COOPER Lighting Solutions

ProtoNode FPC-N34 and ProtoNode FPC-N35 Startup Guide For Interfacing Cooper Lighting Solutions Products: Greengate and iLUMIN To Building Automation Systems: BACnet MS/TP, BACnet/IP, Modbus TCP/IP, Modbus RTU and LonWorks

APPLICABILITY & EFFECTIVITY

Explains ProtoNode FPC-N34 and FPC-N35 hardware and how to install it.

The instructions are effective for the above as of February 2016.

sierra monitor

Document Revision: 1.H
Auto Discovery
Template Revision: 53

Technical Support:

Thank you for purchasing the ProtoNode for Cooper Lighting Solutions.

Please call Cooper Lighting Solutions for Technical support of the ProtoNode product.

SMC does not provide direct support. If Cooper Lighting Solutions needs to escalate the concern, they will contact Sierra Monitor Corporation for assistance.

Support Contact Information:

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1121 Highway 74 South
Peachtree City, GA 30269
P:770-486-4800
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A Quick Start Guide

1. Record the information about the unit. (**Section** 2.1)
2. Set the Device COM setting that will be connected to ProtoNode. (**Section** 2.3.2)
3. **Connect ProtoNode FPC-N34's** 3 pin RS-485 port to the Field Protocol cabling (**Section** 3.2), **or connect ProtoNode FPC-N35's** 2 pin LonWorks port to the Field Protocol cabling. (**Section** 3.3)
4. Connect Power to ProtoNode's 6 pin connector. (**Section** 3.4)
5. Connect a PC to the ProtoNode via Ethernet cable and change the IP Address of the PC to the same subnet as the ProtoNode. (**Section** 4.1)
6. Set the IP Address of the ProtoNode to the subnet of the intended Network and reset IP details of the PC. (**Section** 4.3)
7. Set the BACnet settings via the Web Configurator GUI. (**Section** 4.3.1)
8. Use the Web Configurator Discovery function to configure the ProtoNode and to find any light panels connected to the Device. (**Section** 4.3.1.2)
9. LonWorks (FPC-N35): The ProtoNode must be commissioned on the LonWorks Network. This needs to be done by the LonWorks administrator using a LonWorks Commissioning tool. (**Section** 6)

Certifications

BTL MARK – BACNET TESTING LABORATORY

The BTL Mark on ProtoNode is a symbol that indicates that a product has passed a series of rigorous tests conducted by an independent laboratory which verifies that the product correctly implements the BACnet features claimed in the listing. The mark is a symbol of a high-quality BACnet product. Go to http://www.BACnetInternational.net/btl/ for more information about the BACnet Testing Laboratory. Click here for BACnet PIC Statement

LONMARK CERTIFICATION

LonMark International is the recognized authority for certification, education, and promotion of interoperability standards for the benefit of manufacturers, integrators and end users. LonMark International has developed extensive product certification standards and tests to provide the integrator and user with confidence that products from multiple manufacturers utilizing LonMark devices work together. FieldServer Technologies has more LonMark Certified gateways than any other gateway manufacturer, including the ProtoCessor, ProtoCarrier and ProtoNode for OEM applications and the full featured, configurable gateways.

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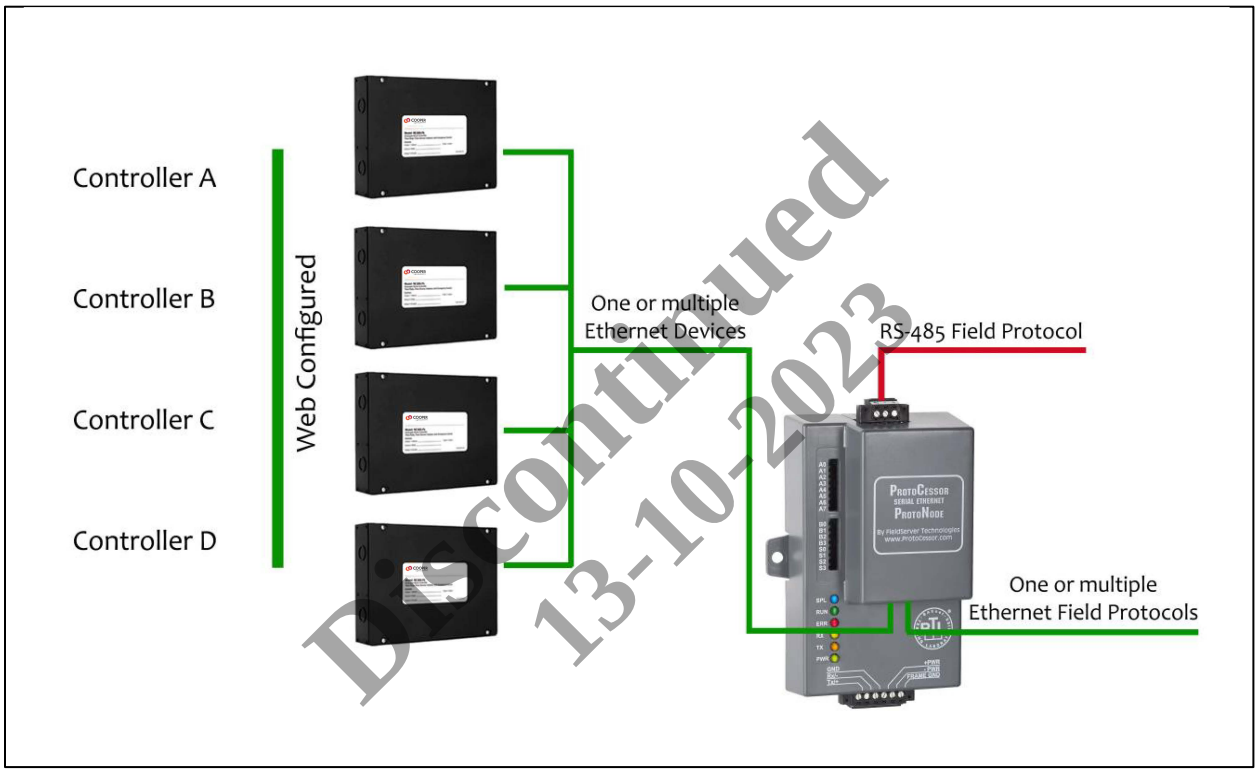
LIST OF FIGURES

1 INTRODUCTION

1.1 ProtoNode Gateway

ProtoNode is an external, high performance **Building Automation multi-protocol gateway** that is preconfigured to Auto-Discover any of the Cooper Lighting Solutions' products (hereafter called "device") connected to the ProtoNode and automatically configures them for BACnet®[1]MS/TP, BACnet/IP, Modbus TCP/IP or LonWorks®[2].

It is not necessary to download any configuration files to support the required applications. The ProtoNode is pre-loaded with tested Profiles/Configurations for the supported devices.



[1] BACnet is a registered trademark of ASHRAE
[2] LonWorks is a registered trademark of Echelon Corporation

2 BACNET/LONWORKS SETUP FOR PROTOCESSOR PROTONODE FPC-N34/FPC-N35

2.1 Record Identification Data

Each ProtoNode has a unique part number located on the side or the back of the unit. This number should be recorded, as it may be required for technical support. The numbers are as follows:

Model	Part Number
ProtoNode N34	FPC-N34-1130
ProtoNode N35	FPC-N35-1131

Figure 1: ProtoCessor Part Numbers

- FPC-N34 units have the following 3 ports: RS-485 + Ethernet + RS-485.
- FPC-N35 units have the following 3 ports: LonWorks + Ethernet + RS-485.

2.2 Point Count Capacity and Registers per Device

The total number of points presented by all of the devices attached to the ProtoNode cannot exceed:

Part number	Total Point Capacity
FPC-N34-1130	10,000
FPC-N35-1131	4,096

Figure 2: Supported Point Count Capacity

Greengate Devices	Point Count Per Device
3264640000	161
4864643204	213
808640000	81
344640003	115
1664643204	181
6464643200	225

Figure 3: Greengate Point Count per Device

iLUMIN Devices	Point Count Per Device
Scene	2
Channel	2

Figure 4: iLUMIN Point Count per Device

2.3 Configuring Device IP Communications

2.3.1 Set Greengate or iLUMIN IP Address Connected to the ProtoNode

- The Greengate or iLUMIN device needs to be on the same IP subnet as the ProtoNode and the configuration PC.

2.3.2 Configure Device IP Address settings

- Record the following to start the setup:
  - IP Address
  - IP port
  - Panel Address
  - Number of Panels

Note: This information is required for Section 4.

3 INTERFACING PROTONODE TO DEVICES

3.1 ProtoNode FPC-N34 and FPC-N35 Showing Connection Ports

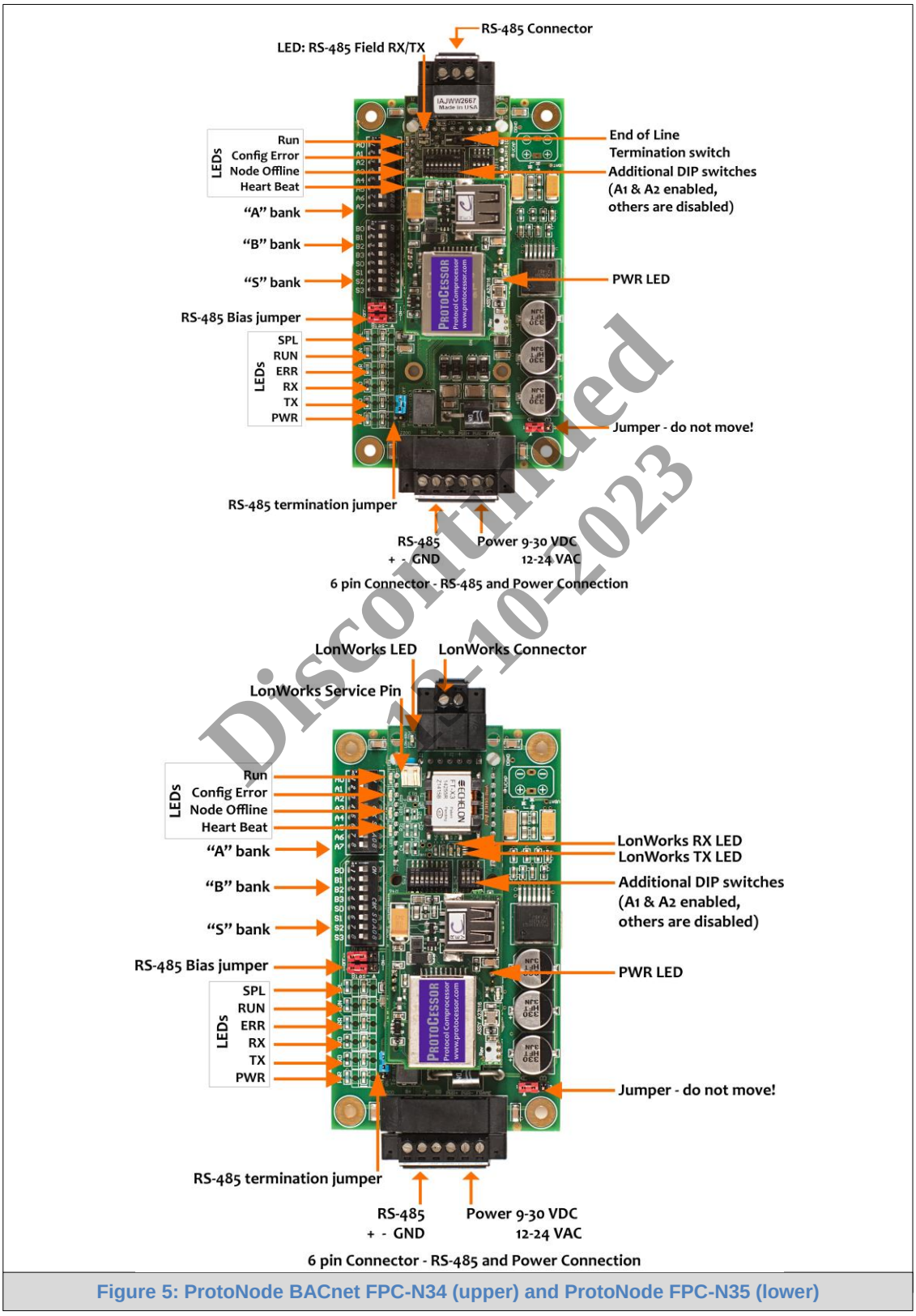


Figure 5: ProtoNode BACnet FPC-N34 (upper) and ProtoNode FPC-N35 (lower)

3.2 BACnet MS/TP (FPC-N34): Wiring Field Port to RS-485 BMS Network

- Connect the BACnet MS/TP RS-485 network wires to the 3-pin RS-485 connector on ProtoNode FPC-N34 as shown below in **Figure 6**.
  - The RS-485 GND (Pin 3) is not typically connected.
- See **Section 5** for information on connecting to BACnet/IP network.
- If the ProtoNode is the last device on the BACnet MS/TP, then the End-Of-Line Termination Switch needs to be enabled. (**Figure 7**)
  - The default setting from the factory is OFF (switch position = right side).
  - To enable the EOL Termination, turn the EOL switch ON (switch position = left side).

BMS RS-485 Wiring	ProtoNode Pin #	Pin Assignment
RS-485 +	Pin 1	RS-485 +
RS-485 -	Pin 2	RS-485 -
-	Pin 3	RS-485 GND

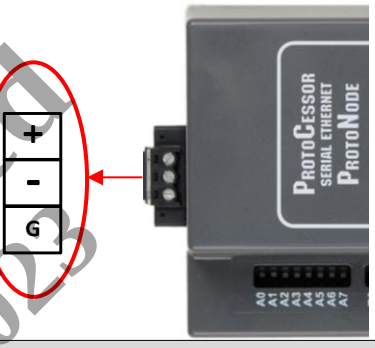


Figure 6: Connection from ProtoNode to RS-485 Field Network

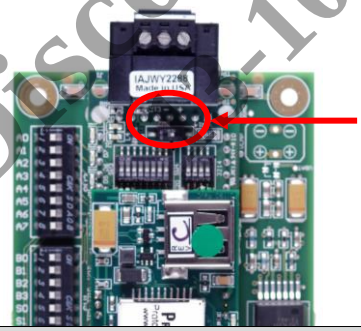


Figure 7: RS-485 BMS Network EOL Switch

3.3 LonWorks (FPC-N35): Wiring Field Port to LonWorks Network

- Connect ProtoNode to the field network with the LonWorks terminal using a twisted pair non-shielded cable. LonWorks has no polarity.

Figure 8: LonWorks Terminal

3.4 Power-Up ProtoNode

Apply power to ProtoNode as show below in **Figure 10.** Ensure that the power supply used complies with the specifications provided in **Appendix C.1**.

- ProtoNode accepts either 9-30VDC or 12-24 VAC on pins 4 and 5.
- **Frame GND should be connected.**

Power Requirement for ProtoNode External Gateway			
	Current Draw Type		
ProtoNode Family	12VDC/VAC	24VDC/VAC	30VDC
FPC – N34 (Typical)	170mA	100mA	80mA
FPC – N34 (Maximum)	240mA	140mA	100mA
FPC – N35 (Typical)	210mA	130mA	90mA
FPC – N35 (Maximum)	250mA	170mA	110mA
Note: These values are 'nominal' and a safety margin should be added to the power supply of the host system. A safety margin of 25% is recommended.			

Figure 9: Required Current Draw for the ProtoNode

Power to ProtoNode	ProtoNode Pin #	Pin Assignment
Power In (+)	Pin 4	V +
Power In (-)	Pin 5	V -
Frame Ground	Pin 6	FRAME GND

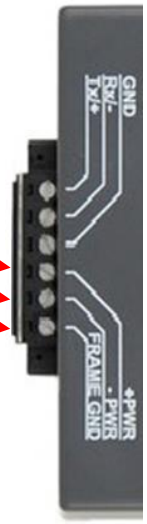


Figure 10: Power Connections

4 CONFIGURE THE PROTONODE VIA WEB CONFIGURATOR GUI

4.1 Connect the PC to ProtoNode via the Ethernet Port

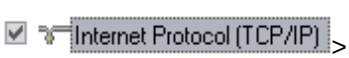
- Connect a Cat 5 Ethernet cable (Straight through or Cross-Over) between the PC and ProtoNode.
- The Default IP Address of ProtoNode is **192.168.1.24**, Subnet Mask is **255.255.255.0**. If the PC and ProtoNode are on different IP Networks, assign a static IP Address to the PC on the 192.168.1.xxx network.
- For Windows XP:

  Go to 

> 

> 

  Right-click on Local Area Connection > Properties

  Highlight 

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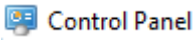
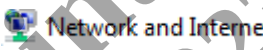
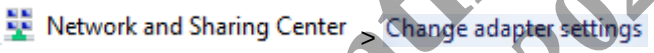
- For Windows 7:

  Go to 
> 

> 

> 

  Right-click on Local Area Connection > Properties

  Highlight 

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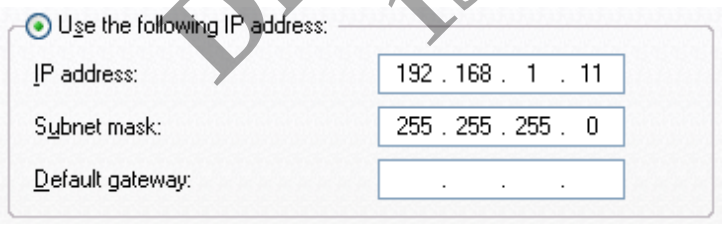
- For Windows XP and Windows 7, use the following IP Address:



- Click 

twice.

4.2 Connecting to the ProtoNode Web Configurator GUI

- After setting the PC on the same subnet as the ProtoNode (**Section 4.1**), open a web browser on the PC and enter the IP Address of the ProtoNode; the default address is 192.168.1.24.
- The Configurator Web GUI will now appear when entering the device's IP Address on the browser.
- Select the desired protocol.

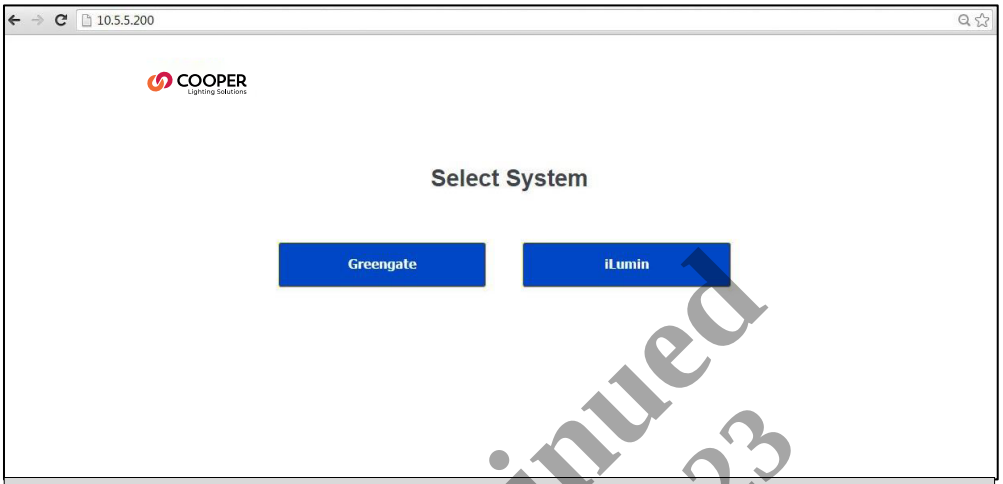


Figure 11: Select System Page

- The Configurator Web GUI landing page will now appear.

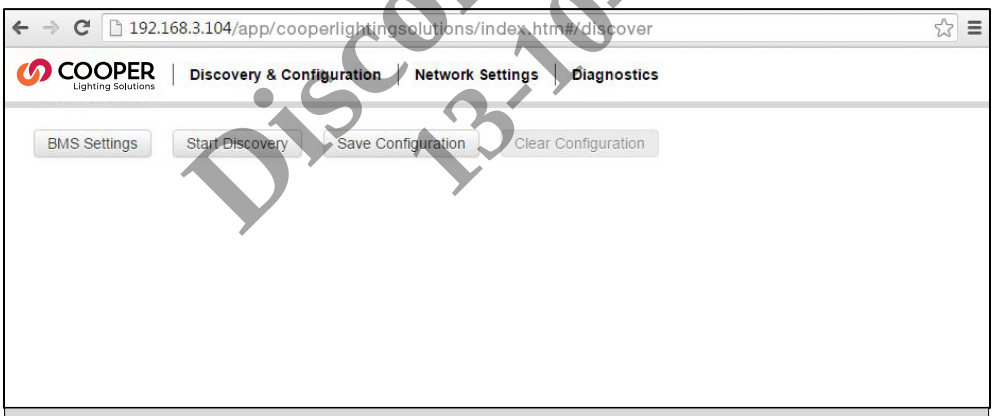


Figure 12: Web Configurator GUI

NOTE: If the wrong protocol was selected, click the Clear Configuration button to reset the GUI and go back to the Select System Page.

4.3 Set BACnet/IP and Modbus TCP/IP Address of ProtoNode to Same Switch/Router of the Device

- From the Web GUI's landing page, click on "Network Settings" Tab to access the IP Settings menu. (**Figure 13**)

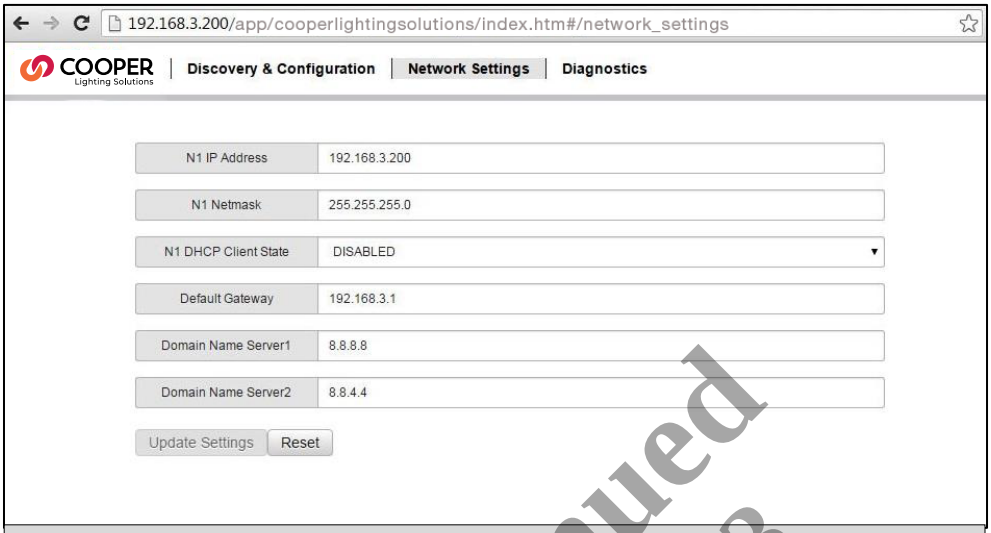


Figure 13: IP Address Settings via Web GUI

- **Enter new IP Address (N1 IP Address field) of the ProtoNode Ethernet port to the same switch or router's subnet that the device is connected.**
- If necessary, change the Netmask (N1 Netmask field).
- Type in a new subnet mask.
- If necessary, change the IP Gateway (Default Gateway field).
- Type in a new IP Gateway.
- Reset ProtoNode.
- Connect the ProtoNode to same switch or router that the Device is connected.
- **Connect the PC to the same switch or router and change the IP Address of the PC to be on the same subnet of the Device and the ProtoNode.**
- Record the IP Address assigned to the ProtoNode for future reference.
- After setting the PC to be on the same subnet as the ProtoNode and the Device, open a web browser on the PC and enter the new IP of the ProtoNode.

4.3.1 Select Network Protocol

- Going back to the Discovery and Configuration tab, and press BMS Settings button to view/ Change the Building Management System (BMS) Settings.
- Select BACnet/IP, BACnet MS/TP, Modbus TCP/IP, or Modbus RTU protocols.

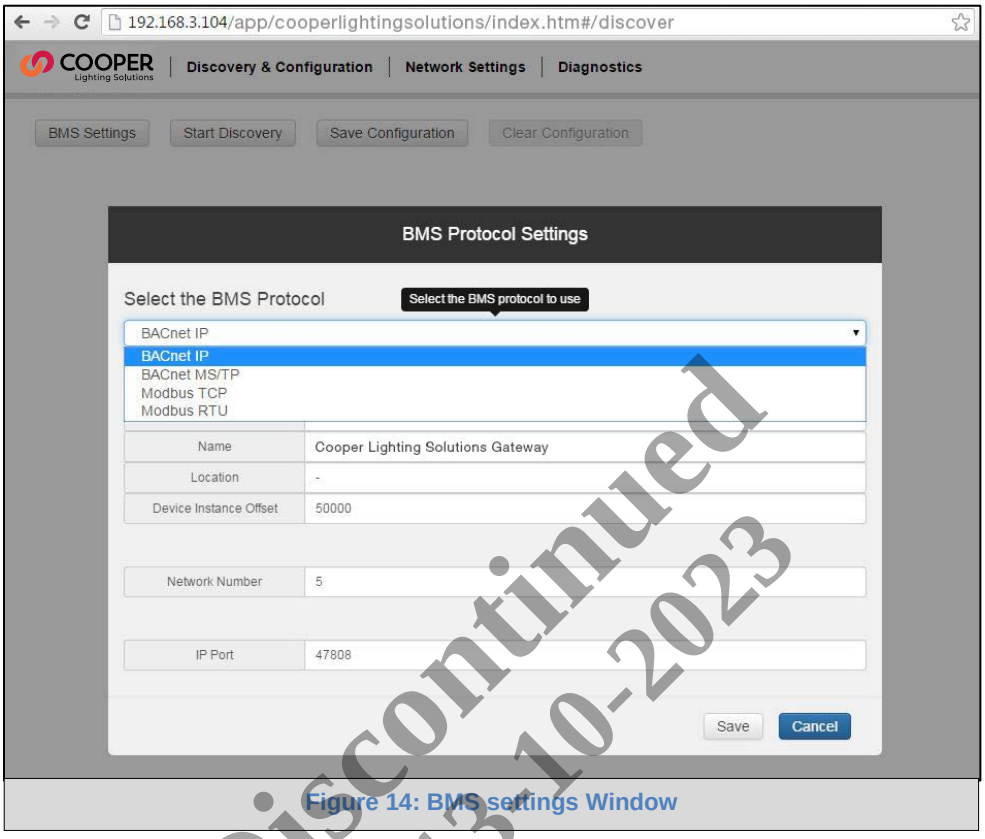


Figure 14: BMS settings Window

4.3.1.1 Set Device Instance for each lighting panel attached to the Device

The Device Instance can be set independently of the site administrator.

As an example:

- A Device Instance is a BACnet Node-ID which is obtained by the network administrator.
- Each lighting panel connected to the Device will have its own BACnet Device Instance.
- The values allowed for a BACnet Device Instance can range from 1 to 4,194,303.
- With the default BACnet Device Instance value of 50,000 the Device Instances values generated will be within the range of 50,000 plus the incremental number of lighting panels that are connected to the ProtoNode. The first lighting panel will therefore be 50,000.
- To assign a specific Device Instance (or range); change the Device instance value to assigned value of the first lighting panel.
- The Web Configurator will be displayed as the landing page.

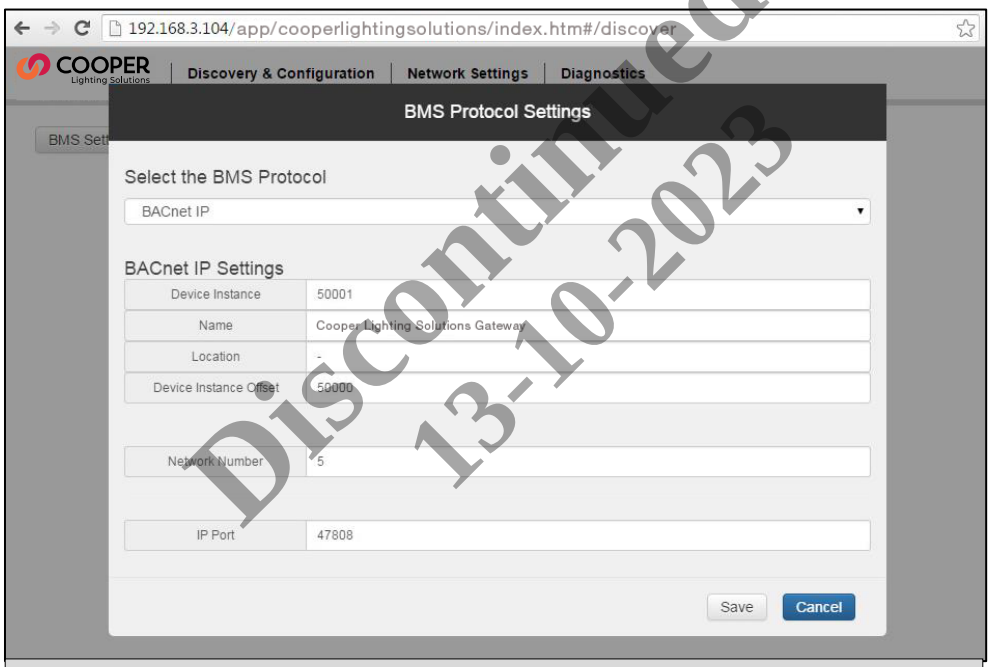


Figure 15: BACnet/IP Settings Window

4.3.1.2 BACnet MS/TP (FPC-N34): Setting the MAC Address BACnet Network

- Only 1 MAC address is set for ProtoNode regardless of how many light panels are connected to ProtoNode.
- Set the BACnet MS/TP MAC address of the ProtoNode to a value between 1 to 127 (MAC Primary Addresses); this is so that the BMS Front End can find the ProtoNode via BACnet auto discovery.
- **Note: Never set a BACnet MS/TP MAC Address from 128 to 255**. Addresses from 128 to 255 are Secondary Addresses and can not be discovered by BMS Front Ends that support auto discovery of BACnet MS/TP devices.

Enter the following details into the web configuration as per **Figure 16** below:

- Device Instance – Enter a range between 1 and 4,194,303.
- Name – Enter the name of the Device.
- Location – Enter the location of the lighting panel.
- Device Instance Offset – Default of 50000 so that Device Instance begins at 50001.
- Network Number – Leave as default unless instructed by BMS integrator.
- Baud Rate – Enter a value of 9600, 19200, 38400, or 76800.

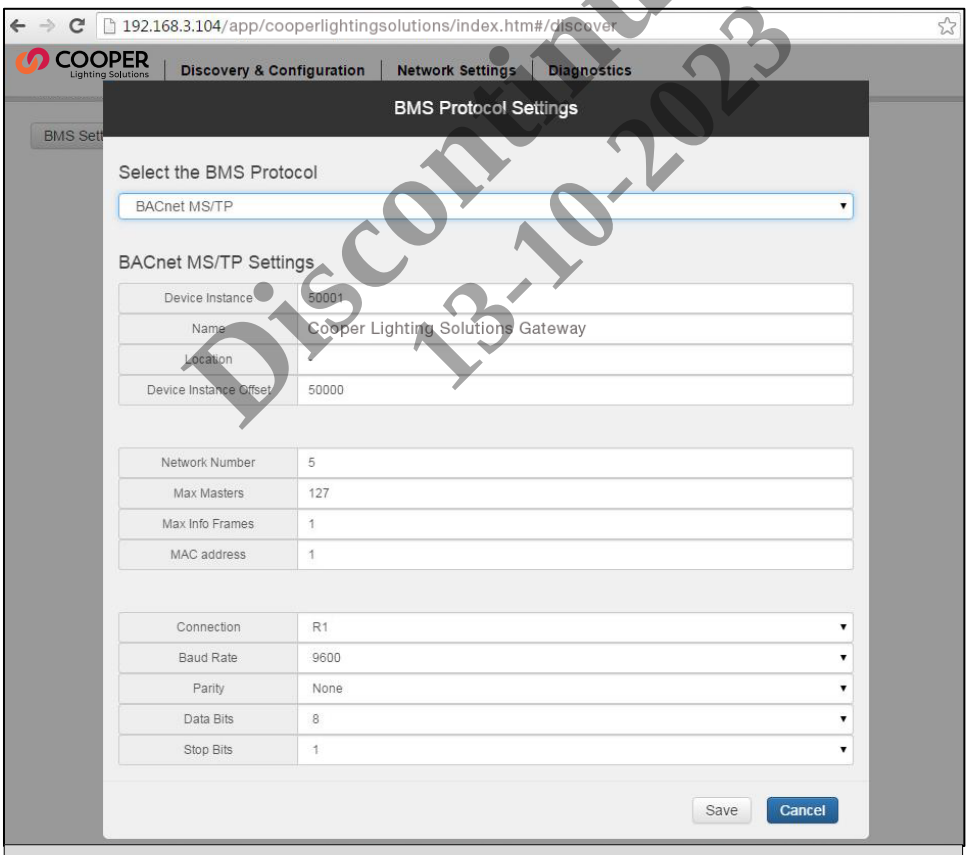


Figure 16: BACnet MS/TP Settings Window

4.3.1.3 Modbus TC/IP and Modbus RTU Settings

- Modbus TC/IP

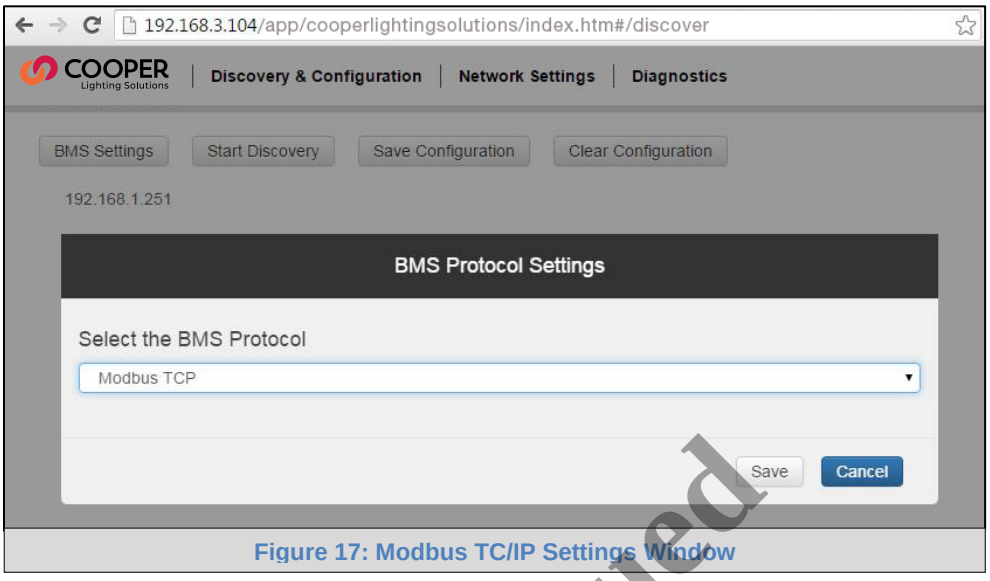


Figure 17: Modbus TC/IP Settings Window

- Modbus RTU

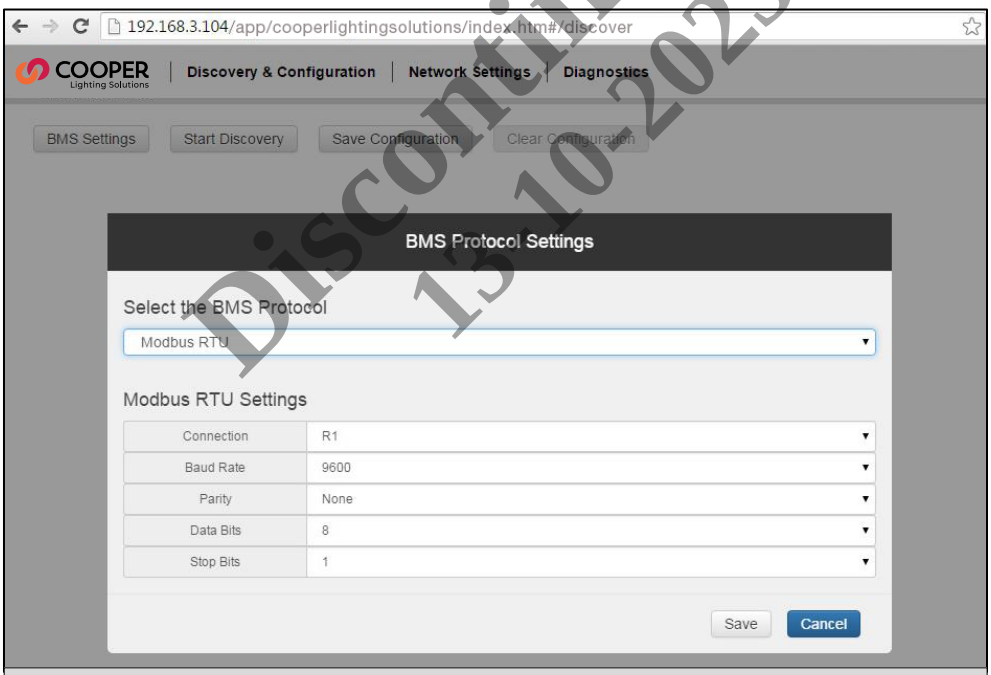


Figure 18: Modbus RTU Settings Window

4.3.2 Configure the Device on the ProtoNode and Automatically Discover Light Panels Connected to the Device

- Click on the “Start Discovery” button to enter the port, network address, Panel Address and Number of Panels for the Device.

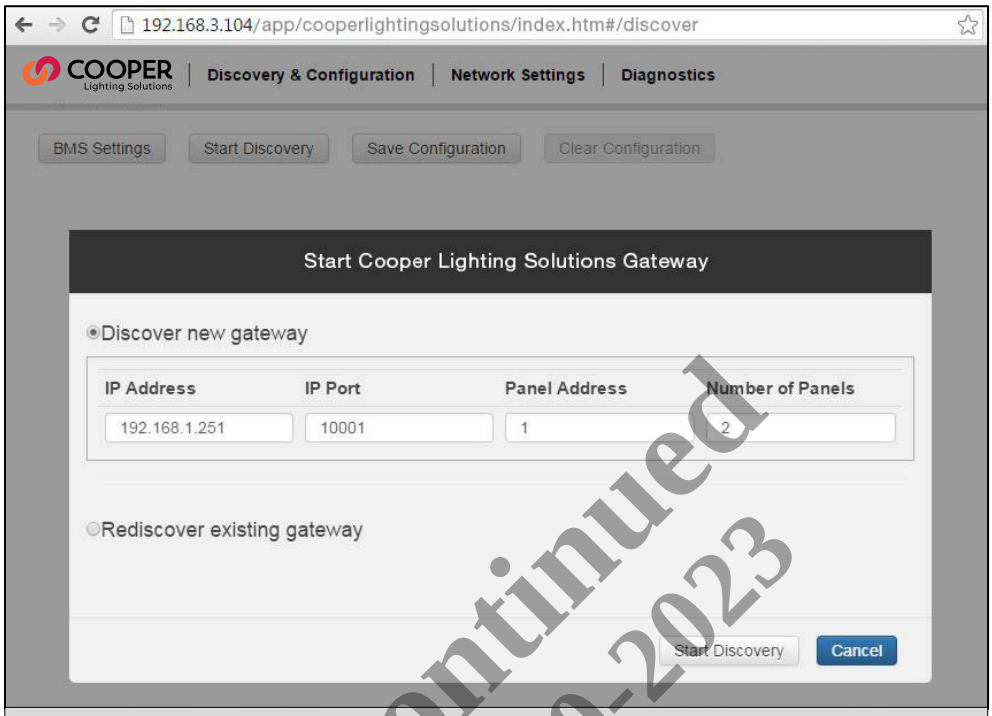


Figure 19: Start Discovery Fields

- After entering the Device details, click on the “Start Discovery” button and the discovery progress bar will display.
- The discovery of a Device may take a few minutes depending on the number of items it contains.

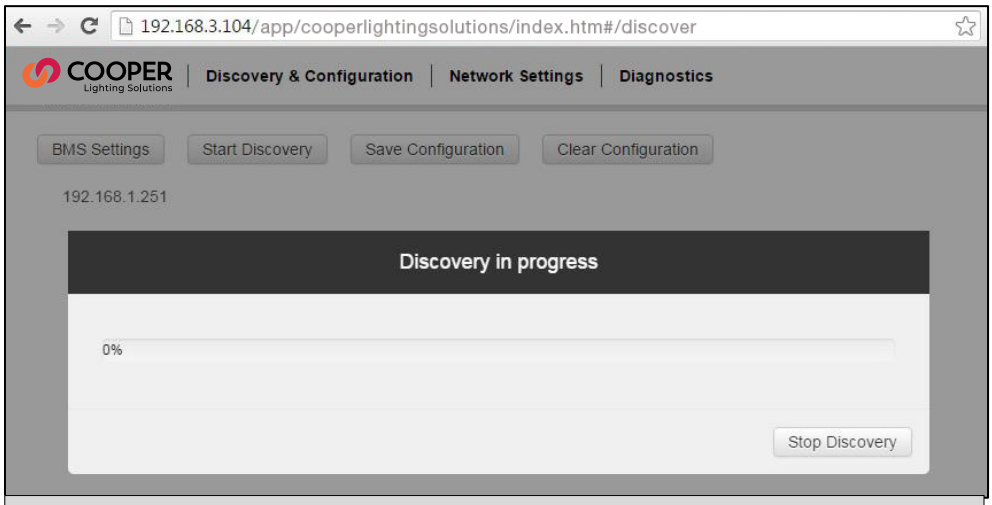


Figure 20: Discovery Bar

- After the discovery process is complete, the discovery tree will immediately come up.
- The items being marked as green indicate that they have not been configured for protocol conversion.

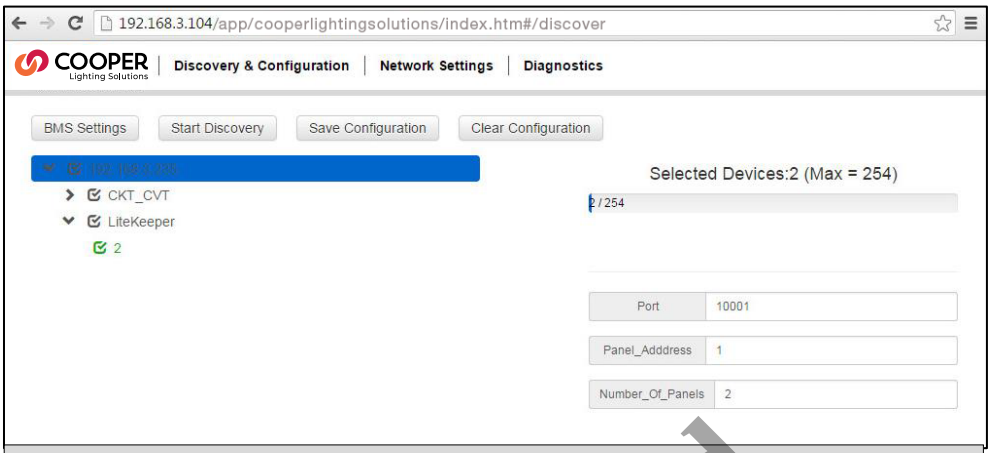


Figure 21: The Discovery Tree

  - When clicking on gateways or gateways containing light panels a tick box will check or uncheck items for Protocol conversion.
  - By clicking on a gateway the parameters will be shown and can be edited.

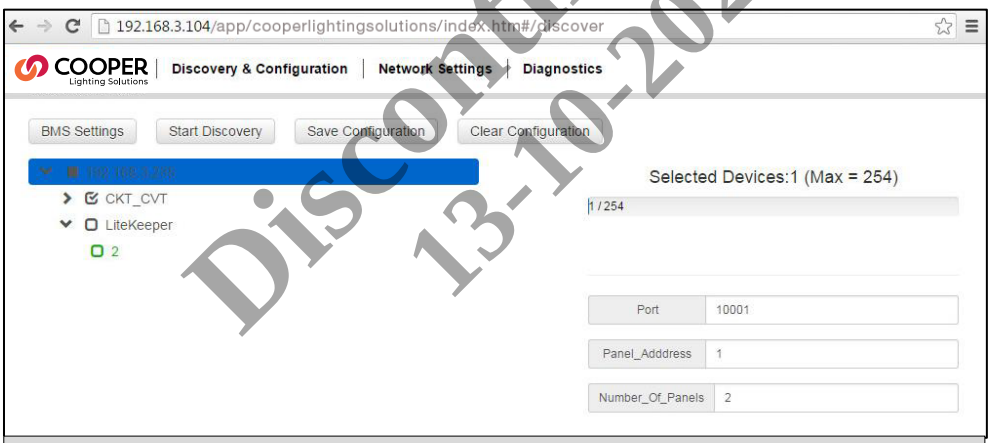


Figure 22: View & Edit Gateway Parameters

- By clicking on a light panel, parameters for that panel will be shown.

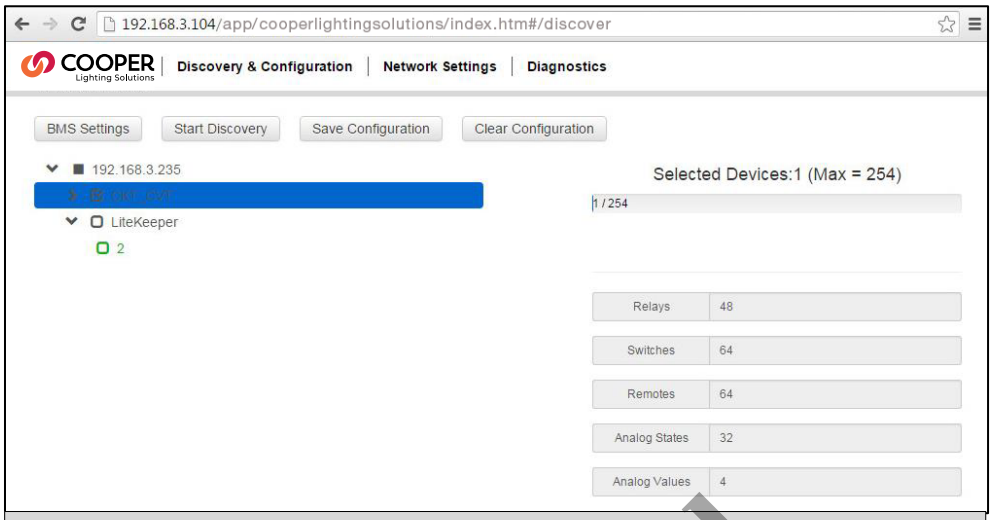


Figure 23: View Light Panel Parameters

- Clicking on a light displays and allows editing of the preconfigured BACnet parameters.

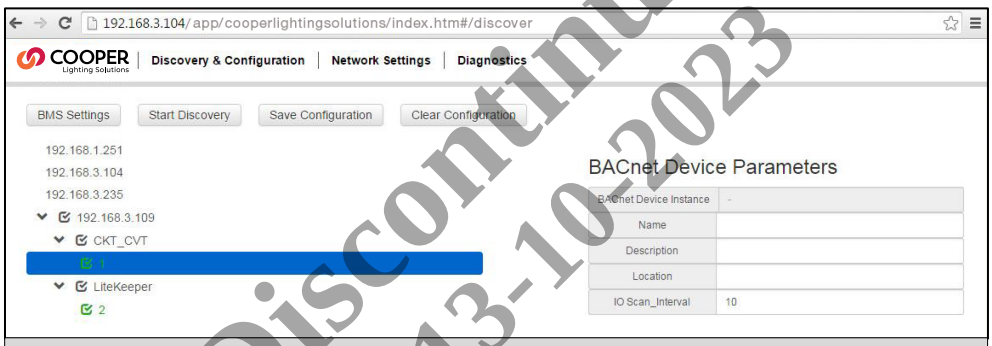


Figure 24: View & Edit BACnet Parameters on a Lighting Panel

- Once the items for configuration are chosen, click on the “Save Configuration” button. The save configuration progress bar will appear. This process may take several minutes.

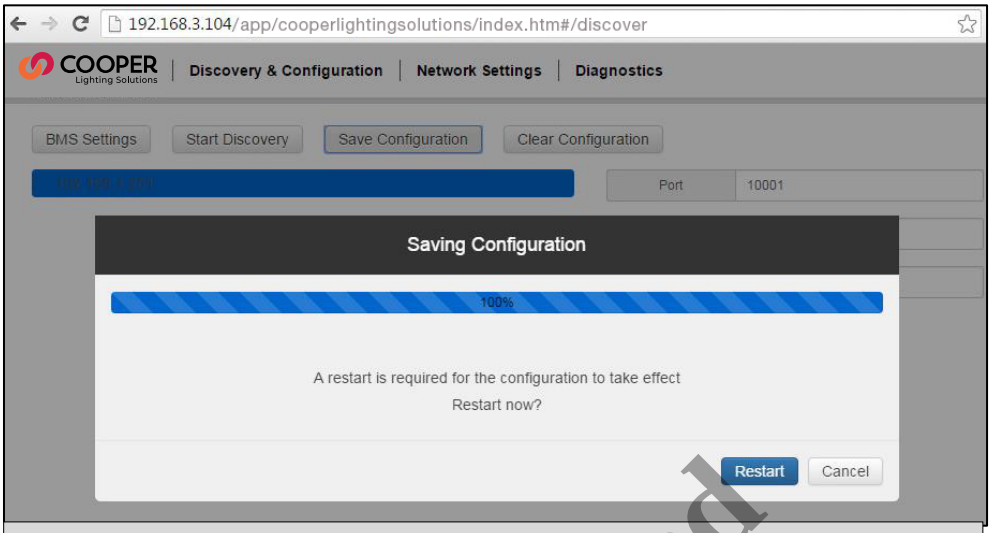


Figure 25: Saving Configurations Bar

- When this process is complete, the items on the tree will change from green to black to show that they have been configured.

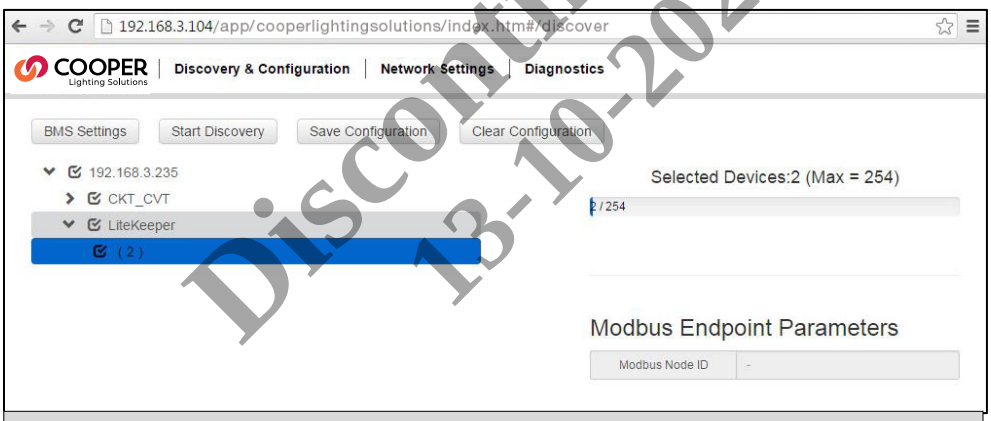


Figure 26: Saved Configurations

- In order to clear a configuration, click on the “Clear Configuration” button. An additional option to clear all other device configurations will appear.

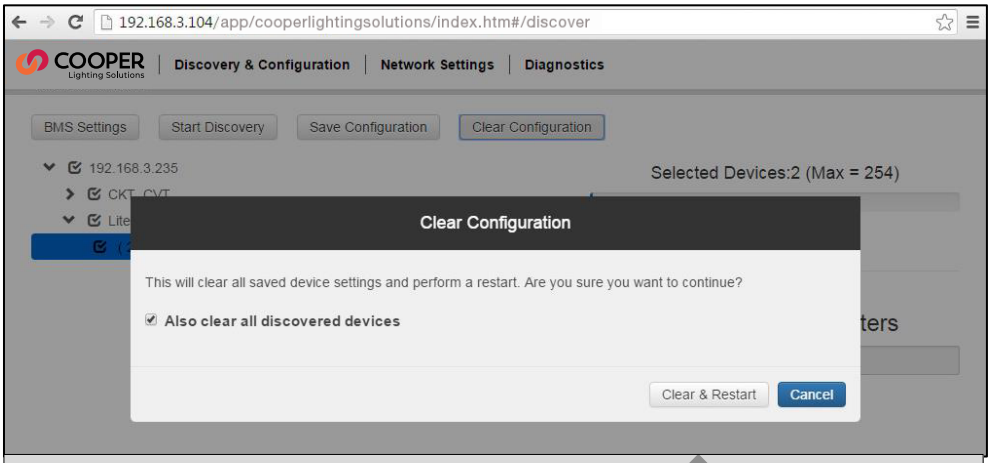


Figure 27: Clear Configuration Window

- After clicking on the Clear & Restart button the following message will appear.

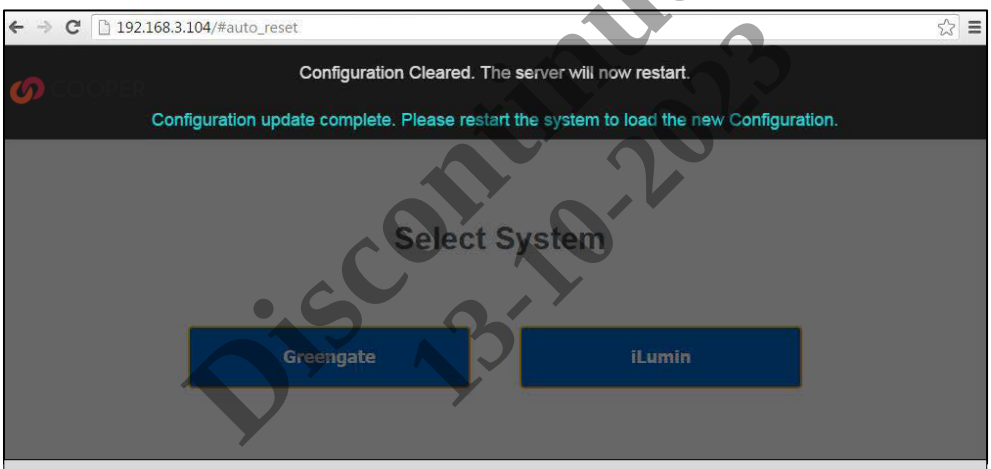


Figure 28: Clearing Configurations

- After this process is complete, the ProtoNode will automatically restart.

5 BACNET MS/TP AND BACNET/IP: SETTING NODE_OFFSET TO ASSIGN SPECIFIC DEVICE INSTANCES

- After setting your PC to be on the same subnet as the ProtoNode (**Section 4**), open a web browser on your PC and enter the IP Address of the ProtoNode; the default address is 192.168.1.24.
- If the IP Address of the ProtoNode has been changed by previous configuration get the assigned IP Address from the network administrator.
- The Web Configurator will be displayed, click "BMS Settings". (**Figure 29**)
- Node_Offset field will be presented displaying the current value (default = 50,000).
- Change the value of the Node_Offset to establish the desired Device Instance values, then click "SUBMIT".
    - **Given that: Node_Offset + Greengate Node_ID = Device Instance**
    - **Then: Node_Offset (required) = Device Instance (desired) – Greengate Node_ID**

For example:

- Device 1 has a Greengate Node-ID of 1
- Device 2 has a Greengate Node-ID of 22
- Device 3 has a Greengate Node-ID of 33
- Desired Device Instance for 1st device = 1,001
- **Node_Offset (required) = 1,001 – (Greengate Node_ID) = 1,001 – 1 = 1,000**
- The Node_Offset value will be applied to all devices.
- Device 1 Instance will then be = 1,000 + Greengate Node_ID = 1,000 + 1 = 1,001
- Device 2 Instance will then be = 1,000 + Greengate Node_ID = 1,000 + 22 = 1,022
- Device 3 Instance will then be = 1,000 + Greengate Node_ID = 1,000 + 33 = 1,033

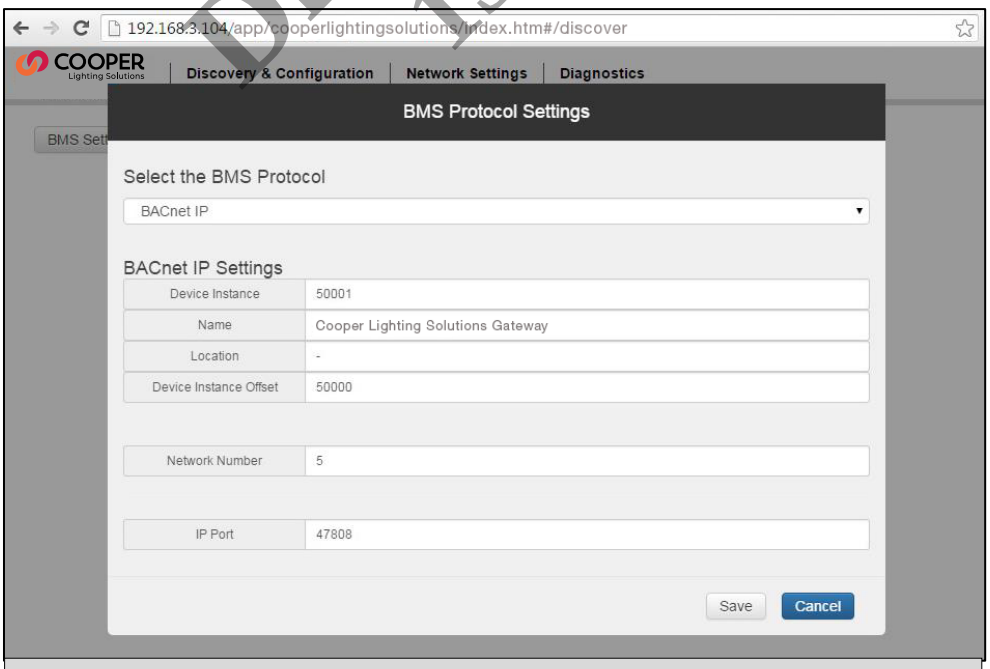


Figure 29: Web Configurator Settings Window

6 LONWORKS (FPC-N35): COMMISSIONING PROTONODE ON A LONWORKS NETWORK

Commissioning may only be performed by the LonWorks administrator.

6.1 Commissioning ProtoNode FPC-N35 on a LonWorks Network

The User will be prompted by the LonWorks Administrator to hit the Service Pin on the ProtoNode FPC-N35 at the correct step of the Commissioning process which is different for each LonWorks Network Management Tool.

- If an XIF file is required, see steps in **Section** 6.1.1 to generate XIF.

Figure 30: LonWorks Service Pin Location

6.1.1 Instructions to Download XIF File from ProtoNode FPC-N35 Using Browser

- Connect a Cat 5 Ethernet cable (Straight through or Cross-Over) between the PC and ProtoNode.
- The Default IP Address of ProtoNode is **192.168.1.24**, Subnet Mask is **255.255.255.0**. If the PC and ProtoNode are on different IP Networks, assign a static IP Address to the PC on the 192.168.1.xxx network.
- For Windows XP:

  Go to start > Control Panel > Network Connections

  Right-click on Local Area Connection > Properties

  Highlight Internet Protocol (TCP/IP) > Properties

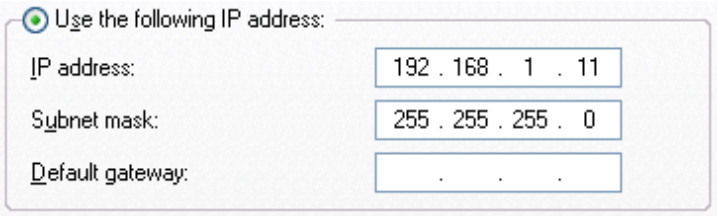
- For Windows 7:

  Go to > Control Panel > Network and Internet > Network and Sharing Center > Change adapter settings

  Right-click on Local Area Connection > Properties

  Highlight Internet Protocol Version 4 (TCP/IPv4) > Properties

- For Windows XP and Windows 7, select: Use the following IP Address



- Click 

twice.
- Open a web browser and go to the following address: IP Address of ProtoCessor/fserver.xif
- Example: 192.168.1.24/fserver.xif.
- If the web browser prompts you to save file, save the file onto the PC. If the web browser displays the xif file as a web page, save the file on your PC as fserver.xif.

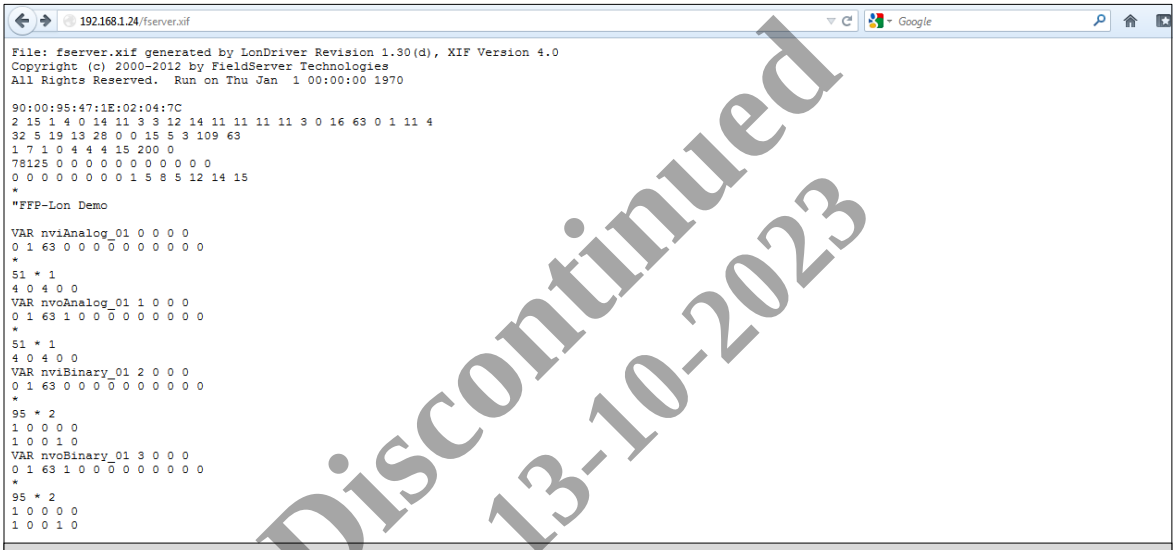


Figure 31: Sample of Fserver.XIF File Being Generated

7 CAS BACNET EXPLORER FOR VALIDATING PROTONODE IN THE FIELD

ProtoCessor has arranged a complementary 2 week fully functional copy of CAS BACnet Explorer (through Chipkin Automation) that can be used to validate BACnet MS/TP and/or BACnet/IP communications of ProtoNode in the field without having to have the BMS Integrator on site. A Serial or USB to RS-485 converter is needed to test BACnet MS/TP.

7.1 Downloading the CAS Explorer and Requesting an Activation Key

- To request the complementary BACnet CAS key, go to http://app.chipkin.com/activation/twoweek/ and fill in all the information. **Enter Vendor Code "CooperLightingSolutions2BACnet".** Once completed, the email address that was submitted will be registered.

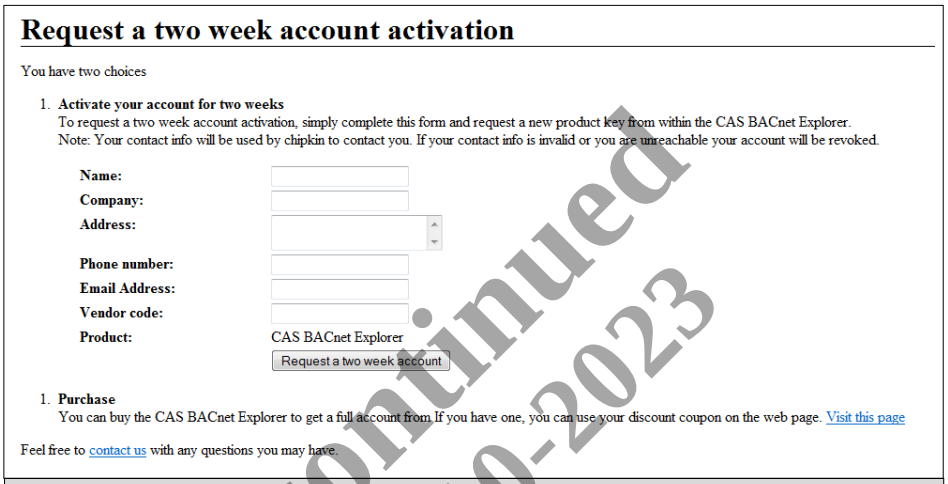


Figure 32: Downloading the CAS Explorer

- Go to the following web site, download and install the CAS BACnet Explorer to your PC: http://www.chipkin.com/technical-resources/cas-bacnet-explorer/
- Open CAS BACnet Explorer; in the CAS Activation form, enter the email address that was registered and click on "Request a key". The CAS key will then be emailed to the registered address. Cut/paste key from email into the Product key field and click "Activate".

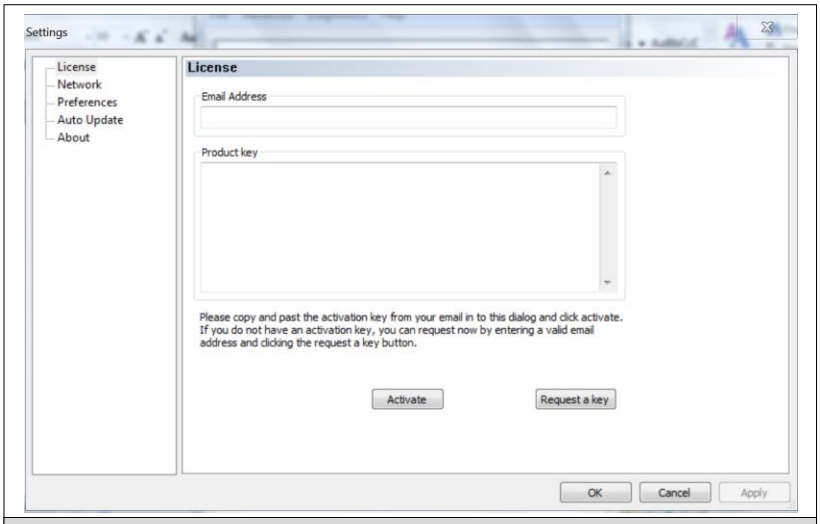


Figure 33: Requesting CAS Activation Key

7.2 CAS BACnet Setup

These are the instructions to set CAS Explorer up for the first time on BACnet MS/TP and BACnet/IP.

7.2.1 CAS BACnet MS/TP Setup

- Using the Serial or USB to RS-485 converter, connect it to your PC and the 3 Pin BACnet MS/TP connector on ProtoNode FPC-N34.
- In CAS Explorer, do the following:
  - Click on settings
  - Check the BACnet MS/TP box and uncheck the BACnet/IP and BACnet Ethernet boxes
  - Set the BACnet MS/TP MAC address to 0
  - Set the BACnet MS/TP Baud Rate to 38400
  - Click Ok
  - On the bottom right-hand corner, make sure that the BACnet MS/TP box is green
  - Click on discover
  - Check all 4 boxes
  - Click Send

7.2.2 CAS BACnet BACnet/IP Setup

- See **Section 4.1** to set the IP Address and subnet of the PC that will be running the CAS Explorer.
- Connect a straight through or cross Ethernet cable from the PC to ProtoNode.
- In CAS Explorer, do the following:
  - Click on settings
  - Check the BACnet/IP box and uncheck the BACnet MS/TP and BACnet Ethernet boxes
  - In the “Select a Network Device” box, select the network card of the PC by clicking on it
  - Click Ok
  - On the bottom right-hand corner, make sure that the BACnet/IP box is green
  - Click on discover
  - Check all 4 boxes
  - Click Send

Appendix A. Troubleshooting

Appendix A.1. Lost or Incorrect IP Address

- Ensure that FieldServer Toolbox is Loaded on the PC that is currently being used, or download FieldServer-Toolbox.zip on the Sierra Monitor webpage, under Customer Care: Resource Center, Software Downloads:
  http://www.sierramonitor.com/customer-care/resource-center?filters=software-downloads
- Extract the executable file and complete the installation.

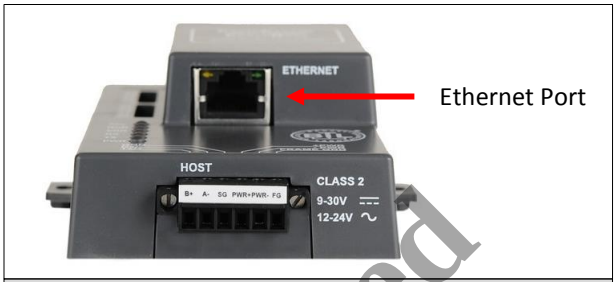
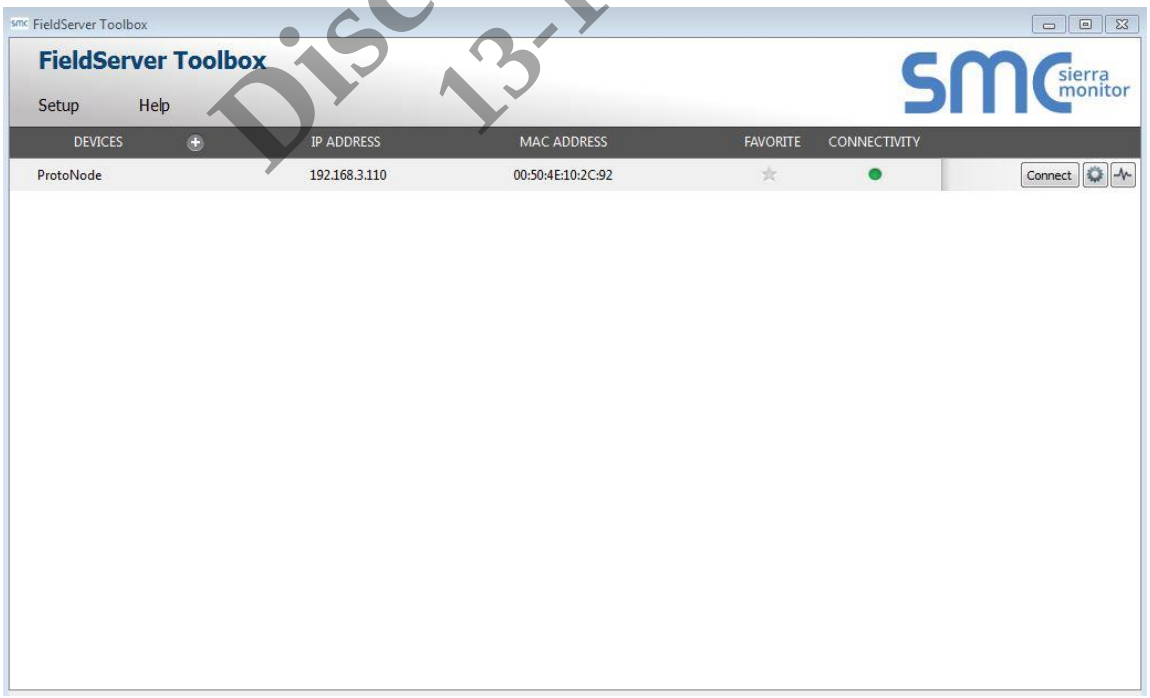


Figure 34: Ethernet Port Location

- Disable any wireless Ethernet adapters on the PC/Laptop.
- Disable firewall and virus protection software if possible.
- Connect a standard Cat 5 Ethernet cable between the PC and ProtoNode.
- Double click on the FS Toolbox Utility.
- Check IP Addresses from the Device listings.



- Correct IP Address(es) by right clicking the settings icon and changing the IP Address.

Appendix A.2. Viewing Diagnostic information

- Type the IP Address of the ProtoNode into your web browser or use the FieldServer Toolbox to connect to the ProtoNode.
- Click on Diagnostics and Debugging Button, then click on view, and then on connections.
- If there are any errors showing on the Connection page, please refer to **Appendix A.3** for the relevant wiring and settings.

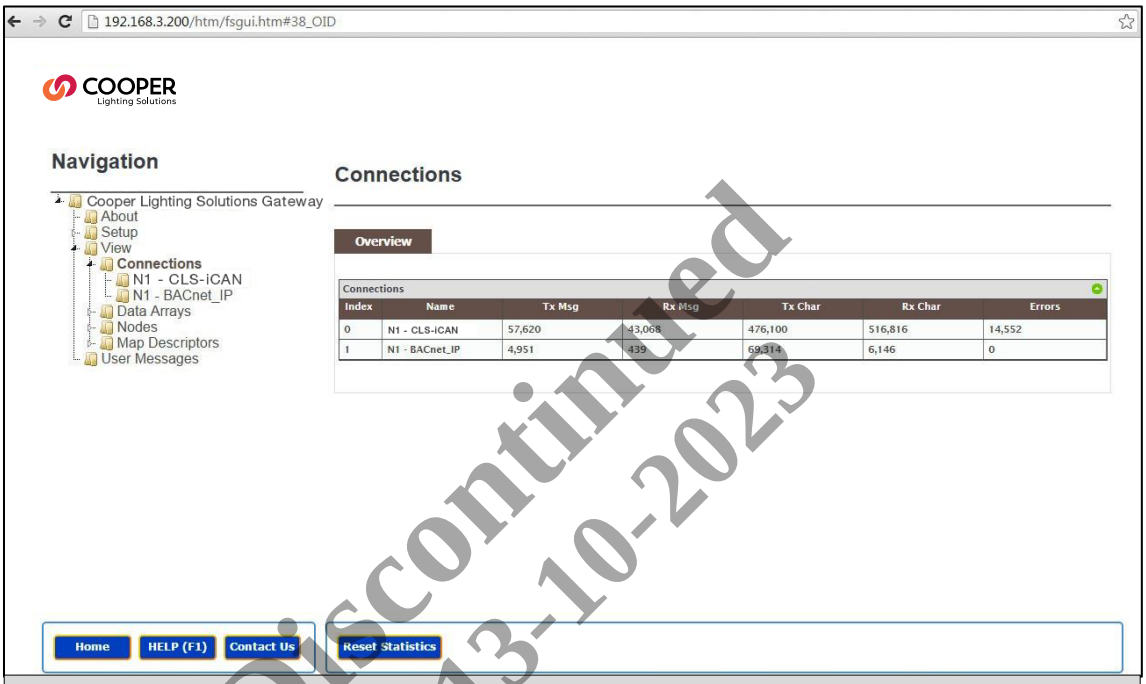


Figure 35: Error messages screen

Appendix A.3. Check Wiring and Settings

- No COMS on Greengate or iLUMIN side. Check the following:
  - Check Greengate or iLUMIN IP Address
  - Check Ethernet Switch
  - Check Ethernet LEDs
  - Verify Ethernet Cable
- Field COM problems:
  - Visual observations of LEDs on ProtoNode. (**Appendix A.6**)
  - Verify IP Address setting
  - Verify wiring

If the problem still exists, a Diagnostic Capture needs to be taken and sent to Sierra Monitor Corporation. (Appendix A.4)

Appendix A.4. Take Diagnostic Capture With the FieldServer Utilities

- **Once the Diagnostic Capture is complete, email it to support@sierramonitor.com. The Diagnostic Capture will allow us to rapidly diagnose the problem.**
- Ensure that FieldServer Toolbox is Loaded on the PC that is currently being used, or download FieldServer-Toolbox.zip on the Sierra Monitor Corporation webpage, under Customer Care: Resource Center, Software Downloads:
  http://www.sierramonitor.com/customer-care/resource-center?filters=software-downloads
- Extract the executable file and complete the installation.

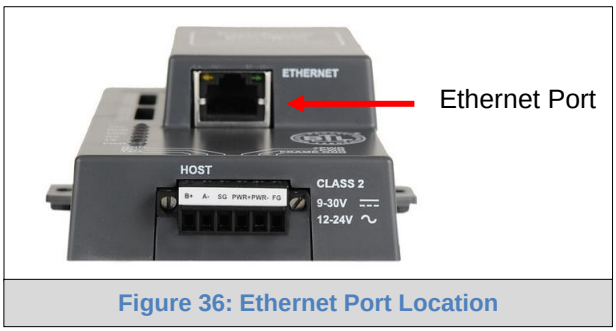
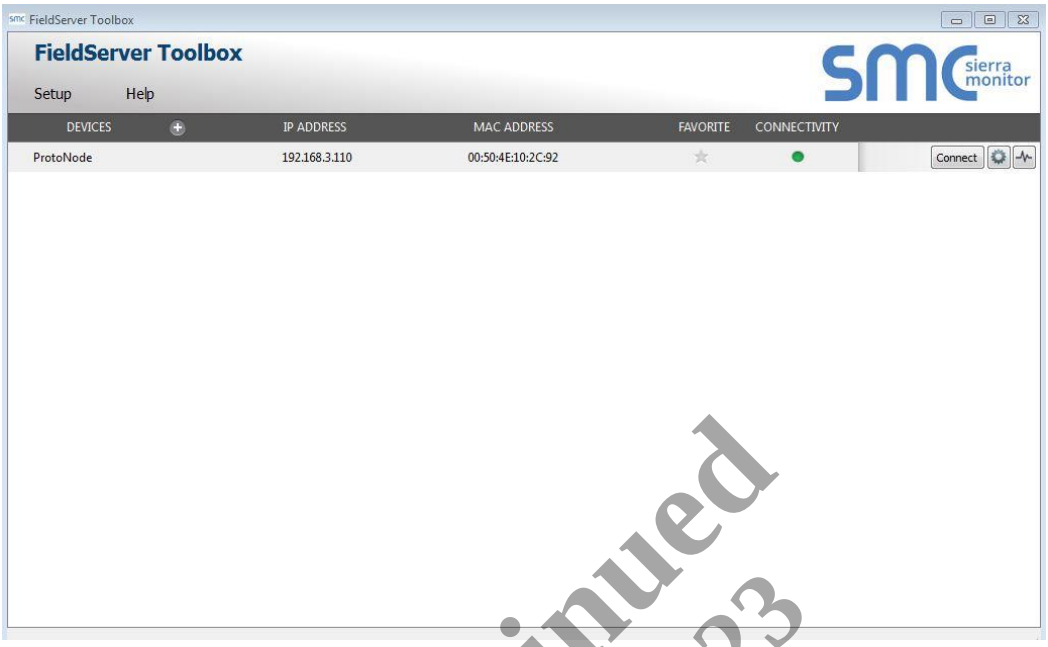


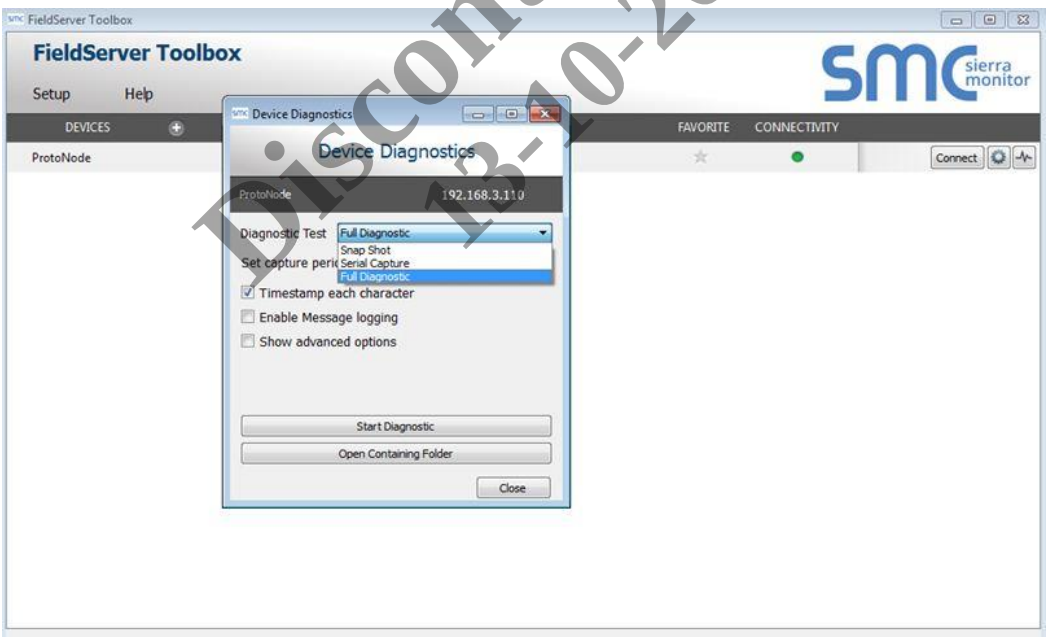
Figure 36: Ethernet Port Location

- Disable any wireless Ethernet adapters on the PC/Laptop.
- Disable firewall and virus protection software if possible.
- Connect a standard cat5 Ethernet cable between the PC and ProtoNode.
- Double click on the FS Toolbox Utility.

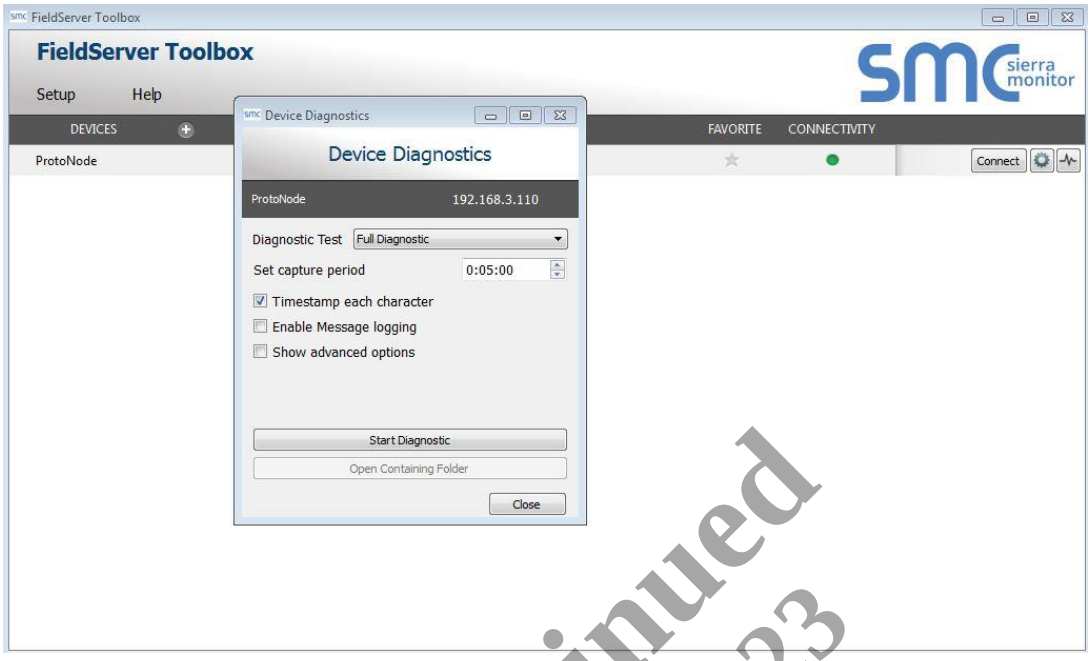
- **Step 1:** Take a Log
  - Click on the diagnose icon  of the desired device.



  - Select full Diagnostic.

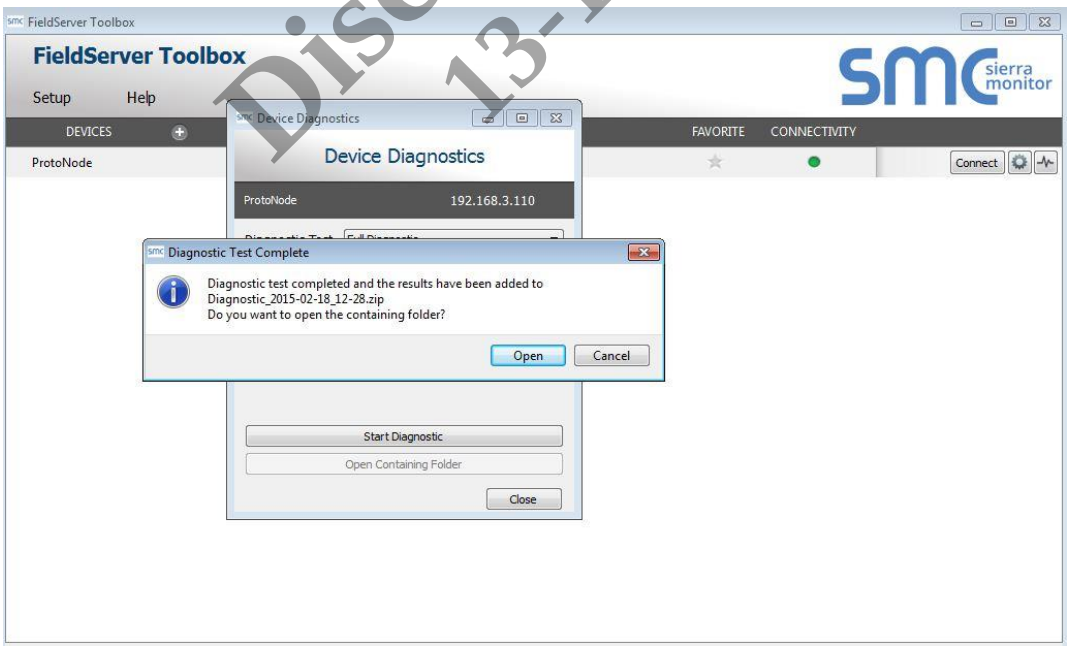


- If desired, the default capture period can be changed.
- Click on Start Diagnostic.



- Wait for Capture period to finish. Diagnostic Test Complete window will appear.

- **Step 2**: Send Log
  - Once the Diagnostic test is complete, a .zip file will be saved on the PC.



- Choose open to launch explorer and have it point directly at the correct folder. Send the Diagnostic zip file to **support@sierramonitor.com**

Appendix A.5. BACnet: Setting Network_Number for more than one ProtoNode on Subnet

For both BACnet MS/TP and BACnet/IP, if more than one ProtoNode is connected to the same subnet, they must be assigned unique Network_Number values.

On the main Web Configuration screen, update the Network Number with the “network_nr” field and click submit. The default value is 50.

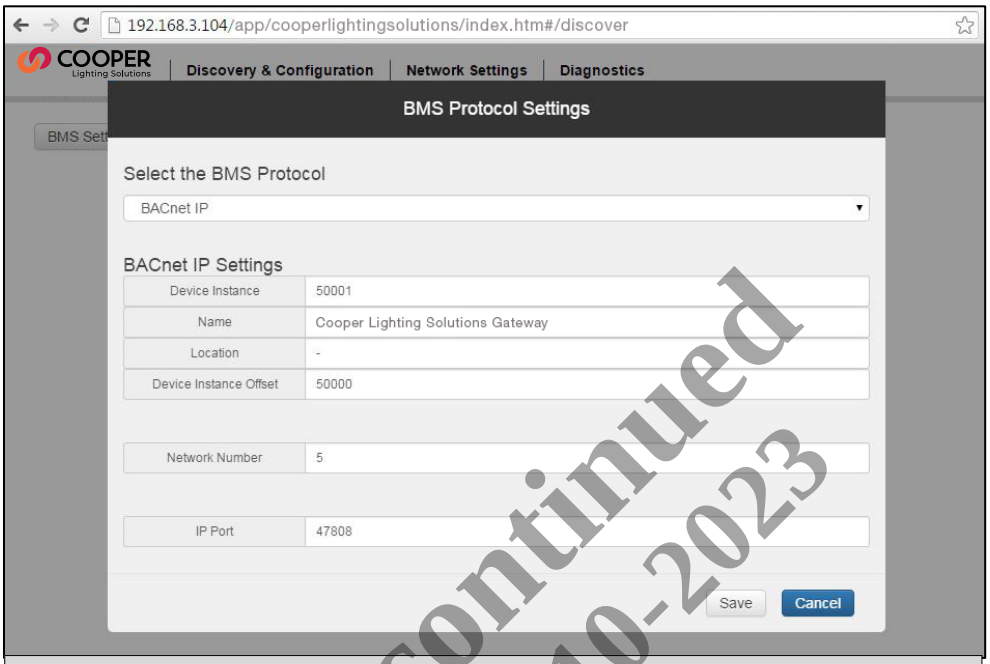
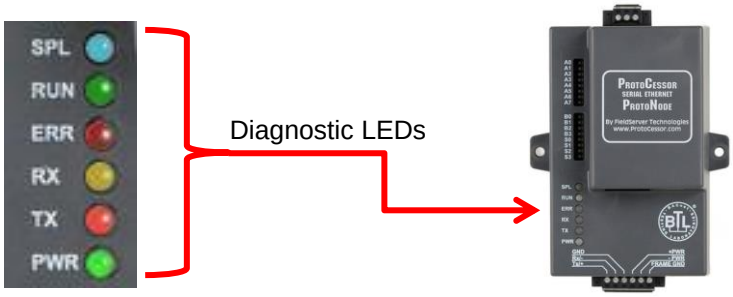


Figure 37: Web Configurator showing Network Number Setting for BACnet/IP

Appendix A.6. LED Diagnostics for Communications Between ProtoNode and Devices

Please see the diagram below for ProtoNode FPC-N34 and FPC-N35 LED Locations.



Tag	Description
SPL	The SPL LED will light if the ProtoNode is off line. **For FPC-N35**, the LED will also light until ProtoNode is Commissioned on the LonWorks network.
RUN	The RUN LED will start flashing 20 seconds after power indicating normal operation.
ERR	The SYS ERR LED will go on solid 15 seconds after power up. It will turn off after 5 seconds. A steady red light will indicate there is a system error on ProtoNode. If this occurs, immediately report the related "system error" shown in the error screen of the GUI interface to FieldServer Technologies for evaluation.
RX	Not Used.
TX	Not Used.
PWR	This is the power light and should show steady green at all times when ProtoNode is powered.

Figure 38: Diagnostic LEDs

Appendix A.7. Passwords

Access to the ProtoNode can be restricted by enabling a password. There are 2 access levels defined by 2 account names: Admin and User.

- The Admin account has unrestricted access to the ProtoNode.
- The User account can view any ProtoNode information, but cannot make any changes or restart the ProtoNode.

The password needs to be a minimum of eight characters and **is case sensitive**.

If you forgot your password, click cancel on the password authentication popup window, and e-mail the Password recovery token to Controltechsupport@cooperlighting.com to receive a temporary password from the Sierra Monitor support team. You can now access the ProtoNode to set a new password.

Appendix B. Vendor Information – Cooper Lighting Solutions

Appendix B.1. 3264640000 Greengate Mappings to BACnet, Modbus and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register	Lon Name	Lon SNVT
Reset	BV	1001	201	nviXXX_Reset	SNVT_switch
Relay01	BV	1	1	nvi/nvoXXX_Relay001	SNVT_switch
Relay02	BV	2	2	nvi/nvoXXX_Relay002	SNVT_switch
Relay03	BV	3	3	nvi/nvoXXX_Relay003	SNVT_switch
Relay04	BV	4	4	nvi/nvoXXX_Relay004	SNVT_switch
Relay05	BV	5	5	nvi/nvoXXX_Relay005	SNVT_switch
Relay06	BV	6	6	nvi/nvoXXX_Relay006	SNVT_switch
Relay07	BV	7	7	nvi/nvoXXX_Relay007	SNVT_switch
Relay08	BV	8	8	nvi/nvoXXX_Relay008	SNVT_switch
Relay09	BV	9	9	nvi/nvoXXX_Relay009	SNVT_switch
Relay010	BV	10	10	nvi/nvoXXX_Relay010	SNVT_switch
Relay011	BV	11	11	nvi/nvoXXX_Relay011	SNVT_switch
Relay012	BV	12	12	nvi/nvoXXX_Relay012	SNVT_switch
Relay013	BV	13	13	nvi/nvoXXX_Relay013	SNVT_switch
Relay014	BV	14	14	nvi/nvoXXX_Relay014	SNVT_switch
Relay015	BV	15	15	nvi/nvoXXX_Relay015	SNVT_switch
Relay016	BV	16	16	nvi/nvoXXX_Relay016	SNVT_switch
Relay017	BV	17	17	nvi/nvoXXX_Relay017	SNVT_switch
Relay018	BV	18	18	nvi/nvoXXX_Relay018	SNVT_switch
Relay019	BV	19	19	nvi/nvoXXX_Relay019	SNVT_switch
Relay020	BV	20	20	nvi/nvoXXX_Relay020	SNVT_switch
Relay021	BV	21	21	nvi/nvoXXX_Relay021	SNVT_switch
Relay022	BV	22	22	nvi/nvoXXX_Relay022	SNVT_switch
Relay023	BV	23	23	nvi/nvoXXX_Relay023	SNVT_switch
Relay024	BV	24	24	nvi/nvoXXX_Relay024	SNVT_switch
Relay025	BV	25	25	nvi/nvoXXX_Relay025	SNVT_switch
Relay026	BV	26	26	nvi/nvoXXX_Relay026	SNVT_switch
Relay027	BV	27	27	nvi/nvoXXX_Relay027	SNVT_switch
Relay028	BV	28	28	nvi/nvoXXX_Relay028	SNVT_switch
Relay029	BV	29	29	nvi/nvoXXX_Relay029	SNVT_switch
Relay030	BV	30	30	nvi/nvoXXX_Relay030	SNVT_switch
Relay031	BV	31	31	nvi/nvoXXX_Relay031	SNVT_switch
Relay032	BV	32	32	nvi/nvoXXX_Relay032	SNVT_switch
Remote01	BV	101	101	nvi/nvoXXX_Remote001	SNVT_switch
Remote02	BV	102	102	nvi/nvoXXX_Remote002	SNVT_switch
Remote03	BV	103	103	nvi/nvoXXX_Remote003	SNVT_switch
Remote04	BV	104	104	nvi/nvoXXX_Remote004	SNVT_switch
Remote05	BV	105	105	nvi/nvoXXX_Remote005	SNVT_switch
Remote06	BV	106	106	nvi/nvoXXX_Remote006	SNVT_switch
Remote07	BV	107	107	nvi/nvoXXX_Remote007	SNVT_switch
Remote08	BV	108	108	nvi/nvoXXX_Remote008	SNVT_switch

Remote09	BV	109	109	nvi/nvoXXX_Remote009	SNVT_switch
Remote010	BV	110	110	nvi/nvoXXX_Remote010	SNVT_switch
Remote011	BV	111	111	nvi/nvoXXX_Remote011	SNVT_switch
Remote012	BV	112	112	nvi/nvoXXX_Remote012	SNVT_switch
Remote013	BV	113	113	nvi/nvoXXX_Remote013	SNVT_switch
Remote014	BV	114	114	nvi/nvoXXX_Remote014	SNVT_switch
Remote015	BV	115	115	nvi/nvoXXX_Remote015	SNVT_switch
Remote016	BV	116	116	nvi/nvoXXX_Remote016	SNVT_switch
Remote017	BV	117	117	nvi/nvoXXX_Remote017	SNVT_switch
Remote018	BV	118	118	nvi/nvoXXX_Remote018	SNVT_switch
Remote019	BV	119	119	nvi/nvoXXX_Remote019	SNVT_switch
Remote020	BV	120	120	nvi/nvoXXX_Remote020	SNVT_switch
Remote021	BV	121	121	nvi/nvoXXX_Remote021	SNVT_switch
Remote022	BV	122	122	nvi/nvoXXX_Remote022	SNVT_switch
Remote023	BV	123	123	nvi/nvoXXX_Remote023	SNVT_switch
Remote024	BV	124	124	nvi/nvoXXX_Remote024	SNVT_switch
Remote025	BV	125	125	nvi/nvoXXX_Remote025	SNVT_switch
Remote026	BV	126	126	nvi/nvoXXX_Remote026	SNVT_switch
Remote027	BV	127	127	nvi/nvoXXX_Remote027	SNVT_switch
Remote028	BV	128	128	nvi/nvoXXX_Remote028	SNVT_switch
Remote029	BV	129	129	nvi/nvoXXX_Remote029	SNVT_switch
Remote030	BV	130	130	nvi/nvoXXX_Remote030	SNVT_switch
Remote031	BV	131	131	nvi/nvoXXX_Remote031	SNVT_switch
Remote032	BV	132	132	nvi/nvoXXX_Remote032	SNVT_switch
Remote033	BV	133	133	nvi/nvoXXX_Remote033	SNVT_switch
Remote034	BV	134	134	nvi/nvoXXX_Remote034	SNVT_switch
Remote035	BV	135	135	nvi/nvoXXX_Remote035	SNVT_switch
Remote036	BV	136	136	nvi/nvoXXX_Remote036	SNVT_switch
Remote037	BV	137	137	nvi/nvoXXX_Remote037	SNVT_switch
Remote038	BV	138	138	nvi/nvoXXX_Remote038	SNVT_switch
Remote039	BV	139	139	nvi/nvoXXX_Remote039	SNVT_switch
Remote040	BV	140	140	nvi/nvoXXX_Remote040	SNVT_switch
Remote041	BV	141	141	nvi/nvoXXX_Remote041	SNVT_switch
Remote042	BV	142	142	nvi/nvoXXX_Remote042	SNVT_switch
Remote043	BV	143	143	nvi/nvoXXX_Remote043	SNVT_switch
Remote044	BV	144	144	nvi/nvoXXX_Remote044	SNVT_switch
Remote045	BV	145	145	nvi/nvoXXX_Remote045	SNVT_switch
Remote046	BV	146	146	nvi/nvoXXX_Remote046	SNVT_switch
Remote047	BV	147	147	nvi/nvoXXX_Remote047	SNVT_switch
Remote048	BV	148	148	nvi/nvoXXX_Remote048	SNVT_switch
Remote049	BV	149	149	nvi/nvoXXX_Remote049	SNVT_switch
Remote050	BV	150	150	nvi/nvoXXX_Remote050	SNVT_switch
Remote051	BV	151	151	nvi/nvoXXX_Remote051	SNVT_switch
Remote052	BV	152	152	nvi/nvoXXX_Remote052	SNVT_switch
Remote053	BV	153	153	nvi/nvoXXX_Remote053	SNVT_switch
Remote054	BV	154	154	nvi/nvoXXX_Remote054	SNVT_switch
Remote055	BV	155	155	nvi/nvoXXX_Remote055	SNVT_switch
Remote056	BV	156	156	nvi/nvoXXX_Remote056	SNVT_switch
Remote057	BV	157	157	nvi/nvoXXX_Remote057	SNVT_switch
Remote058	BV	158	158	nvi/nvoXXX_Remote058	SNVT_switch

Remote059	BV	159	159	nvi/nvoXXX_Remote059	SNVT_switch
Remote060	BV	160	160	nvi/nvoXXX_Remote060	SNVT_switch
Remote061	BV	161	161	nvi/nvoXXX_Remote061	SNVT_switch
Remote062	BV	162	162	nvi/nvoXXX_Remote062	SNVT_switch
Remote063	BV	163	163	nvi/nvoXXX_Remote063	SNVT_switch
Remote064	BV	164	164	nvi/nvoXXX_Remote064	SNVT_switch
Switch01	BI	1	10001	nvoXXX_Switch001	SNVT_switch
Switch02	BI	2	10002	nvoXXX_Switch002	SNVT_switch
Switch03	BI	3	10003	nvoXXX_Switch003	SNVT_switch
Switch04	BI	4	10004	nvoXXX_Switch004	SNVT_switch
Switch05	BI	5	10005	nvoXXX_Switch005	SNVT_switch
Switch06	BI	6	10006	nvoXXX_Switch006	SNVT_switch
Switch07	BI	7	10007	nvoXXX_Switch007	SNVT_switch
Switch08	BI	8	10008	nvoXXX_Switch008	SNVT_switch
Switch09	BI	9	10009	nvoXXX_Switch009	SNVT_switch
Switch010	BI	10	10010	nvoXXX_Switch010	SNVT_switch
Switch011	BI	11	10011	nvoXXX_Switch011	SNVT_switch
Switch012	BI	12	10012	nvoXXX_Switch012	SNVT_switch
Switch013	BI	13	10013	nvoXXX_Switch013	SNVT_switch
Switch014	BI	14	10014	nvoXXX_Switch014	SNVT_switch
Switch015	BI	15	10015	nvoXXX_Switch015	SNVT_switch
Switch016	BI	16	10016	nvoXXX_Switch016	SNVT_switch
Switch017	BI	17	10017	nvoXXX_Switch017	SNVT_switch
Switch018	BI	18	10018	nvoXXX_Switch018	SNVT_switch
Switch019	BI	19	10019	nvoXXX_Switch019	SNVT_switch
Switch020	BI	20	10020	nvoXXX_Switch020	SNVT_switch
Switch021	BI	21	10021	nvoXXX_Switch021	SNVT_switch
Switch022	BI	22	10022	nvoXXX_Switch022	SNVT_switch
Switch023	BI	23	10023	nvoXXX_Switch023	SNVT_switch
Switch024	BI	24	10024	nvoXXX_Switch024	SNVT_switch
Switch025	BI	25	10025	nvoXXX_Switch025	SNVT_switch
Switch026	BI	26	10026	nvoXXX_Switch026	SNVT_switch
Switch027	BI	27	10027	nvoXXX_Switch027	SNVT_switch
Switch028	BI	28	10028	nvoXXX_Switch028	SNVT_switch
Switch029	BI	29	10029	nvoXXX_Switch029	SNVT_switch
Switch030	BI	30	10030	nvoXXX_Switch030	SNVT_switch
Switch031	BI	31	10031	nvoXXX_Switch031	SNVT_switch
Switch032	BI	32	10032	nvoXXX_Switch032	SNVT_switch
Switch033	BI	33	10033	nvoXXX_Switch033	SNVT_switch
Switch034	BI	34	10034	nvoXXX_Switch034	SNVT_switch
Switch035	BI	35	10035	nvoXXX_Switch035	SNVT_switch
Switch036	BI	36	10036	nvoXXX_Switch036	SNVT_switch
Switch037	BI	37	10037	nvoXXX_Switch037	SNVT_switch
Switch038	BI	38	10038	nvoXXX_Switch038	SNVT_switch
Switch039	BI	39	10039	nvoXXX_Switch039	SNVT_switch
Switch040	BI	40	10040	nvoXXX_Switch040	SNVT_switch
Switch041	BI	41	10041	nvoXXX_Switch041	SNVT_switch
Switch042	BI	42	10042	nvoXXX_Switch042	SNVT_switch
Switch043	BI	43	10043	nvoXXX_Switch043	SNVT_switch

Switch044	BI	44	10044	nvoXXX_Switch044	SNVT_switch
Switch045	BI	45	10045	nvoXXX_Switch045	SNVT_switch
Switch046	BI	46	10046	nvoXXX_Switch046	SNVT_switch
Switch047	BI	47	10047	nvoXXX_Switch047	SNVT_switch
Switch048	BI	48	10048	nvoXXX_Switch048	SNVT_switch
Switch049	BI	49	10049	nvoXXX_Switch049	SNVT_switch
Switch050	BI	50	10050	nvoXXX_Switch050	SNVT_switch
Switch051	BI	51	10051	nvoXXX_Switch051	SNVT_switch
Switch052	BI	52	10052	nvoXXX_Switch052	SNVT_switch
Switch053	BI	53	10053	nvoXXX_Switch053	SNVT_switch
Switch054	BI	54	10054	nvoXXX_Switch054	SNVT_switch
Switch055	BI	55	10055	nvoXXX_Switch055	SNVT_switch
Switch056	BI	56	10056	nvoXXX_Switch056	SNVT_switch
Switch057	BI	57	10057	nvoXXX_Switch057	SNVT_switch
Switch058	BI	58	10058	nvoXXX_Switch058	SNVT_switch
Switch059	BI	59	10059	nvoXXX_Switch059	SNVT_switch
Switch060	BI	60	10060	nvoXXX_Switch060	SNVT_switch
Switch061	BI	61	10061	nvoXXX_Switch061	SNVT_switch
Switch062	BI	62	10062	nvoXXX_Switch062	SNVT_switch
Switch063	BI	63	10063	nvoXXX_Switch063	SNVT_switch
Switch064	BI	64	10064	nvoXXX_Switch064	SNVT_switch

Appendix B.2. 4864643204 Greengate Mappings to BACnet, Modbus and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register	Lon Name	Lon SNVT
Reset	BV	1001	201	nviXXX_Reset	SNVT_switch
Relay01	BV	1	1	nvi/nvoXXX_Relay001	SNVT_switch
Relay02	BV	2	2	nvi/nvoXXX_Relay002	SNVT_switch
Relay03	BV	3	3	nvi/nvoXXX_Relay003	SNVT_switch
Relay04	BV	4	4	nvi/nvoXXX_Relay004	SNVT_switch
Relay05	BV	5	5	nvi/nvoXXX_Relay005	SNVT_switch
Relay06	BV	6	6	nvi/nvoXXX_Relay006	SNVT_switch
Relay07	BV	7	7	nvi/nvoXXX_Relay007	SNVT_switch
Relay08	BV	8	8	nvi/nvoXXX_Relay008	SNVT_switch
Relay09	BV	9	9	nvi/nvoXXX_Relay009	SNVT_switch
Relay010	BV	10	10	nvi/nvoXXX_Relay010	SNVT_switch
Relay011	BV	11	11	nvi/nvoXXX_Relay011	SNVT_switch
Relay012	BV	12	12	nvi/nvoXXX_Relay012	SNVT_switch
Relay013	BV	13	13	nvi/nvoXXX_Relay013	SNVT_switch
Relay014	BV	14	14	nvi/nvoXXX_Relay014	SNVT_switch
Relay015	BV	15	15	nvi/nvoXXX_Relay015	SNVT_switch
Relay016	BV	16	16	nvi/nvoXXX_Relay016	SNVT_switch
Relay017	BV	17	17	nvi/nvoXXX_Relay017	SNVT_switch
Relay018	BV	18	18	nvi/nvoXXX_Relay018	SNVT_switch
Relay019	BV	19	19	nvi/nvoXXX_Relay019	SNVT_switch
Relay020	BV	20	20	nvi/nvoXXX_Relay020	SNVT_switch

Relay021	BV	21	21	nvi/nvoXXX_Relay021	SNVT_switch
Relay022	BV	22	22	nvi/nvoXXX_Relay022	SNVT_switch
Relay023	BV	23	23	nvi/nvoXXX_Relay023	SNVT_switch
Relay024	BV	24	24	nvi/nvoXXX_Relay024	SNVT_switch
Relay025	BV	25	25	nvi/nvoXXX_Relay025	SNVT_switch
Relay026	BV	26	26	nvi/nvoXXX_Relay026	SNVT_switch
Relay027	BV	27	27	nvi/nvoXXX_Relay027	SNVT_switch
Relay028	BV	28	28	nvi/nvoXXX_Relay028	SNVT_switch
Relay029	BV	29	29	nvi/nvoXXX_Relay029	SNVT_switch
Relay030	BV	30	30	nvi/nvoXXX_Relay030	SNVT_switch
Relay031	BV	31	31	nvi/nvoXXX_Relay031	SNVT_switch
Relay032	BV	32	32	nvi/nvoXXX_Relay032	SNVT_switch
Relay033	BV	33	33	nvi/nvoXXX_Relay033	SNVT_switch
Relay034	BV	34	34	nvi/nvoXXX_Relay034	SNVT_switch
Relay035	BV	35	35	nvi/nvoXXX_Relay035	SNVT_switch
Relay036	BV	36	36	nvi/nvoXXX_Relay036	SNVT_switch
Relay037	BV	37	37	nvi/nvoXXX_Relay037	SNVT_switch
Relay038	BV	38	38	nvi/nvoXXX_Relay038	SNVT_switch
Relay039	BV	39	39	nvi/nvoXXX_Relay039	SNVT_switch
Relay040	BV	40	40	nvi/nvoXXX_Relay040	SNVT_switch
Relay041	BV	41	41	nvi/nvoXXX_Relay041	SNVT_switch
Relay042	BV	42	42	nvi/nvoXXX_Relay042	SNVT_switch
Relay043	BV	43	43	nvi/nvoXXX_Relay043	SNVT_switch
Relay044	BV	44	44	nvi/nvoXXX_Relay044	SNVT_switch
Relay045	BV	45	45	nvi/nvoXXX_Relay045	SNVT_switch
Relay046	BV	46	46	nvi/nvoXXX_Relay046	SNVT_switch
Relay047	BV	47	47	nvi/nvoXXX_Relay047	SNVT_switch
Relay048	BV	48	48	nvi/nvoXXX_Relay048	SNVT_switch
Remote01	BV	101	101	nvi/nvoXXX_Remote001	SNVT_switch
Remote02	BV	102	102	nvi/nvoXXX_Remote002	SNVT_switch
Remote03	BV	103	103	nvi/nvoXXX_Remote003	SNVT_switch
Remote04	BV	104	104	nvi/nvoXXX_Remote004	SNVT_switch
Remote05	BV	105	105	nvi/nvoXXX_Remote005	SNVT_switch
Remote06	BV	106	106	nvi/nvoXXX_Remote006	SNVT_switch
Remote07	BV	107	107	nvi/nvoXXX_Remote007	SNVT_switch
Remote08	BV	108	108	nvi/nvoXXX_Remote008	SNVT_switch
Remote09	BV	109	109	nvi/nvoXXX_Remote009	SNVT_switch
Remote010	BV	110	110	nvi/nvoXXX_Remote010	SNVT_switch
Remote011	BV	111	111	nvi/nvoXXX_Remote011	SNVT_switch
Remote012	BV	112	112	nvi/nvoXXX_Remote012	SNVT_switch
Remote013	BV	113	113	nvi/nvoXXX_Remote013	SNVT_switch
Remote014	BV	114	114	nvi/nvoXXX_Remote014	SNVT_switch
Remote015	BV	115	115	nvi/nvoXXX_Remote015	SNVT_switch
Remote016	BV	116	116	nvi/nvoXXX_Remote016	SNVT_switch
Remote017	BV	117	117	nvi/nvoXXX_Remote017	SNVT_switch
Remote018	BV	118	118	nvi/nvoXXX_Remote018	SNVT_switch
Remote019	BV	119	119	nvi/nvoXXX_Remote019	SNVT_switch
Remote020	BV	120	120	nvi/nvoXXX_Remote020	SNVT_switch
Remote021	BV	121	121	nvi/nvoXXX_Remote021	SNVT_switch

Remote022	BV	122	122	nvi/nvoXXX_Remote022	SNVT_switch
Remote023	BV	123	123	nvi/nvoXXX_Remote023	SNVT_switch
Remote024	BV	124	124	nvi/nvoXXX_Remote024	SNVT_switch
Remote025	BV	125	125	nvi/nvoXXX_Remote025	SNVT_switch
Remote026	BV	126	126	nvi/nvoXXX_Remote026	SNVT_switch
Remote027	BV	127	127	nvi/nvoXXX_Remote027	SNVT_switch
Remote028	BV	128	128	nvi/nvoXXX_Remote028	SNVT_switch
Remote029	BV	129	129	nvi/nvoXXX_Remote029	SNVT_switch
Remote030	BV	130	130	nvi/nvoXXX_Remote030	SNVT_switch
Remote031	BV	131	131	nvi/nvoXXX_Remote031	SNVT_switch
Remote032	BV	132	132	nvi/nvoXXX_Remote032	SNVT_switch
Remote033	BV	133	133	nvi/nvoXXX_Remote033	SNVT_switch
Remote034	BV	134	134	nvi/nvoXXX_Remote034	SNVT_switch
Remote035	BV	135	135	nvi/nvoXXX_Remote035	SNVT_switch
Remote036	BV	136	136	nvi/nvoXXX_Remote036	SNVT_switch
Remote037	BV	137	137	nvi/nvoXXX_Remote037	SNVT_switch
Remote038	BV	138	138	nvi/nvoXXX_Remote038	SNVT_switch
Remote039	BV	139	139	nvi/nvoXXX_Remote039	SNVT_switch
Remote040	BV	140	140	nvi/nvoXXX_Remote040	SNVT_switch
Remote041	BV	141	141	nvi/nvoXXX_Remote041	SNVT_switch
Remote042	BV	142	142	nvi/nvoXXX_Remote042	SNVT_switch
Remote043	BV	143	143	nvi/nvoXXX_Remote043	SNVT_switch
Remote044	BV	144	144	nvi/nvoXXX_Remote044	SNVT_switch
Remote045	BV	145	145	nvi/nvoXXX_Remote045	SNVT_switch
Remote046	BV	146	146	nvi/nvoXXX_Remote046	SNVT_switch
Remote047	BV	147	147	nvi/nvoXXX_Remote047	SNVT_switch
Remote048	BV	148	148	nvi/nvoXXX_Remote048	SNVT_switch
Remote049	BV	149	149	nvi/nvoXXX_Remote049	SNVT_switch
Remote050	BV	150	150	nvi/nvoXXX_Remote050	SNVT_switch
Remote051	BV	151	151	nvi/nvoXXX_Remote051	SNVT_switch
Remote052	BV	152	152	nvi/nvoXXX_Remote052	SNVT_switch
Remote053	BV	153	153	nvi/nvoXXX_Remote053	SNVT_switch
Remote054	BV	154	154	nvi/nvoXXX_Remote054	SNVT_switch
Remote055	BV	155	155	nvi/nvoXXX_Remote055	SNVT_switch
Remote056	BV	156	156	nvi/nvoXXX_Remote056	SNVT_switch
Remote057	BV	157	157	nvi/nvoXXX_Remote057	SNVT_switch
Remote058	BV	158	158	nvi/nvoXXX_Remote058	SNVT_switch
Remote059	BV	159	159	nvi/nvoXXX_Remote059	SNVT_switch
Remote060	BV	160	160	nvi/nvoXXX_Remote060	SNVT_switch
Remote061	BV	161	161	nvi/nvoXXX_Remote061	SNVT_switch
Remote062	BV	162	162	nvi/nvoXXX_Remote062	SNVT_switch
Remote063	BV	163	163	nvi/nvoXXX_Remote063	SNVT_switch
Remote064	BV	164	164	nvi/nvoXXX_Remote064	SNVT_switch
Switch01	BI	1	10001	nvoXXX_Switch001	SNVT_switch
Switch02	BI	2	10002	nvoXXX_Switch002	SNVT_switch
Switch03	BI	3	10003	nvoXXX_Switch003	SNVT_switch
Switch04	BI	4	10004	nvoXXX_Switch004	SNVT_switch
Switch05	BI	5	10005	nvoXXX_Switch005	SNVT_switch
Switch06	BI	6	10006	nvoXXX_Switch006	SNVT_switch

Switch07	BI	7	10007	nvoXXX_Switch007	SNVT_switch
Switch08	BI	8	10008	nvoXXX_Switch008	SNVT_switch
Switch09	BI	9	10009	nvoXXX_Switch009	SNVT_switch
Switch010	BI	10	10010	nvoXXX_Switch010	SNVT_switch
Switch011	BI	11	10011	nvoXXX_Switch011	SNVT_switch
Switch012	BI	12	10012	nvoXXX_Switch012	SNVT_switch
Switch013	BI	13	10013	nvoXXX_Switch013	SNVT_switch
Switch014	BI	14	10014	nvoXXX_Switch014	SNVT_switch
Switch015	BI	15	10015	nvoXXX_Switch015	SNVT_switch
Switch016	BI	16	10016	nvoXXX_Switch016	SNVT_switch
Switch017	BI	17	10017	nvoXXX_Switch017	SNVT_switch
Switch018	BI	18	10018	nvoXXX_Switch018	SNVT_switch
Switch019	BI	19	10019	nvoXXX_Switch019	SNVT_switch
Switch020	BI	20	10020	nvoXXX_Switch020	SNVT_switch
Switch021	BI	21	10021	nvoXXX_Switch021	SNVT_switch
Switch022	BI	22	10022	nvoXXX_Switch022	SNVT_switch
Switch023	BI	23	10023	nvoXXX_Switch023	SNVT_switch
Switch024	BI	24	10024	nvoXXX_Switch024	SNVT_switch
Switch025	BI	25	10025	nvoXXX_Switch025	SNVT_switch
Switch026	BI	26	10026	nvoXXX_Switch026	SNVT_switch
Switch027	BI	27	10027	nvoXXX_Switch027	SNVT_switch
Switch028	BI	28	10028	nvoXXX_Switch028	SNVT_switch
Switch029	BI	29	10029	nvoXXX_Switch029	SNVT_switch
Switch030	BI	30	10030	nvoXXX_Switch030	SNVT_switch
Switch031	BI	31	10031	nvoXXX_Switch031	SNVT_switch
Switch032	BI	32	10032	nvoXXX_Switch032	SNVT_switch
Switch033	BI	33	10033	nvoXXX_Switch033	SNVT_switch
Switch034	BI	34	10034	nvoXXX_Switch034	SNVT_switch
Switch035	BI	35	10035	nvoXXX_Switch035	SNVT_switch
Switch036	BI	36	10036	nvoXXX_Switch036	SNVT_switch
Switch037	BI	37	10037	nvoXXX_Switch037	SNVT_switch
Switch038	BI	38	10038	nvoXXX_Switch038	SNVT_switch
Switch039	BI	39	10039	nvoXXX_Switch039	SNVT_switch
Switch040	BI	40	10040	nvoXXX_Switch040	SNVT_switch
Switch041	BI	41	10041	nvoXXX_Switch041	SNVT_switch
Switch042	BI	42	10042	nvoXXX_Switch042	SNVT_switch
Switch043	BI	43	10043	nvoXXX_Switch043	SNVT_switch
Switch044	BI	44	10044	nvoXXX_Switch044	SNVT_switch
Switch045	BI	45	10045	nvoXXX_Switch045	SNVT_switch
Switch046	BI	46	10046	nvoXXX_Switch046	SNVT_switch
Switch047	BI	47	10047	nvoXXX_Switch047	SNVT_switch
Switch048	BI	48	10048	nvoXXX_Switch048	SNVT_switch
Switch049	BI	49	10049	nvoXXX_Switch049	SNVT_switch
Switch050	BI	50	10050	nvoXXX_Switch050	SNVT_switch
Switch051	BI	51	10051	nvoXXX_Switch051	SNVT_switch
Switch052	BI	52	10052	nvoXXX_Switch052	SNVT_switch
Switch053	BI	53	10053	nvoXXX_Switch053	SNVT_switch
Switch054	BI	54	10054	nvoXXX_Switch054	SNVT_switch
Switch055	BI	55	10055	nvoXXX_Switch055	SNVT_switch
Switch056	BI	56	10056	nvoXXX_Switch056	SNVT_switch

Switch057	BI	57	10057	nvoXXX_Switch057	SNVT_switch
Switch058	BI	58	10058	nvoXXX_Switch058	SNVT_switch
Switch059	BI	59	10059	nvoXXX_Switch059	SNVT_switch
Switch060	BI	60	10060	nvoXXX_Switch060	SNVT_switch
Switch061	BI	61	10061	nvoXXX_Switch061	SNVT_switch
Switch062	BI	62	10062	nvoXXX_Switch062	SNVT_switch
Switch063	BI	63	10063	nvoXXX_Switch063	SNVT_switch
Switch064	BI	64	10064	nvoXXX_Switch064	SNVT_switch
AI_State01	BI	101	10101	nvoXXX_State01	SNVT_switch
AI_State02	BI	102	10102	nvoXXX_State02	SNVT_switch
AI_State03	BI	103	10103	nvoXXX_State03	SNVT_switch
AI_State04	BI	104	10104	nvoXXX_State04	SNVT_switch
AI_State05	BI	105	10105	nvoXXX_State05	SNVT_switch
AI_State06	BI	106	10106	nvoXXX_State06	SNVT_switch
AI_State07	BI	107	10107	nvoXXX_State07	SNVT_switch
AI_State08	BI	108	10108	nvoXXX_State08	SNVT_switch
AI_State09	BI	109	10109	nvoXXX_State09	SNVT_switch
AI_State010	BI	110	10110	nvoXXX_State10	SNVT_switch
AI_State011	BI	111	10111	nvoXXX_State11	SNVT_switch
AI_State012	BI	112	10112	nvoXXX_State12	SNVT_switch
AI_State013	BI	113	10113	nvoXXX_State13	SNVT_switch
AI_State014	BI	114	10114	nvoXXX_State14	SNVT_switch
AI_State015	BI	115	10115	nvoXXX_State15	SNVT_switch
AI_State016	BI	116	10116	nvoXXX_State16	SNVT_switch
AI_State017	BI	117	10117	nvoXXX_State17	SNVT_switch
AI_State018	BI	118	10118	nvoXXX_State18	SNVT_switch
AI_State019	BI	119	10119	nvoXXX_State19	SNVT_switch
AI_State020	BI	120	10120	nvoXXX_State20	SNVT_switch
AI_State021	BI	121	10121	nvoXXX_State21	SNVT_switch
AI_State022	BI	122	10122	nvoXXX_State22	SNVT_switch
AI_State023	BI	123	10123	nvoXXX_State23	SNVT_switch
AI_State024	BI	124	10124	nvoXXX_State24	SNVT_switch
AI_State025	BI	125	10125	nvoXXX_State25	SNVT_switch
AI_State026	BI	126	10126	nvoXXX_State26	SNVT_switch
AI_State027	BI	127	10127	nvoXXX_State27	SNVT_switch
AI_State028	BI	128	10128	nvoXXX_State28	SNVT_switch
AI_State029	BI	129	10129	nvoXXX_State29	SNVT_switch
AI_State030	BI	130	10130	nvoXXX_State30	SNVT_switch
AI_State031	BI	131	10131	nvoXXX_State31	SNVT_switch
AI_State032	BI	132	10132	nvoXXX_State32	SNVT_switch
AI01	AI	1	30001	nvoXXX_AI01	SNVT_count_f
AI02	AI	2	30002	nvoXXX_AI02	SNVT_count_f
AI03	AI	3	30003	nvoXXX_AI03	SNVT_count_f
AI04	AI	4	30004	nvoXXX_AI04	SNVT_count_f

Appendix B.3. 808640000 Greengate Mappings to BACnet, Modbus and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register	Lon Name	Lon SNVT
Reset	BV	1001	201	nviXXX_Reset	SNVT_switch
Relay01	BV	1	1	nvi/nvoXXX_Relay001	SNVT_switch
Relay02	BV	2	2	nvi/nvoXXX_Relay002	SNVT_switch
Relay03	BV	3	3	nvi/nvoXXX_Relay003	SNVT_switch
Relay04	BV	4	4	nvi/nvoXXX_Relay004	SNVT_switch
Relay05	BV	5	5	nvi/nvoXXX_Relay005	SNVT_switch
Relay06	BV	6	6	nvi/nvoXXX_Relay006	SNVT_switch
Relay07	BV	7	7	nvi/nvoXXX_Relay007	SNVT_switch
Relay08	BV	8	8	nvi/nvoXXX_Relay008	SNVT_switch
Remote01	BV	101	101	nvi/nvoXXX_Remote001	SNVT_switch
Remote02	BV	102	102	nvi/nvoXXX_Remote002	SNVT_switch
Remote03	BV	103	103	nvi/nvoXXX_Remote003	SNVT_switch
Remote04	BV	104	104	nvi/nvoXXX_Remote004	SNVT_switch
Remote05	BV	105	105	nvi/nvoXXX_Remote005	SNVT_switch
Remote06	BV	106	106	nvi/nvoXXX_Remote006	SNVT_switch
Remote07	BV	107	107	nvi/nvoXXX_Remote007	SNVT_switch
Remote08	BV	108	108	nvi/nvoXXX_Remote008	SNVT_switch
Remote09	BV	109	109	nvi/nvoXXX_Remote009	SNVT_switch
Remote010	BV	110	110	nvi/nvoXXX_Remote010	SNVT_switch
Remote011	BV	111	111	nvi/nvoXXX_Remote011	SNVT_switch
Remote012	BV	112	112	nvi/nvoXXX_Remote012	SNVT_switch
Remote013	BV	113	113	nvi/nvoXXX_Remote013	SNVT_switch
Remote014	BV	114	114	nvi/nvoXXX_Remote014	SNVT_switch
Remote015	BV	115	115	nvi/nvoXXX_Remote015	SNVT_switch
Remote016	BV	116	116	nvi/nvoXXX_Remote016	SNVT_switch
Remote017	BV	117	117	nvi/nvoXXX_Remote017	SNVT_switch
Remote018	BV	118	118	nvi/nvoXXX_Remote018	SNVT_switch
Remote019	BV	119	119	nvi/nvoXXX_Remote019	SNVT_switch
Remote020	BV	120	120	nvi/nvoXXX_Remote020	SNVT_switch
Remote021	BV	121	121	nvi/nvoXXX_Remote021	SNVT_switch
Remote022	BV	122	122	nvi/nvoXXX_Remote022	SNVT_switch
Remote023	BV	123	123	nvi/nvoXXX_Remote023	SNVT_switch
Remote024	BV	124	124	nvi/nvoXXX_Remote024	SNVT_switch
Remote025	BV	125	125	nvi/nvoXXX_Remote025	SNVT_switch
Remote026	BV	126	126	nvi/nvoXXX_Remote026	SNVT_switch
Remote027	BV	127	127	nvi/nvoXXX_Remote027	SNVT_switch
Remote028	BV	128	128	nvi/nvoXXX_Remote028	SNVT_switch
Remote029	BV	129	129	nvi/nvoXXX_Remote029	SNVT_switch
Remote030	BV	130	130	nvi/nvoXXX_Remote030	SNVT_switch
Remote031	BV	131	131	nvi/nvoXXX_Remote031	SNVT_switch
Remote032	BV	132	132	nvi/nvoXXX_Remote032	SNVT_switch
Remote033	BV	133	133	nvi/nvoXXX_Remote033	SNVT_switch
Remote034	BV	134	134	nvi/nvoXXX_Remote034	SNVT_switch

Remote035	BV	135	135	nvi/nvoXXX_Remote035	SNVT_switch
Remote036	BV	136	136	nvi/nvoXXX_Remote036	SNVT_switch
Remote037	BV	137	137	nvi/nvoXXX_Remote037	SNVT_switch
Remote038	BV	138	138	nvi/nvoXXX_Remote038	SNVT_switch
Remote039	BV	139	139	nvi/nvoXXX_Remote039	SNVT_switch
Remote040	BV	140	140	nvi/nvoXXX_Remote040	SNVT_switch
Remote041	BV	141	141	nvi/nvoXXX_Remote041	SNVT_switch
Remote042	BV	142	142	nvi/nvoXXX_Remote042	SNVT_switch
Remote043	BV	143	143	nvi/nvoXXX_Remote043	SNVT_switch
Remote044	BV	144	144	nvi/nvoXXX_Remote044	SNVT_switch
Remote045	BV	145	145	nvi/nvoXXX_Remote045	SNVT_switch
Remote046	BV	146	146	nvi/nvoXXX_Remote046	SNVT_switch
Remote047	BV	147	147	nvi/nvoXXX_Remote047	SNVT_switch
Remote048	BV	148	148	nvi/nvoXXX_Remote048	SNVT_switch
Remote049	BV	149	149	nvi/nvoXXX_Remote049	SNVT_switch
Remote050	BV	150	150	nvi/nvoXXX_Remote050	SNVT_switch
Remote051	BV	151	151	nvi/nvoXXX_Remote051	SNVT_switch
Remote052	BV	152	152	nvi/nvoXXX_Remote052	SNVT_switch
Remote053	BV	153	153	nvi/nvoXXX_Remote053	SNVT_switch
Remote054	BV	154	154	nvi/nvoXXX_Remote054	SNVT_switch
Remote055	BV	155	155	nvi/nvoXXX_Remote055	SNVT_switch
Remote056	BV	156	156	nvi/nvoXXX_Remote056	SNVT_switch
Remote057	BV	157	157	nvi/nvoXXX_Remote057	SNVT_switch
Remote058	BV	158	158	nvi/nvoXXX_Remote058	SNVT_switch
Remote059	BV	159	159	nvi/nvoXXX_Remote059	SNVT_switch
Remote060	BV	160	160	nvi/nvoXXX_Remote060	SNVT_switch
Remote061	BV	161	161	nvi/nvoXXX_Remote061	SNVT_switch
Remote062	BV	162	162	nvi/nvoXXX_Remote062	SNVT_switch
Remote063	BV	163	163	nvi/nvoXXX_Remote063	SNVT_switch
Remote064	BV	164	164	nvi/nvoXXX_Remote064	SNVT_switch
Switch01	BI	1	10001	nvoXXX_Switch001	SNVT_switch
Switch02	BI	2	10002	nvoXXX_Switch002	SNVT_switch
Switch03	BI	3	10003	nvoXXX_Switch003	SNVT_switch
Switch04	BI	4	10004	nvoXXX_Switch004	SNVT_switch
Switch05	BI	5	10005	nvoXXX_Switch005	SNVT_switch
Switch06	BI	6	10006	nvoXXX_Switch006	SNVT_switch
Switch07	BI	7	10007	nvoXXX_Switch007	SNVT_switch
Switch08	BI	8	10008	nvoXXX_Switch008	SNVT_switch

Appendix B.4. 344640003 Greengate Mappings to BACnet, Modbus and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register	Lon Name	Lon SNVT
Reset	BV	1001	201	nviXXX_Reset	SNVT_switch
Relay01	BV	1	1	nvi/nvoXXX_Relay001	SNVT_switch
Relay02	BV	2	2	nvi/nvoXXX_Relay002	SNVT_switch

Relay03	BV	3	3	nvi/nvoXXX_Relay003	SNVT_switch
Remote01	BV	101	101	nvi/nvoXXX_Remote001	SNVT_switch
Remote02	BV	102	102	nvi/nvoXXX_Remote002	SNVT_switch
Remote03	BV	103	103	nvi/nvoXXX_Remote003	SNVT_switch
Remote04	BV	104	104	nvi/nvoXXX_Remote004	SNVT_switch
Remote05	BV	105	105	nvi/nvoXXX_Remote005	SNVT_switch
Remote06	BV	106	106	nvi/nvoXXX_Remote006	SNVT_switch
Remote07	BV	107	107	nvi/nvoXXX_Remote007	SNVT_switch
Remote08	BV	108	108	nvi/nvoXXX_Remote008	SNVT_switch
Remote09	BV	109	109	nvi/nvoXXX_Remote009	SNVT_switch
Remote010	BV	110	110	nvi/nvoXXX_Remote010	SNVT_switch
Remote011	BV	111	111	nvi/nvoXXX_Remote011	SNVT_switch
Remote012	BV	112	112	nvi/nvoXXX_Remote012	SNVT_switch
Remote013	BV	113	113	nvi/nvoXXX_Remote013	SNVT_switch
Remote014	BV	114	114	nvi/nvoXXX_Remote014	SNVT_switch
Remote015	BV	115	115	nvi/nvoXXX_Remote015	SNVT_switch
Remote016	BV	116	116	nvi/nvoXXX_Remote016	SNVT_switch
Remote017	BV	117	117	nvi/nvoXXX_Remote017	SNVT_switch
Remote018	BV	118	118	nvi/nvoXXX_Remote018	SNVT_switch
Remote019	BV	119	119	nvi/nvoXXX_Remote019	SNVT_switch
Remote020	BV	120	120	nvi/nvoXXX_Remote020	SNVT_switch
Remote021	BV	121	121	nvi/nvoXXX_Remote021	SNVT_switch
Remote022	BV	122	122	nvi/nvoXXX_Remote022	SNVT_switch
Remote023	BV	123	123	nvi/nvoXXX_Remote023	SNVT_switch
Remote024	BV	124	124	nvi/nvoXXX_Remote024	SNVT_switch
Remote025	BV	125	125	nvi/nvoXXX_Remote025	SNVT_switch
Remote026	BV	126	126	nvi/nvoXXX_Remote026	SNVT_switch
Remote027	BV	127	127	nvi/nvoXXX_Remote027	SNVT_switch
Remote028	BV	128	128	nvi/nvoXXX_Remote028	SNVT_switch
Remote029	BV	129	129	nvi/nvoXXX_Remote029	SNVT_switch
Remote030	BV	130	130	nvi/nvoXXX_Remote030	SNVT_switch
Remote031	BV	131	131	nvi/nvoXXX_Remote031	SNVT_switch
Remote032	BV	132	132	nvi/nvoXXX_Remote032	SNVT_switch
Remote033	BV	133	133	nvi/nvoXXX_Remote033	SNVT_switch
Remote034	BV	134	134	nvi/nvoXXX_Remote034	SNVT_switch
Remote035	BV	135	135	nvi/nvoXXX_Remote035	SNVT_switch
Remote036	BV	136	136	nvi/nvoXXX_Remote036	SNVT_switch
Remote037	BV	137	137	nvi/nvoXXX_Remote037	SNVT_switch
Remote038	BV	138	138	nvi/nvoXXX_Remote038	SNVT_switch
Remote039	BV	139	139	nvi/nvoXXX_Remote039	SNVT_switch
Remote040	BV	140	140	nvi/nvoXXX_Remote040	SNVT_switch
Remote041	BV	141	141	nvi/nvoXXX_Remote041	SNVT_switch
Remote042	BV	142	142	nvi/nvoXXX_Remote042	SNVT_switch
Remote043	BV	143	143	nvi/nvoXXX_Remote043	SNVT_switch
Remote044	BV	144	144	nvi/nvoXXX_Remote044	SNVT_switch
Remote045	BV	145	145	nvi/nvoXXX_Remote045	SNVT_switch
Remote046	BV	146	146	nvi/nvoXXX_Remote046	SNVT_switch
Remote047	BV	147	147	nvi/nvoXXX_Remote047	SNVT_switch
Remote048	BV	148	148	nvi/nvoXXX_Remote048	SNVT_switch

Remote049	BV	149	149	nvi/nvoXXX_Remote049	SNVT_switch
Remote050	BV	150	150	nvi/nvoXXX_Remote050	SNVT_switch
Remote051	BV	151	151	nvi/nvoXXX_Remote051	SNVT_switch
Remote052	BV	152	152	nvi/nvoXXX_Remote052	SNVT_switch
Remote053	BV	153	153	nvi/nvoXXX_Remote053	SNVT_switch
Remote054	BV	154	154	nvi/nvoXXX_Remote054	SNVT_switch
Remote055	BV	155	155	nvi/nvoXXX_Remote055	SNVT_switch
Remote056	BV	156	156	nvi/nvoXXX_Remote056	SNVT_switch
Remote057	BV	157	157	nvi/nvoXXX_Remote057	SNVT_switch
Remote058	BV	158	158	nvi/nvoXXX_Remote058	SNVT_switch
Remote059	BV	159	159	nvi/nvoXXX_Remote059	SNVT_switch
Remote060	BV	160	160	nvi/nvoXXX_Remote060	SNVT_switch
Remote061	BV	161	161	nvi/nvoXXX_Remote061	SNVT_switch
Remote062	BV	162	162	nvi/nvoXXX_Remote062	SNVT_switch
Remote063	BV	163	163	nvi/nvoXXX_Remote063	SNVT_switch
Remote064	BV	164	164	nvi/nvoXXX_Remote064	SNVT_switch
Switch01	BI	1	10001	nvoXXX_Switch001	SNVT_switch
Switch02	BI	2	10002	nvoXXX_Switch002	SNVT_switch
Switch03	BI	3	10003	nvoXXX_Switch003	SNVT_switch
Switch04	BI	4	10004	nvoXXX_Switch004	SNVT_switch
Switch05	BI	5	10005	nvoXXX_Switch005	SNVT_switch
Switch06	BI	6	10006	nvoXXX_Switch006	SNVT_switch
Switch07	BI	7	10007	nvoXXX_Switch007	SNVT_switch
Switch08	BI	8	10008	nvoXXX_Switch008	SNVT_switch
Switch09	BI	9	10009	nvoXXX_Switch009	SNVT_switch
Switch010	BI	10	10010	nvoXXX_Switch010	SNVT_switch
Switch011	BI	11	10011	nvoXXX_Switch011	SNVT_switch
Switch012	BI	12	10012	nvoXXX_Switch012	SNVT_switch
Switch013	BI	13	10013	nvoXXX_Switch013	SNVT_switch
Switch014	BI	14	10014	nvoXXX_Switch014	SNVT_switch
Switch015	BI	15	10015	nvoXXX_Switch015	SNVT_switch
Switch016	BI	16	10016	nvoXXX_Switch016	SNVT_switch
Switch017	BI	17	10017	nvoXXX_Switch017	SNVT_switch
Switch018	BI	18	10018	nvoXXX_Switch018	SNVT_switch
Switch019	BI	19	10019	nvoXXX_Switch019	SNVT_switch
Switch020	BI	20	10020	nvoXXX_Switch020	SNVT_switch
Switch021	BI	21	10021	nvoXXX_Switch021	SNVT_switch
Switch022	BI	22	10022	nvoXXX_Switch022	SNVT_switch
Switch023	BI	23	10023	nvoXXX_Switch023	SNVT_switch
Switch024	BI	24	10024	nvoXXX_Switch024	SNVT_switch
Switch025	BI	25	10025	nvoXXX_Switch025	SNVT_switch
Switch026	BI	26	10026	nvoXXX_Switch026	SNVT_switch
Switch027	BI	27	10027	nvoXXX_Switch027	SNVT_switch
Switch028	BI	28	10028	nvoXXX_Switch028	SNVT_switch
Switch029	BI	29	10029	nvoXXX_Switch029	SNVT_switch
Switch030	BI	30	10030	nvoXXX_Switch030	SNVT_switch
Switch031	BI	31	10031	nvoXXX_Switch031	SNVT_switch
Switch032	BI	32	10032	nvoXXX_Switch032	SNVT_switch
Switch033	BI	33	10033	nvoXXX_Switch033	SNVT_switch

Switch034	BI	34	10034	nvoXXX_Switch034	SNVT_switch
Switch035	BI	35	10035	nvoXXX_Switch035	SNVT_switch
Switch036	BI	36	10036	nvoXXX_Switch036	SNVT_switch
Switch037	BI	37	10037	nvoXXX_Switch037	SNVT_switch
Switch038	BI	38	10038	nvoXXX_Switch038	SNVT_switch
Switch039	BI	39	10039	nvoXXX_Switch039	SNVT_switch
Switch040	BI	40	10040	nvoXXX_Switch040	SNVT_switch
Switch041	BI	41	10041	nvoXXX_Switch041	SNVT_switch
Switch042	BI	42	10042	nvoXXX_Switch042	SNVT_switch
Switch043	BI	43	10043	nvoXXX_Switch043	SNVT_switch
Switch044	BI	44	10044	nvoXXX_Switch044	SNVT_switch
AI01	AI	1	30001	nvoXXX_AI01	SNVT_count_f
AI02	AI	2	30002	nvoXXX_AI02	SNVT_count_f
AI03	AI	3	30003	nvoXXX_AI03	SNVT_count_f

Appendix B.5. 1664643204 Greengate Mappings to BACnet, Modbus and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register	Lon Name	Lon SNVT
Reset	BV	1001	201	nviXXX_Reset	SNVT_switch
Relay01	BV	1	1	nvi/nvoXXX_Relay001	SNVT_switch
Relay02	BV	2	2	nvi/nvoXXX_Relay002	SNVT_switch
Relay03	BV	3	3	nvi/nvoXXX_Relay003	SNVT_switch
Relay04	BV	4	4	nvi/nvoXXX_Relay004	SNVT_switch
Relay05	BV	5	5	nvi/nvoXXX_Relay005	SNVT_switch
Relay06	BV	6	6	nvi/nvoXXX_Relay006	SNVT_switch
Relay07	BV	7	7	nvi/nvoXXX_Relay007	SNVT_switch
Relay08	BV	8	8	nvi/nvoXXX_Relay008	SNVT_switch
Relay09	BV	9	9	nvi/nvoXXX_Relay009	SNVT_switch
Relay010	BV	10	10	nvi/nvoXXX_Relay010	SNVT_switch
Relay011	BV	11	11	nvi/nvoXXX_Relay011	SNVT_switch
Relay012	BV	12	12	nvi/nvoXXX_Relay012	SNVT_switch
Relay013	BV	13	13	nvi/nvoXXX_Relay013	SNVT_switch
Relay014	BV	14	14	nvi/nvoXXX_Relay014	SNVT_switch
Relay015	BV	15	15	nvi/nvoXXX_Relay015	SNVT_switch
Relay016	BV	16	16	nvi/nvoXXX_Relay016	SNVT_switch
Remote01	BV	101	101	nvi/nvoXXX_Remote001	SNVT_switch
Remote02	BV	102	102	nvi/nvoXXX_Remote002	SNVT_switch
Remote03	BV	103	103	nvi/nvoXXX_Remote003	SNVT_switch
Remote04	BV	104	104	nvi/nvoXXX_Remote004	SNVT_switch
Remote05	BV	105	105	nvi/nvoXXX_Remote005	SNVT_switch
Remote06	BV	106	106	nvi/nvoXXX_Remote006	SNVT_switch
Remote07	BV	107	107	nvi/nvoXXX_Remote007	SNVT_switch
Remote08	BV	108	108	nvi/nvoXXX_Remote008	SNVT_switch
Remote09	BV	109	109	nvi/nvoXXX_Remote009	SNVT_switch

Remote010	BV	110	110	nvi/nvoXXX_Remote010	SNVT_switch
Remote011	BV	111	111	nvi/nvoXXX_Remote011	SNVT_switch
Remote012	BV	112	112	nvi/nvoXXX_Remote012	SNVT_switch
Remote013	BV	113	113	nvi/nvoXXX_Remote013	SNVT_switch
Remote014	BV	114	114	nvi/nvoXXX_Remote014	SNVT_switch
Remote015	BV	115	115	nvi/nvoXXX_Remote015	SNVT_switch
Remote016	BV	116	116	nvi/nvoXXX_Remote016	SNVT_switch
Remote017	BV	117	117	nvi/nvoXXX_Remote017	SNVT_switch
Remote018	BV	118	118	nvi/nvoXXX_Remote018	SNVT_switch
Remote019	BV	119	119	nvi/nvoXXX_Remote019	SNVT_switch
Remote020	BV	120	120	nvi/nvoXXX_Remote020	SNVT_switch
Remote021	BV	121	121	nvi/nvoXXX_Remote021	SNVT_switch
Remote022	BV	122	122	nvi/nvoXXX_Remote022	SNVT_switch
Remote023	BV	123	123	nvi/nvoXXX_Remote023	SNVT_switch
Remote024	BV	124	124	nvi/nvoXXX_Remote024	SNVT_switch
Remote025	BV	125	125	nvi/nvoXXX_Remote025	SNVT_switch
Remote026	BV	126	126	nvi/nvoXXX_Remote026	SNVT_switch
Remote027	BV	127	127	nvi/nvoXXX_Remote027	SNVT_switch
Remote028	BV	128	128	nvi/nvoXXX_Remote028	SNVT_switch
Remote029	BV	129	129	nvi/nvoXXX_Remote029	SNVT_switch
Remote030	BV	130	130	nvi/nvoXXX_Remote030	SNVT_switch
Remote031	BV	131	131	nvi/nvoXXX_Remote031	SNVT_switch
Remote032	BV	132	132	nvi/nvoXXX_Remote032	SNVT_switch
Remote033	BV	133	133	nvi/nvoXXX_Remote033	SNVT_switch
Remote034	BV	134	134	nvi/nvoXXX_Remote034	SNVT_switch
Remote035	BV	135	135	nvi/nvoXXX_Remote035	SNVT_switch
Remote036	BV	136	136	nvi/nvoXXX_Remote036	SNVT_switch
Remote037	BV	137	137	nvi/nvoXXX_Remote037	SNVT_switch
Remote038	BV	138	138	nvi/nvoXXX_Remote038	SNVT_switch
Remote039	BV	139	139	nvi/nvoXXX_Remote039	SNVT_switch
Remote040	BV	140	140	nvi/nvoXXX_Remote040	SNVT_switch
Remote041	BV	141	141	nvi/nvoXXX_Remote041	SNVT_switch
Remote042	BV	142	142	nvi/nvoXXX_Remote042	SNVT_switch
Remote043	BV	143	143	nvi/nvoXXX_Remote043	SNVT_switch
Remote044	BV	144	144	nvi/nvoXXX_Remote044	SNVT_switch
Remote045	BV	145	145	nvi/nvoXXX_Remote045	SNVT_switch
Remote046	BV	146	146	nvi/nvoXXX_Remote046	SNVT_switch
Remote047	BV	147	147	nvi/nvoXXX_Remote047	SNVT_switch
Remote048	BV	148	148	nvi/nvoXXX_Remote048	SNVT_switch
Remote049	BV	149	149	nvi/nvoXXX_Remote049	SNVT_switch
Remote050	BV	150	150	nvi/nvoXXX_Remote050	SNVT_switch
Remote051	BV	151	151	nvi/nvoXXX_Remote051	SNVT_switch
Remote052	BV	152	152	nvi/nvoXXX_Remote052	SNVT_switch
Remote053	BV	153	153	nvi/nvoXXX_Remote053	SNVT_switch
Remote054	BV	154	154	nvi/nvoXXX_Remote054	SNVT_switch
Remote055	BV	155	155	nvi/nvoXXX_Remote055	SNVT_switch
Remote056	BV	156	156	nvi/nvoXXX_Remote056	SNVT_switch
Remote057	BV	157	157	nvi/nvoXXX_Remote057	SNVT_switch
Remote058	BV	158	158	nvi/nvoXXX_Remote058	SNVT_switch
Remote059	BV	159	159	nvi/nvoXXX_Remote059	SNVT_switch

Remote060	BV	160	160	nvi/nvoXXX_Remote060	SNVT_switch
Remote061	BV	161	161	nvi/nvoXXX_Remote061	SNVT_switch
Remote062	BV	162	162	nvi/nvoXXX_Remote062	SNVT_switch
Remote063	BV	163	163	nvi/nvoXXX_Remote063	SNVT_switch
Remote064	BV	164	164	nvi/nvoXXX_Remote064	SNVT_switch
Switch01	BI	1	10001	nvoXXX_Switch001	SNVT_switch
Switch02	BI	2	10002	nvoXXX_Switch002	SNVT_switch
Switch03	BI	3	10003	nvoXXX_Switch003	SNVT_switch
Switch04	BI	4	10004	nvoXXX_Switch004	SNVT_switch
Switch05	BI	5	10005	nvoXXX_Switch005	SNVT_switch
Switch06	BI	6	10006	nvoXXX_Switch006	SNVT_switch
Switch07	BI	7	10007	nvoXXX_Switch007	SNVT_switch
Switch08	BI	8	10008	nvoXXX_Switch008	SNVT_switch
Switch09	BI	9	10009	nvoXXX_Switch009	SNVT_switch
Switch010	BI	10	10010	nvoXXX_Switch010	SNVT_switch
Switch011	BI	11	10011	nvoXXX_Switch011	SNVT_switch
Switch012	BI	12	10012	nvoXXX_Switch012	SNVT_switch
Switch013	BI	13	10013	nvoXXX_Switch013	SNVT_switch
Switch014	BI	14	10014	nvoXXX_Switch014	SNVT_switch
Switch015	BI	15	10015	nvoXXX_Switch015	SNVT_switch
Switch016	BI	16	10016	nvoXXX_Switch016	SNVT_switch
Switch017	BI	17	10017	nvoXXX_Switch017	SNVT_switch
Switch018	BI	18	10018	nvoXXX_Switch018	SNVT_switch
Switch019	BI	19	10019	nvoXXX_Switch019	SNVT_switch
Switch020	BI	20	10020	nvoXXX_Switch020	SNVT_switch
Switch021	BI	21	10021	nvoXXX_Switch021	SNVT_switch
Switch022	BI	22	10022	nvoXXX_Switch022	SNVT_switch
Switch023	BI	23	10023	nvoXXX_Switch023	SNVT_switch
Switch024	BI	24	10024	nvoXXX_Switch024	SNVT_switch
Switch025	BI	25	10025	nvoXXX_Switch025	SNVT_switch
Switch026	BI	26	10026	nvoXXX_Switch026	SNVT_switch
Switch027	BI	27	10027	nvoXXX_Switch027	SNVT_switch
Switch028	BI	28	10028	nvoXXX_Switch028	SNVT_switch
Switch029	BI	29	10029	nvoXXX_Switch029	SNVT_switch
Switch030	BI	30	10030	nvoXXX_Switch030	SNVT_switch
Switch031	BI	31	10031	nvoXXX_Switch031	SNVT_switch
Switch032	BI	32	10032	nvoXXX_Switch032	SNVT_switch
Switch033	BI	33	10033	nvoXXX_Switch033	SNVT_switch
Switch034	BI	34	10034	nvoXXX_Switch034	SNVT_switch
Switch035	BI	35	10035	nvoXXX_Switch035	SNVT_switch
Switch036	BI	36	10036	nvoXXX_Switch036	SNVT_switch
Switch037	BI	37	10037	nvoXXX_Switch037	SNVT_switch
Switch038	BI	38	10038	nvoXXX_Switch038	SNVT_switch
Switch039	BI	39	10039	nvoXXX_Switch039	SNVT_switch
Switch040	BI	40	10040	nvoXXX_Switch040	SNVT_switch
Switch041	BI	41	10041	nvoXXX_Switch041	SNVT_switch
Switch042	BI	42	10042	nvoXXX_Switch042	SNVT_switch
Switch043	BI	43	10043	nvoXXX_Switch043	SNVT_switch
Switch044	BI	44	10044	nvoXXX_Switch044	SNVT_switch

Switch045	BI	45	10045	nvoXXX_Switch045	SNVT_switch
Switch046	BI	46	10046	nvoXXX_Switch046	SNVT_switch
Switch047	BI	47	10047	nvoXXX_Switch047	SNVT_switch
Switch048	BI	48	10048	nvoXXX_Switch048	SNVT_switch
Switch049	BI	49	10049	nvoXXX_Switch049	SNVT_switch
Switch050	BI	50	10050	nvoXXX_Switch050	SNVT_switch
Switch051	BI	51	10051	nvoXXX_Switch051	SNVT_switch
Switch052	BI	52	10052	nvoXXX_Switch052	SNVT_switch
Switch053	BI	53	10053	nvoXXX_Switch053	SNVT_switch
Switch054	BI	54	10054	nvoXXX_Switch054	SNVT_switch
Switch055	BI	55	10055	nvoXXX_Switch055	SNVT_switch
Switch056	BI	56	10056	nvoXXX_Switch056	SNVT_switch
Switch057	BI	57	10057	nvoXXX_Switch057	SNVT_switch
Switch058	BI	58	10058	nvoXXX_Switch058	SNVT_switch
Switch059	BI	59	10059	nvoXXX_Switch059	SNVT_switch
Switch060	BI	60	10060	nvoXXX_Switch060	SNVT_switch
Switch061	BI	61	10061	nvoXXX_Switch061	SNVT_switch
Switch062	BI	62	10062	nvoXXX_Switch062	SNVT_switch
Switch063	BI	63	10063	nvoXXX_Switch063	SNVT_switch
Switch064	BI	64	10064	nvoXXX_Switch064	SNVT_switch
AI_State01	BI	101	10101	nvoXXX_State01	SNVT_switch
AI_State02	BI	102	10102	nvoXXX_State02	SNVT_switch
AI_State03	BI	103	10103	nvoXXX_State03	SNVT_switch
AI_State04	BI	104	10104	nvoXXX_State04	SNVT_switch
AI_State05	BI	105	10105	nvoXXX_State05	SNVT_switch
AI_State06	BI	106	10106	nvoXXX_State06	SNVT_switch
AI_State07	BI	107	10107	nvoXXX_State07	SNVT_switch
AI_State08	BI	108	10108	nvoXXX_State08	SNVT_switch
AI_State09	BI	109	10109	nvoXXX_State09	SNVT_switch
AI_State010	BI	110	10110	nvoXXX_State10	SNVT_switch
AI_State011	BI	111	10111	nvoXXX_State11	SNVT_switch
AI_State012	BI	112	10112	nvoXXX_State12	SNVT_switch
AI_State013	BI	113	10113	nvoXXX_State13	SNVT_switch
AI_State014	BI	114	10114	nvoXXX_State14	SNVT_switch
AI_State015	BI	115	10115	nvoXXX_State15	SNVT_switch
AI_State016	BI	116	10116	nvoXXX_State16	SNVT_switch
AI_State017	BI	117	10117	nvoXXX_State17	SNVT_switch
AI_State018	BI	118	10118	nvoXXX_State18	SNVT_switch
AI_State019	BI	119	10119	nvoXXX_State19	SNVT_switch
AI_State020	BI	120	10120	nvoXXX_State20	SNVT_switch
AI_State021	BI	121	10121	nvoXXX_State21	SNVT_switch
AI_State022	BI	122	10122	nvoXXX_State22	SNVT_switch
AI_State023	BI	123	10123	nvoXXX_State23	SNVT_switch
AI_State024	BI	124	10124	nvoXXX_State24	SNVT_switch
AI_State025	BI	125	10125	nvoXXX_State25	SNVT_switch
AI_State026	BI	126	10126	nvoXXX_State26	SNVT_switch
AI_State027	BI	127	10127	nvoXXX_State27	SNVT_switch
AI_State028	BI	128	10128	nvoXXX_State28	SNVT_switch
AI_State029	BI	129	10129	nvoXXX_State29	SNVT_switch

AI_State030	BI	130	10130	nvoXXX_State30	SNVT_switch
AI_State031	BI	131	10131	nvoXXX_State31	SNVT_switch
AI_State032	BI	132	10132	nvoXXX_State32	SNVT_switch
AI01	AI	1	30001	nvoXXX_AI01	SNVT_switch
AI02	AI	2	30002	nvoXXX_AI02	SNVT_switch
AI03	AI	3	30003	nvoXXX_AI03	SNVT_switch
AI04	AI	4	30004	nvoXXX_AI04	SNVT_switch

Appendix B.6. 6464643200 Greengate Mappings to BACnet, Modbus and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register	Lon Name	Lon SNVT
Reset	BV	1001	201	nviXXX_Reset	SNVT_switch
Relay01	BV	1	1	nvi/nvoXXX_Relay001	SNVT_switch
Relay02	BV	2	2	nvi/nvoXXX_Relay002	SNVT_switch
Relay03	BV	3	3	nvi/nvoXXX_Relay003	SNVT_switch
Relay04	BV	4	4	nvi/nvoXXX_Relay004	SNVT_switch
Relay05	BV	5	5	nvi/nvoXXX_Relay005	SNVT_switch
Relay06	BV	6	6	nvi/nvoXXX_Relay006	SNVT_switch
Relay07	BV	7	7	nvi/nvoXXX_Relay007	SNVT_switch
Relay08	BV	8	8	nvi/nvoXXX_Relay008	SNVT_switch
Relay09	BV	9	9	nvi/nvoXXX_Relay009	SNVT_switch
Relay010	BV	10	10	nvi/nvoXXX_Relay010	SNVT_switch
Relay011	BV	11	11	nvi/nvoXXX_Relay011	SNVT_switch
Relay012	BV	12	12	nvi/nvoXXX_Relay012	SNVT_switch
Relay013	BV	13	13	nvi/nvoXXX_Relay013	SNVT_switch
Relay014	BV	14	14	nvi/nvoXXX_Relay014	SNVT_switch
Relay015	BV	15	15	nvi/nvoXXX_Relay015	SNVT_switch
Relay016	BV	16	16	nvi/nvoXXX_Relay016	SNVT_switch
Relay017	BV	17	17	nvi/nvoXXX_Relay017	SNVT_switch
Relay018	BV	18	18	nvi/nvoXXX_Relay018	SNVT_switch
Relay019	BV	19	19	nvi/nvoXXX_Relay019	SNVT_switch
Relay020	BV	20	20	nvi/nvoXXX_Relay020	SNVT_switch
Relay021	BV	21	21	nvi/nvoXXX_Relay021	SNVT_switch
Relay022	BV	22	22	nvi/nvoXXX_Relay022	SNVT_switch
Relay023	BV	23	23	nvi/nvoXXX_Relay023	SNVT_switch
Relay024	BV	24	24	nvi/nvoXXX_Relay024	SNVT_switch
Relay025	BV	25	25	nvi/nvoXXX_Relay025	SNVT_switch
Relay026	BV	26	26	nvi/nvoXXX_Relay026	SNVT_switch
Relay027	BV	27	27	nvi/nvoXXX_Relay027	SNVT_switch
Relay028	BV	28	28	nvi/nvoXXX_Relay028	SNVT_switch
Relay029	BV	29	29	nvi/nvoXXX_Relay029	SNVT_switch
Relay030	BV	30	30	nvi/nvoXXX_Relay030	SNVT_switch
Relay031	BV	31	31	nvi/nvoXXX_Relay031	SNVT_switch
Relay032	BV	32	32	nvi/nvoXXX_Relay032	SNVT_switch
Relay033	BV	33	33	nvi/nvoXXX_Relay033	SNVT_switch

Relay034	BV	34	34	nvi/nvoXXX_Relay034	SNVT_switch
Relay035	BV	35	35	nvi/nvoXXX_Relay035	SNVT_switch
Relay036	BV	36	36	nvi/nvoXXX_Relay036	SNVT_switch
Relay037	BV	37	37	nvi/nvoXXX_Relay037	SNVT_switch
Relay038	BV	38	38	nvi/nvoXXX_Relay038	SNVT_switch
Relay039	BV	39	39	nvi/nvoXXX_Relay039	SNVT_switch
Relay040	BV	40	40	nvi/nvoXXX_Relay040	SNVT_switch
Relay041	BV	41	41	nvi/nvoXXX_Relay041	SNVT_switch
Relay042	BV	42	42	nvi/nvoXXX_Relay042	SNVT_switch
Relay043	BV	43	43	nvi/nvoXXX_Relay043	SNVT_switch
Relay044	BV	44	44	nvi/nvoXXX_Relay044	SNVT_switch
Relay045	BV	45	45	nvi/nvoXXX_Relay045	SNVT_switch
Relay046	BV	46	46	nvi/nvoXXX_Relay046	SNVT_switch
Relay047	BV	47	47	nvi/nvoXXX_Relay047	SNVT_switch
Relay048	BV	48	48	nvi/nvoXXX_Relay048	SNVT_switch
Relay049	BV	49	49	nvi/nvoXXX_Relay049	SNVT_switch
Relay050	BV	50	50	nvi/nvoXXX_Relay050	SNVT_switch
Relay051	BV	51	51	nvi/nvoXXX_Relay051	SNVT_switch
Relay052	BV	52	52	nvi/nvoXXX_Relay052	SNVT_switch
Relay053	BV	53	53	nvi/nvoXXX_Relay053	SNVT_switch
Relay054	BV	54	54	nvi/nvoXXX_Relay054	SNVT_switch
Relay055	BV	55	55	nvi/nvoXXX_Relay055	SNVT_switch
Relay056	BV	56	56	nvi/nvoXXX_Relay056	SNVT_switch
Relay057	BV	57	57	nvi/nvoXXX_Relay057	SNVT_switch
Relay058	BV	58	58	nvi/nvoXXX_Relay058	SNVT_switch
Relay059	BV	59	59	nvi/nvoXXX_Relay059	SNVT_switch
Relay060	BV	60	60	nvi/nvoXXX_Relay060	SNVT_switch
Relay061	BV	61	61	nvi/nvoXXX_Relay061	SNVT_switch
Relay062	BV	62	62	nvi/nvoXXX_Relay062	SNVT_switch
Relay063	BV	63	63	nvi/nvoXXX_Relay063	SNVT_switch
Relay064	BV	64	64	nvi/nvoXXX_Relay064	SNVT_switch
Remote01	BV	101	101	nvi/nvoXXX_Remote001	SNVT_switch
Remote02	BV	102	102	nvi/nvoXXX_Remote002	SNVT_switch
Remote03	BV	103	103	nvi/nvoXXX_Remote003	SNVT_switch
Remote04	BV	104	104	nvi/nvoXXX_Remote004	SNVT_switch
Remote05	BV	105	105	nvi/nvoXXX_Remote005	SNVT_switch
Remote06	BV	106	106	nvi/nvoXXX_Remote006	SNVT_switch
Remote07	BV	107	107	nvi/nvoXXX_Remote007	SNVT_switch
Remote08	BV	108	108	nvi/nvoXXX_Remote008	SNVT_switch
Remote09	BV	109	109	nvi/nvoXXX_Remote009	SNVT_switch
Remote010	BV	110	110	nvi/nvoXXX_Remote010	SNVT_switch
Remote011	BV	111	111	nvi/nvoXXX_Remote011	SNVT_switch
Remote012	BV	112	112	nvi/nvoXXX_Remote012	SNVT_switch
Remote013	BV	113	113	nvi/nvoXXX_Remote013	SNVT_switch
Remote014	BV	114	114	nvi/nvoXXX_Remote014	SNVT_switch
Remote015	BV	115	115	nvi/nvoXXX_Remote015	SNVT_switch
Remote016	BV	116	116	nvi/nvoXXX_Remote016	SNVT_switch
Remote017	BV	117	117	nvi/nvoXXX_Remote017	SNVT_switch
Remote018	BV	118	118	nvi/nvoXXX_Remote018	SNVT_switch

Remote019	BV	119	119	nvi/nvoXXX_Remote019	SNVT_switch
Remote020	BV	120	120	nvi/nvoXXX_Remote020	SNVT_switch
Remote021	BV	121	121	nvi/nvoXXX_Remote021	SNVT_switch
Remote022	BV	122	122	nvi/nvoXXX_Remote022	SNVT_switch
Remote023	BV	123	123	nvi/nvoXXX_Remote023	SNVT_switch
Remote024	BV	124	124	nvi/nvoXXX_Remote024	SNVT_switch
Remote025	BV	125	125	nvi/nvoXXX_Remote025	SNVT_switch
Remote026	BV	126	126	nvi/nvoXXX_Remote026	SNVT_switch
Remote027	BV	127	127	nvi/nvoXXX_Remote027	SNVT_switch
Remote028	BV	128	128	nvi/nvoXXX_Remote028	SNVT_switch
Remote029	BV	129	129	nvi/nvoXXX_Remote029	SNVT_switch
Remote030	BV	130	130	nvi/nvoXXX_Remote030	SNVT_switch
Remote031	BV	131	131	nvi/nvoXXX_Remote031	SNVT_switch
Remote032	BV	132	132	nvi/nvoXXX_Remote032	SNVT_switch
Remote033	BV	133	133	nvi/nvoXXX_Remote033	SNVT_switch
Remote034	BV	134	134	nvi/nvoXXX_Remote034	SNVT_switch
Remote035	BV	135	135	nvi/nvoXXX_Remote035	SNVT_switch
Remote036	BV	136	136	nvi/nvoXXX_Remote036	SNVT_switch
Remote037	BV	137	137	nvi/nvoXXX_Remote037	SNVT_switch
Remote038	BV	138	138	nvi/nvoXXX_Remote038	SNVT_switch
Remote039	BV	139	139	nvi/nvoXXX_Remote039	SNVT_switch
Remote040	BV	140	140	nvi/nvoXXX_Remote040	SNVT_switch
Remote041	BV	141	141	nvi/nvoXXX_Remote041	SNVT_switch
Remote042	BV	142	142	nvi/nvoXXX_Remote042	SNVT_switch
Remote043	BV	143	143	nvi/nvoXXX_Remote043	SNVT_switch
Remote044	BV	144	144	nvi/nvoXXX_Remote044	SNVT_switch
Remote045	BV	145	145	nvi/nvoXXX_Remote045	SNVT_switch
Remote046	BV	146	146	nvi/nvoXXX_Remote046	SNVT_switch
Remote047	BV	147	147	nvi/nvoXXX_Remote047	SNVT_switch
Remote048	BV	148	148	nvi/nvoXXX_Remote048	SNVT_switch
Remote049	BV	149	149	nvi/nvoXXX_Remote049	SNVT_switch
Remote050	BV	150	150	nvi/nvoXXX_Remote050	SNVT_switch
Remote051	BV	151	151	nvi/nvoXXX_Remote051	SNVT_switch
Remote052	BV	152	152	nvi/nvoXXX_Remote052	SNVT_switch
Remote053	BV	153	153	nvi/nvoXXX_Remote053	SNVT_switch
Remote054	BV	154	154	nvi/nvoXXX_Remote054	SNVT_switch
Remote055	BV	155	155	nvi/nvoXXX_Remote055	SNVT_switch
Remote056	BV	156	156	nvi/nvoXXX_Remote056	SNVT_switch
Remote057	BV	157	157	nvi/nvoXXX_Remote057	SNVT_switch
Remote058	BV	158	158	nvi/nvoXXX_Remote058	SNVT_switch
Remote059	BV	159	159	nvi/nvoXXX_Remote059	SNVT_switch
Remote060	BV	160	160	nvi/nvoXXX_Remote060	SNVT_switch
Remote061	BV	161	161	nvi/nvoXXX_Remote061	SNVT_switch
Remote062	BV	162	162	nvi/nvoXXX_Remote062	SNVT_switch
Remote063	BV	163	163	nvi/nvoXXX_Remote063	SNVT_switch
Remote064	BV	164	164	nvi/nvoXXX_Remote064	SNVT_switch
Switch01	BI	1	10001	nvoXXX_Switch001	SNVT_switch
Switch02	BI	2	10002	nvoXXX_Switch002	SNVT_switch
Switch03	BI	3	10003	nvoXXX_Switch003	SNVT_switch

Switch04	BI	4	10004	nvoXXX_Switch004	SNVT_switch
Switch05	BI	5	10005	nvoXXX_Switch005	SNVT_switch
Switch06	BI	6	10006	nvoXXX_Switch006	SNVT_switch
Switch07	BI	7	10007	nvoXXX_Switch007	SNVT_switch
Switch08	BI	8	10008	nvoXXX_Switch008	SNVT_switch
Switch09	BI	9	10009	nvoXXX_Switch009	SNVT_switch
Switch010	BI	10	10010	nvoXXX_Switch010	SNVT_switch
Switch011	BI	11	10011	nvoXXX_Switch011	SNVT_switch
Switch012	BI	12	10012	nvoXXX_Switch012	SNVT_switch
Switch013	BI	13	10013	nvoXXX_Switch013	SNVT_switch
Switch014	BI	14	10014	nvoXXX_Switch014	SNVT_switch
Switch015	BI	15	10015	nvoXXX_Switch015	SNVT_switch
Switch016	BI	16	10016	nvoXXX_Switch016	SNVT_switch
Switch017	BI	17	10017	nvoXXX_Switch017	SNVT_switch
Switch018	BI	18	10018	nvoXXX_Switch018	SNVT_switch
Switch019	BI	19	10019	nvoXXX_Switch019	SNVT_switch
Switch020	BI	20	10020	nvoXXX_Switch020	SNVT_switch
Switch021	BI	21	10021	nvoXXX_Switch021	SNVT_switch
Switch022	BI	22	10022	nvoXXX_Switch022	SNVT_switch
Switch023	BI	23	10023	nvoXXX_Switch023	SNVT_switch
Switch024	BI	24	10024	nvoXXX_Switch024	SNVT_switch
Switch025	BI	25	10025	nvoXXX_Switch025	SNVT_switch
Switch026	BI	26	10026	nvoXXX_Switch026	SNVT_switch
Switch027	BI	27	10027	nvoXXX_Switch027	SNVT_switch
Switch028	BI	28	10028	nvoXXX_Switch028	SNVT_switch
Switch029	BI	29	10029	nvoXXX_Switch029	SNVT_switch
Switch030	BI	30	10030	nvoXXX_Switch030	SNVT_switch
Switch031	BI	31	10031	nvoXXX_Switch031	SNVT_switch
Switch032	BI	32	10032	nvoXXX_Switch032	SNVT_switch
Switch033	BI	33	10033	nvoXXX_Switch033	SNVT_switch
Switch034	BI	34	10034	nvoXXX_Switch034	SNVT_switch
Switch035	BI	35	10035	nvoXXX_Switch035	SNVT_switch
Switch036	BI	36	10036	nvoXXX_Switch036	SNVT_switch
Switch037	BI	37	10037	nvoXXX_Switch037	SNVT_switch
Switch038	BI	38	10038	nvoXXX_Switch038	SNVT_switch
Switch039	BI	39	10039	nvoXXX_Switch039	SNVT_switch
Switch040	BI	40	10040	nvoXXX_Switch040	SNVT_switch
Switch041	BI	41	10041	nvoXXX_Switch041	SNVT_switch
Switch042	BI	42	10042	nvoXXX_Switch042	SNVT_switch
Switch043	BI	43	10043	nvoXXX_Switch043	SNVT_switch
Switch044	BI	44	10044	nvoXXX_Switch044	SNVT_switch
Switch045	BI	45	10045	nvoXXX_Switch045	SNVT_switch
Switch046	BI	46	10046	nvoXXX_Switch046	SNVT_switch
Switch047	BI	47	10047	nvoXXX_Switch047	SNVT_switch
Switch048	BI	48	10048	nvoXXX_Switch048	SNVT_switch
Switch049	BI	49	10049	nvoXXX_Switch049	SNVT_switch
Switch050	BI	50	10050	nvoXXX_Switch050	SNVT_switch
Switch051	BI	51	10051	nvoXXX_Switch051	SNVT_switch
Switch052	BI	52	10052	nvoXXX_Switch052	SNVT_switch
Switch053	BI	53	10053	nvoXXX_Switch053	SNVT_switch

Switch054	BI	54	10054	nvoXXX_Switch054	SNVT_switch
Switch055	BI	55	10055	nvoXXX_Switch055	SNVT_switch
Switch056	BI	56	10056	nvoXXX_Switch056	SNVT_switch
Switch057	BI	57	10057	nvoXXX_Switch057	SNVT_switch
Switch058	BI	58	10058	nvoXXX_Switch058	SNVT_switch
Switch059	BI	59	10059	nvoXXX_Switch059	SNVT_switch
Switch060	BI	60	10060	nvoXXX_Switch060	SNVT_switch
Switch061	BI	61	10061	nvoXXX_Switch061	SNVT_switch
Switch062	BI	62	10062	nvoXXX_Switch062	SNVT_switch
Switch063	BI	63	10063	nvoXXX_Switch063	SNVT_switch
Switch064	BI	64	10064	nvoXXX_Switch064	SNVT_switch
AI_State01	BI	101	10101	nvoXXX_State01	SNVT_switch
AI_State02	BI	102	10102	nvoXXX_State02	SNVT_switch
AI_State03	BI	103	10103	nvoXXX_State03	SNVT_switch
AI_State04	BI	104	10104	nvoXXX_State04	SNVT_switch
AI_State05	BI	105	10105	nvoXXX_State05	SNVT_switch
AI_State06	BI	106	10106	nvoXXX_State06	SNVT_switch
AI_State07	BI	107	10107	nvoXXX_State07	SNVT_switch
AI_State08	BI	108	10108	nvoXXX_State08	SNVT_switch
AI_State09	BI	109	10109	nvoXXX_State09	SNVT_switch
AI_State010	BI	110	10110	nvoXXX_State10	SNVT_switch
AI_State011	BI	111	10111	nvoXXX_State11	SNVT_switch
AI_State012	BI	112	10112	nvoXXX_State12	SNVT_switch
AI_State013	BI	113	10113	nvoXXX_State13	SNVT_switch
AI_State014	BI	114	10114	nvoXXX_State14	SNVT_switch
AI_State015	BI	115	10115	nvoXXX_State15	SNVT_switch
AI_State016	BI	116	10116	nvoXXX_State16	SNVT_switch
AI_State017	BI	117	10117	nvoXXX_State17	SNVT_switch
AI_State018	BI	118	10118	nvoXXX_State18	SNVT_switch
AI_State019	BI	119	10119	nvoXXX_State19	SNVT_switch
AI_State020	BI	120	10120	nvoXXX_State20	SNVT_switch
AI_State021	BI	121	10121	nvoXXX_State21	SNVT_switch
AI_State022	BI	122	10122	nvoXXX_State22	SNVT_switch
AI_State023	BI	123	10123	nvoXXX_State23	SNVT_switch
AI_State024	BI	124	10124	nvoXXX_State24	SNVT_switch
AI_State025	BI	125	10125	nvoXXX_State25	SNVT_switch
AI_State026	BI	126	10126	nvoXXX_State26	SNVT_switch
AI_State027	BI	127	10127	nvoXXX_State27	SNVT_switch
AI_State028	BI	128	10128	nvoXXX_State28	SNVT_switch
AI_State029	BI	129	10129	nvoXXX_State29	SNVT_switch
AI_State030	BI	130	10130	nvoXXX_State30	SNVT_switch
AI_State031	BI	131	10131	nvoXXX_State31	SNVT_switch
AI_State032	BI	132	10132	nvoXXX_State32	SNVT_switch

Appendix B.7. Scene iLUMIN Mappings to BACnet, Modbus and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register	Lon Name	Lon SNVT
scene	AO	1	40001	nvi/nvoXXXscene	SNVT_count_f
sceneFT	AO	2	40002	nvi/nvoXXXsceneFT	SNVT_count_f

Appendix B.8. Channel iLUMIN Mappings to BACnet, Modbus and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register	Lon Name	Lon SNVT
channel	AO	1	40001	nvi/nvoXXXchannel	SNVT_count_f
channelFT	AO	2	40002	nvi/nvoXXXchannelFT	SNVT_count_f

Appendix C. Reference

Appendix C.1. Specifications

	ProtoNode FPC-N34	ProtoNode FPC-N35
Electrical Connections	One 6-pin Phoenix connector with: RS-485 port (+ / - / gnd) Power port (+ / - / Frame-gnd) One 3-pin Phoenix connector with: RS-485 port (+ / - / gnd) One Ethernet 10/100 BaseT port	One 6-pin Phoenix connector with: RS-485 port (+ / - / gnd) Power port (+ / - / Frame-gnd) One Ethernet 10/100 BaseT port One FTT-10 LonWorks port
Approvals:	CE Certified; TUV approved to UL 916, EN 60950-1, EN 50491-3 and CSA C22-2 standards; FCC Class A Part 15; DNP3 Conformance Tested; RoHS Compliant; CSA 205 Approved	
	BTL Marked	LonMark Certified
Power Requirements	Multi-mode power adapter: 9-30VDC or 12 - 24VAC	
Physical Dimensions	11.5 cm L x 8.3 cm W x 4.1 cm H (4.5 x 3.2 x 1.6 in.)	
Weight:	0.2 kg (0.4 lbs)	
Operating Temperature:	-40°C to 75°C (-40°F to167°F)	
Surge Suppression	EN61000-4-2 ESD EN61000-4-3 EMC EN61000-4-4 EFT	
Humidity:	5 - 90% RH (non-condensing)	
(Specifications subject to change without notice)		

Figure 39: Specifications

Appendix C.1.1. Compliance with UL Regulations

For UL compliance, the following instructions must be met when operating ProtoNode.

- The units shall be powered by listed LPS or Class 2 power supply suited to the expected operating temperature range.
- The interconnecting power connector and power cable shall:
  - Comply with local electrical code
  - Be suited to the expected operating temperature range
  - Meet the current and voltage rating for ProtoNode/Net
- Furthermore, the interconnecting power cable shall:
  - Be of length not exceeding 3.05m (118.3")
  - Be constructed of materials rated VW-1, FT-1 or better
- If the unit is to be installed in an operating environment with a temperature above 65 °C, it should be installed in a Restricted Access Area requiring a key or a special tool to gain access
- This device must not be connected to a LAN segment with outdoor wiring.

Appendix D. Limited 2 Year Warranty

Sierra Monitor Corporation warrants its products to be free from defects in workmanship or material under normal use and service for two years after date of shipment. Sierra Monitor Corporation will repair or replace any equipment found to be defective during the warranty period. Final determination of the nature and responsibility for defective or damaged equipment will be made by Sierra Monitor Corporation personnel.

All warranties hereunder are contingent upon proper use in the application for which the product was intended and do not cover products which have been modified or repaired without Sierra Monitor Corporation's approval or which have been subjected to accident, improper maintenance, installation or application, or on which original identification marks have been removed or altered. This Limited Warranty also will not apply to interconnecting cables or wires, consumables or to any damage resulting from battery leakage.

In all cases Sierra Monitor Corporation's responsibility and liability under this warranty shall be limited to the cost of the equipment. The purchaser must obtain shipping instructions for the prepaid return of any item under this warranty provision and compliance with such instruction shall be a condition of this warranty.

Except for the express warranty stated above, Sierra Monitor Corporation disclaims all warranties with regard to the products sold hereunder including all implied warranties of merchantability and fitness and the express warranties stated herein are in lieu of all obligations or liabilities on the part of Sierra Monitor Corporation for damages including, but not limited to, consequential damages arising out of/or in connection with the use or performance of the product.