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JUMO Campus 2022





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Dear Reader: Welcome to JUMO Campus!

"The only constant in life is change." Heraclitus

In keeping with this motto, we have all been adapting to many changes over the past few months. We had to change habitual behavior, discover new paths, and develop new strategies. We at JUMO Campus have also adapted our training program to the new conditions – because the safety of our customers and employees has top priority for JUMO:

Seminars

All training rooms are always adapted so that distance and hygiene rules are observed at all times. If the number of registrations exceeds the room capacities, the participants will be divided into groups. In addition, starting this year we also offer fixed online dates for selected courses. However, our high demands on the quality of our **seminars "from the practitioner for the practitioner"** remain unchanged. This is why we are very pleased to receive your positive feedback: the average rating we received from our participants was **A+**!

Exclusive training courses – on-site or online

We can conduct all our seminars as exclusive training courses for you – either on-site at your company or simply online. All participants need is a PC or notebook with Internet access and headset or, alternatively, a telephone. For our practical training courses, we can send participants a training device in advance so that practical exercises are also possible. Contact us – we will be happy to make you an individual offer for your requirements!

E-learning and technical literature

In addition, we offer **over 100** e-learning courses, webinar recordings, and technical literature that deal with the entire subject of measuring and control technology **for you to study on your own**.

Webinars

Furthermore, we continue to offer our **free webinars** which provide a first glimpse of a selected subject area in just under an hour. The focus here is on current topics and product innovations. Accordingly, new dates will be announced during the year. Keep up to date with the latest news – simply sign up for our newsletter: <http://newsletter.jumo-en.info>.

JUMO Campus portal

In our JUMO Campus portal you will find **our complete range of training courses** in a clearly laid out manner. Thanks to various **filter and search functions** you can easily find relevant training options for your product or subject area. Visit us at <https://campus.jumo-en.info>.

All details about our product range can be found on the following pages. We look forward to meeting you soon in person or online at JUMO Campus.

Yours sincerely,

Sabine Häcker
Head of Trade Fair, Training, and Event Management

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Overview of training courses in 2022

Temperature

Seminar	Electrical temperature measurement for practitioners	Upon request	p. 7
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Liquid analysis

Seminar	Analytical measurement technology for practitioners	Upon request	p. 8
Seminar	JUMO AQUIS touch S/P – modular multichannel measuring devices for liquid analysis	Upon request	p. 9
Webinar	Application of inductive conductivity measurement technology	June 08, 2022 Sept. 21, 2022	p. 26

Pressure and level

Seminar	Pressure and level measurement technology	Upon request	p. 10
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Flow

Seminar	Flow measurement technology	Upon request	p. 11
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Control

Seminar	Control technology for practitioners	Upon request	p. 12
Seminar	3 days in compact form: Measuring. Control. Recording.	Upon request	p. 13
Seminar	Control parameters and optimization of controllers	Upon request	p. 14
Seminar	Configuration and operation of JUMO compact controllers	Upon request	p. 15
Seminar	JUMO DICON touch – two-channel/four-channel process and program controller with paperless recorder	Upon request	p. 16
Webinar	Expansion of JUMO meroTRON and JUMO meroVIEW with PLC functionality	June 09, 2022 Sept. 22, 2022	p. 26
Webinar	JUMO meroTRON presentation of the new 2-channel controller	June 30, 2022 Oct. 11, 2022	p. 26


Recording

Seminar	JUMO paperless recorder for recording process data according to FDA 21 CFR Part 11	Upon request	p. 17
Seminar	Data recording and data evaluation with JUMO paperless recorders	Upon request	p. 18
Seminar	Safe handling of measurement data from JUMO devices with recording function	Upon request	p. 19
Webinar	JUMO paperless recorders – counters/integrators function	June 28, 2022 Oct. 05, 2022	p. 27


Automation

Seminar	JUMO variTRON 500 – basic course	Upon request	p. 20
Seminar	JUMO variTRON 500 – advanced course	Upon request	p. 21
Seminar	Thyristor power controllers from the JUMO TYA 200 series and JUMO IPC 300 electronic transformer	Upon request	p. 22
Seminar	Measuring, control, and automation system – JUMO mTRON T and CODESYS V3.5	Upon request	p. 23
Webinar	JUMO dTRANS T06 Ex from the perspective of explosion protection	June 14, 2022 Sept. 29, 2022	p. 27
Webinar	JUMO temperature transmitters at a glance	June 15, 2022 Oct. 04, 2022	p. 27
Webinar	JUMO Cloud – establish connection and visualize first values	June 29, 2022 Oct. 06, 2022	p. 27


Comprehensive topics

Seminar	Functional safety in Europe pertaining to Safety Integrity Level and Performance Level	Upon request	p. 24
Seminar	Extension of JUMO components through PLC functionality	Upon request	p. 25

Our trainers



Manfred Schleicher



Maximilian Wenderoth



Marcell Bräutigam



Thomas Diel



Matthias Garbsch



Reinhard Manns



Ulrike Storm



Manfred Walter



Michael Wiener

Electrical temperature measurement for practitioners

Content

Temperature is one of the most important measurands in all areas of technology. The seminar covers the basic principles for the use of RTD temperature probes and thermocouples in industrial applications.

- The temperature concept
 - Development of temperature measurement: from thermoscope to platinum chip sensor
- Functionality and application of RTD temperature probes
 - Basic principles, tolerance classes, connection types
- Operating principle and application of thermocouples
 - Thermoelectric effect, possible temperature compensation, short circuit assessment, galvanic isolation, standardized thermocouples, max. operating temperature, tolerance classes, ceramic protection tubes, drift behavior, compensating cables, and thermovoltage-free plug connectors
- Overview of electrical thermometers
 - Head thermometers and terminal heads, transmitters and signal isolators, measuring insert and construction of thermometers without measuring insert, sheath elements, different types of electrical thermometers
- Information about electric thermometers
 - Heat conduction error, transition function, extension tubes, protection tubes, screw-in and welding sleeves
- Extensive workshops for the startup of measuring chains with RTD temperature probes and thermocouples

Objectives

After the seminar, participants will be able to safely use RTD temperature probes and thermocouples.

Target group

Employees working regularly with electrical temperature measurement and who are responsible for the correct selection as well as the best possible use of temperature probes.

Requirements

Basic technical knowledge.

Course:	JK 900010
Duration:	1 day
Fee:	Upon request
Dates:	Upon request
Trainer:	Manfred Schleicher
Follow-up courses:	None

INQUIRE HERE!



Analytical measurement technology for the practitioner

Content

The seminar provides the basic principles of measurement parameters in analytical measurement technology. Concrete examples are used to set up measuring chains and start them up. The parameters pH value, redox potential, and electrolytic conductivity are covered.

- General and practical contents on the measuring principles
- Measurement technology information (setup and correct maintenance of sensors, wiring, configuration of the transmitters, etc.)
- Basic distinctive features of sensors with regard to application areas in liquid analysis
- Possible applications of modern transmitters and controllers as well as intelligent sensors
- Extensive workshops for the startup of measuring chains including calibration

Objectives

After the seminar, the participants will be able to start up the corresponding measurement technology and to service the systems.

Target group

Employees planning, installing, or maintaining measuring chains with electrochemical sensors.

Requirements

Expertise in the field of electrical engineering and/or chemistry.

INQUIRE HERE!

Course:	JK 201080
Duration:	1 day
Fee:	Upon request
Date:	Upon request
Trainers:	Manfred Schleicher Ulrike Storm
Follow-up courses:	None

Liquid analysis



JUMO AQUIS touch S/P – modular multichannel measuring devices for liquid analysis

Content

The seminar provides the necessary basic principles and knowledge for the startup and operation of the modular multichannel measuring devices for liquid analysis.

- Brief overview of the measurement parameters pH value, conductive and inductive conductivity, as well as the disinfection measurands (e.g. free chlorine)
- Hardware and display options
- Calibration logbooks, alarm and event lists, web server
- Control and recording function
- Further options with the multichannel measuring device
- Connection of JUMO digiLine sensors to the JUMO AQUIS touch S/P
- Practical session
 - Startup of measuring chains for pH value and conductivity measurement (conductive and inductive) including calibration
 - Configuration and operation of a two-state controller based on the example of a wastewater neutralization reaction

Objectives

After the seminar the participants will know the most important functions of the JUMO AQUIS touch S/P and will be able to start up as well as operate the device safely for measuring analytical measurands.

Target group

Employees who are responsible for startup and operation of the JUMO AQUIS touch S/P or who would like to get an overview of the device.

Requirements

Basic knowledge for determining analytical measurement parameters and/or participation in the "Analytical measurement technology for practitioners" seminar.

Course:	JK 202580
Duration:	1 day
Fee:	Upon request
Date:	Upon request
Trainers:	Reinhard Manns Manfred Schleicher
Follow-up course:	Analytical measurement technology for the practitioner, p. 8

INQUIRE HERE!

Liquid analysis



 Pressure and level measurement technology

Content

The seminar provides important basic principles about electrical pressure measurement technology as well as hydrostatic level measurement.

- Operation, structure, and features of the most important sensor types
- Technical features of pressure transmitters and level probes
- Understanding data sheet and accuracy specifications
- Application-oriented selection of pressure transmitters
- Level measurement at open and pressurized containers

Objectives

After the seminar the participants will be able to select, start up, and check electrical pressure measuring devices.

Target group

Employees working regularly with the measurands pressure, differential pressure, or level and who are responsible for the correct selection or the best possible operation of the measuring devices.

Requirements

Basic technical knowledge.

INQUIRE HERE!

Course:	JK 400010
Duration:	1 day
Fee:	Upon request
Date:	Upon request
Trainers:	Maximilian Wenderoth
Follow-up courses:	None



Flow measurement technology

Content

The seminar provides the physical basic principles of different measurement methods as well as the layout and start-up of the devices.

- Physical basic principles
 - Flow types
 - Flow calculation
- Structure and operating principle of the measuring devices and methods
 - Electromagnetic flowmeters
 - Differential pressure method
 - Paddlewheel sensors
- Dimensioning and accuracy
 - Layout of the device size
- Connection types and signal evaluation
 - Impulse frequency output
 - Analog output types

Objectives

After the seminar the participants will be able to assign the measurement methods offered by JUMO to the requirements of the measuring point, to start up the respective devices, and to carry out a safe measured value recording.

Target group

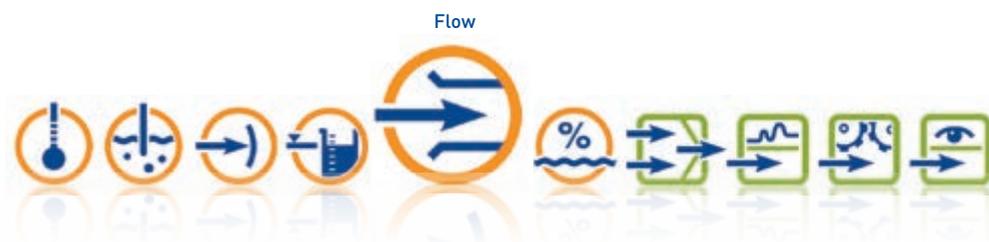
Employees in the area of plant engineering, maintenance, planning, or similar who are responsible for the startup and maintenance of these measurement methods or who are planning the dimensioning of measuring points.

Requirements

Basic technical knowledge.

INQUIRE HERE!

Course:	JK 400020
Duration:	1 day
Fee:	Upon request
Date:	Upon request
Trainer:	Maximilian Wenderoth
Follow-up courses:	None



Control technology for practitioners

Content

The seminar provides the basic principles of control technology in a practical manner. Included are extensive workshops, which fill more than half of the seminar time.

- Basic principles of control technology
- Types of control processes
- The PID controller with continuous output and its control parameters X_p , T_n , and T_v
- Influence on the control response by X_p , T_n , and T_v
- Optimization methods
- Working with two-state, three-state, modulating, and position controllers
- Control loop structures (cascade control, disturbance feedforward control, etc.) and other controller functions
- Extensive workshops about:
 - Ratio control
 - Controllers with direct control direction
 - Optimization of a controller for disturbance behavior
 - Processes without self-regulation and processes with exclusive delay time
 - Operation of non-linear processes
 - Split-range operation

Objectives

After the seminar the participants will be able to select a controller that suits their control process and to configure, operate, and optimize this controller.

Target group

Employees involved with startup, maintenance, and repair who require practical information on control technology. Engineers and technicians involved in plant planning. All employees who would like to refresh their knowledge of control technology.

Requirements

Basic knowledge in the field of automation technology.

INQUIRE HERE!

Course:	JK 700010
Duration:	4 days
Fee:	Upon request
Dates:	Upon request
Trainers:	Manfred Schleicher Maximilian Wenderoth
Follow-up courses:	None



3 days in compact form: Measuring. Control. Recording.

Content

The seminar provides the basic principles and further information on the most important measurands – temperature and pressure – as well as on their control, data acquisition, and data management with the proven JUMO products.

- General information
 - Input and output signals for measurement, control, and recording technology
- RTD temperature probes and thermocouples
 - Basic principles and general information for application
- Pressure transmitters
 - Basic principles and general information for application
- Transmitters
 - Startup of two-wire, three-wire, and four-wire transmitters
- Compact controllers
 - Configuration and operation of the devices
 - Optimization of PID controllers (continuous controller and two-state controller)
- Interfaces
 - Connection of JUMO device technology to Ethernet and serial interface
- Paperless recorders
 - Configuration of data recording
 - Evaluation of measurement data using evaluation software PCA3000
 - Transfer of registered measurement data via USB flash drive as well as via interface with the JUMO PCC communication software
- Practical session
 - Implementation of numerous workshops
 - Startup of exemplary sensor and device technology

Objectives

After the seminar, the participants have a solid grasp of the measurement and control technology field as well as measurement data recording. They will be able to install the devices as well as to configure and handle typical applications.

Target group

Beginners in the field of measurement and control technology.

Experienced employees responsible for the installation and startup of RTD temperature probes, thermocouples, temperature transmitters, pressure transmitters, controllers, and paperless recorders.

Requirements

Technical training.

INQUIRE HERE!

Course:	JK 700080
Duration:	3 days
Fee:	Upon request
Dates:	Upon request
Trainers:	Manfred Schleicher Maximilian Wenderoth
Follow-up course:	Control technology for practitioners, p. 12



Control parameters and optimization of controllers

Content

The seminar provides compact and concise information about the operation mode of the controller components P, I, and D. The participants learn how to classify applications as well as processes and to determine suitable parameters.

- The closed control loop (mode of operation, components, and concepts)
- The controller components P, I, and D
- Influence on the control response by control parameters X_p , T_n , and T_v
- Autotuning in JUMO controllers
- Distinctive features of the two-state controller
- Practical session: workshop for manual optimization of PID controllers (continuous controller and two-state controller) for an unknown control process

Objectives

After the seminar the participants will know the mode of operation of PID controllers and the influence on the control response when changing the parameters X_p , T_n , and T_v . The participants will generally be able to implement controller optimizations.

Target group

Employees involved with startup, maintenance, and servicing who would like to acquire information about the operation mode of the controller components P, I, and D.

Requirements

Basic knowledge in the field of automation technology.

Please note

For technicians and students from the field of control and automation technology we offer this seminar free of charge in Fulda upon request. Feel free to contact us at campus@jumo.net.

INQUIRE HERE!

Course:	JK 700025
Duration:	1 day
Fee:	Upon request
Date:	Upon request
Trainers:	Manfred Schleicher Maximilian Wenderoth
Follow-up course:	Control technology for practitioners, p. 12



Configuration and operation of JUMO compact controllers

Content

This seminar provides basic knowledge about JUMO compact controllers with only a minimum of theoretical input. The following topics will be covered in the seminar through product introductions and practical workshops:

- Mounting and connection
- Configuration of the devices as two-state and continuous controllers using the device front or the configuration program
- General information about the configuration programs (connection assistant, device manager, diagnostic possibilities, etc.)
- Manual and automatic mode as well as autotuning
- "JUMO startup" function to record the control response
- Important functions (limit value monitoring, binary functions, ramp function, math and timer function, etc.)
- Level concept and user level
- Working with texts
- Practical session: extensive workshops on the device

Objectives

After the seminar the participants will know the most important functions of the controllers, will be able to operate the devices, and can set up typical configurations.

Target group

Employees who are responsible for startup and operation of JUMO compact controllers (JUMO diraTRON, JUMO dTRON 300, JUMO DICON touch, and JUMO IMAGO 500).

Requirements

Basic technical knowledge and knowledge in the field of automation technology.

INQUIRE HERE!

Course:	JK 703500
Duration:	1 day
Fee:	Upon request
Date:	Upon request
Trainers:	Manfred Schleicher Maximilian Wenderoth
Follow-up course:	Control technology for practitioners, p. 12



JUMO DICON touch – two/four-channel process and program controller with paperless recorder

Content

The seminar provides basic principles and information on the configuration and startup of JUMO DICON touch.

- Function overview JUMO DICON touch
- Hardware and display options
- Configuration of the controller using the setup program and device front
- Startup of the controller as two-state controller and continuous controller
- Autotuning
- Program controller and recording function
- Process screens
- Timer and math function
- Limit value monitoring function
- Practical session: extensive workshops on the device

Objectives

After the seminar the participants will know the main functions of the JUMO DICON touch and will be able to operate the device according to plant-specific requirements. In addition, the participants will be able to configure control and monitoring functions.

Target group

Employees who are responsible for startup and operation of the JUMO DICON touch or who would like to get an overview of the device.

Requirements

Basic knowledge in the field of automation and control technology.

INQUIRE HERE!

Course:	JK 703571
Duration:	1 day
Fee:	Upon request
Date:	Upon request
Trainer:	Maximilian Wenderoth
Follow-up courses:	Control technology for practitioners, p. 12 Control parameters and optimization of controllers, p. 14



JUMO paperless recorder for recording process data according to FDA 21 CFR Part 11

Content

The seminar provides central basic principles and information on the startup of paperless recorders and the relevant software components:

- Explanation of the safety concept for the whole system
- Installation of the PC software components
- Creating user lists and device rights files via the PC Security Manager software PCS
- Configuration of the paperless recorder using the setup software
- Electronic signatures on the device and on the PC
- Working with the PC evaluation software PCA3000
- Connection of the devices via RS485 and Ethernet interface, time-controlled data query with the PCA communication software PCC
- Traceability according to FDA 21 CFR Part 11 and introduction of the PC Audit Trail Manager software PCAT
- Practical session: extensive workshops on the device as well as with the software components

Objectives

After the seminar the participants will be able to administer the system and to configure the paperless recorders for typical applications. Time-controlled communication via Ethernet can be set up using the communication software and the data of an archive can be evaluated.

Target group

Employees who are responsible for startup, operation, and maintenance of paperless recorders. Engineers as well as technicians who are responsible for planning plants with documentation requirements and who are responsible for their optimal deployment.

Requirements

Basic technical knowledge.

Course:	JK 706560
Duration:	1 day
Fee:	Upon request
Date:	Upon request
Trainers:	Manfred Schleicher Manfred Walter
Follow-up courses:	None

INQUIRE HERE!



Data recording and data evaluation with JUMO paperless recorders

Content

The seminar provides central basic principles for start-up and efficient use of the paperless recorder series JUMO LOGOSCREEN as well as the relevant software components:

- Mounting and connection
- Functional principle of the paperless recorder
- Configuration of the devices for typical applications
- Operation
- General information about the configuration programs (connection assistant, device manager, diagnostic possibilities, etc.)
- Evaluation of measurement data using the JUMO PC evaluation software PCA3000
- Connection of the devices via Ethernet
- Time-controlled data request with the JUMO PCA communication software PCC
- Practical session: extensive workshops on the device as well as with the software components

Objectives

After the seminar the participants will be able to configure and operate the JUMO paperless recorders for typical applications. They can transfer and archive recording data securely via data carrier or Ethernet as well as carry out a secure evaluation with the PCA3000 software.

Target group

Employees who are responsible for starting up JUMO paperless recorders of the type JUMO LOGOSCREEN 601/700 or who are responsible for evaluating the recorded measurement data. Engineers as well as technicians who are responsible for planning plants with documentation requirements and who are responsible for their optimal implementation.

Requirements

Basic technical knowledge and knowledge in the field of automation technology.

INQUIRE HERE!

Course:	JK 706580
Duration:	1 day
Fee:	Upon request
Date:	Upon request
Trainer:	Manfred Schleicher
Follow-up courses:	None



Safe handling of measurement data from JUMO devices with recording function

Content

The seminar provides central basic principles and information on the transfer, archiving, and measurement data evaluation of the following JUMO products:

JUMO LOGOSCREEN 601/700, JUMO DICON touch, JUMO IMAGO 500, JUMO AQUIS touch S/P, JUMO mTRON T.

- Setup of the software components before the first loading of registered data via USB flash drive or interface
- Safe handling of archives
- Evaluation possibilities
- Connection of the devices to Ethernet
- Setting up a time-controlled data transfer with the JUMO PCC communication software
- Use of the web server
- Basic principles of data output with forms, use of standard forms
- Practical session: extensive workshops with the evaluation and communication software

Objectives

After the seminar the participants will be able to safely handle the PC evaluation software PCA3000 and the PCA communication software PCC.

Target group

Employees who are responsible for setting up data storage and archiving for JUMO devices with recording function and/or who are responsible for evaluating data (network administrators, QM employees, etc.).

Requirements

Basic technical knowledge.

Please note

The configuration of the devices is not part of this seminar.

INQUIRE HERE!

Course:	JK 706500
Duration:	1 day
Fee:	Upon request
Date:	Upon request
Trainer:	Manfred Schleicher
Follow-up courses:	None



JUMO variTRON 500 – basic course

Content

The seminar provides the necessary information for successful startup of JUMO variTRON 500.

- Introduction of JUMO variTRON 500, the connection modules, and web panels
- Overview of the JUMO variTRON 500 tools:
 - JUMO smartWARE Setup for JUMO variTRON 500
 - CODESYS V3.5
 - JUMO Web Cockpit
- Functional range of the connection modules and their configuration
- Creation of a project:
 - Configuration of a continuous control with additional functionalities
 - Creation of a visualization in CODESYS
 - System access via JUMO Web Cockpit

Objectives

After the seminar, the participants will be able to create simple projects independently and to supervise existing projects together with JUMO Engineering.

Target group

Employees who maintain JUMO variTRON systems or would like to put them into operation.

Requirements

Basic technical knowledge.

INQUIRE HERE!

Course:	JK 705002
Duration:	2 days
Fee:	Upon request
Dates:	Upon request
Trainers:	Michael Wiener Thomas Diel Manfred Schleicher
Follow-up course:	JUMO variTRON 500 – advanced course, p. 21

Automation



JUMO variTRON 500 – advanced course

Content

The seminar provides in-depth information about the application of CODESYS in connection with JUMO variTRON 500.

- CODESYS
 - Programming in CFC and ST code
 - Data types and conversion
 - Naming of variables and functions
 - Import and export of programs and functions
 - Cross-reference list
 - Customized user functions and function blocks
- Further options with smartWARE Setup for JUMO variTRON 500
- Extensive workshops on the device

Objectives

After the seminar, the participants will be able to create simple projects independently and to supervise existing projects together with JUMO Engineering.

Target group

Employees who want to create simple PLC programs

Requirements

Practical experience with the configuration of JUMO variTRON 500 or participation in the basic course.

Course:	705003
Duration:	1 day
Fee:	Upon request
Dates:	Upon request
Trainers:	Michael Wiener Thomas Diel Manfred Schleicher
Follow-up courses:	None

INQUIRE HERE!



Thyristor power controllers from the JUMO TYA 200 series and JUMO IPC 300 electronic transformer

Content

The seminar provides the necessary information for safe handling of the actuators.

- Selection of the suitable actuator (applications without transformer – TYA, applications with transformer – IPC).
- Dimensioning of actuators and accessories (mains filter and choke – IPC)
- Connection
- Operating modes: phase-angle control and burst-firing operation (TYA) or amplitude control (IPC)
- Adaptation of actuators to different load types such as metallic heating elements, IR emitters, MoSi₂ and SiC heating elements
- The subordinate control loops
- Monitoring of the heating elements by partial load break monitoring and r-control
- Further functional scope of the actuators
- Workshops

Objectives

After the seminar, participants will be able to select the right actuator for the application and to safely start it up.

Target group

Engineers and technicians who are responsible for the implementation of plants with electrical heating. Employees who start up and support the actuators.

Requirements

Electrotechnical training.

INQUIRE HERE!

Course:	JK 709000
Duration:	1 day
Fee:	Upon request
Date:	Upon request
Trainers:	Manfred Schleicher
Follow-up courses:	None

Automation



Measuring, control, and automation system – JUMO mTRON T and CODESYS V3.5

Content

The seminar provides the necessary information for successful startup of JUMO mTRON T including the extension with CODESYS.

- System overview, installation, and wiring
- Configuration of the recording function, the controller function, and the program generator
- Detailed information on the multifunction panel 840 and the multichannel controller module
- Important functionalities of the system (limit value monitoring function, user administration, email transmission, etc.)
- Extensive configuration examples
- Refresher training on programming in CFC (Continuous Function Chart) and in ST code (structured text)
- Procedure in CODESYS for extending the system with PLC functionality
- Data types and declaration of variables, communication between PLC and JUMO mTRON T
- Information about the user interface of CODESYS V3.5
- JUMO functions in CODESYS
- Tips and tricks in handling the software
- Extensive workshops

Objectives

After the seminar the participants will be able to start up the system including the PLC extension.

Target group

Employees who are starting up JUMO mTRON T for the first time. Engineers and technicians who are responsible for the planning of plants with JUMO mTRON T and who are responsible for the optimal use of the system.

Requirements

Basic technical knowledge.

Course:	JK 705000-2
Duration:	3 days
Fee:	Upon request
Dates:	Upon request
Trainers:	Manfred Schleicher Thomas Diel
Follow-up courses:	None

INQUIRE HERE!





Functional safety in Europe pertaining to Safety Integrity Level and Performance Level

Content

The seminar provides an introduction about the simple start into functional safety through application-oriented practical information when dealing with the standards.

- What does functional safety mean?
- Standards, definitions, values
- Differences between SIL and PL
- Manufacturer specifications
- System structures
- Risk assessment and the tools
- Security structures
- Case study of a safety chain
- SIL ratings according to standards
- Certificates and safety manual
- System applications and their different approaches with structures and calculations
- General information and examples for practical use
- Exchange of experience

Objectives

After the seminar the participants will have an overview of functional safety and can

- Create risk assessments
- Retrace calculations
- Establish SIL structures
- Compile documentations

Target group

Employees who want to get an initial overview of the functional safety requirements in plant and mechanical engineering.

Requirements

Basic technical knowledge.

INQUIRE HERE!

Course:	JK 989020
Duration:	1 day
Fee:	Upon request
Dates:	Upon request
Trainer:	Matthias Garbsch
Follow-up courses:	None



Extension of JUMO components through PLC functionality

Content

The indicators, controllers, and paperless recorders have a wide range of functions which can be set via the configuration program. Extensive extensions are possible in the programming language ST code (structured text) in the ST editor. The seminar demonstrates the extension through the PLC functionality.

- Linking input and output variables in the configuration program for the ST editor
- Brief overview of the ST editor
- Procedure for creating the program
- Arithmetic, numerical, and logical functions
- Statistics and comparison functions
- Date and time functions
- Conversions
- Instructions (If, For, While, etc.)
- Text display control from the PLC
- Variables declaration
- Changing control parameters from the PLC
- Practical session: workshops on the above topics

Objectives

After the seminar, participants will be able to add PLC functionality to JUMO diraTRON/diraVIEW, JUMO meroTRON/meroVIEW, and JUMO LOGOSCREEN 601/700.

Target group

Employees who want to add PLC functionality to JUMO components.

Requirements

Basic technical knowledge. First experiences with the devices would be optimal.

INQUIRE HERE!

Course:	JK 701521
Duration:	1 day
Fee:	Upon request
Date:	Upon request
Trainer:	Manfred Schleicher
Follow-up courses:	None



Webinars

The following section provides an overview of our [free JUMO webinars](#).

Essentially, a webinar is an online seminar. All participants and trainers enter a virtual seminar room. The trainer splits their screen to enable all participants to see their presentation. At the same time, everyone is connected via the integrated audio conference so that they can hear the trainer. In addition, they can turn on their webcam to enable all participants to see them. The participants can also ask questions during the webinar.

Advantages for you:

JUMO webinars are free of charge. Also, you can participate comfortably from your workplace without traveling at all. All you need is a computer with Internet access and a telephone or headset for your computer.

▶ All webinars at a glance

Liquid analysis

Application of inductive conductivity measurement technology

The webinar describes the straightforward use of inductive conductivity measurement technology:

- Notes on the mounting situation
- Configuration of transmitters
- Base calibration
- Meaning of the relative cell constants
- Maintenance

Target group: employees who use inductive conductivity measurement technology.

Dates

Wed., June 08, 2022

Wed., Sept. 21, 2022

Time: 3:00 – 3:30 PM

Trainer: Manfred Schleicher

[→ Sign up here](#)

Control

Expansion of JUMO meroTRON and JUMO meroVIEW to include PLC functionality

The webinar introduces the special features of the ST editor if it is used in the setup program of the JUMO meroTRON and JUMO meroVIEW:

- Querying the displayed basic display
- Control of control elements from the ST editor
- Change target variables and attributes for the base display
- Other options
- Examples

Target group: employees who want to add PLC functionality to the controller or indicator.

Dates

Thurs., June 09, 2022

Thurs., Sept. 22, 2022

Time: 3:00 – 4:00 PM

Trainer: Manfred Schleicher

[→ Sign up here](#)

JUMO meroTRON presentation of the new 2-channel controller

The JUMO meroTRON is characterized by its flexibility and high level of integration.

Topics covered in the webinar include:

- Functionality and hardware equipment
- Creating your own menu structure
- Special functions of the ST code

Target group: employees who want to learn about the device.

Dates

Thurs., June 30, 2022

Thurs., Oct. 11, 2022

Time: 3:00 – 4:00 PM

Trainer: Marcell Bräutigam

[→ Sign up here](#)



Recording

JUMO paperless recorders – counters/integrators function

The webinar demonstrates how to use the features:

- Counting of pulses, integration of analog signals, and determination of the operating time over a defined time range
- Setting the time range (daily, weekly, monthly, yearly, or during an active binary signal)
- Display of the results on the recorder display and easy-to-use evaluation with the PCA3000 evaluation software

Target group: employees who want to get an overview of the function or who want to use it.

Dates

Tues., June 28, 2022
 Wed., Oct. 05, 2022
 Time: 3:00 – 3:45 PM
 Trainer: Manfred Schleicher

[→ Sign up here](#)



Automation

JUMO dTRANS T06 Ex from the perspective of explosion protection

The webinar provides clarity on the 3 different identification markings/approvals of the transmitter related to explosion protection and possible applications:

- For use as associated/intrinsically safe/electrical equipment according to DIN EN 60079-11
- Used for ignition source monitoring for devices according to EN 50495 and meaning of Safety Integrity Level (SIL)
- Monitoring of non-electrical devices/plant components with regard to explosion protection according to DIN EN 80079-37

Target group: employees who want to learn about the meaning of the different Ex approvals.

Dates

Tues., June 14, 2022
 Thurs., Sept. 29, 2022
 Time: 3:00 – 3:30 PM
 Trainer: Manfred Schleicher

[→ Sign up here](#)

JUMO temperature transmitters at a glance

The webinar provides decision support for the selection of JUMO temperature transmitters JUMO dTRANS T01 ranging to JUMO dTRANS T09 and JUMO Wtrans B

- Head transmitter for B-head and J-head
- Cable transmitter
- Transmitter for mounting rail
- Versions for RTD temperature probes and thermocouples
- Models with current or voltage output
- Types with serial/HART® communication or IO-Link
- Variants with programming option via slide switch
- Versions with approvals regarding explosion protection and Safety Integrity Level

Target group: employees who want to get an overview of the various temperature transmitters that are available from JUMO.

Dates

Wed., June 15, 2022
 Tues., Oct. 04, 2022
 Time: 3:00 – 4:00 PM
 Trainer: Manfred Schleicher

[→ Sign up here](#)

JUMO Cloud – establish connection and visualize first values

The webinar provides an introduction to working with JUMO Cloud and JUMO smartWARE SCADA.

- Preparation JUMO variTRON
- Establishing the JUMO variTRON connection with JUMO Cloud
- First visualization of values with widgets

Target group: employees who want to get started with JUMO Cloud and JUMO smartWARE SCADA.

Dates

Wed., June 29, 2022
 Thurs., Oct. 06, 2022
 Time: 3:00 – 3:45 PM
 Trainer: Maximilian Wenderoth

[→ Sign up here](#)



<http://webinars.jumo-en.info>

SIGN UP FOR FREE

E-learning

The following section provides an overview of our **free JUMO e-learning courses and webinar recordings**.

For example, you can have a typical startup of JUMO devices demonstrated in a succinct and simple manner through an **e-learning course**. You can also use videos for a quick introduction to fundamental topics such as individual measurands.

If you would like to delve a little deeper into a topic, we recommend our **webinar recordings**, which are also free of charge: in just under an hour, you will gain a somewhat deeper insight into various topics of measurement and control technology or JUMO device technology.

Advantages for you:

You can always access our free e-learning courses from anywhere. That way, you have all the flexibility you need to suit your schedule.

Our product range is being expanded continuously – all e-learning courses can be found at <http://elearning.jumo-en.info>.

▶ Selected e-learning courses and webinar recordings at a glance

Temperature

- Startup of RTD temperature probes (e-learning)
- Startup of thermocouples (e-learning)
- Practical information on dial thermometers and an overview of the JUMO product portfolio (webinar recording)

Liquid analysis

- Measuring of the pH value (e-learning)
- Measurement of the redox voltage (e-learning)
- Measuring the electrolytic conductivity (e-learning)
- Basic principles of chlorine measurement and the use of measurement technology (webinar recording)
- Basic principles of measuring dissolved oxygen and the use of measurement technology (webinar recording)
- Basic principles of turbidity measurement and the use of measurement technology (webinar recording)
- Ammonia leakage detection in cooling circuits with the ammonia-sensitive sensor (webinar recording)

Pressure and level

- Pressure measurement with JUMO (e-learning)
- Hydrostatic level measurement (webinar recording)
- Point and continuous level measurement with JUMO NESOS (webinar recording)

Flow

- Industrial flow measurement technology (webinar recording)
- Flow measurement according to the differential pressure method (webinar recording)

Humidity

- Basic principles of humidity measurement and information on measurement methods (e-learning)

Control

- The controller function in JUMO compact controllers and automation components (webinar recording)
- Configuration of JUMO compact controllers and automation components as three-state, modulating and position controllers (webinar recording)
- How to enhance efficiency by safely applying autotuning in JUMO controllers (webinar recording)

Recording

- Startup of a JUMO LOGOSCREEN 700 device (e-learning)
- PC evaluation software PCA3000 (e-learning)
- JUMO PCA communication software PCC (e-learning)
- JUMO PC Security Manager software PCS (webinar recording)

Automation

- JUMO variTRON 500 – part 1: central processing unit for automation systems (webinar recording)
- JUMO variTRON 500 – part 2: the hardware and the configuration program (webinar recording)
- JUMO variTRON 500 – part 3: addressing the modules from CODESYS and the JUMO Web Cockpit (webinar recording)
- JUMO variTRON 500 – part 4: CODESYS WebVisu using an example (webinar recording)
- Expansion of JUMO mTRON T – applications with CODESYS V3.5 (webinar recording)
- JUMO thyristor power controllers: electrical engineering basics (e-learning)
- JUMO IPC 300 – part 1: operation of ceramic heating elements in phase-angle operation without current peaks and with a minimum of reactive power and harmonics (webinar recording)
- JUMO IPC 300 – part 2: introduction of the electronic transformer (webinar recording)
- JUMO IPC 300 – part 3: starting up the electronic transformer (webinar recording)
- JUMO transmitter connection, configuration, handling (webinar recording)

Monitoring

- Application of JUMO safetyM STB/STW – safety temperature limiter and safety temperature monitor (webinar recording)
- Basic principles for using thermostats based on the example of the JUMO heatTHERM series (webinar recording)

Comprehensive topics

- Basic principles for programming in the ST editor (webinar recording)
- JUMO setup programs (e-learning)
- Operation and application of JUMO thermoCOR – portable measuring system according to AMS2750 and CQI-9 (webinar recording)
- IO-Link – basic principles, connection, and parameterization (webinar recording)
- Basic principles of explosion protection (ATEX) and the use of JUMO equipment with the protection type "intrinsically safe" (webinar recording)
- Process screen creation based on the example of the JUMO DICON touch (webinar recording)
- Use of math and logic function in JUMO components (webinar recording)

Industries

- Applying the AMS2750 directive on the basis of an example case (webinar recording)
- Successfully applying the CQI-9 directive: key changes to the 4th edition (webinar recording)



Technical literature

Up-to-date technical knowledge for beginners and practitioners

With our extensive range of technical literature in the field of measurement and control technology we offer insights into the basic principles for beginners as well as useful information for more experienced users.

The technical literature is clearly laid out and the content is presented in a simple as well as understandable manner through **practical examples** and illustrations. The individual topics are presented in a structured style and can for the most part be applied to **products of other manufacturers**.

The authors possess decades of experience as well as comprehensive knowledge in their area of expertise. This is one of the reasons why our technical literature has received a distinctive place in the range of teaching materials at various technology institutes and universities.

Our technical literature is available as paperback books and can be ordered directly on our website. Alternatively, you can download the PDF file free of charge at <http://literature.jumo-en.info>.

► All technical literature at a glance

Temperature

- Measurement uncertainty of a temperature measuring chain (FAS 625)

Liquid analysis

- Information on high-purity water (FAS 614)
- Information on conductivity measurement (FAS 624)
- Information on redox voltage measurement (FAS 615)
- Information on pH measurement (FAS 622)
- Information on measuring ammonia in water (FAS 631)
- Information on the amperometric measurement of free chlorine, chlorine dioxide and ozone in water (FAS 619)
- Information on the measurement of hydrogen peroxide and peracetic acid (FAS 628)

Pressure

- Electronic Pressure Measurement (FAS 606)

Control

- Control Engineering – Basic principles and tips for practitioners (FAS 525)

Automation

- Thyristor power controller – Basic principles and tips for professionals (FAS 620)

Comprehensive topics

- Functional Safety – Safety Integrity Level (FAS 630)
- Explosion Protection in Europe – Electrical equipment, fundamentals, guidelines, standards (FAS 547)



<http://literature.jumo-en.info>

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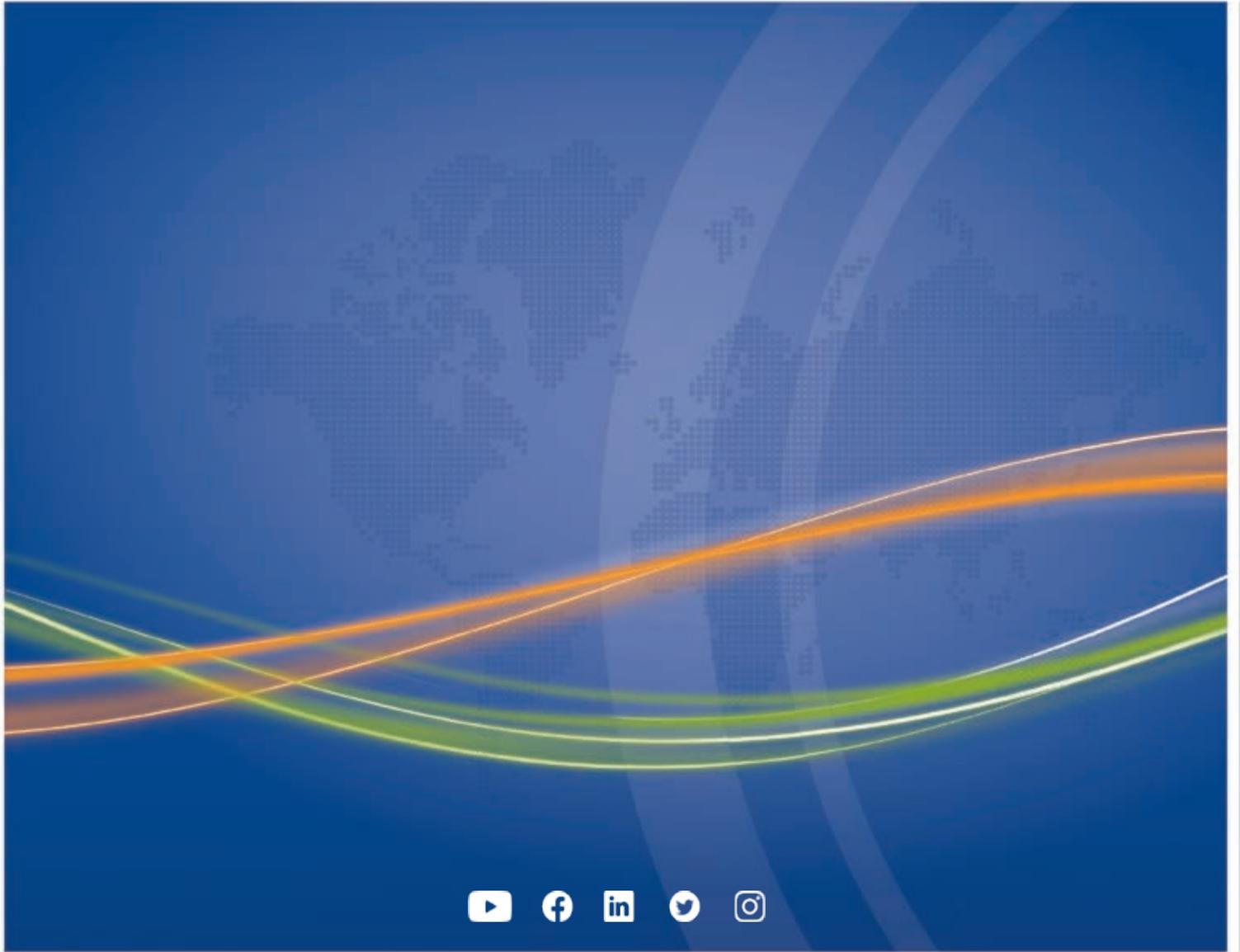
Our JUMO Campus team will be happy to assist you and answer all your questions about the seminar organization. Please contact us by phone at the numbers listed above or via email to campus@jumo.net.

<http://campus.jumo-en.info>

Staying up to date

In addition to the mentioned dates we offer other events, additional seminars, or further webinars during the year. Would you like to stay informed about current events? Simply subscribe to our free quarterly newsletter at <http://newsletter.jumo-en.info>.

<http://newsletter.jumo-en.info>



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