


EcoStruxure™ Building

EcoStruxure Automation Server Device and Enterprise Server B-BC PICS

Protocol Implementation Conformance Statement



EcoStruxure Automation Server Devices and an Enterprise Server

- EcoStruxure Building Operation has been designed to strictly comply with the ASHRAE BACnet standard.
- BACnet enables integration between Devices designed for a wide variety of applications.
- Natively supports BACnet, LonWorks, Modbus, and Web Services, and can serve as a gateway between protocols.
- This Protocol Implementation Conformance Statement (PICS) document details the BACnet Interoperability Building Blocks that are supported in EcoStruxure Building Operation.

Date	January, 2024
Vendor name	Schneider Electric
Vendor ID	10
Website	www.se.com/buildings
Range name	EcoStruxure Building Operation

Product name	Product model number
Enterprise Server	ES
SpaceLogic Controller AS-B	AS-B-24, AS-B-24H, AS-B-24-P, AS-B-24H-P, AS-B-36, AS-B-36H, AS-B-36-P, AS-B-36-H-P
SpaceLogic Controller AS-P	AS-P, AS-P-NL, AS-P-NL-S, AS-P-S, AS-P-NLS-SMK, AS-P-SBA
Edge Server	CS

Application software version	N/A
Firmware revision	6.0.1
Base ASHRAE standard	135-2012-a, ar, aw, ax
BACnet Protocol version	1
BACnet Protocol revision	16

Product description

EcoStruxure automation server devices and Enterprise Servers are combined, native BACnet/IP protocol operator workstations and controllers with a built-in web server. The AS-P models have expandable Input/Output through the use of expansion modules while the AS-B model has onboard Input/Outputs.

All AS-P models have serial ports that may be used to communicate with MS/TP controller devices. These EcoStruxure automation server devices can also serve as a BACnet protocol router and BACnet/IP Broadcast Management Device (BBMD). They perform BACnet routing functions among attached MS/TP networks. BACnet/SC is supported on all AS-P models. The Enterprise Server can also serve as a BACnet/IP BBMD.

EcoStruxure automation server devices also natively support other protocols, such as LonWorks, Modbus, and Web Services, and can be used as a gateway device to exchange values between protocols.

Note: Requires EcoStruxure BMS Workstation P/N SXWSWORK00001 and SXWSWORK00002 for user interface.

Device Profile Support

Controller Profile

BACnet Building Controller (B-BC)	X
BACnet Advanced Application Controller (B-AAC)	
BACnet Application Specific Controller (B-ASC)	
BACnet Smart Actuator (B-SA)	
BACnet Smart Sensor (B-SS)	

Operator Profile

BACnet Advanced Operator Workstation (B-AWS)	
BACnet Operator Workstation (B-OWS)	
BACnet Operator Display (B-OD)	

Segmentation Capability

Segmentation	Supported	Window Size
Able to transmit segmented messages	X	1
Able to receive segmented messages	X	1

Data Link Layer and Routing Options

BACnet/IP

BACnet/IP	Description
Data Rates	10/100/1000 Mbit/s
Router for Data Link	Yes

MS/TP master (Clause 9)

Node	Description
Master	Yes
Router for Data Link	Yes ¹
Transceiver Type	Non-isolated
Local 47K ohm bias resistors	Yes
Transceiver Unit Load	1/4
Data Rates	76.8 kbaud 38.4 kbaud 19.2 kbaud 9.6 kbaud

¹ Valid for AS models only.

Data Link Layer and Routing Options – Continued

BACnet/SC (Annex AB)

BACnet/SC	Description
Data Rates	10/100/1000 Mbit/s
Router for Data Link	Yes
BACnet Secure Connect Node	Yes
Direct connections supported	Yes
Maximum number of simultaneous direct connections initiated:	Limited only by available memory
Maximum number of direct connections accepted:	Limited only by available memory
BACnet Secure Connect Hub Function	Yes
Maximum number of simultaneous hub connections accepted:	Limited only by available memory
HTTPS Proxy Support	No
List the types of HTTPS proxies supported:	None
Additional cipher suites supported beyond those required for TLS V1.3 ¹	None
Additional Transport Layer Security versions other than V1.3 supported ²	None
Generates private keys internally, and provides matching certificate signing requests	No
DNS host name resolution supported (RFC 1123)	Yes
mDNS host name resolution supported (RFC 6762)	No

¹ The additional cipher suites supported using the cipher suite names as of the TLS Cipher Suite Registry at IANA (See RFC 8446).

² The TLS versions other than V1.3 that are supported, including the supported cipher suites for the version beyond those required, using the cipher suite names as defined by the TLS version supported.

Other Networking Options

Networking Option	Supported
Static Device Binding Supported	
Annex H, BACnet Tunneling Router over IP	
BACnet Broadcast Management Device (BBMD)	X
BBMD supports registration by foreign device	X
Device support registration as foreign device	X

Character Sets Supported

Character Sets	Supported
ISO 8859-1	X
ISO 10646 (UCS-2)	X
ISO 10646 (UCS-4)	X
ISO 10646 (UTF-8)	X
IBM/Microsoft DBCS	
JIS C 6226	

Note: For messages received in UTF-8 encoding, responses are transmitted with the narrowest character set for optimal interoperability.

BACnet Interoperability Building Blocks (BIBBs) Support

Alarms and Events

BIBB	Description
AE-N-A	Notification-A
AE-N-I-B	Notification Internal-B
AE-N-E-B	Notification External-B
AE-ACK-B	ACK-B
AE-ASUM-B	Alarm Summary-B
AE-ESUM-B	Enrollment Summary-B
AE-INFO-B	Information-B

Data Sharing

BIBB	Description
DS-RP-A	ReadProperty-A
DS-RP-B	ReadProperty-B
DS-RPM-A	ReadPropertyMultiple-A
DS-RPM-B	ReadPropertyMultiple-B
DS-WP-A	WriteProperty-A
DS-WP-B	WriteProperty-B
DS-WPM-B	WritePropertyMultiple-B
DS-COV-A	COV-A
DS-COV-B	COV-B
DS-COVP-B	COVP-B

BACnet Interoperability Building Blocks (BIBBs) Support

Device Management

BIBB	Description
DM-DDB-A	Dynamic Device Binding-A
DM-DDB-B	Dynamic Device Binding-B
DM-DOB-B	Dynamic Object Binding-B
DM-DCC-B	DeviceCommunication Control-B
DM-TS-A	TimeSynchronization-A
DM-TS-B	TimeSynchronization-B
DM-UTC-A	UTCTimeSynchronization-A
DM-UTC-B	UTCTimeSynchronization-B
DM-RD-B	ReinitializeDevice-B
DM-BR-B	Backup and Restore-B
DM-OCD-B	Object Creation and Deletion-B
DM-ANM-A	Automatic Network Mapping-A
DM-ADM-A	Automatic Device Mapping-A
DM-ATS-A	Automatic Time Synchronization

BACnet Interoperability Building Blocks (BIBBs) Support

Schedules

BIBB	Description
SCHED-I-B	Scheduling - Internal-B
SCHED-E-B	Scheduling - External-B

Note: The SCHED-A BACnet interoperability building block was removed from the BACnet Standard.

Trends

BIBB	Description
T-VMT-I-B	Viewing and Modifying Trends Internal-B
T-VMT-E-B	Viewing and Modifying Trends External-B
T-ATR-B	Automated Trend Retrieval-B

Note: The T-VMT-A BACnet interoperability building block was removed from the BACnet Standard.

BACnet Interoperability Building Blocks (BIBBs) Support

Network Management

BIBB	Description
NM-RC-B	Router Configuration-B
NM-BBMDC-B	BBMD Configuration-B
NM-FDR-A	Foreign Device Registration-A

Gateway

BIBB	Description
GW-EO-B	Embedded Objects-B

Supported BACnet Object Types

ID	Description	Creatable	Deletable
0	Analog Input		
1	Analog Output		
2	Analog Value	x	x
3	Binary Input		
4	Binary Output		
5	Binary Value	x	x
6	Calendar	x	x
8	Device		
9	Event Enrollment	x	x
10	File		
45	Integer Value	x	x
12	Loop	x	x
13	Multi-state Input		
14	Multi-state Output		
19	Multi-state Value	x	x
15	Notification Class	x	x
17	Schedule	x	x
20	Trend Log	x	x

Analog Input

BACnet Standard Analog Input		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
85	present-value	Value	W
28	description	Description	W
31	device-type	Device type	W
111	status-flags	Status flags	
36	event-state	Event state	
103	reliability	Reliability	W
81	out-of-service	Out of service	W
118	update-interval	Update interval (cs)	
117	units	Unit	W
69	min-pres-value	Minimum value	W
65	max-pres-value	Maximum value	W
106	resolution	Resolution	
22	cov-increment	COV increment	W
113	time-delay	Time delay	W
17	notification-class	BACnet notification	W
45	high-limit	Upper limit	W
59	low-limit	Lower limit	W
25	deadband	Deadband	W
52	limit-enable	Limit enable	W
35	event-enable	Event enable	W
0	acked-transitions	Acknowledged transitions	
72	notify-type	Notify type	W
130	event-time-stamps	To-off-normal time To-fault time To-normal time	

Analog Input (continued)

BACnet Standard Analog Input		EcoStruxure Automation Server Device	Writable
ID	BACnet property name	Internal Device property name	
351	event-message-texts	Last alarm message, Last fault message, Last reset message	
352	event-message-texts-config	Alarm message, Reset message, Fault message	W
353	event-detection-enable	Event detection enable	W
355	event-algorithm-inhibit-ref	Shunt variable reference	W
354	event-algorithm-inhibit	Shunt variable	W
356	time-delay-normal	Reset delay (s)	W
371	property-list		
168	profile-name	Profile name	

Analog Output

BACnet Standard Analog Output		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
85	present-value	Value	W
28	description	Description	W
31	device-type	Device type	W
111	status-flags	Status flags	
36	event-state	Event state	
103	reliability	Reliability	W
81	out-of-service	Out of service	W
117	units	Unit	W
69	min-pres-value	Minimum value	W
65	max-pres-value	Maximum value	W
106	resolution	Resolution	
87	priority-array	Command Priority Levels	
104	relinquish-default	Relinquish default	W
22	cov-increment	COV increment	W
113	time-delay	Time delay	W
17	notification-class	BACnet notification	W
45	high-limit	Upper limit	W
59	low-limit	Lower limit	W
25	deadband	Deadband	W
52	limit-enable	Limit enable	W
35	event-enable	Event enable	W
0	acked-transitions	Acknowledged transitions	
72	notify-type	Notify type	W
130	event-time-stamps	To-off-normal time To-fault time To-normal time	

Analog Output (continued)

BACnet Standard Analog Output		EcoStruxure Automation Server Device	Writable
ID	BACnet property name	Internal Device property name	
351	event-message-texts	Last alarm message, Last fault message, Last reset message	
352	event-message-texts-config	Alarm message Reset message Fault message	W
353	event-detection-enable	Event detection enable	W
355	event-algorithm-inhibit-ref	Shunt variable reference	W
354	event-algorithm-inhibit	Shunt variable	W
356	time-delay-normal	Reset delay (s)	W
371	property-list		
168	profile-name	Profile name	

Analog Value

BACnet Standard Analog Value		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
85	present-value	Value	W
28	description	Description	W
111	status-flags	Status flags	
36	event-state	Event state	
103	reliability	Reliability	W
81	out-of-service	Out of service	W
117	units	Unit	W
87	priority-array	Command Priority Levels	
104	relinquish-default	Relinquish default	W
22	cov-increment	COV increment	W
113	time-delay	Time delay	W
17	notification-class	BACnet notification	W
45	high-limit	Upper limit	W
59	low-limit	Lower limit	W
25	deadband	Deadband	W
52	limit-enable	Limit enable	W
35	event-enable	Event enable	W
0	acked-transitions	Acknowledged transitions	
72	notify-type	Notify type	W
130	event-time-stamps	To-off-normal time To-fault time To-normal time	

Analog Value (continued)

BACnet Standard Analog Value		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
351	event-message-texts	Last alarm message, Last fault message, Last reset message	
352	event-message-texts-config	Alarm message, Reset message, Fault message	W
353	event-detection-enable	Event detection enable	W
355	event-algorithm-inhibit-ref	Shunt variable reference	W
354	event-algorithm-inhibit	Shunt variable	W
356	time-delay-normal	Reset delay (s)	W
69	min-pres-value	Minimum value	W
65	max-pres-value	Maximum value	W
106	resolution	Resolution	
371	property-list		
168	profile-name	Profile name	

Binary Input

	BACnet Standard Binary Input	EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
85	present-value	Value	W
28	description	Description	W
31	device-type	Device type	W
111	status-flags	Status flags	
36	event-state	Event state	
103	reliability	Reliability	W
81	out-of-service	Out of service	W
84	polarity	Polarity	W
46	inactive-text	Inactive text	W
4	active-text	Active text	W
16	change-of-state-time	Change of state time	
15	change-of-state-count	Change of state count	W
115	time-of-state-count-reset	Time of state count reset	
33	elapsed-active-time	Elapsed active time (s)	W
114	time-of-active-time-reset	Time of active time reset	
113	time-delay	Time delay	W
17	notification-class	BACnet notification	W
6	alarm-value	Alarm value	W
35	event-enable	Event enable	W
0	acked-transitions	Acknowledged transitions	
72	notify-type	Notify type	W
130	event-time-stamps	To-off-normal time To-fault time To-normal time	

Binary Input (continued)

BACnet Standard Binary Input		EcoStruxure Automation Server Device	Writable
ID	BACnet property name	Internal Device property name	
130	event-time-stamps	To-off-normal time To-fault time To-normal time	
351	event-message-texts	Last alarm message, Last fault message, Last reset message	
352	event-message-texts-config	Alarm message, Reset message, Fault message	W
353	event-detection-enable	Event detection enable	W
355	event-algorithm-inhibit-ref	Shunt variable reference	W
354	event-algorithm-inhibit	Shunt variable	W
356	time-delay-normal	Reset delay (s)	W
371	property-list		
168	profile-name	Profile name	

Binary Output

BACnet Standard Binary Output		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
85	present-value	Value	W
28	description	Description	W
31	device-type	Device type	W
111	status-flags	Status flags	
36	event-state	Event state	
103	reliability	Reliability	W
81	out-of-service	Out of service	W
84	polarity	Polarity	W
46	inactive-text	Inactive text	W
4	active-text	Active text	W
16	change-of-state-time	Change of state time	
15	change-of-state-count	Change of state count	W
115	time-of-state-count-reset	Time of state count reset	
33	elapsed-active-time	Elapsed active time	W
114	time-of-active-time-reset	Time of active time reset	
66	minimum-off-time	Minimum off time	W
67	minimum-on-time	Minimum on time	W
87	priority-array	Command Priority Levels	
104	relinquish-default	Relinquish default	W
113	time-delay	Time delay (s)	W
17	notification-class	BACnet notification	W
40	feedback-value	Feedback value	W
35	event-enable	Event enable	W
0	acked-transitions	Acknowledged transitions	

Binary Output (continued)

BACnet Standard Binary Output		EcoStruxure Automation Server Device	Writable
ID	BACnet property name	Internal Device property name	
72	notify-type	Notify type	W
130	event-time-stamps	To-off-normal time To-fault time To-normal time	
351	event-message-texts	Last alarm message, Last fault message, Last reset message	
352	event-message-texts-config	Alarm message, Reset message, Fault message	W
353	event-detection-enable	Event detection enable	W
355	event-algorithm-inhibit-ref	Shunt variable reference	W
354	event-algorithm-inhibit	Shunt variable	W
356	time-delay-normal	Reset delay (s)	W
371	property-list		
168	profile-name	Profile name	

Binary Value

BACnet Standard Binary Value		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
85	present-value	Value	W
28	description	Description	W
111	status-flags	Status flags	
36	event-state	Event state	
103	reliability	Reliability	W
81	out-of-service	Out of service	W
46	inactive-text	Inactive text	W
4	active-text	Active text	W
16	change-of-state-time	Change of state time	
15	change-of-state-count	Change of state count	W
115	time-of-state-count-reset	Time of state count reset	
33	elapsed-active-time	Elapsed active time	W
114	time-of-active-time-reset	Time of active time reset	
66	minimum-off-time	Minimum off time	W
67	minimum-on-time	Minimum on time	W
87	priority-array	Command Priority Levels	
104	relinquish-default	Relinquish default	W
113	time-delay	Time delay	W
17	notification-class	BACnet notification	W
6	alarm-value	Alarm value	W
35	event-enable	Event enable	W
0	acked-transitions	Acknowledged transitions	
72	notify-type	Notify type	W
130	event-time-stamps	To-off-normal time To-fault time To-normal time	

Binary Value (continued)

BACnet Standard Binary Value		EcoStruxure Automation Server Device	Writable
ID	BACnet property name	Internal Device property name	
351	event-message-texts	Last alarm message, Last fault message, Last reset message	
352	event-message-texts-config	Alarm message, Reset message, Fault message	W
353	event-detection-enable	Event detection enable	W
355	event-algorithm-inhibit-ref	Shunt variable reference	W
354	event-algorithm-inhibit	Shunt variable	W
356	time-delay-normal	Reset delay (s)	W
371	property-list		
168	profile-name	Profile name	

Calendar

BACnet Standard Calendar		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
28	description	Description	W
85	present-value	Value	
23	date-list	Date list	W
371	property-list		
168	profile-name	Profile name	

Device

BACnet Standard Device		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
112	system-status	System status	
121	vendor-name	Vendor name	
120	vendor-identifier	Vendor identifier	
70	model-name	Model name	
44	firmware-revision	Firmware revision	
12	application-software-version	Application software version	
58	location	Location	W
28	description	Description	W
98	protocol-version	Protocol version	
139	protocol-revision	Protocol revision	
97	protocol-services-supported	Services supported	
96	protocol-object-types-supported	Object types supported	
76	object-list	View objects in Application folder	
62	max-apdu-length-accepted	Maximum APDU length accepted	
107	segmentation-supported	Segmentation supported	
167	max-segments-accepted	Maximum segments accepted	
57	local-time	Local time	
56	local-date	Local date	
119	utc-offset	UTC offset (min)	
24	daylight-savings-status	Daylight savings	
10	apdu-segment-timeout	APDU segment timeout	W

Device (continued)

BACnet Standard Device		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
11	apdu-timeout	APDU timeout	W
73	number-of-apdu-retries	Number of APDU retries	W
116	time-synchronization-recipients	Time synchronization recipients	W
64	max-master	Maximum master	W
63	max-info-frames	Maximum information frames	W
30	device-address-binding	View properties of bound devices in Hardware folder.	
155	database-revision	Database revision	
154	configuration-files	Backup configuration files	
157	last-restore-time	Last restore time	
153	backup-failure-timeout	Backup failure timeout	W
339	backup-preparation-time	Backup preparation time	W
341	restore-preparation-time	Restore preparation time	W
340	restore-completion-time	Restore completion time	W
338	backup-and-restore-state	Backup and restore state	
152	active-cov-subscriptions		
172	slave-proxy-enable		
206	utc-time-synchronization-recipients	UTC time synchronization recipients	

Device (continued)

BACnet Standard Device		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
204	time-synchronization-interval	Time synchronization interval (min)	
193	align-intervals	Align intervals	
195	interval-offset	Interval offset (min)	
371	property-list		
168	profile-name	Profile name	
515	proprietary-property-515	Serial number	
517	proprietary-property-517	Infinity path	

Event Enrollment

BACnet Standard Event Enrollment		EcoStruxure Automation Server Device	Writable
ID	BACnet property name	Internal Device property name	
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
28	description	Description	W
37	event-type	Alarm Type	
72	notify-type	Notify type	W
83	event-parameters	Alarm Trigger	W
78	object-property- reference	Monitored variable	W
36	event-state	Event state	
35	event-enable	Event enable	W
0	acked-transitions	Acknowledged transitions	
17	notification-class	BACnet notification	W
130	event-time-stamps	To-off-normal time To-fault time To-normal time	
351	event-message-texts	Last alarm message, Last fault message, Last reset message	
352	event-message-texts- config	Alarm message, Reset message, Fault message	W
353	event-detection- enable	Event detection enable	W
355	event-algorithm- inhibit-ref	Shunt variable reference	W
354	event-algorithm- inhibit	Shunt variable	W
356	time-delay-normal		W
111	status-flags	Status flags	
103	reliability	Reliability	W
359	fault-type		
358	fault-parameters		

Event Enrollment (continued)

	BACnet Standard Event Enrollment	EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
371	property-list		
168	profile-name	Profile name	
359	fault-type		
358	fault-parameters		

File

BACnet Standard File		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	
79	object-type	BACnet type	
28	description	Description	W
43	file-type	File type	
42	file-size	File size	W ³
71	modification-date	Modification date	
13	archive	Archive	W
99	read-only	Read only	
41	file-access-method	File access method	
141	record-count	Record count	
371	property-list		
168	profile-name	Profile name	

Integer Value (Standard Object)

BACnet Standard Integer Value		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
0	acked-transitions	Acknowledged transitions	
17	notification-class	Notification class	W
25	deadband	Deadband	W
35	event-enable	Event enable	W
45	high-limit	Upper limit	W
52	limit-enable	Limit enable	W
59	low-limit	Limit enable	W
72	notify-type	Notify type	W
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
85	present-value	Value	W
28	description	Description	W
111	status-flags	Status flags	
113	time-delay	Time delay	W
36	event-state	Event state	
81	out-of-service	Out of service	W
117	units	Unit	W
69	min-pres-value	Minimum value	W
65	max-pres-value	Maximim value	W
87	priority-array	Command Priority Levels	
103	reliability	Reliability	
104	relinquish-default	Relinquish default	W
22	cov-increment	COV increment	W
168	profile-name	Profile name	W
371	property-list		

Integer Value (continued)

BACnet Standard Integer Value		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
130	event-time-stamps	To-off -normal time To-fault time To-normal time	
351	event-message-texts	Last alarm message, Last fault message, Last reset message	
352	event-message-texts-config	Alarm message, Reset message, Fault message	W
353	event-detection-enable	Event detection enable	W
354	event-algorithm-inhibit	Shunt variable	W
355	event-algorithm-inhibit-ref	Shunt variable reference	W
356	time-delay-normal	Reset delay (s)	W

Loop

BACnet Standard Loop		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
85	present-value	Value	W
28	description	Description	W
111	status-flags	Status flags	
36	event-state	Event state	
103	reliability	Reliability	W
81	out-of-service	Out of service	W
118	update-interval	Update interval (ms)	W
82	output units	Unit	W
60	manipulated-variable-reference	Manipulated variable reference	W
19	controlled-variable-reference	Controlled variable reference	W
21	controlled-variable-value	Controlled variable value	
20	controlled-variable-units	Unit	W
109	setpoint-reference	Setpoint reference	W
108	setpoint	Setpoint	W
2	action	Action	W
93	proportional-constant	Proportional constant	W
94	proportional-constant-units	Unit	W
49	integral-constant	Integral constant	W
50	integral-constant-units	Unit	W
26	derivative-constant	Derivative constant	W
27	derivative-constant-units	Unit	W
14	bias	Bias	W
61	maximum-output	Maximum output	W
68	minimum-output	Minimum output	W
88	priority-for-writing	Priority for writing	W
22	cov-increment	COV increment	W

Loop (continued)

BACnet Standard Loop		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
113	time-delay	Time delay (s)	W
17	notification-class	BACnet notification	W
34	error-limit	Error limit	W
25	deadband	Deadband	W
35	event-enable	Event enable	W
0	acked-transitions	Acknowledged transitions	
72	notify-type	Notify type	W
130	event-time-stamps	To-off-normal time To-fault time To-normal time	
351	event-message-texts	Last alarm message, Last fault message, Last reset message	
352	event-message-texts-config	Alarm message Reset message Fault message	W
353	event-detection-enable	Event detection enable	W
355	event-algorithm-inhibit-ref	Shunt variable reference	W
354	event-algorithm-inhibit	Shunt variable	W
356	time-delay-normal	Reset delay (s)	W
357	reliability-evaluation-inhibit		
371	property-list		
168	profile-name	Profile name	

Multi-state Input

	BACnet Standard Multi-state Input	EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
85	present-value	Value	W
28	description	Description	W
31	device-type	Device type	W
111	status-flags	Status flags	
36	event-state	Event state	
103	reliability	Reliability	W
81	out-of-service	Out of service	W
74	number-of-states	Number of states	W
110	state-text	Label	W
113	time-delay	Time delay (s)	W
17	notification-class	BACnet notification	W
7	alarm-values	Is alarm value	W
39	fault-values	Is fault value	W
35	event-enable	Event enable	W
0	acked-transitions	Acknowledged transitions	
72	notify-type	Notify type	W
130	event-time-stamps	To-off-normal time To-fault time To-normal time	
351	event-message-texts	Last alarm message, Last fault message, Last reset message	
352	event-message-texts- config	Alarm message, Reset message, Fault message	W
353	event-detection- enable	Event detection enable	W
355	event-algorithm- inhibit-ref	Shunt variable reference	W
354	event-algorithm- inhibit	Shunt variable	W
356	time-delay-normal	Reset delay (s)	W

Multi-state Input (continued)

	BACnet Standard Multi-state Input	EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
371	property-list		
168	profile-name	Profile name	

Multi-state Output

BACnet Standard Multi-state Output		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
85	present-value	Value	W
28	description	Description	W
31	device-type	Device type	W
111	status-flags	Status flags	
36	event-state	Event state	
103	reliability	Reliability	W
81	out-of-service	Out of service	W
74	number-of-states	Number of states	W
110	state-text	Label	W
87	priority-array	Command priority levels	
104	relinquish-default	Relinquish default	W
113	time-delay	Time delay (s)	W
17	notification-class	BACnet notification	W
40	feedback-value	Feedback value	W
35	event-enable	Event enable	W
0	acked-transitions	Acknowledged transitions	
72	notify-type	Notify type	W
130	event-time-stamps	To-off-normal time To-fault time To-normal time	
351	event-message-texts	Last alarm message, Last fault message, Last reset message	
352	event-message-texts-config	Alarm message, Reset message, Fault message	W
353	event-detection-enable	Event detection enable	W
355	event-algorithm-inhibit-ref	Shunt variable reference	W
354	event-algorithm-inhibit	Shunt variable	W

Multi-state Output (continued)

	BACnet Standard Multi-state Output	EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
356	time-delay-normal	Reset delay (s)	W
371	property-list		
168	profile-name	Profile name	

Multi-state Value

BACnet Standard Multi-state Value		EcoStruxure Automation Server Device	Writable
ID	BACnet property name	Internal Device property name	
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
85	present-value	Value	W
28	description	Description	W
111	status-flags	Status flags	
36	event-state	Event state	
103	reliability	Reliability	W
81	out-of-service	Out of service	W
74	number-of-states	Number of states	W
110	state-text	Label	W
87	priority-array	Command Priority Levels	
104	relinquish-default	Relinquish default	W
113	time-delay	Time delay (s)	W
17	notification-class	BACnet notification	W
7	alarm-values	Is alarm value	W
39	fault-values	Is fault value	W
35	event-enable	Event enable	W
0	acked-transitions	Acknowledged transitions	
72	notify-type	Notify type	W
130	event-time-stamps	To-off-normal time To-fault time To-normal time	
351	event-message-texts	Last alarm message, Last fault message, Last reset message	
352	event-message-texts- config	Alarm message Reset message Fault message	W
353	event-detection- enable	Event detection enable	W
354	event-algorithm- inhibit	Shunt variable	W
355	event-algorithm- inhibit-ref	Shunt variable reference	W
356	time-delay-normal	Reset delay (s)	W

Multi-state Value (continued)

	BACnet Standard Multi-state Value	EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
371	property-list		
168	profile-name	Profile name	

Notification Class

BACnet Standard Notification Class		EcoStruxure Automation Server Device	Writable
ID	BACnet property name	Internal Device property name	
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
28	description	Description	W
86	priority	Priority-to-off-normal Priority-to-fault Priority-to-normal	W
1	ack-required	Acknowledgement required	W
102	recipient-list	Recipient rules	W
371	property-list		
168	profile-name	Profile name	

Schedule

BACnet Standard Schedule		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
85	present-value	Value	
28	description	Description	W
32	effective-period	Effective period	W
123	weekly-schedule	Weekly	W
32	exception-schedule	Exception	W
174	schedule-default	Default value	W
54	list-of-object-property-references	Object property references	W
88	priority-for-writing	Priority for writing	W
111	status-flags	Status flags	
103	reliability	Reliability	
81	out-of-service	Out of service	W

Schedule (continued)

BACnet Standard Schedule		EcoStruxure Automation Server Device	Writable
ID	BACnet property name	Internal Device property name	
371	property-list		
168	profile-name	Profile name	
512	proprietary-property-512	Previous transition time	
513	proprietary-property-513	Next transition time	
514	proprietary-property-514	Following transition time	
518	proprietary-property-518	Time since previous transition (min)	
519	proprietary-property-519	Time to next transition (min)	
520	proprietary-property-520	Time to following transition (min)	
521	proprietary-property-521	Next transition value	
522	proprietary-property-522	Following transition value	

Trend Log

BACnet Standard Trend Log		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
75	object-identifier	Object ID	
77	object-name	BACnet name	W
79	object-type	BACnet type	
28	description	Description	W
133	enable	Log enable	W
142	start-time	Start time	W
143	stop-time	Stop time	W
132	log-device-object-property	Log device object property	W
134	log-interval	Log interval	W
128	cov-resubscription-interval	COV resubscription interval (s)	W
127	client-cov-increment	Delta	W
144	stop-when-full	Stop when full	W
126	buffer-size	Buffer size	W
131	log-buffer	Trend log list	
141	record-count	Record count	W
145	total-record-count	Total record count	
197	logging-type	Logging type	W
193	align-intervals	Align intervals	
195	interval-offset	Interval offset	
205	trigger	Trigger	
111	status-flags	Status flags	
103	reliability	Reliability	
137	notification-threshold	Notification threshold	W
140	records-since-notification	Records since notification	
173	last-notify-record	Last notify record	
36	event-state	Event state	
17	notification-class	BACnet notification	W
35	event-enable	Event enable	W
0	acked-transitions	Acknowledged transitions	

Trend Log (continued)

BACnet Standard Trend Log		EcoStruxure Automation Server Device	
ID	BACnet property name	Internal Device property name	Writable
130	event-time-stamps	To-off-normal time To-fault time To-normal time	
351	event-message-texts	Last alarm message, Last fault message, Last reset message	
352	event-message-texts-config	Alarm message Reset message Fault message	W
353	event-detection-enable	Event detection enable	W
355	event-algorithm-inhibit-ref	Shunt variable reference	W
354	event-algorithm-inhibit	Shunt variable	W
356	time-delay-normal	Reset delay (s)	W
371	property-list		
168	profile-name	Profile name	

Vendor Specific Implementations

Serial Number Property

Every Schneider Electric EcoStruxure automation server device has a unique serial number. The serial number property of an EcoStruxure automation server BACnet device is only the lower portion of its Ethernet MAC address. The serial number is made available by the Serial_Number property of the Device object. The property identifier is 515, and the data type is Unsigned.

Device Property	ID	Description
Serial_Number	515	Serial number value derived from Ethernet MAC address

Support for Optimum Start-Stop

The controller includes a proprietary extension that can be used, together with Script programming, to optimize the start and stop times for a heating and cooling system based on scheduled occupancy times. The extension consists of three proprietary properties of the Schedule object type.

Schedule Property	ID	Description
Previous_Transition_Time	512	The date and time when the Schedule's present-value most recently changed value.
Next_Transition_Time	513	The date and time when the Schedule's present-value is next scheduled to change value.
Following_Transition_Time	514	The time when the Schedule's present-value is next scheduled to change value after the time indicated by Next_Transition.
Time since previous transition (min)	518	The elapsed time in minutes or parts since the present-value previous last changed.
Time to next transition (min)	519	The amount of time in minutes before the present-value changes.
Time to following transition (min)	520	The amount of time in minutes before present-value changes to the Following transition value.
Next transition value	521	The present-value of the referenced property after the next transition.
Following transition value	522	The present-value after two changes.

Vendor Specific Implementations (continued)

Unsigned Numbers Restrictions

Any property or service parameter that is an unsigned number has an upper limit restriction of $2^{32} - 2$ (4294967294). This upper limit restriction is one less than the full range of all possible 32 bit numbers.

Multistate Object Restrictions

Multistate objects (input, output, and value) have an upper limit restriction of 4096 on the number of configurable states.

Restrictions on Object Names and Identifiers

The instance number portion of the Object_Identifier property has a restricted range, which depends to some extent on the object type. The following table lists the valid range of the instance numbers.

Object Type	Minimum Instance Number	Maximum Instance Number
Device	1	4194302
File ¹	1	1
All others	1	4194302

¹Only one file object exists (for backup and restore) and users do not create objects of this type.

The following table lists the maximum character length of object names and descriptions.

Property	Maximum Length
Name	254 characters
Description	1000 characters