



## **PG-130-100-BX Simplex 4100 to Modbus RTU Protocol Converter**

PG-130-100-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-130-100-BX Gateway model supports SIMPLEX 4100 and Modbus RTU protocols. It is a Bi-directional Converter that can be configured as a Client on SIMPLEX 4100 side and a Server/Client on Modbus RTU protocol interface.

When configured as a SIMPLEX 4100 client, the PG-130-100-BX can read data from your SIMPLEX 4100 fire panel and publish it as Modbus RTU data. Also, it can write commands sent from the Modbus RTU side to the SIMPLEX 4100 fire panel.

When configured as a Modbus RTU client, the PG-130-100-BX can read data from your Modbus RTU devices and publish it as SIMPLEX 4100 type data. Also, it can write commands sent from the SIMPLEX 4100 side to the Modbus RTU devices.

The PG-130-100-BX can be configured to behave as a server on Modbus RTU interfaces. This mode is useful when data exchange is required between a SIMPLEX 4100 client (for e.g. SCADA) and a Modbus RTU client (for e.g. a Building Management System).

The PG-130-100-BX can be configured to behave as a client on both SIMPLEX 4100 and Modbus RTU interfaces.

PG-130-100-BX gateways have benefitted system integrators worldwide with its powerful line of gateways. Additionally, PG-130-100-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-130-100-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



## Specifications

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



## PG-130-100-BX AS Simplex 4100 Client

### Data Types and Commands Supported

Function	Read/Write	Description
AckAll	Client Writes	This command acknowledges all card-point-sub states. The points to be ack'd are determined by inspection of a data array. This is a data driven command.
Ack	Client Writes	This command allows the driver to acknowledge a single point. The points to be ack'd are determined by inspection of a data array. This is a data driven command
Clist	Client reads	This command returns the current point status for one point. When a point's status is obtained, the PG-139-AB will write one byte of data to a data array. The byte will contain the following information:
Seta	Client Writes	This command allows the user to Modify the value of an analog pseudo point. The port access level must be set appropriately in the Simplex device otherwise the device returns an error.
Setd	Client Writes	This command allows the user to: Manipulate the status and/or priority of a control point Modify the value of an analog pseudo point. Set the sensitivity of a TrueAlarm sensor. Set the rate-of-rise threshold of a TrueAlarm heat sensor.
Xpoint	Client listens for panel generated messages.	Point Status Change. This is an unsolicited message sent automatically by a Simplex Device to report some or other points status if there is a change of interest. When one of these messages is received then the card-point-sub are used to calculate an offset into the associated data array
Reset	Client Writes	Used to send a reset signal to the Simplex device. This is a triggered command.
Revision	Client Reads	Used to request revision information from the simplex panel.
Time	Client Reads/Writes	Allows Panel time to be read/set.
Show	Client Reads	This function reads information about a point other than just the status. Only the point format of this command is implemented. The driver is only capable of processing responses from a sub-set of point types and is not tolerant to variations in the formatting of responses. The function can be used to read the current analog value (for TrueAlarm devices and Analog pseudo points only).
Value	Client Reads	This driver function used the Simplex 'CSHOW c-p-s CVAL' command. A subset of the function is implemented to allow the analog values of certain points to be read and stored. It is only supported by panels with firmware revision numbers greater than 10.
Earths	Client Reads	This driver function uses the Simplex 'SYSDIAG Earths' command. It is only supported by panels with firmware revision numbers greater than 10. A subset of this function is implemented to allow device and panel earth states to be read and stored.

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## Data Types and Commands Unsupported

Function
Symbolic point formatting is not supported.
The following command and message are not supported. XLOG, TERM, DISARM, DISABLE, HELP, LOGIN, RESTART, LIST, PRINT, TYPE, SELECT, CLEAR, DIAGNOSTIC, WALKTEST, CTRL-D, SYSDIAG, SWAP, TICMODE.
For all commands, a subset of the command capability has been implemented. The subset is chosen to exclude most ASCII based responses.

## Functions Described

Information	Functions Supported
Point Status	The driver reports the state by setting a Data Array element to a value corresponding to each possible state. This data is obtained using the <i>Clist</i> and <i>Xpoint</i> functions. The <i>Setd</i> function can be used to set the state of selected points if access levels are set appropriately.
Panel Information	The panel time and software revision information may be read. The panel may be sent an ack, reset command or silence command. A number of methods for triggering these commands are provided. The panel time may be set.
Device Information	Additional information about device attributes is provided using the protocol's SHOW command. The Show command provides an ASCII response formatted for printing. The driver parses these messages and converts the data to numbers so that they can be sent to Client devices using another protocol. The driver compares the state keyword to a table of state keywords which it uses to set the value of the array point. The offset into the Data Array is determined by the attribute and the value stored is determined by the attribute state value. The position of the array element to be set for each attribute is determined using an attribute table. A range of array locations must be reserved for each device being polled to allow the driver to set array values for all the possible attributes of that device. The table of attributes and attribute states is extendable by modifying the configuration of the driver.

## Analog Values

The current analog value for TrueAlarm devices and Analog pseudo points can be read from the panel. This is only true of panels with firmware revisions 10.x and later. Typically this excludes older panels such as the 4020 and 4100 unless they have had their firmware updated.

TrueAlarm smoke devices show the triplet current count/current % of alarm/current smoke

level. TrueAlarm heat devices show the pair current count/current temperature.

Analog monitor ZAM devices show their current sensor counts (0-



255). Analog pseudo points show their current value (0-65535).

When multiple values are returned they are stored in consecutive array location.

Some points may have their values set if access levels are set appropriately. The seta function is used for this purpose.

### **Earth States**

The Sysdiag function may be used to monitor the current raw state of the earth statuses in the panel. It displays the earth statuses for 1) SPS/XPS, 2) Mapnet/IDNet, 3) TrueAlert cards. This is only true of panels with firmware revisions 10.x and later. Typically this excludes older panels such as the 4020 and 4100 unless they have had their firmware updated.

### **Unsupported Functions and Data Types**

<b>Function</b>	<b>Reason</b>
Programming messages	PG-139-AB is a data transfer device, and as such, programming messages are not required.



## Modbus RTU Description

PG-130-100-BX Mode	Comments
Client	Nodes:1 Only 1 client node allowed on Multidrop systems
Server	Nodes:255 Actual electrical loading may reduce number of usable server nodes
<b>Formal Driver Type</b>	
	Serial
	Client or Server
<b>Connection Information</b>	
	Connection Type: RS-232 or RS-485(Two wire, half-duplex)
	Baud Rate: 110-115200, standard baud rates only
	Data Bits: 7,8
	Parity: Even, odd, None
	Multidrop Compatibility: Yes
<b>Function Code Supported</b>	
Function Codes	Description
01	Read Discrete Output Status (0xxxx)
02	Read Discrete Input Status (1xxxx)
03	Read Output Registers (4xxxx)
04	Read Input Registers (3xxxx)
05	Force Single Coil (0xxxx)
06	Preset Single Register (4xxxx)
15	Force Multiple Coils (0xxxx)
16	Preset Multiple Registers (4xxxx)

**Dimensions:**

