

# Product Selection Guide

EcoStruxure™ Building  
Integrated building management system



[schneider-electric.com/ecostruxure-building](https://schneider-electric.com/ecostruxure-building)

Life Is On

Schneider  
Electric



## Unlock building value, unleash productivity

Next generation EcoStruxure™ Building from Schneider Electric is The Open Innovation Platform of Buildings – a collaborative Internet of Things (IoT) solution that features a scalable, secure and global architecture to create future-ready smart buildings.

EcoStruxure Building securely connects hardware, software, and services over an Ethernet IP backbone to:

- Maximize building efficiency
- Optimize comfort and productivity
- Increase building value

EcoXperts™ and other system integrator partners also benefit from many new deployment tools to achieve:

- Up to 30% increase in engineering efficiency
- Up to 20% faster commissioning and installation
- 10x more scalability for large and multisite building needs



## Connected Room Solutions deliver buildings of the future

Our latest IP-enabled hardware and software helps create engaging environments with personalized comfort and increased operational and energy efficiency. Harness the power of today's smart buildings and the IoT to:

- enable Building Owners to **future-ready** their building's infrastructure for easier expansions & retrofits
- offer a **personalized experience** to Tenants and Occupants
- enable System Integrators to **increase project capacity** and cost-competitiveness

EcoStruxure Building delivers Innovation At Every Level



# EcoXpert™ Partner Program

One Program. One Network. Endless Opportunities.

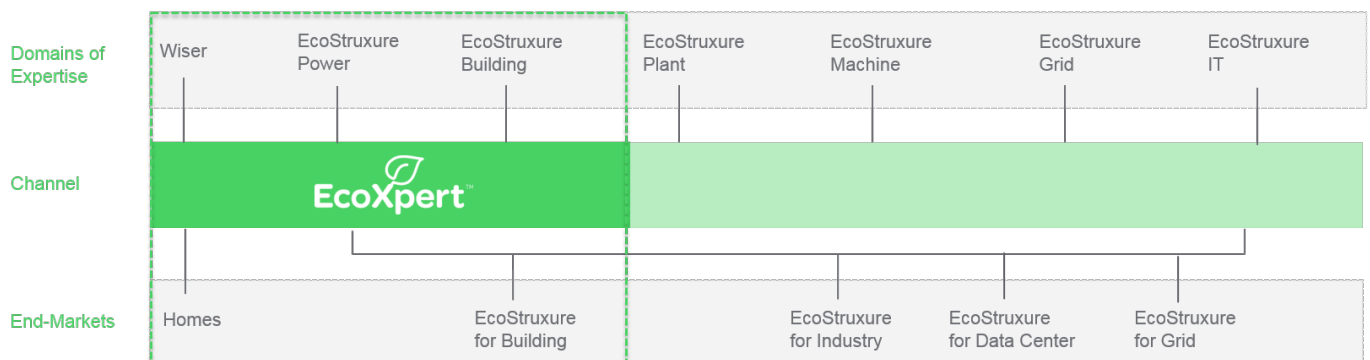
Innovating smarter buildings, more reliable infrastructures, and optimized efficiency.

At Schneider Electric, we constantly look beyond the norm to provide innovative solutions, both in technology and in the way we do business. That's the idea behind the EcoXpert™ Partner Program – an esteemed partnership between Schneider Electric and more than 3,000 of the world's leading technology providers with best-in-class systems integration competencies. Working with partners we trust is as important to us as it is to our customers. Spanning more than 50 countries, EcoXpert companies are certified on our IoT-enabled EcoStruxure™ architecture and platform, enabling them to deliver innovative and sustainable solutions, through integrated technology and digitization, to our shared customers.

Our mission is to connect expertise, ignite growth and enable success for our EcoXpert partner companies, because together we deliver best-in-class services and solutions to our valued customers.

The EcoXpert Program enables our certified partners and valued customers to share in the experience of ensuring that **Life Is On** everywhere, for everyone, and at every moment.

Our EcoXpert partners are the implementation arms of EcoStruxure in Homes and Buildings



Discover more about the EcoXpert Partner Program:  
<https://www.schneider-electric.com/ecoxpert>

# Table of Contents

## EcoStruxure™ Solution

Software	E2
User Interfaces	E4
Automation Server Family of Modules	E6
SmartX Edge Server – AS-P	E6
Power Supply and Module Terminal Bases	E7
Power Supply Selection Table	E7
I/O Modules	E8
I/O Modules - Inputs and Outputs	E12
SmartX Edge Server – AS-B	E14
SmartX Edge Server – AS-B – Inputs and Outputs	E15
Edge Accessories	E16
SmartX Advanced Display	E16
Reference Architecture	E17

## Connected Room Solutions

SmartX IP Controller – RP-C Series	S2
SmartX IP Controller – RP-C Series Accessories	S4
SmartX Sensors	S5
SmartX IP Controller – RP-C Expansion modules	S6

## SmartX IP Controllers

SmartX IP Controller – MP Series	S9
SmartX IP Controller – IP-IO Series	S13
Accessories	S15

## BACnet® Controllers

BACnet b3 Series	B2
b3 Series Controllers	B3
b3 Series xP Expansion I/O Modules	B9
b3 Series Controllers – Inputs and Outputs	B11
b3 Series xP Expansion I/O Modules – Inputs and Outputs	B14
MNB Series	B15
MNB Series Controllers	B16
MNB Series Controllers – Inputs and Outputs	B18

## LonWorks® Controllers

Xenta™ Series	L2
Xenta Series Controllers	L3
Xenta Series I/O Modules	L5
Xenta Series Controllers – Inputs and Outputs	L7
Xenta Series I/O Modules – Inputs and Outputs	L8
MNL Series	L9
MNL Series Controllers	L10
MNL Series Controllers – Inputs and Outputs	L14

## Additional EcoStruxure Building Resources

Learn more about other offers	A2-A9
-------------------------------	-------

### Disclaimers

- Not all products in the guide may be available in every country, please check availability with the local Schneider Electric office.
- Some product images are not images of the exact model, but are represented by a “series” image.
- Information within this guide is subject to change without notice.
- Schneider Electric is not responsible for inadvertent typographical errors or omissions.



## Flexible, personalized user workspace

EcoStruxure Building Operation provides an attractive, modern interface that can be organised by individual users to suit their needs. These preferences follow users regardless of where they log on. The information each user can access, such as graphics and alarms, can be managed at the job function, or individual level for added security and accountability.

## EcoStruxure™ Building Operation

**EcoStruxure™ Building Operation software** is the edge control heart of the EcoStruxure Building system to monitor, manage and control building systems. With an open integration platform, it securely facilitates the exchange of data from both Schneider Electric and third-party energy, lighting, HVAC, fire safety, security and workplace management systems to create future-ready smart buildings.

**Enterprise Central** dedicated supervisory server at the top of the EcoStruxure Building system architecture can integrate up to 10 Enterprise Servers, hosting as many as 2,500 SmartX Edge Servers (AS-P and AS-B) to easily scale operations management across the largest buildings, campuses, and multisite real estate portfolios from a single location.

**Enterprise Server**, the Windows® applications version of the Building Operation Server, is the single point of administration through WorkStation, WebStation, and mobile applications. Enterprise Server collects site-wide data and configures, controls and monitors the entire system. It generates aggregated reports, standardizes critical security policies, normalizes alarm presentation and prioritization, and audits activity across the entire organization.

**Regulated-industries Compliance Pack** provides facility-wide accountability and traceability of environmental and security conditions that can impact the quality and safety in controlled environments. With electronic reports and signatures, Compliance Pack maintains a complete archive of all system events, consolidated into one reporting structure for effortless search and retrieval. It complies with the FDA's 21 CFR Part 11 and ALCOA principals. (Available with EcoStruxure Building Operation 3.2.)

**SmartX Edge Servers** at the edge control level of the architecture are automation servers for use in any application. SmartX Edge Servers feature dual Ethernet ports that elevate BACnet field bus communication to the IP level to modernize existing building management systems while keeping in place existing field buses and devices.

**WorkStation** interface provides users and engineers with access to SmartX Edge Servers and Enterprise Servers to view and manage graphics, alarms, scheduling, trend logs and reports. WorkStation offers a new array of engineering efficiency tools and features to speed administrative functions, including standard applications, mass change/mass update; custom types and libraries, and more.

**WebStation** user interface provides a truly mobile experience for anytime, anywhere access to commonly used functions of EcoStruxure Building Operation on any platform without the installation of additional software. Developers can engineer once and the workspace automatically adapts the same high-quality user experience for desktop, tablet and mobile devices, saving valuable engineering time and resources.

**Smart Connector** is an open, extensible and configurable application framework that allows developers to create innovative new capabilities, applications and solutions that extend and enhance EcoStruxure™ Building.

**SmartDriver** is a custom driver for connection with other intelligent building devices that use non-native protocols (available with Building Operation v1.8.1 and later versions).

**EcoStruxure Energy Expert** is an embedded software module that enables energy usage to be monitored, and managed in the same system as HVAC, lighting and fire safety.

Part Number	Product Name	Description
Enterprise Central		
SXWSWECXX00005	Enterprise Central - 5	The Enterprise Central is the Windows® application that aggregates and archives data from up to 5 EcoStruxure Enterprise Servers
SXWSWECXX00010	Enterprise Central - 10	The Enterprise Central is the Windows® application that aggregates and archives data from up to 10 EcoStruxure Enterprise Servers
Enterprise Server		
SXWSWESXX00010	Enterprise Server - 10	The Enterprise Server is the Windows® application that aggregates and archives data from up to 10 EcoStruxure SmartX Edge Servers
SXWSWESXX00050	Enterprise Server - 50	The Enterprise Server is the Windows® application that aggregates and archives data from up to 50 EcoStruxure SmartX Edge Servers
SXWSWESXX00100	Enterprise Server - 100	The Enterprise Server is the Windows® application that aggregates and archives data from up to 100 EcoStruxure SmartX Edge Servers
SXWSWESXX00250	Enterprise Server - 250	The Enterprise Server is the Windows® application that aggregates and archives data from up to 250 EcoStruxure SmartX Edge Servers
SXWSWASES00001	ES Hosting AS Pack -1	Allows the addition of one more SmartX Edge Servers than were supported by the original Enterprise Server purchased
SXWSWNDES00010	ES Hosting AS Pack - 10	Allows the addition of 10 more SmartX Edge Servers than were supported by the original Enterprise Server purchased
SXWSWNDES00005	ES Hosted Node Pack - 5	Allow the addition of 5 servers or controllers to any of the interfaces supported by the Enterprise Server
SXWSWNDES00010	ES Hosted Node Pack - 10	Allow the addition of 10 servers or controllers to any of the interfaces supported by the Enterprise Server
SXWSWNDES00025	ES Hosted Node Pack - 25	Allow the addition of 25 servers or controllers to any of the interfaces supported by the Enterprise Server
SXWSWNDES00050	ES Hosted Node Pack - 50	Allow the addition of 50 servers or controllers to any of the interfaces supported by the Enterprise Server
SXWSWNDES00100	ES Hosted Node Pack - 100	Allow the addition of 100 servers or controllers to any of the interfaces supported by the Enterprise Server
SXWSWNDES00300	ES Hosted Node Pack - 300	Allow the addition of 300 servers or controllers to any of the interfaces supported by the Enterprise Server
SXWSWNDES00600	ES Hosted Node Pack - 600	Allow the addition of 600 servers or controllers to any of the interfaces supported by the Enterprise Server

\* The Enterprise Server is BACnet B-OWS and B-BC certified; the testing for this certification included the use of EcoStruxure Building Operation WorkStation as the HMI.

## EcoStruxure™ Building Operation (continued)

Part Number	Product Name	Description
Clients		
SXWSWCLIENT0001	Building Operation Client - 1	Fully featured environment for operating and administering all aspects of the system – 1 seat
SXWSWCLIENT0005	Building Operation Client - 5	Fully featured environment for operating and administering all aspects of the system – 5 seats
SXWSWCLIENT0010	Building Operation Client - 10	Fully featured environment for operating and administering all aspects of the system – 10 seats
SXWSWCLIENT0025	Building Operation Client - 25	Fully featured environment for operating and administering all aspects of the system – 25 seats
SXWSWCLIENT0999	Building Operation Client - unl	Fully featured environment for operating and administering all aspects of the system – Unlimited seats
Integration		
SXWSWSDRV00001	Smart Driver License	Allow "drivers" to be deployed, loaded and run on the Enterprise Server and the SmartX Controller - AS-P
SXWSWSCDL100001	Smart Connector Deployment License	Allows the Smart Connector application to be deployed to a single server
Engineering Tools		
SXWSWORK00002	WorkStation Professional	A full environment for operating and engineering all aspects of EcoStruxure Building Operation
SXWSWEDIT00001	Editors	An environment that provides the ability to edit graphics, script programs and function block programs.
Add-On Features		
SXWSWSNMP00001	SNMP Alarming	This option provides support for SNMP alarm traps v3.0 notifications on any EcoStruxure Building server.
SXWSWEWSX00001	EWS 1	A common integration method to other Schneider Electric systems and services. Consume
SXWSWEWSX00002	EWS 2	A common integration method to other Schneider Electric systems and services. Consume and serve
SXWSWEWSX00003	EWS 3	A common integration method to other Schneider Electric systems and services. Consume, serve and gather history
SXWSWGWSX00001	GWS	An integration method to other systems and services
SXSWDASH00001	Personal Dashboards license	Enables Personal Dashboard feature on one Enterprise Server or Enterprise Central
SXSWECDBTS001	TimescaleDB connection license	Enables high capacity historical storage in TimescaleDB on one Enterprise Central
SXSWESDBTS001	TimescaleDB connection license	Enables high capacity historical storage in TimescaleDB on one Enterprise Server
SXSWCMPLPK001	Regulated-industry Compliance Pack	Set of features to assist in validation in a regulated environment
SXSWECPDFSS01	Building Operation PDF Sign EC	Enables PDF documents to be digitally signed at time of generation - EC
SXSWESPDFS01	Building Operation PDF Sign ES	Enables PDF documents to be digitally signed at time of generation - ES
SXSWMQTTSRW01	MQTT - Read/Write - ES	Enterprise Server publishes data to MQTT broker
SXSWESSDZR001	Building Operation Zoning – ES	Enables zoning in one ES and connected AS
EcoStruxure Energy Expert		
PSWPMNCZZSPEZZ	Energy Expert Base	Energy Expert software module license for a PC server (no maintenance subscription included)

(\*) Only supported by Managed Device / BYOD Customized deployment method.

(\*\*) Supported by Managed Device / BYOD Customized and Generic: this requires an unlimited devices deployment license.



## Functionality matrix

WorkStation Standard - WorkStation software without graphics editor, script and function block programming editors.

WorkStation Pro - WorkStation software including graphics editor, script and function block programming editors.

WebStation - Direct access to an Automation Server and/or Enterprise Server using a web browser.

WebReports - Direct access to the Reports Server using a web browser.

• Full functionality o Partial functionality	WorkStation Standard	WorkStation Pro	WebStation	WebReports
<b>Dashboards</b>				
View public dashboards			Full	
Create and edit public dashboards	Partial	Partial	Full	
View personal dashboards			Full	
Create and edit personal dashboards			Full	
View slideshows			Full	
Create and edit slideshows	Full	Full	Full	
<b>Zoning</b>				
Graphical management			•	
Textual management	•	•	•	
<b>Alarms</b>				
View alarms	•	•	•	
Manage alarms	•	•	•	
Edit alarms	•	•	o *2	
Create alarms	•	•		
Support for flashing & audible alarms	•	•	•	
<b>BACnet™</b>				
View priority array	•	•	•	
Edit priority array	•	•	•	
Create devices (includes device discovery)	•	•		
Manage BACnet backup and restore	•	•		
<b>Graphics</b>				
View Graphics	•	•	•	
Create and edit graphics		•		
<b>Logs &amp; Extended Logs</b>				
View logs	•	•	•	
Edit logs	•	•	o *4	
Create logs	•	•	o *5	
View multi trend log lists	•	•	•	
Create and edit multi trend log lists	•	•	•	
Export to CSV and XML	Full	Full	•	
Export to XLSX	Full	Full	Full	
View extended logs	•	•	•	
Edit extended logs	•	•	o *4	
Create extended logs	•	•		
<b>LON</b>				
Create devices (includes device discovery)	•	•		
Manage devices	•	•		
View Network Variables (NVs) and Configuration Parameters (CPs)	•	•	•	
Edit NVs and CPs	•	•	•	
<b>Modbus®</b>				
Create devices	•	•		
Manage devices	•	•		
View values	•	•	•	
Edit values	•	•	•	
<b>Point Values - e.g. Temperature Setpoint</b>				
View values	•	•	•	
Edit values - e.g. "change setpoint"	•	•	•	
<b>Programs</b>				
Create and edit customised programs		•		
View graphical function block viewer	•	•		
Program MNL/MNB controllers		• *7		

\* 1 Supports alarm acknowledgement.

\* 2 Edit alarm ranges, text, delay times, shunt variables, assignments, deadband.

\* 3 View in list format.

\* 4 Change parameters - e.g. interval time.

\* 5 Create interval log type.

\* 6 NVs and CPs are displayed only in SI units.

\* 7 Microsoft® Visio required

Functionality matrix, continued

• Full functionality o Partial functionality	WorkStation Standard	WorkStation Pro	WebStation	WebReports
<b>Reports</b>				
View reports	•	•	•	•
Edit reports	•	•	• *8	•
Create & configure reports	•	•		
Administer reports	•	•		•
<b>Schedules &amp; Calendars</b>				
View schedules and calendars	•	•	•	
Edit schedules and calendars	•	•	•	
Create schedules and calendars	•	•		
<b>Users &amp; User Groups</b>				
Create and edit users	•	•	o *9	
Create and edit user's group membership	•	•	o *9	
Create and edit groups	•	•		
Create and edit permissions	•	•		
<b>User Experience</b>				
View customised workspaces	•	•	•	
Log on as windows Active Directory user	•	•	•	
Automatic guest account log on			•	
Password management	•	•	•	
Create and edit saved searches	•	•		
View saved search	•	•	•	
Ad hoc search	•	•	•	
Kiosk mode			•	
Bookmarking to a particular web view			•	•
Support for localisation	•	•	•	
Support for translation	•	• *10	•	o *11
Ability to change language on the client side	•	•	•	
<b>Other</b>				
Configure & edit I/O points, field buses, and communication ports	•	•		
Create and edit logical structure	•	•		
Create and edit viewers, panels and workspaces	•	•		
View & configure Watch pane	•	•	•	
View events	•	•	•	
Administer backup/restore of database	•	•		
Manage archiving	•	•		

\*8 Edit some parameters per report, save changes or make a copy of the report with changes.  
 \*9 Cannot assign permissions.  
 \*10 Translation is only supported in the WorkStation interface; it is not supported for graphics and programming editors.  
 \*11 Report text can be edited and translated using a Report Definition Language (RDL) editor such as Microsoft® Report Builder.

## SmartX Edge Server – AS-P

The SmartX Edge Server – AS-P is an EcoStruxure server device at the Edge Level of the architecture. With superior performance, the AS-P simplifies system integration and modernization, and is the preferred choice for large, complex enterprise applications.



SmartX Edge Server – AS-P

The SmartX Edge Server – AS-P and AS-B feature dual Ethernet ports to elevate BACnet field bus communication to the IP level. Modernize the BMS while keeping in place legacy field buses and devices to future-ready current systems and move buildings into the 21st century!

	AS-P	AS-P-NL	AS-P-SMK
<b>Part Number</b>	<b>SXWASPXXX10001</b>	<b>SXWASPXXX10002</b>	<b>SWXASPXXX1S001</b>
<b>Communications</b>			
<b>Communication Interface</b>	LonWorks FTT-10, BACnet/IP, BACnet MS/TP, Modbus TCP (Client+Server), Modbus serial (Master+Slave), EWS, Generic WebService consume	BACnet/IP, BACnet MS/TP, Modbus TCP (Client+Server), Modbus serial (Master+Slave), EWS, Generic WebService consume	LonWorks FTT-10, BACnet/IP, BACnet MS/TP, Modbus TCP (Client+Server), Modbus serial (Master+Slave), EWS, Generic WebService consume
<b>Software</b>			
<b>Programability</b>	Function Block/Script Programmable	Function Block/Script Programmable	Function Block/Script Programmable
<b>Physical</b>			
<b>Dimensions</b>	90 W x 114 H x 64 D mm (3.60 W x 4.50 H x 2.50 D in.)	90 W x 114 H x 64 D mm (3.60 W x 4.50 H x 2.50 D in.)	90 W x 114 H x 64 D mm (3.60 W x 4.50 H x 2.50 D in.)
<b>Weight (including baseplate)</b>	0.245 kg (0.54 lb)	0.245 kg (0.54 lb)	0.245 kg (0.54 lb)
<b>Power</b>			
<b>Power</b>	24 VDC	24 VDC	24 VDC
<b>Consumption</b>	10 W	10 W	10 W
<b>Environmental</b>			
<b>Operating Range</b>	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing)	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing)	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing)
<b>CPU Internals</b>			
<b>CPU</b>	SPEAr320S, ARM926 core	SPEAr320S, ARM926 core	SPEAr320S, ARM926 core
<b>Memory</b>	4 GB	4 GB	4 GB
<b>Battery</b>	No	No	No
<b>Real time clock</b>	Yes -10 days backup/Super Capacitor	Yes -10 days backup/Super Capacitor	Yes -10 days backup/Super Capacitor
<b>External Features</b>			
<b>Enclosure rating</b>	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)
<b>HOA Switches (DO/AO)</b>	N/A	N/A	N/A
<b>Manual Override of Outputs</b>	N/A	N/A	N/A
<b>Digital Status LEDs</b>	Yes	Yes	Yes
<b>Service Port</b>	Yes	Yes	Yes
<b>Terminals</b>			
<b>I/O Expansion</b>	Yes - Up to 29 modules/464 max I/O	Yes - Up to 29 modules/464 max I/O	Yes - Up to 29 modules/464 max I/O
<b>External Enclosure/Mounting</b>			
<b>Mounting</b>	DIN-rail or wall mount	DIN-rail or wall mount	DIN-rail or wall mount
<b>Certifications</b>			
<b>BTL</b>	Yes	Yes	Yes
<b>FCC</b>	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)
<b>Industry Canda (IC)</b>	ICES-003 (Emission)	ICES-003 (Emission)	ICES-003 (Emission)
<b>UL</b>	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)
<b>C-UL US</b>	Yes	Yes	Yes
<b>CE - EU</b>	Yes	Yes	Yes
<b>WEEE - Directive of the European Union</b>	Yes	Yes	Yes
<b>RoHS Directive</b>	Yes	Yes	Yes
<b>RCM</b>	Yes	Yes	Yes
<b>US Patent</b>	8 207 842, 8 271 102, 7 994 438	8 207 842, 8 271 102, 7 994 438	8 207 842, 8 271 102, 7 994 438
<b>UL-864</b>	No	No	Yes

\*Notes: EcoStruxure solution installations or BMS transitions requiring UL-864 certifications must use the SmartX Controller AS-P-SMK (listed above).

SmartX Controller - AS-P and AS-B conform to the BACnet® Building Controller (B-BC) profile at protocol revision 12 by the BACnet Testing Laboratories (BTL®). StruxureWare™ Building Operation v1.9 is the certified firmware revision.

## Power Supply and Module Terminal Bases

The PS-24V is a power supply module that accommodates 24 VAC or 24 VDC input power. Each power supply module delivers reliable and consistent output power of 24 VDC to the backplane. It can deliver power to the AS-P and a number of I/O modules calculated from the Power Budget Table (located below). If more I/O modules are needed, another power supply can be added to the bus. The power supplies are isolated from each other while also providing communication pass-through.



PS-24V  
Automation Server Power Supply

Part Number	Product Name	Description
SXWPS24VX10001	PS-24V	Power Supply 24 VAC or 21-30 VDC
SXWTBPSW110001	TB-PS-W1	Terminal Base Power Supply (Terminal Base required for each power supply)
SXWTBASW110002	TB-ASP-W1	Terminal Base AS-P (Terminal base required for each AS-P)
SXWTBIOW110001	TB-IO-W1	Terminal Base I/O (Terminal Base required for each I/O module)



I/O Module  
Terminal Base and Module Detail

**NOTE:** An appropriate terminal base is required for each module, including the AS-P, Power Supply and I/O Modules. See the above table for the correct part numbers.

## Power Supply Selection Table

Power Requirements	
SmartX Edge Server – AS-P	24 VDC / 10 W
SmartX Edge Server – AS-B	24 VDC / 10 W    24 VAC / 15 VA
<b>Power Requirements - Input only I/O</b>	<b>24 VDC Power</b>
DI-16	1.6 W
RTD-DI-16	1.6 W
UI-16	1.8 W
<b>Power Requirements - Output only I/O</b>	<b>24 VDC Power</b>
DO-FA-12	1.8 W
DO-FA-12-H	1.8 W
DO-FC-8	2.2 W
DO-FC-8-H	2.2 W
AO-8	4.9 W
AO-8-H	4.9 W
AO-V-8	0.7 W
AO-V-8-H	0.7 W
<b>Power Requirements - Mixed I/O</b>	<b>24 VDC Power</b>
UI-8/DO-FC-4	1.9 W
UI-8/DO-FC-4-H	1.9 W
UI-8/AO-4	3.2 W
UI-8/AO-4-H	3.2 W
UI-8/AO-V-4	1.0 W
UI-8/AO-V-4-H	1.0 W

Please refer to the appropriate Data Sheets for more information.

## Automation Server Family of Modules

### I/O Modules

The Automation Server includes support for a broad spectrum of I/O modules. The variety of modules available ensures the right combination of points for any project, which keeps costs down for our customers. Some modules are available with Hand/Off/Auto (HOA) switches to provide override control of the outputs.



UI-16  
16 Channel Universal Input



DI-16  
16 Channel Digital Input



AO-8, AO-8-H  
8 Channel Analog Output

	UI-16	DI-16	AO-8, AO-8-H
<b>Part Number</b>	<b>SXWUI16XX10001</b>	<b>SXWDI16XX10001</b>	<b>SXWAO8XXX10001, SXWAO8HXX10001</b>
<b>Physical</b>			
<b>Dimensions</b>	90 W x 114 H x 64 D mm (3.60 W x 4.50 H x 2.50 D in.)	90 W x 114 H x 64 D mm (3.60 W x 4.50 H x 2.50 D in.)	90 W x 114 H x 64 D mm (3.60 W x 4.50 H x 2.50 D in.)
<b>Weight (including baseplate)</b>	0.269 kg (0.59 lb.)	0.255 kg (0.56 lb.)	0.279 kg (0.62 lb.)
<b>Power</b>			
<b>Power</b>	24 VDC	24 VDC	24 VDC
<b>Consumption</b>	1.8 W	1.6 W	0.7 W
<b>Environmental</b>			
<b>Operating Range</b>	0 °C to 50 °C (32 °F to 122 °F) 0-95% RH (non-condensing)	0 °C to 50 °C (32 °F to 122 °F) 0-95% RH (non-condensing)	0 °C to 50 °C (32 °F to 122 °F) 0-95% RH (non-condensing)
<b>External Features</b>			
<b>Enclosure rating</b>	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)
<b>HOA Switches (DO/AO)</b>	No	No	Available on -H model
<b>Digital Status LEDs</b>	Yes	Yes	No
<b>Service Port</b>	No	No	No
<b>Terminals</b>			
<b>I/O Terminals</b>	Terminal base	Terminal base	Terminal base
<b>External Enclosure/Mounting</b>			
<b>Mounting</b>	DIN-rail or wall mount	DIN-rail or wall mount	DIN-rail or wall mount
<b>Certifications</b>			
<b>FCC</b>	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)
<b>Industry Canada (IC)</b>	ICES-003 (Emission)	ICES-003 (Emission)	ICES-003 (Emission)
<b>UL</b>	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)
<b>C-UL US</b>	No	No	No
<b>CE - EU</b>	Yes	Yes	Yes
<b>WEEE - Directive of the European Union</b>	Yes	Yes	Yes
<b>RoHS Directive</b>	Yes	Yes	Yes
<b>RCM</b>	Yes	Yes	Yes
<b>US Patent</b>	7 994 438	7 994 438	7 994 438

## I/O Modules, continued



AO-V-8 , AO-V-8-H  
8 Channel Analog Output  
Voltage Points



DO-FA-12 , DO-FA-12-H  
12 Channel Digital Output,  
Form-A



DO-FC-8, DO-FC-8-H  
8 Channel Digital Output,  
Form-C

	AO-8-V, AO-8-V-H	DO-FA-12, DO-FA-12-H	DO-FC-8, DO-FC-8-H
<b>Part Number</b>	<b>SXWAOV8XX10001, SXWAOV8HX10001</b>	<b>SXWDOA12X10001, SXWDOA12H10001</b>	<b>SXWDOC8XX10001, SXWDOC8HX10001</b>
<b>Physical</b>			
<b>Dimensions</b>	90 W x 114 H x 64 D mm (3.60 W x 4.50 H x 2.50 D in.)	90 W x 114 H x 64 D mm (3.60 W x 4.50 H x 2.50 D in.)	90 W x 114 H x 64 D mm (3.60 W x 4.50 H x 2.50 D in.)
<b>Weight (including baseplate)</b>	0.279 kg (0.62 lb.)	0.317 kg (0.70 lb.)	0.332 kg (0.73 lb.)
<b>Power</b>			
<b>Power</b>	24 VDC	24 VDC	24 VDC
<b>Consumption</b>	0.7 W	1.8 W	2.2 W
<b>Environmental</b>			
<b>Operating Range</b>	0 °C to 50 °C (32 °F to 122 °F) 0-95% RH (non-condensing)	0 °C to 50 °C (32 °F to 122 °F) 0-95% RH (non-condensing)	0 °C to 50 °C (32 °F to 122 °F) 0-95% RH (non-condensing)
<b>External Features</b>			
<b>Enclosure rating</b>	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)
<b>HOA Switches (DO/AO)</b>	Available on -H model	Available on -H model	Available on -H model
<b>Digital Status LEDs</b>	No	Yes	Yes
<b>Service Port</b>	No	No	No
<b>Terminals</b>			
<b>I/O Terminals</b>	Terminal base	Terminal base	Terminal base
<b>External Enclosure/Mounting</b>			
<b>Mounting</b>	DIN-rail or wall mount	DIN-rail or wall mount	DIN-rail or wall mount
<b>Certifications</b>			
<b>FCC</b>	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)
<b>Industry Canada (IC)</b>	ICES-003 (Emission)	ICES-003 (Emission)	ICES-003 (Emission)
<b>UL</b>	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)
<b>C-UL US</b>	No	No	Yes
<b>CE - EU</b>	Yes	Yes	Yes
<b>WEEE - Directive of the European Union</b>	Yes	Yes	Yes
<b>RoHS Directive</b>	Yes	Yes	Yes
<b>RCM</b>	Yes	Yes	Yes
<b>US Patent</b>	2002/96/EC	2002/96/EC	2002/96/EC

## I/O Modules, continued



UI-8/AO-4, UI-8/AO-4-H  
8 Channel Universal Inputs  
with 4 Analog Outputs



UI-8/AO-V-4, UI-8/AO-V-4-H  
8 Channel Universal Inputs  
with 4 Channel Voltage  
Outputs  
(UI-8/AO-V-4-H shown)



UI-8/DO-FC-4, UI-8/DO-FC-4-H  
8 Channel Universal Inputs with 4  
Channel Digital Outputs, Form-C

	UI-8/AO-4, UI-8/AO-4-H	UI-8/AO-V-4, UI-8/AO-V-4-H	UI-8/DO-FC-4, UI-8/DO-FC-4-H
<b>Part Number</b>	<b>SXWUI8A4X10001, SXWUI8A4H10001</b>	<b>SXWUI8V4X10001, SXWUI8V4H10001</b>	<b>SXWUI8D4X10001, SXWUI8D4H10001</b>
<b>Physical</b>			
<b>Dimensions</b>	90 W x 114 H x 64 D mm (3.60 W x 4.50 H x 2.50 D in.)	90 W x 114 H x 64 D mm (3.60 W x 4.50 H x 2.50 D in.)	90 W x 114 H x 64 D mm (3.60 W x 4.50 H x 2.50 D in.)
<b>Weight (including baseplate)</b>	0.276 kg (0.61 lb.)	0.276 kg (0.61 lb.)	0.304 kg (0.67 lb.)
<b>Power</b>			
<b>Power</b>	24 VDC	24 VDC	24 VDC
<b>Consumption</b>	3.2 W	1.0 W	1.9 W
<b>Environmental</b>			
<b>Operating Range</b>	0 °C to 50 °C (32 °F to 122 °F) 0-95% RH (non-condensing)	0 °C to 50 °C (32 °F to 122 °F) 0-95% RH (non-condensing)	0 °C to 50 °C (32 °F to 122 °F) 0-95% RH (non-condensing)
<b>External Features</b>			
<b>Enclosure rating</b>	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)
<b>HOA Switches (DO/AO)</b>	Available on -H model	Available on -H model	Available on -H model
<b>Digital Status LEDs</b>	Yes	Yes	Yes
<b>Service Port</b>	No	No	No
<b>Terminals</b>			
<b>I/O Terminals</b>	Terminal base	Terminal base	Terminal base
<b>External Enclosure/Mounting</b>			
<b>Mounting</b>	DIN-rail or wall mount	DIN-rail or wall mount	DIN-rail or wall mount
<b>Certifications</b>			
<b>FCC</b>	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)
<b>Industry Canada (IC)</b>	ICES-003 (Emission)	ICES-003 (Emission)	ICES-003 (Emission)
<b>UL</b>	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)
<b>C-UL US</b>	Yes	Yes	Yes
<b>CE - EU</b>	Yes	Yes	Yes
<b>WEEE - Directive of the European Union</b>	Yes	Yes	Yes
<b>RoHS Directive</b>	Yes	Yes	Yes
<b>RCM</b>	Yes	Yes	Yes
<b>US Patent</b>	7 994 438	7 994 438	7 994 438

## I/O Modules, continued



RTD-DI-16  
16 Channel Inputs (RTD and  
Digital) Combination Module

RTD-DI-16	
<b>Part Number</b>	<b>SXWRTD16X10001</b>
<b>Physical</b>	
<b>Dimensions</b>	90 W x 114 H x 64 D mm (3.60 W x 4.50 H x 2.50 D in.)
<b>Weight (including baseplate)</b>	0.269 kg (0.59 lb.)
<b>Power</b>	
<b>Power</b>	24 VDC
<b>Consumption</b>	1.6 W
<b>Environmental</b>	
<b>Operating Range</b>	0 °C to 50 °C (32 °F to 122 °F) 0-95% RH (non-condensing)
<b>External Features</b>	
<b>Enclosure rating</b>	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)
<b>HOA Switches (DO/AO)</b>	No
<b>Digital Status LEDs</b>	Yes
<b>Service Port</b>	No
<b>Terminals</b>	
<b>I/O Terminals</b>	Terminal base
<b>External Enclosure/Mounting</b>	
<b>Mounting</b>	DIN-rail or wall mount
<b>Certifications</b>	
<b>FCC</b>	47 CFR § 15, Class B (Emission)
<b>Industry Canada (IC)</b>	ICES-003 (Emission)
<b>UL</b>	UL-916 (Energy Management Equipment)
<b>C-UL US</b>	Yes
<b>CE - EU</b>	Yes
<b>WEEE - Directive of the European Union</b>	Yes
<b>RoHS Directive</b>	Yes
<b>RCM</b>	Yes
<b>US Patent</b>	7 994 438



## I/O Modules – Inputs and Outputs

	UI-16	DI-16	AO-8, AO-8-H	AO-8-V, AO-8-V-H	DO-FA-12, DO-FA-12-H	DO-FC-8, DO-FC-8-H
<b>Part Number</b>	SXWUI16XX10001	SXWDI16XX10001	SXWAO8XXX10001, SXWAO8HXX10001	SXWAOV8XX10001, SXWAOV8HX10001	SXWDOA12X10001, SXWDOA12H10001	SXWDOC8XX10001, SXDWC8HX10001
<b>Universal Inputs</b>	16					
Digital Contact	•					
Digital Counter - Low Speed						
Digital Counter - Medium Speed	•					
Digital Counter - High Speed						
Digital Supervised	•					
Analog Voltage - 0-1 V	•					
Analog Voltage - 0-5 V	•					
Analog Voltage - 0-10 V	•					
Analog Voltage - 2-10 V	•					
Analog Current - 0-20 mA	•					
Analog Current - 4-20 mA	•					
Analog Resistance	•					
Analog Thermistor - 10 k	•					
Analog Thermistor - 1.8 k	•					
Analog Thermistor - 1 k	•					
Analog Thermistor - 20 k	•					
Analog Thermistor - 2.2 k	•					
Analog RTD - Pt100						
Analog RTD - Pt1000						
Analog RTD - Ni1000						
Analog RTD - LG Ni1000						
<b>Digital Inputs</b>		16				
Digital Contact		•				
Counter - Low Speed						
Counter - Medium Speed		•				
Counter - High Speed						
<b>Digital Outputs</b>					12	8
Form A, SPST					•	
Form C, SPDT						•
Triac						
<b>Analog Outputs</b>			8	8		
Voltage - 0-10 V			•	•		
Current - 0-20 mA			•			

I/O Modules – Inputs and Outputs, continued

	UI-8/AO-4, UI-8/AO-4-H	UI-8/AO-V-4, UI-8/AO-V-4-H	UI-8/DO-FC-4, UI-8/DO-FC-4-H	RTD-DI-16
Part Number	SXWUI8A4X10001, SXWUI8A4H10001	SXWUI8V4X10001, SXWUI8V4H10001	SXWUI8D4X10001, SXWUI8D4H10001	SXWRTD16X10001
<b>Universal Inputs</b>	8	8	8	16*
Digital Contact	•	•	•	•
Digital Counter - Low Speed				
Digital Counter - Medium Speed	•	•	•	•
Digital Counter - High Speed				
Digital Supervised	•	•	•	
Analog Voltage - 0-1 V	•	•	•	
Analog Voltage - 0-5 V	•	•	•	
Analog Voltage - 0-10 V	•	•	•	
Analog Voltage - 2-10 V	•	•	•	
Analog Current - 0-20 mA	•	•	•	
Analog Current - 4-20 mA	•	•	•	
Analog Resistance	•	•	•	•
Analog Thermistor - 10 k	•	•	•	
Analog Thermistor - 1.8 k	•	•	•	
Analog Thermistor - 1 k	•	•	•	
Analog Thermistor - 20 k	•	•	•	
Analog Thermistor - 2.2 k	•	•	•	
Analog RTD - Pt100				•
Analog RTD - Pt1000				•
Analog RTD - Ni1000				•
Analog RTD - LG Ni1000				•
<b>Digital Inputs</b>				
Digital Contact				
Counter - Low Speed				
Counter - Medium Speed				
Counter - High Speed				
<b>Digital Outputs</b>			4	
Form A, SPST				
Form C, SPDT			•	
Triac				
<b>Analog Outputs</b>	4	4		
Voltage - 0-10 V	•	•		
Current - 0-20 mA	•			

## SmartX Edge Server – AS-B

The SmartX Edge Server – AS-B is the most compact, all-in-one BMS. It features flexible on-board universal I/O configurations and built-in power supply. An EcoStruxure server device, its powerful, compact design is ideal for small-to-medium main plant control applications. It offers lower total installation costs.



SmartX Edge Server – AS-B

Note: Screw terminal blocks for the AS-B are now delivered with the controller. Spare is available. See accessories section on page E16.

	AS-B-24(H)	AS-B-36(H)
<b>Part Number</b>	<b>SXWASB24(X,H)10001</b>	<b>SXWASB36(X,H)10001</b>
<b>Communications</b>		
<b>Communication Interface</b>	BACnet/IP, BACnet MS/TP, Modbus TCP (Client+Server), Modbus serial (Master+Slave), EWS, Generic WebService consume	BACnet/IP, BACnet MS/TP, Modbus TCP (Client+Server), Modbus serial (Master+Slave), EWS, Generic WebService consume
<b>Software</b>		
<b>Programmability</b>	Function Block/Script Programmable	Function Block/Script Programmable
<b>Physical</b>		
<b>Dimensions</b>	198 W x 110 H x 64 D mm (7.8 W x 4.3 H x 2.5 D in.)	198 W x 110 H x 64 D mm (7.8 W x 4.3 H x 2.5 D in.)
<b>Weight (including baseplate)</b>	0.504 kg (1.111 lb)	0.504 kg (1.111 lb)
<b>Power</b>		
<b>Power</b>	24 VAC/DC	24 VAC/DC
<b>Consumption</b>	10 W	10 W
<b>Environmental</b>		
<b>Operating Range</b>	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing)	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing)
<b>CPU Internals</b>		
<b>CPU</b>	SPEAr320S, ARM926 core	SPEAr320S, ARM926 core
<b>Memory</b>	4 GB	4 GB
<b>Battery</b>	No	No
<b>Real time clock</b>	Yes -10 days backup/Super Capacitor	Yes -10 days backup/Super Capacitor
<b>External Features</b>		
<b>Enclosure rating</b>	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5VB, IP 20 (<12.5 mm protection)
<b>HOA Switches (DO/AO)</b>	N/A	N/A
<b>Manual Override of Outputs</b>	Yes - On 'H' model	Yes - On 'H' model
<b>Digital Status LEDs</b>	Yes	Yes
<b>Service Port</b>	Yes	Yes
<b>Terminals</b>		
<b>I/O Expansion</b>	No	No
<b>External Enclosure/Mounting</b>		
<b>Mounting</b>	DIN-rail or wall mount	DIN-rail or wall mount
<b>Certifications</b>		
<b>BTL</b>	Yes	Yes
<b>FCC</b>	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)
<b>Industry Canada (IC)</b>	ICES-003 (Emission)	ICES-003 (Emission)
<b>UL</b>	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)
<b>C-UL US</b>	Yes	Yes
<b>CE - EU</b>	Yes	Yes
<b>WEEE - Directive of the European Union</b>	Yes	Yes
<b>RoHS Directive</b>	Yes	Yes
<b>RCM</b>	Yes	Yes
<b>US Patent</b>	8 207 842, 8 271 102, 7 994 438	8 207 842, 8 271 102, 7 994 438

\*Notes: EcoStruxure Building installations or BMS transitions requiring UL-864 certifications must use the SmartX Edge Server AS-P-SMK (see page E6).

SmartX Edge Server - AS-P and AS-B conform to the BACnet® Building Controller (B-BC) profile at protocol revision 12 by the BACnet Testing Laboratories (BTL®). EcoStruxure™ Building Operation v1.9 is the certified firmware revision.

## SmartX Edge Server – AS-B – Inputs and Outputs

	AS-B-24(H)	AS-B-36(H)
Part Number	SXWASB24(X,H)10001	SXWASB36(X,H)10001
<b>Universal Inputs/Outputs</b>	12-Ua 4-Ub	20-Ua 8-Ub
Digital Contact	Ua/Ub	Ua/Ub
Digital Counter - Low Speed		
Digital Counter - Medium Speed	•	•
Digital Counter - High Speed		
Digital Supervised	Ua/Ub	Ua/Ub
Analog Voltage - 0-1V	Ua/Ub	Ua/Ub
Analog Voltage - 0-5V	Ua/Ub	Ua/Ub
Analog Voltage - 0-10V	Ua/Ub	Ua/Ub
Analog Voltage - 2-10V	Ua/Ub	Ua/Ub
Analog Current - 0-20mA	Ub	Ub
Analog Current - 4-20mA	Ub	Ub
Analog Resistance	Ua/Ub	Ua/Ub
Analog Thermistor - 10k	Ua/Ub	Ua/Ub
Analog Thermistor - 1.8k	Ua/Ub	Ua/Ub
Analog Thermistor - 1k	Ua/Ub	Ua/Ub
Analog Thermistor - 20k	Ua/Ub	Ua/Ub
Analog Thermistor - 2.2k	Ua/Ub	Ua/Ub
Analog RTD - Pt100		
Analog RTD - Pt1000	Ua/Ub	Ua/Ub
Analog RTD - Ni1000	Ua/Ub	Ua/Ub
Analog RTD - LG Ni1000	Ua/Ub	Ua/Ub
<b>Digital Inputs</b>	4	
Digital Contact	•	
Counter - Low Speed		
Counter - Medium Speed		
Counter - High Speed		
<b>Digital Outputs</b>	4	8
Form A, SPST	•	4
Form C, SPDT		
PWM	•	•
Triac		4

Key:  
 Ua – Universal Type A  
 Ub – Universal Type B  
 I – Input  
 O – Output

## Automation Server Family of Modules

### Accessories

The following accessories are available for the Automation Server Family of modules.



Part Number	Product Name	Description
SXWDINEND10001	DIN-RAIL-CLIP-25	DIN-Rail End Clip, package of 25 pieces
SXWTERLBL10011	PRINTOUT-A4-W1	A4-Size blank printable adhesive label sheets for terminals (100 Sheets, 18 labels per Sheet)
SXWTERLBL10012	PRINTOUT-LTR-W1	Letter-size blank printable adhesive label sheets for terminals (100 Sheets, 16 labels per Sheet)
SXWSCABLE10002	S-CABLE-L-1.5M	S-Cable extension cord for Automation Server I/O bus, L shaped connectors, 1.5 m
SXWSCABLE10003	S-CABLE-L-0.75M	S-Cable extension cable for Automation Server I/O bus, L-shaped connectors, 0.75 m
SXWASBINS10001	AS-B installer kit	Dummy unit, no electronics, just terminals. Supports easy wiring in the panel shop
SXWASBCON10001	AS-B Connector Kit	Spare screw terminals for all AS-B models
SXWUSBADP10001	USB-485-INET Interface Adapter	I/NET Adapter: Separate hardware component, added to a SmartX Controller - AS-P or Automation Server

### SmartX Edge Server add-on options

Add-on option part numbers are required to activate certain features. SmartX Servers require an embedded license to activate features. An embedded license is not interchangeable with a Windows license.

Part Number	Product Name	Description
SXWSWSNMPX0001	EBO SNMP Alarming - SmartX	Alarm notifications via SNMP – SmartX Server
SXWSWEWSXX0001	EBO WS EWS Consume - SmartX	EcoStruxure Web Services (run-time) option – Consume only – SmartX Server
SXWSWEWSXX0002	EBO WS EWS C+Serve - SmartX	EcoStruxure Web Services (run-time) option – Serve & Consume – SmartX Server
SXWSWEWSXX0003	EBO WS EWS C+S+Hist - SmartX	EcoStruxure Web Services (run-time) option – Serve & Consume, plus Historical trend log data – SmartX Server
SXWSWGWSXX0001	EBO WS Gen Consume - SmartX	Web Services (Generic Consume) option – SmartX Server
SXWSWDASHX0001	Personal Dashboards - SmartX	Built-in dashboard functionality which enables users to create their own pages to get an overview of how buildings perform – SmartX Server
SXWSWASDBXS001	Timescale DB Option - SmartX	Integration of an open, external SQL database for long term data and audit trail storage – SmartX Server
SXWSWMQTTXRW01	MQTT - Read/Write - SmartX	SmartX Server publishes data to MQTT broker

\* An embedded client license that will be activated on a SmartX Server will always allow for the operation of a WebStation only. In order for WorkStation to operate it must have access to a Windows license on a PC that is running a Windows OS. Since WorkStation software requires a Windows operating system, then the license might be installed on the same PC or it might make use of a demo license.

### SmartX Advanced Display

Portable or permanent-mount tablet HMI (10.1-inch) specifically configured to interact with EcoStruxure Building user interfaces. Purpose-built on an Android 8.1 platform.



Part Number	Product Name	Description
SXWADBUND10003	Advanced Display 10.1-inch Bundle	
SXWADWIFI10001	AD v3 Wi-Fi Module	
SXWADUSBC10001	USB-C cable, Straight, 2.4m (7.87 ft) - Only for use with Wi-Fi module	
SXWADUSBC10002	USB cable, Y-shaped, 1.35m (4.43 ft)	
SXWADUSBC10003	USB cable, Y-shaped, 2.85m (9.35 ft)	

### Wireless Connectivity

USB-based wireless adapter that enables Zigbee™ wireless connectivity for SmartX Servers and SmartX IP Controllers.

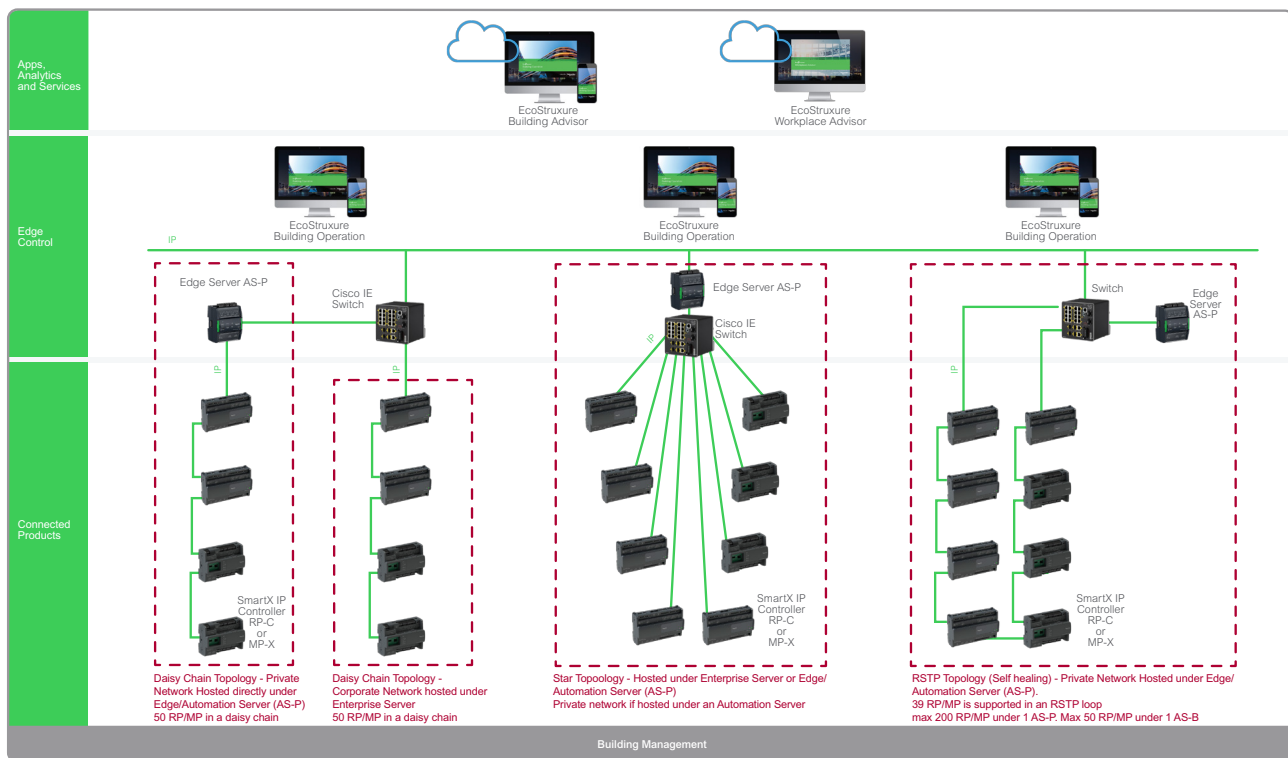


Part Number	Product Name	Description
SXWZBAUSB10001	ZB-A-USB	SmartX Zigbee Adapter for the AS-P, AS-B and RP Series controllers
SXWUSBCRA10001	USB-CRA	USB adapter plastic mounting cradle and wall plate
SXWUSBCBL10001	USB-CBL-1	USB Extension Cable of Length 1 m (3 ft)
SXWUSBCBL10002	USB-CBL-3	Plenum rated USB Extension Cable of Length 3 m (10 ft)

# Reference Architecture

## EcoStruxure™ Building Powered by EcoStruxure™ Building Operation

### End-to-end IP Architecture Options



Schneider Electric and Cisco® together have developed, tested and validated this building system design to provide customers with confidence in knowing that their systems will securely connect to an end-to-end IP network with a resilient architecture that is easy to manage.

Life Is On

**Schneider Electric**

# Connected Room Solutions

Create engaging environments with personalized comfort and increased operational and energy efficiency, which are essential in today's connected world. Connected Room Solutions feature a modular BACnet/IP Controller, the SmartX IP Controller RP-C for control of HVAC, lights and blinds. Built on a flexible architecture, the RP-C provides a consistent IP story across the building together with our existing network and field level controllers. Complementary offers include the Engage employee mobile app, SmartX Living Space Sensors, and eCommission SmartX Controller Mobile App.



# SmartX IP Controller

## RP-C

Room Purpose Controller RP-C gives occupants the ability to control the room environment and personalize comfort while serving as a data hub for IoT devices. It leverages the latest wireless technologies for easy integration of IoT devices and fast installation. It is built on a flexible architecture that enables deployment with EcoStruxure Building Operation or any BMS.



## SmartX IP Controllers – RP-C

The RP-C controllers are designed for fan coil, chilled beam and ceiling based systems. When used in combination with a variety of expansion modules, the controller can be used for state-of-the-art lighting and blind control. These scalable and secure BACnet IP-based room controllers enable connected room solutions. With an open IoT hub, it meets customers' future needs, including light and blind control and easy re-zoning. Also save time by managing commissioning conveniently with the SmartX eCommission Mobile App.



SmartX IP Controller – RP-C



SmartX IP Controller – RP-C with external terminal cover

	RP-C-12A-F-24V	RP-C-12B-F-24V	RP-C-12C-F-24V	RP-C-16A-F-230V
<b>Part Number</b>	SXWRCF12A10001	SXWRCF12B10001	SXWRCF12C10001	SXWRCF16A10002
<b>Communications</b>				
<b>Communication Interface</b>	BACnet/IP, BTL B-AAC	BACnet/IP, BTL B-AAC	BACnet/IP, BTL B-AAC	BACnet/IP, BTL B-AAC
<b>Software</b>				
<b>Programmability</b>	Function Block/Script Programmable	Function Block/Script Programmable	Function Block/Script Programmable	Function Block/Script Programmable
<b>Physical</b>				
<b>Dimensions</b>	180 W x 110 H x 64 D mm (7.1 W x 4.3 H x 2.5 D in.)	180 W x 110 H x 64 D mm (7.1 W x 4.3 H x 2.5 D in.)	180 W x 110 H x 64 D mm (7.1 W x 4.3 H x 2.5 D in.)	180 W x 110 H x 64 D mm (7.1 W x 4.3 H x 2.5 D in.)
<b>Weight (including terminal blocks)</b>	0.370 kg (0.816 lb)	0.390 kg (0.86 lb)	0.390 kg (0.86 lb)	0.720 kg (1.587 lb)
<b>Power</b>				
<b>Power</b>	24 VAC/DC	24 VAC/DC	24 VAC/DC	230 VAC
<b>Consumption</b>	23 VA	23 VA	23 VA	65 VA
<b>Environmental</b>				
<b>Operating Range</b>	0°C to 50°C (32°F to 122°F) -40°C to 60°C (-40°F to 140°F) for rooftop	0°C to 50°C (32°F to 122°F) -40°C to 60°C (-40°F to 140°F) for rooftop	0°C to 50°C (32°F to 122°F) -40°C to 60°C (-40°F to 140°F) for rooftop	0°C to 50°C (32°F to 122°F)
<b>Internals</b>				
<b>CPU</b>	ARM Cortex-A7 single-core	ARM Cortex-A7 single-core	ARM Cortex-A7 single-core	ARM Cortex-A7 single-core
<b>On-board Bluetooth Low Energy</b>	Yes	Yes	Yes	Yes
<b>Battery</b>	No	No	No	No
<b>Real time clock</b>	Yes -7 days	Yes -7 days	Yes -7 days	Yes -7 days
<b>External Features</b>				
<b>Enclosure rating</b>	UL94 5VB, Plenum rated, IP 20 (<12.5 mm protection)	UL94 5VB, Plenum rated, IP 20 (<12.5 mm protection)	UL94 5VB, Plenum rated, IP 20 (<12.5 mm protection)	UL94 5VB, IP 20 (<12.5 mm protection)
<b>Manual Override of Outputs</b>	No	No	No	No
<b>Optional cover</b>	Yes	Yes	Yes	Yes
<b>Intelligent Sensors</b>	SmartX Living Space Sensors	SmartX Living Space Sensors	SmartX Living Space Sensors	SmartX Living Space Sensors
<b>Sensor Bus</b>	Yes	Yes	Yes	Yes
<b>Room Bus</b>	Yes	Yes	Yes	Yes
<b>Terminals</b>				
<b>I/O terminals</b>	Screw terminals	Screw terminals	Screw terminals	Screw terminals
<b>External Enclosure/Mounting</b>				
<b>Mounting</b>	DIN-rail or wall mount	DIN-rail or wall mount	DIN-rail or wall mount	DIN-rail or wall mount
<b>Certifications</b>				
<b>BTL</b>	Yes	Yes	Yes	Yes
<b>FCC</b>	47 CFR §15, Subpart A and C, Class B (Emission)	47 CFR §15, Subpart A and C, Class B (Emission)	47 CFR §15, Subpart A and C, Class B (Emission)	No
<b>REACH</b>	Yes	Yes	Yes	Yes
<b>Innovation, Science and Economic Development Canada (ISED)</b>	Class B (Emission)	Class B (Emission)	Class B (Emission)	No
<b>UL</b>	UL-916 (Energy Management Equipment)	UL-916 (Open Energy Management Equipment)	UL-916 (Open Energy Management Equipment)	No
<b>C-UL US</b>	Yes	Yes	Yes	No
<b>CE - EU</b>	Yes	Yes	Yes	Yes
<b>WEEE - Directive of the European Union</b>	Yes	Yes	Yes	Yes
<b>RoHS Directive</b>	Yes	Yes	Yes	Yes
<b>RCM</b>	Yes	Yes	Yes	Yes
<b>eu.bac</b>	No	No	No	Yes

All eu.bac certified products are found on the eu.bac web site [www.eubaccert.eu](http://www.eubaccert.eu)

## SmartX IP Controllers RP-C – Inputs and Outputs

	RP-C-12A-F-24V	RP-C-12B-F-24V	RP-C-12C-F-24V	RP-C-16A-F-230V
<b>Part Number</b>	<b>SXWRCF12A10001</b>	<b>SXWRCF12B10001</b>	<b>SXWRCF12C10001</b>	<b>SXWRCF16A10002</b>
<b>Universal Inputs/Outputs</b>	8-Ub	8-Ub	4-Ub	8-Ub
Digital Input	Ub	Ub	Ub	Ub
Counter Input	Ub	Ub	Ub	Ub
Supervised Input	Ub	Ub	Ub	Ub
Voltage Input (0-10 VDC)	Ub	Ub	Ub	Ub
Resistive Input	Ub	Ub	Ub	Ub
Current Input (0-20 mA)	Ub	Ub	Ub	Ub
Temperature Input	Ub	Ub	Ub	Ub
2-wire RTD Temperature Input	Ub	Ub	Ub	Ub
Thermistor Input - 10k	Ub	Ub	Ub	Ub
Thermistor Input - 1.8k	Ub	Ub	Ub	Ub
Thermistor Input - 1k	Ub	Ub	Ub	Ub
Thermistor Input - 20k	Ub	Ub	Ub	Ub
Thermistor Input - 2.2k	Ub	Ub	Ub	Ub
RTD Temp Input - Ni1000	Ub	Ub	Ub	Ub
RTD Temp Input - Pt1000	Ub	Ub	Ub	Ub
RTP Temp Input - LG-Ni1000	Ub	Ub	Ub	Ub
Voltage Output (0-10 VDC)	Ub	Ub	Ub	Ub
<b>Digital Outputs</b>				
Solid-state Relay Output (MOSFET)	4		4	4
Relay Output (Form A)		3	3	3
High Power Relay Output (Form C)		1	1	1

Key: Ub – Universal Type B

## SmartX IP Controllers RP-C – Accessories

The following accessories are available for the SmartX IP Controller – RP-C HVAC.

Part number	Product Name	Description
SXWRPCCOV10001	RP-C external terminal covers	Optional external covers for RP-C HVAC



SmartX IP Controller – RP-C with optional covers

## Wireless Connectivity

USB-based wireless adapter that enables Zigbee™ wireless connectivity for SmartX Servers and SmartX IP Controllers.

Part Number	Product Name	Description
SXWZBAUSB10001	ZB-A-USB	SmartX Zigbee Adapter for the AS-P, AS-B and RP Series controllers
SXWUSBCRA10001	USB-CRA	USB adapter plastic mounting cradle and wall plate
SXWUSBCBL10001	USB-CBL-1	USB Extension Cable of Length 1 m (3 ft)
SXWUSBCBL10002	USB-CBL-3	Plenum rated USB Extension Cable of Length 3 m (10 ft)



Zigbee Adapter

## SmartX Sensors

Communicating sensors for SmartX IP Controllers with the EcoStruxure Building Operation user interface. These sensors use an RJ-45 sensor bus that provides communication and power from the controller. For quick installation, up to four SmartX sensors may be connected to each IP controller through the RJ-45 sensor bus using Cat 5/6 cable (22 to 26 AWG). A Bluetooth® adapter is available for commissioning and service. It is temporarily connected to installed communicating sensors and allows for quick setup and configuration. The Bluetooth adapter communicates to upload devices (smart phone, laptop, table, etc.) with the Living Space Sensor EcoStruxure Building Operation app installed via USB or Bluetooth communications.

SmartX Living Space Sensors are modular and ordered in two parts: the sensor base and the cover. Four SmartX communicating sensor base models are available that can be paired with any SmartX cover model. CO2, Relative Humidity, and Temperature sensor base options provide an efficient, cost effective solution for living space air quality and comfort needs. Covers are available with a 61 mm (2.4") backlit color touchscreen and a three button non-display version for override and setpoint. Blank covers with no user interface are also available. All modular cover variants are available with and without passive infrared occupancy sensors.

Two complete sensor/cover combination model types are available:

- Temperature-only with LCD display. Communicating with three button cover. This is a low cost temperature sensor with a basic display.
- A two-wire, resistive-only, non-communicating temperature sensor is offered for a low cost conformance part. This uses an I/O port on the controller.

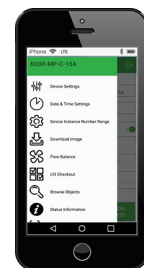
Combination models come with a sensor base and cover, and are available in White Optimum, Black Optimum or medium White Matte finishes. Combination units have the same form factor as the modular sensor bases and covers of the same housing type. (Combination units will not work with other covers.) Sensors measure the levels of CO2 (if equipped), RH (if equipped), and temperature of air in a living space application. The CO2 sensor operates within accuracy specifications for an interval of two years and can be field calibrated.

Find more information and part numbers on The Exchange Extranet: <https://ecobuilding.schneider-electric.com/field-devices/sensors>



## eCommission SmartX Controller Mobile App

Reduce commissioning time, gain flexibility in project execution, and eliminate dependencies on network infrastructure. This mobile application enables device configuration (including network settings), I/O checkout operations and configuration across all RP Series controllers (as well as the MP Series). It is ideal for all skill-sets including those who may have limited familiarity with the Building Operation system. The eCommission tool with Connected Room Solution support is available to download from iOS, Google Play, and Windows 10.



## EcoStruxure Engage Mobile App

Provides flexibility and convenience for today's building occupants, enabling them to control room temperature, fan speed, lights, and blinds/shades directly from a smartphone. Users can manage these settings when the mobile app is connected to the RP-C Controller. Free and downloadable from Google Play and Apple App Store.



## SmartX IP Controllers - RP-C Expansion modules for Light & Blinds

### Wired Expansion Modules

The RP-C provides a room bus, which allows RP Series expansion modules and multi-sensors to be connected to the controller for control of lights and window blinds, motion detection, and luminosity measurements.

Product	RP-C-EXT-DALI-M-PD	RP-C-EXT-0-10V-4-PD	RP-C-EXT-BL-4-HV-PD	RP-C-EXT-BL-2-LV-PD
Part Number	SXWREDAMPD10001	SXWRE0104PD10001	SXWREB4HVPD10001	SXWREB2LVPD10001
<b>Communication</b>				
Communication Interface	Room Bus	Room Bus	Room Bus	Room Bus
<b>Physical</b>				
Dimensions	198 W x 110 H x 64 D mm (7.8 W x 4.3 H x 2.5 D in.)	198 W x 110 H x 64 D mm (7.8 W x 4.3 H x 2.5 D in.)	198 W x 110 H x 64 D mm (7.8 W x 4.3 H x 2.5 D in.)	198 W x 110 H x 64 D mm (7.8 W x 4.3 H x 2.5 D in.)
Weight	0.433 kg (0.955 lb)	0.418 kg (0.922 lb)	0.437kg (0.963 lb)	0.399 kg (0.880 lb)
<b>Power</b>				
Nominal voltage	230VAC	230VAC	230VAC	230VAC
Room bus power consumption	0.3W	0.3W	0.3W	0.3W
<b>Environmental</b>				
Operating Range	0 to 50 °C (32 to 122 °F)	0 to 50 °C (32 to 122 °F)	0 to 50 °C (32 to 122 °F)	0 to 40 °C (32 to 104 °F)
Humidity	20 to 90 % RH	20 to 90 % RH	20 to 90 % RH	20 to 90 % RH
<b>Material</b>				
Plastic flame rating	UL94 V-0	UL94 V-0	UL94 V-0	UL94 V-0
IP rating	IP 20	IP 20	IP 20	IP 20
Connectors	Yes	Yes	Yes	Yes
<b>Inputs</b>				
Digital Inputs	4	4	4	4
<b>Outputs</b>				
Type of Output	DALI	0-10V	230V	24V
Number of outputs	4	4	4	2
Power Distribution	Yes	Yes	Yes	Yes
<b>Certifications</b>				
FCC	Yes	Yes	Yes	Yes
UL	No	No	No	No
C UL	No	No	No	No
CE	Yes	Yes	Yes	Yes
WEEE-Directive of EU	Yes	Yes	Yes	Yes
RoHS	Yes	Yes	Yes	Yes
RCM	Yes	Yes	Yes	Yes



RP-C Controller High Voltage SMI Blind Module



RP-C Controller Light Module - 0-10V

## SmartX IP Controllers - RP-C Light & Blinds

Product	RP-C-EXT-MS-BLE	RP-C-EXT-BL-SMI-4-HV-PD	RP-C-EXT-BL-SMI-2-LV-PD	RP-C-EXT-REL-4
Part Number	SXWREMSBLE10001	SXWRESMI4HVPD10001	SXWRESMI2LVPD10001	SXWREREL410001
<b>Communication</b>				
Communication Interface	Room Bus	Room Bus	Room Bus	Room Bus
<b>Physical</b>				
Dimensions	97.5 mm (3.84 in.) overall diameter	198 W x 110 H x 64 D mm (7.8 W x 4.3 H x 2.5 D in.)	198 W x 110 H x 64 D mm (7.8 W x 4.3 H x 2.5 D in.)	198 W x 110 H x 64 D mm (7.8 W x 4.3 H x 2.5 D in.)
Weight	0.083 kg (0.183 lb)	0.405 kg (0.893 lb)	0.439 kg (0.968 lb)	0.378 kg (0.833 lb)
<b>Power</b>				
Nominal voltage	24V DC	230VAC	230VAC	100 to 277 VAC
Room bus power consumption	0.3W	0.3W	0.3W	0.3W
<b>Environmental</b>				
Operating Range	0 to 50 °C (32 to 122 °F)	0 to 50 °C (32 to 122 °F)	0 to 40 °C (32 to 104 °F)	0 to 50 °C (32 to 122 °F)
Humidity	20 to 90 % RH	20 to 90 % RH	20 to 90 % RH	20 to 90 % RH
<b>Material</b>				
Plastic flame rating	UL94 V-0	UL94 V-0	UL94 V-0	UL94 V-0
IP rating	IP 20	IP 20	IP 20	IP 20
Connectors	No	Yes	Yes	Yes
<b>Inputs</b>				
Digital Inputs	no	4	4	4
<b>Outputs</b>				
Type of Output	no	230V SMI	24V SMI	Relays
Number of outputs	0	4	2	4
Power Distribution	no	Yes	Yes	Yes
<b>Certifications</b>				
FCC	Yes	Yes	Yes	Yes
UL	Yes	No	No	Yes
C UL	Yes	No	No	Yes
CE	Yes	Yes	Yes	Yes
WEEE-Directive of EU	Yes	Yes	Yes	Yes
RoHS	Yes	Yes	Yes	Yes
RCM	Yes	Yes	Yes	Yes



RP-C Controller Relay Module

## SmartX IP Controllers - RP-C Light & Blinds

Product	RP-C-EXT-0-10V-4	RP-C-EXT-DALI-1	RP-C-EXT-KNX	RP-C-EXT-0-10V-UNIDIM-1	RP-C-RC-BLE
Part Number	SXWRE010410001	SXWREDALI10001	SXWREKNX10001	SXWRE010DIM10001	SXWRERCBLE10001
<b>Communication</b>					
Communication Interface	Room Bus	Room Bus	Modbus	0-10V extension module	Bluetooth
<b>Physical</b>					
Dimensions	198 W x 110 H x 64 D mm (7.8 W x 4.3 H x 2.5 D in.)	198 W x 110 H x 64 D mm (7.8 W x 4.3 H x 2.5 D in.)	18 W x 90 H x 60 D mm (0.7 W x 3.5 H x 2.4 D in.)	17.5W x35 mm DIN rail mount (0.7Wx 1.37 inch)	57 W x 143 H x 18 D mm (2.24 W x 5.63 H x 0.71 D in.)
weight	0.438 kg (0.965 lb)	0.352 kg (0.776 lb)	50 g (1.76 oz)		0.105 kg (0.231 lb)
<b>Power</b>					
Nominal voltage	100 to 277 VAC	100 to 277 VAC	24VDC	230VAC	3.0 VDC
Power Consumption	0.3W	0.3W	<0.24W	0.5W	n/a
<b>Environmental</b>					
Operating Range	0 to 50 °C (32 to 122 °F)	0 to 50 °C (32 to 122 °F)	-5 °C to +45 °C (23 °F to +113 °F)	-10 to 50 °C (14 to 122 °F)	0 to 40 °C (32 to 104 °F)
Humidity	20 to 90 % RH	20 to 90 % RH	5 to 93 % RH	n/a	20 to 90 % RH
<b>Material</b>					
Plastic flame rating	UL94 V-0	UL94 V-0	UL94 V-0	n/a	n/a
IP rating	IP 20	IP 20	IP 20	IP 20	IP 30
Connectors	Yes	Yes	No	No	No
<b>Inputs</b>					
Digital Inputs	4	4	No	No	No
<b>Outputs</b>					
Type of Output	0-10V	DALI	KNX	230V	n/a
Number of outputs	4	4	1	1	0
Power Distribution	no	no	no	Yes	No
<b>Certifications</b>					
FCC	Yes	Yes	no	no	Yes
UL	Yes	Yes	no	no	no
C UL	Yes	Yes	no	no	no
CE	Yes	Yes	Yes	Yes	Yes
WEEE- Directive of EU	Yes	Yes	Yes	Yes	Yes
RoHS	Yes	Yes	Yes	Yes	Yes
RCM	Yes	Yes	No	No	Yes

## Connector accessories for RP-C Controller Expansion Modules

The following external connectors needed for the expansion modules are available for order in quantities of 50 or 100.

Proposed acc. part number	Wieland Reference	Product Name	Connectors per packet
SXWRPCCONWDI	91.921.2353.0	Digital input Connector	100
SXWRPCCONWWLIGHT2	91.922.3353.0	Light output connector for 0-10V modules without power distribution	100
SXWRPCCONWWLIGHT	91.922.3453.0	Light output connector for DALI modules without power distribution	100
SXWRPCCONWWPOW	91.931.4053.1	Power supply input connector	100
SXWRPCCONWWREL	91.932.4053.1	Relay output connector	100
SXWRPCCONWBLHV	91.942.4053.1	High Voltage blind output connector	50
SXWRPCCONWBLSMI	91.952.4053.1	High Voltage SMI blind output connector	50
SXWRPCCONWBLLV	91.952.4353.0	Low Voltage blind output connector	50
SXWRPCCONWWLIGHTPD	91.952.4453.0	Light output connector for light modules with power distribution	50



# SmartX IP Controller

## MP Series

Next-generation IP field controllers and accessories extend the reach of EcoStruxure Building's open innovation platform with seamless scalability and flexible topologies that enable data transmission from connected equipment, and enhance the ability to diagnose and resolve issues faster.

## SmartX IP Controllers – MP Series

The MP Series are designed for VAVs and fan coil, heat pump, roof top and air handling units. They feature scalable and flexible topologies that enable data transmission from connected equipment, which enhance the ability to diagnose and resolve issues faster. Also manage commissioning activities conveniently from mobile devices with the eCommission SmartX IP Controller Mobile App.



SmartX IP Controller – MP-C

Note: Screw terminals are prepopulated. Spare is available. See accessories section on page S6.

	MP-C-15A	MP-C-18A	MP-C-18B	MP-C-24A	MP-C-36A
<b>Part Number</b>	SXWMPC15A10001	SXWMPC18A10001	SXWMPC18B10001	SXWMPC24A10001	SXWMPC36A10001
<b>Other Models</b>	MP-C-15A-SMK	MP-C-18A-SMK	MP-C-18B-SMK	MP-C-24A-SMK	MP-C-36A-SMK
<b>Part Number (UL-864 Smoke Control)</b>	SXWMPC15A1S001	SXWMPC18A1S001	SXWMPC18B1S001	SXWMPC24A1S001	SXWMPC36A1S001
<b>Communications</b>					
<b>Communication Interface</b>	BACnet/IP, BTL B-AAC	BACnet/IP, BTL B-AAC	BACnet/IP, BTL B-AAC	BACnet/IP, BTL B-AAC	BACnet/IP, BTL B-AAC
<b>Software</b>					
<b>Programability</b>	Function Block/Script Programmable	Function Block/Script Programmable	Function Block/Script Programmable	Function Block/Script Programmable	Function Block/Script Programmable
<b>Physical</b>					
<b>Dimensions</b>	153 W x 110 H x 64 D mm (6.0 W x 4.3 H x 2.5 D in.)	153 W x 110 H x 64 D mm (6.0 W x 4.3 H x 2.5 D in.)	153 W x 110 H x 64 D mm (6.0 W x 4.3 H x 2.5 D in.)	234 W x 110 H x 64 D mm (9.2 W x 4.3 H x 2.5 D in.)	234 W x 110 H x 64 D mm (9.2 W x 4.3 H x 2.5 D in.)
<b>Weight (including terminal blocks)</b>	0.358 kg (0.789 lb)	0.371 kg (0.818 lb)	0.361 kg (0.796 lb)	0.495 kg (1.091 lb)	0.547 kg (1.206 lb)
<b>Power</b>					
<b>Power</b>	24 VAC/DC	24 VAC/DC	24 VAC/DC	24 VAC/DC	24 VAC/DC
<b>Consumption</b>	12 W	12 W	12 W	15 W	18 W
<b>Environmental</b>					
<b>Operating Range<sup>6</sup></b>	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing) -40°C to 60°C (-40°F to 140°F) for rooftop	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing) -40°C to 60°C (-40°F to 140°F) for rooftop	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing) -40°C to 60°C (-40°F to 140°F) for rooftop	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing) -40°C to 60°C (-40°F to 140°F) for rooftop	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing) -40°C to 60°C (-40°F to 140°F) for rooftop
<b>CPU Internals</b>					
<b>CPU</b>	ARM Cortex-A7 dual-core	ARM Cortex-A7 dual-core	ARM Cortex-A7 dual-core	ARM Cortex-A7 dual-core	ARM Cortex-A7 dual-core
<b>Memory</b>	128 MB (DDR3 SDRAM)	128 MB (DDR3 SDRAM)	128 MB (DDR3 SDRAM)	128 MB (DDR3 SDRAM)	128 MB (DDR3 SDRAM)
<b>Battery</b>	No	No	No	No	No
<b>Real time clock</b>	Yes -7 days minimum	Yes -7 days minimum	Yes -7 days minimum	Yes -7 days minimum	Yes -7 days minimum
<b>External Features</b>					
<b>Enclosure rating</b>	Eco Friendly ABS/PC, UL94 5V, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5V, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5V, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5V, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5V, IP 20 (<12.5 mm protection)
<b>HOA Switches (DO/AO)</b>	Add-On (see accessories)	Add-On (see accessories)	Add-On (see accessories)	Add-On (see accessories)	Add-On (see accessories)
<b>Manual Override of Outputs</b>	Yes	Yes	Yes	Yes	Yes
<b>Digital Status LEDs</b>	Yes	Yes	Yes	Yes	Yes
<b>Intelligent Sensors</b>	SmartX Livings Space sensors	SmartX Livings Space sensors	SmartX Livings Space sensors	SmartX Livings Space sensors	SmartX Livings Space sensors
<b>Sensor Bus</b>	Yes	Yes	Yes	Yes	Yes
<b>Terminals</b>					
<b>I/O terminals</b>	Two-piece terminal	Two-piece terminal	Two-piece terminal	Two-piece terminal	Two-piece terminal
<b>External Enclosure/Mounting</b>					
<b>Mounting</b>	DIN-rail or wall mount	DIN-rail or wall mount	DIN-rail or wall mount	DIN-rail or wall mount	DIN-rail or wall mount
<b>Certifications</b>					
<b>BTL</b>	Yes	Yes	Yes	Yes	Yes
<b>FCC</b>	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)
<b>REACH</b>	Yes	Yes	Yes	Yes	Yes
<b>Innovation, Science and Economic Development Canada (ISED)</b>	Class B (Emission)	Class B (Emission)	Class B (Emission)	Class B (Emission)	Class B (Emission)
<b>UL</b>	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)
<b>C-UL US</b>	Yes	Yes	Yes	Yes	Yes
<b>CE - EU</b>	Yes	Yes	Yes	Yes	Yes
<b>WEEE - Directive of the European Union</b>	Yes	Yes	Yes	Yes	Yes
<b>RoHS Directive</b>	Yes	Yes	Yes	Yes	Yes
<b>RCM</b>	Yes	Yes	Yes	Yes	Yes
<b>US Patent</b>					

SmartX IP Controllers MP-C and MP-V conform to the BACnet® Advanced Application Controller (B-AAC) profile at protocol revision 12 by the BACnet Testing Laboratories (BTL®). EcoStruxure solution installations or BMS transitions requiring UL-864 certifications must use the SmartX Controller MP-C-xxx-SMK (listed above).



## SmartX IP Controller MP-V



SmartX Controller – MP-V

Note: Screw terminals are prepopulated. Spare is available. See accessories section on page S6.

	MP-V-7A	MP-V-9A
<b>Part Number</b>	<b>SXWMPV7AX10001</b>	<b>SXWMPV9AX10001</b>
<b>Other Models</b>	MP-V-7A-SMK	MP-V-9A-SMK
<b>Part Number (UL-864 Smoke Control)</b>	SXWMPV7AX1S001	SXWMPV9AX1S001
<b>Communications</b>		
<b>Communication Interface</b>	BACnet/IP, BTL B-AAC	BACnet/IP, BTL B-AAC
<b>Software</b>		
<b>Programmability</b>	Function Block/Script Programmable	Function Block/Script Programmable
<b>Physical</b>		
<b>Dimensions</b>	161 W x 198 H x 63 D mm (6.3 W x 7.8 H x 2.5 D in.)	161 W x 198 H x 63 D mm (6.3 W x 7.8 H x 2.5 D in.)
<b>Weight (including baseplate)</b>	1.13 kg (2.5 lb)	1.13 kg (2.5 lb)
<b>Power</b>		
<b>Power</b>	24 VAC	24 VAC
<b>Consumption</b>	21 VA	22 VA
<b>Environmental</b>		
<b>Operating Range</b>	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing)	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing)
<b>CPU Internals</b>		
<b>CPU</b>	ARM Cortex-A7 dual-core	ARM Cortex-A7 dual-core
<b>Memory</b>	128 MB (DDR3 SDRAM)	128 MB (DDR3 SDRAM)
<b>Battery</b>	No	No
<b>Real time clock</b>	Yes -7 days minimum	Yes -7 days minimum
<b>External Features</b>		
<b>Enclosure rating</b>	Eco Friendly ABS/PC, UL94 V-0, IP 20 (<12.5 mm protection), Plenum Rated	Eco Friendly ABS/PC, UL94 V-0, IP 20 (<12.5 mm protection), Plenum Rated
<b>HOA Switches (DO/AO)</b>	N/A	N/A
<b>Manual Override of Outputs</b>	Yes	Yes
<b>Digital Status LEDs</b>	Yes	Yes
<b>Sensor Bus</b>	Yes	Yes
<b>Terminals</b>		
<b>I/O Expansion</b>	No	No
<b>External Enclosure/ Mounting</b>		
<b>Mounting</b>	wall mount	wall mount
<b>Certifications</b>		
<b>BTL</b>	Yes	Yes
<b>FCC</b>	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)
<b>REACH</b>	Yes	Yes
<b>Innovation, Science and Economic Development Canada (ISED)</b>	Class B (Emission)	Class B (Emission)
<b>UL</b>	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)
<b>UL-864</b>	Yes	Yes
<b>C-UL US</b>	Yes	Yes
<b>CE - EU</b>	Yes	Yes
<b>WEEE - Directive of the European Union</b>	Yes	Yes
<b>RoHS Directive</b>	Yes	Yes
<b>RCM</b>	Yes	Yes
<b>US Patent</b>		

SmartX IP Controllers MP-C and MP-V conform to the BACnet® Advanced Application Controller (B-AAC) profile at protocol revision 12 by the BACnet Testing Laboratories (BTL®). EcoStruxure solution installations or BMS transitions requiring UL-864 certifications must use the SmartX Controller MP-V-xx-SMK (listed above).

## SmartX IP Controllers MP-C – Inputs and Outputs

	MP-C-15A	MP-C-18A	MP-C-18B	MP-C-24A	MP-C-36A
<b>Part Number</b>	SXWMP15A10001	SXWMP18A10001	SXWMP18B10001	SXWMP24A10001	SXWMP36A10001
<b>Other Models</b>	MP-C-15A-SMK	MP-C-18A-SMK	MP-C-18B-SMK	MP-C-24A-SMK	MP-C-36A-SMK
<b>Part Number (UL-864 Smoke Control)</b>	SXWMP15A1S001	SXWMP18A1S001	SXWMP18B1S001	SXWMP24A1S001	SXWMP36A1S001
<b>Universal Inputs/Outputs</b>	8-Ub	10-Ub	10-Ub	16-Ub, 4Uc	20-Ub, 8Uc
Digital Input	Ub	Ub	Ub	Ub/Uc	Ub/Uc
Counter Input	Ub	Ub	Ub	Ub/Uc	Ub/Uc
Supervised Input	Ub	Ub	Ub	Ub/Uc	Ub/Uc
Voltage Input - (0-10V)	Ub	Ub	Ub	Ub/Uc	Ub/Uc
Resistive Input	Ub	Ub	Ub	Ub/Uc	Ub/Uc
Thermistor Input - 10k	Ub	Ub	Ub	Ub/Uc	Ub/Uc
Thermistor Input - 1.8k	Ub	Ub	Ub	Ub/Uc	Ub/Uc
Thermistor Input - 1k	Ub	Ub	Ub	Ub/Uc	Ub/Uc
Thermistor Input - 20k	Ub	Ub	Ub	Ub/Uc	Ub/Uc
Thermistor Input - 2.2k	Ub	Ub	Ub	Ub/Uc	Ub/Uc
RTD Temp Input - Pt100					
RTD Temp Input - Pt1000	Ub	Ub	Ub	Ub/Uc	Ub/Uc
RTD Temp Input - Ni1000	Ub	Ub	Ub	Ub/Uc	Ub/Uc
RTD Temp Input - LG-Ni1000	Ub	Ub	Ub	Ub/Uc	Ub/Uc
Voltage Output (0-10V)	Ub	Ub	Ub	Ub/Uc	Ub/Uc
Current Output (0-20mA)				Uc	Uc
<b>Digital Outputs</b>	7	8	8	4	8
Form A Relay, SPST		3		4	8
Form C Relay, SPDT					
Triac	6	4	8		
Form A High Power Relay, SPST	1	1			

Key: Ub – Universal Type B, Uc – Universal Type C

## SmartX IP Controllers MP-V – Inputs and Outputs

	MP-V-7A	MP-V-9A
<b>Part Number</b>	SXWMPV7AX10001	SXWMPV9AX10001
<b>Other Models</b>	MP-V-7A-SMK	MP-V-9A-SMK
<b>Part Number (UL-864 Smoke Control)</b>	SXWMPV7AX1S001	SXWMPV9AX1S001
<b>Universal Inputs</b>	3	4
Digital Input	Yes	Yes
Counter Input	Yes	Yes
Supervised Input	Yes	Yes
Voltage Input - (0-10V)	Yes	Yes
Resistive Input	Yes	Yes
Thermistor Input - 10k	Yes	Yes
Thermistor Input - 1.8k	Yes	Yes
Thermistor Input - 1k	Yes	Yes
Thermistor Input - 20k	Yes	Yes
Thermistor Input - 2.2k	Yes	Yes
RTD Temp Input - Pt100		
RTD Temp Input - Pt1000	Yes	Yes
RTD Temp Input - Ni1000	Yes	Yes
RTD Temp Input - LG-Ni1000	Yes	Yes
Voltage Output (0-10V)	Yes	Yes
Current Output (0-20mA)		
Damper Position Feedback	Yes	Yes
Velocity Pressure Sensor	Yes	Yes
<b>Digital Output</b>	3	3
Form C Relay, SPDT		
Triac	Yes	Yes
Form A High Power Relay, SPST		
<b>Analog Output</b>	1	2
Voltage outputs (0-10 VDC)	Yes	Yes
Current Output (0-20 mA)	Yes	Yes
Damper Outputs		
Form K, Triac Voltage	Yes	Yes

## SmartX IP Controllers – IP-IO Series

As a network level IO resource the IP-IO Series is capable of sharing its local IO resources across one or multiple SmartX IP Controllers or EcoStruxure Building Edge Servers over BACnet network.



SmartX IP Controller – IP-IO

Note: Screw terminals are prepopulated. Spare is available. See accessories section on page S6.

	IP-IO-DI10	IP-IO-UIO10	IP-IO-UIO5DOFA4
<b>Part Number</b>	<b>SXWIIPOAA10001</b>	<b>SXWIIPOBA10001</b>	<b>SXWIIPOCA10001</b>
<b>Other Models</b>	IP-IO-DI10-SMK	IP-IO-UIO10-SMK	IP-IO-UIO5DOFA4-SMK
<b>Part Number (UL-864 Smoke Control)</b>	SXWIIPOAA1S001	SXWIIPOBA1S001	SXWIIPOCA1S001
<b>Communications</b>			
<b>Communication Interface</b>	BACnet/IP, BTL B-AAC	BACnet/IP, BTL B-AAC	BACnet/IP, BTL B-AAC
<b>Physical</b>			
<b>Dimensions</b>	153 W x 110 H x 64 D mm (6.0 W x 4.3 H x 2.5 D in.)	153 W x 110 H x 64 D mm (6.0 W x 4.3 H x 2.5 D in.)	153 W x 110 H x 64 D mm (6.0 W x 4.3 H x 2.5 D in.)
<b>Weight (including terminal blocks)</b>	0.358 kg (0.789 lb)	0.358 kg (0.789 lb)	0.358 kg (0.789 lb)
<b>Power</b>			
<b>Power</b>	24 VAC/DC	24 VAC/DC	24 VAC/DC
<b>Consumption</b>	9 W	9 W	9 W
<b>Environmental</b>			
<b>Operating Range6</b>	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing) -40°C to 60°C (-40°F to 140°F) for rooftop	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing) -40°C to 60°C (-40°F to 140°F) for rooftop	0°C to 50°C (32°F to 122°F) 0-95% RH (non-condensing) -40°C to 60°C (-40°F to 140°F) for rooftop
<b>CPU Internals</b>			
<b>CPU</b>	ARM Cortex-A7 dual-core	ARM Cortex-A7 dual-core	ARM Cortex-A7 dual-core
<b>Memory</b>	128 MB (DDR3 SDRAM)	128 MB (DDR3 SDRAM)	128 MB (DDR3 SDRAM)
<b>Battery</b>	No	No	No
<b>Real time clock</b>	Yes -7 days minimum	Yes -7 days minimum	Yes -7 days minimum
<b>External Features</b>			
<b>Enclosure rating</b>	Eco Friendly ABS/PC, UL94 5V, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5V, IP 20 (<12.5 mm protection)	Eco Friendly ABS/PC, UL94 5V, IP 20 (<12.5 mm protection)
<b>Add-on HOA / Display</b>	Add-On (see accessories)	Add-On (see accessories)	Add-On (see accessories)
<b>Manual Override of Outputs</b>	N/A	Yes	Yes
<b>Digital Status LEDs</b>	Yes	Yes	Yes
<b>Intelligent Sensors</b>	No	No	No
<b>Sensor Bus</b>	No	No	No
<b>Terminals</b>			
<b>I/O terminals</b>	Two-piece terminal	Two-piece terminal	Two-piece terminal
<b>External Enclosure/Mounting</b>			
<b>Mounting</b>	DIN-rail or wall mount	DIN-rail or wall mount	DIN-rail or wall mount
<b>Certifications</b>			
<b>BTL</b>	Yes	Yes	Yes
<b>FCC</b>	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)
<b>REACH</b>	Yes	Yes	Yes
<b>Innovation, Science and Economic Development Canada (ISED)</b>	Class B (Emission)	Class B (Emission)	Class B (Emission)
<b>UL</b>	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)
<b>C-UL US</b>	Yes	Yes	Yes
<b>CE - EU</b>	Yes	Yes	Yes
<b>WEEE - Directive of the European Union</b>	Yes	Yes	Yes
<b>RoHS Directive</b>	Yes	Yes	Yes
<b>RCM</b>	Yes	Yes	Yes
<b>US Patent</b>			

SmartX IP Controllers - IP-IO Series is pending certification of the BACnet Application Specific Controller (B-ASC) profile at protocol revision 14 by the BACnet Testing Laboratories (BTL®).

## SmartX IP Controllers IP-IO – Inputs and Outputs

	IP-IO-DI10	IP-IO-UIO10	IP-IO-UIO5DOFA4
<b>Part Number</b>	<b>SXWIPIOAA10001</b>	<b>SXWIPIOBA10001</b>	<b>SXWIPIOCA10001</b>
<b>Other Models</b>	IP-IO-DI10-SMK	IP-IO-UIO10-SMK	IP-IO-UIO5DOFA4-SMK
<b>Part Number (UL-864 Smoke Control)</b>	SXWIPIOAA1S001	SXWIPIOBA1S001	SXWIPIOCA1S001
<b>Digital Inputs</b>	10		
<b>Universal Inputs/Outputs</b>		10-Ub	5-Ub
Digital Input		Ub	Ub
Counter Input		Ub	Ub
Supervised Input		Ub	Ub
Voltage Input - 0-10V		Ub	Ub
Resistive Input		Ub	Ub
Thermistor Input - 10k		Ub	Ub
Thermistor Input - 1.8k		Ub	Ub
Thermistor Input - 1k		Ub	Ub
Thermistor Input - 20k		Ub	Ub
Thermistor Input - 2.2k		Ub	Ub
RTD Temp Input - Pt100			
RTD Temp Input - Pt1000		Ub	Ub
RTD Temp Input - Ni1000			
RTD Temp Input - LG Ni1000		Ub	Ub
Voltage Output 0-10V		Ub	Ub
Current Output 0-20mA			
<b>Digital Outputs</b>			4
Form A Relay, SPST			3
Form C Relay, SPDT			
Triac			
Form A High Power Relay, SPST			1

Key: Ub – Universal Type B, Uc – Universal Type C

## SmartX IP Controllers – Accessories

The following accessories are available for the SmartX IP Controllers.

Part Number	Product Name	Description
SXWMPDSP10001	MP-C DISPLAY	MP-C override display module
SXWDINEND10001	DIN-RAIL-CLIP	DIN-rail end clip, package of 25 pieces
SXWMPVCON10001	MP-V Connector Kit	Spare screw terminals for all MP-V models
SXWMPCCON10001	MP-C Connector Kit	Spare screw terminals for all MP-C models
SXWBTAECXX10001	eCommission Bluetooth Adapter	



MP-C DISPLAY



SXWMPCCON10001



DIN-RAIL-CLIP



SXWMPVCON10001

\*Touch Display supports user access to the following settings: HVAC mode (Cooling/Heating/Auto), Setpoint adjust, Override and Fan (On/Off/Auto)

## SmartX IP Controllers – Accessories (continued)

### Actassi Structured Cabling Solution

Actassi connectivity work seamlessly with SmartX IP Controllers. Get simple installation and ease of engineering deployment with a single source for BMS and network cabling needs. These physical network infrastructure solutions offer reliable and scalable SmartX IP backbone that enable a responsive BMS network.

Part number	Region	Description (system)
<b>Global</b>		
ACTPG6TLU001	Global	Cat 6 field-term plug, UTP
ACTPG6PTU100	Global	Cat 6 pass-through plug, UTP, 100-pack
ACTTLCPT	Global	Actassi crimping tool
ACTPG5EPTU100	Global	Cat 5e pass-through plug, UTP, 100-pack
<b>AMER</b>		
ACT4P6UCP1ARXGR	AMER	Cat 6 cable, UTP, 1000 ft (305 m), CMP, green
ACTPC6UBCP30AGR	AMER	Cat 6 patch cord, UTP, 30 ft (9 m), CMP, green
ACTPC6UBCP50AGR	AMER	Cat 6 patch cord, UTP, 50 ft (15 m), CMP, green
ACTPC6UBCP70AGR	AMER	Cat 6 patch cord, UTP, 70 ft (21 m), CMP, green
ACTPC6UBCP90AGR	AMER	Cat 6 patch cord, UTP, 90 ft (27 m), CMP, green
ACT4P5EUCP1ARXGR	AMER	Cat 5e cable, UTP, 1000 ft (305 m), CMP, green
ACTPC5EUBCP30AGR	AMER	Cat 5e patch cord, UTP, 30 ft (9 m), CMP, green
ACTPC5EUBCP50AGR	AMER	Cat 5e patch cord, UTP, 50 ft (15 m), CMP, green
ACTPC5EUBCP70AGR	AMER	Cat 5e patch cord, UTP, 70 ft (21 m), CMP, green
ACTPC5EUBCP90AGR	AMER	Cat 5e patch cord, UTP, 90 ft (27 m), CMP, green
<b>EMEA</b>		
VDICD116118	EMEA	Cat 6 cable, UTP, 305 m (1000 ft), Euroclass D, green
ACTPC6UBLS100GR	EMEA	Cat 6 patch cord, UTP, 10 m (32 ft), LSZH, green
ACTPC6UBLS150GR	EMEA	Cat 6 patch cord, UTP, 15 m (49 ft), LSZH, green
ACTPC6UBLS200GR	EMEA	Cat 6 patch cord, UTP, 20 m (65 ft), LSZH, green
ACTPC6UBLS250GR	EMEA	Cat 6 patch cord, UTP, 25 m (82 ft), LSZH, green
VDICD115118	EMEA	Cat 5e cable, UTP, 305 m (1000 ft), Euroclass D, green
ACTPC5EUBLS100GR	EMEA	Cat 5e patch cord, UTP, 10 m (32 ft), LSZH, green
ACTPC5EUBLS150GR	EMEA	Cat 5e patch cord, UTP, 15 m (49 ft), LSZH, green
ACTPC5EUBLS200GR	EMEA	Cat 5e patch cord, UTP, 20 m (65 ft), LSZH, green
ACTPC5EUBLS250GR	EMEA	Cat 5e patch cord, UTP, 25 m (82 ft), LSZH, green
<b>PACIFIC</b>		
ACT4P6UCM3RBGR	PACIFIC	Cat 6 cable, UTP, 305 m (1000 ft), PVC, green
ACTPC6UBCM100GR	PACIFIC	Cat 6 patch lead, UTP, 10 m (32 ft), PVC, green
ACTPC6UBCM150GR	PACIFIC	Cat 6 patch lead, UTP, 15 m (49 ft), PVC, green
ACTPC6UBCM200GR	PACIFIC	Cat 6 patch lead, UTP, 20 m (65 ft), PVC, green
ACTPC6UBCM250GR	PACIFIC	Cat 6 patch lead, UTP, 25 m (82 ft), PVC, green
ACT4P5EUCM3RBGR	PACIFIC	Cat 5e cable, UTP, 305 m (1000 ft), PVC, green
ACTPC5EUBCM100GR	PACIFIC	Cat 5e patch lead, UTP, 10 m (32 ft), PVC, green
ACTPC5EUBCM150GR	PACIFIC	Cat 5e patch lead, UTP, 15 m (49 ft), PVC, green
ACTPC5EUBCM200GR	PACIFIC	Cat 5e patch lead, UTP, 20 m (65 ft), PVC, green
ACTPC5EUBCM250GR	PACIFIC	Cat 5e patch lead, UTP, 25 m (82 ft), PVC, green



a) Abbreviations: UTP (Unshielded Twisted Pair), CMP (Plenum-rated cable),

# BACnet controllers



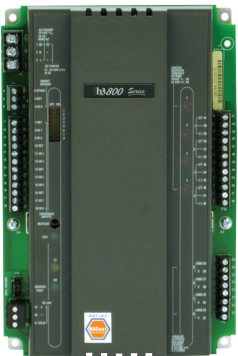
## BACnet b3 Series

Schneider Electric's b3 controllers support the most advanced BACnet services, addressing all five interoperability areas: data sharing, scheduling, trending, alarming, and device management. Every BACnet controller in the b3 system is compliant with the ASHRAE standard and interoperate with third party BACnet devices.



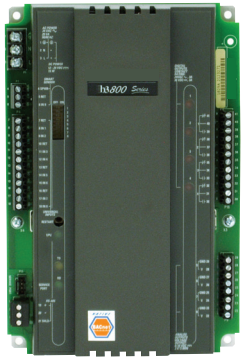
**b3 Series Controllers**

 b3608  
Local Controller

 b3624  
Local Controller

 b3800  
Local Controller

Part Number	b3608	b3624	b3800
<b>Communications</b>			
Protocol	BACnet Open Protocol	BACnet Open Protocol	BACnet Open Protocol
Communication Interface	MS/TP, 9600 -76,800 bit/s	MS/TP, 9600 -76,800 bit/s	MS/TP, 9600 -76,800 bit/s
<b>Software</b>			
Programmability	Script Programmable	Script Programmable	Script Programmable
<b>Physical</b>			
Dimensions	153 W x 229 H x 54 D mm (6.01 W x 9.03 H x 2.14 D in.)	153 W x 229 H x 54 D mm (6.01 W x 9.03 H x 2.14 D in.)	153 W x 229 H x 54 D mm (6.01 W x 9.03 H x 2.14 D in.)
Weight (including baseplate)	0.54 kg (1.19 lb.)	0.54 kg (1.19 lb.)	0.61 kg (1.34 lb.)
<b>Power</b>			
Power	24 VAC +10% -15%, 50/60 Hz Class 2 limited power, 12-24 VDC (auto sensing AC/DC)	24 VAC +10% -15%, 50/60 Hz Class 2 limited power, 12-24 VDC (auto sensing AC/DC)	24 VAC +10% -15%, 50/60 Hz Class 2 limited power, 12-24 VDC (auto sensing AC/DC)
Consumption	25 VA (3 A fuse overload MOV protected)	25 VA (3 A fuse overload MOV protected)	25 VA (3 A fuse overload MOV protected)
<b>Environmental</b>			
Operating Range	0 °C to 49 °C (32 °F to 120 °F) 10-95% RH (non-condensing)	0 °C to 49 °C (32 °F to 120 °F) 10-95% RH (non-condensing)	-23 °C to 60 °C (-10 °F to 140 °F) 10-95% RH (non-condensing)
<b>CPU Internals</b>			
CPU	Motorola Coldfire 32-bit, 10 Mhz	Motorola Coldfire 32-bit, 10 Mhz	Motorola Coldfire 32-bit, 10 Mhz
Memory	1 MB flash, 128 kB SRAM	1 MB flash, 128 kB SRAM	1 MB flash, 128 kB SRAM
Battery	Replaceable, non-rechargeable lithium battery. Provides 5 years typical accumulated power failure backup of RAM memory.	Replaceable, non-rechargeable lithium battery. Provides 5 years typical accumulated power failure backup of RAM memory.	Replaceable, non-rechargeable lithium battery. Provides 5 years typical accumulated power failure backup of RAM memory.
Real time clock	Synchronized via BACnet service	Synchronized via BACnet service	Synchronized via BACnet service
<b>External Features</b>			
Enclosure rating	UL94 5 V (Plenum rated), IP 10 (<50 mm protection)	UL94 5 V (Plenum rated), IP 10 (<50 mm protection)	UL94 5 V (Plenum rated), IP 10 (<50 mm protection)
HOA Switches (DO/AO)	No	No	No
Digital Status LEDs	No	No	Yes
Display	No	No	No
Intelligent Sensors	Smart Sensor	Smart Sensor	Smart Sensor
Service Port	b3	b3	b3
<b>Terminals</b>			
I/O Terminals	Fixed terminal	Fixed terminal	Fixed terminal
I/O Expansion	No	No	No
<b>External Enclosure/Mounting</b>			
Enclosure class	Open class (separate enclosure required)	Open class (separate enclosure required)	Open class (separate enclosure required)
Mounting	Wall mount	Wall mount	Wall mount
<b>Certifications</b>			
BTL	BTL: BACnet Advanced Application Controllers (B-AAC) with trending	BTL: BACnet Advanced Application Controllers (B-AAC) with trending	BTL: BACnet Advanced Application Controllers (B-AAC) with trending
FCC	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)
Industry Canada (IC)	ICES-003 (Emission)	ICES-003 (Emission)	ICES-003 (Emission)
UL	UL-916 (Energy Management Equipment), Optional UL-864 (Smoke Control System Equipment) UUKL	UL-916 (Energy Management Equipment), Optional UL-864 (Smoke Control System Equipment) UUKL	UL-916 (Energy Management Equipment), Optional UL-864 (Smoke Control System Equipment) UUKL
C-UL US	Yes	Yes	Yes
CE - EU	Yes	Yes	Yes
WEEE - Directive of the European Union	Yes	Yes	Yes
RoHS Directive	Yes	Yes	Yes
RCM	Yes	Yes	Yes

b3 Series Controllers, continued



b3804  
Local Controller



b3810  
Local Controller



b3814  
Local Controller

Part Number	b3804	b3810	b3814
<b>Communications</b>			
Protocol	BACnet Open Protocol	BACnet Open Protocol	BACnet Open Protocol
Communication Interface	MS/TP, 9600 -76,800 bit/s	MS/TP, 9600 -76,800 bit/s	MS/TP, 9600 -76,800 bit/s
<b>Software</b>			
Programmability	Script Programmable	Script Programmable	Script Programmable
<b>Physical</b>			
Dimensions	153 W x 229 H x 54 D mm (6.01 W x 9.03 H x 2.14 D in.)	184 W x 241 H x 54 D mm (7.26 W x 9.51 H x 2.14 D in.)	184 W x 241 H x 54 D mm (7.26 W x 9.51 H x 2.14 D in.)
Weight (including baseplate)	0.61 kg (1.34 lb.)	0.75 kg (1.65 lb.)	0.75 kg (1.65 lb.)
<b>Power</b>			
Power	24 VAC +10% -15%, 50/60 Hz Class 2 limited power, 12-24 VDC (auto sensing AC/DC)	24 VAC +10% -15%, 50/60 Hz Class 2 limited power, 12-24 VDC (auto sensing AC/DC)	24 VAC +10% -15%, 50/60 Hz Class 2 limited power, 12-24 VDC (auto sensing AC/DC)
Consumption	25 VA (3 A fuse overload MOV protected)	30 VA (3 A fuse overload MOV protected)	30 VA (3 A fuse overload MOV protected)
<b>Environmental</b>			
Operating Range	-23 °C to 60 °C (-10 °F to 140 °F) 10-95% RH (non-condensing)	0 °C to 49 °C (32 °F to 120 °F) 10-95% RH (non-condensing)	0 °C to 49 °C (32 °F to 120 °F) 10-95% RH (non-condensing)
<b>CPU Internals</b>			
CPU	Motorola Coldfire 32-bit, 10 Mhz	Motorola Coldfire 32-bit, 10 Mhz	Motorola Coldfire 32-bit, 10 Mhz
Memory	1 MB flash, 128 kB SRAM	1 MB flash, 256 kB SRAM	1 MB flash, 256 kB SRAM
Battery	Replaceable, non-rechargeable lithium battery. Provides 5 years typical accumulated power failure backup of RAM memory.	Replaceable, non-rechargeable lithium battery. Provides 5 years typical accumulated power failure backup of RAM memory.	Replaceable, non-rechargeable lithium battery. Provides 5 years typical accumulated power failure backup of RAM memory.
Real time clock	Synchronized via BACnet service	Synchronized via BACnet service	Synchronized via BACnet service
<b>External Features</b>			
Enclosure rating	UL94 5 V (Plenum rated), IP 10 (<50 mm protection)	UL94 5 V (Plenum rated), IP 10 (<50 mm protection)	UL94 5 V (Plenum rated), IP 10 (<50 mm protection)
HOA Switches (DO/AO)	No	Yes - (8/0)	Yes - (4/4)
Digital Status LEDs	Yes	Yes	Yes
Display	No	No	No
Intelligent Sensors	Smart Sensor	Smart Sensor	Smart Sensor
Service Port	b3	b3	b3
<b>Terminals</b>			
I/O Terminals	Fixed terminal	Two-piece terminal	Two-piece terminal
I/O Expansion	No	Up to 2 xP expansion modules	Up to 2 xP expansion modules
<b>External Enclosure/Mounting</b>			
Enclosure class	Open class (separate enclosure required)	Open class (separate enclosure required)	Open class (separate enclosure required)
Mounting	Wall mount	Wall mount	Wall mount
<b>Certifications</b>			
BTL	BTL: BACnet Advanced Application Controllers (B-AAC) with trending	BTL: BACnet Advanced Application Controllers (B-AAC) with trending	BTL: BACnet Advanced Application Controllers (B-AAC) with trending
FCC	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)
Industry Canada (IC)	ICES-003 (Emission)	ICES-003 (Emission)	ICES-003 (Emission)
UL	UL-916 (Energy Management Equipment), Optional UL-864 (Smoke Control System Equipment) UUKL	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)
C-UL US	Yes	Yes	Yes
CE - EU	Yes	Yes	Yes
WEEE - Directive of the European Union	Yes	Yes	Yes
RoHS Directive	Yes	Yes	Yes
RCM	Yes	Yes	Yes

**b3 Series Controllers, continued**


b3850  
Fan Coil, Heat Pump, VAV  
Zone Controller



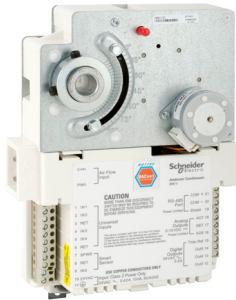
b3851  
Fan Coil & Heat Pump Zone  
Controller



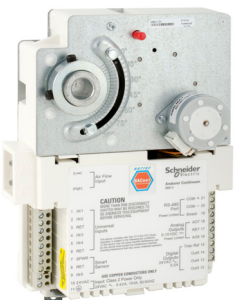
b3853  
Fan Coil, Heat Pump, Dual VAV  
Zone Controller

Part Number	b3850	b3851	b3853
<b>Communications</b>			
Protocol	BACnet Open Protocol	BACnet Open Protocol	BACnet Open Protocol
Communication Interface	MS/TP, 9600 -76,800 bit/s	MS/TP, 9600 -76,800 bit/s	MS/TP, 9600 -76,800 bit/s
<b>Software</b>			
Programmability	Script Programmable	Script Programmable	Script Programmable
<b>Physical</b>			
Dimensions	207 W x 139 H x 62 D mm (8.16 W x 5.47 H x 2.44 D in.)	207 W x 139 H x 62 D mm (8.16 W x 5.47 H x 2.44 D in.)	207 W x 139 H x 62 D mm (8.16 W x 5.47 H x 2.44 D in.)
Weight (including baseplate)	0.51 kg (1.08 lb)	0.51 kg (1.08 lb)	0.51 kg (1.08 lb)
<b>Power</b>			
Power	24 VAC +10% -15%, 50/60Hz Class 2 limited power	24 VAC +10% -15%, 50/60Hz Class 2 limited power	24 VAC +10% -15%, 50/60Hz Class 2 limited power
Consumption	20 VA (2A fuse overload MOV protected)	20 VA (2A fuse overload MOV protected)	20 VA (2A fuse overload MOV protected)
<b>Environmental</b>			
Operating Range	0°C to 49°C (32°F to 120°F) 10-95% RH (non-condensing)	0°C to 49°C (32°F to 120°F) 10-95% RH (non-condensing)	0°C to 49°C (32°F to 120°F) 10-95% RH (non-condensing)
<b>CPU Internals</b>			
CPU	Motorola Coldfire 32-bit, 10Mhz	Motorola Coldfire 32-bit, 10Mhz	Motorola Coldfire 32-bit, 10Mhz
Memory	1 MB flash, 128 kB SRAM	1 MB flash, 128 kB SRAM	1 MB flash, 128 kB SRAM
Battery	Replaceable, non- rechargeable lithium battery. Provides 5 years typical accumulated power failure backup of RAM memory.	Replaceable, non- rechargeable lithium battery. Provides 5 years typical accumulated power failure backup of RAM memory.	Replaceable, non- rechargeable lithium battery. Provides 5 years typical accumulated power failure backup of RAM memory.
Real time clock	Synchronized via BACnet service	Synchronized via BACnet service	Synchronized via BACnet service
<b>External Features</b>			
Enclosure rating	UL94 5V (Plenum rated), IP 10 (<50 mm protection)	UL94 5V (Plenum rated), IP 10 (<50 mm protection)	UL94 5V (Plenum rated), IP 10 (<50 mm protection)
HOA Switches (DO/AO)	No	No	No
Digital Status LEDs	No	No	No
Display	Option - xP Display	Option - xP Display	Option - xP Display
Intelligent Sensors	Smart Sensor	Smart Sensor	Smart Sensor
Service Port	b3	b3	b3
<b>Terminals</b>			
I/O Terminals	Fixed terminal	Fixed terminal	Fixed terminal
I/O Expansion	Up to 2 xP expansion modules	Up to 2 xP expansion modules	Up to 2 xP expansion modules
<b>External Enclosure/Mounting</b>			
Enclosure class	Open class (separate enclosure required)	Open class (separate enclosure required)	Open class (separate enclosure required)
Mounting	Wall mount	Wall mount	Wall mount
<b>Certifications</b>			
BTL	BTL: BACnet Advanced Application Controllers (B-AAC) with trending	BTL: BACnet Advanced Application Controllers (B-AAC) with trending	BTL: BACnet Advanced Application Controllers (B-AAC) with trending
FCC	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)
Industry Canada (IC)	ICES-003 (Emission)	ICES-003 (Emission)	ICES-003 (Emission)
UL	UL-916 (Energy Management Equipment), Optional UL- 864 (Smoke Control System Equipment) UUKL	UL-916 (Energy Management Equipment), Optional UL- 864 (Smoke Control System Equipment) UUKL	UL-916 (Energy Management Equipment)
C-UL US	Yes	Yes	Yes
CE - EU	Yes	Yes	Yes
WEEE - Directive of the European Union	Yes	Yes	Yes
RoHS Directive	Yes	Yes	Yes
RCM	Yes	Yes	Yes

b3 Series Controllers, continued



b3865-V  
VAV Zone Controller

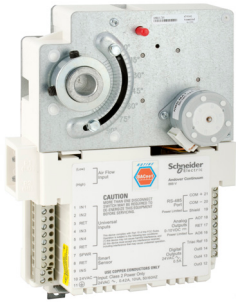
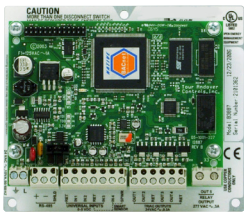
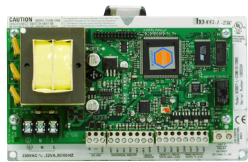


b3866-V  
VAV Zone Controller



b3867  
Terminal Controller

Part Number	b3865-V	b3866-V	b3867
<b>Communications</b>			
Protocol	BACnet Open Protocol	BACnet Open Protocol	BACnet Open Protocol
Communication Interface	MS/TP, 9600 -76,800 bit/s	MS/TP, 9600 -76,800 bit/s	MS/TP, 9600 -76,800 bit/s
<b>Software</b>			
Programmability	Script Programmable	Script Programmable	Script Programmable
<b>Physical</b>			
Dimensions	159 W x 197 H x 63 D mm (6.25 W x 7.75 H x 2.50 D in.)	159 W x 197 H x 63 D mm (6.25 W x 7.75 H x 2.50 D in.)	157 W x 89 H x 64 D mm (6.20 W x .3.50 H x 2.50 D in.)
Weight (including baseplate)	1.04 kg (2.50 lb.)	1.04 kg (2.50 lb.)	0.29 kg (0.64 lb.)
<b>Power</b>			
Power	24 VAC +10% -15%, 50/60 Hz Class 2 limited power	24 VAC +10% -15%, 50/60 Hz Class 2 limited power	24 VAC +10% -15%, 50/60 Hz Class 2 limited power
Consumption	<10 VA (fused overload MOV protected)	<10 VA (fused overload MOV protected)	4 VA (2 A fuse overload MOV protected)
<b>Environmental</b>			
Operating Range	0 °C to 50 °C (32 °F to 122 °F) 10-90% RH (non-condensing)	0 °C to 50 °C (32 °F to 122 °F) 10-90% RH (non-condensing)	0 °C to 49 °C (32 °F to 120 °F) 10-95% RH (non-condensing)
<b>CPU Internals</b>			
CPU	Motorola Coldfire 32-bit, 10 Mhz	Motorola Coldfire 32-bit, 10 Mhz	Motorola Coldfire 32-bit, 10 Mhz
Memory	512 kB flash, 128 kB SRAM, programs/data max 56 kB, parameters 64 kB	512 kB flash, 128 kB SRAM, programs/data max 56 kB, parameters 64 kB	1 MB flash, 128 kB SRAM
Battery	Replaceable, rechargeable battery. Provides 30 days typical accumulated power failure backup of RAM memory. All data stored in Flash on power loss.	Replaceable, rechargeable battery. Provides 30 days typical accumulated power failure backup of RAM memory. All data stored in Flash on power loss.	Replaceable, non- rechargeable lithium battery. Provides 5 years typical accumulated power failure backup of RAM memory.
Real time clock	No	No	Synchronized via BACnet service
<b>External Features</b>			
Enclosure rating	N/A	N/A	UL94 5 V (Plenum rated), IP 10 (<50 mm protection)
HOA Switches (DO/AO)	No	No	No
Digital Status LEDs	No	No	No
Display	No	No	No
Intelligent Sensors	Smart Sensor	Smart Sensor	Smart Sensor
Service Port	b3	b3	b3
<b>Terminals</b>			
I/O Terminals	Two-piece terminal	Two-piece terminal	Two-piece terminal
I/O Expansion	No	No	No
<b>External Enclosure/Mounting</b>			
Enclosure class	Open class (separate enclosure required)	Open class (separate enclosure required)	Open class (separate enclosure required)
Mounting	Wall mount	Wall mount	Wall mount
<b>Certifications</b>			
BTL	BTL: BACnet Advanced Application Controllers (B-AAC) with trending	BTL: BACnet Advanced Application Controllers (B-AAC) with trending	BTL: BACnet Advanced Application Controllers (B-AAC) with trending
FCC	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)
Industry Canada (IC)	ICES-003 (Emission)	ICES-003 (Emission)	ICES-003 (Emission)
UL	UL-916 (Energy Management Equipment), Optional UL- 864 (Smoke Control System Equipment) UUKL	UL-916 (Energy Management Equipment), Optional UL- 864 (Smoke Control System Equipment) UUKL	UL-916 (Energy Management Equipment), Optional UL- 864 (Smoke Control System Equipment) UUKL
C-UL US	Yes	Yes	Yes
CE - EU	Yes	Yes	Yes
WEEE - Directive of the European Union	Yes	Yes	Yes
RoHS Directive	Yes	Yes	Yes
RCM	Yes	Yes	Yes

**b3 Series Controllers, continued**

 b3885-V  
VAV Zone Controller

 b3887 (without enclosure)  
Terminal Controller

 b3887-L-230  
Terminal Controller

Part Number	b3885-V	b3887
<b>Communications</b>		
Protocol	BACnet Open Protocol	BACnet Open Protocol
Communication Interface	MS/TP, 9600 -76,800 bit/s	MS/TP, 9600 -76,800 bit/s
<b>Software</b>		
Programmability	Script Programmable	Script Programmable
<b>Physical</b>		
Dimensions	159 W x 197 H x 63 D mm (6.25 W x 7.75 H x 2.50 D in.)	130 W x 111 H x 30 D mm (5.13 W x 4.40 H x 1.15 D in.)
Weight (including baseplate)	1.04 kg (2.50 lb.)	0.23 kg (0.50 lb.)
<b>Power</b>		
Power	24 VAC +10% -15%, 50/60 Hz Class 2 limited power	24 VAC +10% -15%, 50/60 Hz Class 2 limited power
Consumption	<10 VA (fused overload MOV protected)	10 VA (1 A fuse overload MOV protected)
<b>Environmental</b>		
Operating Range	0 °C to 50 °C (32 °F to 122 °F) 10- 90% RH (non-condensing)	0 °C to 49 °C (32 °F to 120 °F) 10- 95% RH (non-condensing)
<b>CPU Internals</b>		
CPU	Motorola Coldfire 32-bit, 10 Mhz	Motorola Coldfire 32-bit, 10 Mhz
Memory	512 kB flash, 128 kB SRAM, programs/data max 56 kB, parameters 64 kB	1 MB flash, 512 kB SRAM
Battery	Replaceable, rechargeable battery. Provides 30 days typical accumulated power failure backup of RAM memory. All data stored in Flash on power loss.	Replaceable, non-rechargeable lithium battery. Provides 5 years typical accumulated power failure backup of RAM memory.
Real time clock	No	Synchronized via BACnet service
<b>External Features</b>		
Enclosure rating	N/A	UL94 5 V (Plenum rated), IP 10 (<50 mm protection)
HOA Switches (DO/AO)	No	No
Digital Status LEDs	No	No
Display	No	No
Intelligent Sensors	Smart Sensor	Smart Sensor
Service Port	b3	b3
<b>Terminals</b>		
I/O Terminals	Two-piece terminal	Fixed terminal
I/O Expansion	No	No
<b>External Enclosure/Mounting</b>		
Enclosure class	Open class (separate enclosure required)	Open class (separate enclosure required)
Mounting	Wall mount	Wall mount
<b>Certifications</b>		
BTL	BTL: BACnet Advanced Application Controllers (B-AAC) with trending	BTL: BACnet Advanced Application Controllers (B-AAC) with trending
FCC	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)
Industry Canada (IC)	ICES-003 (Emission)	ICES-003 (Emission)
UL	UL-916 (Energy Management Equipment), Optional UL- 864 (Smoke Control System Equipment) UUKL	UL-916 (Energy Management Equipment)
C-UL US	Yes	Yes
CE - EU	Yes	Yes
WEEE - Directive of the European Union	Yes	Yes
RoHS Directive	Yes	Yes
RCM	Yes	Yes

b3 Series Controllers, continued



b3887-L-115-C, b3887-L-230-C Terminal Controllers



b3920 System Controller

Part Number	b3887-L-115-C, b3887-L-230-C	b3920, b3920-D
<b>Communications</b>		
Protocol	BACnet Open Protocol	BACnet Open Protocol
Communication Interface	MS/TP, 9600 -76,800 bit/s	MS/TP, 9600 -76,800 bit/s
<b>Software</b>		
Programmability	Script Programmable	Script Programmable
<b>Physical</b>		
Dimensions	186 W x 111 H x 59 D mm (7.32 W x 4.40 H x 2.31 D in.)	270.8 W x 330.2 H x 69.0 D mm (10.66 W x 13.00 H x 2.72 D in.)
Weight (including baseplate)	1.19 kg (2.63 lb.)	1.58 kg (3.50 lb.)
<b>Power</b>		
Power	115/230 VAC +10% -15%, 50/60 Hz	115/230 VAC +10% -15%, 50/60 Hz
Consumption	32 VA (1 A fuse overload MOV protected)	45 VA (3 A fuse overload MOV protected)
<b>Environmental</b>		
Operating Range	0 °C to 49 °C (32 °F to 120 °F) 10-95% RH (non-condensing)	0 °C to 49 °C (32 °F to 120 °F) 10-95% RH (non-condensing)
<b>CPU Internals</b>		
CPU	Motorola Coldfire 32-bit, 10 Mhz	Motorola Coldfire 32-bit, 10 Mhz
Memory	1 MB flash, 512 kB SRAM	2 MB flash, 1 MB SRAM
Battery	Replaceable, non-rechargeable lithium battery. Provides 5 years typical accumulated power failure backup of RAM memory.	Replaceable, non-rechargeable lithium battery. Provides 5 years typical accumulated power failure backup of RAM memory.
Real time clock	Synchronized via BACnet service	Synchronized via BACnet service
<b>External Features</b>		
Enclosure rating	UL94 5 V (Plenum rated), IP 20 (<12.5 mm protection)	UL94 5 V (Plenum rated), IP 10 (<50 mm protection)
HOA Switches (DO/AO)	No	Yes - (8/8)
Digital Status LEDs	No	Yes
Display	No	Option - xP Display
Intelligent Sensors	Smart Sensor	Smart Sensor
Service Port	b3	b3
<b>Terminals</b>		
I/O Terminals	Fixed terminal	Two-piece terminal
I/O Expansion	No	Up to 2 xP expansion modules
<b>External Enclosure/Mounting</b>		
Enclosure class	Closed class	Open class (separate enclosure required)
Mounting	Wall mount	Wall mount
<b>Certifications</b>		
BTL	BTL: BACnet Advanced Application Controllers (B-AAC) with trending	BTL: BACnet Advanced Application Controllers (B-AAC) with trending
FCC	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)
Industry Canada (IC)	ICES-003 (Emission)	ICES-003 (Emission)
UL	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment), Optional UL-864 (Smoke Control System Equipment) UUKL
C-UL US	Yes	Yes
CE - EU	Yes	Yes
WEEE - Directive of the European Union	Yes	Yes
RoHS Directive	Yes	Yes
RCM	Yes	Yes

**b3 Series xP Expansion I/O Modules**


xPDI8  
8 Channel Digital Output  
Expansion Module



xPUI4  
4 Channel Universal Input  
Expansion Module



xPDO2  
2 Channel Digital Output  
Expansion Module

Part Number	xPDI8	xPUI4
<b>Communications</b>		
Protocol	xP Bus	xP Bus
<b>Physical</b>		
Dimensions	180 W x 82 H x 41 D mm (7.10 W x 3.21 H x 1.60 D in.)	180 W x 82 H x 41 D mm (7.10 W x 3.21 H x 1.60 D in.)
Weight (including baseplate)	0.22 kg (0.48 lb.)	0.22 kg (0.48 lb.)
<b>Power</b>		
Power	From xP bus with 400 mA power supply	From xP bus with 400 mA power supply
Consumption	25 mA	50 mA
<b>Environmental</b>		
Operating Range	0 °C to 49 °C (32 °F to 120 °F) 10-95% RH (non-condensing)	0 °C to 49 °C (32 °F to 120 °F) 10-95% RH (non-condensing)
<b>External Features</b>		
Enclosure rating	UL94 5VB, IP 10 (<50 mm protection)	UL94 5VB, IP 10 (<50 mm protection)
HOA Switches (DO/AO)	No	No
Digital Status LEDs	Yes	Yes
<b>Terminals</b>		
I/O Terminals	Two-piece terminal	Two-piece terminal
I/O Expansion	N/A	N/A
<b>External Enclosure/Mounting</b>		
Enclosure class	Open class (separate enclosure required)	Open class (separate enclosure required)
Mounting	Wall mount	Wall mount
<b>Certifications</b>		
BTL	No	No
FCC	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)
Industry Canada (IC)	ICES-003 (Emission)	ICES-003 (Emission)
UL	UL-916 (Energy Management Equipment), UL-864 (Smoke Control System Equipment) UUKL	UL-916 (Energy Management Equipment), Optional UL-864 (Smoke Control System Equipment) UUKL
C-UL US	Yes	Yes
CE - EU	Yes	Yes
WEEE - Directive of the European Union	Yes	Yes
RoHS Directive	Yes	Yes
RCM	Yes	Yes

b3 Series xP Expansion I/O Modules, continued



xPDO4  
4 Channel Digital Output  
Expansion Module



xPAO2  
2 Channel Analog Output  
Expansion Module



xPAO4  
4 Channel Analog Output  
Expansion Module

Part Number	xPDO4	xPAO2	xPAO4
<b>Communications</b>			
Protocol	xP Bus	xP Bus	xP Bus
<b>Physical</b>			
Dimensions	180 W x 82 H x 41 D mm (7.10 W x 3.21 H x 1.60 D in.)	180 W x 82 H x 41 D mm (7.10 W x 3.21 H x 1.60 D in.)	180 W x 82 H x 41 D mm (7.10 W x 3.21 H x 1.60 D in.)
Weight (including baseplate)	0.22 kg (0.48 lb.)	0.22 kg (0.48 lb.)	0.22 kg (0.48 lb.)
<b>Power</b>			
Power	From xP bus with 400 mA power supply	From xP bus with 400 mA power supply	From xP bus with 400 mA power supply
Consumption	100 mA	80 mA	120 mA
<b>Environmental</b>			
Operating Range	0 °C to 49 °C (32 °F to 120 °F) 10-95% RH (non-condensing)	0 °C to 49 °C (32 °F to 120 °F) 10-95% RH (non-condensing)	0 °C to 49 °C (32 °F to 120 °F) 10-95% RH (non-condensing)
<b>External Features</b>			
Enclosure rating	UL94 5VB, IP 10 (<50 mm protection)	UL94 5VB, IP 10 (<50 mm protection)	UL94 5VB, IP 10 (<50 mm protection)
HOA Switches (DO/AO)	Yes - (4/0)	Yes - (0/2)	Yes - (0/4)
Digital Status LEDs	Yes	Yes	Yes
<b>Terminals</b>			
I/O Terminals	Two-piece terminal	Two-piece terminal	Two-piece terminal
I/O Expansion	N/A	N/A	N/A
<b>External Enclosure/Mounting</b>			
Enclosure class	Open class (separate enclosure required)	Open class (separate enclosure required)	Open class (separate enclosure required)
Mounting	Wall mount	Wall mount	Wall mount
<b>Certifications</b>			
BTL	No	No	No
FCC	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)
Industry Canada (IC)	ICES-003 (Emission)	ICES-003 (Emission)	ICES-003 (Emission)
UL	UL-916 (Energy Management Equipment), UL-864 (Smoke Control System Equipment) UUKL	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)
C-UL US	Yes	Yes	Yes
CE - EU	Yes	Yes	Yes
WEEE - Directive of the European Union	Yes	Yes	Yes
RoHS Directive	Yes	Yes	Yes
RCM	Yes	Yes	Yes



## b3 Series

### b3 Series Controllers – Inputs and Outputs

Part Number	b3608	b3624	b3800	b3804	b3810	b3814
<b>Universal Inputs</b>	8	24	8	8	8	8
Digital Contact	•	•	•	•	•	•
Digital Counter - Low Speed	•	•	•	•	•	•
Digital Counter - Medium Speed						
Digital Counter - High Speed						
Digital Supervised	•	•	•	•	•	•
Analog Voltage - 0-1 V						
Analog Voltage - 0-5 V	•	•	•	•		
Analog Voltage - 0-10 V					•	•
Analog Voltage - 2-10 V						
Analog Current - 0-20 mA						
Analog Current - 4-20 mA	•	•	•	•	•	•
Analog Resistance						
Analog Thermistor - 10 k	•	•	•	•	•	•
Analog Thermistor - 1.8 k						
Analog Thermistor - 1 k						
<b>Analog Inputs</b>						
Voltage - 0-5 V						
Voltage - 0-10 V						
Velocity Pressure						
Analog Thermistor - 10 k						
Analog Thermistor - 1.8 k						
Analog Thermistor - 1 k						
<b>Digital Outputs</b>			8	4	8	4
Form A, SPST						
Form C, SPDT			•	•	•	•
Triac						
<b>Analog Outputs</b>				4		4
Voltage - 0-10 V				•		•
Current - 0-20 mA						•
<b>Damper Outputs</b>						
Form K, Triac						
Voltage						
<b>Intelligent Sensors</b>	1	1	1	1	1	1
Smart Sensor (b3)	•	•	•	•	•	•

## b3 Series

### b3 Series Controllers – Inputs and Outputs, continued

Part Number	b3850	b3851	b3853	b3865-V	b3866-V	b3867
<b>Universal Inputs</b>	4	4	4	4	4	4
Digital Contact	•	•	•	•	•	•
Digital Counter - Low Speed	•	•	•	•	•	•
Digital Counter - Medium Speed						
Digital Counter - High Speed						
Digital Supervised	•	•	•	•	•	•
Analog Voltage - 0-1 V						
Analog Voltage - 0-5 V	•	•	•	•	•	•
Analog Voltage - 0-10 V						
Analog Voltage - 2-10 V						
Analog Current - 0-20 mA	•	•	•			
Analog Current - 4-20 mA				•	•	•
Analog Resistance						
Analog Thermistor - 10 k	•	•	•	•	•	•
Analog Thermistor - 1.8 k						
Analog Thermistor - 1 k						
<b>Analog Inputs</b>	1		2	1	1	
Voltage - 0-5 V						
Voltage - 0-10 V						
Velocity Pressure	internal		internal	internal	internal	
Analog Thermistor - 10 k						
Analog Thermistor - 1.8 k						
Analog Thermistor - 1 k						
<b>Digital Outputs</b>	4	4	4	3	3	5
Form A, SPST	3ch	3ch	3ch			
Form C, SPDT						
Triac	1ch	1ch	1ch	•	•	•
<b>Analog Outputs</b>					2	2
Voltage - 0-10 V					•	•
Current - 0-20 mA						
<b>Damper Outputs</b>				1	1	
Form K, Triac				internal		
Voltage					internal	
<b>Intelligent Sensors</b>	1	1	1	1	1	1
Smart Sensor (b3)	•	•	•	•	•	•

## b3 Series

### b3 Series Controllers – Inputs and Outputs, continued

Part Number	b3885-V	b3887	b3887-L-115-C, b3887-L-230-C	b3920, b3920-D
<b>Universal Inputs</b>	2	3	3	16
Digital Contact	•	•	•	•
Digital Counter - Low Speed		•	•	•
Digital Counter - Medium Speed				
Digital Counter - High Speed	•			
Digital Supervised	•	•	•	•
Analog Voltage - 0-1 V				
Analog Voltage - 0-5 V	•	•	•	
Analog Voltage - 0-10 V				•
Analog Voltage - 2-10 V				
Analog Current - 0-20 mA				
Analog Current - 4-20 mA	•	•	•	•
Analog Resistance				
Analog Thermistor - 10 k	•	•	•	•
Analog Thermistor - 1.8 k				
Analog Thermistor - 1 k				
<b>Analog Inputs</b>	1			
Voltage - 0-5 V				
Voltage - 0-10 V				
Velocity Pressure	internal			
Analog Thermistor - 10 k				
Analog Thermistor - 1.8 k				
Analog Thermistor - 1 k				
<b>Digital Outputs</b>	2	5	5	8
Form A, SPST		1 channel	1 channel	
Form C, SPDT				•
Triac	•	4 channel	4 channel	
<b>Analog Outputs</b>				8
Voltage - 0-10 V				•
Current - 0-20 mA				•
<b>Damper Outputs</b>	1			
Form K, Triac	internal			
Voltage				
<b>Intelligent Sensors</b>	1	1	1	1
Smart Sensor (b3)	•	•	•	•

## b3 Series xP Expansion I/O Modules – Inputs and Outputs

Part Number	xPDI8	xPUI4	xPDO4	xPAO2	xPAO4
<b>Universal Inputs</b>		4			
Digital Contact		•			
Digital Counter - Low Speed		3 channel			
Digital Counter - Medium Speed					
Digital Counter - High Speed		1 channel			
Digital Supervised		•			
Analog Voltage - 0-1 V					
Analog Voltage - 0-5 V		•			
Analog Voltage - 0-10 V					
Analog Voltage - 2-10 V					
Analog Current - 0-20 mA					
Analog Current - 4-20 mA		•			
Analog Resistance					
Analog Thermistor - 10 k		•			
Analog Thermistor - 1.8 k					
Analog Thermistor - 1 k					
<b>Digital Inputs</b>	8				
Digital Contact	•				
Counter - Low Speed					
Counter - Medium Speed					
Counter - High Speed	•				
<b>Digital Outputs</b>			4		
Form A, SPST					
Form C, SPDT			•		
Triac					
<b>Analog Outputs</b>				2	4
Voltage - 0-10 V				•	•
Current - 0-20 mA				•	•

The PCS enables offline engineering and project configuration of EcoStruxure Building Operation without the need for live equipment or for an engineer or technician to be onsite. Save time and reduce costs by engineering automation servers and the Enterprise Server offline and later deploying when live onsite.

Search keyword: Project Configuration Server



## MNB Series

Now native in EcoStruxure solution, the MNB series of MicroNet controllers are designed in accordance with BACnet® standards. When programmed or loaded with a pre-engineered application, these controllers provide control for packaged rooftops, heat pumps, fan coils, unit ventilators, and similar applications.

## MNB Series Controllers



MNB-1000

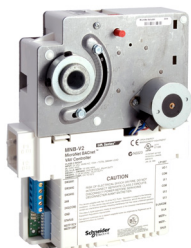


MNB-300

Part Number	MNB-70	MNB-300	MNB-1000
<b>Communications</b>			
Protocol	BACnet Open Protocol	BACnet Open Protocol	BACnet Open Protocol
Communication Interface	MS/TP, 9600-76,800 bit/s	MS/TP, 9600-76,800 bit/s	MS/TP, 9600-76,800 bit/s
<b>Software</b>			
Preloaded Application/ASC	No	No	No
Programability	WorkPlace Tech programmable	WorkPlace Tech programmable	WorkPlace Tech programmable
<b>Physical</b>			
Dimensions	127 W x 92 H x 41 D mm (5 W x 3.625 H x 1.594 D in.)	178 W x 100 H x 56 D mm (7.0 W x 3.94 H x 2.19 D in.)	213 W x 278 H x 58 D mm (8.375 W x 10.937 H x 2.281 D in.)
Weight (including baseplate)	1.1 lb.	1.5 lb	3.95 lb.
<b>Power</b>			
Power	20.4 to 30 VAC, 50/60Hz	20.4 to 30 VAC, 50/60Hz	20.4 to 30 VAC, 50/60Hz
Consumption	15 VA (plus DO loads)	16VA	50VA
<b>Environmental</b>			
Operating Range	0°C to 55°C (32°F to 131°F) 5-95% RH (non-condensing)	-40°C to 60°C (-40°F to 140°F) 5-95% RH (non-condensing)	-40°C to 60°C (-40°F to 140°F) 5-95% RH (non-condensing)
<b>CPU Internals</b>			
CPU	8 Bit	8 Bit	32 Bit
Memory	"Flash: 256K EEPROM: 4K"	"Flash: 256K EEPROM: 4K"	"DDR: 64M NOR Flash: 16M"
Battery	N/A	N/A	72 hour
Real time clock	N/A	N/A	Yes
<b>External Features</b>			
Enclosure rating	NEMA-1, UL94 5V (Plenum rated)	N/A	N/A
HOA Switches (DO/AO)	No	No	No
Digital Status LEDs	Yes	Yes	Yes
Display	Via S-Link Sensor	Via S-Link Sensor	Via S-Link Sensor
Intelligent Sensors	Sensor Link (S-Link)	Sensor Link (S-Link)	Sensor Link (S-Link)
Service Port	MS/TP jack on controller	MS/TP jack on controller	MS/TP jack on controller
<b>Terminals</b>			
I/O Terminals	Fixed terminal	Fixed terminal	Fixed terminal
I/O Expansion	No	No	Up to 8 MNB-15s, each with 15 I/O points
A/D Conversion - Inputs	12-bit	12-bit	12-bit
A/D Conversion - Outputs	8-bit	8-bit	8-bit
<b>External Enclosure/Mounting</b>			
Enclosure class	N/A	NEMA-1	NEMA-1
Conduit knockouts	No	Yes	Yes
Mounting	Panel Mount	Panel Mount	Panel Mount
<b>Certifications</b>			
BTL	BTL: BACnet Application Specific Controller (B-ASC)	BTL: BACnet Application Specific Controller (B-ASC)	BTL: BACnet Application Specific Controller (B-ASC)
FCC	Part 15, Class A	Part 15, Class A	Part 15, Class A
Industry Canda (IC)	CAN/CSA 22.2, ULC/ORD-C100-92, CAN-ULC-S527	CAN/CSA 22.2, ULC/ORD-C100-92, CAN-ULC-S527	CAN/CSA 22.2, ULC/ORD-C100-92, CAN-ULC-S527
UL	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment), UL-864 (Smoke Control)	UL-916 (Energy Management Equipment), UL-864 (Smoke Control)
C-UL US	UL Listed to Canadian Safety Standards (CAN/CSA 22.2).	UL Listed to Canadian Safety Standards (CAN/CSA 22.2).	UL Listed to Canadian Safety Standards (CAN/CSA 22.2).
CE - EU	89/336/EEC, EN61326	89/336/EEC, EN61326	89/336/EEC, EN61326
WEEE - Directive of the European Union	2012/19/EU	2012/19/EU	2012/19/EU
RoHS Directive	RoHS II	RoHS II	RoHS II
RCM	Yes	Yes	Yes

**MNB Series Controllers, continued**


MNB-V1



MNB-V2

Part Number	MNB-1000-15	MNB-V1-2	MNB-V2-2
<b>Communications</b>			
Protocol	Modbus	BACnet Open Protocol	BACnet Open Protocol
Communication Interface	RS-485	MS/TP, 9600-76,800 bit/s	MS/TP, 9600-76,800 bit/s
<b>Software</b>			
Preloaded Application/ASC	No	No	No
Programability	Program resides on parent controller	WorkPlace Tech programmable	WorkPlace Tech programmable
<b>Physical</b>			
Dimensions	178 W x 100 H x 56 D mm (7.0 W x 3.94 H x 2.19 D in.)	*159 W x 197 H x 63 D mm (6.25 W x 7.75 H x 2.50 D in.)	*159 W x 197 H x 63 D mm (6.25 W x 7.75 H x 2.50 D in.)
Weight (including baseplate)	1.5 lb.	2.68 lb.	2.65 lb.
<b>Power</b>			
Power	20.4 to 30 VAC, 50/60Hz	20.4 to 30 VAC, 50/60Hz	20.4 to 30 VAC, 50/60Hz
Consumption	16VA	15VA	15VA
<b>Environmental</b>			
Operating Range	-40°C to 60°C (-40°F to 140°F) 5-95% RH (non-condensing)	0°C to 55°C (32°F to 131°F) 5-95% RH (non-condensing)	0°C to 55°C (32°F to 131°F) 5-95% RH (non-condensing)
<b>CPU Internals</b>			
CPU	8 Bit	8 Bit	8 Bit
Memory	*Flash: 256K EEPROM: 4K"	*Flash: 256K EEPROM: 4K"	*Flash: 256K EEPROM: 4K"
Battery	N/A	N/A	N/A
Real time clock	N/A	N/A	N/A
<b>External Features</b>			
Enclosure rating	N/A	UL94 5V (Plenum rated)	UL94 5V (Plenum rated)
HOA Switches (DO/AO)	No	No	No
Digital Status LEDs	Yes	Yes	Yes
Display	No	Via S-Link Sensor	Via S-Link Sensor
Intelligent Sensors	No	Sensor Link (S-Link)	Sensor Link (S-Link)
Service Port	No	MS/TP jack on controller	MS/TP jack on controller
<b>Terminals</b>			
I/O Terminals	Fixed terminal	Fixed terminal	Fixed terminal
I/O Expansion	No	No	No
A/D Conversion - Inputs	12-bit	12-bit	12-bit
A/D Conversion - Outputs	8-bit	N/A	8-bit
<b>External Enclosure/Mounting</b>			
Enclosure class	NEMA-1	NEMA-1	NEMA-1
Conduit knockouts	Yes	Yes	Yes
Mounting	Panel Mount	Shaft mount	Shaft mount
<b>Certifications</b>			
BTL	N/A	BTL: BACnet Application Specific Controller (B-ASC)	BTL: BACnet Application Specific Controller (B-ASC)
FCC	Part 15, Class A	Part 15, Class A	Part 15, Class A
Industry Canada (IC)	CAN/CSA 22.2	CAN/CSA 22.2, ULC/ORD-C100-92, CAN-ULC-S527	CAN/CSA 22.2, ULC/ORD-C100-92, CAN-ULC-S527
UL	UL-916 (Energy Management Equipment), UL-864 (Smoke Control)	UL-916 (Energy Management Equipment), UL-864 (Smoke Control)	UL-916 (Energy Management Equipment), UL-864 (Smoke Control)
C-UL US	UL Listed to Canadian Safety Standards (CAN/CSA 22.2).	UL Listed to Canadian Safety Standards (CAN/CSA 22.2).	UL Listed to Canadian Safety Standards (CAN/CSA 22.2).
CE - EU	89/336/EEC, EN61326	89/336/EEC, EN61326	89/336/EEC, EN61326
WEEE - Directive of the European Union	2012/19/EU	2012/19/EU	2012/19/EU
RoHS Directive	RoHS II	RoHS II	RoHS II
RCM	Yes	Yes	Yes

## MNB Series

### MNB Series Controllers – Inputs and Outputs

Base Part Number	MNB-70	MNB-300	MNB-1000	MNB-1000-15	MNB-V1-2	MNB-V2-2
<b>Universal Inputs</b>	3	6	12	6	3	3
Digital Contact	•	•	•	•	•	•
Digital Counter - Low Speed						
Digital Counter - Medium Speed		•				
Digital Counter - High Speed		•				
Digital Supervised						
Analog Voltage - 0-1V						
Analog Voltage - 0-5V	•	•	•	•	•	•
Analog Voltage - 0-10V						
Analog Voltage - 2-10V						
Analog Current - 0-20mA	•	•	•	•	•	•
Analog Current - 4-20mA						
Analog Resistance	•	•	•	•	•	•
Analog Thermistor - 10k	•	•	•	•	•	•
Analog Thermistor - 1.8k						
Analog Thermistor - 1k	•	•	•	•	•	•
<b>Digital Inputs</b>			4			
Digital Contact			•			
Counter - Low Speed						
Counter - Medium Speed						
Counter - High Speed			•			
<b>Analog Inputs</b>						
Voltage - 0-5V						
Voltage - 0-10V						
Velocity Pressure						
Analog Thermistor - 10k						
Analog Thermistor - 1.8k						
Analog Thermistor - 1k						
<b>Universal Outputs</b>	1	3	8	3		1
Digital Contact	•	•		•		•
Digital Counter - Low Speed						
Digital Counter - Medium Speed						
Digital Counter - High Speed						
Digital Supervised						
Analog Voltage - 0-1V						
Analog Voltage - 0-5V						
Analog Voltage - 0-10V	•	•	•	•		•
Analog Voltage - 2-10V						
Analog Current - 0-20mA	•	•	•	•		•
Analog Current - 4-20mA						
Analog Resistance						
Analog Thermistor - 10k						
Analog Thermistor - 1.8k						
Analog Thermistor - 1k						
<b>Digital Outputs</b>	3	6	8	6		3
Form A, SPST						
Form C, SPDT						
Triac	•	•	•	•		•
<b>Analog Outputs</b>						
Voltage - 0-10V						
Current - 0-20mA						
<b>Damper Outputs</b>					1	1
Form K, Triac					internal	internal
Voltage						
<b>Intelligent Sensors</b>						
S-Link (MN-Sx for MNB)	•	•	•		•	•



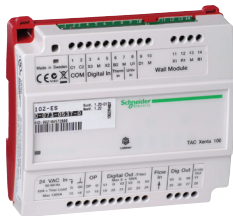




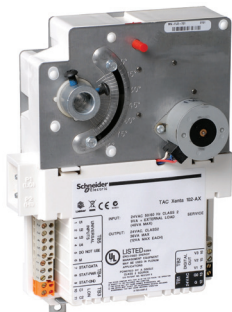
# Xenta Series

Xenta series controllers and I/O modules provide an open and flexible system architecture and access to standardized LonWorks-based network technology.

## Xenta Series Controllers



Xenta 102-ES  
VAV Zone Controller



Xenta 102-AX  
VAV Zone Controller

	102-ES	102-AX
<b>Part Number</b>	<b>007305370</b>	<b>007305401</b>
<b>Communications</b>		
<b>Protocol</b>	LonTalk communication protocol	LonTalk communication protocol
<b>Communication Interface</b>	TP/FT-10, 78 kbps	TP/FT-10, 78 kbps
<b>Software</b>		
<b>Pre loaded Application/ASC</b>	Yes	Yes
<b>Physical</b>		
<b>Dimensions</b>	127 W x 126 H x 50 D mm (5.0 W x 4.9 H x 1.9 D in.)	159 W x 197 H x 63 D mm (6.25 W x 7.75 H x 2.50 D in.)
<b>Weight</b>	0.4 kg (0.88 lb.)	1.04 kg (2.3 lb.)
<b>Power</b>		
<b>Power</b>	24 VAC ±20%, 50/60 Hz	24 VAC ±10%, 50/60 Hz
<b>Consumption</b>	6 VA with Xenta OP, Digital Outputs max 6 x 9 =114 VA , Total max 120 VA	9 VA, Digital Outputs each 12 VA , Total max 36 VA
<b>Environmental</b>		
<b>Operating Range</b>	0 °C to 50 °C (32 °F to 122 °F) 0-95% RH (non-condensing)	0 °C to 50 °C (32 °F to 122 °F) 0-90% RH (non-condensing)
<b>External Features</b>		
<b>Enclosure rating</b>	UL94 5VB, IP 30 (<2.5 mm protection)	NEMA-1, UL94 5VB, IP 10 (<50 mm protection)
<b>HOA Switches (DO/AO)</b>	No	No
<b>Digital Status LEDs</b>	No	No
<b>Intelligent Sensors</b>	STR150	STR150
<b>Service Port</b>	Xenta OP	Xenta OP
<b>Terminals</b>		
<b>I/O Terminals</b>	Fixed terminal	Two-piece terminal
<b>I/O Expansion</b>	No	No
<b>External Enclosure/Mounting</b>		
<b>Enclosure class</b>	N/A	N/A
<b>Mounting</b>	DIN-rail or wall mount	VAV/FPB box mount
<b>Certifications</b>		
<b>LonMark</b>	LonMark certified: VAV 8010	LonMark certified: VAV 8010
<b>FCC</b>	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class B (Emission)
<b>UL</b>	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)
<b>C-UL US</b>	Yes	No
<b>CE - EU</b>	Yes	Yes
<b>WEEE - Directive of the European Union</b>	Yes	Yes
<b>RoHS Directive</b>	Yes	Yes
<b>RCM</b>	Yes	Yes

## Xenta Series Controllers, continued



Xenta 122-FC/24, 122-FC/230  
Flexible Zone Controllers

<b>122-FC/24, 122-FC/230</b>	
<b>Part Number</b>	<b>007307110, 007307120</b>
<b>Communications</b>	
<b>Protocol</b>	LonTalk communication protocol
<b>Communication Interface</b>	TP/FT-10, 78 kbps
<b>Software</b>	
<b>Pre loaded Application/ASC</b>	Hybrid
<b>Physical</b>	
<b>Dimensions</b>	112 W x 110 H x 50 D mm (4.37 W x 4.29 H x 2.00 D in.)
<b>Weight</b>	0.3 kg (0.66 lb.) / 0.6 kg (1.3 lb)
<b>Power</b>	
<b>Power</b>	24 VAC ±20%, 50/60 Hz (230 V AC ±10%, 50–60 Hz)
<b>Consumption</b>	Controller and OP 4 VA, including digital outputs: FC/24: 84 VA, FC/230: 20 VA
<b>Environmental</b>	
<b>Operating Range</b>	0 °C to 50 °C (32 °F to 122 °F) 0-90% RH (non-condensing)
<b>External Features</b>	
<b>Enclosure rating</b>	UL94 5VB, IP 20 (<12.5 mm protection)
<b>HOA Switches (DO/AO)</b>	No
<b>Digital Status LEDs</b>	No
<b>Intelligent Sensors</b>	STR150
<b>Service Port</b>	Xenta OP
<b>Terminals</b>	
<b>I/O Terminals</b>	Fixed terminal
<b>I/O Expansion</b>	No
<b>External Enclosure/Mounting</b>	
<b>Enclosure class</b>	N/A
<b>Mounting</b>	DIN-rail or wall mount
<b>Certifications</b>	
<b>LonMark</b>	LonMark certified: 8501 Fan Coil
<b>FCC</b>	47 CFR Part 15, Subpart B, Class B
<b>UL</b>	UL-916 (Energy Management Equipment)
<b>C-UL US</b>	Yes
<b>CE - EU</b>	Yes
<b>WEEE - Directive of the European Union</b>	Yes
<b>RoHS Directive</b>	Yes
<b>RCM</b>	Yes

## Xenta Series I/O Modules



Xenta 411/412  
10 Channel Digital Input  
Modules



Xenta 421A/422A  
4 Channel Universal Input/5  
Channel Digital Output  
Modules

	411, 412	421A, 422A
<b>Part Number</b>	007302011, 007302031	007302450, 007302460
<b>Communications</b>		
<b>Protocol</b>	LonTalk communication protocol	LonTalk communication protocol
<b>Communication Interface</b>	TP/FT-10, 78 kbps	TP/FT-10, 78 kbps
<b>Physical</b>		
<b>Dimensions</b>	90 W x 110 H x 75 D mm (3.55 W x 4.33 H x 3.1 D in.)	90 W x 110 H x 75 D mm (3.55 W x 4.33 H x 3.1 D in.)
<b>Weight (including baseplate)</b>	0.595 kg (1.41 lb.)	0.295 kg (0.65 lb.)
<b>Power</b>		
<b>Power</b>	24 VAC ±20%, 50/60 Hz	24 VAC ±20%, 50/60 Hz
<b>Consumption</b>	2 VA	4 W, 8 VA transformer
<b>Environmental</b>		
<b>Operating Range</b>	0 °C to 50 °C (32 °F to 122 °F) 0-90% RH (non-condensing)	0 °C to 50 °C (32 °F to 122 °F) 0-90% RH (non-condensing)
<b>External Features</b>		
<b>Enclosure rating</b>	UL94 V-0, IP 20 (<12.5 mm protection)	UL94 V-0, IP 20 (<12.5 mm protection)
<b>HOA Switches (DO/AO)</b>	Available on 412 model	Available on 422A model
<b>Digital Status LEDs</b>	Available on 412 model	Available on 422A model
<b>Terminals</b>		
<b>I/O Terminals</b>	Terminal base	Terminal base
<b>External Enclosure/Mounting</b>		
<b>Enclosure class</b>	Enclosed class (no separate enclosure required)	Open class (separate enclosure required)
<b>Mounting</b>	DIN-rail or wall mount	DIN-rail or wall mount
<b>Certifications</b>		
<b>LonMark</b>	No	LonMark® certified: Digital Input 20543, Analog Input 0520
<b>FCC</b>	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class B (Emission)
<b>UL</b>	UL-916 (Energy Management Equipment), UL 3111-1 (Electrical Measuring and Test Equipment)	UL-916 (Energy Management Equipment)
<b>C-UL US</b>	Yes	Yes
<b>CE - EU</b>	Yes	Yes
<b>WEEE - Directive of the European Union</b>	Yes	Yes
<b>RoHS Directive</b>	Yes	Yes
<b>RCM</b>	Yes	Yes

Xenta Series I/O Modules, continued



Xenta 451A / 452A  
8 Channel Universal Input/2  
Channel Analog Output  
Modules



Xenta 471  
8 Channel Universal Input  
Module



Xenta 491/492  
8 Channel Analog Output  
Modules

	451A, 452A	471	491, 492
<b>Part Number</b>	<b>007302850, 007302860</b>	<b>007302910</b>	<b>007303010, 007303030</b>
<b>Communications</b>			
<b>Protocol</b>	LonTalk communication protocol	LonTalk communication protocol	LonTalk communication protocol
<b>Communication Interface</b>	TP/FT-10, 78 kbps	TP/FT-10, 78 kbps	TP/FT-10, 78 kbps
<b>Physical</b>			
<b>Dimensions</b>	90 W x 110 H x 75 D mm (3.55 W x 4.33 H x 3.1 D in.)	90 W x 110 H x 75 D mm (3.55 W x 4.33 H x 3.1 D in.)	90 W x 110 H x 75 D mm (3.55 W x 4.33 H x 3.1 D in.)
<b>Weight (including baseplate)</b>	0.295 kg (0.65 lb.)	0.495 kg (1.09 lb.)	0.495 kg (1.09 lb.)
<b>Power</b>			
<b>Power</b>	24 VAC ±20%, 50/60 Hz	24 VAC ±20%, 50/60 Hz	24 VAC ±20%, 50/60 Hz
<b>Consumption</b>	3 W, 6 VA transformer	4 W, 8 VA transformer	3 W, 6 VA transformer
<b>Environmental</b>			
<b>Operating Range</b>	0 °C to 50 °C (32 °F to 122 °F) 0-90% RH (non-condensing)	0 °C to 50 °C (32 °F to 122 °F) 0-90% RH (non-condensing)	0 °C to 50 °C (32 °F to 122 °F) 0-90% RH (non-condensing)
<b>External Features</b>			
<b>Enclosure rating</b>	UL94 V-0, IP 20 (<12.5 mm protection)	UL94 V-0, IP 20 (<12.5 mm protection)	UL94 V-0, IP 20 (<12.5 mm protection)
<b>HOA Switches (DO/AO)</b>	Available on 452A model	No	Available on 492 model
<b>Digital Status LEDs</b>	Available on 452A model	No	Available on 492 model
<b>Terminals</b>			
<b>I/O Terminals</b>	Terminal base	Terminal base	Terminal base
<b>External Enclosure/Mounting</b>			
<b>Enclosure class</b>	Enclosed class (no separate enclosure required)	Enclosed class (no separate enclosure required)	Enclosed class (no separate enclosure required)
<b>Mounting</b>	DIN-rail or wall mount	DIN-rail or wall mount	DIN-rail or wall mount
<b>Certifications</b>			
<b>LonMark</b>	LonMark certified: Analog Input 0520, Analog Output 0521	No	No
<b>FCC</b>	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class A (Emission)
<b>UL</b>	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment), UL 3111-1 (Electrical Measuring and Test Equipment)	UL-916 (Energy Management Equipment), UL 3111-1 (Electrical Measuring and Test Equipment)
<b>C-UL US</b>	Yes	Yes	Yes
<b>CE - EU</b>	Yes	Yes	Yes
<b>WEEE - Directive of the European Union</b>	Yes	Yes	Yes
<b>RoHS Directive</b>	Yes	Yes	Yes
<b>RCM</b>	Yes	Yes	Yes

## Xenta Series

### Xenta Series Controllers – Inputs and Outputs

	102-ES	102-AX	122-FC/24, 122-FC/230
Part Number	007305370	007305401	007307110, 007307120
<b>Universal Inputs</b>		4	4
Digital Contact		•	•
Digital Counter - Low Speed			
Digital Counter - Medium Speed			
Digital Counter - High Speed			
Digital Supervised			
Analog Voltage - 0-1 V			
Analog Voltage - 0-5 V		•	
Analog Voltage - 0-10 V			•
Analog Voltage - 2-10 V			
Analog Current - 0-20 mA			
Analog Current - 4-20 mA			
Analog Resistance			
Analog Thermistor - 10 k		•	
Analog Thermistor - 1.8 k			•
Analog Thermistor - 1 k			
<b>Digital Inputs</b>	2		3
Digital Contact	•		•
Counter - Low Speed			
Counter - Medium Speed			
Counter - High Speed			
<b>Analog Inputs</b>	3	5	•
Voltage - 0-5 V		4 channel	
Voltage - 0-10 V	1 channel		
Velocity Pressure	1 channel internal	1 channel internal	
Resistor, 10 k			•
Analog Thermistor - 10 k			
Analog Thermistor - 1.8 k	•		
Analog Thermistor - 1 k			
<b>Digital Outputs</b>	6	3	8
Form A, SPST			4
Form C, SPDT			
Triac	•	•	4
<b>Analog Outputs</b>	1		3
Voltage - 0-10 V	•		•
Current - 0-20 mA			
<b>Damper Outputs</b>		1	
Form K, Triac		internal	
Voltage			
<b>Intelligent Sensors</b>	1	1	1
STR (Xenta)	•	•	•

## Xenta Series I/O Modules – Inputs and Outputs

	411, 412	421A, 422A	451A, 452A	471	491, 492
Part Number	007302011, 007302031	007302450, 007302460	007302850, 007302860	007302910	007303010, 007303030
<b>Universal Inputs</b>		4	8	8	
Digital Contact		•	•		
Digital Counter - Low Speed			•		
Digital Counter - Medium Speed		•			
Digital Counter - High Speed					
Digital Supervised					
Analog Voltage - 0-1 V		•	•	•	
Analog Voltage - 0-5 V		•	•	•	
Analog Voltage - 0-10 V		•	•	•	
Analog Voltage - 2-10 V		•	•	•	
Analog Current - 0-20 mA		•	•	•	
Analog Current - 4-20 mA		•	•	•	
Analog Resistance		•	•		
Analog Thermistor - 10 k		•	•		
Analog Thermistor - 1.8 k		•	•		
Analog Thermistor - 1 k					
<b>Digital Inputs</b>	10				
Digital Contact	•				
Counter - Low Speed					
Counter - Medium Speed	•				
Counter - High Speed					
<b>Digital Outputs</b>		5			
Form A, SPST		•			
Form C, SPDT					
Triac					
<b>Analog Outputs</b>			2		8
Voltage - 0-10 V			•		•
Current - 0-20 mA					

Note: 421A, 422A, 451A, and 452A can also be used as distributed I/Os under an automation server.





## MNL Series

The MNL series of controllers are designed in accordance with LonMark® guidelines. When programmed or loaded with a pre-engineered application, these controllers provide control for packaged rooftops, heat pumps, fan coils, unit ventilators, and similar applications.

## MNL Series Controllers



MNL-50  
Fan Coil, Heat Pump, Roof  
Top, Satellite Zone Controllers



MNL-100  
Fan Coil, Heat Pump, Roof  
Top, Satellite Zone Controllers



MNL-110  
Fan Coil Zone Controller

	MNL-50	MNL-100	MNL-110
<b>Part Number</b>	MNL-5RF3, MNL-5RH3, MNL-5RR3, MNL-5RS3, MNL-5RS4	MNL-10RF3, MNL-10RH3, MNL-10RR3, MNL-10RS3, MNL-10RS4	MNL-11RF3
<b>Communications</b>			
<b>Protocol</b>	LonTalk® communication protocol	LonTalk communication protocol	LonTalk communication protocol
<b>Communication Interface</b>	TP/FT-10, 78 kbps	TP/FT-10, 78 kbps	TP/FT-10, 78 kbps
<b>Software</b>			
<b>Pre loaded Application/ASC</b>	Yes	Yes	Yes
<b>Programmability</b>	WorkPlace Tech programmable	WorkPlace Tech programmable	WorkPlace Tech programmable
<b>Physical</b>			
<b>Dimensions</b>	127 W x 112 H x 41 D mm (5.0 W x 4.5 H x 1.625 D in.)	109 W x 111 H x 51 D mm (4.37 W x 4.29 H x 2.00 D in.)	154.9 W x 107 H x 50 D mm (6.1 W x 4.2 H x 2.0 D in.)
<b>Weight (including baseplate)</b>	N/A	N/A	N/A
<b>Power</b>			
<b>Power</b>	24 VAC +25% -15%, 50/60 Hz	24 VAC +25% -15%, 50/60 Hz	24 VAC +25% -15%, 50/60 Hz
<b>Consumption</b>	12 VA (84 VA with DO loads @24 VA each)	15 VA	20.5 VA
<b>Environmental</b>			
<b>Operating Range</b>	-40 °C to 60 °C (-40 °F to 140 °F) 5-95% RH (non-condensing)	-40 °C to 60 °C (-40 °F to 140 °F) 5-95% RH (non-condensing)	-40 °C to 55 °C (-40 °F to 131 °F) 0-95% RH (non-condensing)
<b>CPU Internals</b>			
<b>CPU</b>	Neuron FT5000	Neuron FT5000	Neuron FT5000
<b>Memory</b>	Flash = 64 byte or 512 k bit, EEPROM 6 k bit or 8 k byte	Flash = 64 byte or 512 k bit, EEPROM 6 k bit or 8 k byte	Flash = 64 byte or 512 k bit, EEPROM 6 k bit or 8 k byte
<b>Battery</b>	N/A	N/A	N/A
<b>Real time clock</b>	No	No	No
<b>External Features</b>			
<b>Enclosure rating</b>	NEMA-1, UL94 5 V (Plenum rated)	NEMA-1, UL94 5 V (Plenum rated)	UL94 V-0
<b>HOA Switches (DO/AO)</b>	No	No	No
<b>Digital Status LEDs</b>	No	No	No
<b>Display</b>	Via S-Link Sensor	Via S-Link Sensor	Via S-Link Sensor
<b>Intelligent Sensors</b>	Sensor Link (S-Link)	Sensor Link (S-Link)	Sensor Link (S-Link)
<b>Service Port</b>	LonWorks Network Jack via S-Link Sensor	LonWorks Network Jack	LonWorks Network Jack via S-Link Sensor
<b>Terminals</b>			
<b>I/O Terminals</b>	Fixed terminal	Terminal base	Fixed terminal
<b>I/O Expansion</b>	No	No	No
<b>A/D Conversion - Inputs</b>	Yes	Yes	Yes
<b>A/D Conversion - Outputs</b>	Yes	Yes	Yes
<b>External Enclosure/Mounting</b>			
<b>Enclosure class</b>	N/A	N/A	N/A
<b>Conduit knockouts</b>	No	No	No
<b>Mounting</b>	Wall mount	DIN-rail or wall mount	DIN-rail or wall mount
<b>Certifications</b>			
<b>LonMark</b>	LonMark certified: Fan Coil 8020, Heat Pump, Roof Top, Satellite	LonMark certified: Fan Coil 8020, Heat Pump, Roof Top, Satellite	LonMark certified: Fan Coil 8020
<b>FCC</b>	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)
<b>Industry Canada (IC)</b>	Yes	Yes	Yes
<b>UL</b>	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)	UL-873 (Temperature Indicating and Regulating Equipment) Recognized component and UL-916 (Energy Management Equipment) Recognized
<b>C-UL US</b>	Yes	Yes	Yes
<b>CE - EU</b>	Yes	Yes	Yes
<b>WEEE - Directive of the European Union</b>	No	No	No
<b>RoHS Directive</b>	No	No	No
<b>RCM</b>	Yes	Yes	Yes

MNL Series Controllers, continued



MNL-130  
Fan Coil Zone Controller



MNL-150  
Fan Coil, Heat Pump, Roof Top, Satellite Zone Controllers



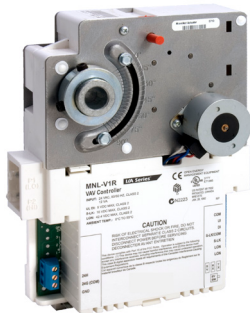
MNL-200  
Fan Coil, Heat Pump, Roof Top, Satellite Zone Controllers

	MNL-130	MNL-150	MNL-200
<b>Part Number</b>	MNL-13RF3	MNL-15RF3, MNL-15RH3, MNL-15RR3, MNL-15RS3, MNL-15RS4	MNL-20RF3, MNL-20RH3, MNL-20RR3, MNL-20RS3, MNL-20RS4
<b>Communications</b>			
<b>Protocol</b>	LonTalk communication protocol	LonTalk communication protocol	LonTalk communication protocol
<b>Communication Interface</b>	TP/FT-10, 78 kbps	TP/FT-10, 78 kbps	TP/FT-10, 78 kbps
<b>Software</b>			
<b>Pre loaded Application/ASC</b>	Yes	Yes	Yes
<b>Programmability</b>	WorkPlace Tech programmable	WorkPlace Tech programmable	WorkPlace Tech programmable
<b>Physical</b>			
<b>Dimensions</b>	154.9 W x 107 H x 50 D mm (6.1 W x 4.2 H x 2.0 D in.)	109 W x 111 H x 51 D mm (4.37 W x 4.29 H x 2.00 D in.)	109 W x 111 H x 51 D mm (4.37 W x 4.29 H x 2.00 D in.)
<b>Weight (including baseplate)</b>	N/A	N/A	N/A
<b>Power</b>			
<b>Power</b>	24 VAC +25% -15%, 50/60 Hz	24 VAC +25% -15%, 50/60 Hz	24 VAC +25% -15%, 50/60 Hz
<b>Consumption</b>	21.5 VA	15 VA	15 VA
<b>Environmental</b>			
<b>Operating Range</b>	-40 °C to 55 °C (-40 °F to 131 °F) 0-95% RH (non-condensing)	-40 °C to 60 °C (-40 °F to 140 °F) 5-95% RH (non-condensing)	-40 °C to 60 °C (-40 °F to 140 °F) 5-95% RH (non-condensing)
<b>CPU Internals</b>			
<b>CPU</b>	Neuron FT5000	Neuron FT5000	Neuron FT5000
<b>Memory</b>	Flash = 64 byte or 512 k bit, EEPROM 6 k bit or 8 k byte	Flash = 64 byte or 512 k bit, EEPROM 6 k bit or 8 k byte	Flash = 64 byte or 512 k bit, EEPROM 6 k bit or 8 k byte
<b>Battery</b>	N/A	N/A	N/A
<b>Real time clock</b>	No	No	No
<b>External Features</b>			
<b>Enclosure rating</b>	UL94 V-0	NEMA-1, UL94 5 V (Plenum rated)	NEMA-1, UL94 5 V (Plenum rated)
<b>HOA Switches (DO/AO)</b>	No	No	No
<b>Digital Status LEDs</b>	No	No	No
<b>Display</b>	Via S-Link Sensor	Via S-Link Sensor	Via S-Link Sensor
<b>Intelligent Sensors</b>	Sensor Link (S-Link)	Sensor Link (S-Link)	Sensor Link (S-Link)
<b>Service Port</b>	LonWorks Network Jack via S-Link Sensor	LonWorks Network Jack	LonWorks Network Jack
<b>Terminals</b>			
<b>I/O Terminals</b>	Fixed terminal	Terminal base	Terminal base
<b>I/O Expansion</b>	No	No	No
<b>A/D Conversion - Inputs</b>	Yes	Yes	Yes
<b>A/D Conversion - Outputs</b>	Yes	Yes	Yes
<b>External Enclosure/Mounting</b>			
<b>Enclosure class</b>	N/A	N/A	N/A
<b>Conduit knockouts</b>	No	No	No
<b>Mounting</b>	DIN-rail or wall mount	DIN-rail or wall mount	DIN-rail or wall mount
<b>Certifications</b>			
<b>LonMark</b>	LonMark certified: Fan Coil 8020	LonMark certified: Fan Coil 8020, Heat Pump, Roof Top, Satellite	LonMark certified: Fan Coil 8020, Heat Pump, Roof Top, Satellite
<b>FCC</b>	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)
<b>Industry Canada (IC)</b>	Yes	Yes	Yes
<b>UL</b>	UL-873 (Temperature Indicating and Regulating Equipment) Recognized component and UL-916 (Energy Management Equipment) Recognized	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)
<b>C-UL US</b>	Yes	Yes	Yes
<b>CE - EU</b>	Yes	Yes	Yes
<b>WEEE - Directive of the European Union</b>	No	No	No
<b>RoHS Directive</b>	No	No	No
<b>RCM</b>	Yes	Yes	Yes

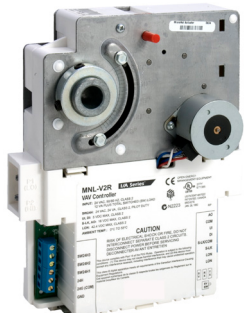
MNL Series Controllers, continued



MNL-800  
Local Controller



MNL-V1RVx  
VAV Zone Controller



MNL-V2RVx  
VAV Zone Controller

	MNL-800	MNL-V1RVx	MNL-V2RVx
Part Number	MNL-800-102	MNL-V1RV3-2	MNL-V2RV3-2
<b>Communications</b>			
Protocol	LonTalk communication protocol	LonTalk communication protocol	LonTalk communication protocol
Communication Interface	TP/FT-10, 78 kbps	TP/FT-10, 78 kbps	TP/FT-10, 78 kbps
<b>Software</b>			
Pre loaded Application/ASC	Yes	Yes	Yes
Programmability	WorkPlace Tech programmable	WorkPlace Tech programmable	WorkPlace Tech programmable
<b>Physical</b>			
Dimensions	216 W x 262 H x 101 D mm (8.5 W x 10.875 H x 4.25 D in.)	159 W x 197 H x 63 D mm (6.25 W x 7.75 H x 2.50 D in.)	159 W x 197 H x 63 D mm (6.25 W x 7.75 H x 2.50 D in.)
Weight (including baseplate)	N/A	N/A	N/A
<b>Power</b>			
Power	24 VAC +25% -15%, 50/60 Hz	24 VAC +25% -15%, 50/60 Hz	24 VAC +25% -15%, 50/60 Hz
Consumption	20 VA	12 VA	12 VA (84 VA with DO loads @24 VA each)
<b>Environmental</b>			
Operating Range	-40 °C to 60 °C (-40 °F to 140 °F) 5-95% RH (non-condensing)	0 °C to 55 °C (32 °F to 131 °F) 5-95% RH (non-condensing)	0 °C to 55 °C (32 °F to 131 °F) 5-95% RH (non-condensing)
<b>CPU Internals</b>			
CPU	SAF-C161, 10 MHz Clock speed, 16 bit word size	Neuron FT5000	Neuron FT5000
Memory	EPROM = 512; RAM = 128; EEPROM = 32	Flash = 64 byte or 512 k bit, EEPROM 6 k bit or 8 k byte	Flash = 64 byte or 512 k bit, EEPROM 6 k bit or 8 k byte
Battery	Rechargeable, 3 days for clock and RAM	N/A	N/A
Real time clock	±30 minutes/year at 25 °C (77 °F)	No	No
<b>External Features</b>			
Enclosure rating	N/A	NEMA-1, UL94 5 V (Plenum rated)	NEMA-1, UL94 5 V (Plenum rated)
HOA Switches (DO/AO)	No	No	No
Digital Status LEDs	No	No	No
Display	Via S-Link Sensor	Via S-Link Sensor	Via S-Link Sensor
Intelligent Sensors	Sensor Link (S-Link)	Sensor Link (S-Link)	Sensor Link (S-Link)
Service Port	LonWorks Network Jack	LonWorks Network Jack via S-Link Sensor	LonWorks Network Jack via S-Link Sensor
<b>Terminals</b>			
I/O Terminals	Terminal base	Fixed terminal	Fixed terminal
I/O Expansion	No	No	No
A/D Conversion - Inputs	Yes	Yes	Yes
A/D Conversion - Outputs	Yes	Yes	Yes
<b>External Enclosure/Mounting</b>			
Enclosure class	Open class (separate enclosure required)	N/A	N/A
Conduit knockouts	Yes - On enclosure	No	No
Mounting	Wall mount	Wall mount	Wall mount
<b>Certifications</b>			
LonMark	LonMark certified	LonMark certified: VAV 8010	LonMark certified: VAV 8010
FCC	47 CFR § 15, Class A (Emission)	47 CFR § 15, Class B (Emission)	47 CFR § 15, Class B (Emission)
Industry Canada (IC)	Yes	Yes	Yes
UL	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)	UL-916 (Energy Management Equipment)
C-UL US	Yes	Yes	Yes
CE - EU	Yes	Yes	Yes
WEEE - Directive of the European Union	No	No	No
RoHS Directive	No	No	No
RCM	Yes	Yes	Yes

## MNL Series Controllers, continued



MNL-V3RV3  
VAV Zone Controller

MNL-V3RV3	
Part Number	MNL-V3RV3
<b>Communications</b>	
Protocol	LonTalk communication protocol
Communication Interface	TP/FT-10, 78 kbps
<b>Software</b>	
Pre loaded Application/ASC	Yes
Programmability	WorkPlace Tech programmable
<b>Physical</b>	
Dimensions	114 W x 127 H x 41 D mm (4.5 W x 5.0 H x 1.625 D in.)
Weight (including baseplate)	N/A
<b>Power</b>	
Power	24 VAC +25% -15%, 50/60 Hz
Consumption	12VA (102 VA with DO loads @24 VA each and triac load @18 VA each)
<b>Environmental</b>	
Operating Range	0 °C to 55 °C (32 °F to 131 °F) 5-95% RH (non-condensing)
<b>CPU Internals</b>	
CPU	Neuron FT5000
Memory	Flash = 64 byte or 512 k bit, EEPROM 6 k bit or 8 k byte
Battery	N/A
Real time clock	No
<b>External Features</b>	
Enclosure rating	NEMA-1, UL94 5 V (Plenum rated)
HOA Switches (DO/AO)	No
Digital Status LEDs	No
Display	Via S-Link Sensor
Intelligent Sensors	Sensor Link (S-Link)
Service Port	LonWorks Network Jack via S-Link Sensor
<b>Terminals</b>	
I/O Terminals	Fixed terminal
I/O Expansion	No
A/D Conversion - Inputs	Yes
A/D Conversion - Outputs	Yes
<b>External Enclosure/Mounting</b>	
Enclosure class	N/A
Conduit knockouts	No
Mounting	Wall mount
<b>Certifications</b>	
LonMark	LonMark certified: VAV 8010
FCC	47 CFR § 15, Class B (Emission)
Industry Canada (IC)	Yes
UL	UL-916 (Energy Management Equipment)
C-UL US	Yes
CE - EU	Yes
WEEE - Directive of the European Union	No
RoHS Directive	No
RCM	Yes

## MNL Series Controllers – Inputs and Outputs

	MNL-50	MNL-100	MNL-110	MNL-130	MNL-150
Part Number	MNL-5RF3, MNL-5RH3, MNL-5RR3, MNL-5RS3, MNL-5RS4	MNL-10RF3, MNL-10RH3, MNL-10RR3, MNL-10RS3, MNL-10RS4	MNL-11RF3	MNL-13RF3	MNL-15RF3, MNL-15RH3, MNL-15RR3, MNL-15RS3, MNL-15RS4
<b>Universal Inputs</b>	1	2	3	3	3
Digital Contact	•	•	•	•	•
Digital Counter - Low Speed					
Digital Counter - Medium Speed					
Digital Counter - High Speed					
Digital Supervised					
Analog Voltage - 0-1 V					
Analog Voltage - 0-5 V	•	•	•	•	•
Analog Voltage - 0-10 V					
Analog Voltage - 2-10 V					
Analog Current - 0-20 mA	•	•	•	•	•
Analog Current - 4-20 mA					
Analog Resistance	•	•	•	•	•
Analog Thermistor - 10 k					
Analog Thermistor - 1.8 k					
Analog Thermistor - 1 k	•	•	•	•	•
<b>Digital Inputs</b>	1	1			
Digital Contact	•	•			
Counter - Low Speed					
Counter - Medium Speed					
Counter - High Speed					
<b>Analog Inputs</b>					
Voltage - 0-5 V					
Voltage - 0-10 V					
Velocity Pressure					
Analog Thermistor - 10 k					
Analog Thermistor - 1.8 k					
Analog Thermistor - 1 k					
<b>Digital Outputs</b>	3	4	5	7	2
Form A, SPST	•	•	1 channel	3 channel	•
Form C, SPDT					
Triac			4 channel	4 channel	
<b>Analog Outputs</b>					2
Voltage - 0-10 V					
Current - 0-20 mA					•
<b>Damper Outputs</b>					
Form K, Triac					
Voltage					
<b>Intelligent Sensors</b>	1	1	1	1	1
S-Link (MN-Sx for MNL)	•	•	•	•	•

## MNL Series

### MNL Series Controllers – Inputs and Outputs, continued

	MNL-200	MNL-800	MNL-V1RVx	MNL-V2RVx	MNL-V3RV3
Part Number	MNL-20RF3, MNL-20RH3, MNL-20RR3, MNL-20RS3, MNL-20RS4	MNL-800-102	MNL-V1RV3-2	MNL-V2RV3-2	MNL-V3RV3
<b>Universal Inputs</b>	3	8	1	1	1
Digital Contact	•	•	•	•	•
Digital Counter - Low Speed					
Digital Counter - Medium Speed					
Digital Counter - High Speed					
Digital Supervised					
Analog Voltage - 0-1 V					
Analog Voltage - 0-5 V	•	•	•	•	•
Analog Voltage - 0-10 V					
Analog Voltage - 2-10 V					
Analog Current - 0-20 mA	•	•	•	•	•
Analog Current - 4-20 mA					
Analog Resistance	•	•	•	•	•
Analog Thermistor - 10 k					
Analog Thermistor - 1.8 k					
Analog Thermistor - 1 k	•	•	•	•	•
<b>Digital Inputs</b>	2	5	1	1	1
Digital Contact	•	•	•	•	•
Counter - Low Speed					
Counter - Medium Speed		4 channel			
Counter - High Speed		1 channel			
<b>Analog Inputs</b>			1	1	1
Voltage - 0-5 V					
Voltage - 0-10 V					
Velocity Pressure			internal	internal	internal
Analog Thermistor - 10 k					
Analog Thermistor - 1.8 k					
Analog Thermistor - 1 k					
<b>Digital Outputs</b>	6	8		3	5
Form A, SPST	•			•	3 channel
Form C, SPDT		•			
Triac					2 channel
<b>Analog Outputs</b>	2	4		1	1
Voltage - 0-10 V					
Current - 0-20 mA	•	•		•	•
<b>Damper Outputs</b>			1	1	
Form K, Triac			internal	internal	
Voltage					
<b>Intelligent Sensors</b>	1	1	1	1	1
S-Link (MN-Sx for MNL)	•	•	•	•	•





# Additional Resources

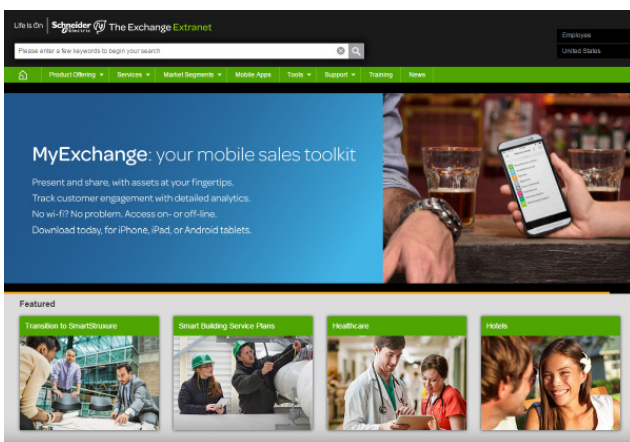
# Digital sales tools to enable your success!

Tools, platforms, and services for an increasingly mobile workforce. Drive collaboration within and across the organization and with customers in an always on, global environment.

## The Exchange - EcoBuilding Partner & Employee Extranet

Attractive interface; user-friendly access 20,000+ assets

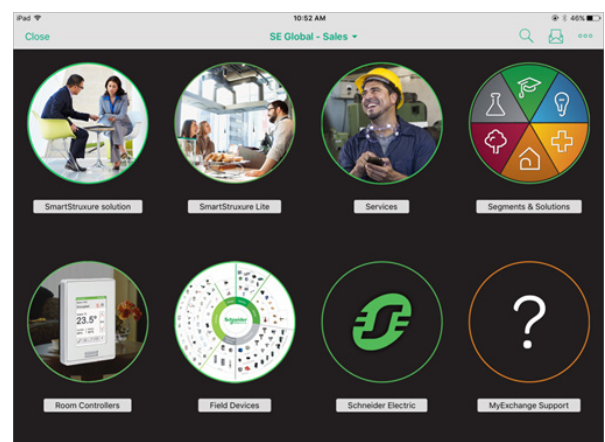
- Sales enablement, marcom, product & technical documentation
- Constantly refreshed with new content; all EcoBuilding lines of business represented
- Access to the Communities and technical & product support
- One-time single sign-on via easy self-registration: <https://ecobuilding.schneider-electric.com/register>



## MyExchange Mobile App

Easily access and view the latest assets from The Exchange online with iOS or Android devices

- Download assets for availability while offline
- Electronically highlight and mark up assets and save your notations
- Manage a personal "channel" with your own content
- Email assets to customers, and manage sharing activities/history
- Receive news and notifications on updates directly on your device



For more information on registering and downloading the app, go to The Exchange: <https://ecobuilding.schneider-electric.com/myexchange#tab/documents>

# Modernize your BMS with EcoStruxure Building

Building automation technology is changing rapidly. New building management systems help deliver occupant satisfaction and productivity, are more secure, and provide better performance!

Future-ready your customers' buildings. Minimize the risk, downtime and cost of modernizing a BMS, and take advantage of new features and benefits, with EcoStruxure Building transition tools and services.

## Customer benefits:

- Update and make your buildings IoT-ready while preserving existing site investments
- Leverage the benefits of Schneider Electric's preeminent building management system, including: a new user experience, new technology and new feature sets

## System integrator benefits:

- Protect valued customer relationships with best-in-class solutions and conversion tools to ease customer site transitions
- Save time and labor costs by reusing components (controllers, sensors, wiring) and system design and configuration

## Mutual benefits:

- Choose from multiple modernization path options to meet specific needs, schedules and budgets
- Enable access to connected offers; facilitate predictive and preventative cloud-enabled connected services

Tools are available to support transition from any other building management systems:

TAC I/A Series™ – transitioniaseries
--------------------------------------

TAC I/NET™ – transitioninet
-----------------------------

TAC Vista™ – transitionvista
------------------------------

Andover Continuum™ – transitioncontinuum
--

NETWORK 8000™ – transitionnw8000
----------------------------------

Use the keywords to find all assets on The Exchange.



Find comprehensive transition assets and tools on The Exchange:

<https://ecobuilding.schneider-electric.com/transition-to-ecostruxure#tab/documents>



# EcoStruxure Building Advisor

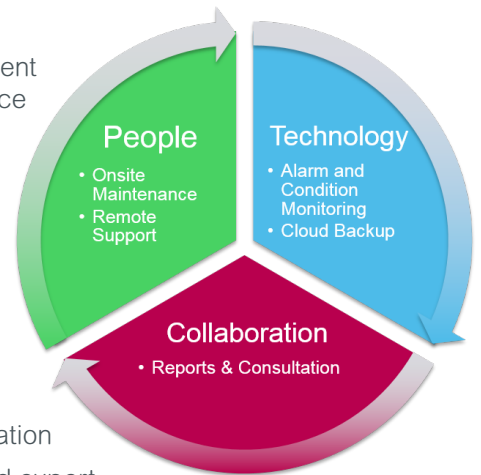
Empowering you to achieve greater lifetime building efficiencies.

Facilities managers are faced with difficult challenges:

Tighter budgets, aging infrastructure, and higher energy costs demand a different approach to a building's operation and maintenance. Our comprehensive service portfolio combines people, technology and collaboration to help you lower operating costs, improve occupant comfort, and increase asset value.

You can benefit from:

- Field service engineers and data scientists who provide support and troubleshoot problems onsite and remotely
- Real-time system alarm monitoring and continuous building performance monitoring to anticipate issues
- Automated fault detection and diagnostics to speed resolution. We'll identify opportunities to save costs, improve comfort and well-being with cost justification
- Customized, detailed reports with deep insights on your building systems and expert advice with solutions



		Plus	Prime	Ultra	Managed Services
Monitoring	Alarm Monitoring	✓	✓	✓	
	Condition Monitoring		✓	✓	✓
	Cloud Backup	✓	✓	✓	
Maintenance	Preventive Checks		✓	✓	
	Remote Issue Resolution	✓	✓	✓	
	Condition-Based Checks			✓	
Reports & Consultation	Alarms and Site Work Report	✓	✓	✓	
	Site Health Report		✓	✓	✓
	Site Health Report with ROI Justification			✓	✓



Please find information on EcoStruxure Building Advisor on The Exchange:  
<https://ecobuilding.schneider-electric.com/ecostruxure-building-advisor>

# Smart starts at the foundation of the BMS

Connected products are an integral part of EcoStruxure Building, Schneider Electric's open innovative platform of buildings. Inclusive of valves, actuators, sensors and cabling management solutions, connected products help ensure optimal performance and comfort.

Valves, actuators and sensors interpret critical data points, sending real-time responses to changes in the physical environment while connectors and patch panels solve cabling network management challenges.

If connected products are not running at optimal efficiency, neither is the higher level BMS.

How strong is your foundation?



Learn more about our BIM-enabled connected products here:  
<https://www.schneider-electric.com/en/work/support/building-information-modelling/>



Please find all sales, marketing and technical documentation on Connected Devices on The Exchange:  
<https://ecobuilding.schneider-electric.com/field-devices#tab/documents>

# EcoStruxure™ Energy Expert

Monitor, measure, and optimize power in buildings in the same way as your HVAC, lighting, and fire safety systems with this embedded power management option.

EcoStruxure Energy Expert electrical systems management enables organizations specifically with non-critical electrical network applications to better monitor, manage and optimize their buildings from a single system interface. Leveraging Schneider's expertise in power management, it helps facility and building operators improve building energy performance, optimize maintenance staff effectiveness, and leverage fault diagnostics to prevent downtime and maintain power availability.

## Ensure electrical network health

- Monitor electrical equipment and key assets
- Improve response to power related issues

## Increase power quality awareness

- Power factor, harmonics and voltage disturbances
- Detect faults and diagnose key electrical problems

## Improve energy usage accountability

- Track energy consumption and allocate costs
- Achieve energy conservation objectives

## Power Meters

### Optimize power uptime and building performance

Power is a complex factor within a building's operation and monitoring it as part of building management is crucial. Power meters provide insight that helps owners and managers ensure electrical network health, increase power quality awareness, and improve energy accountability.

Schneider Electric offers a wide range of meters that collect data from key points within the electrical infrastructure of a building and seamlessly serve it up to EcoStruxure Energy Expert.



Please find all sales, marketing and technical documentation for EcoStruxure Energy Expert on The Exchange:

[https://ecobuilding.schneider-electric.com/search#keyword/power manager](https://ecobuilding.schneider-electric.com/search#keyword/power%20manager)



# Engineering efficiency tools; Increase simplicity. Save time.

Find more Efficiency Tools information on The Exchange:  
<https://ecobuilding.schneider-electric.com/tools>

## Automated Engineering Tool (AET)

Drive efficiency and standardization with anytime access to a large selection of standard HVAC applications and components on this cloud-based repository. The AET enables users to create templates based on preexisting engineered solutions and reuse those templates on other projects or for similar applications on the same project.

Search keyword: AET

## Project Configuration Tool (PCT)

Produce proven solutions that are high quality and easy to maintain with the PCT, an offline engineering platform used for project configuration, server configuration and deployment. This virtual environment allows engineers to spend less time at the customer site, and design, program, model and analyze solutions in their own offices without the need for physical hardware.

Search keyword: PCT

## eCommission SmartX IP Controller Mobile App

Conveniently load controller applications, program and configure systems, conduct I/O checkout and air balancing, and more, for SmartX IP Controllers all from a laptop computer or any IOS or Android device. These commissioning activities can be done early in the process even without a network infrastructure in place.

Search keyword: mp-x app

## Expert Tool

This PC-based software application helps visualize the configuration of EcoStruxure Building Enterprise Server and SmartX Edge Controllers. The tool enables design commissioning or support engineers to see the relationship between the objects on the folder structure and generate documentation to support the commissioning or support process.

Search keyword: Expert Tool

## Selection Tools

Find a range of product selection tools on The Exchange, including SE8000 and SE7000 Series Room Controllers, EcoStruxure Building Expert, Heat and Flow Meters, and HVAC Sensors, and Power Meters.

## Graphic Development Support

Outsource graphics development for building management system and user interface needs to our expert team of highly skilled graphic developers, ACAD engineers and Revit/MEP specialists. They possess expertise in BMS graphics development, Building Information Modeling (BIM), 3D graphics and image rendering.

Search keyword: Graphic Development Support

<https://ecobuilding.schneider-electric.com/tools>



Please find information on Efficiency Tools on The Exchange:  
<https://ecobuilding.schneider-electric.com/>



# EcoStruxure™ Security Expert

## Your First Line of Defense in Building Security

Protect your building occupants and assets with EcoStruxure Security Expert, an integrated role-based physical access control and intrusion detection solution that unifies your building's security infrastructure and management systems into an easy to manage, single platform that enables faster, more efficient, and potentially life-saving decision making.

Available for small, mid and large enterprise environments, this solution provides extensive data handling capabilities that can store millions of credentials in off-line memory; while functioning independently and maintaining a unique database. Information is encrypted throughout the architecture, and complies with global agency listings. EcoStruxure Security Expert will also easily extend to multiple sites and future business expansions.



**One unified view**  
Connect anywhere from any device



Please find all sales, marketing and technical documentation for EcoStruxure Security Expert on The Exchange:

<https://ecobuilding.schneider-electric.com/ecostruxure-security-expert#tab/documents>



# Application-specific Room Controllers

## SE7000 and SE8000 Series.

## Cost effective alternative to direct digital controls.

Schneider Electric room controllers bridge the gap between the cost of stand-alone thermostats and the performance of DDC systems. They simplify installation and commissioning to control rooftop units, fan coil units, terminal units and heat pump applications in a wide variety of facilities. Our series of intelligent room controllers provide comfort and energy savings using their native application-specific control sequences, PID algorithms, occupancy detection and schedule management.

### SE8000 Series

With rich, customizable features, the SE8000 Series enables significant energy savings with accurate temperature control in any space. The SE8000 room controllers can be easily integrated into most BMSs as well as to communicate wirelessly for ease of installation, flexibility and scalability.

### SE7000 Series

The SE7000 digital controllers offer easy-to-install, thermostat-like functionality that sense occupancy and adjust set-point or fan speed control. Easily integrate into most BMSs. The wireless versions of the SE7000 provide a simple yet powerful solution which targets retrofit installations where running new communication wiring is prohibitive.



Please find all sales, marketing and technical documentation for Room Controllers on The Exchange:

<https://ecobuilding.schneider-electric.com/room-controllers#tab/documents>

# Quick Links

## Digital Tools & Resources

### The Exchange – EcoBuilding Extranet

<https://ecobuilding.schneider-electric.com>

### MyExchange Mobile App

<https://schneiderelectric.showpad.biz>

#### iTunes (iOS) download

<https://itunes.apple.com/us/app/myexchange-schneider-electric/id911005711?mt=8>

#### Google Play (Android) download

<https://play.google.com/store/apps/details?id=com.showpad.myexchange&hl=en>

### mySchneider App

Tailored services, 24/7 self-service, and expert help

[http://www.schneider-electric.com/b2b/en/support/myschneider-app/?c=InternalNews\\_LDC&pid=Email](http://www.schneider-electric.com/b2b/en/support/myschneider-app/?c=InternalNews_LDC&pid=Email)

## Sales, Marketing & Thought Leadership

### Sales Enablement Kit

<https://ecobuilding.schneider-electric.com/ecostruxure-building-operation/sales-support-library/sales-enablement-kits#Language!English!10910/tab/documents>

### Sales Support Library

<https://ecobuilding.schneider-electric.com/ecostruxure-building-operation/sales-support-library#Language!English!10910/tab/documents>

### Customer Success Stories

<https://ecobuilding.schneider-electric.com/ecostruxure-building-operation/sales-support-library/case-study#Language!English!10910/tab/documents>

### Schneider Electric Videos

<https://www.youtube.com/user/SchneiderCorporate>

### Schneider Electric Blog

<http://blog.schneider-electric.com/building-management/>

### White Papers

<http://www.schneider-electric.com/ww/en/download/1555889-WhitePaperLanding>

## Community & Product Support

### Building Management Community

<https://exchangecommunity.schneider-electric.com/t5/Building-Management-Systems/ct-p/building-management>

### Knowledgebase (Lessons Learned)

<http://buildingskb.schneider-electric.com>

### EcoStruxure Solution WebHelp

<https://ecostruxure-building-help.se.com>

### Customer Care Center

[www.schneider-electric.com](http://www.schneider-electric.com)

Go to “Support” section tab and select your country of origin

Or install the “mySchneider” mobile application onto your Apple or Android device

[mySchneider app](#)

### Product Support

<https://ecobuilding.schneider-electric.com/support#tab/documents>



Please find more EcoStruxure information on The Exchange:  
<https://ecobuilding.schneider-electric.com>



Life Is On

**Schneider**  
Electric

**Schneider Electric Americas**

Boston ONE Campus  
800 Federal Street  
Andover, MA 01810-1067  
Tel: +1-978-794-0800

**Schneider Electric EMEA**

Mobilvägen 10  
SE-223 62, Lund, Sweden  
Tel: +46 (40) 38 68 50

**Schneider Electric Hong Kong Ltd**

11/F, Kerry Centre,  
683 King's Rd,  
Quarry Bay, Hong Kong  
Tel:+853 2875 1738

[www.schneider-electric.com](http://www.schneider-electric.com)

July 2020

©2018 Schneider Electric. All Rights Reserved.  
All trademarks are owned by Schneider Electric Industries SAS or its affiliated companies.  
998-20312057