

JUMO GmbH & Co. KG
 Delivery address: Mackenrodtstraße 14
 36039 Fulda, Germany
 Postal address: 36035 Fulda, Germany
 Phone: +49 661 6003-0
 Fax: +49 661 6003-607
 Email: mail@jumo.net
 Internet: www.jumo.net

JUMO Instrument Co. Ltd.
 JUMO House
 Temple Bank, Riverway
 Harlow, Essex, CM20 2DY, UK
 Phone: +44 1279 63 55 33
 Fax: +44 1279 62 50 29
 Email: sales@jumo.co.uk
 Internet: www.jumo.co.uk

JUMO Process Control, Inc.
 6733 Myers Road
 East Syracuse, NY 13057, USA
 Phone: +1 315 437 5866
 Fax: +1 315 437 5860
 Email: info.us@jumo.net
 Internet: www.jumousa.com



JUMO smartWARE SCADA

Software for process monitoring and control

Brief description

The JUMO smartWARE SCADA software provides easy access to measurement data using conventional web browsers. It offers functions for process visualization as well as for evaluation of the acquired data. The software also supports manufacturing and work processes with valuable visualization, alarm, and planning functions.

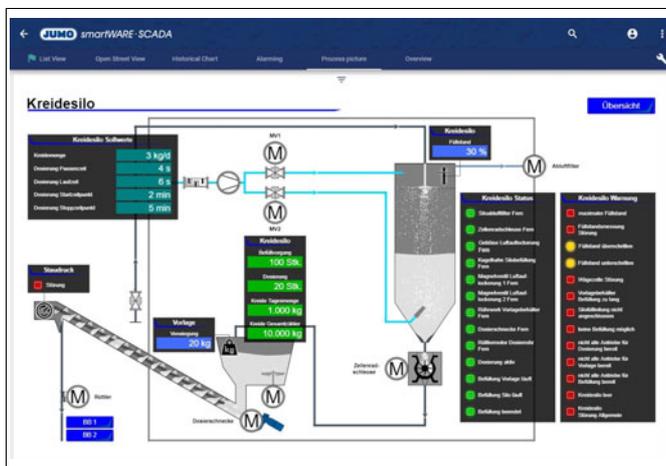


 **Maximum transparency**
 for your processes with individually configurable user rights and dashboards

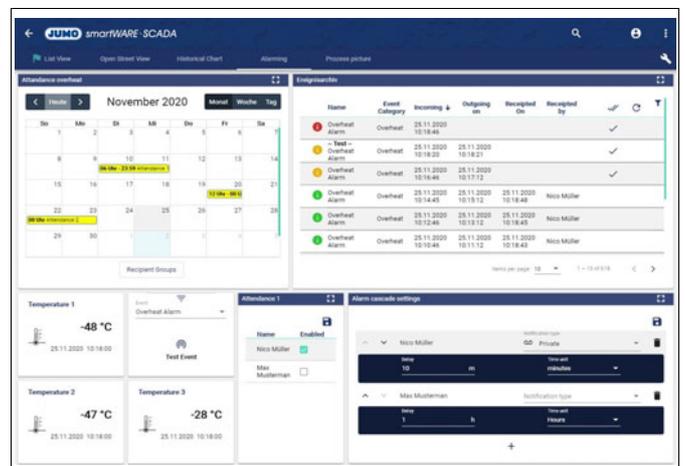
 **Reduced outlay**
 due to outstanding report and export functions

 **Unlimited access**
 to the dashboards with any number of end devices via common web browsers without carrying out installation

 **Alarm management**
 through data evaluation, availability planning, monitoring and remote alarm functions



Visualization of process screens



Availability planning and remote alarm

JUMO GmbH & Co. KG
 Delivery address: Mackenrodtstraße 14
 36039 Fulda, Germany
 Postal address: 36035 Fulda, Germany
 Phone: +49 661 6003-0
 Fax: +49 661 6003-607
 Email: mail@jumo.net
 Internet: www.jumo.net

JUMO Instrument Co. Ltd.
 JUMO House
 Temple Bank, Riverway
 Harlow, Essex, CM20 2DY, UK
 Phone: +44 1279 63 55 33
 Fax: +44 1279 62 50 29
 Email: sales@jumo.co.uk
 Internet: www.jumo.co.uk

JUMO Process Control, Inc.
 6733 Myers Road
 East Syracuse, NY 13057, USA
 Phone: +1 315 437 5866
 Fax: +1 315 437 5860
 Email: info.us@jumo.net
 Internet: www.jumousa.com



System architecture

<p>Supported operating systems</p> <ul style="list-style-type: none"> Windows 10, from version 1903 Windows Server® 2019, from version 1903 RedHat Enterprise Linux 7/8 CentOS 7/8 Virtual machine for Microsoft Hyper-V (generation 2) and VMWare 	<p>Supported database systems</p> <ul style="list-style-type: none"> MongoDB (open source/commercial) Azure DocumentDB
<p>Supported browsers</p> <ul style="list-style-type: none"> Microsoft Edge on Windows Google Chrome on Windows, Mac, iOS, and Android Apple Safari on iOS 	<p>Object orientation</p> <ul style="list-style-type: none"> Templates for complex, nested objects can be configured Any number of templates Any number of instances of a template Automatic and manual updating of the instances of a template Graphic objects can be assigned to a template
<p>Security</p> <ul style="list-style-type: none"> End-to-end encryption Browser access via HTTPS Gateway connections via MQTTS/TLS User management with password rules Two-factor authentication (OTP) 	<p>Redundancy</p> <ul style="list-style-type: none"> Active cluster function Automatic load distribution Automatic client switching Automatic synchronization of current, historical, and project planning data Support for redundant communication channels
<p>Docker</p> <p>Linux:</p> <ul style="list-style-type: none"> Linux kernel version 3.10 or higher, CS Docker Engine Version 1.10 or higher, 2 GB of working memory, 3 GB of available hard disk space, a static IP address <p>Windows:</p> <ul style="list-style-type: none"> Windows 10 64 bit: Pro or Enterprise (build 15063 or higher), Hyper-V and Container Windows features have to be activated <p>The following hardware requirements are necessary in order to run Client Hyper-V on Windows 10 successfully:</p> <ul style="list-style-type: none"> 64-bit processor with Second Level Address Translation (SLAT), 4-GB system RAM, support of hardware visualization at the BIOS level must be activated in the BIOS settings 	<p>Hardware</p> <p>Minimum requirements:</p> <ul style="list-style-type: none"> Quad core with hyperthreading 16 GB RAM SSD hard disk drive

Dongle licensing

<p>Software</p> <p>The software dongle consists of a CodeMeter license file that is linked to the server application.</p>	<p>Hardware</p> <p>The hardware dongle consists of a physical USB flash drive that has to be connected to the server for licensing. The basis here for this is also CodeMeter licensing.</p>
----------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

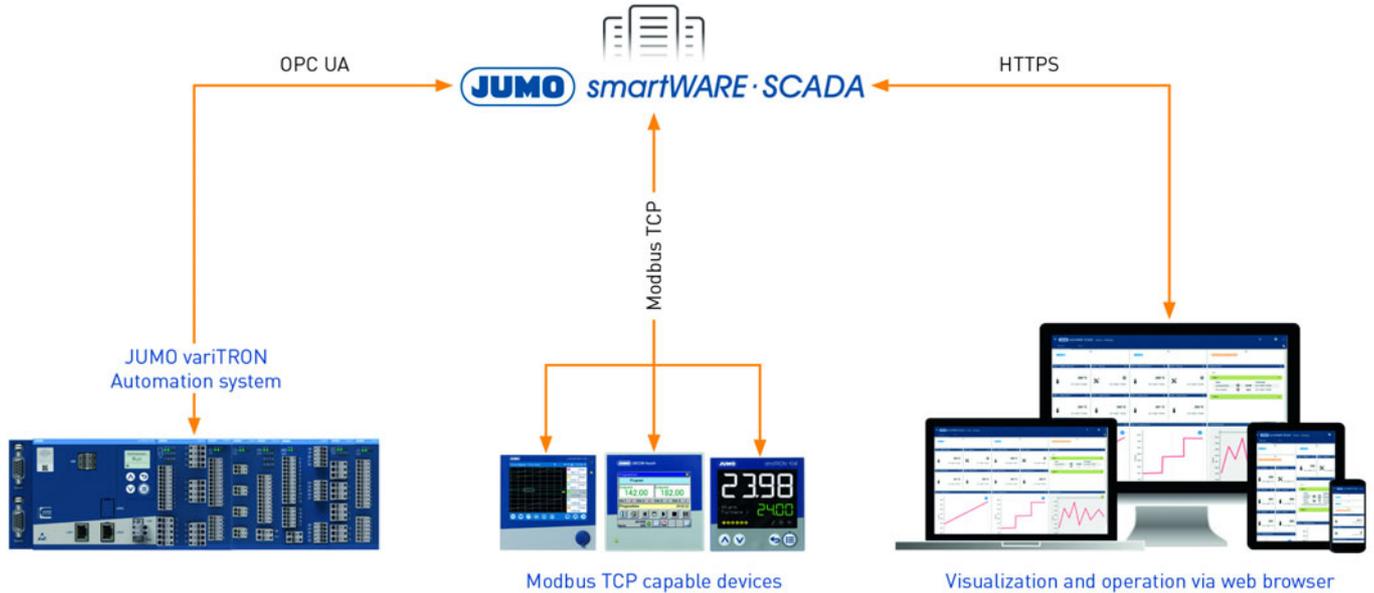
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
Email: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 62 50 29
Email: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
6733 Myers Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com



Schematic process for communication



And many other interfaces including M-Bus, Beckhoff ADS.NET, S7 TCP, REST API

JUMO GmbH & Co. KG
 Delivery address: Mackenrodtstraße 14
 36039 Fulda, Germany
 Postal address: 36035 Fulda, Germany
 Phone: +49 661 6003-0
 Fax: +49 661 6003-607
 Email: mail@jumo.net
 Internet: www.jumo.net

JUMO Instrument Co. Ltd.
 JUMO House
 Temple Bank, Riverway
 Harlow, Essex, CM20 2DY, UK
 Phone: +44 1279 63 55 33
 Fax: +44 1279 62 50 29
 Email: sales@jumo.co.uk
 Internet: www.jumo.co.uk

JUMO Process Control, Inc.
 6733 Myers Road
 East Syracuse, NY 13057, USA
 Phone: +1 315 437 5866
 Fax: +1 315 437 5860
 Email: info.us@jumo.net
 Internet: www.jumousa.com



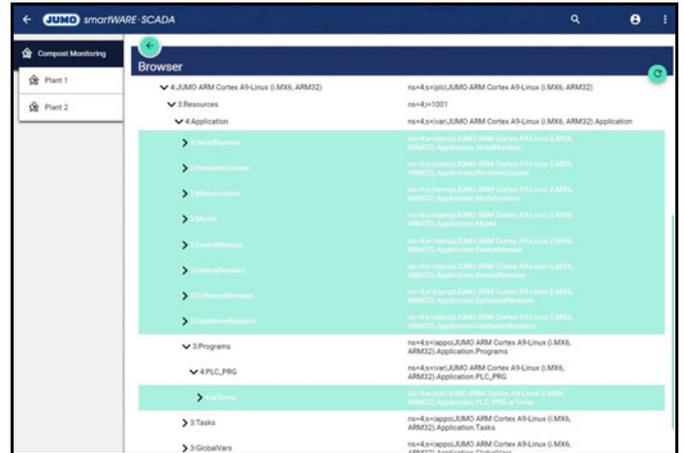
Functions

All function blocks/modules not indicated are included in the standard software scope. All indicated functions/modules must be additionally selected using the order code and comply with the relevant size of the signal quantity (XS, S, M, L) selected at the start.

Data and facts

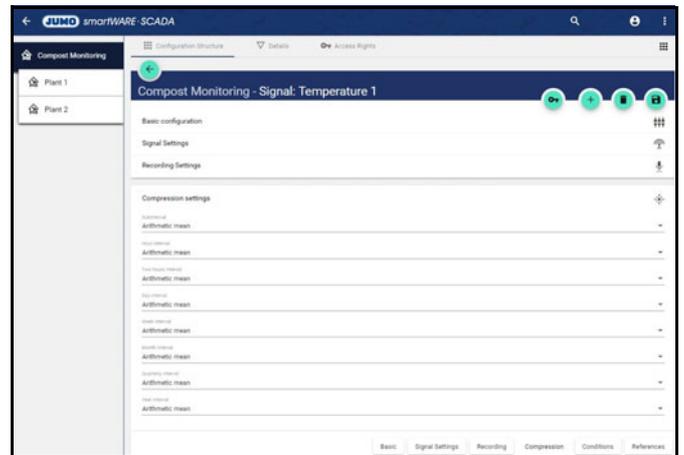
Data archiving:

- Configurable data acquisition
- Acquisition of the average value, last value, minimum and/or maximum
- Acquisition according to the delta event method
- Acquisition cycle at a speed of up to 1 second
- Extremely compact storage of raw data



Data compression:

- Minor interval can be set; 15 minutes as standard
- Hourly interval, two-hourly interval, daily interval, weekly interval, monthly interval, quarterly interval, and annual interval preconfigured
- Min/max reference can be set per evaluation (for example daily data with max/max values from the two-hour values)
- In-memory calculation of predefined intervals and free intervals possible at any time
- Extremely compact storage of pre-compressed data



Script module:^a

- Scripts can be integrated on the server side
- API for access to variables, events, current and historical data

^a The functions are included in the order details under "script module".

JUMO GmbH & Co. KG
 Delivery address: Mackenrodtstraße 14
 36039 Fulda, Germany
 Postal address: 36035 Fulda, Germany
 Phone: +49 661 6003-0
 Fax: +49 661 6003-607
 Email: mail@jumo.net
 Internet: www.jumo.net

JUMO Instrument Co. Ltd.
 JUMO House
 Temple Bank, Riverway
 Harlow, Essex, CM20 2DY, UK
 Phone: +44 1279 63 55 33
 Fax: +44 1279 62 50 29
 Email: sales@jumo.co.uk
 Internet: www.jumo.co.uk

JUMO Process Control, Inc.
 6733 Myers Road
 East Syracuse, NY 13057, USA
 Phone: +1 315 437 5866
 Fax: +1 315 437 5860
 Email: info.us@jumo.net
 Internet: www.jumousa.com



Trends, reports, and scheduler

Trends:

- Display of current and historical data
- Value/timing charts
- Any number of axes and lines; any number of lines per axis
- Display as line, step line, or bar chart
- Time comparisons across multiple time axes
- Zoom using mouse/touch, shifting of the time range using time bars
- Automatic key
- Ruler for reading the values and time with a locking function
- User configurable balloon tool tips for the value at the time that is shown
- Export of data to CSV, XLSX, and PDF as well as printing directly from the chart
- Pie chart



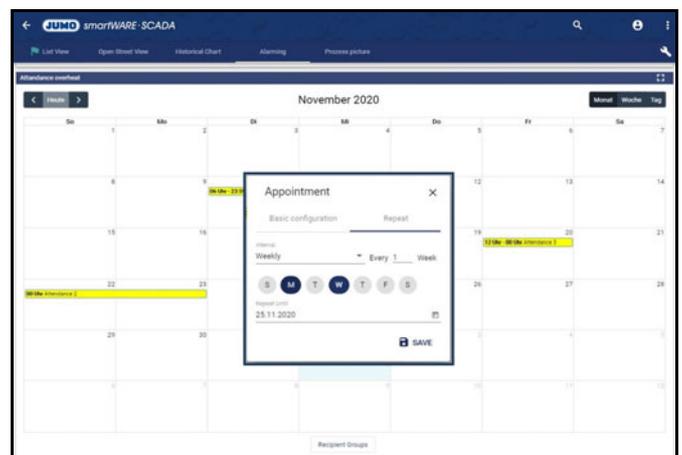
Reports:

- Web-based reports
- Output in the browser, download as PDF or Excel file
- Templates can be designed using HTML, more complex calculations can be programmed via JavaScript^a
- User configurable manual inputs for manual counter or laboratory data^a
- Industry-specific templates for energy, water, and wastewater^a



Scheduler:^b

- Timer/timer program
- One-time events and series
- Value changes at the start and end of an event can be parameterized



^a The functions are included in the order details under "advanced reporting".

^b The functions are included in the order details under "Scheduler".

JUMO GmbH & Co. KG
 Delivery address: Mackenrodtstraße 14
 36039 Fulda, Germany
 Postal address: 36035 Fulda, Germany
 Phone: +49 661 6003-0
 Fax: +49 661 6003-607
 Email: mail@jumo.net
 Internet: www.jumo.net

JUMO Instrument Co. Ltd.
 JUMO House
 Temple Bank, Riverway
 Harlow, Essex, CM20 2DY, UK
 Phone: +44 1279 63 55 33
 Fax: +44 1279 62 50 29
 Email: sales@jumo.co.uk
 Internet: www.jumo.co.uk

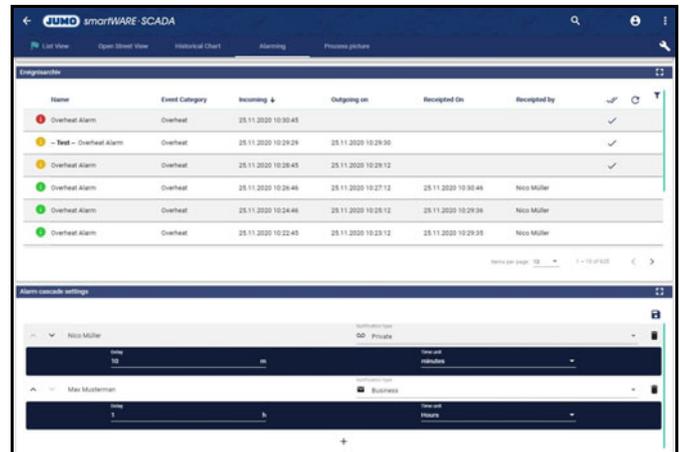
JUMO Process Control, Inc.
 6733 Myers Road
 East Syracuse, NY 13057, USA
 Phone: +1 315 437 5866
 Fax: +1 315 437 5860
 Email: info.us@jumo.net
 Internet: www.jumousa.com



Alarm and event system

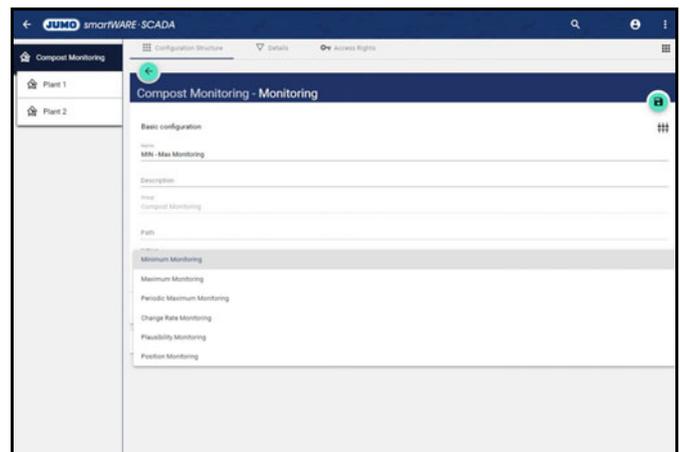
Alarm system:

- User configurable event classes with classification (note, warning, malfunction) and acknowledgement requirement yes/no
- Any number of conditions per signal with logical comparators (>, >=, =, <=, <, ?=) and values; separate for when the event occurs and when the event stops
- Start and stop delay can be configured per condition
- Linking of conditions with logical AND and OR elements for an event^a



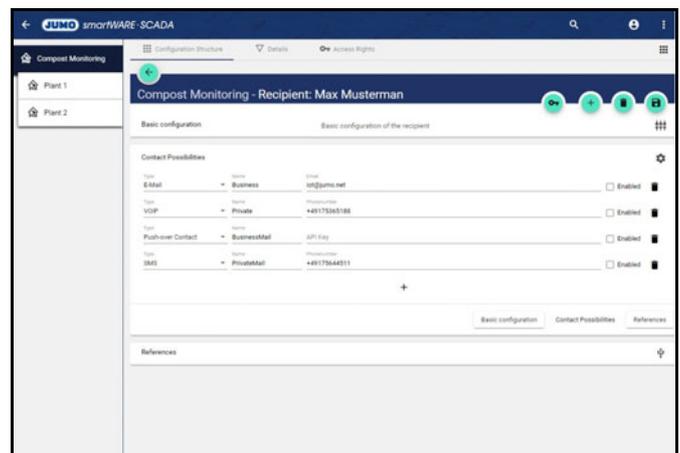
Monitoring:^a

- Minimum/leakage/pipe leakage monitoring
- Maximum and periodic maximum monitoring
- Change rate monitoring
- Plausibility monitoring



Remote alarm:^b

- Availability planner^c
- Recipient and recipient group management
- Establishing of alarm cascades
- Multiple cycles of an alarm cascade with max. two alarm options; example: SMS and email or push message and SMS
- SMS and email
- Push messages sent to smartphone app, sound until they are acknowledged
- Voice calls with synthesized voice for outputting any message text^d
- Archiving of all remote alarm steps
- >2-way alarm: more than two alarm options can be set in one alarm cascade; example: SMS, email, voice call, and push message^e



^a The functions are included in the order details under "advanced events".
^b The functions are included in the order details under "Standard notification".
^c The functions are included in the order details under "Availability planner".
^d The functions are included in the order details under "Advanced notification" (standard notification included).
^e The functions are included in the order details under ">2-way alarm".

JUMO GmbH & Co. KG
 Delivery address: Mackenrodtstraße 14
 36039 Fulda, Germany
 Postal address: 36035 Fulda, Germany
 Phone: +49 661 6003-0
 Fax: +49 661 6003-607
 Email: mail@jumo.net
 Internet: www.jumo.net

JUMO Instrument Co. Ltd.
 JUMO House
 Temple Bank, Riverway
 Harlow, Essex, CM20 2DY, UK
 Phone: +44 1279 63 55 33
 Fax: +44 1279 62 50 29
 Email: sales@jumo.co.uk
 Internet: www.jumo.co.uk

JUMO Process Control, Inc.
 6733 Myers Road
 East Syracuse, NY 13057, USA
 Phone: +1 315 437 5866
 Fax: +1 315 437 5860
 Email: info.us@jumo.net
 Internet: www.jumousa.com



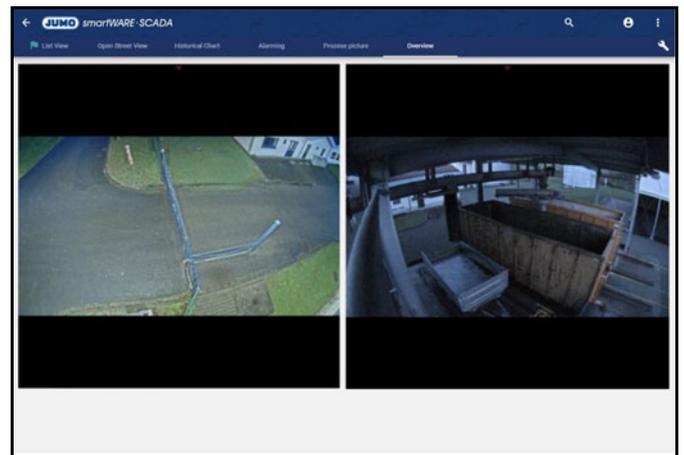
Add-ons

Maintenance:

- Definition of maintenance tasks possible in a time or signal-based manner
- Document attachment
- Acknowledgment of maintenance and resetting of specific operating hours counter possible

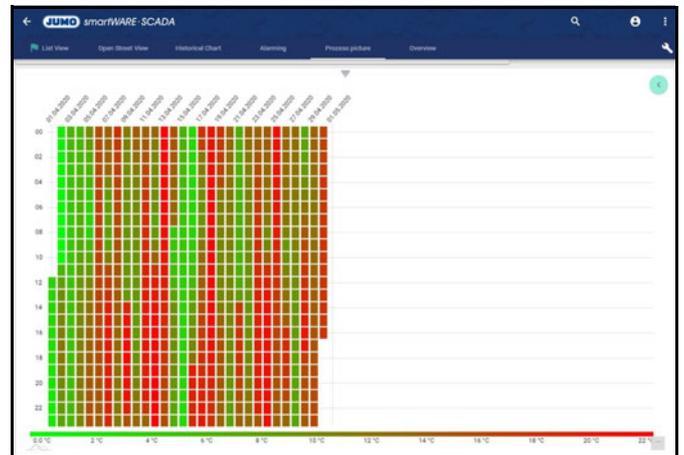
Camera integration;^a

- Integration of (M)JPEG camera (standard IP camera)
- Display of live image
- Archiving of camera images and sequences in a manner that is event and time-controlled
- Call up of camera images and sequences
- User configurable acknowledgement requirement for camera images and sequences



Energy package/ISO 50001 compliant:^b

- Heat map
- Sankey/flow chart with any number of nodes and connections between them
- Combined with functions from trending and reporting



^a The functions are included in the order details under "Camera, video".
^b The functions are included in the order details under "Analysis module".

JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
Email: mail@jumo.net
Internet: www.jumo.net

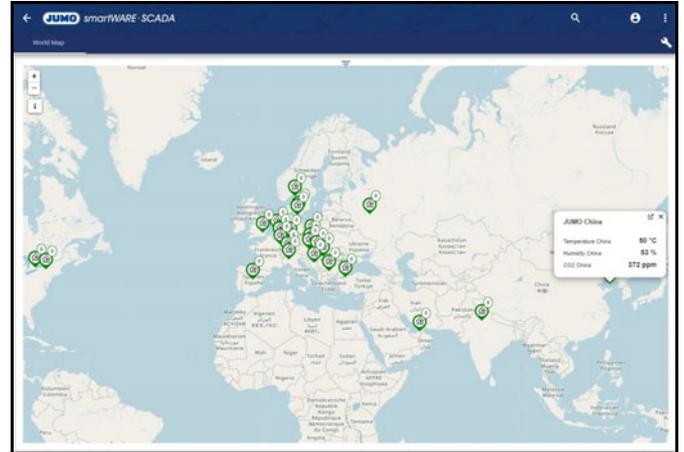
JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 62 50 29
Email: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
6733 Myers Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com



Map and GPS integration

- Map as dashboard element
- Display of fixed markers with animation (e.g. malfunction at station) and link
- OpenStreetMap
- Live display of GPS trackers on the map
- Geofencing/position monitoring of GPS trackers^a



^a The functions are included in the order details under "advanced events".

JUMO GmbH & Co. KG
 Delivery address: Mackenrodtstraße 14
 36039 Fulda, Germany
 Postal address: 36035 Fulda, Germany
 Phone: +49 661 6003-0
 Fax: +49 661 6003-607
 Email: mail@jumo.net
 Internet: www.jumo.net

JUMO Instrument Co. Ltd.
 JUMO House
 Temple Bank, Riverway
 Harlow, Essex, CM20 2DY, UK
 Phone: +44 1279 63 55 33
 Fax: +44 1279 62 50 29
 Email: sales@jumo.co.uk
 Internet: www.jumo.co.uk

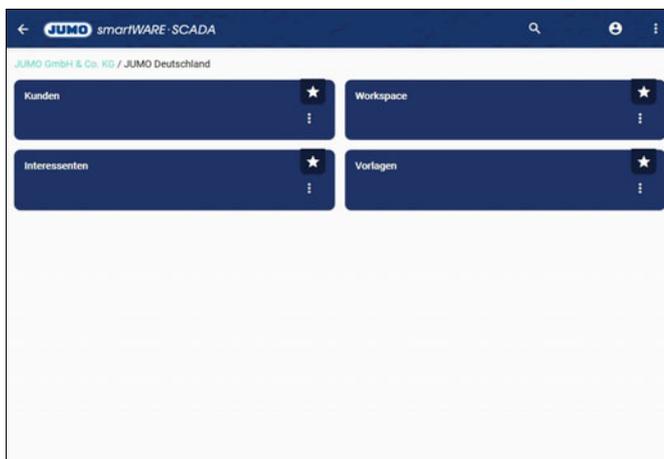
JUMO Process Control, Inc.
 6733 Myers Road
 East Syracuse, NY 13057, USA
 Phone: +1 315 437 5866
 Fax: +1 315 437 5860
 Email: info.us@jumo.net
 Internet: www.jumousa.com



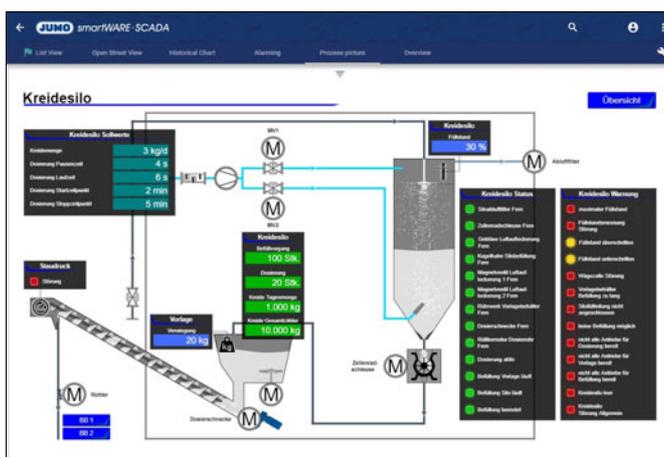
User interface

General information

- Web-based client
- All functions on the web
- Responsible, mobile-device-friendly
- Dashboards as a central element
- User configurable dashboards
- Variety of pre-conceived widgets
- No installation on client computers necessary
- No browser plugins or add-ons
- HTML5 standard
- API for developing your own widget
- Favored browser: Chrome



Client management



Process screen management

Process visualization

- Vector-based, self-scaling process screens
- Editor with integrated animation and test tool
- Screen modules that can be addressed according to object
- Multimonitor support with links for calling up of screens across monitors
- Button for functions including screen change, setting values, calling up of data lists and graphics from the archive
- Setting of values directly or using security dialog
- Value displays with formatting and units
- Color changes with any number of stages depending on the value ranges
- Visibility of 0 to 100 % and any number of stages depending on the value ranges
- Flashing animation depending on the value ranges
- Bargraph function for containers and levels with free direction definition, including for negative values
- Slide animation for moving any number of elements to display their current position
- Display of live data and historical data, e.g. previous day counter and day counter



Login and authentication



Connectivity

Driver

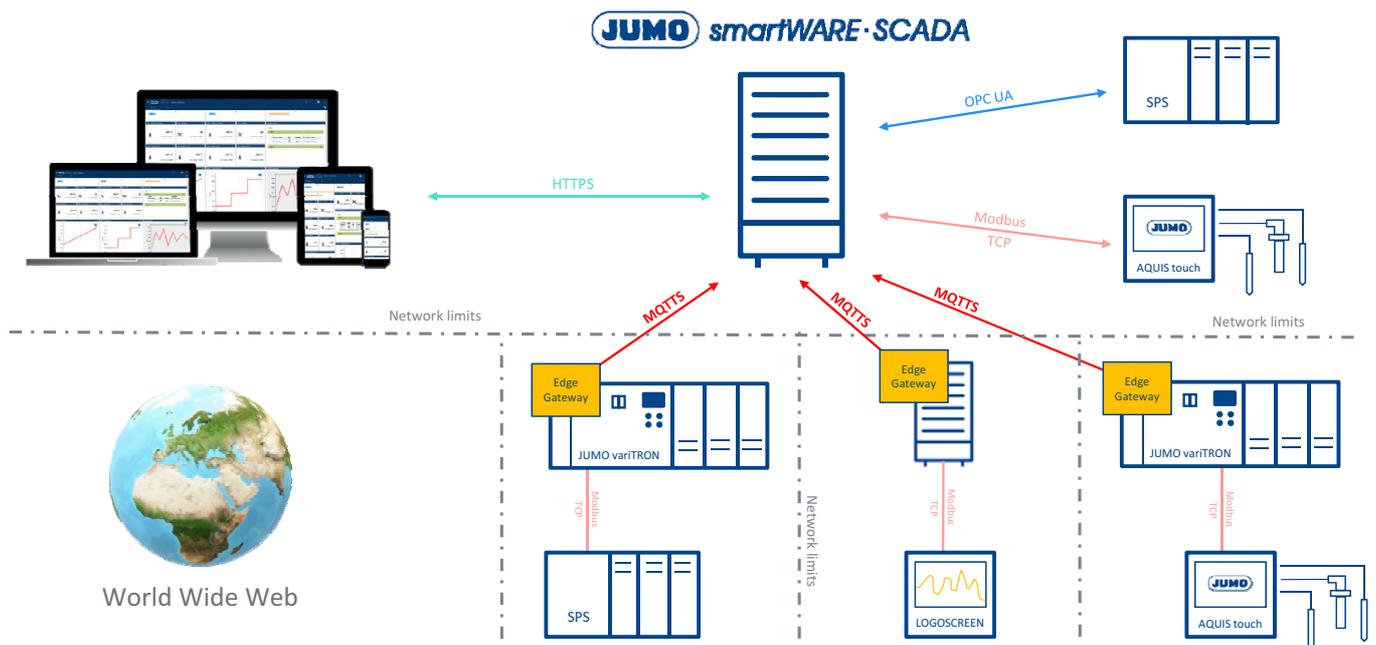
- OPC UA
- OPC DA (only on Windows)
- S7 TCP directly (PROFINET), S7 MPI/PROFIBUS via adapter
- Modbus TCP directly, Modbus RTU via adapter
- Beckhoff ADS.NET
- IEC 60870-104
- IEC 61850
- M-Bus
- KNX
- BACnet
- MQTT 3.11
- REST API, SQL import, CSV import

Drivers are additional modules and have to be licensed separately from the basic system. More information is included in the order details under "Extra codes".

Edge gateway

- Hardware gateway based on JUMO variTRON
- Software gateway as a container or VM
- Process for load balancing can be optimized using gateways
- Communication between different IT networks through the use of multiple gateways
- More efficient software updates through the use of multiple gateways
- Any number of gateways can be connected
- Completely user configurable from the central user interface
- Drivers are installed on edge gateways
- Data buffering in the size of the memory card/the assigned memory, typically multiple years

Gateways have to be licensed separately from the basic system. More information is included in the order details under "Extra codes" and "Additional data source".



JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
Email: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 62 50 29
Email: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
6733 Myers Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com



Worth knowing

Always up-to-date

Do you always want the latest and most up-to-date SCADA software? Then order our "Software Update Service" as an accessory. You can find the relevant part nos. on the last page of this document.

Test the solution quickly and easily

Would you like to test the SCADA solution quickly and easily without installing it or the dongle? You can do this easily using our JUMO Cloud solution:

www.jumo.cloud

To do so, simply contact a JUMO contact person of your choice. The JUMO Cloud and JUMO smartWARE SCADA solutions have the same technical basis and same appearance.

Do you need support?

If you need more information, simple explanations, training courses, or support on the JUMO smartWARE SCADA, there are a range of options available to you from JUMO.



Online-Help-Center

Detailed SCADA documentation



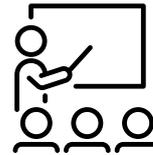
Technical Support

Questions and information



JUMO Engineering

Services



JUMO Campus

Training courses



YouTube-Channel

Explanatory videos

JUMO GmbH & Co. KG

Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
Email: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 62 50 29
Email: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.

6733 Myers Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com



Order details

	(1) Basic type
701820	JUMO smartWARE SCADA – software for process monitoring and control
	(2) Dongle
1	Software dongle
2	Hardware dongle
	(3) Number of signals
100	100 signals (XS_1)
250	250 signals (XS_2)
500	500 signals (S_1)
1000	1000 signals (S_2)
2500	2500 signals (M_1)
5000	5000 signals (M_2)
7500	7500 signals (L_1)
10000	10000 signals (L_2)
	(4) Analysis module
0	None
1	Analysis (XS)
2	Analysis (S)
3	Analysis (M)
4	Analysis (L)
	(5) Advanced events
0	None
1	Advanced events (XS)
2	Advanced events (S)
3	Advanced events (M)
4	Advanced events (L)
	(6) Advanced reporting
0	None
1	Advanced reporting (XS)
2	Advanced reporting (S)
3	Advanced reporting (M)
4	Advanced reporting (L)
	(7) Script module
0	None
1	Script module (XS)
2	Script module (S)
3	Script module (M)
4	Script module (L)
	(8) Standard notification
0	None
1	Standard notification (XS)
2	Standard notification (S)
3	Standard notification (M)
4	Standard notification (L)

JUMO GmbH & Co. KG
 Delivery address: Mackenrodtstraße 14
 36039 Fulda, Germany
 Postal address: 36035 Fulda, Germany
 Phone: +49 661 6003-0
 Fax: +49 661 6003-607
 Email: mail@jumo.net
 Internet: www.jumo.net

JUMO Instrument Co. Ltd.
 JUMO House
 Temple Bank, Riverway
 Harlow, Essex, CM20 2DY, UK
 Phone: +44 1279 63 55 33
 Fax: +44 1279 62 50 29
 Email: sales@jumo.co.uk
 Internet: www.jumo.co.uk

JUMO Process Control, Inc.
 6733 Myers Road
 East Syracuse, NY 13057, USA
 Phone: +1 315 437 5866
 Fax: +1 315 437 5860
 Email: info.us@jumo.net
 Internet: www.jumousa.com



(9)	Advanced notification (standard notification included)
0	None
1	Advanced notification (XS)
2	Advanced notification (S)
3	Advanced notification (M)
4	Advanced notification (L)
(10)	Availability planner (can only be selected with item 8 or 9)
0	None
1	Availability planner (XS)
2	Availability planner (S)
3	Availability planner (M)
4	Availability planner (L)
(11)	>2-way alarm (can only be selected with item 8 or 9)
0	None
1	>2-way alarm (XS)
2	>2-way alarm (S)
3	>2-way alarm (M)
4	>2-way alarm (L)
(12)	Scheduler
0	None
1	Scheduler (XS)
2	Scheduler (S)
3	Scheduler (M)
4	Scheduler (L)
(13)	Camera, video
0	None
1	Camera, video (XS)
2	Camera, video (S)
3	Camera, video (M)
4	Camera, video (L)
(14)	Extra codes (optional)
1100	Additional data source
1101	Single driver class A
1102	Driver class A
1103	Driver class B
1106	Driver OPC UA

Explanation of extra codes

Additional data source (extra code 1100):
+ 1 data source is required if more than one gateway is used (OPC UA is included). For each gateway additionally used, "+ 1 data source" is required.

Individual driver class A (extra code 1101):
 allows an individual connection to a device with driver class A.

Driver class A (extra code 1102):
 allows a large number of connections to a driver of type class A (S7 TCP, Modbus, ADS.NET, M-Bus, KNX, OPC DA).

Driver class B (extra code 1103):
 allows a large number of connections to a driver of type class B (CSV, REST API, SQL, IEC 61850, IEC 60870-104).

Example:

15 edge gateways are required, whereby 8 have to communicate with a single Modbus device: 14 times extra code 1100 + 8 times extra code 1101.

