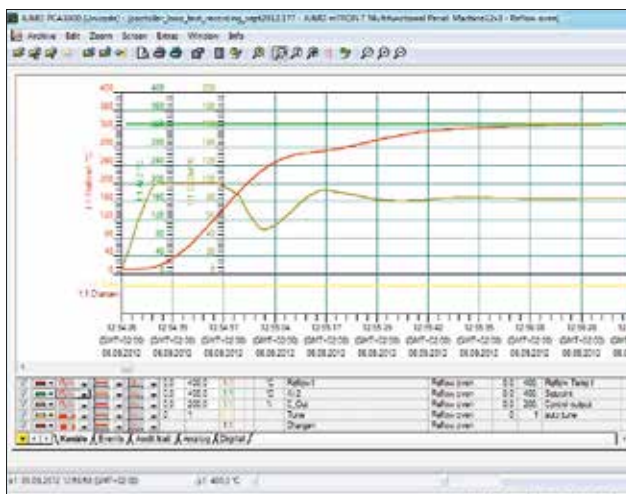
- Visualization, monitoring, and recording of relevant analog and binary signals
- Triggering of a setpoint value change for determining control-related characteristic values on the basis of the plant behavior
- Straightforward comparison of control results for various controller parameters
- Random monitoring of control quality
- No additional devices required to assist with startup

*] Included with the JUMO mTRON T automation system and with certain JUMO compact controllers

**]) Included with certain JUMO compact controllers; in preparation for the JUMO mTRON T automation system



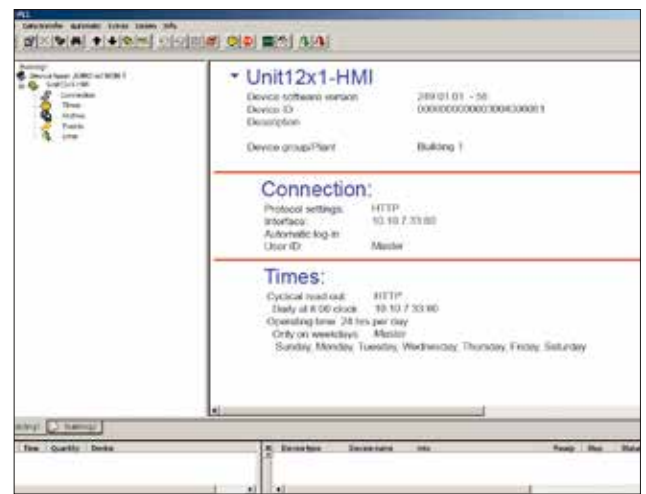
PC software components



Evaluation software PCA 3000

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 imported using a USB memory stick or a memory card. It can also be made available for central data processing via the PCC communication software.

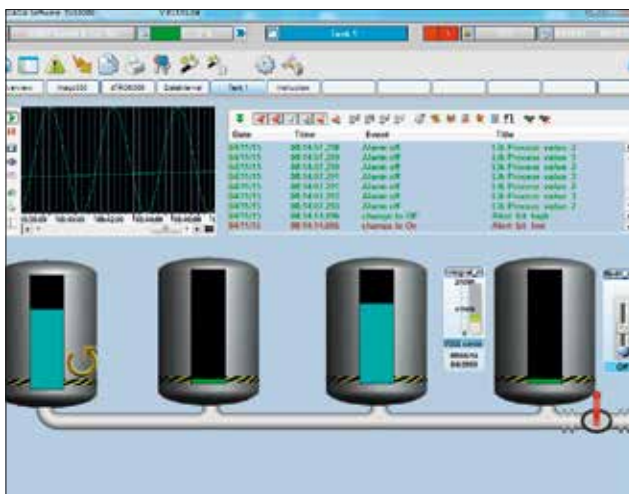
- Easy, straightforward backup and archiving of all process data in a data file
- Archived data can be read and visualized directly from a CD-ROM or DVD
- Graphic measured value processing: evaluation of measured data using a min/max search and zoom function (magnifying glass icon)
- Data export with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



PCA communication software (PCC)

PCC communication software is ideally geared towards PCA3000 and allows for easy data extraction via Ethernet, a serial interface (USB, RS485), or modem.

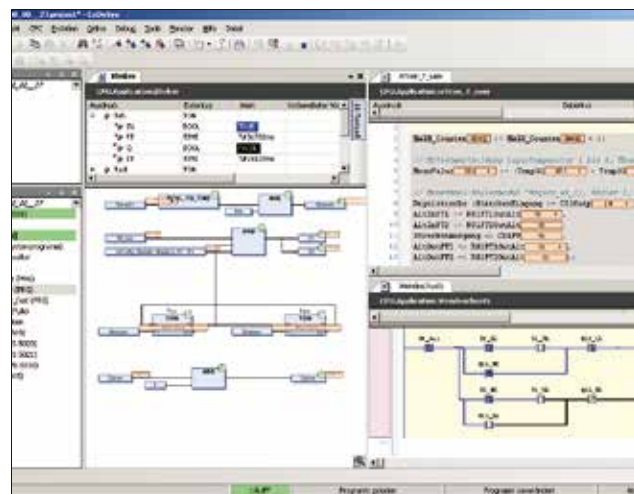
- Time-controlled, automatic data extraction via interface or modem
- Easy, straightforward backup and archiving of all process data in a data file on a hard disk drive or a network server
- Diagnosis function (display of current process data, e.g. via modem or Ethernet)
- Can be launched as a Windows® 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 pre-programmed graphic objects, it is easy to visualize plant-specific components and processes in the form of module 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 customized process screens
- Pre-programmed graphic objects for JUMO products
- Quick and simple creation of customized group screens and trend screens
- Plant operation via groups and/or process screens
- Extensive documentation function with continuous and batch-related evaluation
- Search function for date/time, plant criteria, and freely defined batch criteria
- Automatic printing and data export



PLC programming system CODESYS V3

The CODESYS development environment implemented in the JUMO mTRON T is a comprehensive software tool for industrial automation. This widely used PLC programming system according to IEC 61131-3 enables the implement of almost all automation tasks.

All editors defined in the standard are available for the purpose of programming your control applications:

- Editor for structured text (ST)
- Sequential function chart editor (SFC)
- Continuous function chart editor (CFC)
- Function block diagram editor (FBD)
- Ladder diagram (LD)
- Instruction list editor (IL)



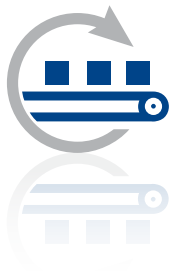


Services & Support

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.



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