Automation Server

Communications hub
Capable of coordinating traffic from above and below its location, the Automation Server can deliver data directly to you or to other servers throughout the site. The Automation Server can run multiple control programs, manage local I/O, alarms, and users, handle scheduling and logging, and communicate using a variety of protocols. Because of this, most parts of the system function autonomously and continue to run as a whole even if communication fails or individual servers or devices go offline.

Variety of connectivity options
The Automation Server has numerous ports that enable it to communicate with a wide range of protocols, devices, and servers.

The Automation Server has the following ports:
- One 10/100 Ethernet port
- Two RS-485 ports
- One built-in I/O bus port
- Two USB host ports
- One USB device port

The USB device port allows you to upgrade and interact with the Automation Server using the Device Administrator.

Authentication and permissions
SmartStruxure provides a powerful permission system that is easy to manage, flexible, and adapts to all kinds of system sizes. The permission system provides a security level to the highest standards. Authentication is done against the built-in user account management system or against Windows Active Directory Domains. The built-in account management system provides password policies that meet the toughest requirements. When Windows Active Directory is used, the administration costs are lower because users do not have to be managed in multiple directories.

WorkStation/WebStation interface
Through any client, the user experience is similar regardless of which SmartStruxure solution server the user is logged on to. The user can log directly on to an Automation Server to engineer,
commission, supervise, and monitor the Automation Server as well as its attached I/O modules and field bus devices. See the WorkStation and WebStation datasheets for additional information.

Open building protocol support
One of the cornerstones of SmartStruxure solution is support for open standards. The Automation Server can natively communicate with three of the most popular standards for buildings: BACnet, LonWorks, and Modbus.

Native BTL-listed BACnet support
The Automation Server communicates directly to BACnet/IP and BACnet MS/TP networks. The Automation Server is BTL-listed as a BACnet Building Controller (B-BC), the most advanced BACnet Device Profile, and as a BACnet Operator Workstation (B-OWS). This capability provides access to the full range of BACnet devices from Schneider Electric and other vendors. See the BTL Product Catalog for up-to-date details on BTL listed firmware revisions on BACnet International’s home page. The Automation Server can also serve as a BACnet Broadcast Management Device (BBMD) to facilitate BACnet systems that span multiple IP networks.

Native LonWorks support
The Automation Server has a built-in FTT-10 port to communicate to the TP/FT-10 LonWorks network. Integrated LonWorks functionality enables access to LonWorks devices from Schneider Electric and other vendors. Lonworks networks can be commissioned, bound, and configured from the Automation Server using the built-in LonWorks Network Management Tool. No third-party tools are needed. A protocol analyzer with powerful debugging and network quality monitoring features can be achieved using third-party software, without additional hardware needed. To increase ease of use, LNS device plug-ins are supported. This allows for easier engineering and maintenance of LonWorks devices from Schneider Electric and other vendors. There are some limitations on how LNS device plug-ins can be used.

Native Modbus support
The Automation Server natively integrates Modbus RS-485 master and slave configurations, as well as TCP client and server. This allows full access to third-party products and the range of Schneider Electric products that communicate on the Modbus protocol, such as power meters, UPS, circuit breakers, and lighting controllers.

Web Services support
The Automation Server supports the use of Web Services based on open standards, such as SOAP and REST, to consume data into the SmartStruxure solution. Use incoming third-party data (temperature forecast, energy cost) over the Web to determine site modes, scheduling, and programming.

EcoStruxure Web Services support
EcoStruxure Web Services, Schneider Electric’s Web Services standard, is natively supported in the Automation Server. EcoStruxure Web Services offers extra features between compliant systems whether within Schneider Electric or other authorized systems. These features include system directory browsing, read/write of current values, alarm receipt and acknowledgement, and historical trend log data. EcoStruxure Web Services is secure. User name and password are required to log on to the system.

Scalable custom configurations
The Automation Server and its family of I/O modules were designed to meet the unique needs of each installation. Depending on the configuration, each Automation Server can control up to 464 I/O points. Because power and communications are delivered along a common bus, multiple modules can be plugged together without tools in a simple one-step process using the built-in connectors.

Two programming options
Unique to the industry, the Automation Server has both Script and Function Block programming options. This flexibility assures that the best programming method can be selected for the application.

4 GB of memory for data and backup
The Automation Server has an available capacity of 4 GB of memory. This represents 2 GB for application and historical data and 2 GB dedicated for backup storage. This ensures that all data is safe from damage, loss, or unintended edits. Users can also manually back up or restore the Automation Server to a storage location on a PC or network. Through the Enterprise Server, users have the ability to perform scheduled backups of associated Automation Servers to network storage for even greater levels of protection.
IT friendly
The Automation Server communicates using the networking standards. This makes installations easy, management simple, and transactions secure.

SSL Certificates
Communication between clients and the SmartStruxure servers can be encrypted using Secure Socket Layer (SSL 1.0, 2.0, 3.0, and TLS 1.0). The servers ship with a default self-signed certificate. Commercial Certification Authority (CA) server certificates are supported to lower the risk of malicious information technology attacks. Use of encrypted communication can be enforced for both WorkStation and WebStation access.

Supported protocols
- IP addressing (IPv6 ready)
- TCP communications
- DHCP/DNS for rapid deployment and lookup of addresses
- HTTP/HTTPS for Internet access through firewalls, which enables remote monitoring and control
- NTP (Network Time Protocol) for time synchronization throughout the system
- SMTP enables sending email messages
- SNMP enables network supervision and reception of application alarms in designated network management tools

Patented two-piece design
Each module can be separated from its terminal base to allow the site to be wired prior to the installation of the electronics. The patented locking mechanism serves as handles for removing the module from its base. All critical components have a protective cover that permits convection cooling to occur.

Figure: Two-piece design

Auto-addressing
The auto-addressing feature eliminates the need for setting DIP switches or pressing commission buttons. With the Automation Server family, each module automatically knows its order in the chain and assigns itself accordingly – significantly reducing engineering and maintenance time.

Simple DIN-rail installation
Fasteners easily snap into a locked position for panel installation. The fastener has a quick-release feature for easy DIN-rail removal.

Specifications

Electrical
DC input supply power .........................................................................................................................7 W
DC input supply voltage ..................................................................................................................24 VDC

Environment
Ambient temperature, operating ..............................................................................................0 to 50 °C (32 to 122 °F)
Ambient temperature, storage ..........................................................................................-20 to +70 °C (-4 to +158 °F)
Maximum humidity ..................................................................................................................95 % RH non-condensing
Material
Plastic rating............................................................................................................................UL94-5VB
Enclosure................................................................................................................................Eco Friendly ABS/PC
Enclosure rating.....................................................................................................................IP20

Mechanical
Dimensions including terminal base ....................................90 W x 114 H x 64 D mm (3.6 W x 4.5 H x 2.5 D in.)

Weight including terminal base .................................................................0.294 kg (0.65 lb)
Weight excluding terminal base .................................................................0.194 kg (0.43 lb)

Agency compliances
Emission .............................................................................................................. C-Tick; EN 61000-6-3; FCC Part 15, Sub-part B, Class B
Immunity ........................................................................................................ EN 61000-6-2
Safety ................................................................................................................ UL 916 C-UL US Listed

Real-time clock backup
..........................................................................................................................................30 days

Communications
Ethernet LAN interface .................................................................10/100 Mbit/s; twisted pair with RJ-45 connector
USB .....................................................................................................................................1 device and 2 host ports
BACnet .................................................................................................................. BACnet/IP and MS/TP, port configurable, default 47808
.....................................................................................................................BTL B-BC (BACnet Building Controller)\(^a\)
.....................................................................................................................BTL B-OWS (BACnet Operator Workstation)\(^b\)
a) See the BTL Product Catalog for up-to-date details on BTL listed firmware revisions on BACnet International’s home page.
LonWorks ................................................................................................................ TP/FT-10
COM A .............................................................................................................2-wire RS-485
COM B .............................................................................................................2-wire RS-485 and 3.3 VDC
I/O Modules ........................................................................................................ RS-485
TCP ......................................................................................................................Non-binary, port fixed, 4444
HTTP ......................................................................................................................Non-binary, port configurable, default 80
HTTPS ...............................................................................................................Encrypted supporting SSL 1.0, 2.0, 3.0 and TLS 1.0, port configurable default 443
SMTP ..................................................................................................................Email sending, port configurable, default 25
SNMP ...................................................................................................................version 3
Network supervision using poll and trap
Application alarm distribution using trap

Terminals

LNS
LNS version ................................................................. OpenLNS
Installed on WorkStation PC

LonMark
Resource files version .......................................................... 14.00

CPU
Frequency ............................................................................. 160 MHz
SDRAM .................................................................................. 128 MB
Flash memory ............................................................................. 4 GB

Part numbers
Automation Server .............................................................. SXWAUTSVR10001
TB-AS-W1, Terminal Base for Automation Server
(Required for each Automation Server) ................................ SXWTBASW110001

Add-on options
SW-EWS-1, EcoStruxure Web Services (run-time) option
Consume only for one Automation Server, no maintenance ................................... SXWSWEWSX00001
SW-EWS-2, EcoStruxure Web Services (run-time) option
Serve & Consume for one Automation Server, no maintenance ........................... SXWSWEWSX00002
SW-EWS-3, EcoStruxure Web Services (run-time) option
Serve & Consume, plus Historical trend log data for one Automation Server, no maintenance .......................................................... SXWSWEWSX00003
SW-GWS-1, Web Services (Generic Consume) option
For one Automation Server, no maintenance ........................................ SXWSWGWSX00001
**Internal configuration**

All connectors of the Automation Server except for the Ethernet connector refer to signal ground as shown in the figure below.

The I/O bus in the terminal base provides the Automation Server with power and an address.

The address value in the I/O bus is increased by one for each terminal base. The I/O bus also enables RS-485 communication between the I/O module and the Automation Server.

---

**Regulatory Notices**

**Federal Communications Commission**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference. (2) This device must accept any interference received, including interference that may cause undesired operation.

**Industry Canada**

This is a Class B digital device that meets all requirements of the Canadian Interference Causing Equipment Regulations.

**C-Tick (Australian Communications Authority (ACA))**

This equipment carries the C-Tick label and complies with EMC and radio communications regulations of the Australian Communications Authority (ACA), governing the Australian and New Zealand (AS/NZS) communities.