

## YZP 480...495: SAUTER Vision Center



### Central building management and visualisation of decentralised installations

SAUTER Vision Center (SVC) is a web-based building management solution in the HTML5 standard for running and visualising the building operation. SVC is suitable for both larger single buildings and entire real estate parks or distributed premises. Typical areas of use are office complexes, business parks, college and industrial campuses, airports, railway stations, hospitals or internationally distributed branch networks. The modular concept allows the software to be extended precisely to meet the customer requirements of every installation. Therefore, SVC gathers all of the data for the entire building and energy management and makes it available to the user from anywhere at all times.

Thanks to SVC's simple and intuitive operation, starting, planning and changing predefined building automation procedures is easy with the scenario manager. This allows users with PC skills to set rooms, for example, to Comfort or ECO mode at precise times and control them via calendar views.

The energy monitoring module integrates energy meters and other data from the buildings to create a comprehensive energy consumption display. Thus, daily, weekly, monthly and annual consumption can be automatically calculated and represented in diagrams. The maintenance module for SVC is also used for optimum planning and efficient performance of servicing and FM tasks. Here support is also provided by plant device data capture, the definition of maintenance intervals and the automatic triggering of maintenance cycles based on building management information. This enables complete concentration on the monitoring and evaluation of the installations, as well as their continuous and optimum operation, and therefore contributes to efficient, sustainable building and energy management.

For the integration of different equipment systems, SVC supports the manufacturer-independent BACnet standard, as well as connection to OPC servers, for integrating different protocols in the building automation. In addition to the OPC UA client, operation as an OPC UA server is also implemented. In order to fully support the integration options, it is also possible to directly connect SAUTER moduWeb Vision via web services and SAUTER novaNet installations. This makes it possible to connect existing systems when converting to the new generation of building management software without having to replace the existing automation level. SVC sends alarms directly via e-mail or SMS to mobile phones according to the responsibilities assigned. With its many user-defined settings and customisable dashboards, SVC guarantees maximum user convenience.

SVC can be deployed in virtual IT environments and uses Microsoft SQL databases. These modern architectures and infrastructures enable topics such as high availability, redundancy via cluster systems and corresponding load assignments (provisioning) to be implemented and used.<sup>1)</sup> For the optimal integration of the user structures of a company, it is possible to connect SVC to an existing LDAP server.

### Overview of types


#### **i** SVC licences and options

Type	Description
YZP480F000	Provision of all codes in a single ticket
YZP480F200	Basic licence for 500 addresses with maintenance
YZP480F999	Engineering licence with maintenance
YZP480F099	Latest version of the DVD
YZP481F200	Additional 100 objects with maintenance
YZP481F210	Additional 1000 objects with maintenance
YZP481F220	Additional 10000 objects with maintenance
YZP481F230	Additional 25000 objects with maintenance
YZP485F201	Basic energy monitoring with maintenance
YZP485F210	Maintenance module with software maintenance
YZP485F220	Scenario manager with software maintenance
YZP484F200	Licence key for VM

<sup>1)</sup> Scalable via MS SQL Express up to SQL Enterprise depending on the specified properties, virtual IT environments and high-availability VMware & SQL Enterprise.



Type	Description
0900360001	Hardlock (dongle) for VM
YZP484F310	Migration Manager for SVC from nP32 and nPO
YZP487F201	OPC UA client for SVC with maintenance
YZP487F203	OPC UA server with maintenance
YZP483F300	novaNet integration *
YZP484F400	Vision Center Studio
YZP482F101	Termination of the software maintenance
YZP482F210	Resumption of the software maintenance

 \* YZP483F300 novaNet connection requires: YZP487F201

### Dashboard

- Individual creation of dashboards as the starting page in the operation of the installation, or as an overview page for key figures and graphics for various installations, buildings or combined premises.
- Energy dashboard in combination with the SVC energy monitoring module with various key figures and graphics for the current and historical consumption display.
- The integration of energy monitoring into the building management makes it possible to display real-time values.

The dashboard contains design templates and is equipped with various widgets. The layout automatically adapts to the size of the screen/device (responsive design) and the individual widgets can be freely arranged using drag & drop.

### Room automation

- Visual display of rooms and related room segments, as well as information on the temperature, air quality, lighting, window blinds etc.
- Flexible assignment of the individual room segments and the related changes to the room automation configuration using drag & drop. This enables room sizes, from open-plan offices to various large offices, to be adjusted according to requirements for 1 to x employees.
- These functions are enabled via the native integration of SAUTER room automation devices (ecos504, ecos505 (both BACnet/IP), ecos500 (BACnet/IP) and ecos311 (BACnet MS/TP)).

### Scenario manager

The scenario manager enables the easy starting, planning and changing of predefined switching procedures. This makes it possible to set rooms, for example, to Comfort or ECO mode at precise times according to user requirements.

For more information, see the section *Description of operation*.

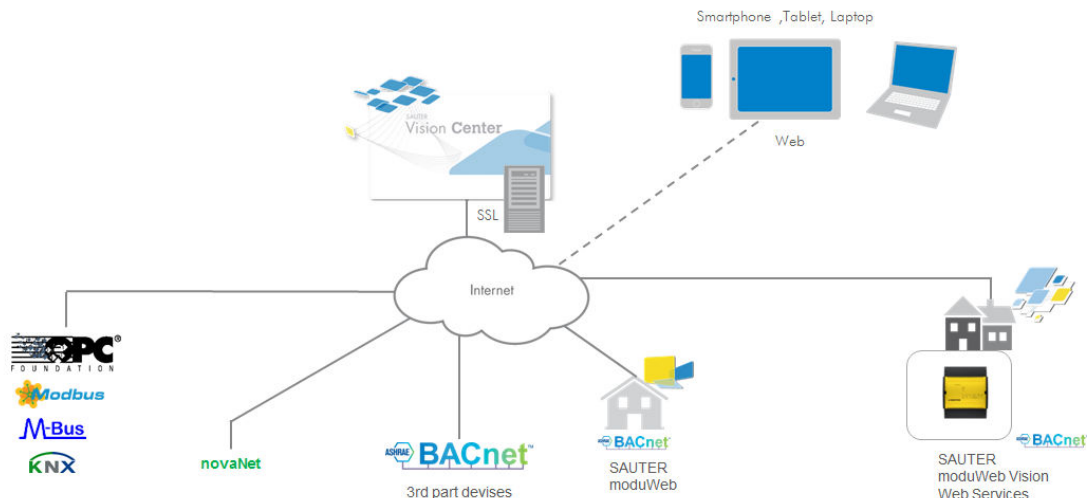
### Servicing and FM maintenance module

- Module for planning of servicing and maintenance schedules and for use documentation
- Recording of plant devices with additional information
- Definition of maintenance intervals
- Definition of criteria for automatic triggering of a maintenance order
- Recording and documentation of the maintenance work

For more information, see the section *Description of operation*.

### HTML 5 - independent of location and platform

- Can be used with any operating system on smartphones, tablets or desktop PCs without setting up inconvenient plug-ins.
- "Responsive design" enables optimum display on devices with various resolutions.

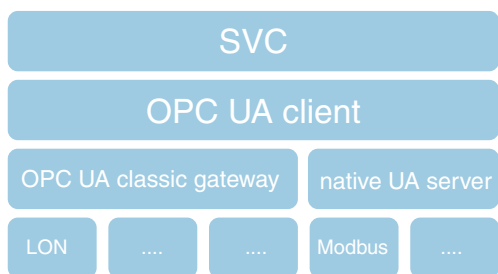


**Integration options**

- Native BACnet client (B-AWS certified)
- OPC UA client and OPC UA server
- OPC DA via UA/DA gateway (gateway supplied)
- moduWeb Vision BACnet server via web services
- SAUTER novaNet

**OPC UA client**

- The basic precondition for connecting different protocols and thus for integrating existing systems and manufacturers which do not support the BACnet standard.
- SVC is a Windows service. The OPC UA/DA gateway included in the OPC client can be run as either a Windows service or an independent application.



**Technical requirements for SVC servers**

Processor	Intel i7 (6th generation), 3.4 GHz or higher. SVC supports multi-processor architectures, processors and chipsets that use Hyper-Threading technology
RAM	At least 8 GB (16 GB recommended)
Hard drive	500 GB (1 TB recommended)
Graphic resolution	No requirements
TCP/IP configuration	The IP address can be permanently or dynamically allocated by a DHCP server
Operating systems	Multilingual, 64-bit: Windows 2012 Server R2, Windows 2016 Server, Windows 7 with SP1 or SP2, Windows 10
Web server	MS IIS (Internet Information Server) version 7.0 or higher
SQL database	MS SQL 2016 Express 64-bit (supplied). Optionally, MS SQL 2014 SP1 or MS SQL 2016 64-bit (Standard/Enterprise) can be used
Internet browser	Microsoft Edge, Mozilla Firefox, Google Chrome
Graphic resolution for operating devices	Min. 1200 x 1024, optimal 1920 x 1080

**Notes**

We explicitly recommend installing SVC on a computer that is only used for technical building management (hardware or virtual machine).

If used by more than 5 users at the same time, the RAM must be expanded (at least 16 GB).

When MS SQL Standard or Enterprise is being used, the MS licence model must be followed.

**Description of operation****General project information**

- Users have the option to define and bookmark their own views such as lists, graphs and tables in the form of documents.
- All templates and documents can be exported via the web interface (CSV, PDF).
- Multiple languages:
  - All users can select their own language.
  - German, English and French are available in the menu functions of the SVC program as standard, and other languages are available on request.
- User rights:
  - Groups of people can be assigned individual rights for specific projects. The users are allocated to the corresponding groups
  - Assignment of rights in relation to data points
  - Increased password security with minimum specifications for length and special characters can be selected
  - Specifications for validity period and reusability of passwords already used
  - Support of UTF8 character sets
- All properties of the BACnet objects can be displayed on the visualisation image of the system (BACnet).
- For each data point, it is possible to display various icons or satellite buttons which enable the following actions:
  - Displaying the active BACnet priority
  - Button for resetting the BACnet 8 priority (switching to automatic mode)
  - Icon showing the current object status (BACnet status flags)
  - Links to a quick chart
  - Links to the time programme of the data point
- All images can be displayed during operation on an internet browser (standard or mobile), without having to install a plug-in

**BACnet driver**

The SAUTER Vision Center is a native BACnet-oriented management level for building automation. Other BACnet-specific and technical communication details are compiled in the standardised SAUTER BACnet PICs of the SAUTER Vision Center.

**Management console**

- The management console is a central web program of the SVC application for the following management tasks:
  - Project management
  - Licence management
  - Maintenance management
  - Vision Center services
  - Access to log files

**Alarm and notification management**

- SVC manages all process-specific alarms, such as BACnet or OPC messages, as well as SVC-specific alarms and system messages.
- The alarm lists can be individually adapted and personalised.
- Notification can take place via e-mail, SMS<sup>2)</sup> or on a printer.
- Alarm events can generate and transfer complete reports.
- Alarms can also be visualised in plant diagrams, object lists, alarm lists, in the menu bar and via pop-ups.
- When an alarm is acknowledged or reset, this must always be accompanied by a comment.

<sup>2)</sup> A modem is required for sending the SMS messages

**Alarms statistics are automatically calculated and generated for each alarm.**

- The following **alarm types** are available:
  - System alarms generated by the building management system itself.
  - Alarms generated by the connected substations.
  - Alarms generated by SVC modules such as the energy monitoring module.
- The alarm lists can be fully and easily **personalised**:
  - Filter by alarm type (system, module, bus etc.).
  - Filter by alarm priority.
  - Filter by BACnet notification class.
  - Filter by BACnet object or data point of every other connected bus.
  - Intelligent, automatic filters depending on variable, dynamic parameters.
  - Automatic filter by image. This makes it possible to create an alarm list for a particular department or building with just a few clicks.
- For each alarm, it is possible to generate the following **actions**:
  - Sending a configurable e-mail with alarm information.
  - Sending configurable SMS messages with alarm information directly via a GSM/UMTS modem (without an external provider).
  - Sending predefined reports without any restrictions, so that information is available not only on the consequences of alarms, but also on the causes.
  - Continuous printout of various alarms on continuous stationery printers.
- Without any other configuration, all alarm lists automatically contain the following data:
  - Current data of the selected filter.
  - **Historical** data of the selected filter.
  - **Statistical** data connected to the alarm events (top 5, frequency).
- Depending on the rights of the user, the following functions can be activated from all alarm lists:
  - **Acknowledgement** of all types of change of state, as far as required.
  - Adding **comments**.
  - Displaying **alarm details**.
  - Displaying **historical data** of an alarm.
  - Displaying the **statistics** for a particular alarm.
  - Downloading a **help document** for this alarm allowing the operator to quickly see how to correct the problem.
  - Displaying a **quick chart** of the data point affected by the alarm, in order to use the curve to identify why and for how long the data point has been affected by the alarm.
  - Displaying all the other objects of the bus or project that are linked to the object.

**Audit trail**

- User actions are recorded in the audit trail (with date, user name, IP, action description, values).
- Audit trail lists can be individually adapted.
- Audit trail documents can be signed with a digital signature.
- Program calls or links to other applications are recorded in the audit trail.

**Charts**

- All charts can be individually adapted.
- 3 different chart modes:
  - Real time
  - Historical
  - Comparison of different time ranges
- 2 chart types:
  - Lines
  - Bars
- Up to 16 objects can be displayed for each chart document.
- 16 trend curves (objects) can be displayed on 4 diagrams for each chart document.
- Each chart document has two display options: diagram or table.
- Quick chart function available that can be called up directly from lists and plant diagrams without additional configuration.

- All documents can be manually exported as PDF and CSV files and can also be sent directly by e-mail.
- All documents can be used in a report.

### Time programmes and calendars

- Intuitive visualisation of the BACnet-optimised time and calendar functionality.
- BACnet time programme and calendar objects can be read, changed and written to the BACnet stations.
- Direct integration of the novaNet time programme so that time programme and calendar objects can be read, changed and written to novaNet stations.
- Internal SVC time programme for managing and controlling objects that are integrated with OPC.
- Exceptions of the date, time period or calendar types can be used.
- The interface makes it quick and easy to switch to a graphical or list view of the time programmes.
- The interface provides both a graphical and a list view of weekdays and special days.
- For BACnet time programmes, the “time values” are shown in the graphical and list views.
- Depending on the user rights, it is possible to change all basic configurations relating to the “schedule object” in BACnet time programmes, such as the “schedule default” or the write priority.

### Reports

Reports can be generated as follows:

- Manually
- Automatically in conjunction with a calendar
- At the beginning or end of an alarm

When creating reports, it is possible to do the following:

- Print the report out on a printer connected to the system at the time it is generated.
- Send the report via e-mail to people designated in advance.
- Constant availability via the web interface for downloading.

When downloading reports, it is possible to select one or more simultaneously and then download them together in a single ZIP file.

All documents in the system can be selected as part of a report.

The reports exported by e-mail or saved in the system memory are non-editable PDF documents.

### Energy monitoring module (EMM)

The energy monitoring module of SVC allows you to display and calculate consumption values, and it displays both real-time and historical values through direct integration in SVC.

- Energy dashboard with various key figure displays for energy consumption
- List of consumption values in different display types:
  - Calendar, graphical and table views
  - Line, bar or pie chart diagrams, as well as numeric representation
- Overview page for all meters and formulas with direct access to the following functions:
  - Correct values
  - Assign offset when changing meters
  - Start a recalculation, e.g. after correction of values. Corrections are made individually and for a previously selected area.
  - Import values and correct larger time ranges via CSV file import
  - Task management module for an overview of various calculations
- Definition of meters for manually entering values and saving and displaying them
- Based on meter values, hourly, daily, weekly, monthly and annual consumption values are calculated, saved and displayed automatically
- Definition of alarm criteria for consumption values and dedicated alarm notifications
- Export of data for use in external systems (CSV, PDF, manually and automatically by e-mail)
- Recording and monitoring energy consumption
- Definition of limit values for notification
- Display of comparative charts for definable periods
- Mathematical calculations
- Units module

### Scenario manager

The building management system contains an optional scenario manager integrated into the main system. The module enables the system operator to configure sequential switching procedures. This makes it possible to set rooms, for example, to Comfort or ECO mode at precise times according to user requirements.

The starting, planning and changing of scenarios or switching procedures is carried out directly in the management and operating device and requires only basic PC skills.

The following functions are ensured:

- Starting, planning, stopping and changing of scenarios
- Calendar overview of the planned or implemented scenarios
- Overview (history) with execution times and status information as well as detailed information in a separate log file
- Configuration of scenarios or switching sequences for an event date
- The switching times can be set between 24 hours before (preparation time) or 24 hours after the event
- Scenario modes such as ECO, Comfort or Normal can be freely defined
- SVC objects incl. BACnet and novaNet objects can be switched
- All writable BACnet and SVC properties can be switched in scenarios
- A priority can be assigned to the individual modes in scenarios

### Maintenance module

The building management system contains an optional maintenance module integrated into the main system that provides information to be used in servicing and FM. The information provided relates to the servicing planning, servicing work and preventive maintenance.

Basic functions as follows:

- Recording of devices / equipment and their properties
- Definition of maintenance intervals
- Definition of criteria for automatic triggering of maintenance
- Recording and documentation of the maintenance work
- Servicing work list with status information and file attachments

The definition of the plant devices enables a complete description relating to the product, e.g. the manufacturer, item numbers, technical data. This data is assigned to a maintenance plan. The creation of a maintenance plan defines the different actions to be carried out. Additionally, documents such as work instructions, test procedures, data sheets and other information can be stored. The triggering of maintenance work and maintenance intervals, as well as preventive servicing work, can be defined based on device alarms, time intervals and information compiled and calculated from this.

### Vision Center Studio

Vision Center Studio is the engineering application directly on the SVC server that is used to add data points and extend or change images. Third-party devices can also be added to the visualisation structure via the integrated BACnet browser or OPC UA browser. It is intended to be used for small changes and extensions after commissioning, in order to enable trained SAUTER partners to also make their own modifications.