PG-138-102-AB Edwards System Technology to BACnet MSTP Protocol Converter

PG-138-102-AB is highly powerful, superior, completely configurable and productive Building & Industrial Automation gateway for integrators to effortlessly interface devices to networks in commercial buildings and industrial plants.

PG-138-102-AB Gateway model supports Edward System Technology and BACnet MSTP protocols. It is a Bi-directional Converter that can be configured as a Client on Edward System Technology side and a Server/Client on BACnet MSTP protocol interface.

When configured as a Edward System Technology client, the PG-138-102-AB can read data from your Edward System Technology fire panel and publish it as BACnet MSTP data. Also, it can write commands sent from the BACnet MSTP side to the Edward System Technology fire panel.

When configured as a BACnet MSTP client, the PG-138-102-AB can read data from your BACnet MSTP devices and publish it as Edward System Technology type data. Also, it can write commands sent from the Edward System Technology side to the BACnet MSTP devices.

The PG-138-102-AB can be configured to behave as a server on BACnet MSTP interfaces. This mode is useful when data exchange is required between a Edward System Technology client (for eg. SCADA) and a BACnet MSTP client (for eg. a Building Management System).

The PG-138-102-AB can be configured to behave as a client on both Edward System Technology and BACnet MSTP interfaces.

PG-138-102-AB gateways have benefitted system integrators worldwide with its powerful line of gateways. Additionally, PG-138-102-AB gateway runs the same protocol conversion software on a productive and cost efficient platform backed by the experience, engineering expertise and technically proven support that integrators have come to expect from PG-138-102-AB.

Features

- Ability to interface upto 1000 points
- DIN rail mount optional
- DIP switches to select baud rate or node ID on the fly
- Multi-configuration capability
- BACnet COV support for fast data communication while reducing the traffic over a BACnet network

Specifications

Environment	Operating Temperature: -40 to 75° C (-40 to 167°F)	
	Relative Humidity:5-90% RH non-condensing	
Power Requirements	9-30 VDC or 12-24 VAC	
	Current Draw @ 12V about 250Ma	
Physical Dimensions(HxWxD)	4.5x2.9x1.6 in. (11.5x7.4x4.1 cm)	
	0.4 lbs (0.2 Kg)	
Other	Configuration/Diagnostic utilities	
	Capacity: 1000 points	
	Table,Wall or DIN rail mount	
Communication Interfaces	RS-485	1
	RS-485 or RS-232	1
	Ethernet 10Base-T, 100BASE-T[2]	1
	Mbus	-
	KNX	-
	LonWorks	-
Approvals	TUV Approved to UL 916 and CSA C22.2 standards	
	BTL and LonMark certified	
	LonMark Certified	
	RoHS Compliant	
	GOST-R Certified	
	CE and FCC	

www.protoconvert.com
sales@protoconvert.com

Edwards Systems Technology Protocol Driver Description

Formal Driver Type	Serial
	Passive Client
Connection Information	
Connection Type:	RS-232 Edwards
Baud Rates:	9600 (Vendor Limitation)
Data Bits:	8 (Vendor Limitation)
Stop Bits:	1 (Vendor Limitation)
Parity:	None (Vendor Limitation)
Multidrop Capability:	No
Devices Tested	
Device	**Tested (Factory, SITE)**
Edwards Systems Technology-European and American QS1-2/QS4-8 Addressable Panels, and the QSC Conventional Panel	SITE

Supported Communication Functions

Event Description Text Strings		State	Comments
ACTIVATE RESTART			-OPERATOR COMMAND- clears all the Data Arrays
QUIESCENT	QUIE RST		Not Implemented
ALARM ACTIVE	ALARM RST	A	
PULL STATION	PULL STA RST	A	
HEAT ALARM	HEAT ALM RS	A	
WATERFLOW	WATERFLOW RS	A	
STAGE ONE		A	
SUPERVISORY	SUP RST	S	
TAMPER	TAMPER RST	S	
SECURITY	SECURITY RST	O	
FIREPHONE	PHONE RST	M	
MONITOR	MONITOR RST	M	
LATCH SUPV	LAT SUPV RST	S	
LATCH TAMPER	LAT TAMP RST	S	
UNKNOWN	UNKNOWN RST	O	
ALARM VERIFY	ALM VFY RST	M	
PREALARM	PREALARM RST	M	
TROUBLE OPEN	TBL OPEN RST	T	
TROUBLE SHRT	TBL SHRT RST	T	
LCL TROUBLE	LCL TRBL RST	T	
MAINT ALERT	MAT ALERT RS	M	
DIRTY HEAD	DTY HEAD RST	T	
COMMN FAULT	COMM FLT RST	T	
GROUND FAULT	GND FLT RST	T	

INTERNAL TBL	INTR TRBL RS	T	
BAD TYPE	BAD TYPE RST	T	
BAD PRSONATY	BAD PRSTY RS	T	
UNEPECT DEV	UNEC DEV RST	T	
TROUBLE	TROUBLE RST	T	
RELAY CONFIR	RLY CFRM RST	M	
LCL MONITOR	LCL MNTR RST	M	
SWITCH	SWITCH RST	M	
TEST	TEST RST	T	
DEV COMPATBL	DEV COMP RST	T	
AND GROUP	AND GRP RST	A	
MATRIX GROUP	MATRIX G RST	A	
SERVICE GRP	SERVICE G RS	T	
TIME CONTROL	TIME CNTL RS	M	
ACK	ACK RST	M	
DISABLED	DISABLED RST	T	
DISAB SOUND	DISSOUND RST	T	
OBJECT RUN	OBJETRUN RST	M	
ZONE ALARM	ZONE ALM RST	A	
ZONE SUPER	ZONE SUP RST	S	
ZONE MONITOR	ZONE MON RST	M	
OUTPUT GROUP	OUTPUT G RST	M	
AUDIBLE	AUDIBLE RST	M	
VISUAL	VISUAL RST	M	
SUPER OUTPUT	SUPER OUT RT	M	
NONSUPER OUT	NONSUP OUT R	M	
COMM ALM OUT	COMMALOUTRST	M	
LED OUTPUT	LEDOUTPU RST	M	

Limitations and Exclusions

- Only one Quickstart panel may be connected to any given RS-232 port at once.
- This driver cannot poll for data, thus if a message sent by the panel is lost or corrupted the status reported will not correctly reflect the status of the panel until the panel is synchronized again or until the device receives a new message reporting the status of the lost message's point.
- Because of the message structure for the QuickStart protocol, it was intended to be the only protocol assigned to any single port.

BACnet MS/TP Protocol Driver Description

Driver Name: BACnet/MSTP	Connection type:	RS-485 (Two wire, half-duplex)
	Baud Rates:	9600,19200,38400 and 76800[3]
	Data Bits:	7,8
	Stop Bits:	1,2
	Parity:	Odd, Even, None
	Multidrop Capability:	Yes

PG-138-102-AB AS A BACnet MS/TP CLIENT

Read Operations Supported	**Properties Supported**	**Comments and Limitations**
Read Property	Present Value	Store value in Data Array location after scaling has been applied
	Out_Of_Service	When using a Complex Data Object, the OOS property is fully supported. Return FALSE when not OOS or when using standard Data Arrays
	Units	Returns Units as specified in the Map Descriptor
	Reliability	When using a Complex Data Objects, returns "Unreliable Other" when the Node is offline, or when the data is old. Returns FALSE if the Node is online or when using Standard Data Arrays

	Priority_Array	Returns Priority_Array of Map Descriptor
	Unsupported	This property is supported
	Protocol_Object_Type_Supported	This property is supported
	Protocol_Services_Supported	This property is supported
	Database_Revision	This property is supported and will change if a new configuration is downloaded to the FS
	Max_Master	This property is supported for the BACnet /MSTP DLL option
	Max_Info_Frames	This property is supported for the BACnet/MSTP DLL option
	Relinguish_Default	Returns Relinguish _Default
	Mode	This property is supported.
	Tracking_Value	This property is supported.
Read Property Multiple	As for Read Property	Transactions can be defined to read multiple objects and properties in a single ReadPropertyMultiple operation.
	ALL	Read Property Multiple of the ALL property is NOT supported

Write Operations Supported	**Properties Supported**	**Comments and Limitations**
Write Property	Present Value	Send value in Data Array location after scaling has been applied
Write Property Multiple		

PG-138-102-AB AS A BACnet MS/TP SERVER

DEVICE OBJECT

Read Operations Supported	**Properties Supported**	**Comments and Limitations**
Read Property	Object_Identifier	Returns Object _ID with Node_ID as Object Instance
	Object_Name	Returns Node Name
	Object_Type	Returns Device Object type
	System_Status	Returns Normal
	Vendor_Name	Returns PG-10XX Technologies
	Vendor_Identifier	Returns 37
	Model_Name	Returns PG-10XX model
	Firmware_revision	Returns Kernel Version
	Application_sw_version	Returns DCC version
	Protocol_Version	Returns version 1
	Protocol_Revision	Returns version 1
	Protocol_Services_Supported	This property is supported

	Protocol_Object_Type_Supported	This property is supported
	Protocol_Object_List	Returns a list of objects defined in the PG-10XX
	Max_APDU_Length_Accepted	For PG-10XX,the MAX APDU length for BACnet MSTP is 480 bytes and for BACnet IP/BACnet Eth 1497 bytes
	Segmentation_Supported	Returns Segmantation NOT Supported
	APDU_Timeout	Returns the value as defined by the Node's "Timeout" paramater
	APDU_Retries	Returns the value as defined by the Node's "Retries" parameter
	Device_Address_Bindings	Returns an empty list
	Max_Master	This property is supported for the BACnet/MSTP DLL option
	Max_info_Frames	This property is supported for the BACnet/MSTP DLL option
	Description	This property is supported
	Database_Revision	This property is supported and will change if a new configuration is downloaded to the PG-10XX
Read Property Multiple	Same properties as Read Property	Read Property Multiple is fully supported. Multiple

		objects with multiple properties can be specified
Write Operations Supported	**Properties Supported**	**Comments and Limitation**
Write Property	Max_Master	This Property is supported for the BACnet /MSTP DLL option
	Max_info_Frames	This Property is supported for the BACnet /MSTP DLL option
Write Property Multiple	Max_Master	This Property is supported for the BACnet /MSTP DLL option
	Max_info_Frames	This Property is supported for the BACnet /MSTP DLL option
Analog Input Object		
Read Operations Supported	**Properties Supported**	**Comments and Limitations**
Read Property	Object_Identifier	No Limitations
	Object_Name	Returns Map Descriptor Name
	Object_Type	Returns Analog Input Object Type
	Present_Value	Returns value in Data_Array after scaling has been applied
	Status_Flags	When using Complex Data Objects returns

		the FAULT and OUT_OF_SERVICE fields as indicated in section 12.2.7 of the BACnet specification. When using standard Data Arrays returns FALSE for all bits.
	Event_State	No Limitations
	Reliability	When using a Complex Data Objects, returns Unreliable Other when the Node is offline, or when the data is old. Returns FALSE if the node is online or when using Standard Data Arrays
	Out_Of_Service	Fully supported when using a Complex data Object. Returns FALSE when not OOS or when using standard Data Arrays
	Description	This property is supported
	Units	Returns Units as specified in the Map Descriptor
Read Property Multiple	Same properties as Read Property	Read Property Multiple is fully supported. Multiple objects with Multiple properties can be specified
Write Operations Supported	**Properties Supported**	**Comments and**

		Limitations
Write Property	Present_Value	Writing to the Present Value is allowed if the Object is OOS
Write Property Multiple		
Data Sharing Operations Supported	**Properties Supported**	**Comments and Limitations**
SubscribeCOV	Present_value	Subscription storage is non-volatile
COVNotification	Present_value	Confirmed and Unconfirmed
Alarm and Event Operations Supported	**Properties Supported**	**Comments and Limitations**
EventNotification	Present_Value,Status	Confirmed and Unconfirmed
AcknowledgeAlarm		No limitations
Analog Output Object, Analog Value Object		
Read Operations Supported	**Properties Supported**	**Comments and Limitations**
Read Property	Object_Identifier	No Limitations
	Object_Name	Returns “Map Descriptor Name”
	Object_Type	Returns Analog Output Object type
	Present_Value	Returns value in Data Array after scaling has been applied
	Status_Flags	When using Complex Data Objects returns the FAULT and OUT_OF_SERVICE

		fields as indicated in section 12.2.7 of the BACnet specification. When using standard Data Arrays returns FALSE for all bits
	Event_State	No Limitations
	Reliability	When using a Complex Data Objects, returns “Unreliable Other” when the Node is offline, or when the data is old. Returns FALSE if the Node is online or when using Standard Data Arrays
	Out_Of_Service	Fully supported when using a Complex Data Object. Returns FALSE when not OOS or when using standard Data Arrays
	Units	Returns Units as specified in the Map Descriptor
	Priority_Array	Returns Priority_Array of Map Descriptor
	Description	This property is supported
	Relinguish_Default	Returns Religuish _Default
Read Property Multiple	Same properties as Read Property	Read Property Multiple is fully supported. Multiple objects with multiple properties can be specified

Write Operations Supported	Properties Supported	Comments and Limitations
Write Property	Present_Value	When using Complex Data Objects and OOS is TRUE, then the write will not cause a write-through operation to the Server side. If the OOS is FALSE or when using standard Data Arrays then writes will always cause a write-through operation to the Server side
Write Property Multiple		
Data Sharing Operations Supported	**Properties Supported**	**Comments and Limitations**
SubscribeCOV	Present_Value	Subscription storage is non-volatile
COVNotification	Present_Value	Confirmed and Unconfirmed
Alarm and Event Operations Supported	**Properties Supported**	**Comments and Limitations**
Event Notification	Present_Value, Status	Confirmed and Unconfirmed
AcknowledgeAlarm		No Limitations
Binary Input Object		
Read Operations Supported	**Properties Supported**	**Comments and Limitations**
Read Property	Object_Identifier	No Limitations

	Object_Name	Returns “Map Descriptor Name”
	Object_Type	Returns Analog Input Object type
	Present_Value	Returns the binary value in the data array
	Status_Flags	When using Complex Data Objects returns the FAULT and OUT_OF_SERVICE fields as indicated in section 12.2.7 of the BACnet specification. When using standard Data Arrays returns FALSE for all bits
	Event_State	No Limitations
	Reliability	When using a Complex Data Objects, returns “Unreliable Other” when the Node is offline, or when the data is old. Returns FALSE if the Node is online or when using Standard Data Arrays
	Out_Of_Service	Fully supported when using Complex Data Object. Returns FALSE when not OOS or when using standard Data Arrays
	Polarity	Always returns “Normal”
	Active_Text	Returns Active Text as specified on the Map Descriptor
	Description	This property is

		supported
	Inactive_Text	Returns Inactive Text as specified on the Map Descriptor
Read Property Multiple	Same properties as Read Property	Read property Multiple is fully supported. Multiple objects with multiple properties can be specified
Write Operations Supported	**Properties Supported**	**Comments and Limitations**
Write Property	Present_Value	Writing to the Present Value is allowed if the Object is OOS
Write Property Multiple		
Data Sharing Operations Supported	**Properties Supported**	**Comments and Limitations**
SubscribeCOV	Present_Value	Subscription storage is non-volatile
COVNotification	Present_Value	Confirmed and Unconfirmed
Alarm and Event Operations Supported	**Properties Supported**	**Comments and Limitations**
Event Notification	Present_Value, Status	Confirmed and Unconfirmed
AcknowledgeAlarm		No Limitations

Binary Output Object, Binary Value Object		
Read Operations Supported	**Properties Supported**	**Comments and Limitations**
Read Property	Object_Identifier	No Limitations
	Object_Name	Returns “Map Descriptor Name”
	Object_Type	Returns Analog Input Object type
	Present_Value	Returns the binary value in the data array
	Status_Flags	When using Complex Data Objects returns the FAULT and OUT_OF_SERVICE fields as indicated in section 12.2.7 of the BACnet specification. When using standard Data Arrays returns FALSE for all bits
	Event_State	No Limitations
	Reliability	When using a Complex Data Objects, returns “Unreliable Other” when the Node is offline, or when the data is old. Returns FALSE if the Node is online or when using Standard Data Arrays
	Out_Of_Service	Fully supported when using Complex Data Object. Returns FALSE when not OOS or when using standard Data Arrays
	Priority_Array	Returns Priority_Array

		of Map Descriptor
	Religuish_Default	Returns Current Relinguish_Default
	Description	This property is supported
	Active_Text	Returns Active Text as specified on the Map Descriptor
	Inactive_Text	Returns Inactive Text as specified on the Map Descriptor
Read Property Multiple	Same properties as Read Property	Read property Multiple is fully supported. Multiple objects with multiple properties can be specified
Write Operations Supported	**Properties Supported**	**Comments and Limitations**
Write Property	Present_Value	When using Complex Data Objects and OOS is TRUE, then the write will not cause a write-through operation to the downstream side. If the OOS is FALSE or when using standard Data Arrays when writes will always cause a write-through operation to the downstream side
Write Property Multiple		
Data Sharing Operations Supported	**Properties Supported**	**Comments and**

		Limitations
SubscribeCOV	Present_Value	Subscription storage is non-volatile
COVNotification	Present_Value	Confirmed and Unconfirmed
Alarm and Event Operations Supported	**Properties Supported**	**Comments and Limitations**
Event Notification	Present_Value, Status	Confirmed and Unconfirmed
AcknowledgeAlarm		No Limitations
Multiple State Input Object		
Read Operations Supported	**Properties Supported**	**Comments and Limitations**
Read Property	Object_Identifier	No Limitations
	Object_Name	Returns “Map Descriptor Name”
	Object_Type	Returns Analog Input Object type
	Present_Value	Returns unsigned Integer value in the data array
	Status_Flags	When using Complex Data Objects returns the FAULT and OUT_OF_SERVICE fields as indicated in section 12.2.7 of the BACnet specification. When using standard Data Arrays returns FALSE for all bits
	Event_State	No Limitations
	Reliability	When using a Complex Data

		Objects, returns “Unreliable Other” when the Node is offline, or when the data is old. Returns FALSE if the Node is online or when using Standard Data Arrays
	Description	This property is supported
	Out_Of_Service	When using a Complex Data Object, the OOS property is fully supported. Returns FALSE when not OOS or when using standard Data Arrays
	Number_Of_State	When using a Complex Data Object, returns the number of states defined. When using Standard Data Arrays returns the value of 5
	State_Text	When using Complex Data Objects returns the State Text Strings defined. When using Standard Data Arrays return “State_X” where “X” is the value stored in Data_Array and could be 0 to 4
Read Property Multiple	Same properties as Read Property	Read property Multiple is fully supported. Multiple objects with multiple properties can be specified

Write Operations Supported	**Properties Supported**	**Comments and Limitations**
Write Property	Present_Value	Writing to the Present Value is allowed if the Object is OOS
Write Property Multiple		
Data Sharing Operations Supported	**Properties Supported**	**Comments and Limitations**
SubscribeCOV	Present_Value	Subscription storage is non-volatile
COVNotification	Present_Value	Confirmed and Unconfirmed
Alarm and Event Operations Supported	**Properties Supported**	**Comments and Limitations**
Event Notification	Present_Value, Status	Confirmed and Unconfirmed
AcknowledgeAlarm		No Limitations
Multi-State Output Object, Multi-State Value Object		
Read Operations Supported	**Properties Supported**	**Comments and Limitations**
Read Property	Object_Identifier	No Limitations
	Object_Name	Returns “Map Descriptor Name”
	Object_Type	Returns Analog Input Object type
	Present_Value	Returns unsigned Integer value in the data array
	Status_Flags	When using Complex Data Objects returns the FAULT and

		OUT_OF_SERVICE fields as indicated in section 12.2.7 of the BACnet specification. When using standard Data Arrays returns FALSE for all bits
	Event_State	No Limitations
	Reliability	When using a Complex Data Objects, returns “Unreliable Other” when the Node is offline, or when the data is old. Returns FALSE if the Node is online or when using Standard Data Arrays
	Out_Of_Service	Fully supported when using a Complex Data Object. Returns FALSE when not OOS or when using standard Data Arrays
	Number_Of_State	When using a Complex Data Object, returns the number of states defined. When using Standard Data Arrays returns the value of 5
	State_Text	When using Complex Data Objects returns the State Text Strings defined. When using Standard Data Arrays return “State_X” where “X” is the value stored in Data_Array and could be 0 to 4
	Description	This property is

		supported
	Priority_Array	Returns Priority_Array of Map Descriptor
	Religuish_Default	Returns Relinguish_Default
Read Property Multiple	Same properties as Read Property	Read property Multiple is fully supported. Multiple objects with multiple properties can be specified
Write Operations Supported	**Properties Supported**	**Comments and Limitations**
Write Property	Present_Value	When using Complex Data Objects and OOS is FALSE or when using standard data arrays, writes will trigger a write through operation to client side
Write Property Multiple		
Data Sharing Operations Supported	**Properties Supported**	**Comments and Limitations**
SubscribeCOV	Present_Value	Subscription storage is non-volatile
COVNotification	Present_Value	Confirmed and Unconfirmed
Alarm and Event Operations Supported	**Properties Supported**	**Comments and Limitations**
Event Notification	Present_Value, Status	Confirmed and Unconfirmed
AcknowledgeAlarm		No Limitations

Notification Class Object		
Read Operations Supported	**Properties Supported**	**Comments and Limitations**
Read Property	Object_Identifier	No Limitations
	Object_Name	Returns “Map Descriptor Name”
	Object_Type	Returns Notification Class Object type
	Description	No Limitations
	Notification_Class	No Limitations
	Priority	No Limitations
	Ack_Required	No Limitations
	Description	This Property is supported
	Recipient List	No Limitations
Read Property Multiple	Same properties as Read Property	Read property Multiple is fully supported. Multiple objects with multiple properties can be specified
Write Operations Supported	**Properties Supported**	**Comments and Limitations**
Write Property	Recipient_List	RecipientList storage is non-volatile
Write Property Multiple		
AddList	RecipientList	Used to subscribe to Alarm and Event Notifications
Life Safety Point Object		

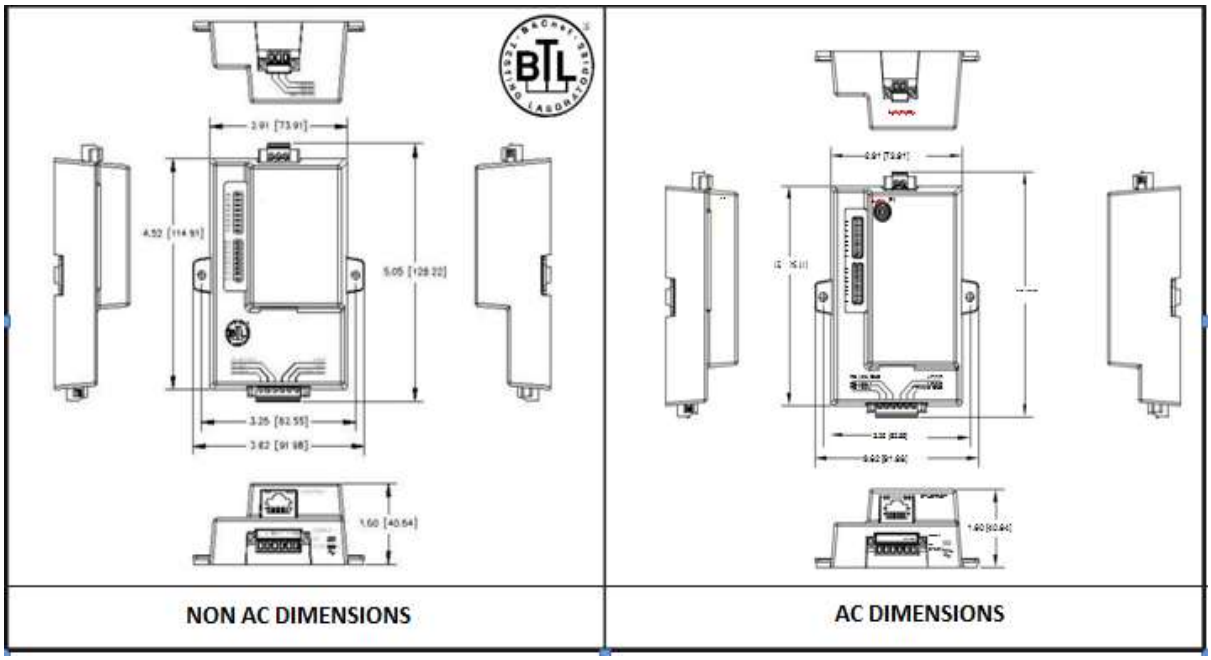
Read Operations Supported	Properties Supported	Comments and Limitations
Read Property	Object_Identifier	No limitations.
	Object_Name	Returns "Map Descriptor Name".
	Object_Type	Returns Analog Input Object type.
	Present_Value	Returns unsigned integer value in the Data Array.
	Status_Flags	When using Complex Data Objects returns the FAULT and OUT_OF_SERVICE fields as indicated in the Reference Section of the BACnet specification. When using standard Data Arrays returns FALSE for all bits.
	Event_State	No limitations.
	Reliability	When using a Complex Data Objects, returns “Unreliable Other” when the Node is offline, or when the data is old. Returns FALSE if the Node is online or when using Standard Data Arrays.
	Description	This property is supported.
	Out_Of_Service	When using a Complex Data Object, the OOS property is fully supported. Return FALSE when not OOS or when using standard Data Arrays.
	Mode	Operating Mode. Only 'ON' mode is supported.
	Accepted_Modes	List of Operating Modes
	Silenced	Represents silenced state, but only "All Silenced" supported.
	Operation_Expected	List of LifeSafety Operations, only 'None' operation is supported.
	Property_List	Returns the list of supported properties.
Read Property multiple	Same properties as Read Property	Read Property Multiple is fully supported. Multiple objects with multiple properties can be specified.
Write Operations Supported	**Properties Supported**	**Comments and Limitations**
Write Property	Object_Name	Sets Object_Name.
	Present_Value	Writing to the Present Value is allowed if the

		Object is OOS.
	Mode	Operating Mode. Only 'ON' mode is supported.
	Operation_Expected	List of LifeSafety Operations, only 'None' operation is supported.
Write Property Multiple	Present_Value	Writing to the Present Value is allowed if the Object is OOS.
Data Sharing Operations Supported	**Properties Supported**	**Comments and Limitations**
SubscribeCOV	Present_Value	Subscription storage is non-volatile.
COVNotification	Present_Value	Confirmed and Unconfirmed.
Alarm and Event Operations Supported	**Properties Supported**	**Comments and Limitations**
EventNotification	Present_Value, Status	Confirmed and Unconfirmed.
AcknowledgeAlarm	No Limitations.	

Unsupported Functions and Data Types
BACnet Object Type not Supported
Averaging Object
Calendar Object
Command Object
Event Enrollment Object
File Object
Group Object
Life Safety Zone Object
Loop Object
Notification Class Object unsupported on Client side only
Program Object
Schedule Object

BACnet Services not Supported
Alarm and Event Services unsupported on Client side only
File Access Services
Virtual Terminal Services
COV and EventNotification services are not supported for BACnet
MSTP on the ProtoCessor
For BACnet MSTP , PTP and Arcnet , COV services are disabled by default and may be enabled by setting the Node_Option property to COV_Enable in the Nodes section configuration file.

Dimensions:



NON AC DIMENSIONS	AC DIMENSIONS