



PG-124-103-BX Siemens XLS to BACnet IP Protocol Converter

PG-124-103-BX 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-124-103-BX Gateway model supports Siemens XLS and BACnet IP protocols. It is a Bi-directional Converter that can be configured as a Client and/or a Server on either protocol interface.

When configured as a Siemens XLS client, the PG-124-103-BX can read data from your Siemens XLS fire panel and publish it as BACnet IP data. Also, it can write commands sent from the BACnet IP side to the Siemens XLS fire panel.

When configured as a BACnet IP client, the PG-124-103-BX can read data from your BACnet IP devices and publish it as Siemens XLS type data. Also, it can write commands sent from the Siemens XLS side to the BACnet IP devices.

The PG-124-103-BX can be configured to behave as a server on both Siemens XLS and BACnet IP interfaces. This mode is useful when data exchange is required between a Siemens XLS client (for eg. SCADA) and a BACnet IP client (for eg. a Building Management System).

The PG-124-103-BX can be configured to behave as a client on both Siemens XLS and BACnet IP interfaces.

PG-124-103-BX gateways have benefitted system integrators worldwide with its powerful line of gateways. Additionally, PG-124-103-BX 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-124-103-BX.

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	



BACnet IP Protocol Driver Description

Driver Name: BACnet/IP	Connection type:	Internet Protocol (IP)
	Ethernet Speeds Supported:	10Base-T, 100BASE-T ²
	BBMD SUPPORTED:	Yes(Not supported on client connections)
	Foreign Device:	Not Supported for client
	Registration:	Connections
PG-124-103-BX AS A BACnet IP 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
	Relinquish_Default	Returns Relinquish_Default



Read Property Multiple	As for Read Property	Transactions can be defined to read multiple objects and properties in a single ReadPropertyMultiple operation.
	ALL	ReadPropertyMultiple 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-124-103-BX AS A BACnet IP 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" parameter
	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
	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



Read Property	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
Subscribe COV	Present_value	Subscription storage is non-volatile
COV Notification	Present_value	Confirmed and Unconfirmed
Alarm and Event Operations Supported	Properties Supported	Comments and Limitations
Event Notification	Present_Value, Status	Confirmed and Unconfirmed
Acknowledge Alarm		No limitations
Analog Output Object, Analog Value Object		
Read Operations Supported	Properties Supported	Comments and Limitations
	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



Read Property	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
	Relinquish_Default	Returns Relinquish_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
Subscribe COV	Present_Value	Subscription storage is non-volatile
COV Notification	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
	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 ComplexData 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



Read Property	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
	Relinquish_Default	Returns Current Relinquish_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 ComplexData 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 ComplexData 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 ComplexData Object, the OOS property is fully supported. Returns FALSE when not OOS or when using standard Data Arrays
	Number_Of_State	When using a ComplexData 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
	Relinguish_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
Write Property Multiple		arrays, writes will trigger a write through operation to client side
Data Sharing Operations Supported	Properties Supported	Comments and Limitations
Subscribe COV	Present_Value	Subscription storage is non-volatile
COV Notification	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
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 Point 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
ForBACnet 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.



PG-124-103-BX AS A Siemens XLS Client

In FSI mode, the NIM-1R or RPM allows the PG-103-124-BX to gather data from up to 63 Siemens Panels connected on an MXL or XLS network. When configured according to the default, the PG-103-124-BX will monitor two panels (1 and 2) with 8 modules (1 to 8) each.

Two sets of data are collected by the driver. The first is a collection of 19 counters per panel. Each 16-bit counter is incremented whenever the corresponding event occurs. These counters can be read to determine if a new event has been reported to the server. The counters occur in the following order:

Event	Offset
Fire Alarm In	0
Fire Alarm Out	1
Fire Alarm Acknowledge	2
Trouble In	3
Trouble Out	4
Trouble Acknowledge	5
Supervisory In	6
Supervisory Out	7
Supervisory Acknowledge	8
Security Alarm In	9
Security Alarm Out	10
Security Alarm Acknowledge	11
Status In	12
Status Out	13
Test In	14
Test Out	15
Audible Silenced	16
Audible Unsilenced	17
System Reset	18

The second is a collection of bit maps that can be queried to determine which device has reported the event. When an alarm from a device is received, two arrays are updated—one indicating the alarm and the other indicating that the alarm has not been acknowledged. An alarm clear will clear the bit in the alarm array, and an alarm acknowledge will clear the bit in the un-acknowledged array. Each of these arrays is optional. To enable one, a MapDescriptor needs to be configured with a message type corresponding to the array as shown in this table:

Array	Msg_Type
Fire Alarm	Fire
Fire Alarm Un-Acknowledged	Fire_Ack
Trouble Alarm	Trouble
Trouble Un-Acknowledged	Trouble_Ack
Supervisory Alarm	Super
Supervisory Un-Acknowledge	Super_Ack
Security Alarm	Secur



Security Alarm Un-Acknowledged	Secur_Ack
Status	Status
Test	Test

PG-124-103-BX AS A Siemens XLS Server

The driver can also be used to emulate a MXL or XLS server. Other protocol drivers could then poll remote devices and access the local MXL or XLS server data to set or clear events. In this configuration an existing Siemens Fire Safety MXL or XLS panel could be replaced with an emulation. Existing clients could poll the emulation driver on the PG-124-103-BX to get the same data as from a conventional MXL or XLS server. Up to 100 panels can be emulated with the driver. Each panel has to be on a unique port and have a unique Node_ID assigned. A Map Descriptor has to be defined for each type of remote device. The following types can be used:

Device Type
Fire Alarm In
Fire Alarm Out
Fire Alarm Acknowledge
Trouble In
Trouble Out
Trouble Acknowledge
Supervisory In
Supervisory Out
Supervisory Acknowledge
Security Alarm In
Security Alarm Out
Security Alarm Acknowledge
Status In
Status Out
Test In
Test Out
Audible
System Reset
System Date and Time
Analog Volts
Analog Sensitivity
Analog Threshold



Command and Control Functions

Function
Un(Silence) Audible
System Reset
Set Date and Time
Acknowledge Fire Alarm Event
Acknowledge Trouble Event
Acknowledge Security Event
Acknowledge Supervisory Event

Analog Functions

Function	Description
Request Analog Data	Requests the present value of analog data from a loop of analog devices. The available data is limited to analog voltage, sensitivity voltage and alarm threshold voltage.

Unsupported Devices or Protocol Options

Device	Details
Cerberus FC924	Panel does not support the FSI protocol.

Dimensions:

