



**MORE THAN SENSORS
AND AUTOMATION**



Simply Smart from the Sensor to the Cloud

Digital sensor communication with IO-Link, SPE, and JUMO digiLine



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Simply Smart from the Sensor to the Cloud

In our VUCA world, which is moving towards digitization at breakneck speed, innovative technologies are inevitably revolutionizing our daily lives and the way we work. As a leading solution provider for industrial sensor and automation technology, we are therefore continuously working to push technological boundaries as well as to develop solutions that meet even the most complex requirements and bring the future to life today.

These include our digital sensors with Single Pair Ethernet or IO-Link, which acquire data precisely and transmit it in real time. Of course JUMO digiLine, an intelligent digital connection system for sensors in liquid analysis, is also included.

In the field of automation we open up completely new possibilities for you as well. After all, production processes run much more effectively, transparently, and cost-efficiently thanks to our automation solutions. They also increase product quality.

You can access the production and process data worldwide through our browser-based cloud solution – completely flexible and with no need to be on site. As a result, end-to-end process monitoring, data-driven optimizations, and comprehensive evaluations become a breeze.

Consequently, we are much more than a supplier of individual sensors or automation systems. Rather, the smooth interaction of our sensor technology, automation, and data evaluation is unique on the market and can become a key component for you with respect to competitiveness and future viability. Experience the impressive variety of our systems – these also include customized engineering services or downstream services!

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Time for new perspectives

The switch from analog to digital sensor technology poses challenges, but also includes enormous opportunities as a result real-time data, precision, and scalability. However, to avoid incompatibilities, downtime, and unnecessary costs, a comprehensive needs analysis and risk assessment is important prior to the planned changeover. Choosing the right technology also plays a major role in the subsequent efficiency of the plant.

Single Pair Ethernet, for example, offers the possibility of continuous data transmission via a single Ethernet line. Due to the large range, areas that were previously difficult to reach can be networked and new applications can be implemented. Examples include: industrial and building automation as well as the Internet of Things (IoT). Consequently, SPE is a door opener for innovations from which many industries can benefit.

As a universal interface for communication with various sensors and actuators, IO-Link offers more flexibility and versatility for integration into existing plants. In sensitive plants and processes, errors and malfunctions can be detected and eliminated in real time due to the advanced diagnostic functions. The decision for SPE or IO-Link therefore always depends on the specific requirements of the respective application.

As a solution provider for sensor and automation technology, we understand the uniqueness of your requirements and are happy to support you with our experience, knowledge, and holistic systems in the digitization of your plants. We provide expert advice from the sensor to the cloud – from the field to the monitoring level. Together we will find the best solution for you. Contact us!

Single Pair Ethernet (SPE)

The innovative technology for lean system solutions

Single Pair Ethernet makes complex installations a thing of the past. After all, the new SPE sensors from JUMO allow you to connect directly to the cloud and effectively combine individual stages of the automation pyramid. Only a single wire pair is required for energy supply and data transmission so that the installation is simple and straightforward.

Your advantage in everyday industrial life

- Minimal cabling work due to "two-wire data cable"
- Flexible installation due to ranges of up to 1000 m
- Continuous Ethernet communication up to the field level
- Cost reduction through efficient construction, operation, and maintenance of plants
- Safe and precise "digital measured value transmission" in real time
- Communication platform for the implementation of Industry 4.0 solutions
- Energy supply via Power over Data Line (PoDL)
- Direct Ethernet access from PLC controllers and SCADA systems

Technical features at a glance

- SPE standard 10BASE-T1L
- SPE connector in M12 version (IP67)
- Transmission speeds of up to 10 mbit/s
- Quick configuration through app/setup program
- Continuous Ethernet communication using Modbus TCP protocol
- Integrated cloud gateway
- Smart sensors for the measurands temperature, humidity, CO₂, flow, and pressure

Smart sensors with Single Pair Ethernet (SPE)



- 1 **JUMO hydroTRANS**
Humidity and temperature transmitter
- 2 **JUMO flowTRANS MAG H20**
Electromagnetic flowmeter
- 3 **JUMO DELOS S02**
Precision pressure transmitter

Member of  **Single Pair Ethernet**
System Alliance

More information can be
found on our website →



IO-Link

The clever point-to-point connection for maximum efficient processes

IO-Link enables companies to successfully lay the foundation for the factory of the future. After all, JUMO sensors with IO-Link enable direct connection to the control level, extensive diagnostic functions, and simple startup as well as configuration. This is by no means the end of the development process, because as an international standard according to IEC 61131-9, IO-Link is continuously being developed and improved.

Your advantage in everyday industrial life

- Interference-free transmission of real-time data
- Simple mounting, startup, and parameterization
- Increase of plant efficiency due to maximum transparency
- Reduction of service and maintenance costs
- Increase in plant availability through extensive diagnostics
- Foundation for Industrial Internet of Things (IIoT)
- High degree of process reliability due to long operating life and great accuracy
- Flexible use due to compact design type and numerous process connections

Technical features at a glance

- Measurands: temperature, pressure, conductivity, point level, flow
- Digital data transmission according to international standard (IEC 61131-9)
- Integration into the control level independent of the fieldbus
- Standardized connection lines and connectors
- Available IO-Link profiles: Common Profile, Smart Sensor Profile, Firmware Update Profile

Intelligent sensors with IO-Link



① JUMO ZELOS C01 LS

Capacitive level switch

② JUMO flowTRANS US W02

Ultrasonic flowmeter

③ JUMO DELOS S02

Precision pressure transmitter



More information can be found on our website →



JUMO digiLine

The all-rounder for sensor networks in liquid analysis

JUMO digiLine is a unique, bus-compatible technology for digital sensor technology in liquid analysis. After all, thanks to easy-to-use Plug and Play functionality, multiple sensors can be combined in a sensor network more easily than ever before. Communication to the controller takes place via a single common master line, which enables efficient and rapid cabling of multiple measuring points.

Your advantage in everyday industrial life

- One system for all important measurands in liquid analysis
- Reduction of installation and maintenance times
- Cost reduction through intuitive sensor management and simple cabling
- Interference-free data transmission in real time
- Modular system for single measuring points and sensor networks
- Reusable JUMO digiLine electronic components in the event of sensor wear
- Calibration on the PC or laptop using JUMO DSM
- Seamless QA documentation over the entire lifecycle

Technical features at a glance

- Measurands: pH value, temperature, redox potential, conductivity, oxygen concentration, turbidity, disinfection measurands
- Additional output signal 4 to 20 mA for easy integration into analog applications
- JUMO digiLine electronic components can be combined with analog sensor technology from other manufacturers (except inductive conductivity)
- Network structure in star or tree form

Intelligent, bus-compatible connection system for digital sensors – JUMO digiLine



- 1 JUMO digiLine O-DO H10/H20**
Digital optical sensors for dissolved oxygen in hygienic applications
- 2 JUMO digiLine CR/CI**
Transmitter for inductive and conductive conductivity sensors
- 3 JUMO tecLine HD**
pH combination electrodes



More information can be found on our website →



JUMO variTRON

The agile family for powerful and fast automation

When using devices from the JUMO variTRON family, the measured values of our digital sensors are acquired, evaluated, and controlled in real time. The central processing unit, together with its wide range of I/O and controller modules as well as the intuitive JUMO smartWARE Evaluation software, offers a sophisticated system that takes the strain off everyday life and opens up perspectives for the core business. This is especially true for the latest addition to the family – the JUMO variTRON 500 touch – a touch panel with integrated central processing unit.

Your advantage in everyday industrial life

- Cost reduction through perfectly functioning processes
- Versatile connection and application options
- Easy integration of new software functions and customer-specific parameters
- Fast startup through JUMO variTRON Visu template
- Simultaneous operation of more than 120 control loops
- Process data recording of up to 240 channels and 20 batches
- Digital data evaluation by JUMO smartWARE Evaluation

Technical features at a glance

- PLC according to IEC 61131-3 (CODESYS V3.5)
- Applications with the programming environment Node-RED
- Support of numerous fieldbus systems such as Modbus RTU/TCP, PROFINET, EtherCAT, and BACnet/IP
- Modern communication protocols such as OPC UA and MQTT
- Visualization CODESYS WebVisu or CODESYS Remote TargetVisu
- Approvals UL, DNV GL (depending on version)
- Voltage supply DC 24 V

Automation system – JUMO variTRON



① JUMO variTRON

Central processing unit for an automation system

② JUMO smartWARE Evaluation

Automation system and software for evaluation and visualization of measurement data recorded by JUMO variTRON



More information can be found on our website →



JUMO Cloud

The intuitive and flexible cosmopolitan for data evaluation

Whether from New York, Berlin, or Tokyo, the JUMO Cloud can be accessed via all common Internet browsers – in the city or in the country – and offers maximum flexibility in data evaluation. After all, multiple plants, processes, and sites can be securely monitored in a single dashboard. Deviations in measurement data are indicated by alarms. Our sensors communicate either directly with the cloud (SPE) or via the JUMO variTRON as a gateway (IO-Link and JUMO digiLine).

Your advantage in everyday industrial life

- No installation of software, browser plugins, or add-ons
- Worldwide access via common Internet browsers
- More efficiency due to data storage/backup from JUMO
- Customized dashboards and easy client management
- High degree of data security and end-to-end encryption
- Alarms via text message, email, voice call, and push messages
- Unlimited data export as Excel, PDF, HTML, CSV, JSON, or PNG
- Intuitive operable editor for process and plant visualization
- Unlimited data storage due to expandable data memory

Technical features at a glance

- Certification according to ISO/IEC 27.001
- Encryption via HTTPS, MQTTS/TLS
- Transport protocol MQTT
- Acquisition cycles as fast as 1 s
- Flat rate or pay-per-use payment models
- Network structure in star or tree form

IoT platform for reliable process management – JUMO Cloud

1



2



1 JUMO variTRON

Central processing unit for an automation system

2 JUMO Cloud and JUMO smartWARE SCADA

Highly-scalable and high-performing IoT solutions



More information can be found on our website →





JUMO Engineering

JUMO Engineering, the service division from JUMO GmbH & Co. KG, combines expertise and industry-specific experience in one team. Our engineers and technicians develop customized solutions that are strictly based on your specific requirements. The JUMO Engineering team strongly believes in personalized support and consulting for its customers – from initial contact and the development of a customized solution to its series production. When implementing the many different industry applications we always strive for optimum results with maximum customer benefits. Our innovative engineering services allow us to achieve this goal.



Innovative system solutions with expertise

We always draw on the feedback from our customers around the world to improve our products. This strategy is reflected in our new developments. We view complex tasks as challenges that allow us to develop tailored solutions for you and at the same time improve our product portfolio. JUMO Engineering with its range of services completes this comprehensive approach.

Our services

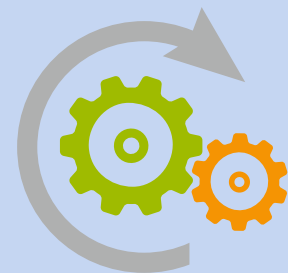
- Feasibility analysis
- Creating a technical concept including product requirements specifications and specification sheet
- Complete project planning and documentation
- Project planning including PLC programming, visualization, network technology, etc.
- Continuous project management
- On-site startup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

Your advantages

- As a central contact partner JUMO develops technical system solutions
- Extensive expertise with all measurement and automation devices
- Global support through experienced specialists
- Flexible, tailored solutions to suit your individual needs and applications

In a nutshell

- Precise and prompt communication channels:
This saves you time and prevents mistakes!
- Fully developed expertise for maximum flexibility:
For project planning that is fully reliable and safe
- Technology that has proven itself over decades reduces downtimes:
For excellent plant availability and process reliability!





www.jumo.net