



PG-103-104-XX BACnet IP to SNMP Protocol Converter

PG-103-104-XX 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-103-104-XX Gateway model supports BACnet IP and SNMP 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 SNMP client, the PG-103-104-XX can read data from your SNMP devices and publish it as BACnet IP data. Also, it can write commands sent from the BACnet IP side to the SNMP devices.

When configured as a BACnet IP client, the PG-103-104-XX can read data from your BACnet IP devices and publish it as SNMP data. Also, it can write commands sent from the SNMP side to the BACnet IP devices.

The PG-103-104-XX can be configured to behave as a server on both SNMP and BACnet IP interfaces. This mode is useful when data exchange is required between a SNMP client (for eg. SCADA) and a BACnet IP client (for eg. a Building Management System).

PG-103-104-XX can be configured to behave as a client on both SNMP and BACnet IP interfaces.

PG-103-104-XX gateways have benefitted system integrators worldwide with its powerful line of gateways. Additionally, PG-103-104-XX 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 PG-103-104-XX.

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

Protoconvert, 9/1484 Malvern Road, Glen Iris VIC 3146 Phone: +61-432-242-992

Email: sales.aus@protoconvert.com Website: protoconvert.com.au



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 | - |
| | RS-232 | - |
| | 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 | |

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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-103-104-XX 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 |

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| | | 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 | 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-103-104-XX 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 | |

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| | | 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 | | |
| 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 | | |
| 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 |

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| | | 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 |



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| | 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 |
| | 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 |
| SubscribeCOV | Present_Value | Subscription storage is non- |



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| | | 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 | | |
| | 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 |

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| | | supported. Multiple objects with multiple properties can be specified |
| Write Operations Supported | | |
| Write Property | Present_Value | Writing to the Present Value is allowed if the Object is OOS |
| Write Property Multiple | | |
| Data Sharing Operations Supported | | |
| SubscribeCOV | Present_Value | Subscription storage is non-volatile |
| COVNotification | Present_Value | Confirmed and Unconfirmed |
| Alarm and Event Operations Supported | | |
| Event Notification | Present_Value, Status | Confirmed and Unconfirmed |
| AcknowledgeAlarm | | No Limitations |
| Binary Output Object, Binary Value Object | | |
| Read Operations Supported | | |
| 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 |



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| | | 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 |
| | Relinguish_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 | | |

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| 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 |



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| | | 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 | | |
| 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 | | 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 | | Comments and Limitations |
| SubscribeCOV | Present_Value | Subscription storage is non-volatile |
| COVNotification | Present_Value | Confirmed and Unconfirmed |
| Alarm and Event Operations Supported | | Comments and Limitations |
| Event Notification | Present_Value, Status | Confirmed and Unconfirmed |
| AcknowledgeAlarm | | No Limitations |
| Notification Class Object | | |
| Read Operations Supported | | Comments and Limitations |
| Read Property | Object_Identifier | No Limitations |
| | Object_Name | Returns "Map Descriptor Name" |



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| | 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 | | |
| For BACnet MSTP , PTP and Archnet , 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. | | |



SNMP Protocol Driver Description

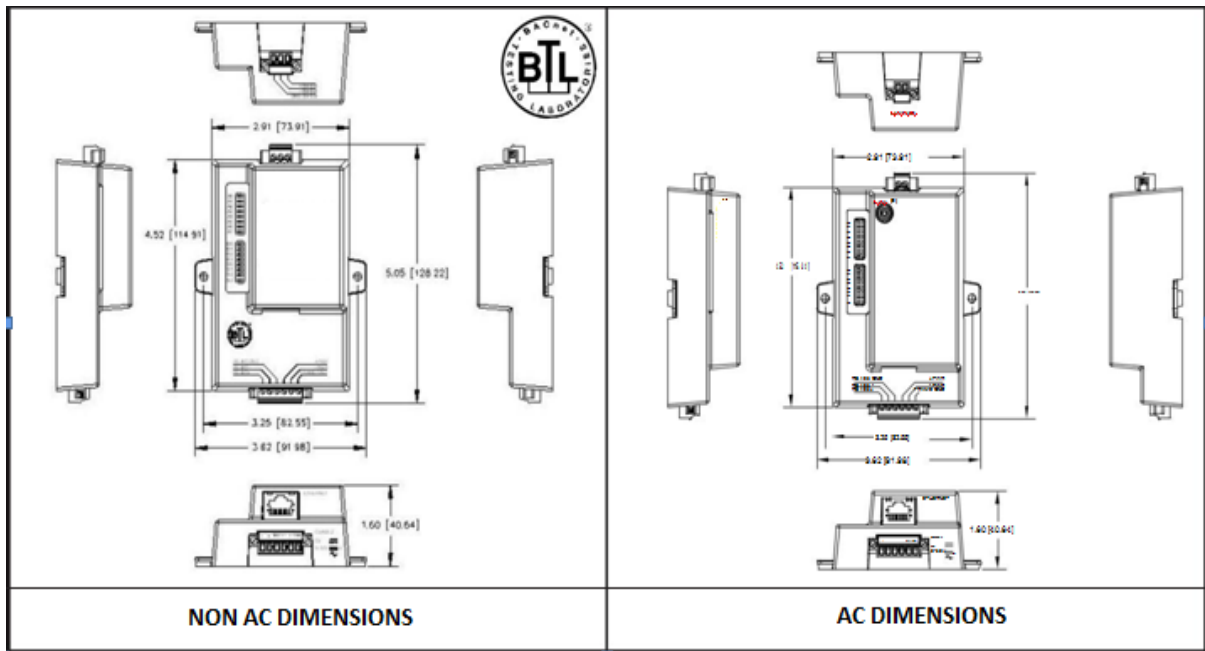
| PG-103-104-XX Mode | | Comments |
|--|---|--|
| Client | Nodes: Limited by hardware memory capacity. Each Node is specified by a unique IP address | |
| Server | Nodes:1 As a Server the SNMP driver can act as a single Node. | |
| Formal Driver Type | | |
| | Ethernet | |
| | Client (Active or Passive) or | |
| | Server | |
| Connection Information | | |
| Connection Type: | Ethernet | |
| Ethernet Speeds Supported: | 10Base-T, 100Base-T ¹ | |
| Data Type Supported | | |
| PG-103-104-XX Data Type | Description | |
| Integer | | |
| Octet_Stream | Character Strings | |
| Timer_Tricks | Timer values in 1/100ths of a second | |
| Read Operations Supported | | |
| PG-103-104-XX As a Client | | PG-103-104-XX As a Server |
| SNMP Get Request | | SNMP Get Request |
| SNMP GetNext Request/SNMP Walk | | SNMP GetNext Request/SNMP Walk |
| Write (Control) Operations Supported | | |
| PG-103-104-XX As a Client | | PG-103-104-XX As a Server |
| SNMP Set Request | | SNMP Set Request |
| Unsolicited Operations Supported | | |
| PG-103-104-XX As a Client | | PG-103-104-XX As a Server |
| Receive Traps specified by OID Data stored by matching OID or by using OID string values to form lookup string. | | Send Traps specified by OID Trap sent based on data change rules, periodic or on source data update. |
| Unsupported Functions and Data Types | | |
| Data Types | Reason | |
| Only the following SNMP Data Types are Supported: Integer Octet_Stream Timer_Tricks | Further types will be implemented as required. | |

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| String | |
| MIB-2 variables not specified above. | The PG-103-104-XX primarily being a protocol converter, these variables are not necessary. |
| Unsupported Devices or Protocol Options | |
| Protocol Versions | Details |
| SNMPv2, SNMPv3 | Not Supported |



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