

SIEMENS

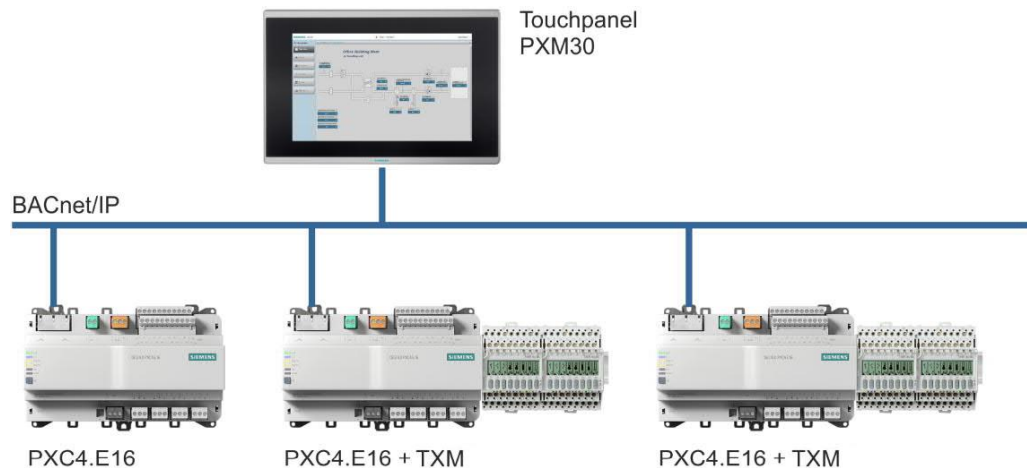


Desigo™ PXC4 & PXC5

Automation system for HVAC and building services

Range overview

PXC4 & PXC5 – The flexible, reliable ...



The Desigo PXC4 & PXC5 automation and control system is optimized for control and monitoring of heating, ventilation, air conditioning plants and other technical plants in buildings. Scalability, energy efficiency, openness, and user-friendly operation sets it apart.

Desigo Control Point – the embedded management station

Ergonomic operation from any location: Remote access means ease of use, and independence. Automation stations can be accessed from any location and at any time via Desigo Control Point. This offers low-cost monitoring and controlling of small to medium-sized systems.

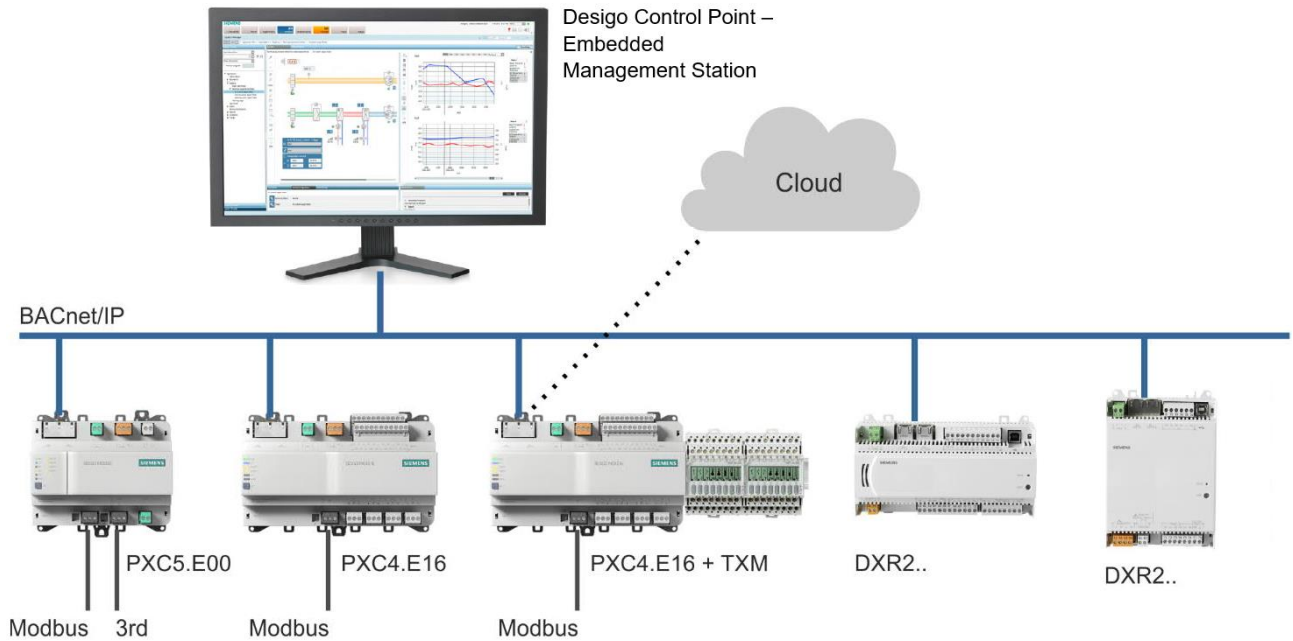
Desigo Control Point – Range of Touch panels

User-friendly, easy-to-understand, and flexible to use: Desigo PXC4 & 5 offers a choice of touch panels to satisfy the different requirements in terms of location and functionality. They excel in intuitive handling with clear user guidance and full graphical displays.

Automation stations – scalable and open

Its scalability and openness distinguish the freely programmable automation stations for primary plants. It meets all expectations associated with the control and monitoring of building services. Modular in system design, the system can be ideally adapted to specific requirements and needs, making cost-effective DDC technology a possibility even in smaller HVAC systems. This innovative system strategy allows to extend the PXC4 & PXC5 controller range in stages into a building automation and control system as and when required. Desigo PX is consistent in its support of open communications, making it easy to connect a wide variety of building services equipment on the basis of standard open data interfaces.

... and scalable automation and control system



Scalable integration platform

Desigo PXC4 & 5 allows for cost effective integration of third-party devices and subsystems via Modbus and/or BACnet communication.

Project planning, engineering, commissioning, and service

User-friendly software tools are optimized for planning, configuration, and service. They are supported by graphic interfaces and allow the access from remote via cloud.

Long-term experience

Siemens is the global leader in building automation and control as well as HVAC control technology. Our development is based on expert knowledge and years of experience of our engineers. The result is a reliable and user-friendly automation and control system: Desigo.

Highlights

- + The system concept is universal in design
- + BACnet communications for maximum openness
- + User-friendly operation for any location and any function
- + Decades of experience in building automation and control

Designo Control Point ...

Designo Control Point – Developed to simplify building automation and control tasks

A building is more than just four walls. We spend 90 percent of our life in buildings – “Living”, sleeping, learning, working, and relaxing. This is why it is important to optimize the building to these ends and increase our comfort. Designo Control Point simplifies these goals.

Designo Control Point is a management station for operating and monitoring HVAC plants and other technical services plants in small to mid-sized buildings. Many public and commercial buildings can increase general comfort conditions, while saving energy. Functionality can be adapted to any user needs and installation, allowing anyone to take advantage of the functionality. BACnet support simplifies integration and operation of third-party devices and systems

Designo Control Point to be independent



At the office

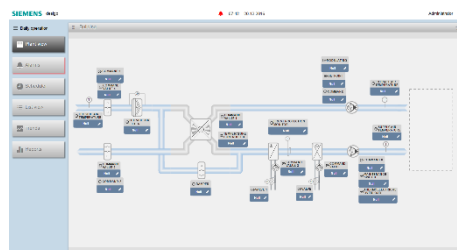


Mobile from anywhere.

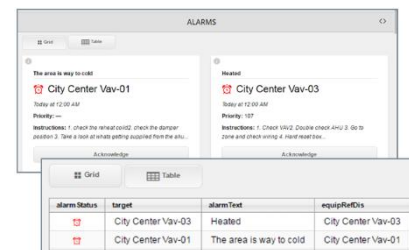


Alarms on the go

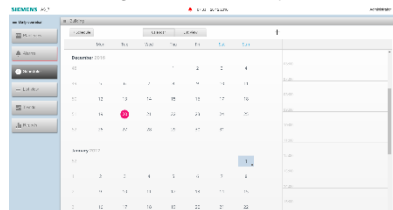
Designo Control Point management station functions



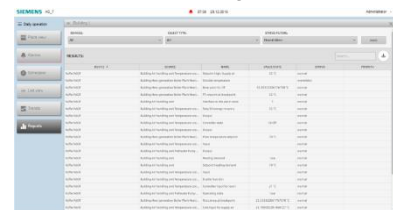
Animated graphics display the plant state



Efficient alarm management



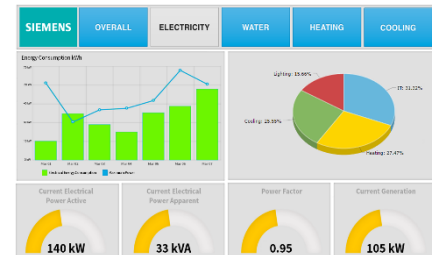
Schedulers based on occupancy



Reports for documentation and analysis



Online / offline trends for analysis



Energy dashboards as an overview

... Embedded management station

Function overview

- | | |
|--|--|
| <ul style="list-style-type: none"> • Plant graphic: Fast and targeted monitoring and operation of the system using animated and real-life plant images. • Schedulers: Central programming of all time-controlled building services functions. • Alarming: Detailed overview of alarms to quickly localize and eliminate errors. • Alarm Routing: Flexible routing of alarms to cellphones and PCs via e-mail or SMS (via the SMS gateway). • Trend: Comfortable analysis of trend data to optimize operations and increase energy efficiency. • Reports: Customizes snapshots of values and display in report form. Reports provide information on plant operation analysis as well as for evaluation and documentation purposes. Data points can be filtered by alarm status or object types. Export as CSV file. Send report by e-mail or save to an FTP server. • Generic operation: An efficient tool for navigation through the hierarchical tree-structure to all the data points in the system. These points can then be read or manipulated, depending on the access rights of the user concerned. | <ul style="list-style-type: none"> • Energy dashboards: Display and compare energy consumption based on a comprehensive library of graphics and configurable elements. • Haystack interface: Access by external IT systems for BACnet objects in a Desigo system via Haystack tagging or Haystack REST APL.
Haystack is an initiative to simplify data access in the Internet of Things (IoT), optimized to the needs of building automation and control (http://project-haystack.org/).
Application examples: Data access with HTML 5.0 browsers, customized apps, via SAP, etc. • Heating curve: Graphical display of the heating curve with the ability to modify parameters. • Engineering: Flexible and efficient creation of customized operation, based on graphic libraries either using the optimized offline tool or via web browser during operation. • Commissioning and service: Integrated tool for HTML 5.0 compatible web browsers. • Access management: User access rights can be assigned down to individual data points (read/write access). |
|--|--|

Efficient and intuitive remote plant operation ...

... that is Desigo Control Point



Designo Control Point ...

The Designo touch panel product range provides intuitive monitoring and operating of multiple plants. The user-friendly graphic interface is optimized for building automation and control.

Plant operation

The touch panels operate plants with graphics and tables tailored to the individual needs of the customer. The touch panels are installed in the panel doors close to the technical building plant. They also integrate alarm management, graphic trend display, scheduler programs, graphical heating curve, and animated plant graphics.



Energy consumption display

The Designo touch panels display energy consumption and encourage users to save energy with easy-to-understand graphics. A large library of displays and comparisons are available to individually design user-friendly energy dashboards. Mounting kits are also available for installing the touch panels on walls.



Touch panel function overview

- | | |
|---|---|
| <ul style="list-style-type: none">• Animated plant graphics• Central programming of all time-controlled building services functions• Detailed overview of alarms to quickly localize and eliminate errors.• Graphical trend displays
Heating curve: Graphical display of the heating curve with the ability to modify parameters | <ul style="list-style-type: none">• Energy dashboards: Consumption display available on-site• Generic operation of all data points and parameters• Engineering: Flexible and efficient creation of customized operation• User management: Define access rights |
|---|---|

... Touch Panels

Touch panel features

PXM30, PXM40, PXM50:

- Robust, high-quality, suitable for industrial installations, 24/7
- Capacitive displays
- Supports multitouch gestures (swipe, zoom, etc.)
- Widescreen
- LED to display alarms on an inactive screen
- Brightness sensor
- Optimized for panel mounting



Additional properties PXM40, PXM50

- Wall-mount option
- Aluminum frames
- Theft protection
- Power over Ethernet (PoE)

BACnet touch panels (BACnet/IP)

The BACnet/IP touch panels can be connected anywhere on a BACnet network and permit generic operation of all connected devices. The project-specific graphics and tables are saved in the touch panel.

The integrated web functions support the user on site to resolve technical or operational problems by a technician.

Remote access via web browser or remote alarming by e-mail is also supported.



Product range overview	Type	Data sheet
BACnet touch panels with own data storage and integrated web server function 7.0 "10.1 ", 15.6 "	PXM30.E PXM40.E PXM50.E	A6V11664137

Touch panel clients (TCP/IP) and Web interface

The touch panel clients (TCP/IP) can be used together with PXG3.Wx Web interface. The PXG3.Wx interface saves all project-specific data for multiple touch panels. It also permits access via web browser and sends alarm messages by e-mail.









Product range overview	Type	Data sheet
Touch panel clients (TCP/IP) 7.0 " 10.1 " 15.6 "	PXM30-1 PXM40-1 PXM50-1	A6V11664139
Web interface for touch panel clients: Data storage is integrated in the PXG3.Wx interface	PXG3.W100-1 PXG3.W200-1	A6V10808336

Operation and monitoring

Comfortable operation tailored at the right place

The various intuitive operations provide excellent coverage of various requirements with regard to location and functionality: on the panel, in the technical plant rooms or with a web browser from anywhere at any time. It permits inexpensive monitoring and operating of small to mid-sized plants.

Location	Products	Application	User
Office Remotely	Designo Control Point – Embedded building management station  Office  Remotely via web clients	Operate and monitor	Building operator
Panel doors	Touch panels PXM50  PXM40  PXM30 	On-site operation	Technical services manager
Panel	TXM... 	Manual intervention	Service technician

Operation with Designo Control Point – Embedded building management station

- Inexpensive plant monitoring and operation: Anytime from anywhere via tablets or notebook using a standard web browser thanks to the web interface.

Plant operating via touch panels and operator units

- The Designo touch panels PXM30, PXM40 and PXM50 are comfortable to operate and monitor complex building technical plants.

Manual operation on the panel

- The Designo I/O modules include facilities for manual/emergency operation of plants and for the display of operating states.

One building.
Various users.



Automation stations and system controllers



PXC4.E16



PXC5.E003

The PXC4 Automation Stations and the PXC5 system controllers offer flexibility and ease of use in the control and monitoring of building automation systems.

The modern system approach allows for cloud connection to all PXC controllers and offers user friendly operation via Designo Control Point.

Comprehensive system functions such as alarm management, time scheduling and trend data storage cover all the requirements associated with the operation of a building.

Decentralized automation stations operate autonomously with consistently net-worked BACnet communication, guaranteeing a high level of operating reliability

Integration of third-party devices via Modbus enlarges the feature list for optimized controllers.

Efficient engineering and commissioning are supported by the modern tool ABT site via WLAN connection, via Ethernet or via Cloud.

You also benefit from uniform equipment design. Thanks to the optimized product concept, installation, maintenance and replacement are quick and cost-efficient.

Alarm management

One of the most important functions of a building automation and control system is the automatic alarm for faults in building automations plants. The management of alarms (generation, display and handling) must be simple, efficient and consistent at all levels of the system. Desigo uses the BACnet alarm functions, and supports the following three types of alarms with up to 256 alarm priority levels:

- Basic alarms (for alarms not requiring user interaction)
- Simple alarms (for alarms requiring acknowledgment)
- Extended Alarms (alarms requiring acknowledgement and reset)

Alarm messages

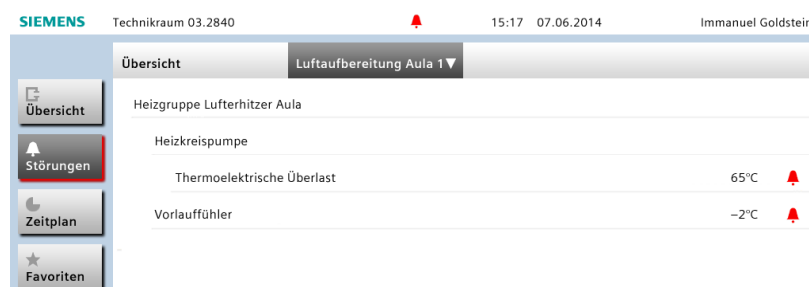
An alarm is automatically recorded, registered, and forwarded to the PXM30/40/50 or to the Desigo management station. Meaningful alarm messages are also sent to remote devices including cell phones, PCs, web browsers via e-mail.

Alarm lists provide a view of all pending and time-stamped alarms at a glance and permit straightforward processing.

Operators are notified by pop-up windows and optical/acoustic signals.

Alarm routing

Alarms are routed based on time and priority. This guarantees uninterrupted routing, even if the operator is not there. Overviews support the user to quickly and correctly handle alarm situations.



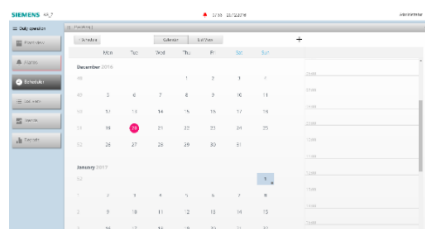
Alarm overview on PXM30/40/50 touch panels or on a web client

Scheduler/calendar

Schedulers control workflows and processes on basic building automation and control functions on a day-to-day basis. Ventilation, heating, air conditioning, are controlled based on office and operational hours in offices, banks, restaurants and schools.

Schedulers ensure that the temperature setpoints are lowered at night in the building. It also ensures that certain rooms are not air-conditioned during vacations and holidays and plants are only operated as needed.

Scheduler programs are saved and processed directly in a decentralized manner on the automation level. The primary plants continue to operate autonomously in the event the network failures.



Calendar program on PXM30/40/50 or on a web client

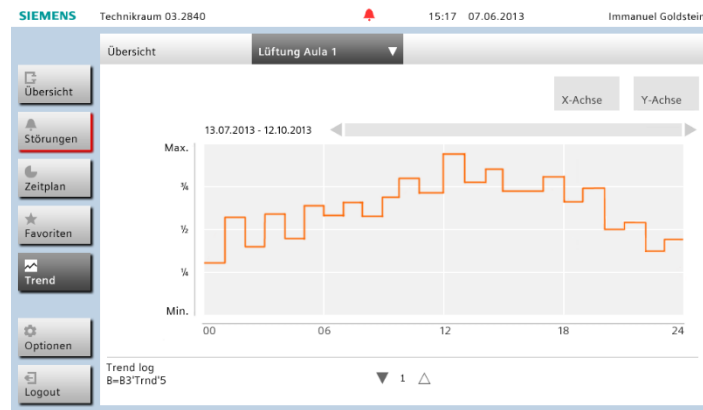
Trend data storage

The fully integrated trend data processing stores real-time (online) and historical (offline) data. The trend functions allow to monitor and fine tune plants.

The Designo system uses trend log objects per BACnet standard to be accessible by any other client.

Gathering options: Query, change of value (COV)

Trend options: Continuously, one-time pass, defined timeframe.



Trend graphics can also be displayed on the PXM30/40/50 touch panels as well as on Designo Control Point web clients

Access rights to data

Access rights are comfort functions to filter information per the individual needs of the customer. In other words, the resident engineer or the service engineers, for example, only have access to the information at a strict-need-to-know basis.

Only authorized personnel can access the operator units. This requires the entry of a name and password. The access rights can also be assigned in detail, down to even an individual data point. Designo uses the following access levels:

- Internal, extended service, and basic service
- Administrator, extended operation and basic operation

Handling certificates and IT security

Handling of certificates to ensure IT security of the control system is an integral part of the engineering process and allows for easy handling of these tasks without special know how.

Automation stations PXC4...



Compact, freely programmable automation stations for HVAC and building services plants. Can be extended with TXM modules.

- System functions such as alarming, schedulers, trend functions and access security
- Stand-alone application or for use within a building automation system
- Generic object viewer via an embedded web-based interface
- Direct connection for field devices.
- Extensions possible with TXM modules
- Integration of communicative field devices, e.g. variable speed drive via Modbus
- Engineering and commissioning with the user-friendly ABT Site tool
- BACnet communication on IP or MS/TP, in compliance with the BACnet standard including B-BC profile (Rev. 1.15)
- WLAN interface for engineering and commissioning
- Cloud connectivity

Function	PXC4.E16	PXC4.M16
Communication	BACnet/IP	BACnet MS/TP
Total number of inputs/outputs (Onboard)	16	16
Number of universal inputs / outputs (UIO)	12	12
Number of relay outputs (DO)	4	4
Number of inputs/outputs (Onboard + TXM)	40	40
2-port Ethernet Switch	1	-
Number of Modbus data points via RTU and/or TCP	40	40
Integrated web operation	Yes.	--
Integrated cloud access	Yes.	--

UIO	<p>Universal inputs/outputs support the following signal types:</p> <p>Passive sensors LG-Ni 1000, 2x LG-Ni1000, Ni 1000 DIN, Pt 1000 (375, 385), NTC 10k, NTC 100k</p> <p>Resistance sensors 1000 Ohm, 2500 Ohm, 2650 Ohm, 1000...1175 Ohm (for setpoint shift)</p> <p>Active sensors DC 0 ... 10 V.</p> <p>Current measurement analog DC 4...20 mA or 0...20 mA, (inputs U1, U2, U7, U8)</p> <p>Binary potential-free contacts for signaling functions</p> <p>Counters to 25 Hz (electronic switch to 100 Hz)</p> <p>Analog outputs DC 0...10 V</p>
DO	<p>Relay outputs AC 250 V for binary controls, changeover contact (NO, NC, pulse)</p>

PXC4 IO-Extension

Type	TXM1.8D	TXM1.16D	TXM1.8U	TXM1.8U-ML	TXM1.8X	TXM1.8X-ML	TXM1.6R	TXM1.6R-M	TXM1.8P	TXM1.8T	TXM1.4D3R
Number of inputs/outputs	8	16	8	8	8	8	6	6	8	8	7
Number of universal inputs / outputs (UIO)			8	8							
Number of universal inputs / outputs (XIO)					8	8					
Number of relay outputs (DO)							6	6			3
Number of digital inputs (DI)	8	16									4
Number of TRIAC										6	
Number of Inputs (P)									8		
Local override	-	-	-	•	-	•	-	•	-	-	-
LCD indication	-	-	-	•	-	•	-	-	-	-	-
3 color I/O status LED	•	-	-	-	-	-	-	•	-	-	•
Green I/O status LED	-	•	•	•	•	•	•	-	•	•	-

UIO	Universal inputs/outputs support the following signal types: <ul style="list-style-type: none"> - Passive sensors LG-Ni 1000, 2x LG-Ni1000, Ni 1000 DIN, Pt 1000 (375, 385), NTC 10k, NTC 100k - Resistance sensors 1000 Ohm, 2500 Ohm, 2650 Ohm, 1000...1175 Ohm (for setpoint shift) - Active sensors DC 0 ... 10 V. - Binary potential-free contacts for signaling functions - Counters to 25 Hz (electronic switch to 100 Hz) - Analog outputs DC 0...10 V
XIO	Universal inputs/outputs support the following signal types: <ul style="list-style-type: none"> - Same as UIO, and in addition - Current input 4...20 mA or 0...20 mA - Current output 4...20 mA on outputs 5 to 8
DO	Relay outputs AC 250 V for binary controls, changeover contact (NO, NC, pulse)
TRIAC	TRIAC: Permanent contact, pulse width modulation
DI	Binary output: Status signal (NO/NC), Signal pulse, Meter 10 Hz (DI 1-8)
P	Pt100 4 wire, 0...250 Ohm, Pt1000 / 0...2500 Ohm, LG-Ni1000

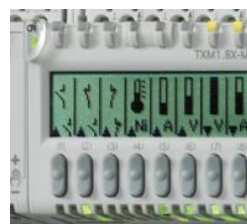
I/O modules with additional functionality

TXM1.6R-M



Local override, three-colored LEDs

TXM1.8U-ML and TXM1.8X-ML



Local override, LCD

System controller PXC5



System controller for the integration of Modbus and/or MSTP devices or subsystems.

- System functionality such as alarming, schedulers, trend functions, access protection with individually defined user profiles and categories
- Integration of Modbus and /or BACnet MS/TP devices and sub-systems
- Generic object viewer via an embedded web-based interface
- Engineering and commissioning with the user-friendly ABT Site tool
- BACnet communication on IP or MS/TP, in compliance with the BACnet standard including B-BC profile (Rev. 1.15)
- WLAN interface for engineering and commissioning
- Cloud connectivity

Function	PXC5.E003
Communication	BACnet/IP
2-port Ethernet Switch	1
RS 485 interface for Integration of BACnet/MSTP devices and systems	1
RS485 interfaces for Integration of Modbus devices and systems	1
Number of Modbus data points via RTU and/or TCP	500
Number of MSTP controllers on a network	30
Integrated web operation	yes
Integrated cloud access	yes

ABT Site ... for flexible and intuitive...

Professional software tools and a wide range of proven application function blocks are available for engineering the automation stations.

ABT site

The engineering tool ABT Site is a user-friendly software tool that is easy to use and geared to technical processing of customer projects. That includes planning, configuration, commissioning and final adjustment of the automation station with the associated program. A variety of report functions are available for documentation purposes. Thanks to its intuitive design of Desigo ABT site, makes it easy to begin working without time-consuming training.

Efficient engineering with blocks

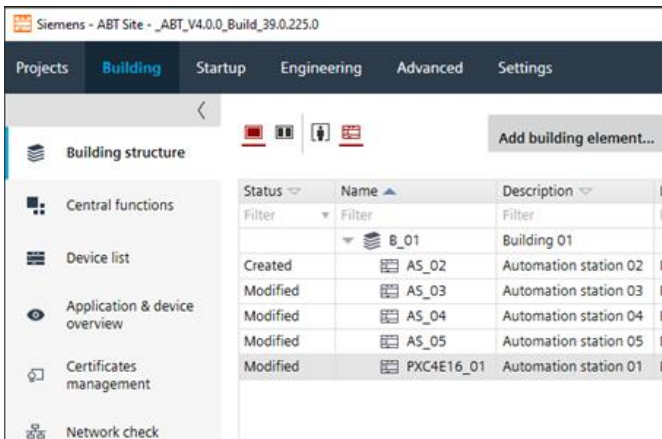
The project-specific HVAC applications are configured, programmed, commissioned and maintained using the CFC Editor. The CFC Editor is a graphics editor based on block and data flow techniques. Predefined and tested application function blocks are assembled to create the controls applications required.

CFC can be used offline in the office as well as online in the plant room allowing for fast and efficient commissioning thanks to actual process values displayed in the programm structure.

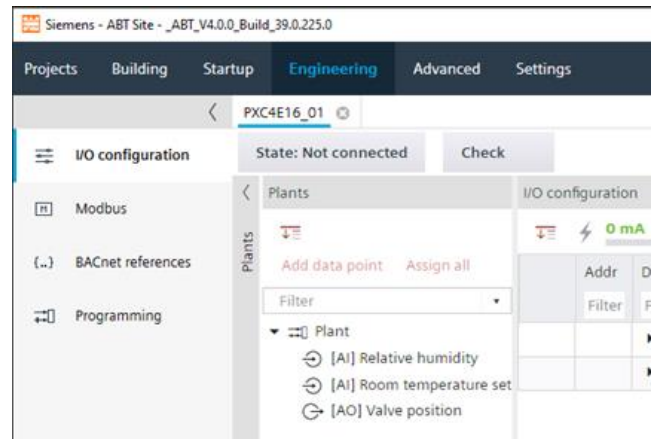
ABT GO

ABT GO allows commissioning via an easy to use App from your mobile. Functions such as I/O testing as well as reporting (incl. photos of the plants) are included.

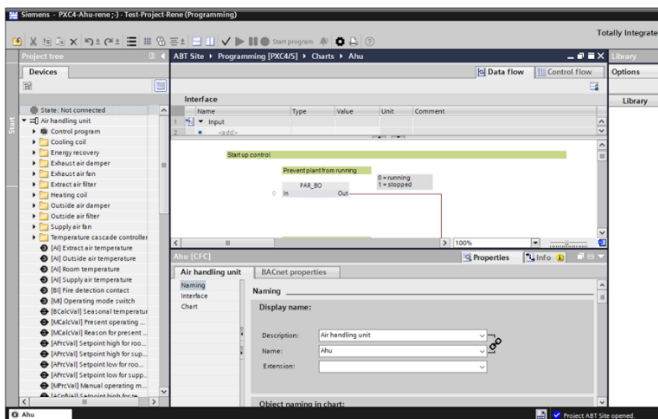
... set-up, programming and commissioning



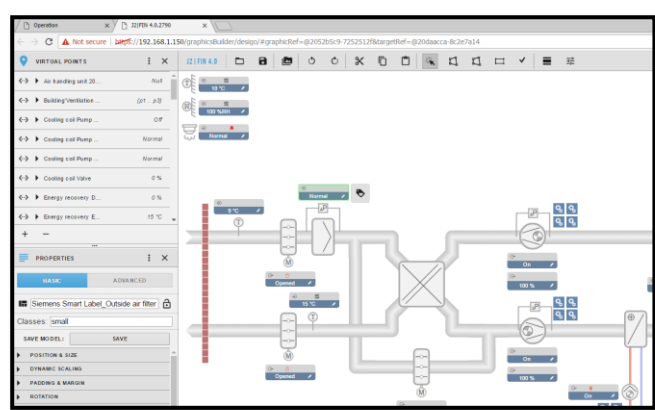
Set up system: Project Settings / Building view



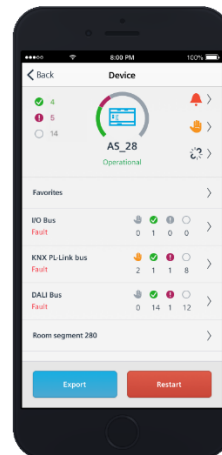
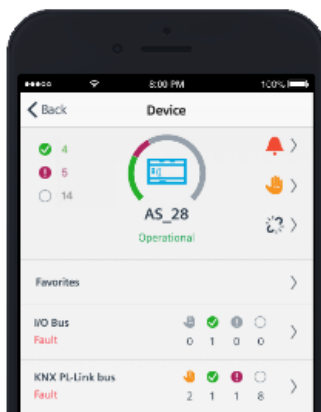
Set up points: I/O Configuration/Modbus editor



Program device: graphical programming with CFC editor



Create graphics: Design Control Point offline engineering



Wiring test: Easy to use mobile app ABT GO to simplify commissioning.

Can be extended in stages at any time

The Desigo PXC4 & PXC5 building automation and control system can be supplemented in stages and extended, meeting the need to optimized flexibility. The modular structure adapts to any building type and size and makes it possible to invest in stages. This ensures long-term protection to your investment and optimizes added value.



Improve operation, step-by-step

Desigo Control Point Touch panels can be supplemented as needed in equipment rooms or on a floor.



Increased ease of service

Remote operation via web solutions increases ease of service throughout the life of the building.



Desigo room automation

The unique and flexible solution for all room automation tasks to reduce energy consumption at a maximum level of comfort.

Desigo room automation provides a product range of solutions with room operation for HVAC as well as lighting and shading.



Desigo CC – The integrated building management platform

The Desigo CC management platform offers comfortable, system-wide multistation operation of distributed building complexes, uniting innovative management of building comfort, security, and energy distribution.

Published by:
Siemens Switzerland Ltd.
Building Technologies Division
International Headquarters
Theilerstrasse 1a
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www.siemens.com/buildingtechnologies

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