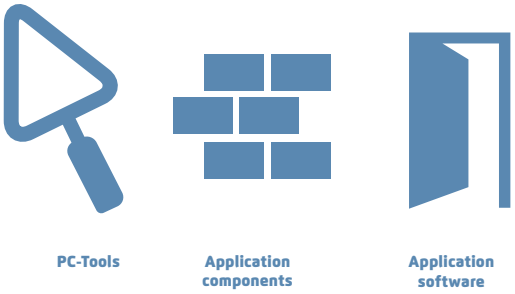
B1 SBC Software

Saia PG5® Controls Suite contains everything required to realise and operate automation solutions with MSR devices. This includes programming and engineering tools as well as libraries and turnkey logic, regulation and automation modules. It also comes with an application software for Windows PCs.



1.1 Saia PG5® Controls Suite: Engineering & programming

1.2 Application software for Windows PCs

1.1 Saia PG5® Controls Suite: Engineering & programming

1.1.1 Saia PG5® Core – everything you need at all times

The Saia PG5® Core is central key element of Saia PG5® Controls Suite. It is used to create Saia PCD® projects. The Saia PG5® Core is included in every software package and it is identical throughout.

1.1.1.1 Saia PG5® Core | Basic properties

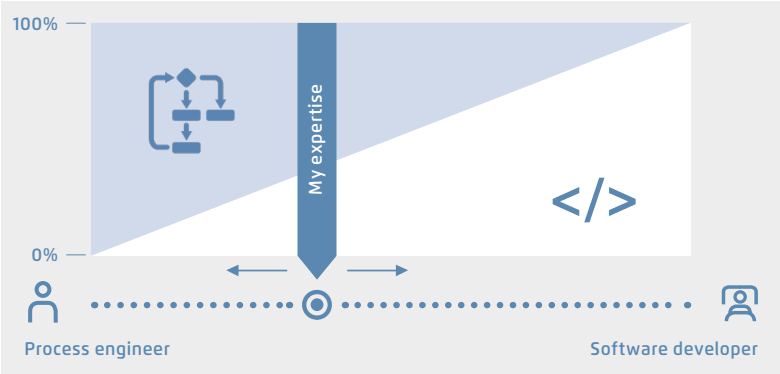
Wide range for large and complex projects

Saia PG5® Project Manager enables users to manage projects with a single set of controls or very large networks.
OEM manufacturers can use it with just one Saia PCD® per machine, just as it can be used for large properties such as tunnels with over a thousand installed Saia PCD® controllers.

◀ The Saia PG5® Project Manager for individual devices and large control networks.

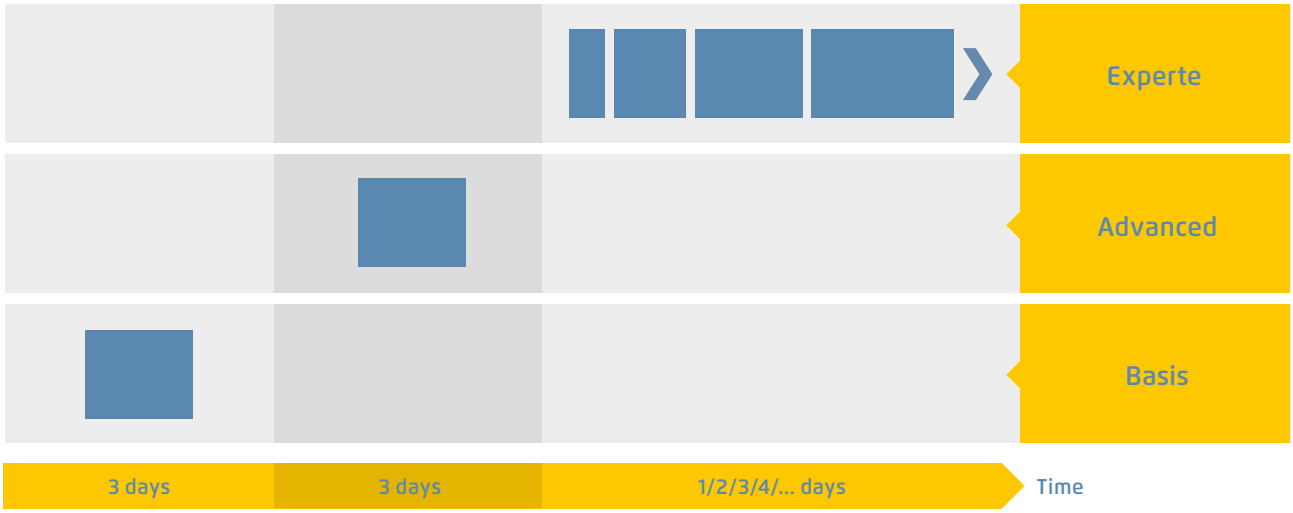
Software tool with broad user profile – all users can quickly master it

Saia PG5® Core provides to all groups of persons involved in MSR and automation technology suitable functions for performing tasks reliably and well.
As an application engineering tool, users can also implement the most demanding automation projects using graphic application modules in the Fupla Editor without requiring programming in IL, Graftec or Kopla, etc.
As a development tool, dedicated control and logic functions, communication drivers and IT functions can be programmed in the Instructions List.



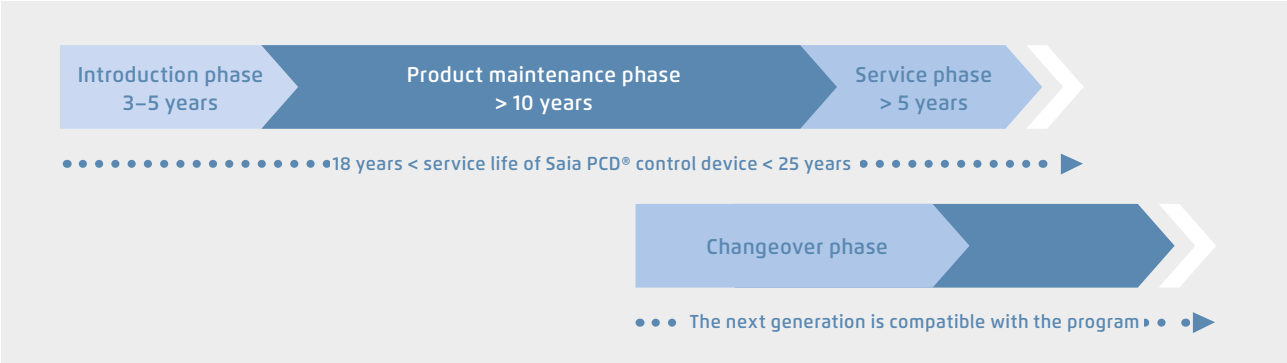
▲ Saia PG5® offers a wide range of solutions, the right product for everyone

The training program by Saia-Burgess Controls AG



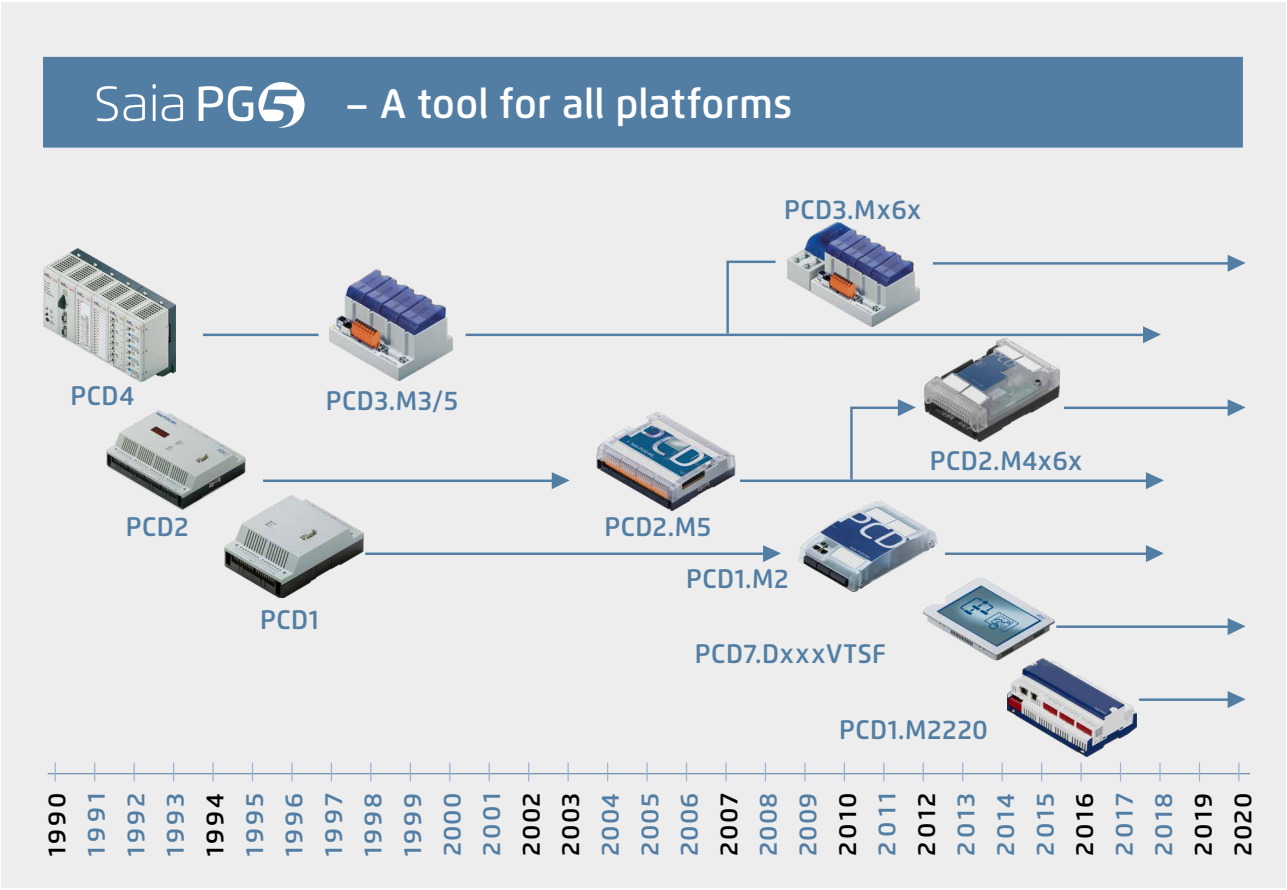
▲ The time required to achieve solution competence

A standardised software – for all device types – now and in the future



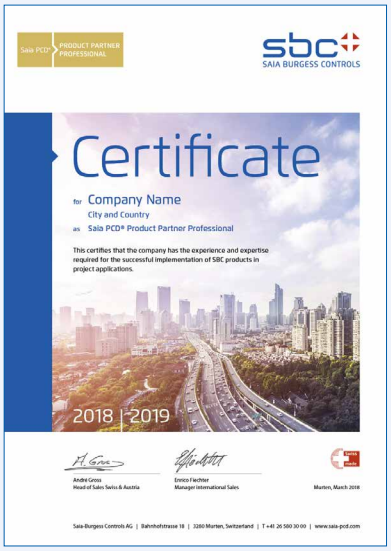
▲ Service life planning of Saia PCD® control devices. Enables maximum profitability of your investment in expertise and systems. Long service life without expensive reinvestment and no high service costs.

The control electronics should have the same service life as the systems technology. It must be possible to adapt and expand at any point in this cycle.
The compatibility and free portability of systems/machine software is guaranteed for 18–25 years across the entire product generation. This can only be achieved if we develop all the engineering software ourselves and systematically use "interpreted program code". This requires more hardware resources, but enables the portability of user software across multiple generations of controllers.



▲ Old application programs can be used with new Saia PCD® controllers and further edited with Saia PG5® Core

Licence policy for maximum security, flexibility and independence



- In principle, any company can acquire the licence for Saia PG5®. There are no market-related exclusions as is the case with other providers. The only requirement is the ability to implement the products professionally.
- With the acquisition of a Saia PG5® licence, a company can register any number of its employees as users. There are no costs per place or per user. However, a company must at least have verifiably one qualified Saia PG5® programmer. The qualification can be obtained via training by SBC.
- There is a special end user licence for operators of Saia PCD® automation systems. This includes all SBC software tools and SBC application libraries which an external service provider or OEM has used in a system/property to create an automation system. The end user licence only applies to the Saia PCD® devices installed by the operator and cannot be used to develop automation solutions for third parties.

◀ This certification as Saia PCD® system integrator demonstrates that a company can verifiably implement automation solutions in a reliable and professional manner with Saia PCD®. We recommend that operators, investors and planners consider certification when selecting service providers.

Licence as a "user key"

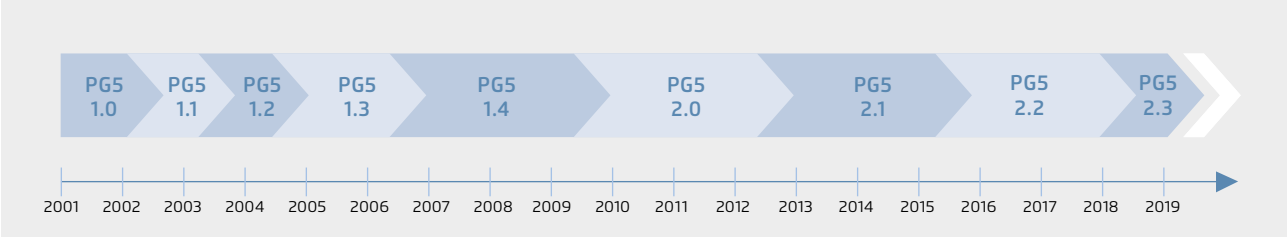
Licensing procedure

The Saia PG5® licence mechanism offers more flexibility and simplicity when installing licence expansions. The licence is distributed as a "user key" file which defines the user's permission for the software applications. A licence expansion can be quickly assigned by sending the customer an e-mail with a "user key" file or a *password*.

SBC can create customer-specific user keys using the licence manager. The keys can be tailored to any requests. It is possible to define editors or libraries which the customer is authorised to use. The scope, number and size of the projects are irrelevant here.

Software maintenance

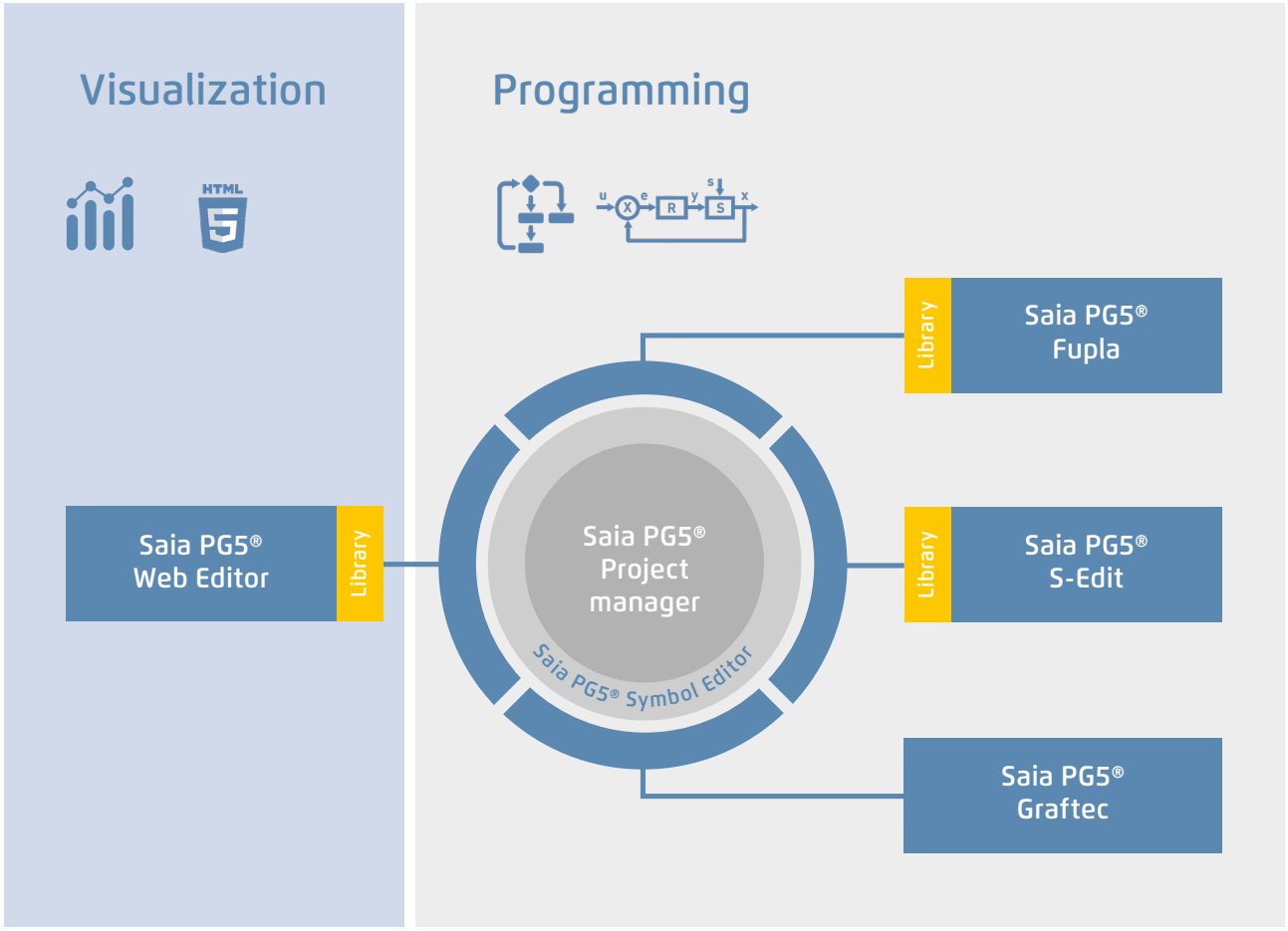
We are continually advancing our software in logical and easy-to-manage innovation steps. The following diagram shows the major version changes over the past 15 years. Patches are used to manage identified errors. Version changes are not required. New functions are first tested in beta versions before the sum of all the new functions is made official in a major new version. A moderate fee is charged for major version steps with substantial additional functions. This happens every 2 to 3 years.



▲ Milestones in software development and maintenance

1.1.1.2 Saia PG5® Core | Components

The following pages illustrate Saia PG5® Core and explain the components individually in detail.



Saia PG5® Core in a nutshell

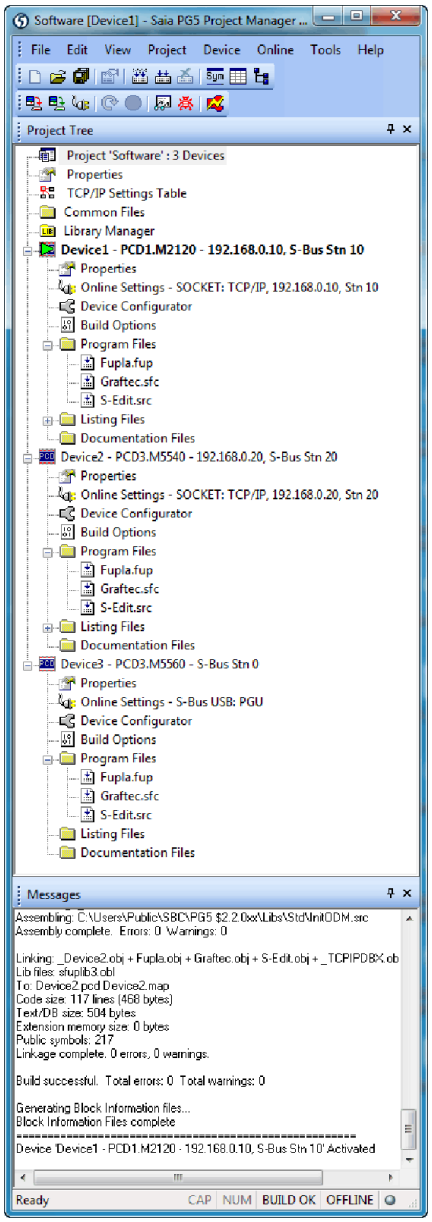
Saia PG5® Core contains the following components

- Project Manager (manages complex installations of networked Saia PCD® controllers including documentation)
- Network Configurator (integrated network editors for the configuration of devices and communications networks)
- Device Configurator (configuration of hardware parameters on the controller)
- Symbol Editor (manages all local, global and network symbols and symbol groups. Thanks to the automatic allocation, no fixed addressing is needed)
- Programming methods (integrated programming environments: Fupla [function block diagram], S-Edit [instruction list IL] and Graftec [flowchart])
- Libs (standard libraries which quickly and easily enable all the core functions of the MSR/automation technology)
- Web Editor (for WebSCADA functions in each controller)

Saia PG5® Project Manager

The configurations and applications are created, changed and managed in Saia PG5® Project Manager. Saia PG5® Project Manager is pivotal for all tasks with Saia PCD® controllers.

The following window appears on the left edge of the screen as soon as Saia PG5® Project Manager is opened. With desktop docking, there is still enough space on the right of the screen for additional windows.



Window of Saia PG5® Project Manager

Project Tree
The layout and structure largely correspond to Windows Explorer. The "Project Tree" window allows direct access to all Saia PCD®s used in the project and their relevant settings, program files and documents. Program organisation by files (containing one or more program blocks) simplifies the shared use of program files in multiple Saia PCD®s.

The "Program Files" folder can consist of different data types. Therefore, it is possible to save all types of programming in one folder.

Messages and Error List
Error and status messages are displayed in this window along with the assembly protocol. Errors in the program code are listed here after assembly, and can be located directly by clicking.

Network Configuration
Network configuration is used for the configuration of devices and communications networks. **There are three different basic configurations:**

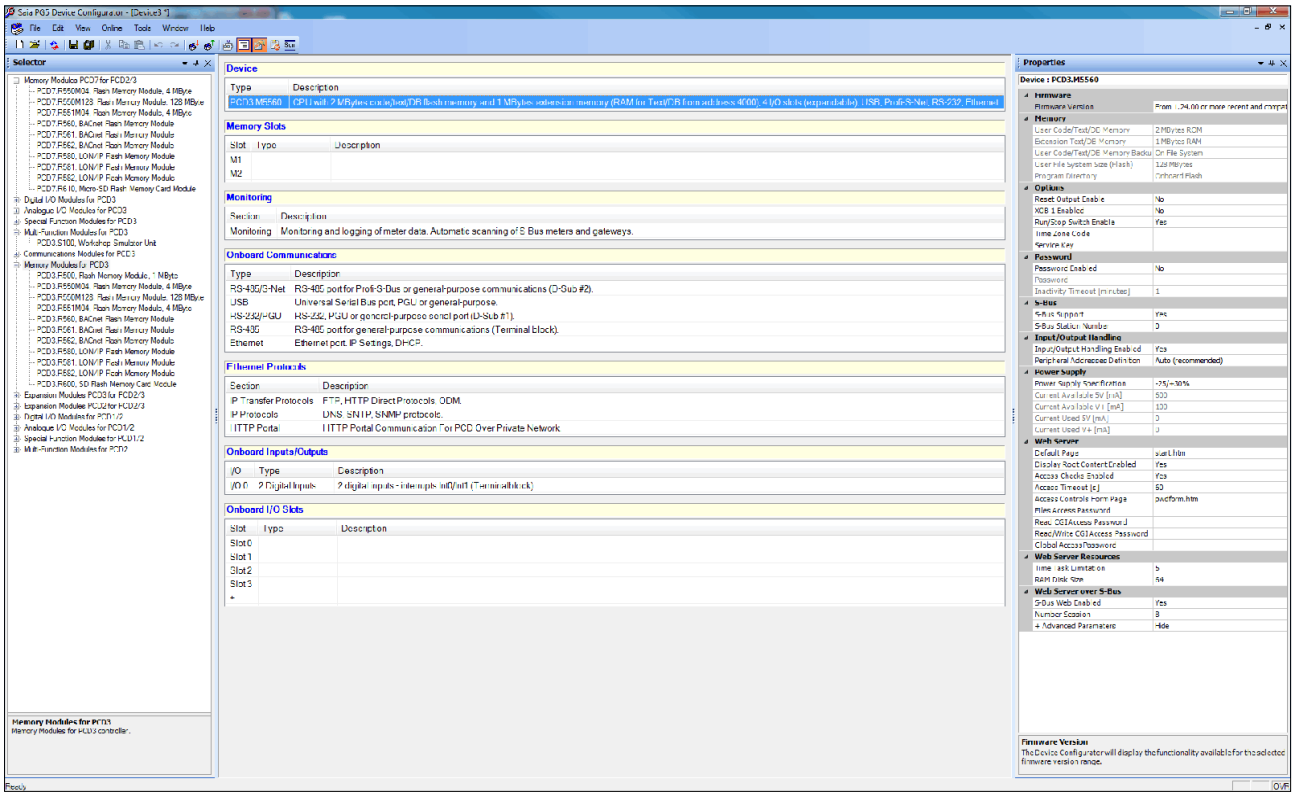
1. Ethernet RIO Network Configurator
- Smart RIO – PCD3.T665 and PCD3.T666

2. BACnet Network Configurator
- BACnet Configuration Files (*.bnt)

3. S-Net Network Configurator
- Profibus DP Network File (*.dp)
- Profi S-IO Network File (*.sio)

Device Configurator

The hardware and physical functions of the controller are defined in the Device Configurator; e.g. device type, memory modules, communication channels, associated modules and I/Os. The I/O configuration, parameterisation and designation, as well as the configuration of the Ethernet protocols, e.g. DNS, DHCP, etc. takes place here. The Device Configurator also controls the use of input/output modules in the internal power supply of PCDs and prints the labels which are placed on the I/O modules.

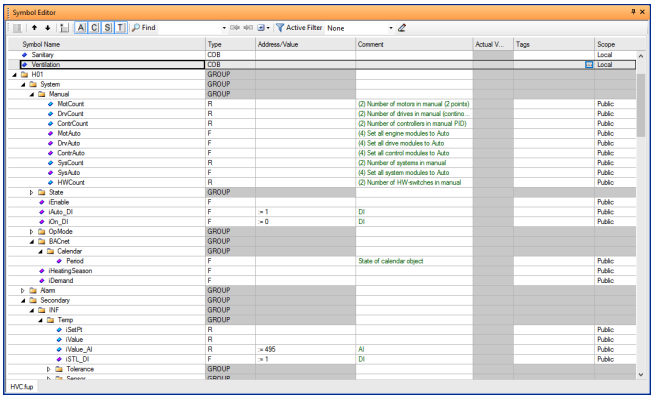


All parameters and modules can be viewed at a glance and printed out as system documentation in the Device Configurator

Symbol Editor

The Symbol Editor is the heart of Saia PG5® Core. It defines and documents all the symbols used by the program.
The various editors are connected with the Symbol Editor. New symbols used in the program code are incorporated directly by the Symbol Editor.

- The import/export function allows the reuse of pre-defined I/O lists in electrical diagrams and visualisation tools.
- Symbols can be grouped together. All the symbols required for a function form one group. This makes it easier to use functions and recognise symbols in the program code, and also gives a clearer overview in the Symbol Editor.



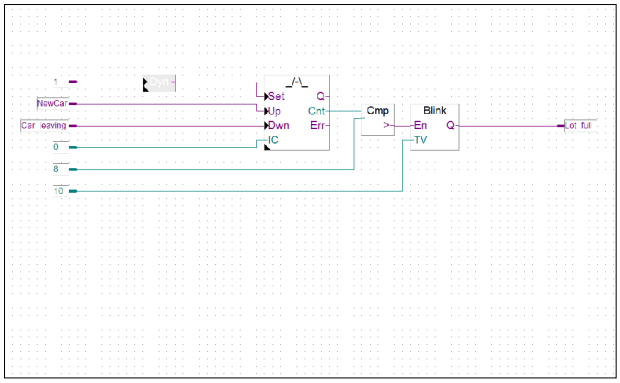
Overview of all symbols used in the Symbol Editor

Programming methods in the Saia PG5® Core

Saia PG5® Fupla (function block diagram)

Fupla is the SBC proprietary function block diagram editor. It differs in many respects from other graphic programming interfaces:

- One Fupla file may contain several program blocks. This means that one file can encompass an entire machine function. In symbolic programming, each program block is given an individual symbol name. This prevents collisions during the build.
- Fupla blocks are organised into pages. Each page can produce several outputs so that entire functions can be viewed at a glance on one page.
- Graphic functions (FBoxes) not only have inputs and outputs, but also parameter windows for configuration and online modification.



Saia PG5® Fupla (function block diagram)

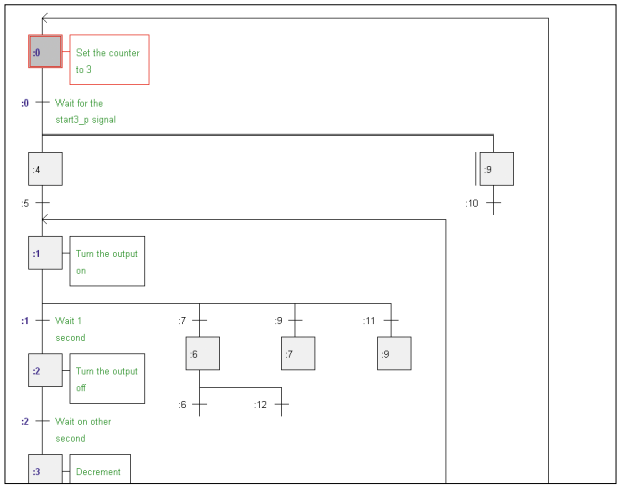
Comment:

The Kopla Editor (contact plan) is an integral part of Saia PG5® Fupla Editor. Unlike conventional graphic programming environments, FBoxes and contact plan elements can be combined in a single graphic.

Saia PG5® Graftec (sequential function chart)

Graftec (sequential function chart) is particularly suited to sequential processes. Sequential blocks are a fixed component of the PCD firmware and are processed by it efficiently.

- Steps and transitions can be programmed in IL and graphically in Fupla.
- To also ensure a good overview with extensive sequential processes, division into sub-pages is possible.
- In online mode, the active transition is permanently displayed.
- Option to process the code step-by-step in step mode.

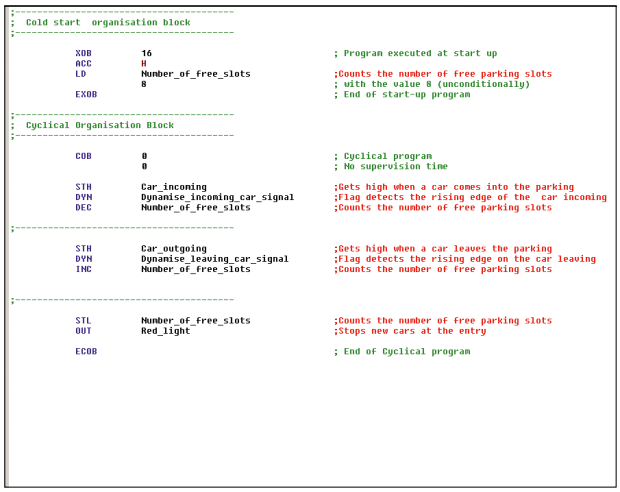


Saia PG5® Graftec (sequential function chart)

Saia PG5® S-Edit (instruction list IL)

The editor for the strong instruction set of Saia PCD®. S-Edit combines an editor and online debugger in one interface.

- The colour syntax function detects valid instructions and applies a colour to them. The program code is thus much easier to read and typographic errors are detected immediately.
- The "Bookmarks", "Goto Line", "Find and Replace" editor functions make it easier to navigate through extensive programs.
- The code built can be displayed directly in the original code. The function is also used by the integrated debugger.
- Complete functions can be copied from a library using drag & drop.



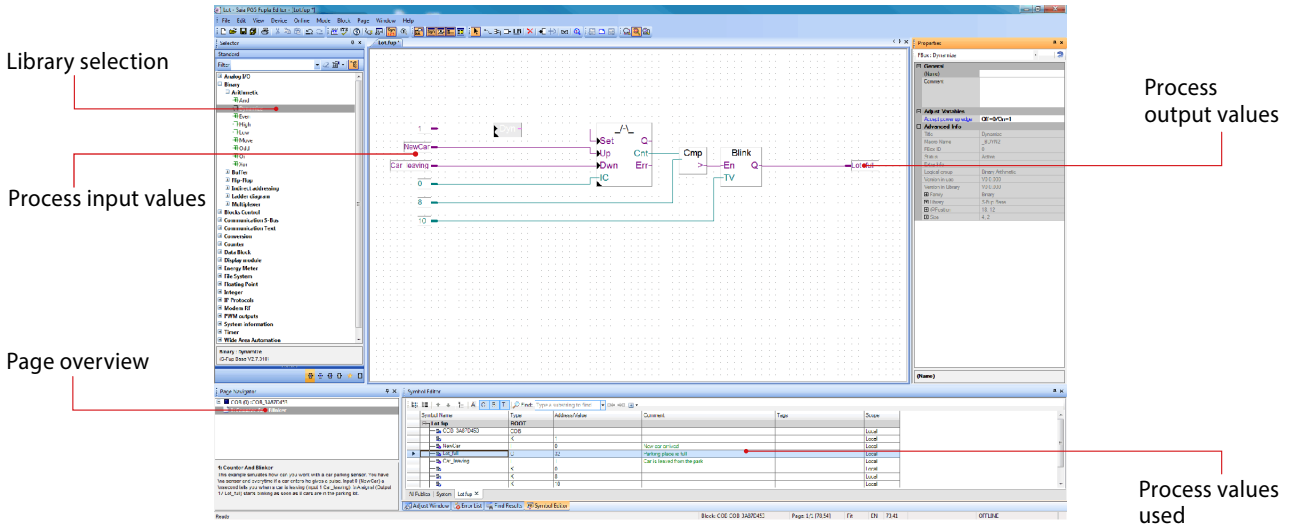
Saia PG5® S-Edit (instruction list IL)

Saia PG5® Fupla

The Saia PG5® Fupla Editor is the quickest and most reliable method of implementing applications. This editor can also be easily used by those with no software programming experience. It is the right tool for optimising and modifying systems. All complex functions have been implemented by specialists in Saia PG5® S-Edit or Saia PG5® Graftec and packaged into graphic function blocks (FBoxes).
"Ready and simple to use" also by service technicians and process engineers. > 95% of all applications can be implemented in the automation infrastructure through engineering using Saia PG5® Fupla alone. No line of code is written here.

Benefits of using the Fupla Editor

- Programming is facilitated with pre-programmed function blocks (FBoxes) for all standard functions
- Creation of complex user programs by simply positioning and linking FBoxes without requiring extensive programming knowledge.
- Extensive and high-performance FBox families for communication and building automation tasks
- Detailed context-sensitive FBox information, clear parameter descriptions and graphic presentation in the function block diagram editor (Fupla) make user programs easy to read and understand
- Online display of process values and parameter adjustment makes commissioning considerably easier and saves maintenance costs



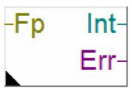
Structure of the Fupla Editor

Features of the libraries

- The clearly arranged tree structure simplifies FBox selection.
- Parameters are conveniently entered via adjust windows in the Fupla editor, without losing the program overview
- Obvious differentiation between data types by using different colours

Each data type is identified by a colour.
This makes programs easier to read.

Binary data	**Purple**
Integer data	**Blue**
Floating point data	**Yellow**
Texts (TX) and data blocks (DB)	**Green**



Clear grouping into families

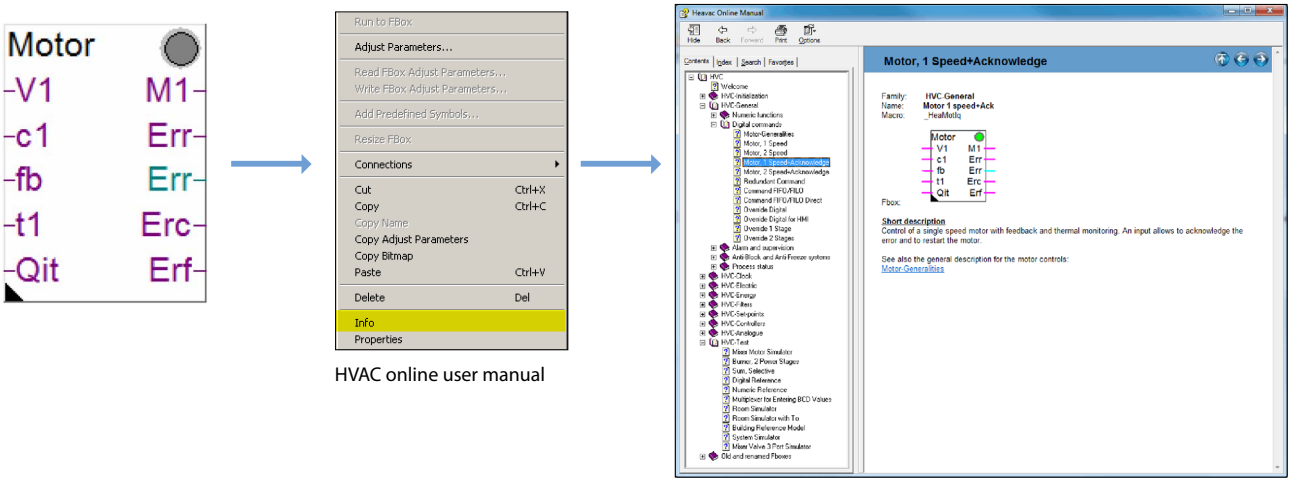
All FBoxes (function boxes) are grouped into families. This provides a better overview and makes it easier to find individual FBoxes.
A distinction is also made between standard, application and user FBox:

- Standard: Shows the FBox libraries of the basic application components
- Application: Shows the FBox libraries of the engineering application components
- User: Only shows the FBox libraries which the user himself has created
- All: Shows all available FBox libraries
- Favourites: On this page the user can group together the most frequently used FBoxes (from all libraries). This means that it is no longer necessary to search for FBoxes or to switch between library tabs.

FBoxes in the Saia PG5® Core

The standard and application FBoxes are readily available for users in the Saia PG5® Core.
The standard FBox libraries are basic families which offer normal logical and arithmetic operations and numerous useful system functions.
In addition to the standard FBoxes, the Saia PG5® Core contains additional FBoxes. These include application FBox libraries which comprise engineering families.
The search function (Filter) in the Selector enables a specific FBox to be found quickly.

So that Engineering can access the correct FBoxes, their function and parameters must be known. The online user manual integrated into the PG5 Core is the ideal way to get a quick overview of the relevant FBoxes.
Clicking on the FBox makes information such as a brief description of the FBox, an explanation of inputs and outputs, information on the parameter settings and a function description of the FBox accessible to all.



HVAC online user manual

Web Editor – a powerful software tool

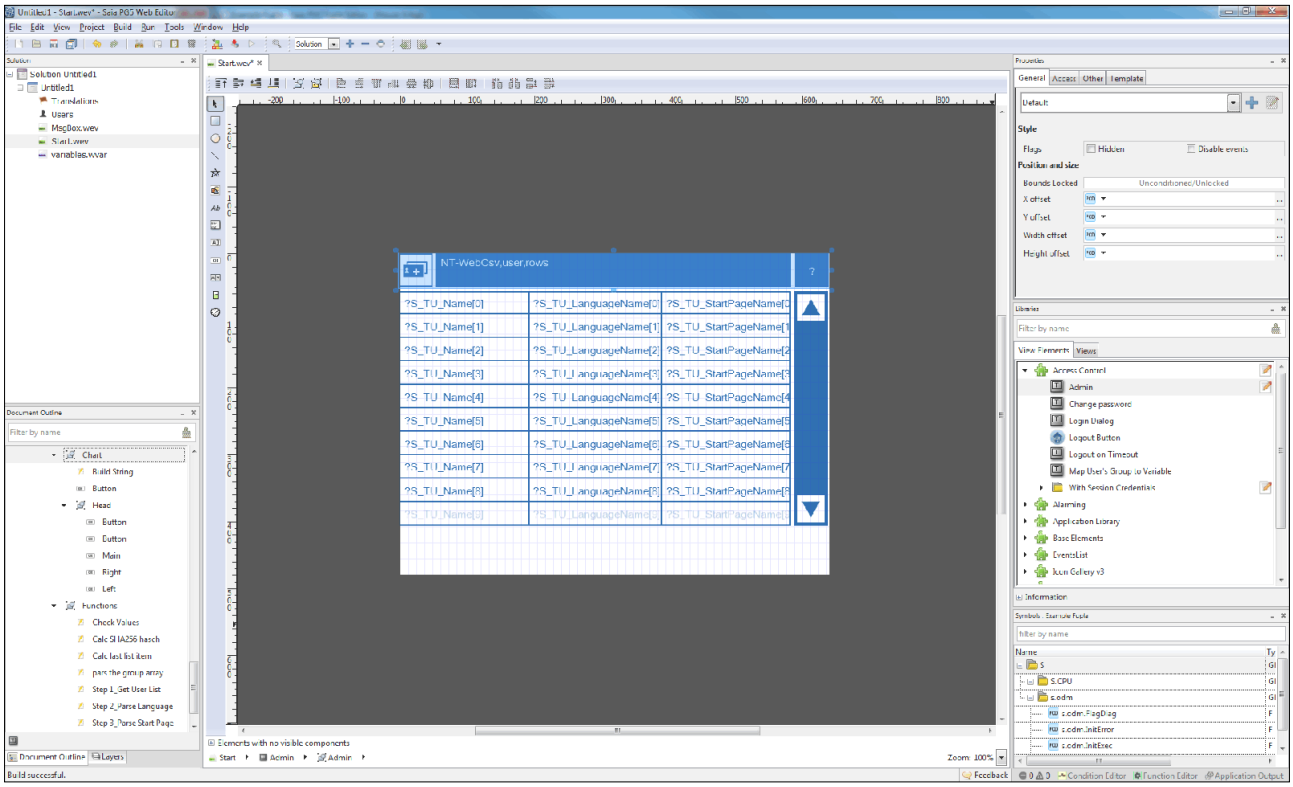
The production of web-based visualisation and control interfaces is an essential element of the engineering effort. Appealing, functionally designed web pages are the public face of the system, supporting operational efficiency and safety. A powerful tool for generating the web pages is therefore crucial.

Start screen for Saia PG5® Web Editor 8

Saia PG5® Web Editor: simple, intuitive and efficient

Designing dynamic web pages with a normal HTML editor is laborious and requires specific expertise (in-depth HTML and Java programming knowledge). With the Saia PG5® Web Editor, SBC provides the user with an easy-to-use software tool for generating web pages to ensure that this innovative technology does not remain the preserve of a small number of specialists. The Web Editor is used to create web pages in HTML5 or in TEQ-format simply and efficiently by placing and parameterising objects. Operation of the editor is intuitive, and rquires no HTML or Java programming knowledge. With optimum integration into the Saia PG5® Controls Suite and the associated direct access to all symbols, powerful macro management to generate your own reusable macros and many other useful functions for efficient generation of web pages, the engineering costs are significantly reduced compared to other editors.

The tool is designed for the automation environment. Applications include system visualisations, alarming and trending functions, or just one service page. The full integration into the Saia PG5® Core combined with Saia PCD® controllers guarantees a particularly efficient working method.

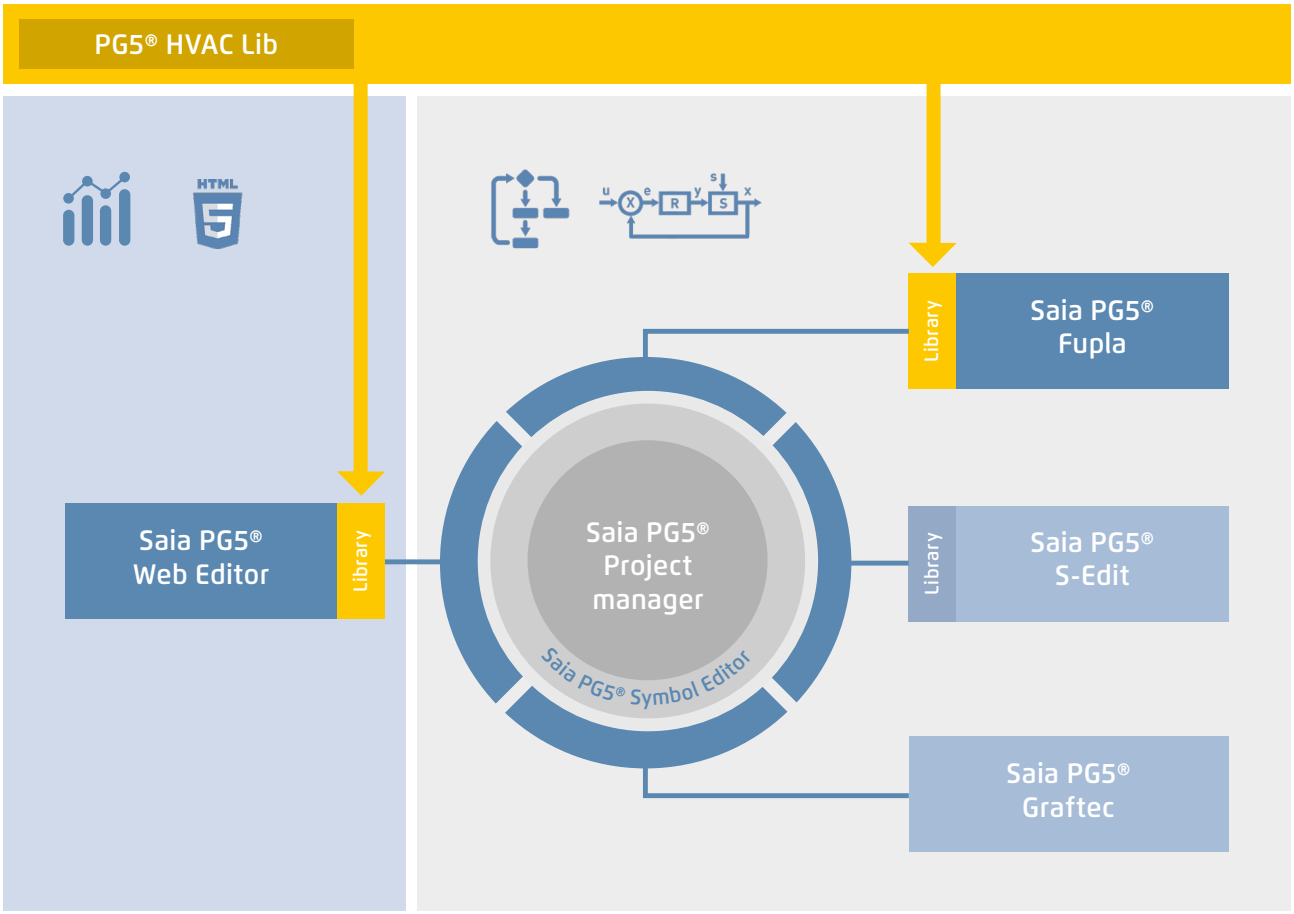


The Saia PG5® Web Editor produces appealing web visualisations with no web designer skills required.

The Web Editor includes a transparent and adjustable workspace for efficient operation. The workspace essentially comprises the menu/command bar, the View Editor (drawing area) and windows. With docking window technology, the user can position and show/hide the windows as required.

1.1.2 Saia PG5® HVAC modules

1.1.2.1 HVAC library



Saia PG5® Core + HVAC library. The visualisation is created using the Web Editor.

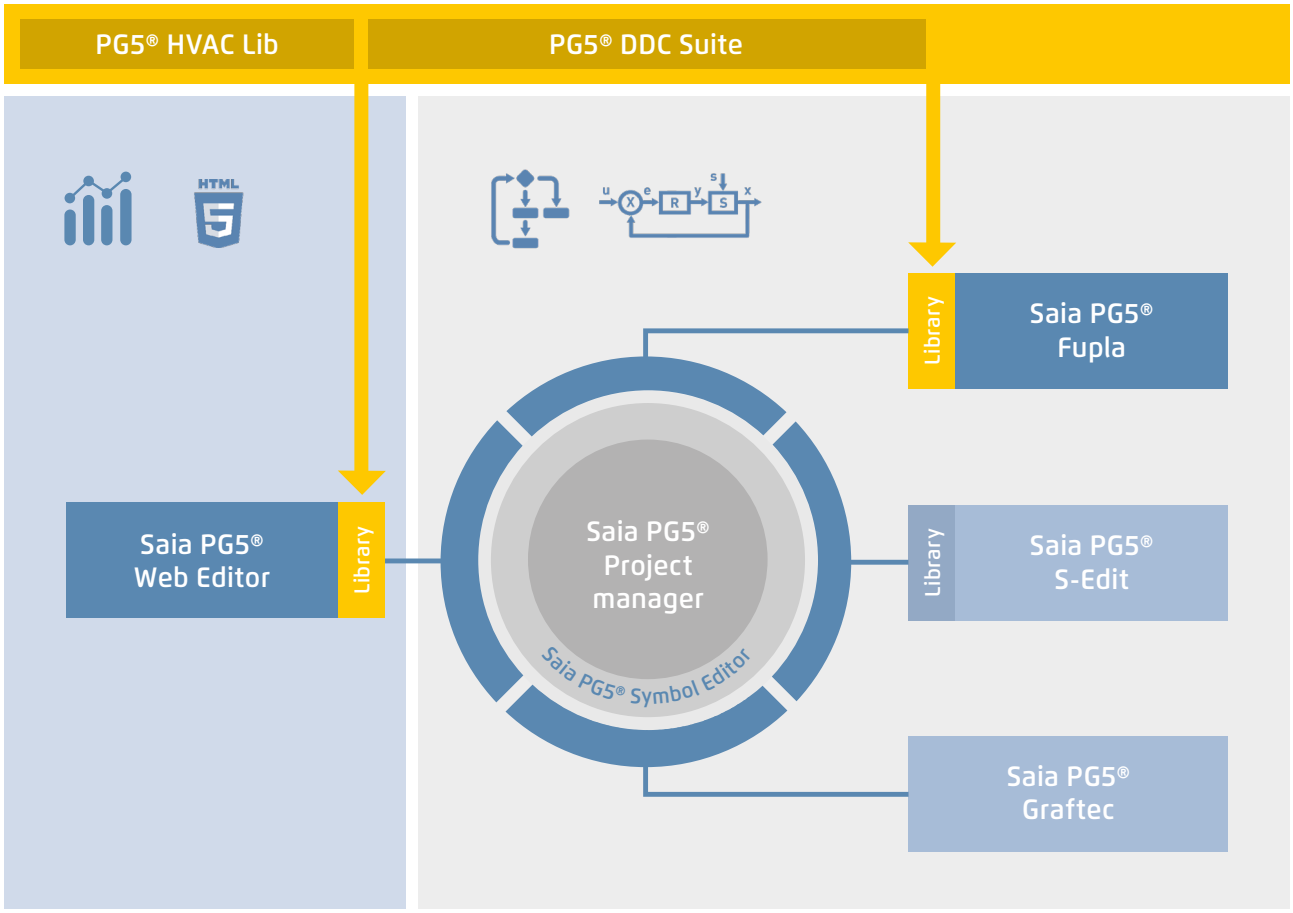
The majority of the program functions can be implemented using the FBoxes included the Saia PG5® Core Package. In addition, additional libraries for specific applications are available. The HVAC library, for example, has an efficient collection of complex control modules (FBoxes) for the heating, ventilation and air conditioning systems area. These functions simplify the engineering of the technical systems of buildings.

The HVAC library contains the following FBox groups

- General: FBoxes for numeric functions, binary functions, alarms, monitoring, motor, blocking and frost protection, process states, switches and the conversion of data types
- Analog: Function blocks for individual scaling of each individual analog input or output
- Electrical: FBoxes for lighting control, window blind control and step switches
- Energy: Energy meters, pulse counters, monthly statement, enthalpy, switching heating on/off, load cut-out
- Filters: Filter, limitation, ramp limitation, average of measurement values, dead zone, dead range with delay, zero zone, hysteresis
- Init: Initialisation of the sub-functions for the HVAC library
- Controllers: Two-point controller, three-point controller, boiler loading, P, PZ, PI, PID, P-PI, P-PID controllers, incoming air mixers, controller sequences, mixer sequences
- Setpoint: Heat curve, heating demand, setpoint device, setpoint ramp, setpoint adjustment
- Test: Simulation of values and states
- Clocks: Daily program, weekly program, annual program, clock with multiple switching periods in one FBox, national holidays, monthly switch-offs or switching periods one after the other on the same day, as well as FBoxes for reading and writing clock data

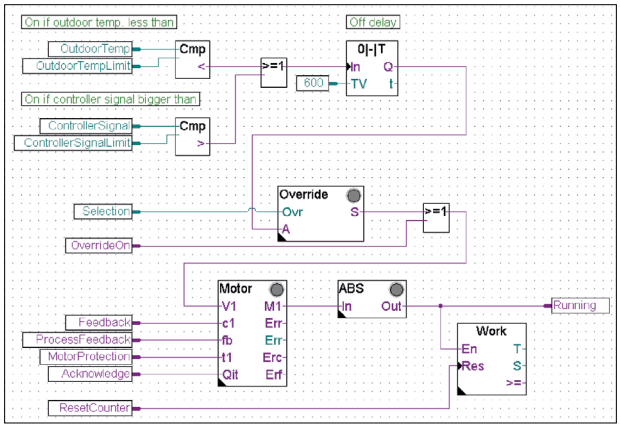
1.1.3 Increasing engineering efficiency through installation templates

1.1.3.1 DDC Suite

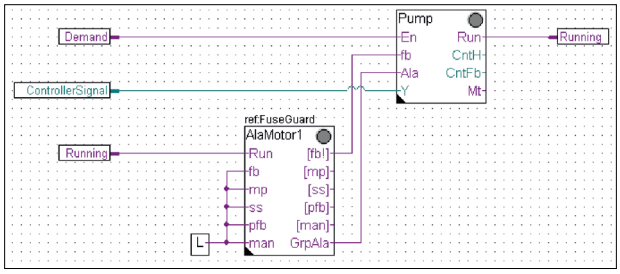


Saia PG5® Core + DDC Suite library

Using the Saia PG5® DDC Suite library and templates makes the creation of HVAC applications even simpler. Complex program structures and application elements such as complete pump controllers, incl. hour meters or entire control tasks for ventilation systems are grouped together as templates in individual function boxes and optimally add to the current HVAC library. This means that projects can be implemented efficiently.



Total pump control with HVAC library



Total pump control with DDC Suite library

We can already see a number of benefits when comparing the two Fupla pages (HVAC and DDC Suite).

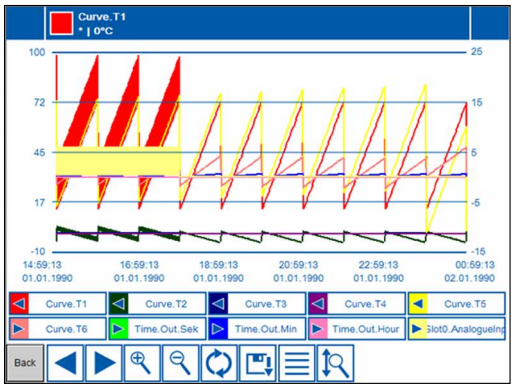
- It is easier to read and understand the Fupla program – fewer FBoxes and links on one page.
- Clear and transparent layout – easier to handle, e.g. for new colleagues in the developer or service team
- Easy to maintain

The following FBox families are available to the DDC Suite library user:

- DDC general: general FBoxes such as manual information, media access
- DDC analog values: FBoxes for capturing measurement values
- DDC BACnet: Scheduler, Trendlog, Loop, Notification Class
- DDC Releases: clocks, systems and aggregate switches
- DDC Initialisation: modules which must be inserted once into a Fupla and which provide basic functions.
- DDC controllers: control modules for components such as coolers, heat recovery systems and heaters
- DDC setpoints: conversions, setpoints
- DDC Controls: Triggering of motors, pumps, covers and drives
- DDC Fault: Fault modules for motors, fire protection and various components

This FBox library with highly integrated FBoxes uses individual data points and creates groups and symbols automatically.

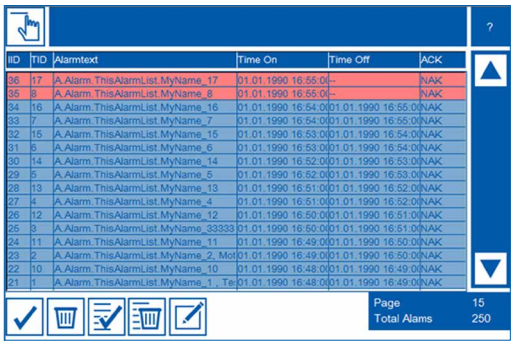
The unique features of the DDC Suite are listed in 5 points:



Trending

1. Integrated trending (offline history)

If data has to be recorded along with the actual control and regulation of a system, this is easily implemented with Saia PG5® DDC Suite. Data acquisition for trending can be initiated by defining the memory size in the object parameter window. When the automation system is in operation, data will be constantly saved in the Saia PCD® and available for evaluation. In addition, documentation (.txt) will be created in the Saia PG5® Project Manager of all the measured historical data. A list of the trend settings can be seen in this file. There is one entry for each trend with all the details.

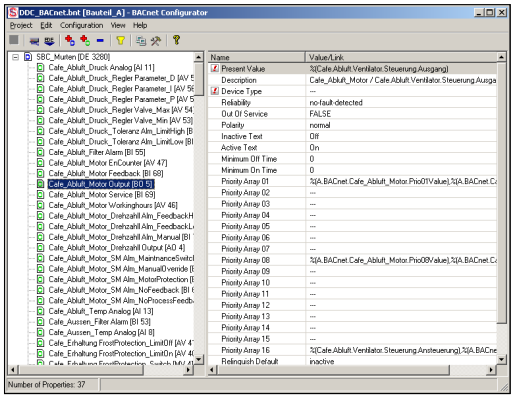


Alarming

2. The principle of the trend function also applies to alarm functions.

By defining the alarm number in the object parameter window, the alarms are listed in a CSV file with numbers and text.

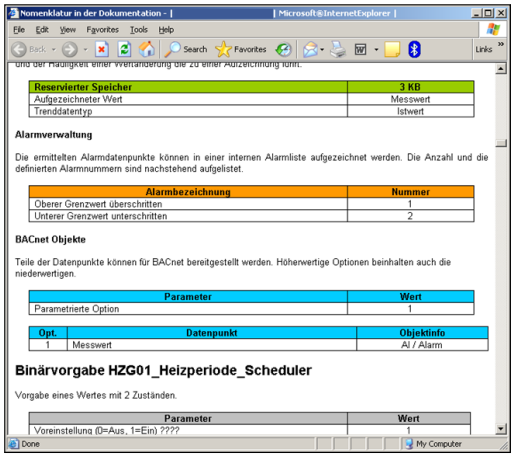
With Version 2.5 of the DDC Suite, the system identification key can be created completely freely directly from Fupla. The aim is to create the system identification key for the S-Web alarm texts and BACnet® completely freely according to the specifications from the Fupla program.



BACnet configurator

3. Automatic generation of BACnet® configurations

For BACnet® projects, the BACnet® object list is created automatically, which saves a great deal of error-prone manual work. The automatic generation of the BACnet® objects is the main reason why so many customers use the DDC Suite. In building automation, it is normal for all systems to map relevant hardware and software data points to BACnet® objects. This may mean that multiple data points are used in a BACnet® object. Thus, for example, a binary output could receive exactly the same return message and be monitored via intrinsic alarming. The control templates for the DDC Suite already contain all BACnet® definitions which can be activated by clicking, Thus BACnet® originates at the click of a button.



HTML document

4. The engineering documentation can be created quickly at the click of a button.

The documentation on all DDC Suite FBoxes is created as an HTML file. This file contains a general description with all parameters and settings. The documentation can be saved in the PCD and, for example, be used for viewing via the web. It is, however, also possible to post-edit the documentation using a text processing tool and to add images from the SCADA/web application.

5. Templates for Fupla, Web Editor and Saia PCD® Supervisor

The Saia PG5® DDC Suite largely comprises a highly integrated FBox librarywhich is supplemented by a growing number of ready-made, tested and ready-to-use Fupla pages which fully map the typical parts of the system in terms of function. The Saia PG5® DDC Suite also provides the control and visualisation function for each FBox. Operation and visualisation using the web browser or Saia PCD Supervisor is already integrated and ready for use.

Fupla templates

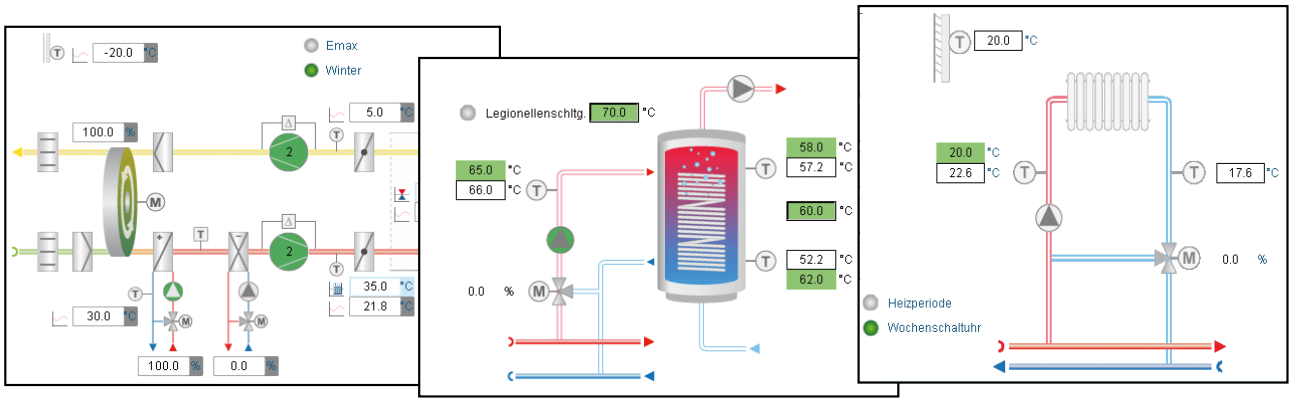
In order to reduce the system programming time, entire applications (heating circuit, water heating, ventilation systems, etc.), including the calendar and control tasks, are fully integrated for free selection. Some suggestions for control settings and for system control can thus be freely added, changed or integrated.

Web Editor templates

The DDC Suite is also includes template objects for Web Editor. Graphic and control objects are available for every FBox. There are also templates for predefined systems.

Saia PCD® Supervisor templates

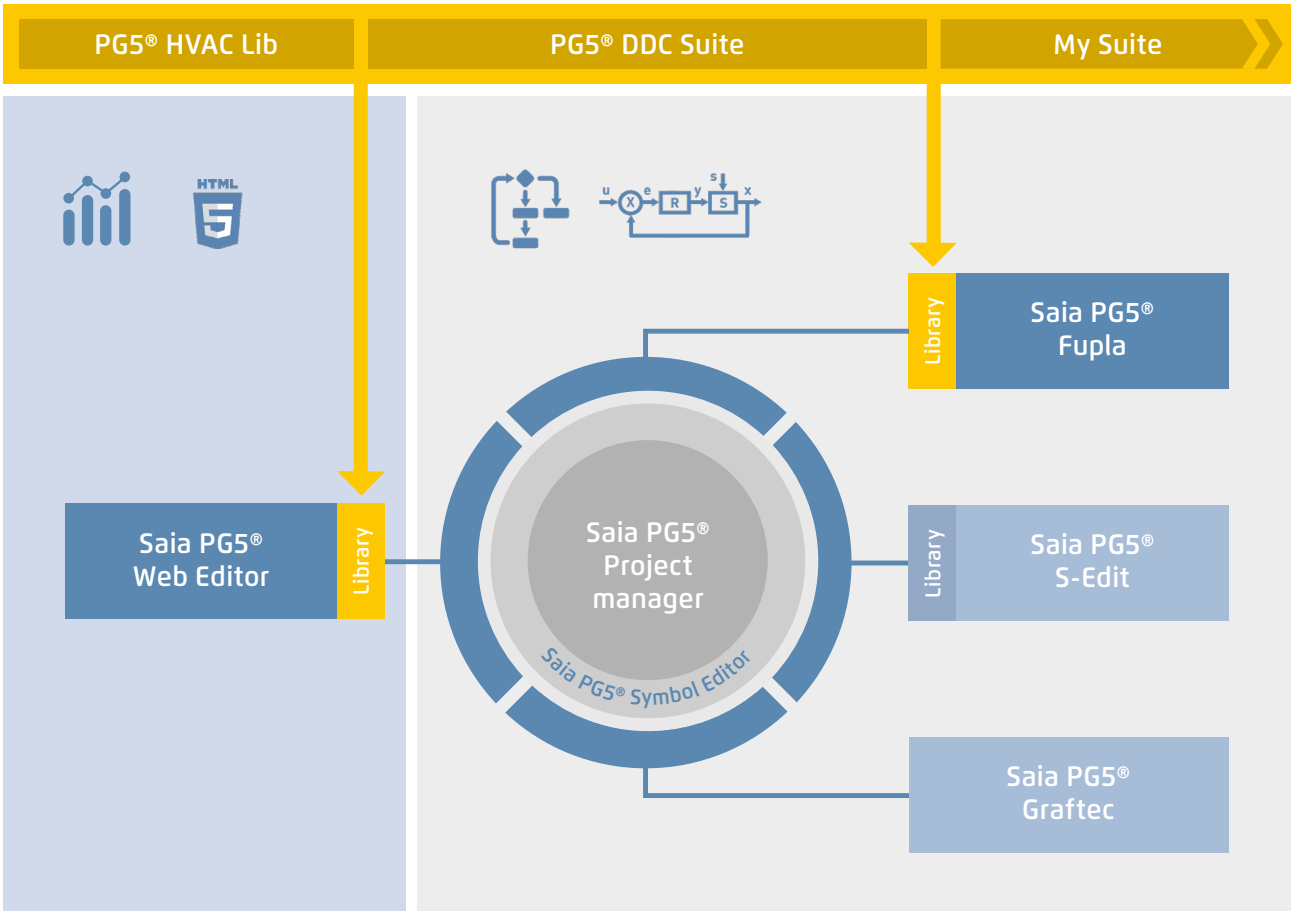
When importing data from Fupla into the Saia PCD Supervisor, the FBoxes are recognized with the help of the integrated mapping table and structured by the Saia PCD Supervisor according to the specifications of the FBoxes. Not only are the information points imported - units, min-max values, alarms and historical trends are also created automatically during import. In addition, the Saia PCD Supervisor user is provided with suitable template objects analogous to the Web Editor templates.



System display

1.1.4 Saia PG5® Controls Suite

1.1.4.1 My Controls Suite



The use of predefined FBoxes and/or templates is not mandatory. Saia PG5® Core enables users to create individual templates and even define the templates with purely graphic engineering, with no IL programming required.

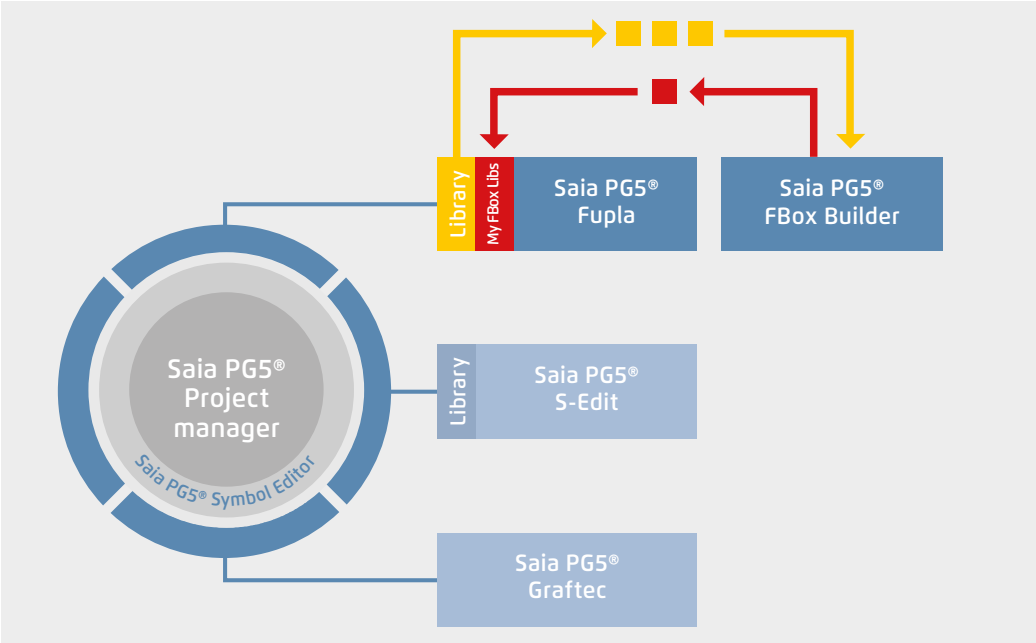
Create templates

Using templates significantly simplifies processes and reduces engineering time. To implement projects more efficiently, users can not only implement existing templates, but also incorporate user-specific engineering projects as templates. Users who have built their standard Fupla pages can export and save them as .fxp files (a .fxp file includes any number of Fupla pages). To reuse the pages, the .fxp files must be located and then imported.

In addition to the templates which can be easily created and reused, you can also create your own FBoxes and/or FBox library (My FBox Lib). The FBox Builder, contained in the Saia PG5® Core, is used for this.

Create FBoxes

The process of exporting Fupla pages and then reimporting them is simplified by the Saia PG5® FBox Builder. Users can import their .fxp files into the FBox Builder and then archive them as FBoxes.
This function (importing Fupla export pages/files) enables a structured group of FBoxes to be assembled into one large macro FBox. The Saia PG5® FBox Builder can then be used to document, maintain and export the new macro FBox as a new "product".
This capability allows users to build customised libraries for any other application. The FBox Builder enables users to develop their own FBoxes without writing a single line of instruction list code.

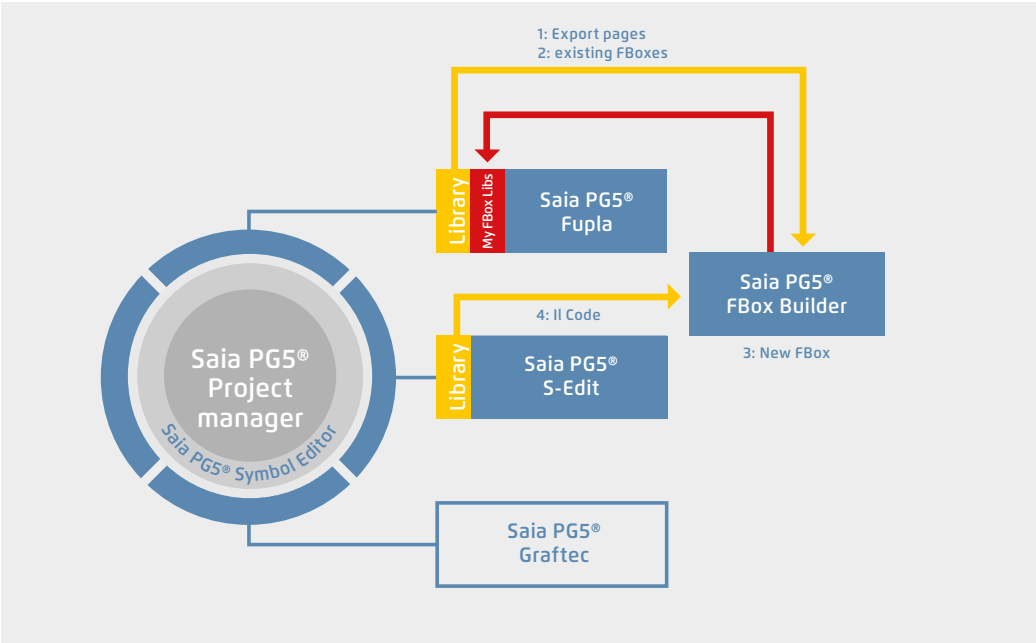


Creating your own FBoxes with the FBox Builder

The Saia PG5® FBox Builder has additional functions that enable programmers to develop totally new FBoxes and to maintain them in their own library. The FBox Builder advanced version is required if the user wishes to integrate existing IL functions, modify existing FBoxes or even create totally new FBoxes. In addition to importing export pages (1), this version enables extensive functions such as:

- Importing existing FBoxes (2)
- Creating FBoxes "from scratch" (3)
- Importing IL code (4)

The advanced FBox Builder is suitable for experienced Saia PG5® IL programmers who have attended a workshop and own a licence for the FBox Builder Advanced add-on tools.



Using the Saia PG5® FBox Builder in projects with the Saia PG5® software technology

1.1.4.2 Overview of the tools and licence packages

The combined platform of the SBC software is the Saia PG5® Controls Suite DVD. It contains software tools for project management, engineering, programming and service. The DVD also includes application components with which you can increase your productivity when using Saia PCD® products. There is also a wide range of system software on the Saia PG5® Controls Suite DVD. This software is predominantly driver software to ensure easy and secure integration into a system environment.

Saia PG5® Controls Suite contains everything you need for automation



PC tools

Saia PG5® Core Project Manager
- Application Programming
- Application Engineering
- Network Management
- Service

Saia PG5® Web Editor
Tool for creating web pages for the Saia PCD® Web Server

Saia PG5® HMI Editor
Tool for Saia PCD® Text Panels

Saia PG5® FBox Builder
Tool for creating and managing Saia PG5® Fupla FBoxes

Saia PG5® Online-Tools
Downloading PG5 programs without installing the Saia PG5® Core

Application components

Standard FBoxes
Program modules for Saia PG5® Fupla, the graphic engineering tool
- Arithmetic and logical FBoxes
- Analog FBoxes
- Communication FBoxes

Application FBoxes
Program modules for Saia PG5® Fupla, the graphic engineering tool.
FBoxes Alarm, DALI, DDC Suite, EIB, Energy Meter, EnOcean, Historical Data Capture, HVAC, Blinds/Lighting, JCI N2-Bus, e-mail Communication, Modbus, Modem, MP-Bus, Room Controller

IL libraries
Function blocks for counter modules, drive modules and analog modules can be integrated into IL programs

Application software

SBC Web Connect
The PC program enables access to the PCD WebServer via any communication interface (RS-232, RS-485, Profibus, Ethernet, etc.)

Saia PG5® SD Flash Explorer
With SD Flash Explorer, the content of the SBC file system can be extracted to the PC.

List of tools in the Saia PG5® Controls Suite

Licence packages

We have defined three packages as a global standard from the wide range of possible software combinations with the Saia PG5® Controls Suite. The training programs, online training and documentation are based on these.

Saia PG5® Core Package
With this package, all types of ICA tasks can be initiated on machines and systems. The graphic application components supplied support the use of the Saia PCD® Automation Server (Web + IT) and simple calculation and logic functions.

Saia PG5® HVAC Package
In addition to the Saia PG5® Core Package, additional graphic control module assemblies (FBoxes) are included which are oriented to the needs of HVAC primary systems. Template pages can be created from the basic collection of HVAC ICA modules which map any kind of system configuration.

Saia PG5® Extended Package
In addition to the Saia PG5® HVAC package, highly integrated graphic modules (DDC Suite) are included as well as a collection of templates which map the current system design of the HVAC technology.

→ For details see order information

Saia PG5® options – Add-on libraries: Tool is separated from libs. The FBox libraries can also be ordered.

Order information | Saia PG5® Controls Suite

Saia PG5® Programming Tool

PG5 – Demo version with all functions. Runtime limited to 90 days	PCD8.PG5–DEMO
Saia PG5® Core Package Programming software with editors (IL, Fupla, Graftec), network configurators, standard libraries (Analog, Communication, Arithmetic & Logic), application libraries (Alarming, Blinds-Lighting, e-mail, Trending [HDLog], Energy Meter, DALI, Modbus, EIB, EnOcean, JCI N2-Bus), Web Editor and FBox Builder (basic version)	PCD8.PG5–CORE
Saia PG5® HVAC Package Similar to Saia PG5® Core Package and associated libraries (HVAC, Belimo MP-Bus, room controllers and modem), BACnet	PCD8.PG5–HVAC
Saia PG5® Extended Package Same as Saia PG5® HVAC Package and associated DDC Suite library	PCD8.PG5–EXTENDED
Saia PG5® Software Upgrade Upgrade according to customer's key Version 2.2 to 2.3	PCD8.PG5–UPGRADE
Saia PG5® Software Upgrade Upgrade from Core to HVAC package	PCD8.PG5-UPGR-HVAC
Saia PG5® Software Upgrade Upgrade from HVAC to Extended package	PCD8.PG5-UPGR-EXTD
End user licence for Saia PG5® End user licence for PG5. The customer is supported by the requisitioner (in accordance with the customer key)	PCD8.PG5–ENDUSER

Saia PG5® options – Add-on tools

PG5 – FBox Builder ("advanced version") Software package for Saia PG5® FBox Builder. IL knowledge needed and 1 day's training included	PCD8.PG5-FBOXBLD

1.2 Application software for Windows PCs

1.2.1 Saia PCD® Supervisor

1.2.1.1 Saia PCD® Supervisor

The complete solution for intelligently managing buildings and infrastructures

The scalable Saia PCD Supervisor software platform monitors and controls simple HVAC regulating systems as well as company-wide control stations in larger building complexes or infrastructure systems.

Main properties of the Saia PCD Supervisor

Complete solution: controlling, monitoring, reporting and visualising with just one centralised software platform

Compatibility: allows integration of all Saia PCD controllers, third-party devices and smart devices via IT protocols and numerous drivers

Flexibility: can easily be adapted to individual customer requirements

Technology standard: based on robust Tridium N4 technology with HTML5 and Cyber security

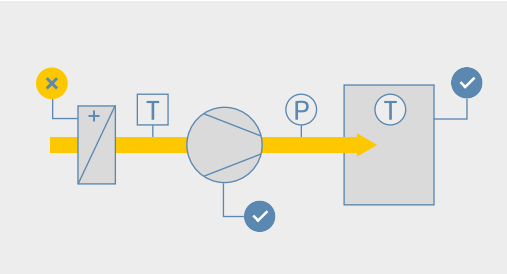
SBC: brand-specific additional services (S-Bus driver, Import Wizard and Icon Gallery) +
ready-made S-Bus and BACnet DDC suite templates and intuitive HTML5 project visualisation templates

Complete solution

As a modern, scalable monitoring and management solution, the Saia PCD Supervisor bundles visualisation, interaction, monitoring and reporting in a user-friendly, high-performance software platform. Designed to offer compatibility regardless of brands, it allows the integration of all building systems across disciplines – even thirdparty systems. By bringing together all relevant data and displaying them in a way which is easy to understand, the Saia PCD Supervisor helps to optimise building systems and thus improve building efficiency significantly.

1. Visualisation
The Saia PCD Supervisor sets new standards: whether you use a desktop PC, a tablet or a smartphone – thanks to HTML5, real-time visualisations can be displayed without problems on virtually all devices. You can take advantage of the adjustable, predefined templates and responsive design.

2. System monitoring
The Saia PCD Supervisor conveniently presents system data in freely definable graphical system diagrams, as a trend diagram or in table form – all directly in a web browser, regardless of protocol, data point type, controller and operating system.



3. Reporting
Data can be exported as reports in CSV or PDF format at any time – this can also be done automatically. Thanks to the optional SQL and OPC interface, integration with other systems is easily possible.

4. Dashboards
Keep track of key performance indicators at all times: Users create and modify the dashboards themselves and save their own specific dashboards.

5. Monitoring
The Saia PCD Supervisor from SBC is a high-performance integration and monitoring platform with central data display for all building sub-systems. With Saia PCD Supervisor EM (see chapter 1.2.1.2), the energy monitoring software from SBC, the energy consumption of buildings is also analysed and monitored. As a result, it can be optimised.

Compatibility

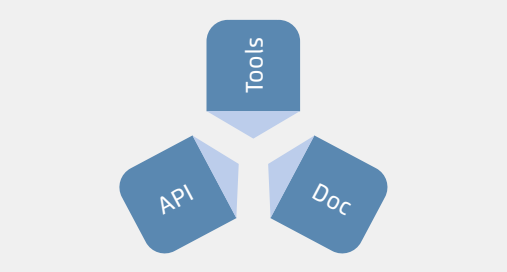
Designed to offer compatibility regardless of brands, the Saia PCD Supervisor allows the integration of all building systems across disciplines. The platform monitors and controls all HVAC and non-HVAC systems such as lighting, shading or security systems. The Saia PCD Supervisor also supports all established communication protocols and integrates all systems and applications in a standardised structure, even across a number of buildings.

Large selection of drivers

Open communication, a factor which is relevant in today's building automation, is supported by various protocols including BACnet, LON, Modbus, M-Bus, KNX, OPC and SNMP. Most open systems are based on the TCP/IP communication standards and can be integrated directly into the Saia PCD Supervisor. Optionally, external systems can also be connected via SQL interface or a freely configurable API interface.

Faster, more efficient development

The open Niagara Framework on which the Saia PCD Supervisor is based allows developers to extend the framework and program their own unique applications, drivers, plug-ins, data displays and application logics for business applications. In addition to this, there is detailed documentation, a comprehensive, open API library and ready-made tools which provide support during development.



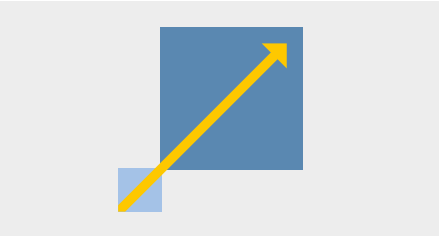
BACnet driver

The Saia PCD Supervisor is a BACnet-certified control centre which satisfies the BACnet profiles B-OWS (Operator Workstation) and B-AWS (Advanced Workstation). It is also certified in accordance with BTL "Revision 14". BACnet guarantees interoperability between devices from various manufacturers. A BIBB (BACnet Interoperability Building Block) defines which services and procedures need to be supported on the server and client side in order to achieve a specific system requirement. The PICS (Protocol Implementation Conformance Statement) document belonging to a device lists all supported BIBBs, object types, character sets and communication options. With the Saia PCD Supervisor, it is possible to scan for BACnet objects within the network or import them via EDE files.

High level of flexibility

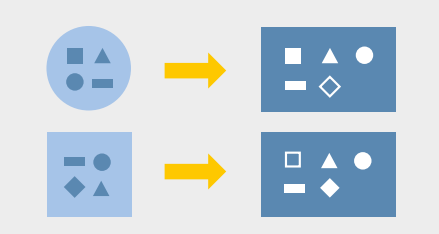
The system can be extended almost unrestrictedly and adapted to meet the individual requirements of integrators, planners or operators.

Modular and scalable



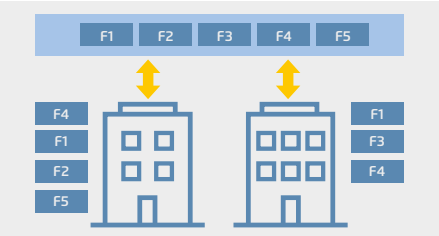
Individual buildings can be managed in the same way as larger building complexes and facilities spread across various sites. All important SCADA functions are already included in the basic packages. Thanks to data point extensions – even for open protocols – the system can be adapted to the particular project size at any time. The customer can therefore select any package as a basis and add various data points at any time in order to give the Supervisor system the capacity it needs for the points to be monitored and controlled. All Saia PCD Supervisor basic packages also include an 18-month maintenance package and with this warranty, a free upgrade of older versions. Continuous maintenance is necessary in order to keep the system up to date. This can be extended by purchasing maintenance upgrade options. Our partners also get an engineering licence (annual contract) which can be used to configure, test and demonstrate the Saia PCD Supervisor. With this annual contract, partners also receive support from SBC (training and technical assistance) in order to ensure that the Saia PCD Supervisor can be operated properly.

Normalised data points



The data of connected devices and networks are normalised in the Saia PCD Supervisor and are then available throughout the system. Normalised means that the data read by the driver are packaged in a standardised data structure and can be used in the same way in any function and visualisation. Each data point in the Saia PCD Supervisor can provide a priority array. S-Bus, M-Bus or BACnet data points are also supplemented with a priority array in the Saia PCD Supervisor. The priority array makes it possible to execute various operating states on the same data point with a different priority.

Higher-level functions



The Saia PCD Supervisor provides a level for higher-level functions with the Wire Sheet (similar to the PG5 Fupla).

- Creating cross-building data sets
- Preparing data for reports and visualisation
- Creating alarm escalations and e-mail recipients

Tailored visualisation

Each user logged in to the system focuses on various individual tasks. The information in a system is therefore user-specific. With the Saia PCD Supervisor, each user sees exactly what is relevant to them: system technicians see the system diagrams and MSR technicians see additional control parameters. The facility manager can also change time plans while the security personnel receive security-related messages. Naturally, all of this can be set up in accordance with specific user requirements. The status reports too can be personalised. The Saia PCD Supervisor offers sophisticated functions for filtering, processing, escalating and forwarding alarms. It is also possible to send alarms via e-mail.

Technological standard

The Saia PCD Supervisor is based on the proven Niagara 4 Framework which is already used in over half a million applications around the world.

Cyber security

The Saia PCD Supervisor is secure as standard and uses the "Defence in Depth" approach for the security architecture on the Internet of Things which is based on the security concept of the Niagara Framework. For authentication, users must select secure login information. In addition, both transmission data and data on network drives must be encrypted. The Saia PCD Supervisor also uses role-based access authorisations. As a result, user authorisations can be configured easily and are less susceptible to errors. The user concept is based on categories, roles and users. This setup allows a very detailed description of the rights of a user within a system up to individual data point features. Each user is assigned a role which defines their access rights and locations. If a user is given a new role in the system, the rights needed for this are added immediately. Each user can also be assigned an individual start page and an individual language. The Saia PCD Supervisor can also be integrated into existing systems for identification and access management such as LDAP or Kerberos. All user activities and security-relevant events are recorded in the Niagara Audit Log and can be traced.

HTML 5

The Saia PCD Supervisor features an intuitive user interface for comprehensive building management. It uses the HTML5 standard in order to provide numerous reliable functions and thus combines maximum control with the very highest data security.

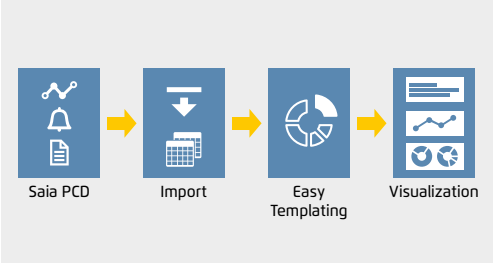
System requirements

- The Saia PCD Supervisor supports the following operating systems:
  - Windows 10 (64 bit)
  - Windows Server 2016
  - Windows Server 2019 (64 bit)
- In addition to the operating system requirements for the Saia PCD Supervisor, the following requirements must also be met:
  - Processor: Intel® Xeon® CPU E5-2640 x64 (or more powerful), compatible with dual and quad core processors
  - Memory: at least 6 GB; for larger systems, 8 GB or more recommended
  - Free hard disk space: at least 4 GB; 10 GB recommended for any supervisor; more may be required depending on the archiving requirements
  - Display: Video card and monitor capable of displaying 1024 × 768 pixel resolution, minimum of 1920 × 1080 recommended
  - Supported networks: Ethernet adapter (10/100 MB with RJ-45 connection)
  - Connectivity: permanent ISP high-speed connection for remote site access recommended (e.g. T1, ADSL, cable modem)
- If data archiving is necessary on a company level (optional), one of the following compatible database applications must be installed: MS SQL Server 2012, 2016, 2017 and 2019,
  MySQL Server 5.7 and MySQL Server 8.0
  Oracle Express 11g, Oracle 12c, 18c, 19c.

SBC-specific benefits

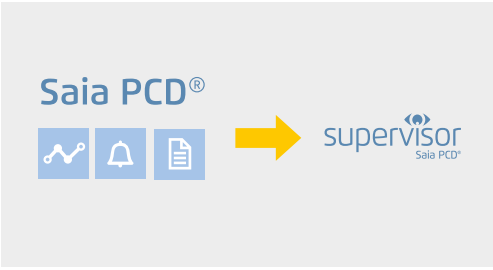
Efficient engineering

A wizard simplifies migration (Ether-S-Bus, S-Bus-Gateway) of all PCD controllers incl. backwards compatibility. An adjustable mapping table defines features and enhancements to data points. Users' own templates can be created independently of protocol and individually visualised via library for S-Bus and BACnet (compatible with PG5 templates). Users can generate their own HTML5 structure for web visualisation with a project template.
The Database Manager extension allows an overview of the existing / used licence data points at any time. In addition, it allows you to automatically delete all unused data points from the project.
With the additional JSON toolkit, it is possible to integrate any application / device via freely definable API interfaces.



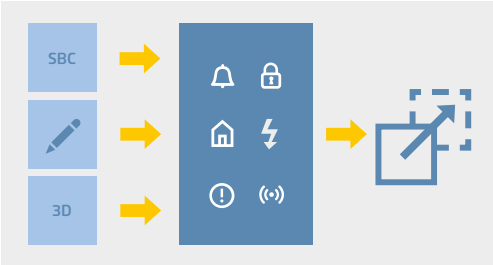
Saia PG5® Import Wizard

The Import Wizard extends the Saia PCD Supervisor with an efficient and fault-free data import of the existing PG5 data point structure with the help of a pre-defined and adjustable mapping table. This can be modified for every FBox and enhanced with the features of all Saia PCD Supervisor components. For instance, in the DDC-Suite 2.7 FBoxes, all features and enhancements are therefore added to the data points directly during the import.
Via the Saia PG5® Import Wizard, symbols and alarm lists with alarm texts from a Web Editor 8 project as well as HDLog lists previously defined in PG5 projects can be imported into the Saia PCD Supervisor quickly and easily. The filter functions can be used if only selected symbols are to be imported. During the import process, the Ether-S-Bus driver is created and configured. All CPUs in a PG5 project where data points were selected are automatically created under the driver as a device and configured for communication. From this moment, data point communication begins automatically when the PCD is available in the network and the device configuration is correct.



SBC Icon Gallery

The Saia PCD Supervisor supports all common image formats such as PNG, SVG, GIF and JPG. In addition to 3D graphics, the graphics in the SBC Icon Gallery on the basis of SVG files are available as usual. Graphics and system diagrams are created in the Saia PCD Supervisor graphics editor. Systems are often made up of the same system parts. These can be created in the Saia PCD Supervisor on a one-off basis and reused. In order to reuse a created object, it is dragged to a page using drag and drop. In the process, data points are automatically connected with the correct system. Changes to an object are made immediately to all usage instances. This is possible both with individual objects and with complete views.



S-Bus driver

Complete solution for integrating a Saia PCD controller via the proprietary S-Bus: the SBC S-Bus-over-IP driver is ideal for connection to PCD1, PCD2, PCD3, PCD7 and gateways.

Supported functions:

- Reading and writing all Saia PCD media
- Reading the Saia PCD status and the firmware version
- Reading out the HDLog data
- Receiving and acknowledging alarms from the PCD system

It is possible to use a number of PCD controllers under an SBC IP network driver. A number of SBC IP network drivers can also be managed in one system. The systems can thus be separated or optimised.

It is also possible to place PCD sub-stations under PCD devices which cannot be connected directly via an Ethernet interface (S-Bus gateway).

Training and technical assistance

A four-day engineering training course provides all the knowledge needed for successful project work.

On the basis of an extensive demo project, participants are taught how to work with the Saia PCD Supervisor in a practical context. And if questions or problems arise later on, our technical support department would be happy to help!

Supported PCD devices

Saia PCD devices are connected directly to the Saia PCD Supervisor via an Ethernet interface.

Devices with an RS-485 interface can communicate with the management system via a gateway station which is connected to the Saia PCD Supervisor via Ethernet.

The following devices are supported:

- PCD with RS-485 interface for connection to a gateway station which is connected to Saia PCD Supervisor via Ethernet:
  PCD1.G/F/Wxxx-xx5 with RS-485 (as slave of a gateway station).
- PCD1.M0160E0
- PCD1.M2xx0
- PCD2.M4x60
- PCD2.M5xx0
- PCD3.Mxxx0
- PCD7.D4xxxT5x

Products and licences

The licensing scheme for the Saia PCD Supervisor is geared to the number of points. A point is an individual information element which is stored in the Saia PCD Supervisor database. With Saia PCD controllers, these are flags, registers, inputs, outputs etc. which can be read or written by the Saia PCD Supervisor via S-Bus. There are also open points, e.g. BACnet IP, EIB/KNX IP, LON IP, Modbus IP, M-Bus IP, OPC and SNMP.

S-Bus points
These are points controlled by SBC manufactured controllers (PCD1, PCD2, PCD3 and PCD7) and accessed using the S-Bus Protocol. For this category of device the license is sized on the points you want to monitor. Point discovery is an embedded feature available through the Saia PG5® Import Wizard embedded in the S-Bus driver. SBC devices and networks are not counted for licensing purposes.

S-Bus extensions
In case more points are needed to meet system requirements, the desired Saia PCD® Supervisor database size can be reached with any combination of Starter Kit and Point Extensions.

Open points
These are points from open protocol equipped devices or subsystems that you wish to integrate straight into Saia PCD® Supervisor. The Saia PCD® Supervisor open driver packs include a selection of standard drivers that you can select to be used to perform head end integration.
Standard drivers are: BACnet IP, EIB/KNX IP, LON IP, Modbus IP master and slave, M-Bus IP, SNMP and OPC client.

Please note that open protocol license management is delivered in a way that as soon as you reach the limit for point count customers need to request license upgrade accordingly.

Maintenance upgrade options
Saia PCD® Supervisor basic packages include an 18 months maintenance and free upgrade package. This can be extended by purchasing maintenance upgrade options.

Extended connectivity options
Upgrade connectivity for communication from Saia PCD® Supervisor to another.

Extended support options
These options extend the Supervisor's ability to communicate with Excel, My SQL Server, SQL Server, Oracle Server, JSON Toolkit for Supervisor (Valid SMA Required) and Micros Fidelio IP Driver.

Video integration options
Device drivers for various camera types for up to 128 connected cameras.

Energy Management options
Comprehensive solution for energy monitoring in the Saia PCD® Supervisor. Monitor and optimize the energy consumption of your entire building.

Security options
Provides interface to integrate the Niagara Enterprise Security Supervisor database to active Directory/LDAP.

Cloud connection options
Allows Supervisor to access the Niagara Cloud Honeywell Sentience Driver.

Partner license agreements
Partner license agreements can be signed and renewed annually, for single or multiple engineers. Maximum felxibility is provided by the license for one month limited to one engineer (workstation).

Licence model and order codes for end users

Basic S-Bus packages

PCD8.SUP-500	Saia PCD® Supervisor basic package including SBC S-Bus driver and 500 points database size
PCD8.SUP-2500	Saia PCD® Supervisor basic package including SBC S-Bus driver and 2,500 points database size
PCD8.SUP-10000	Saia PCD® Supervisor basic package including SBC S-Bus driver and 10,000 points database size
PCD8.SUP-25000	Saia PCD® Supervisor basic package including SBC S-Bus driver and 25,000 points database size
PCD8.SUP-50000	Saia PCD® Supervisor basic package including SBC S-Bus driver and 50,000 points database size
PCD8.SUP-100000	Saia PCD® Supervisor basic package including SBC S-Bus driver and 100,000 points database size.

S-Bus extensions

PCD8.SUP-100EXT	Saia PCD® Supervisor additional 100 SBC database points
PCD8.SUP-2500EXT	Saia PCD® Supervisor additional 2,500 SBC database points
PCD8.SUP-5000EXT	Saia PCD® Supervisor additional 5,000 SBC database points
PCD8.SUP-15000EXT	Saia PCD® Supervisor additional 15,000 SBC database points
PCD8.SUP-50000EXT	Saia PCD® Supervisor additional 50,000 SBC database points.

Extensions with open protocols

PCD8.SUP-500OPEN	Extend base license with additional 500 open protocols points
PCD8.SUP-2500OPEN	Extend base license with additional 2,500 open protocols points
PCD8.SUP-5000OPEN	Extend base license with additional 5,000 open protocols points
PCD8.SUP-10000OPEN	Extend base license with additional 10,000 open protocols points
PCD8.SUP-25000OPEN	Extend base license with additional 25,000 open protocols points
PCD8.SUP-50000OPEN	Extend base license with additional 50,000 open protocols points.

Maintenance upgrade options

PCD8.SUP-MNT1	Saia PCD® Supervisor maintenance upgrade - additional 1 year
PCD8.SUP-MNT3	Saia PCD® Supervisor maintenance upgrade - additional 3 years
PCD8.SUP-MNT5	Saia PCD® Supervisor maintenance upgrade - additional 5 years.

Extended connectivity options

PCD8.SUP-1N-UP	Upgrade connectivity for communication from Supervisor to another one by 1
PCD8.SUP-10N-UP	Upgrade connectivity for communication from Supervisor to another one by 10.

Extended support options

PCD8.SUP-DB-CSV	Extend the capability for the supervisor to interact with Microsoft Excel
PCD8.SUP-DB-MYSQL	Extend the capability for the supervisor to communicate with MySQL Server
PCD8.SUP-DB-ORCL	Extend the capability for the supervisor to communicate with Oracle Server
PCD8.SUP-DB-SQL	Extend the capability for the supervisor to communicate SQL server
PCD8.SUP-JSON	Extend the capability for the supervisor to enable JSON Toolkit for Supervisor (Valid SMA Required)
PCD8.SUP-HTTP	HTTP service interaction as web services and RESTFul API
PCD8.SUP-FID	Extend the capability for the supervisor to interact with Micros Fidelio IP Driver.

Video integration options

PCD8.SUP-MLS-16	Milestone Driver to connect 16 Camera Devices
PCD8.SUP-MLS-64	Milestone Driver to connect 64 Camera Devices
PCD8.SUP-MAXP-16	Maxpro Driver to connect 16 Camera Devices
PCD8.SUP-MAXP-64	Maxpro Driver to connect 64 Camera Devices
PCD8.SUP-MAXP-128	Maxpro Driver to connect 128 Camera Devices
PCD8.SUP-AXIS-16	Axis camera driver included HTML5 video streaming and alarming for 16 videos
PCD8.SUP-AXIS-64	Axis camera driver included HTML5 video streaming and alarming for 64 videos.

Energy Management options

PCD8.SUP-EM25	Saia PCD® Supervisor EM base license for Saia PCD Supervisor with max. 25 meter points
PCD8.SUP-EM50EXT	Saia PCD® Supervisor EM license for additional 50 meter points
PCD8.SUP-EM100EXT	Saia PCD® Supervisor EM license for additional 100 meter points
PCD8.SUP-EM500EXT	Saia PCD® Supervisor EM license for additional 500 meter points
PCD8.SUP-EM1KEXT	Saia PCD® Supervisor EM license for additional 1000 meter points
PCD8.SUP-NA-250	Niagara Analytics Framework license for 250 analytic points
PCD8.SUP-NA-1000	Niagara Analytics Framework license for 1000 analytic points
PCD8.SUP-NA-10000	Niagara Analytics Framework license for 10000 analytic points.

Security options

PCD8.SUP-LDAP	Provides interface to integrate the Niagara Enterprise Security Supervisor database to active Directory/LDAP
PCD8.SUP-ESIG-1000	E-Signature Application with 1'000 secured points
PCD8.SUP-ESIG-UNL	E-Signature Application with unlimited secured points
PCD8.SUP-ESIG-UP1K	E-Signature Application upgrade to add 1'000 additional secured points.

Cloud connection options

PCD8.SUP-CLO-500	Niagara Cloud Honeywell Sentience Driver 500 points
PCD8.SUP-CLO-2500	Niagara Cloud Honeywell Sentience Driver 2500 points
PCD8.SUP-CLO-10000	Niagara Cloud Honeywell Sentience Driver 10000 points.

Partner license agreements

PCD8.SUP-NAA-MON	Saia PCD® Supervisor Starter kit, monthly agreement for 1 engineer*
PCD8.SUP-NAA-STK1	Saia PCD® Supervisor Starter kit, annual agreement for 1 engineer
PCD8.SUP-NAA-STK5	Saia PCD® Supervisor Starter kit, annual agreement for 5 engineers
PCD8.SUP-NAA-REN	Saia PCD® Supervisor annual agreement renewal
PCD8.SUP-NAA-ENG	Saia PCD® Supervisor one additional engineering license.

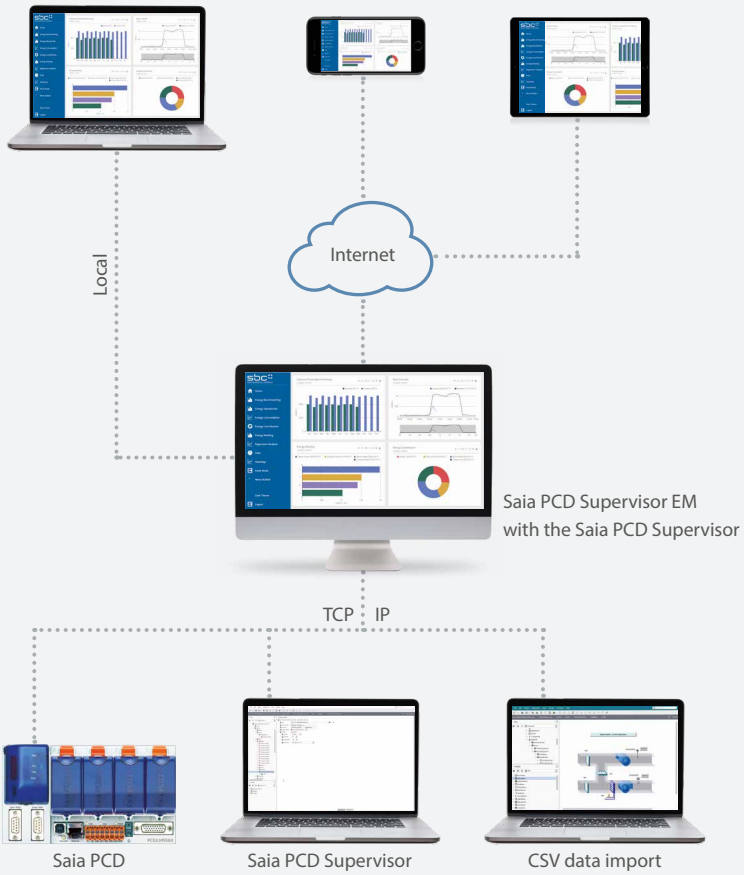
* PCD8.SUP-NAA-MON licenses can only be purchased by new partners. From purchase's month until renewal.
You must always purchase as many monthly licenses as you need for the period until November 30th.
After November 30th, they will be renewed for 1 year with the normal PCD8.SUP-NAA-REN.

1.2.1.2 Saia PCD® Supervisor EM

Comprehensive solution for energy monitoring in the Saia PCD Supervisor. Saia PCD Supervisor EM is a benchmarking and analysis tool for monitoring energy consumption – an integrated solution for all types of buildings. It allows a wide range of energy data to be recorded and optimised at a central location.
The BAFA-supported (German market) Saia PCD Supervisor EM is the ideal system for:

- Recording, analysing and optimizing energy consumption
- Measuring energy consumption across disciplines
- Setting up an energy monitoring system in accordance with DIN EN ISO 50001
- Automatic creation of tenant billing

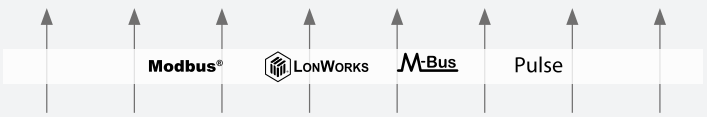
The complete solution for energy monitoring is fully integrated into the Saia PCD Supervisor.
It includes an impressive array of technologies to manage all aspects of energy-related data.



Analysis and optimisation
Saia PCD Supervisor EM is the SBC programme package for monitoring energy consumption. Whether it is used locally or from a remote location, the solution which is fully Internet-capable allows monitoring and analysis of energy consumption anywhere. With various access rights and display options, tenants, property managers and service partners can optimise energy consumption according to individual requirements.

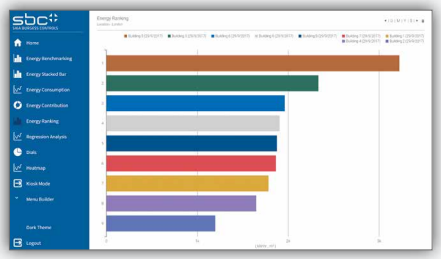
Recording
The SBC system provides a range of options for recording communication protocol-independent measurement data:

- Via Saia PCD controllers
- Via the Saia PCD Supervisor control centre
- Via data import

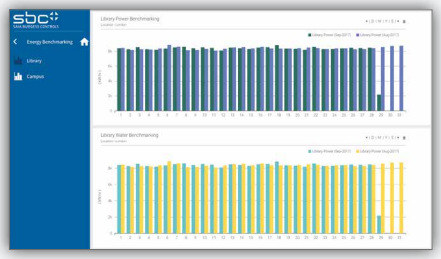


Measuring
Measuring all loads is the basis for analysing and optimizing energy consumption.
SBC supports a wide range of SBC and Honeywell energy meters. Meters from other manufacturers can also be integrated seamlessly.

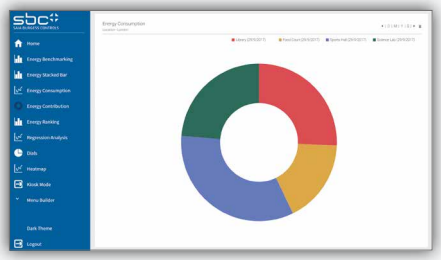
Saia PCD Supervisor EM converts technical data into easy-to-understand graphics, including diagrams with details of the costs in CHF, EUR, GBP or USD. Automatically generated PDF reports can also be sent via e-mail.



Energy ranking
Visualise and compare the performance of your sites, buildings and systems. Increase energy efficiency by optimizing your biggest loads.



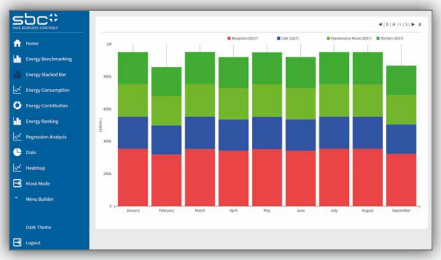
Energy benchmarking
Compare consumption in various areas during similar periods and thus identify areas with low energy efficiency.



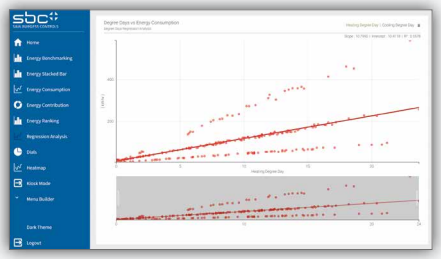
Energy consumption analyses
Gain an overview of energy consumption and the corresponding costs in various areas, buildings and periods.

Daily load profile
Identify inefficient energy use by comparing 24-hour periods on different days.

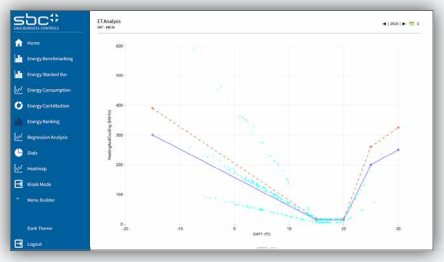
Heat map
Bring up a heat map view of annual data for a load. Would you like to see the profile for a specific day? Simply click on the relevant part of the overview. Configure the heat map according to your specific needs.



Stacked bars
Stacked bar diagrams show how individual loads contribute to total energy consumption over time – within a day, a week or a year – as well as the corresponding costs. On this basis, you can also define specific or general targets or budgets.



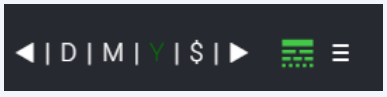
Regression analysis
Compare energy consumption with outside temperature, degree days or another value on the basis of regression lines.



Energy Temperature Curve (ET Curve)
ET Analysis helps determine how the energy consumption of a site varies with temperature. For a given time period, the kWh/m^2 of a site and temperature can be superimposed onto a graph showing the ideal consumption for the period.

Data Quality
Users can now view the integrity of the data displayed within charts via a 'Data Quality' icon placed to the top right of most charts (not applicable to Regression and the HeatMap charts). The button's colour changes based on the minimum integrity value returned from the data set being displayed on the chart.
A simple colour code system [red, amber, green] is used to show the integrity of the data between 80-100% scale.
An integrity level below 80% remains red.

Colour scale example:

100%	95%	80%
		

Order information

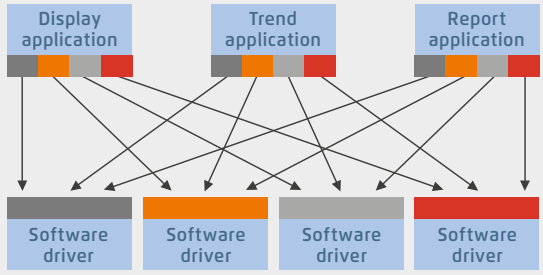
Saia PCD Supervisor EM offers the Core licence as standard. With this licence, 3 measured values are permanently available free of charge.
In addition, Core users can test the functions of the Pro licence for 60 minutes. During this trial period, data from aggregators is randomised.

Order codes

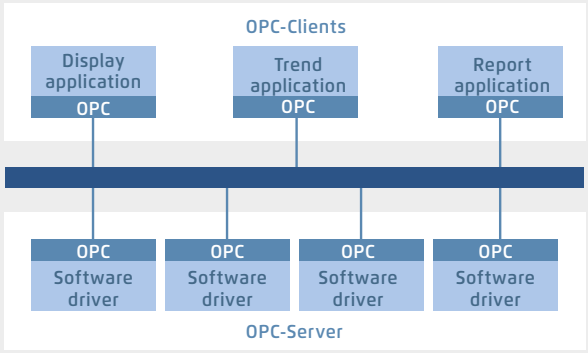
Type	Description
PCD8.SUP-EM25	Saia PCD® Supervisor EM: Basic licence for the Saia PCD Supervisor with a maximum of 25 measured values
PCD8.SUP-EM50EXT	Saia PCD® Supervisor EM: Licence for an additional 50 measured values
PCD8.SUP-EM100EXT	Saia PCD® Supervisor EM: Licence for an additional 100 measured values
PCD8.SUP-EM500EXT	Saia PCD® Supervisor EM: Licence for an additional 500 measured values
PCD8.SUP-EM1KEXT	Saia PCD® Supervisor EM: Licence for an additional 1,000 measured values

1.2.2 SBC OPC Server

Providers of various automation systems trigger the communication between the user and automation through dedicated manufacturer-specific protocols. Each device requires its own software installation on the operator's computers/end devices. If several different devices are to be accessed with one end device, this generally requires a very complex PC installation. With the following consequences: Complex systems, high costs for investment and maintenance as well as limited flexibility for changes/enhancements.



Presentation of devices with various software drivers



Solving the software driver problem

The standardised OPC interface eliminates the need for specialist knowledge of the manufacturer-specific protocols. This results in significantly lower costs and effort for development, commissioning and maintenance.

OPC servers in combination with the SBC S-Bus

- OPC project: All OPC data for networked controllers is brought together in a single project. This produces a clear data structure and simplifies the proper definition of data points
- Import of PLC variables: Symbols and data points previously defined for the PLC program with the Saia PG5® Controls Suite software tool can be carried over and used unmodified by the OPC Server. Data formats for import functions include: *.src (PG3, PG4), *.pcd (PG4, PG5), *.sy5 (PG5), *.csv (comma separated values; e.g. from Excel)
- OPC Server / Saia PCD®: Visualisation and management systems with OPC client interfaces can be connected to any Saia PCD® controller via the OPC Server. This enables every OPC client, via the OPC Server, to read data from the PCD or write data to the PCD. PLC data that can be displayed in OPC Server includes: Inputs, outputs, flags, registers, data blocks, texts, timers, counters, date-time, firmware version

Supported OPC data access standards
1.01a, 2.05a

Supported PC operating systems
Windows Server 2008, Windows Server 2012, Windows 7, Windows 8, Windows 8.1, Windows 10

Communication by all routes
Communication between the OPC Server and the Saia PCD® can take place via RS-232, RS-485, modem, TCP/IP, Profibus or USB. Several OPC clients can access the OPC Server simultaneously via multiple PC interfaces

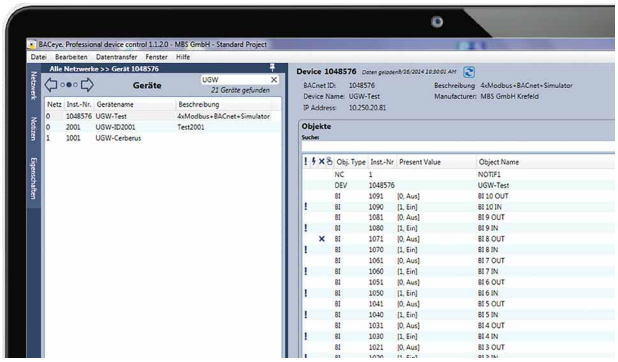
Supported protocols
S-Bus Data, Parity and Break mode, S-Bus via UDP/IP (Ether-S-Bus), S-Bus via Profibus (Profi-S-Bus), PGU-Mode

Order information | Saia OPC Server for SBC S-Bus

SBC OPC Server – Full version, for one PC and one application	PCD8.OPC-1
SBC OPC Server – Full version, for 3 PCs with the same application	PCD8.OPC-3
SBC OPC Server – Full version, for 5 PCs with the same application	PCD8.OPC-5

1.2.3 BACnet Explorer

BACeye provides an overview in a BACnet network.
BACeye can be connected to any BACnet network for easy analysis and switching and for testing events and alarms.

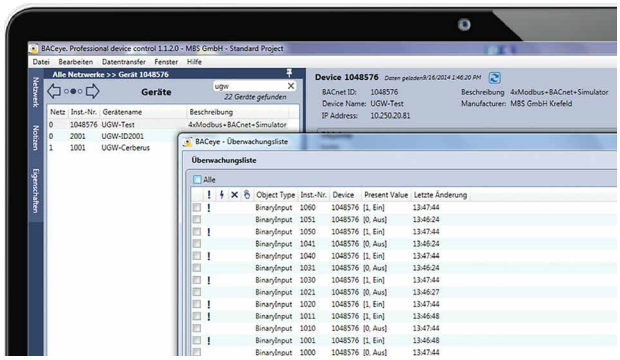


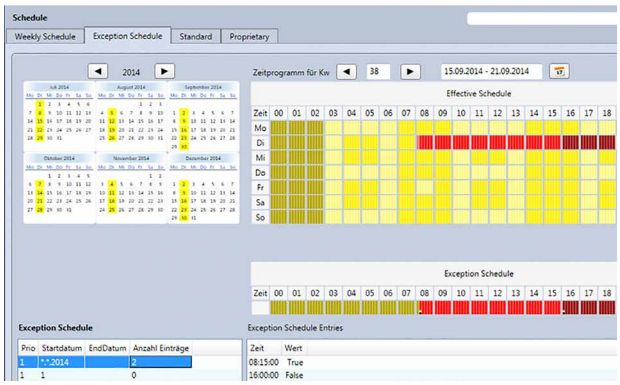
BACnet networks
With the BACnet Who-Is/I-Am services, devices in the network can be conveniently identified and an image of the device properties and objects can be read in BACeye.
A detailed display of all objects allows access to the object properties.

EDE files
Generate EDE files quickly and easily. The EDE file (Engineering Data Exchange) is a format for a BACnet data point list specified by BACnet Interest Group Europe (BIG-EU).

Monitoring list
The monitoring list displays the most important properties of the selected objects. The objects can be compiled from the same or from different devices.

Alarms
All objects are displayed together with their status information (Status_Flags). Users can of course filter and search for status functions at any time.





Schedules
BACnet calendar and schedule objects can be conveniently displayed and edited with BACeye.
The weekly program (Weekly Schedule) and the Exception Schedule can be edited separately. The combined display enables an overview of the actual effective value.
The Weekly Schedule and Exception Schedule can be edited separately. The combined display enables an overview of the actual effective schedules.

Ordering information

BACnet explorer software tool for professional analysis and diagnostics of building automation networks. License valid for 1 user	PCD8.BACnet-Eye-1