

NT network thermostat



**ProtoNode FPC-N34 and ProtoNode FPC-N35
Startup Guide**
**For Interfacing Network Thermostat Products:
RP32-WIFI, RP32H-WIFI, UP32-WIFI, UP32H-WIFI,
RP32-IP, RP32H-IP, UP32-IP, UP32H-IP
To Building Automation Systems:
BACnet MS/TP, BACnet/IP, Modbus TCP/IP, Modbus RTU,
Metasys N2 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 October 2014

Technical Support:

Thank you for purchasing the ProtoNode for Network Thermostat.

Please call Network Thermostat for Technical support of the ProtoNode product.

FieldServer does not provide direct support. If Network Thermostat needs to escalate the concern, they will contact FieldServer for assistance.

Support Contact Information:

NetworkThermostat
PO Box 3161
Grapevine, TX 76099 USA

Network Thermostat Service:
(866) 563-0711

Email: support@networkthermostat.com

Website: www.networkthermostat.com

A Quick Start Guide

1. Record the information about the unit. (Section 2.1)
2. ProtoNode FPC-N34 units: Select the Field Protocol (BACnet MS/TP, BACnet/IP, Modbus TCP/IP/RTU or Metasys N2) on the S Bank of DIP Switches. (Section 2.3)
3. BACnet MS/TP (FPC-N34): Set the BACnet MS/TP MAC Address on the A Bank of DIP Switches. (Section 2.4.1)
4. BACnet MS/TP (FPC-N34): Set the BAUD rate of the BACnet MS/TP and Modbus RTU Field Protocol on the B Bank of DIP Switches. (Section 2.4.5)
5. **Connect FPC-N34's** 3 pin RS-485 port to the Field Protocol cabling, (Section 3.13)
or connect FPC-N35's 2 pin LonWorks port to the Field Protocol cabling. (Section 3.14)
6. Connect the device to the ProtoNode via Ethernet connection. (Section 3.2)
7. Connect Power to ProtoNode's 6 pin connector. (Section 3.55)
8. Use a browser to access the ProtoNode's embedded tool, which is referred to in this manual as the Web Configurator, to select the devices that will be attached to ProtoNode. Set the IP Address of the device, the IP port, user name and password and Device Instance for BACnet or Node-ID for Modbus and Metasys N2. Once the devices are selected, the ProtoNode Automatically builds and loads the Configuration for the devices. (Section 4)
9. BACnet/IP or Modbus TCP/IP (FPC-N34): Use a browser to access the ProtoNode's Web Configurator to change the IP address. No changes to the configuration are necessary. (Section 4.3)
10. 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



BACnet is a registered trademark of ASHRAE. ASHRAE does not endorse, approve or test products for compliance with ASHRAE standards. Compliance of listed products to requirements of ASHRAE Standard 110 is the responsibility of the BACnet International. BTL is a registered trademark of the BACnet International.

The BTL Mark on ProtoNode FPC-N34 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.

▪ 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.

TABLE OF CONTENTS

1	Introduction	7
1.1	ProtoNode Gateway	7
1.2	Network Thermostat's Devices and Point Count Available	10
2	BACnet/LonWorks Setup for ProtoCessor ProtoNode FPC-N34/FPC-N35	11
2.1	Record Identification Data	11
2.2	Configuring Device Communications.....	11
2.2.1	Set IP settings on all of the devices connected to the ProtoNode	11
2.3	Selecting the Desired Field Protocol	12
2.4	Setting the MAC Address, Device Instance, Node Address and Field Protocol Baud Rate	13
2.4.1	BACnet MS/TP (FPC-N34): Setting the MAC Address BACnet Network.....	13
2.4.2	BACnet MS/TP and BACnet/IP (FPC-N34): Setting the Device Instance	13
2.4.3	Modbus RTU Field Protocol Node Address (FPC-N34): Setting the Node-ID	13
2.4.4	Metasys N2 (FPC-N34): Setting the Node-ID.....	13
2.4.5	BACnet MS/TP and Modbus RTU (FPC-N34): Setting the Field Protocol Baud Rate	14
3	Interfacing ProtoNode to Devices	15
3.1	ProtoNode FPC-N34 and FPC-N35 Showing Connection Ports.....	15
3.2	Device Ethernet Connection to ProtoNode	16
3.3	BACnet MS/TP, Modbus RTU or Metasys N2 (FPC-N34): Wiring Field Port to RS-485 Network	17
3.4	LonWorks (FPC-N35): Wiring Field Port to LonWorks Network	18
3.5	Connecting Power to ProtoNode.....	18
4	Use ProtoNode's Web Configurator to Select Device Profiles	19
4.1	Connect the PC and ProtoNode to the network	19
4.2	Connecting to ProtoNode's Web Configurator.....	20
4.2.1	Selecting Profiles for Devices Connected to ProtoNode	20
4.3	BACnet/IP and Modbus TCP/IP: Setting IP Address for Field.....	22
5	How to start the installation over: clearing profiles	24
6	LonWorks (FPC-N35): Commissioning ProtoNode on a Lonworks Network	25
6.1	Commissioning ProtoNode FPC-N35 on a LonWorks Network	25
6.1.1	Instructions to Upload XIF File from ProtoNode FPC-N35 Using FieldServer GUI Web Server	25
7	CAS BACnet Explorer for Validating ProtoNode in the Field	27
7.1	Downloading the CAS Explorer and Requesting an Activation Key	27
7.2	CAS BACnet Setup.....	28
7.2.1	CAS BACnet MS/TP Setup.....	28
7.2.2	CAS BACnet BACnet/IP Setup.....	28
	Appendix A. Troubleshooting	29
	Appendix A.1. Viewing Diagnostic information	29
	Appendix A.2. Take Diagnostic Capture With the FieldServer Utilities	30
	Appendix A.3. If there is more than 1 ProtoNode on the same BACnet/IP network, change Network Number	33
	Appendix A.4. Setting up the ProtoNode for BBMD on the BACnet IP Network.....	33
	Appendix A.5. LED Diagnostics for Communications Between ProtoNode and Devices.....	34
	Appendix A.6. Vacation Scheduling on a Network Thermostat device	35
	Appendix A.7. Passwords.....	36
	Appendix A.7.1. Password setup.....	36
	Appendix B. Vendor Information - Network Thermostat	37
	Appendix B.1. RP32 (IP-WIFI) Mappings to BACnet MS/TP, BACnet/IP, Metasys N2 and LonWorks.....	37
	Appendix B.2. RP32H (IP-WIFI) Mappings to BACnet MS/TP, BACnet/IP, Metasys N2 and LonWorks	44
	Appendix B.3. UP32 (IP-WIFI) Mappings to BACnet MS/TP, BACnet/IP, Metasys N2 and LonWorks	53
	Appendix B.4. UP32H (IP-WIFI) Mappings to BACnet MS/TP, BACnet/IP, Metasys N2 and LonWorks.....	61
	Appendix C. "A" Bank DIP Switch Settings	70
	Appendix C.1. "A" Bank DIP Switch Settings for MAC Address	70

Appendix D. Reference 73
 Appendix D.1. Specifications73
 Appendix D.1.1. Compliance with UL Regulations.....73
Appendix E. Limited 2 Year Warranty 74

LIST OF FIGURES

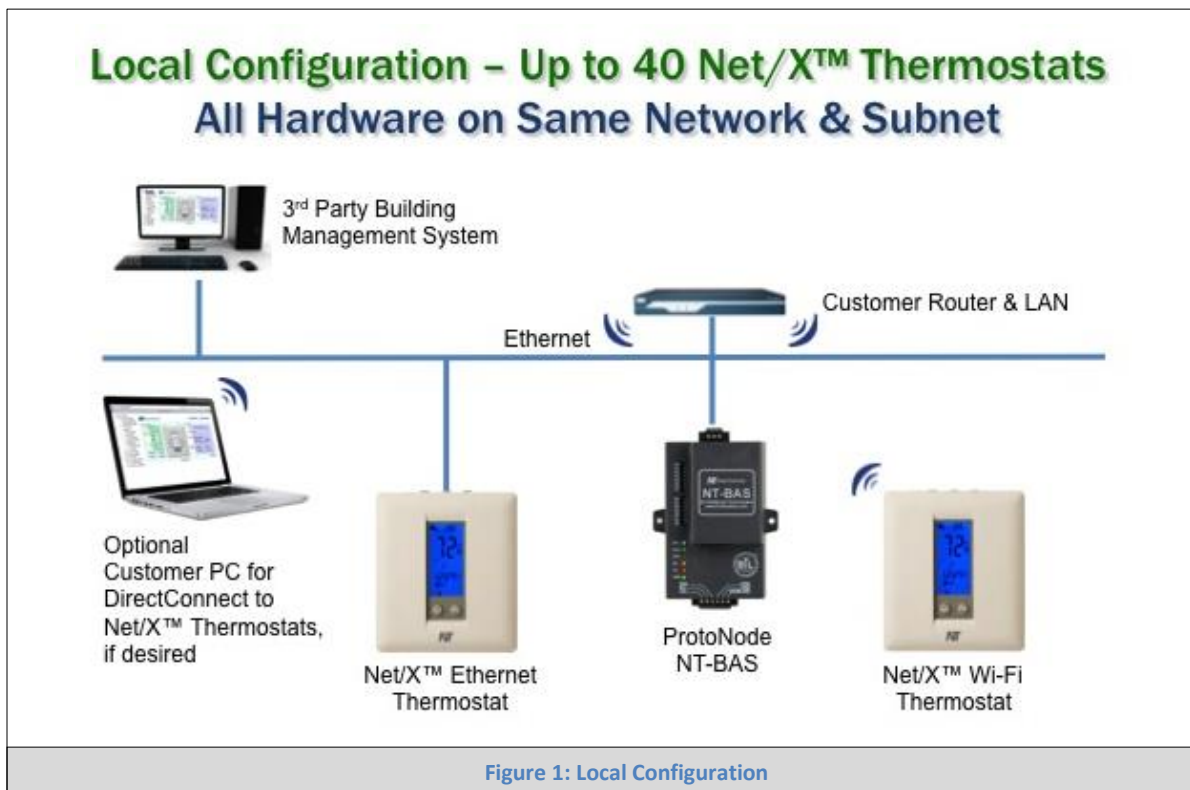
Figure 1: Local Configuration7
 Figure 2: Local Configuration with Additional BACnet Devices8
 Figure 3: Remote Configuration8
 Figure 4: Remote Configuration with Additional BACnet Devices9
 Figure 5: Remote Configuration at Remote Sites9
 Figure 6: Registers count10
 Figure 7: ProtoCessor Part Numbers11
 Figure 8: S Bank DIP Switches12
 Figure 9: Modbus Address DIP Switches13
 Figure 10: Baud Rate DIP Switches14
 Figure 11: Baud Rate.....14
 Figure 12: ProtoNode BACnet FPC-N34 (upper) and ProtoNode FPC-N35 (lower)15
 Figure 13: Ethernet Connections16
 Figure 14: Connection from ProtoNode to RS-485 Field Network17
 Figure 15: RS-485 EOL Switch17
 Figure 16: LonWorks Terminal.....18
 Figure 17: Required current draw for the ProtoNode18
 Figure 18: Power Connections.....18
 Figure 19: Web Configurator Showing no Active Profiles.....20
 Figure 20: Web Configurator Showing Available Profiles for Selection.....21
 Figure 21: Web Configurator Showing an Active Profile Addition.....21
 Figure 22: Web Configurator screen with Active Profiles.....22
 Figure 23: Changing IP Address via FST Web GUI23
 Figure 24: LonWorks Service Pin Location.....25
 Figure 25: Sample of Fserver.XIF File Being Generated26
 Figure 26: Downloading the CAS Explorer27
 Figure 27: Requesting CAS Activation Key27
 Figure 28: Error messages screen29
 Figure 29: Ethernet Port Location.....30
 Figure 30: Web Configurator showing setting the network number for BACnet/IP33
 Figure 31: Setting up the ProtoNode for BBMD on the BACnet IP Network34
 Figure 32: Diagnostic LEDs.....34
 Figure 33: Password setup page.....36
 Figure 34: Specifications.....73

1 INTRODUCTION

1.1 ProtoNode Gateway

ProtoNode is an external, high performance **Building Automation multi-protocol gateway** that is preconfigured to automatically communicate between any of Network Thermostat's Wi-Fi or Ethernet based thermostats (hereafter called "device") that are connected to the ProtoNode and dynamically configures them for BACnet¹MS/TP, BACnet/IP, Metasys² N2 by JCI, Modbus TCP/IP, Modbus RTU or LonWorks³.

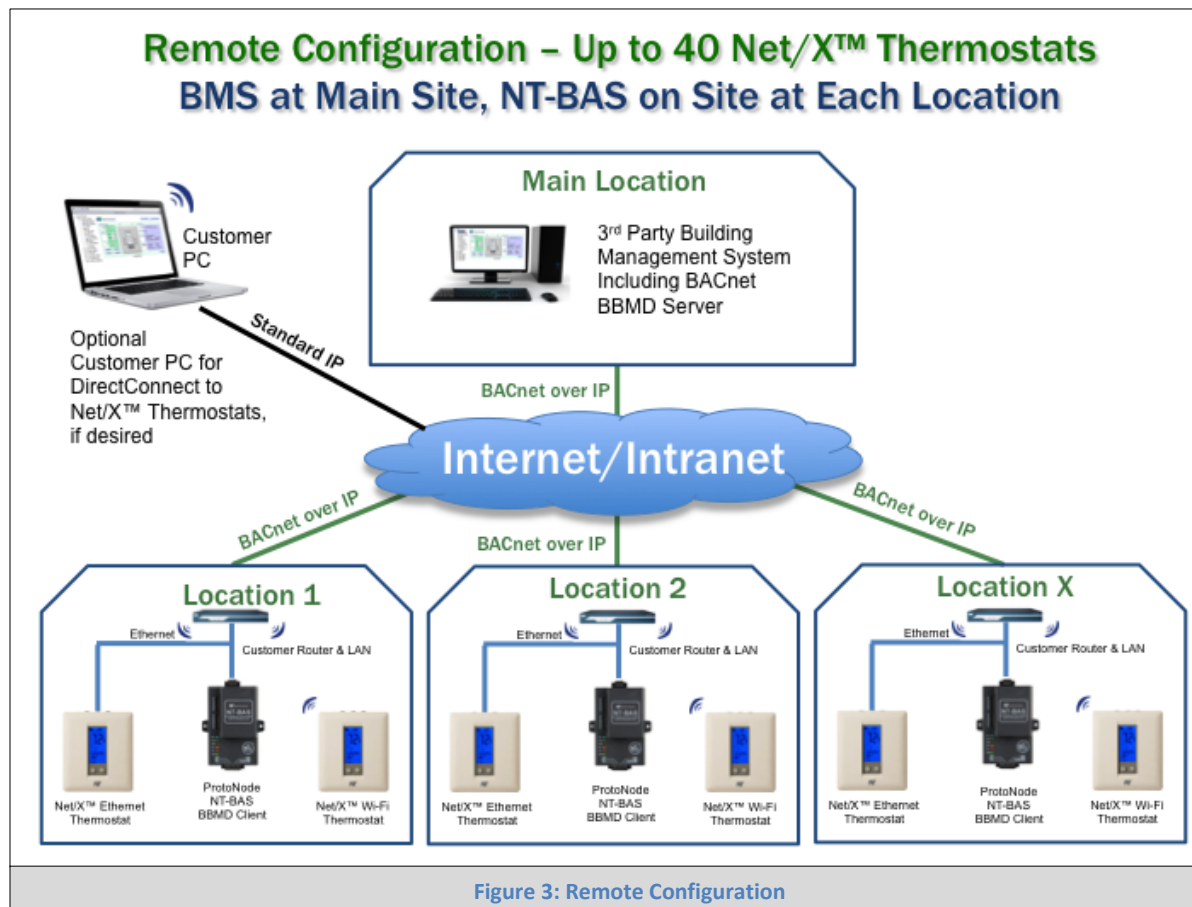
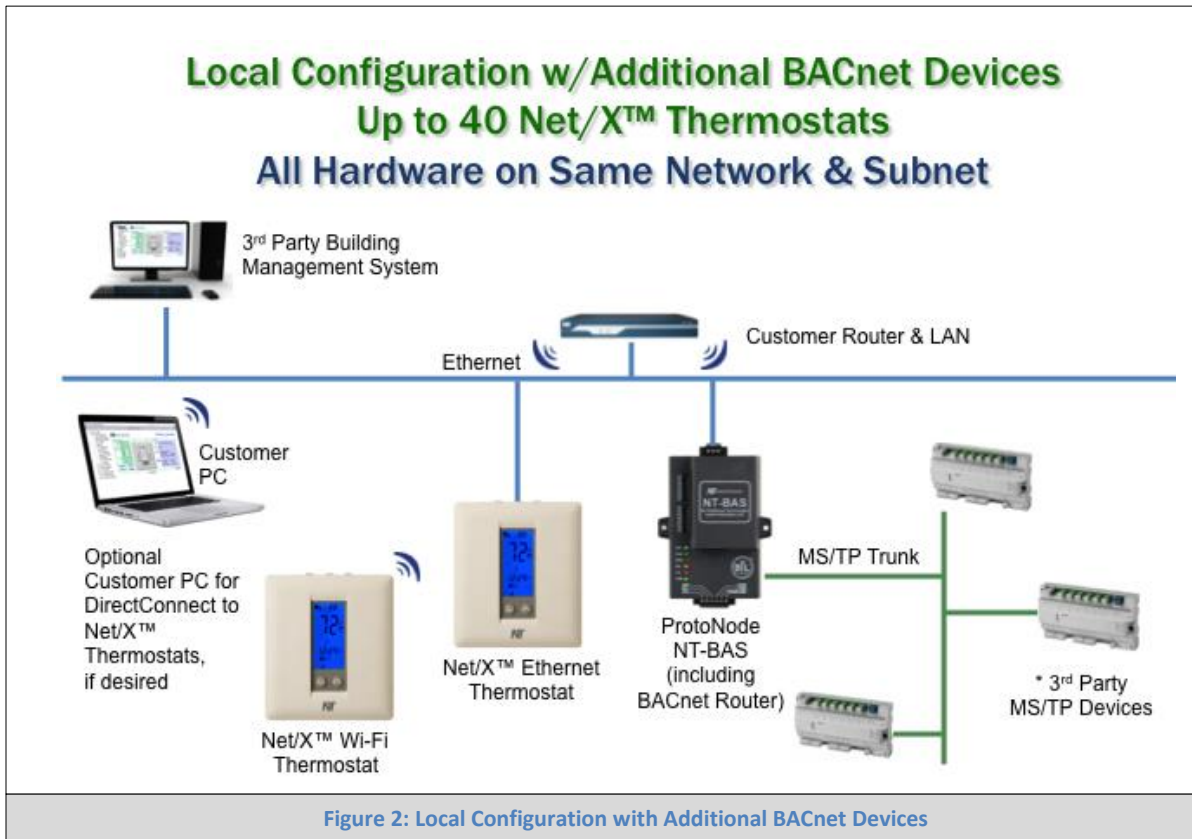
There are no configuration files to build or download to support the required applications.

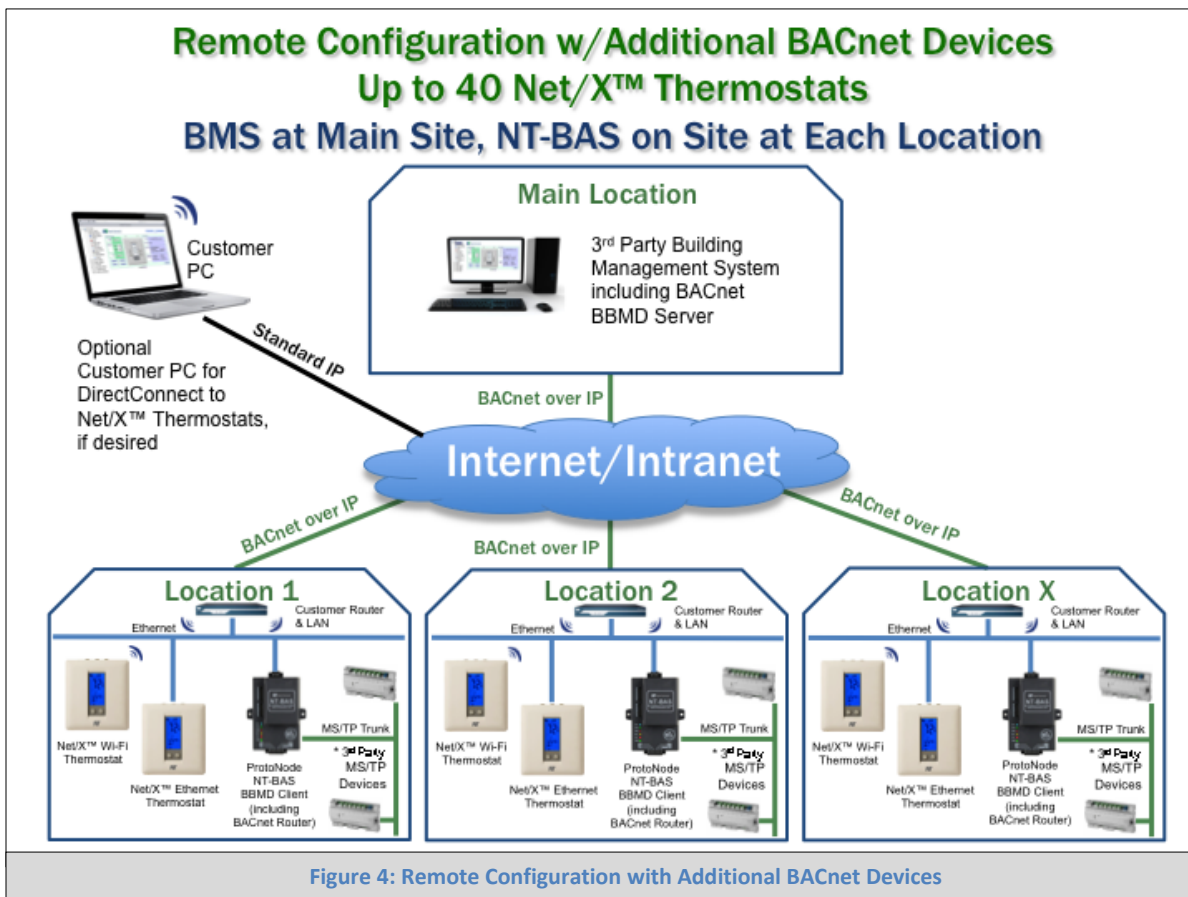


¹ BACnet is a registered trademark of ASHRAE

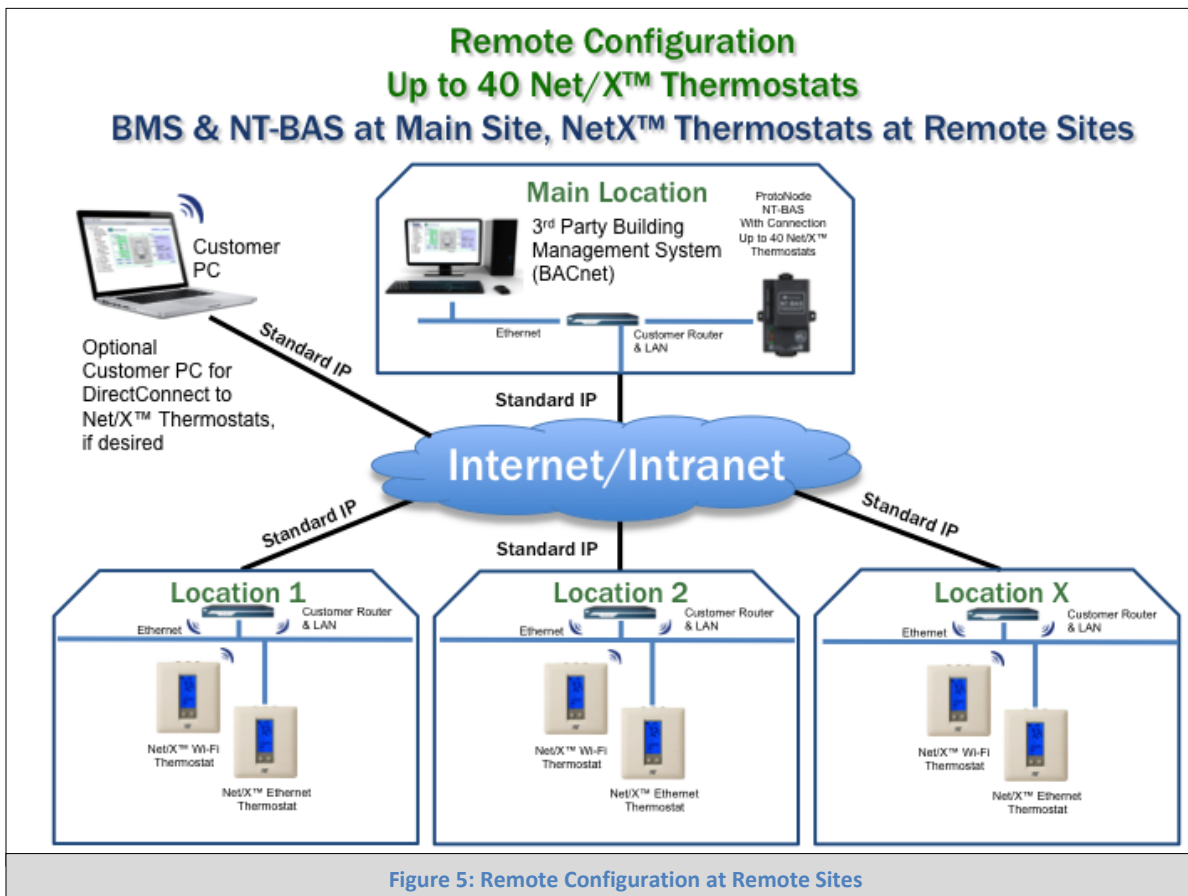
² Metasys is a registered trademark of Johnson Controls Inc.

³ LonWorks is a registered trademark of Echelon Corporation





- **Note:** BACnet Router capability is an additional option that can be ordered.



1.2 Network Thermostat's Devices and Point Count Available

- The total number of devices attached to ProtoNode FPC-N34 cannot exceed 40 devices for BACnet MS/TP, BACnet/IP, Modbus TCP/IP, Modbus RTU or Metasys N2.
- The total number of devices attached to ProtoNode FPC-N35 cannot exceed 14 devices for LonWorks.

Devices	Point Count
RP32-WIFI	292
RP32H-WIFI	305
UP32-WIFI	307
UP32H-WIFI	320
RP32-IP	292
RP32H-IP	305
UP32-IP	307
UP32H-IP	320

Figure 6: Registers count

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 underside 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 FPC-N34 (NT-BAS)	FPC-N34-0961
ProtoNode FPC-N35 (NT-LON)	FPC-N35-0962

Figure 7: 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

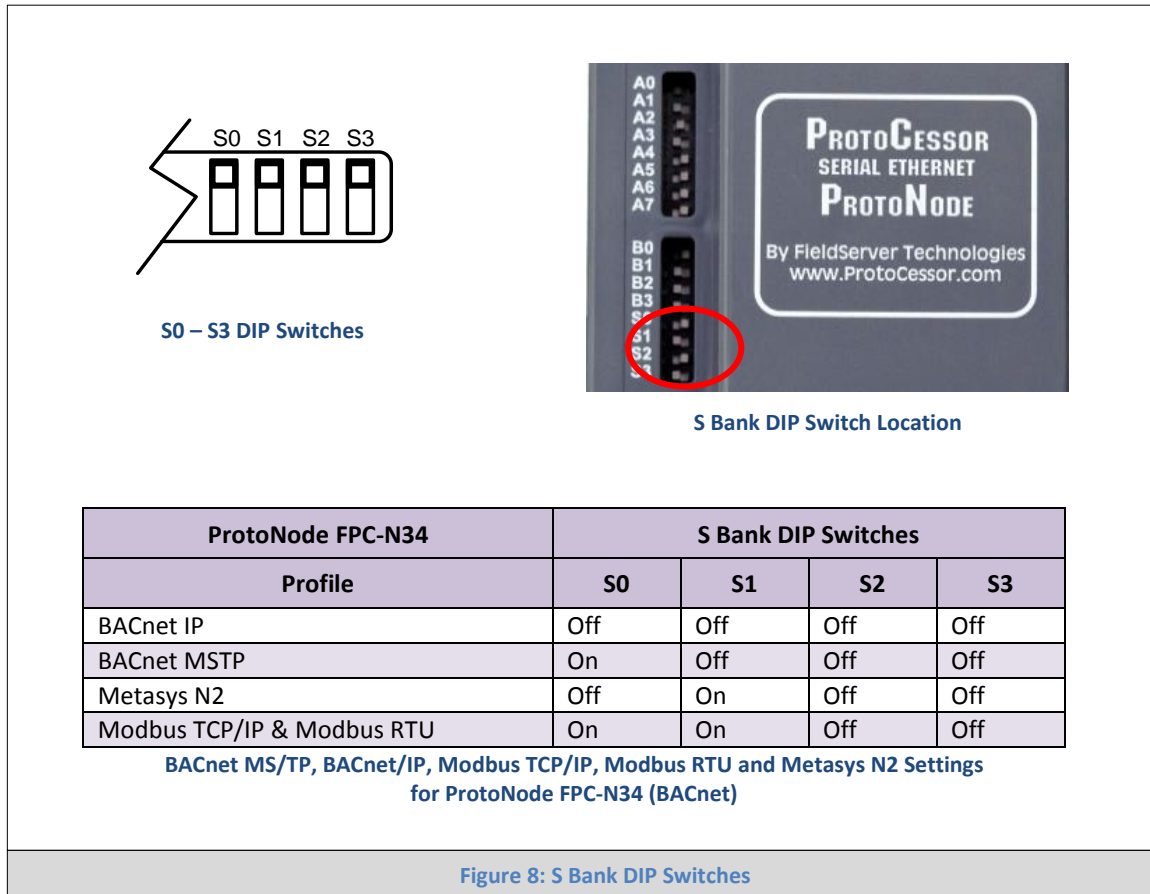
2.2 Configuring Device Communications

2.2.1 Set IP settings on all of the devices connected to the ProtoNode

- All of the devices connected to ProtoNode MUST be on the same IP subnet.
- The PC that runs the Web configurator MUST be on the same subnet.

2.3 Selecting the Desired Field Protocol

- ProtoNode FPC-N34 units use the “S” bank of DIP switches (S0 – S3) to select the Field Protocol.
 - See the table in figure 4 for the DIP switch settings to select BACnet MS/TP, BACnet/IP, Modbus TCP/IP, Modbus RTU or Metasys N2.
 - The OFF position is when the DIP switches are set closest to the outside of the box.
- ProtoNode FPC-N35 units do not use the “S” bank DIP switches (S0 – S3) to select a Field Protocol.
 - On ProtoNode FPC-N35 units, these switches are disabled; the Field Protocol is always LonWorks.



2.4 Setting the MAC Address, Device Instance, Node Address and Field Protocol Baud Rate

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

- Only 1 MAC address is set for ProtoNode regardless of how many devices are connected to ProtoNode.
- Set the BACnet MS/TP MAC address of the ProtoNode to a value between 1 to 127 (Master MAC address); this is so that the BMS Front End can find ProtoNode via BACnet auto discovery.
- **Note: Never set a BACnet MS/TP MAC Address of the ProtoNode to a value from 128 to 255.** Addresses from 128 to 255 are Slave Addresses and can not be discovered by BMS Front Ends that support Auto-Discovery of BACnet MS/TP devices.
- Set "A" bank DIP switches A0 – A7 to assign a MAC Address to the ProtoNode for BACnet MS/TP.
- Please refer to Appendix C.1 for the complete range of MAC Addresses and DIP switch settings.
- **When using Metasys N2 and Modbus TCP/IP, the A Bank of DIP switches are disabled and not used. They should be set to OFF.**

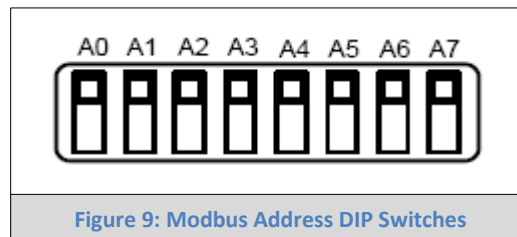


Figure 9: Modbus Address DIP Switches

NOTE: When setting DIP Switches, please ensure that power to the board is OFF.

2.4.2 BACnet MS/TP and BACnet/IP (FPC-N34): Setting the Device Instance

- The Device Instance is set in the Web Configurator, when selecting a device Profile. See section 4.1.2
- The BACnet Device Instance can range from 1 to 4,194,303.

2.4.3 Modbus RTU Field Protocol Node Address (FPC-N34): Setting the Node-ID

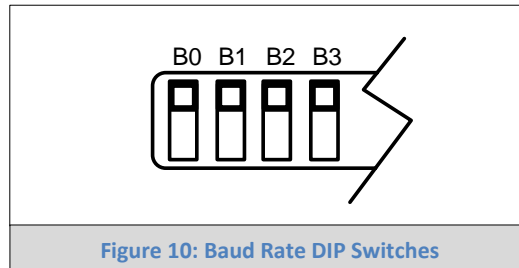
- Each Device connected to the ProtoNode must be assigned its own unique Modbus Node-ID.
- Use the Web Configurator to set Modbus Node-ID.
- The Node-ID's need to be between 1 and 255.

2.4.4 Metasys N2 (FPC-N34): Setting the Node-ID

- Each Device connected to the ProtoNode must be assigned its own unique Metasys N2 Node-ID.
- Use the Web Configurator to set Metasys N2 Node-ID.
- The Node-ID's need to be between 1 and 255.

2.4.5 BACnet MS/TP and Modbus RTU (FPC-N34): Setting the Field Protocol Baud Rate

- “B” bank DIP switches B0 – B3 are used to set the baud rate of the Field Protocol on the ProtoNode to match the baud rate required by the Building Management System for BACnet MS/TP.
- The baud rate on ProtoNode for Metasys N2 is set for 9600. “B” bank DIP switches B0 – B3 are disabled for Metasys N2 on ProtoNode FPC-N34.
- “B” bank DIP switches B0 – B3 are disabled on ProtoNode FPC-N35 (LonWorks).



2.4.5.1 Baud Rate DIP Switch Selection

Baud	B0	B1	B2	B3
9600	On	On	On	Off
19200	Off	Off	Off	On
38400	On	On	Off	On
57600	Off	Off	On	On
76800	On	Off	On	On

Figure 11: Baud Rate

3 INTERFACING PROTONODE TO DEVICES

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

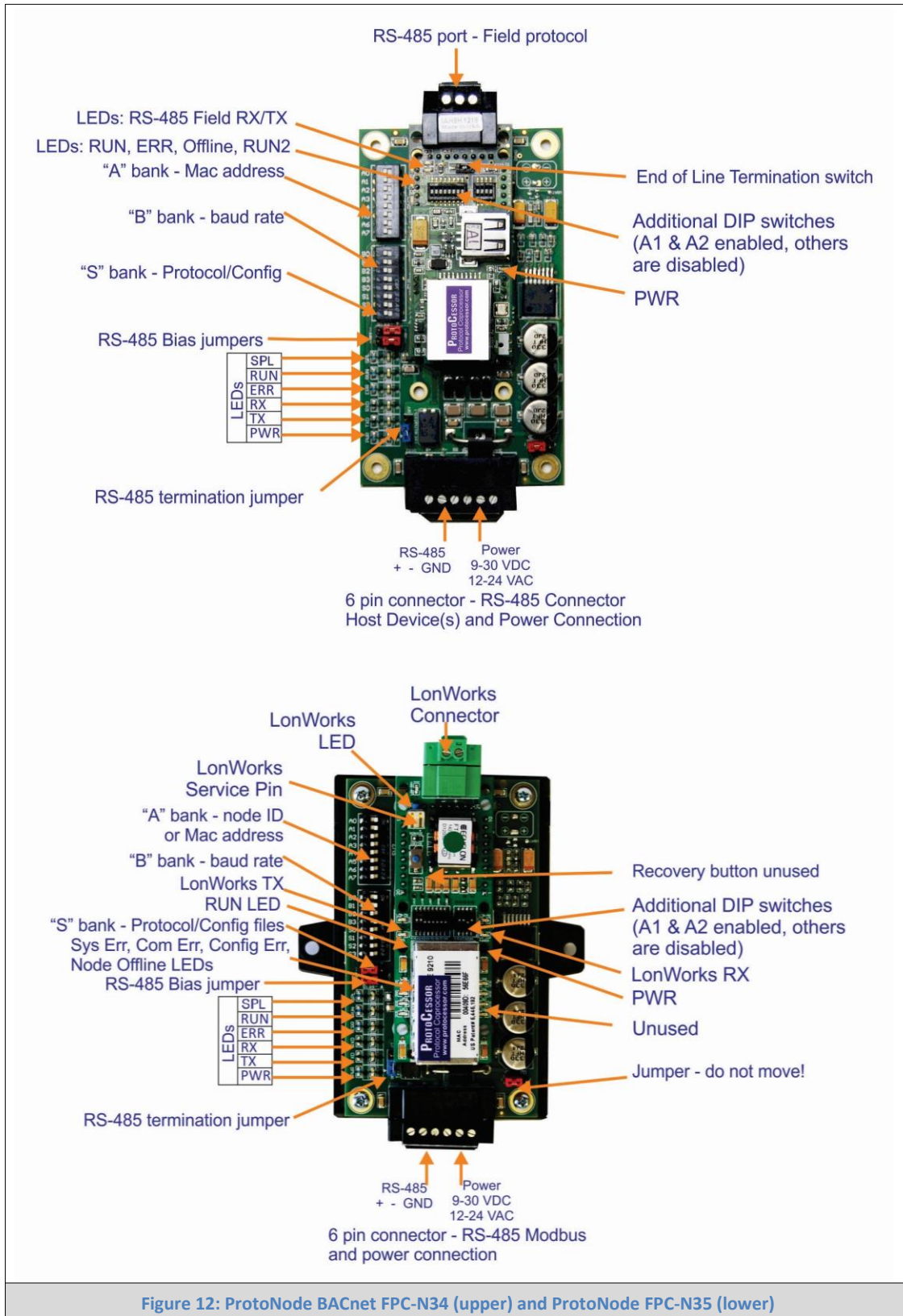


Figure 12: ProtoNode BACnet FPC-N34 (upper) and ProtoNode FPC-N35 (lower)

3.2 Device Ethernet Connection to ProtoNode

- The Network Thermostat devices MUST be installed and communicating on an Ethernet network.
- Connect the ProtoNode and PC to the same Ethernet Network using a standard CAT5 Ethernet cable via a hub, switch or router.

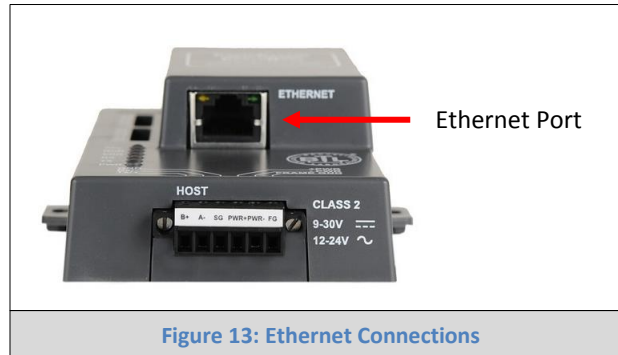
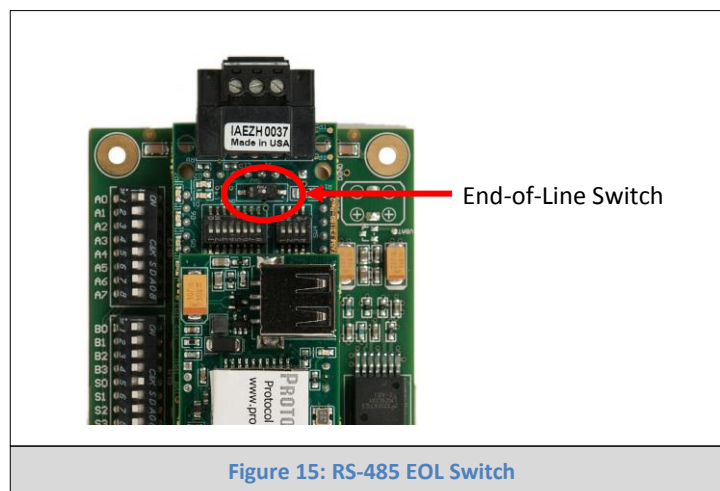
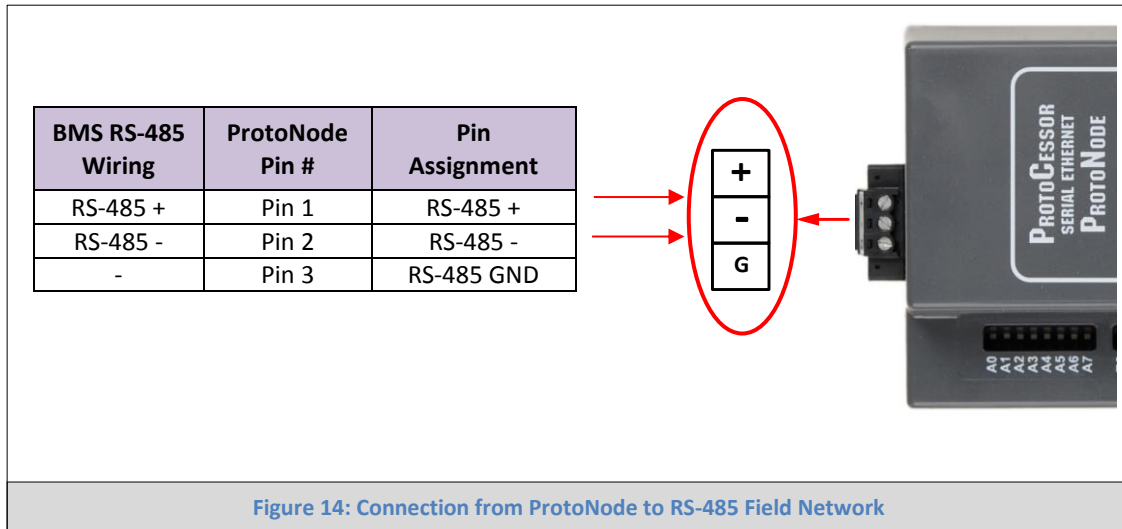


Figure 13: Ethernet Connections

3.3 BACnet MS/TP, Modbus RTU or Metasys N2 (FPC-N34): Wiring Field Port to RS-485 Network

- Connect the BACnet MS/TP, Modbus RTU or Metasys N2 RS-485 network wires to the 3-pin RS-485 connector on ProtoNode FPC-N34 as shown below in [Figure 14](#).
 - The RS-485 GND (Pin 3) is not typically connected.
- If the ProtoNode is the last device on the BACnet MS/TP, Modbus RTU or Metasys N2 trunk, then the End-Of-Line Termination Switch needs to be enabled ([Figure 15](#)).
 - 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).



3.4 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 network connections have no polarity.



Figure 16: LonWorks Terminal

3.5 Connecting Power to ProtoNode.

Apply power to ProtoNode as show below in **Figure 18**. Ensure that the power supply used complies with the specifications provided in **Appendix D.1**.

- ProtoNode accepts either 9-30VDC or 12-24 VAC on pins 4 and 5.
- **IMPORTANT:** The FRAME GROUND of the power connection **MUST BE CONNECTED**.

Power Requirement for ProtoNode at 9V through 30 VDC or 12-24 VAC			
ProtoNode Family	Current Draw Type		
	12VDC/VAC	24VDC/VAC	30VDC
FPC – N34 (Typical)	170mA	100mA	80mA
FPC – N34 (Maximum)	240mA	140mA	100mA
FPC – N35 (Typical)	210mA	100mA	90mA
FPC – N35 (Maximum)	250mA	130mA	100mA

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 17: Required current draw for the ProtoNode

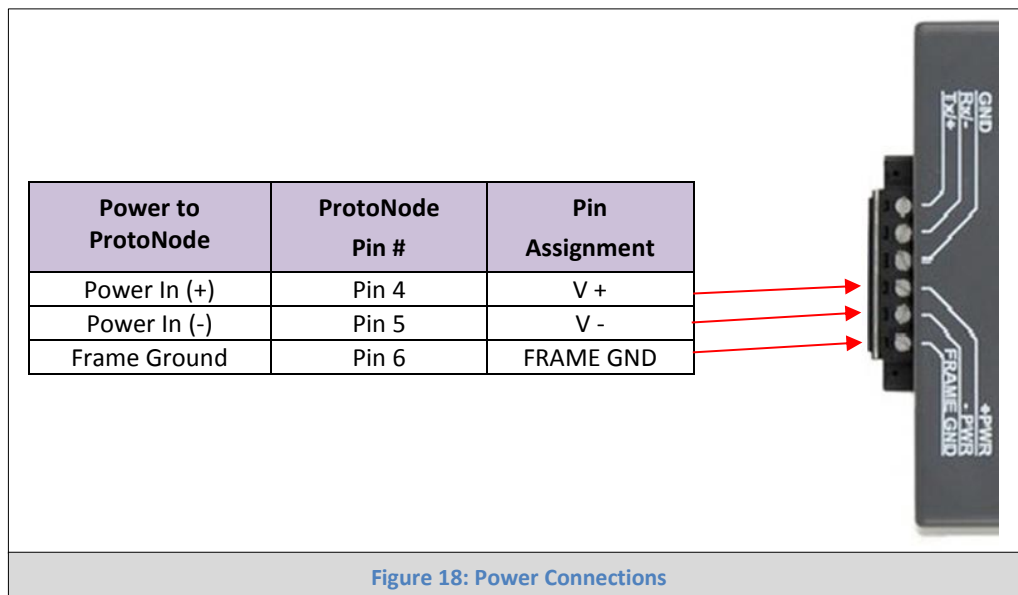




Figure 18: Power Connections


4 USE PROTONODE'S WEB CONFIGURATOR TO SELECT DEVICE PROFILES

4.1 Connect the PC and ProtoNode to the network

- Using a standard CAT5 Ethernet cable, connect the PC to the same Ethernet Network that the devices and the ProtoNode are connected to via a hub, switch or router.
- 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.

- Go to  >  >  Network Connections

- Right-click on Local Area Connection > Properties

- Highlight  Internet Protocol (TCP/IP) > 

- Select: Use the following IP address

Use the following IP address:

IP address:	<input type="text" value="192 . 168 . 1 . 11"/>
Subnet mask:	<input type="text" value="255 . 255 . 255 . 0"/>
Default gateway:	<input type="text" value=" . . ."/>

- Click  twice

4.2 Connecting to ProtoNode's Web Configurator

- After setting your PC to be on the same subnet as the ProtoNode (**Section 4.1**), open a web browser on your PC and enter the IP address of the ProtoNode; the default address is 192.168.1.24.

4.2.1 Selecting Profiles for Devices Connected to ProtoNode

- When you open the Web Configurator, you will see the Active Profiles section on the lower left side of the screen.
- The Active Profiles section lists the currently active device profiles, including previous Web Configurator additions. This list will be empty for new installations, or after clearing all configurations (**Figure 19**).
- To add an active profile to support a device, click the ADD button under Active Profiles. This will present a drop-down box underneath the Current Profile column that lists all the available profiles (**Figure 20**).
 - For FPC-N34 units, profiles for supported devices will be offered in the drop-down box only for the Field protocol option selected with the S bank of DIP switches in **Section 2.3**.
 - For FPC-N35 units, profiles for supported devices will be offered in the drop-down box for the Field protocol LonWorks.
- For every device that is added, you need to specify the IP Address of the device, the IP port, username and password and Device Instance for BACnet or Node-ID for Modbus and Metasys N2.

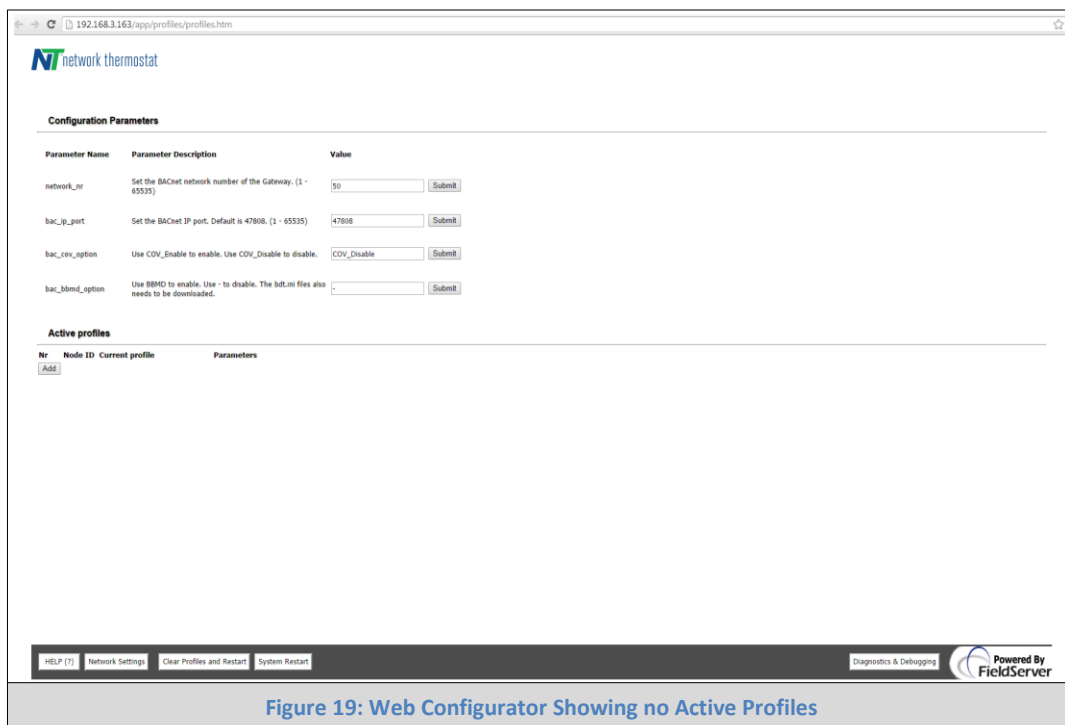


Figure 19: Web Configurator Showing no Active Profiles

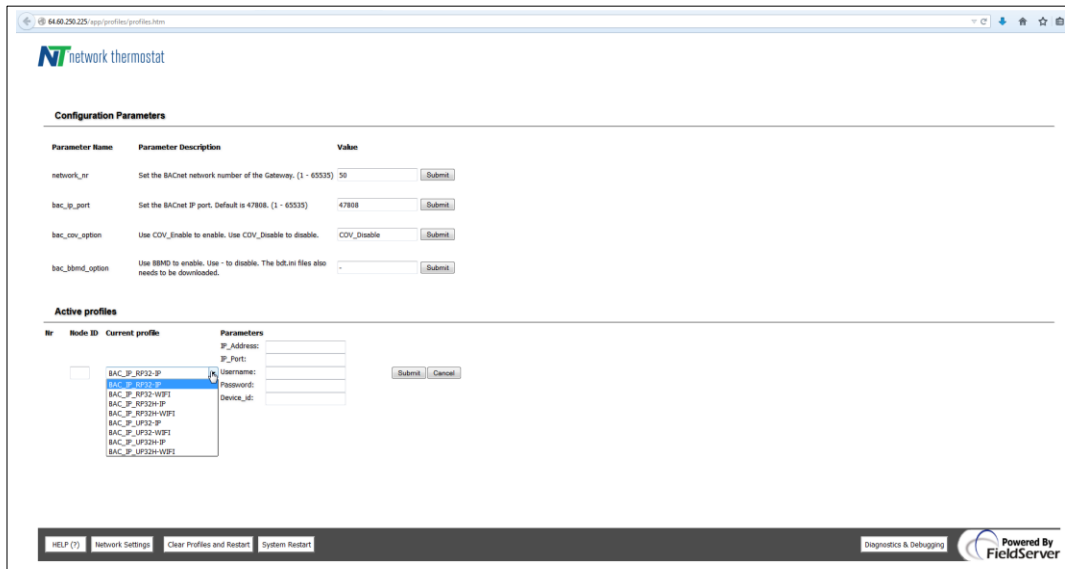


Figure 20: Web Configurator Showing Available Profiles for Selection

- Once the Profile for the device has been selected from the drop-down list, enter the value of the device's Node-ID.
- Then press the SUBMIT button to add the Profile to the list of devices to be configured.
- Repeat this process until all the devices have been added.
- Completed additions will be listed under Active Profiles as show in [Figure 21](#).

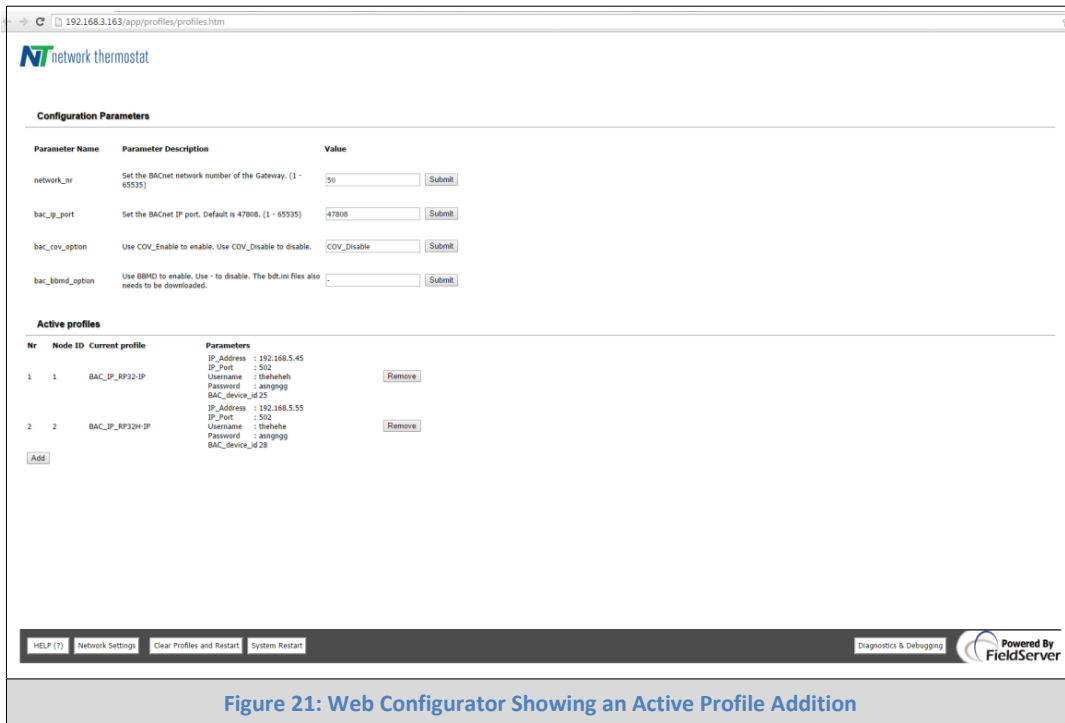


Figure 21: Web Configurator Showing an Active Profile Addition

4.3 BACnet/IP and Modbus TCP/IP: Setting IP Address for Field

- After setting your PC to be on the same subnet as the ProtoNode (**Section 4.1**), open a web browser on your PC and enter the IP address of the ProtoNode; the default address is 192.168.1.24.
- **To access the FST Web GUI, click on the “Diagnostics & Debugging” button** in the bottom right side of the page.

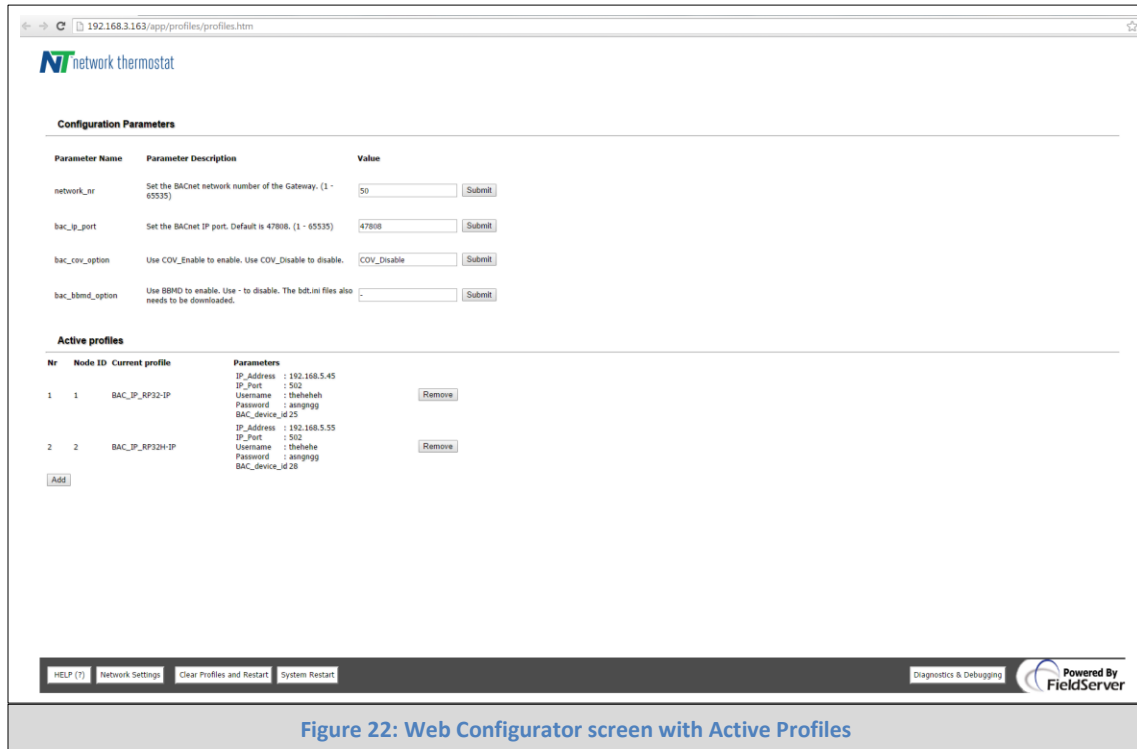


Figure 22: Web Configurator screen with Active Profiles

- The FST Web GUI page will be presented.
- From the FST Web GUI's landing page, click on "Setup" to expand the navigation tree and then select "Network Settings" to access the IP Settings menu. (Figure 23)

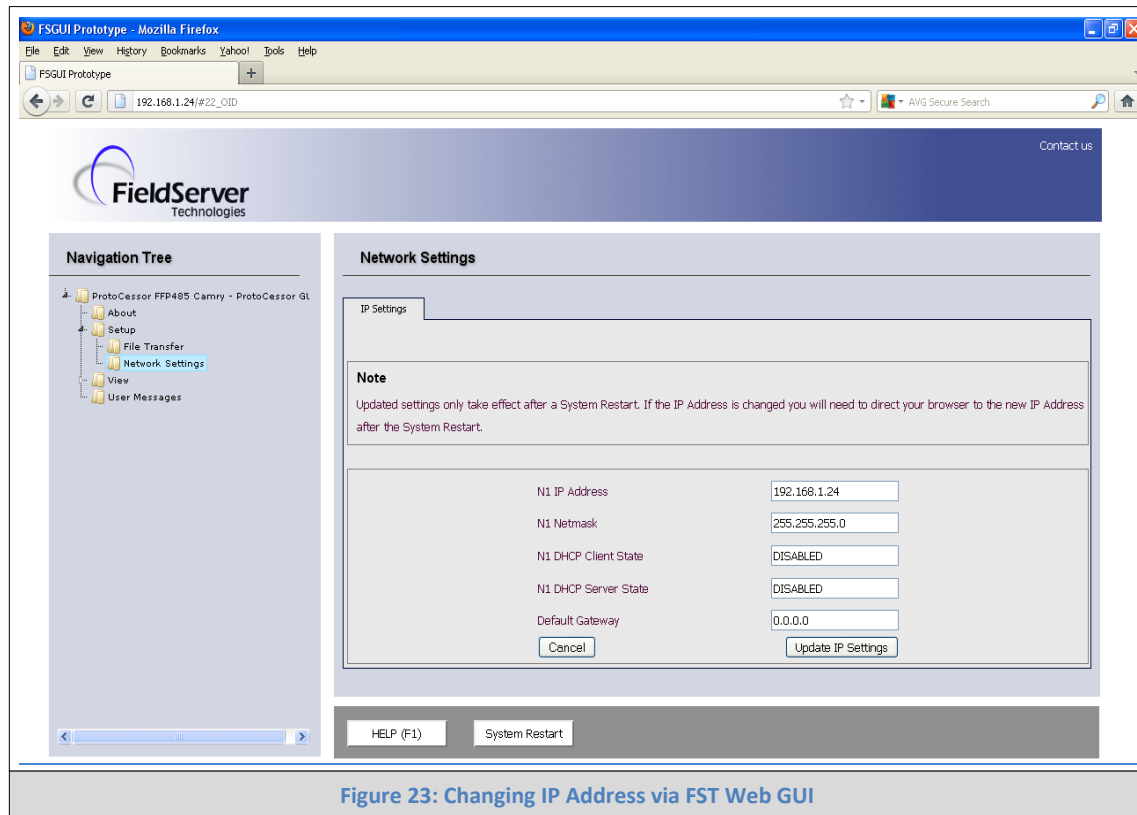


Figure 23: Changing IP Address via FST Web GUI

- Modify the IP address (N1 IP address field) of the ProtoNode Ethernet port.
- 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
- Note: If the ProtoNode is connected to a router, the IP Gateway of the ProtoNode should be set to the IP address of the router that it is connected to
- Click the “System Restart” button to restart the ProtoNode
- Unplug Ethernet cable from PC and connect it to the network hub or router
- **Record the IP address assigned to the ProtoNode for future reference.**

5 HOW TO START THE INSTALLATION OVER: CLEARING PROFILES

- After setting your PC to be on the same subnet as the ProtoNode (Section 4.1), open a web browser on your PC and enter the IP address of the ProtoNode; the default address is 192.168.1.24.
- The Web Configurator will be displayed as your landing page.
- **At the bottom-left of the page, click the “Clear Profiles and Restart” button.**
- Once restart is complete, all the past profiles that were discovered and or added via the Web configurator will be delete. The unit is now ready to be reinstalled.

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



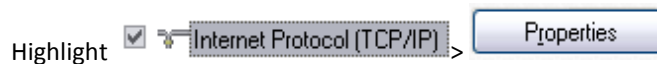
Figure 24: LonWorks Service Pin Location

6.1.1 Instructions to Upload XIF File from ProtoNode FPC-N35 Using FieldServer GUI Web Server

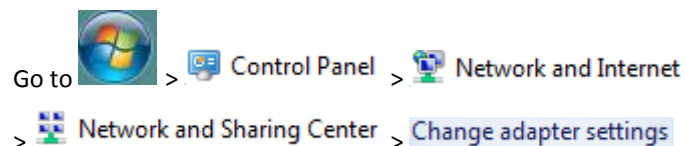
- Connect the PC to the same Ethernet Network that the devices and the ProtoNode are connected to via a hub, switch or router.
- The Default IP Address of ProtoNode is **192.168.1.24**, Subnet Mask is **255.255.255.0**. If the PC and ProtoNode are on different IP Networks, assign a static IP Address to the PC on the 192.168.1.xxx network
- For Windows XP:



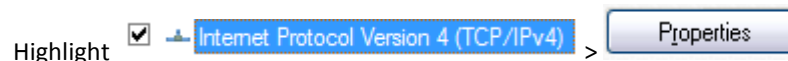
Right-click on Local Area Connection > Properties



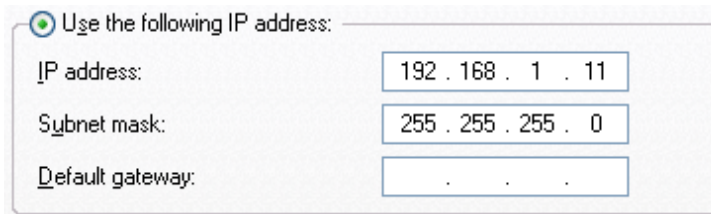
- For Windows 7:



Right-click on Local Area Connection > Properties



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



Use the following IP address:

IP address: 192 . 168 . 1 . 11

Subnet mask: 255 . 255 . 255 . 0

Default gateway: . . .

OK

- Click **OK** 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

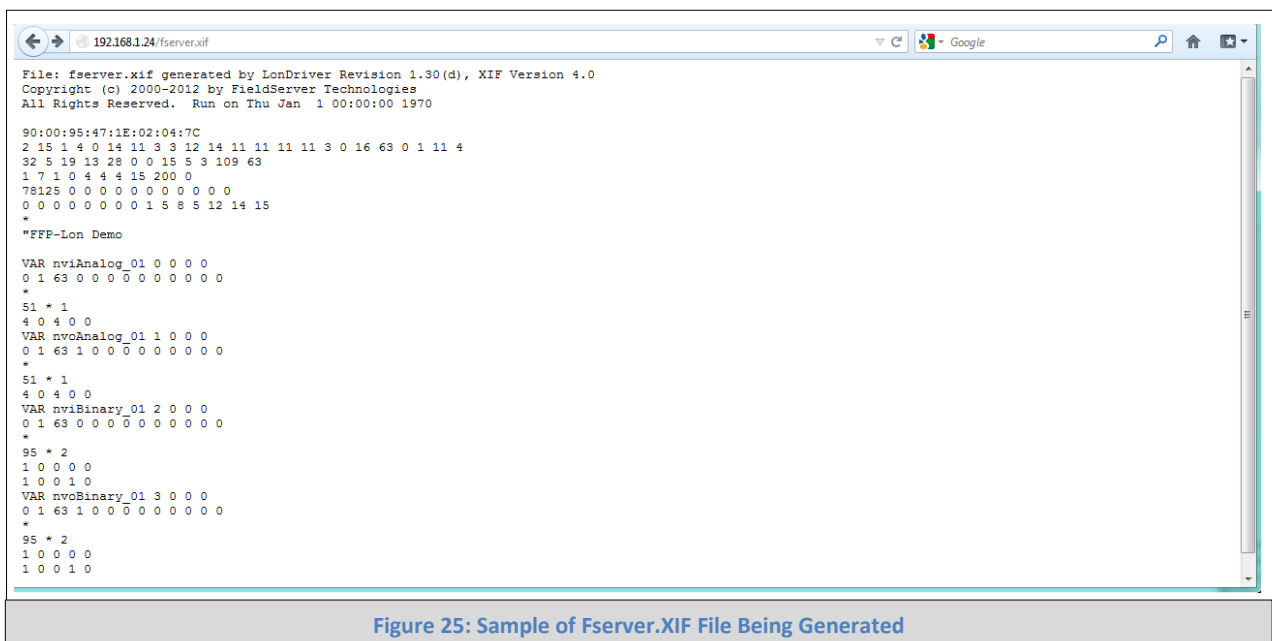


Figure 25: Sample of Fserver.XIF File Being Generated

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 "NetworkThermostat 2BACnet". Once completed, the email address that was submitted will be registered.

Request a two week account activation

You have two choices

1. Activate your account for two weeks
To request a two week account activation, simply complete this form and request a new product key from within the CAS BACnet Explorer.
Note: Your contact info will be used by chipkin to contact you. If your contact info is invalid or you are unreachable your account will be revoked.

Name:
Company:
Address:
Phone number:
Email Address:
Vendor code:
Product: CAS BACnet Explorer

1. Purchase
You can buy the CAS BACnet Explorer to get a full account from If you have one, you can use your discount coupon on the web page. [Visit this page](#)
Feel free to [contact us](#) with any questions you may have.

Figure 26: 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".

Settings

License
Network
Preferences
Auto Update
About

License

Email Address:

Product key:

Please copy and past the activation key from your email in to this dialog and click activate.
If you do not have an activation key, you can request now by entering a valid email address and clicking the request a key button.

Figure 27: 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/ST 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 6.1 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. 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.

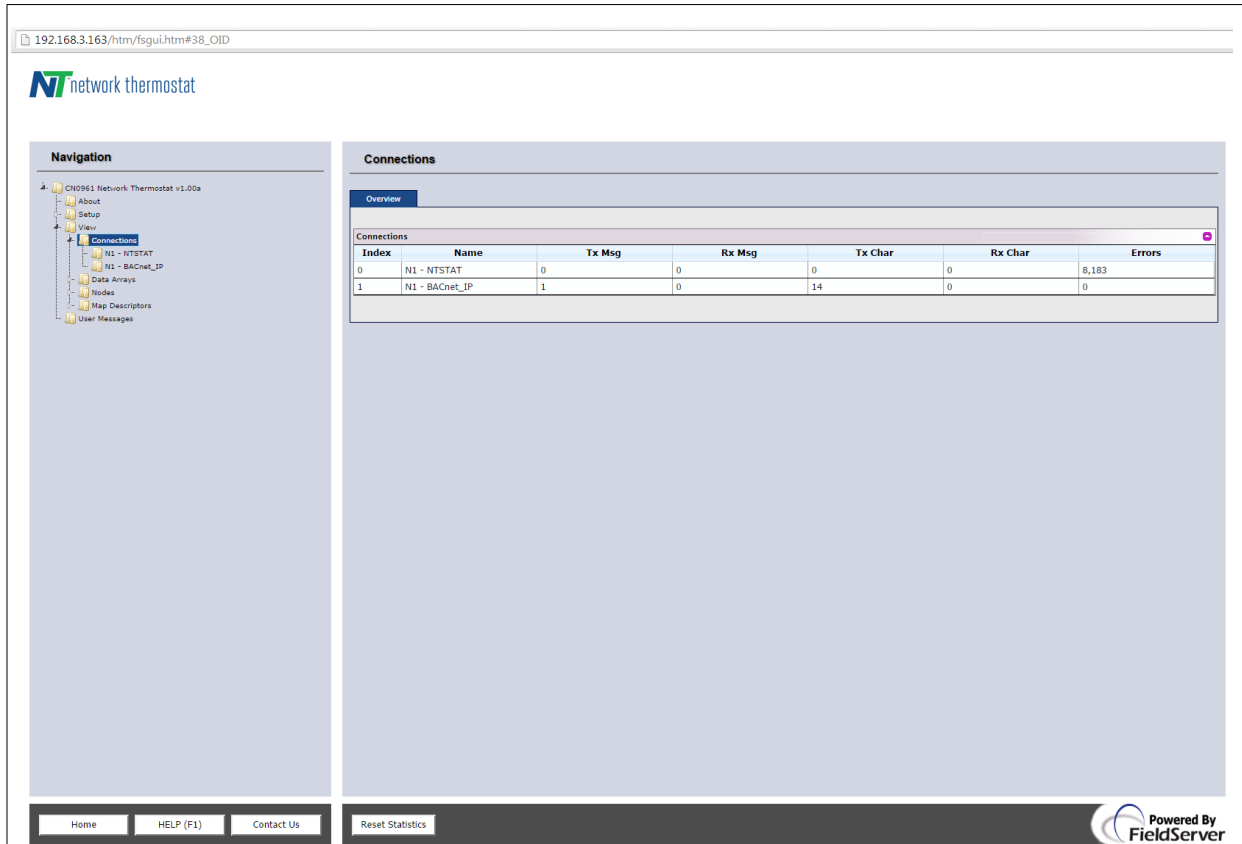
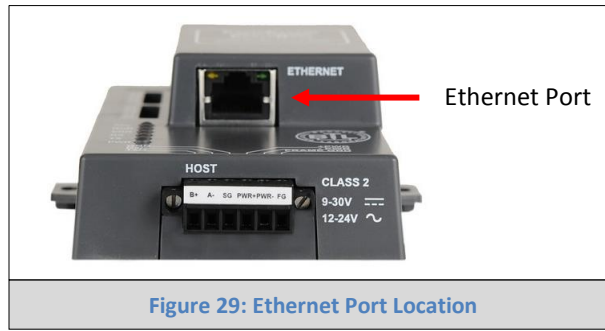



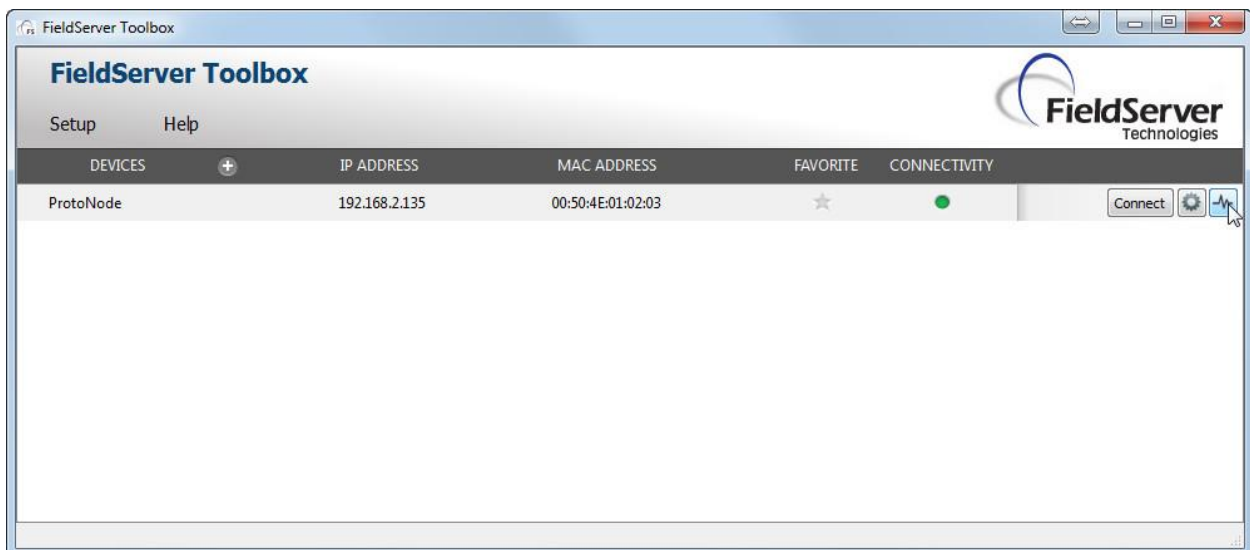
Figure 28: Error messages screen

Appendix A.2. Take Diagnostic Capture With the FieldServer Utilities

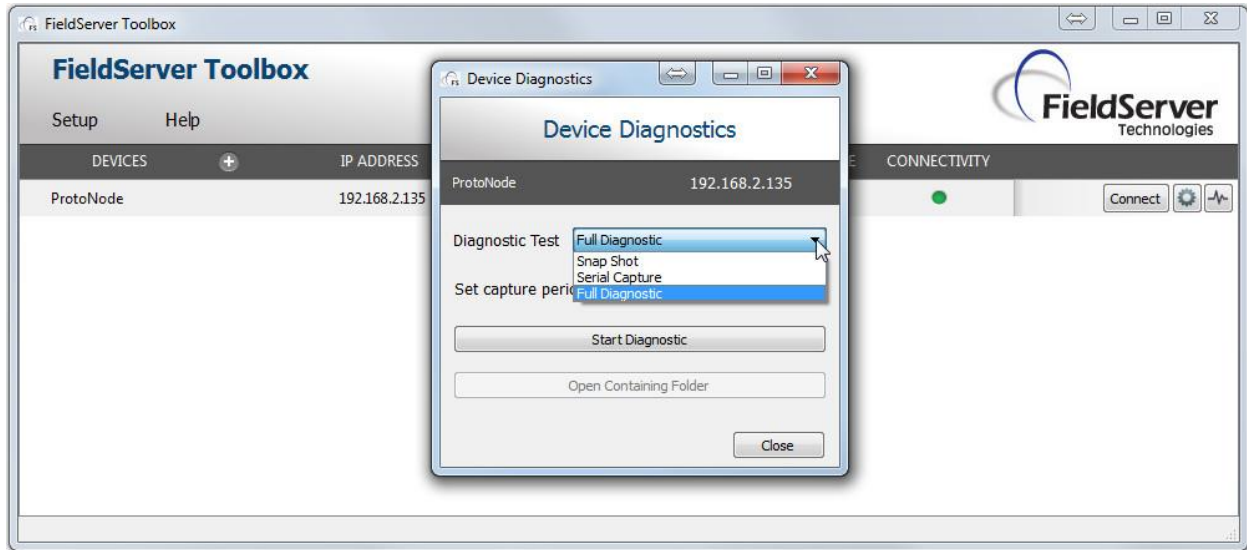
- Once the Diagnostic Capture is complete, email it to support@protocessor.com. The Diagnostic Capture will allow us to rapidly diagnose the problem.
- Ensure that FieldServer Toolbox is Loaded on the PC that is currently being used, or download FieldServer-Toolbox.zip at <http://www.protocessor.com/tech-support/utilities-and-design-documents.php>
- Extract the executable file and complete the installation.



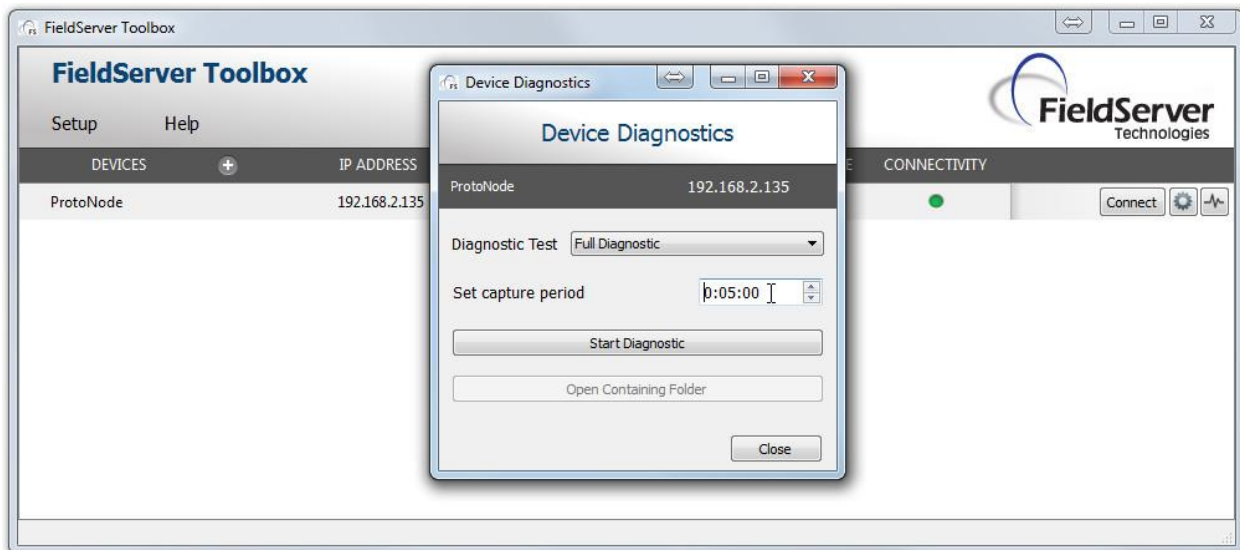
- Disable any wireless Ethernet adapters on the PC/Laptop.
- Disable firewall and virus protection software if possible.
- Connect a standard Cat 5 Ethernet cable between the PC and ProtoNode.
- Double click on the FS Toolbox Utility.
- **Step 1:** Take a Log
 - Click on the diagnose icon  of the desired device.



- Select full Diagnostic

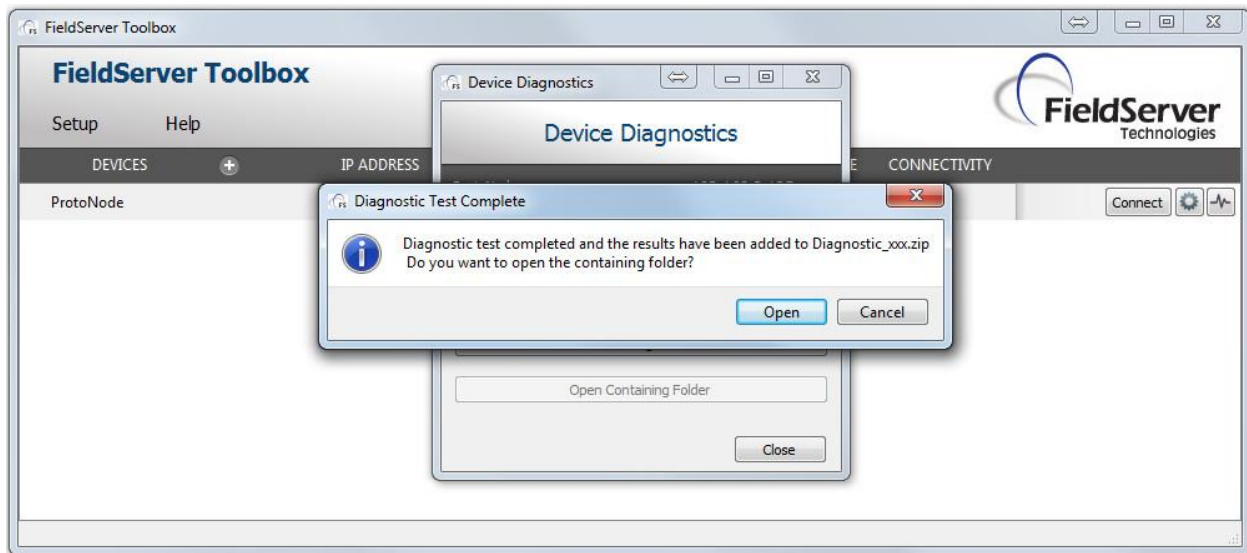


- If desired, the default capture period can be changed.
- Click on Start Diagnostic.



- 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.



- When the “Diagnostic Test Complete” dialog box is presented, click the OPEN button to open the folder containing the Diagnostic zip file with Windows Explorer.

 Diagnostic_2014-07-17_20-15.zip	2014/07/17 20:16	zip Archive	676 KB
---	------------------	-------------	--------

- Send the Diagnostic zip file to support@fieldserver.com

Appendix A.3. If there is more than 1 ProtoNode on the same BACnet/IP network, change Network Number

On the main Web Configurator screen, use the `network_number` field to update the BACnet Network Number and click the SUBMIT button. Please note that the default value is 50.

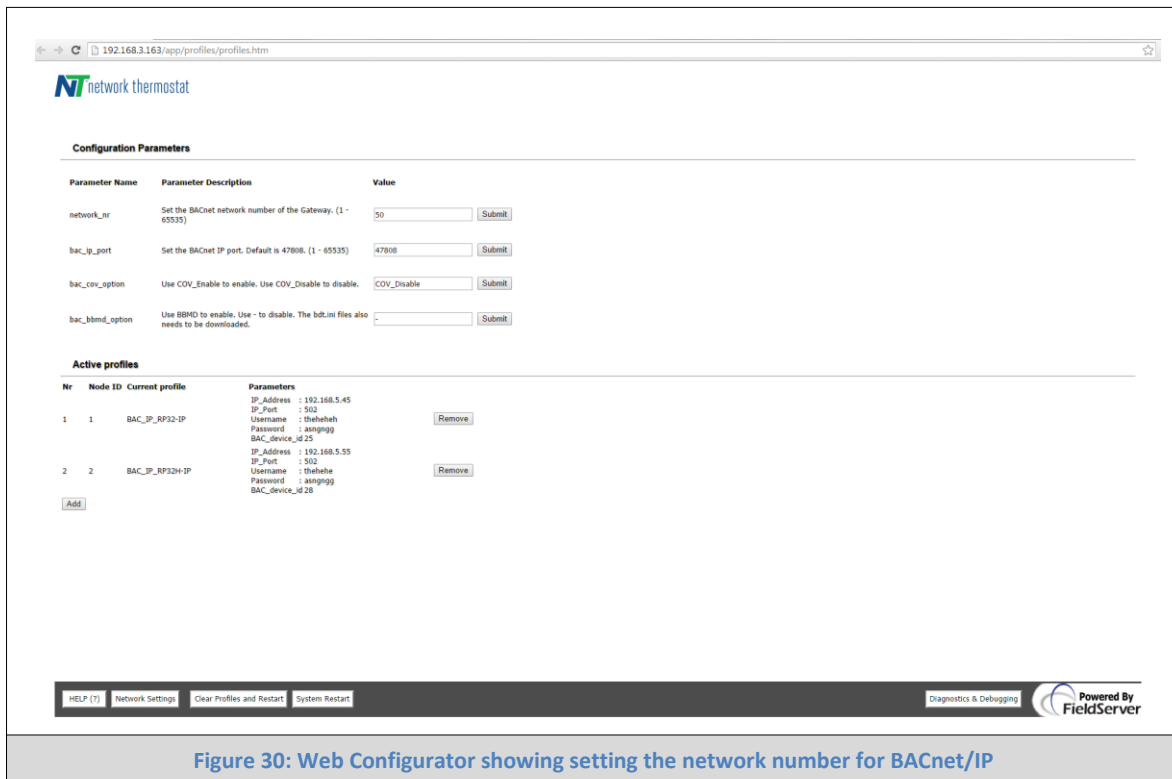


Figure 30: Web Configurator showing setting the network number for BACnet/IP

Appendix A.4. Setting up the ProtoNode for BBMD on the BACnet IP Network

The ProtoNode is capable of being a BACnet BBMD Client on a BACnet network. When this function is enabled, other BACnet networks on different subnets and other remote BACnet networks can access the devices on the particular Subnet that the ProtoNode is connected to. Here are the steps to set up a BACnet BBMD Client:

- Create the `bdt.ini` file. You can get a sample `bdt.ini` file from Network Thermostat.
- Here is a format of the `BDT.ini` file to create:


```
// BBMD IP_Address , BBMD port , BBMD subnet Mask
24.90.48.179 , 47808 , 255.255.255.255
64.80.115.156 , 47808 , 255.255.255.255
```
- The last line of the `bdt.ini` file should be empty.

On the main Web Configurator screen, set the `bac_bbmd_option` to BBMD.

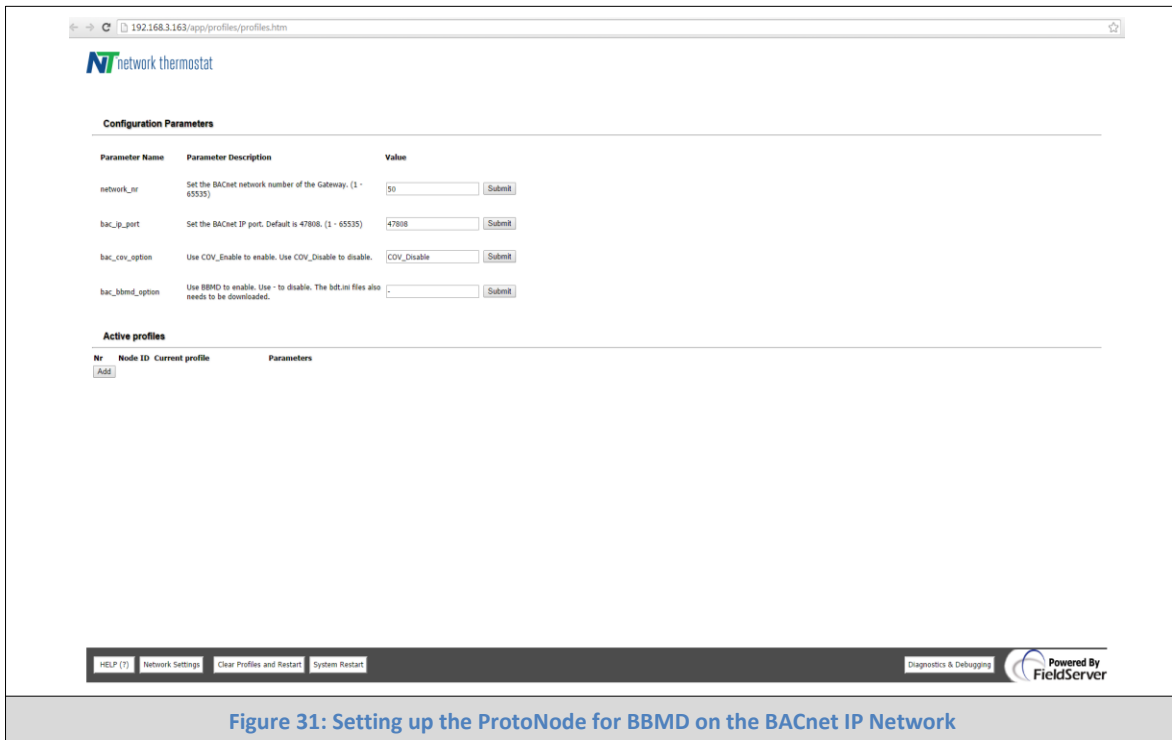


Figure 31: Setting up the ProtoNode for BBMD on the BACnet IP Network

- Click on the Diagnostics & Debugging button.
- In the Navigation tree, click on Setup. Click on File Transfer. Then click on the General Tab.
- Then click on browse and select the bdt.ini file.
- Click on submit.
- When the download is complete, power cycle the unit.

Appendix A.5. 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 offline.
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	The RX LED will flash when a message is received on the host port.
TX	The TX LED will flash when a message is sent on the host port.
PWR	This is the power light and should show steady green at all times when ProtoNode is powered.

Figure 32: Diagnostic LEDs

Appendix A.6. Vacation Scheduling on a Network Thermostat device

There are two different sets of points available on the ProtoNode for performing vacation scheduling on a Network Thermostat device:

Active Points:

- Vacation_Status
- Start_Vacation_Year
- Start_Vacation_Month
- Start_Vacation_Day
- Start_Vacation_Hours
- Start_Vacation_Mins
- End_Vacation_Year
- End_Vacation_Month
- End_Vacation_Day
- End_Vacation_Hours
- End_Vacation_Mins

These points, except for Vacation_Status, are read-only and contain the start time and end time of the vacation schedule read from the Network Thermostat device.

Passive Points:

- Passive_Vacation_Type
- Passive_Start_Vacation_Year
- Passive_Start_Vacation_Month
- Passive_Start_Vacation_Day
- Passive_Start_Vacation_Hours
- Passive_Start_Vacation_Mins
- Passive_End_Vacation_Year
- Passive_End_Vacation_Month
- Passive_End_Vacation_Day
- Passive_End_Vacation_Hours
- Passive_End_Vacation_Mins

These passive points act as a temporary storage location for writing the vacation schedule to the Network Thermostat device. The values of these points are written to the Network Thermostat device only when the value of the active binary point Vacation_Status is changed from inactive to active.

When the value of the point Passive_Vacation_Type is 'START NOW', the start times are ignored and the vacation starts as soon as the point Vacation_Status is changed from inactive to active. When the value of the point Passive_Vacation_Type is 'START LATER', the vacation mode will only start at the specified time if the point Vacation_Status is changed from inactive to active.

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 or 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.

Appendix A.7.1. Password setup

For setting the password:

- Choose "Setup, Passwords" from the Main Menu.
- Click on the account name drop box to set up the password for Admin or User.

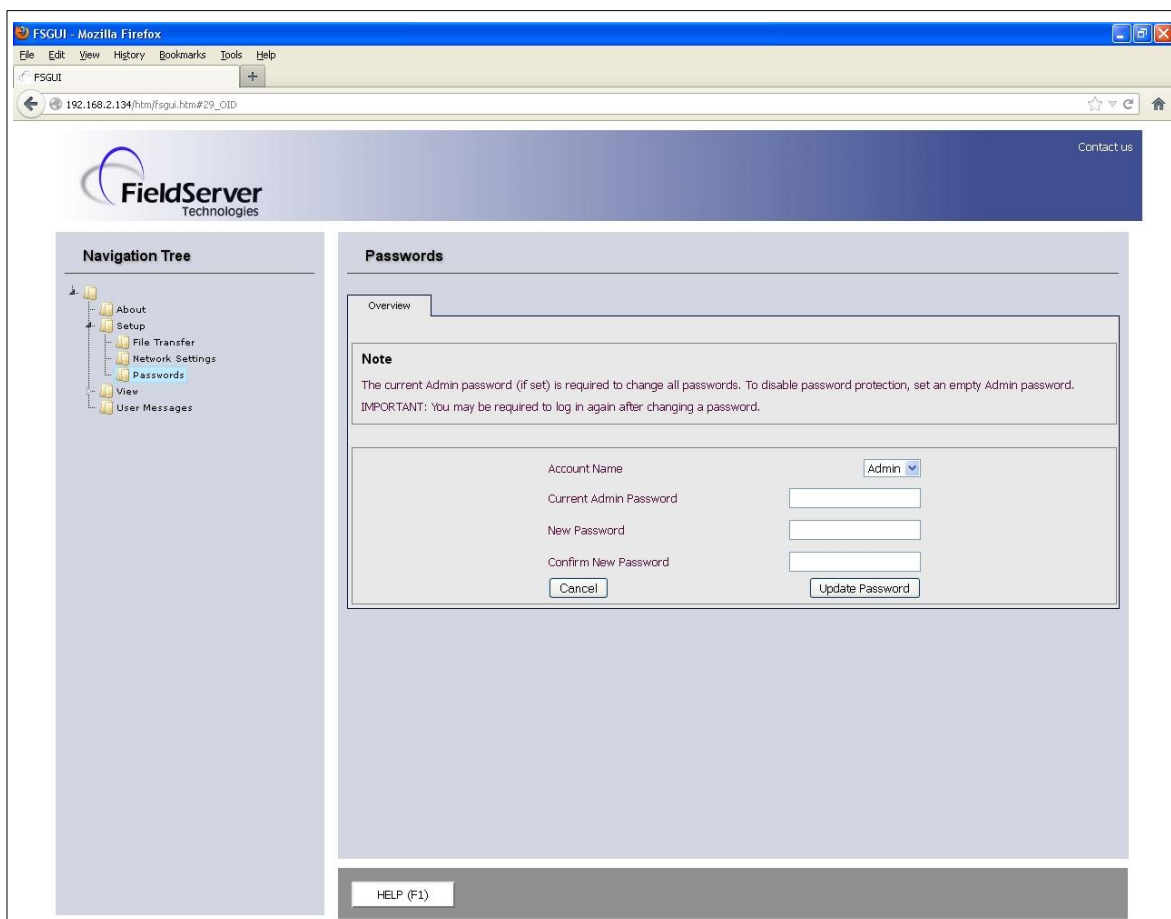


Figure 33: Password setup page

Appendix B. Vendor Information - Network Thermostat

Appendix B.1. RP32 (IP-WIFI) Mappings to BACnet MS/TP, BACnet/IP, Metasys N2 and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT
Fan_Recirc_Active	BI	0	DI	1	40001	TBD	TBD
Fan_Recirc_Timer	AV	1	AO	1	40002	TBD	TBD
Override_Cool_Setpoint	AV	2	AO	2	40003	TBD	TBD
Override_Heat_Setpoint	AV	3	AO	3	40004	TBD	TBD
Balance_Point_Low	AV	4	AO	4	40005	TBD	TBD
Balance_Point_High	AV	5	AO	5	40006	TBD	TBD
Cool_High_Setpoint	AV	6	AO	6	40007	TBD	TBD
Cool_Low_Setpoint	AV	7	AO	7	40008	TBD	TBD
Heat_High_Setpoint	AV	8	AO	8	40009	TBD	TBD
Heat_Low_Setpoint	AV	9	AO	9	40010	TBD	TBD
Day_Of_Week	MI	10	AI	1	40011	TBD	TBD
Daylight_Savings_Time	BV	11	DO	1	40012	TBD	TBD
Time_Zone	MV	12	AO	10	40013	TBD	TBD
Indoor_Temp	AI	13	AI	2	40014	TBD	TBD
Outdoor_Temp	AI	14	AI	3	40015	TBD	TBD
Outdoor_Temp_Valid	BI	15	DI	2	40016	TBD	TBD
Mode	MV	16	AO	11	40017	TBD	TBD
Fan	MV	17	AO	12	40018	TBD	TBD
Recovery_Status	BI	18	DI	3	40019	TBD	TBD
Cool_Setpoint	AV	19	AO	13	40020	TBD	TBD
Heat_Setpoint	AV	20	AO	14	40021	TBD	TBD
Heat_Cool_Status	MI	21	AI	4	40022	TBD	TBD
Stage	AI	22	AI	5	40023	TBD	TBD
Override_Status	BI	23	AI	6	40024	TBD	TBD
Override_Timer_Rem_Hours	AV	24	AO	15	40025	TBD	TBD
Override_Timer_Rem_Mins	AV	25	AO	16	40026	TBD	TBD
Thermostat_Model	MI	26	AI	7	40027	TBD	TBD
Firmware_Version_A	AI	27	AI	8	40028	TBD	TBD
Firmware_Version_B	AI	28	AI	9	40029	TBD	TBD
DIP_Switch_Position_1	AI	29	AI	10	40030	TBD	TBD
DIP_Switch_Position_2	AI	30	AI	11	40031	TBD	TBD
DIP_Switch_Position_3	AI	31	AI	12	40032	TBD	TBD

DIP_Switch_Position_4	AI	32	AI	13	40033	TBD	TBD
DIP_Switch_Position_5	AI	33	AI	14	40034	TBD	TBD
DIP_Switch_Position_6	AI	34	AI	15	40035	TBD	TBD
DIP_Switch_Position_7	AI	35	AI	16	40036	TBD	TBD
DIP_Switch_Position_8	AI	36	AI	17	40037	TBD	TBD
Balance_Point_Compressor_State	MI	37	AI	18	40038	TBD	TBD
Balance_Point_Aux_Heat_State	MI	38	AI	19	40039	TBD	TBD
Year	AV	39	AO	17	40040	TBD	TBD
Month	AV	40	AO	18	40041	TBD	TBD
Day	AV	41	AO	19	40042	TBD	TBD
Vacation_Status	BV	42	DO	2	40043	TBD	TBD
Passive_Vacation_Type	MV	43	AO	20	40044	TBD	TBD
Passive_Start_Vacation_Year	AV	44	AO	21	40045	TBD	TBD
Passive_Start_Vacation_Month	AV	45	AO	22	40046	TBD	TBD
Passive_Start_Vacation_Day	AV	46	AO	23	40047	TBD	TBD
Passive_Start_Vacation_Hours	AV	47	AO	24	40048	TBD	TBD
Passive_Start_Vacation_Mins	AV	48	AO	25	40049	TBD	TBD
Passive_End_Vacation_Year	AV	49	AO	26	40050	TBD	TBD
Passive_End_Vacation_Month	AV	50	AO	27	40051	TBD	TBD
Passive_End_Vacation_Day	AV	51	AO	28	40052	TBD	TBD
Passive_End_Vacation_Hours	AV	52	AO	29	40053	TBD	TBD
Passive_End_Vacation_Mins	AV	53	AO	30	40054	TBD	TBD
Start_Vacation_Year	AI	54	AI	20	40055	TBD	TBD
Start_Vacation_Month	AI	55	AI	21	40056	TBD	TBD
Start_Vacation_Day	AI	56	AI	22	40057	TBD	TBD
Start_Vacation_Hours	AI	57	AI	23	40058	TBD	TBD
Start_Vacation_Mins	AI	58	AI	24	40059	TBD	TBD
End_Vacation_Year	AI	59	AI	25	40060	TBD	TBD
End_Vacation_Month	AI	60	AI	26	40061	TBD	TBD
End_Vacation_Day	AI	61	AI	27	40062	TBD	TBD
End_Vacation_Hours	AI	62	AI	28	40063	TBD	TBD
End_Vacation_Mins	AI	63	AI	29	40064	TBD	TBD
Start_Vacation_Mode	MV	64	AO	31	40065	TBD	TBD
Start_Vacation_Fan	MV	65	AO	32	40066	TBD	TBD
Start_Vacation_Cool_Setpoint	AV	66	AO	33	40067	TBD	TBD
Start_Vacation_Heat_Setpoint	AV	67	AO	34	40068	TBD	TBD
Monday_Schedule_1_Mode	MV	68	AO	35	40069	TBD	TBD
Monday_Schedule_1_Fan	MV	69	AO	36	40070	TBD	TBD

Monday_Schedule_1_Occupation	BV	70	DO	3	40071	TBD	TBD
Monday_Schedule_1_Active	BV	71	DO	4	40072	TBD	TBD
Monday_Schedule_1_Hours	AV	72	AO	37	40073	TBD	TBD
Monday_Schedule_1_Mins	AV	73	AO	38	40074	TBD	TBD
Monday_Schedule_1_Cool_Setpoint	AV	74	AO	39	40075	TBD	TBD
Monday_Schedule_1_Heat_Setpoint	AV	75	AO	40	40076	TBD	TBD
Monday_Schedule_2_Mode	MV	76	AO	41	40077	TBD	TBD
Monday_Schedule_2_Fan	MV	77	AO	42	40078	TBD	TBD
Monday_Schedule_2_Occupation	BV	78	DO	5	40079	TBD	TBD
Monday_Schedule_2_Active	BV	79	DO	6	40080	TBD	TBD
Monday_Schedule_2_Hours	AV	80	AO	43	40081	TBD	TBD
Monday_Schedule_2_Mins	AV	81	AO	44	40082	TBD	TBD
Monday_Schedule_2_Cool_Setpoint	AV	82	AO	45	40083	TBD	TBD
Monday_Schedule_2_Heat_Setpoint	AV	83	AO	46	40084	TBD	TBD
Monday_Schedule_3_Mode	MV	84	AO	47	40085	TBD	TBD
Monday_Schedule_3_Fan	MV	85	AO	48	40086	TBD	TBD
Monday_Schedule_3_Occupation	BV	86	DO	7	40087	TBD	TBD
Monday_Schedule_3_Active	BV	87	DO	8	40088	TBD	TBD
Monday_Schedule_3_Hours	AV	88	AO	49	40089	TBD	TBD
Monday_Schedule_3_Mins	AV	89	AO	50	40090	TBD	TBD
Monday_Schedule_3_Cool_Setpoint	AV	90	AO	51	40091	TBD	TBD
Monday_Schedule_3_Heat_Setpoint	AV	91	AO	52	40092	TBD	TBD
Monday_Schedule_4_Mode	MV	92	AO	53	40093	TBD	TBD
Monday_Schedule_4_Fan	MV	93	AO	54	40094	TBD	TBD
Monday_Schedule_4_Occupation	BV	94	DO	9	40095	TBD	TBD
Monday_Schedule_4_Active	BV	95	DO	10	40096	TBD	TBD
Monday_Schedule_4_Hours	AV	96	AO	55	40097	TBD	TBD
Monday_Schedule_4_Mins	AV	97	AO	56	40098	TBD	TBD
Monday_Schedule_4_Cool_Setpoint	AV	98	AO	57	40099	TBD	TBD
Monday_Schedule_4_Heat_Setpoint	AV	99	AO	58	40100	TBD	TBD
Tuesday_Schedule_1_Mode	MV	100	AO	59	40101	TBD	TBD
Tuesday_Schedule_1_Fan	MV	101	AO	60	40102	TBD	TBD
Tuesday_Schedule_1_Occupation	BV	102	DO	11	40103	TBD	TBD
Tuesday_Schedule_1_Active	BV	103	DO	12	40104	TBD	TBD
Tuesday_Schedule_1_Hours	AV	104	AO	61	40105	TBD	TBD
Tuesday_Schedule_1_Mins	AV	105	AO	62	40106	TBD	TBD
Tuesday_Schedule_1_Cool_Setpoint	AV	106	AO	63	40107	TBD	TBD
Tuesday_Schedule_1_Heat_Setpoint	AV	107	AO	64	40108	TBD	TBD

Tuesday_Schedule_2_Mode	MV	108	AO	65	40109	TBD	TBD
Tuesday_Schedule_2_Fan	MV	109	AO	66	40110	TBD	TBD
Tuesday_Schedule_2_Occupation	BV	110	DO	13	40111	TBD	TBD
Tuesday_Schedule_2_Active	BV	111	DO	14	40112	TBD	TBD
Tuesday_Schedule_2_Hours	AV	112	AO	67	40113	TBD	TBD
Tuesday_Schedule_2_Mins	AV	113	AO	68	40114	TBD	TBD
Tuesday_Schedule_2_Cool_Setpoint	AV	114	AO	69	40115	TBD	TBD
Tuesday_Schedule_2_Heat_Setpoint	AV	115	AO	70	40116	TBD	TBD
Tuesday_Schedule_3_Mode	MV	116	AO	71	40117	TBD	TBD
Tuesday_Schedule_3_Fan	MV	117	AO	72	40118	TBD	TBD
Tuesday_Schedule_3_Occupation	BV	118	DO	15	40119	TBD	TBD
Tuesday_Schedule_3_Active	BV	119	DO	16	40120	TBD	TBD
Tuesday_Schedule_3_Hours	AV	120	AO	73	40121	TBD	TBD
Tuesday_Schedule_3_Mins	AV	121	AO	74	40122	TBD	TBD
Tuesday_Schedule_3_Cool_Setpoint	AV	122	AO	75	40123	TBD	TBD
Tuesday_Schedule_3_Heat_Setpoint	AV	123	AO	76	40124	TBD	TBD
Tuesday_Schedule_4_Mode	MV	124	AO	77	40125	TBD	TBD
Tuesday_Schedule_4_Fan	MV	125	AO	78	40126	TBD	TBD
Tuesday_Schedule_4_Occupation	BV	126	DO	17	40127	TBD	TBD
Tuesday_Schedule_4_Active	BV	127	DO	18	40128	TBD	TBD
Tuesday_Schedule_4_Hours	AV	128	AO	79	40129	TBD	TBD
Tuesday_Schedule_4_Mins	AV	129	AO	80	40130	TBD	TBD
Tuesday_Schedule_4_Cool_Setpoint	AV	130	AO	81	40131	TBD	TBD
Tuesday_Schedule_4_Heat_Setpoint	AV	131	AO	82	40132	TBD	TBD
Wednesday_Schedule_1_Mode	MV	132	AO	83	40133	TBD	TBD
Wednesday_Schedule_1_Fan	MV	133	AO	84	40134	TBD	TBD
Wednesday_Schedule_1_Occupation	BV	134	DO	19	40135	TBD	TBD
Wednesday_Schedule_1_Active	BV	135	DO	20	40136	TBD	TBD
Wednesday_Schedule_1_Hours	AV	136	AO	85	40137	TBD	TBD
Wednesday_Schedule_1_Mins	AV	137	AO	86	40138	TBD	TBD
Wednesday_Schedule_1_Cool_Setpoint	AV	138	AO	87	40139	TBD	TBD
Wednesday_Schedule_1_Heat_Setpoint	AV	139	AO	88	40140	TBD	TBD
Wednesday_Schedule_2_Mode	MV	140	AO	89	40141	TBD	TBD
Wednesday_Schedule_2_Fan	MV	141	AO	90	40142	TBD	TBD
Wednesday_Schedule_2_Occupation	BV	142	DO	21	40143	TBD	TBD
Wednesday_Schedule_2_Active	BV	143	DO	22	40144	TBD	TBD
Wednesday_Schedule_2_Hours	AV	144	AO	91	40145	TBD	TBD
Wednesday_Schedule_2_Mins	AV	145	AO	92	40146	TBD	TBD

Wednesday_Schedule_2_Cool_Setpoint	AV	146	AO	93	40147	TBD	TBD
Wednesday_Schedule_2_Heat_Setpoint	AV	147	AO	94	40148	TBD	TBD
Wednesday_Schedule_3_Mode	MV	148	AO	95	40149	TBD	TBD
Wednesday_Schedule_3_Fan	MV	149	AO	96	40150	TBD	TBD
Wednesday_Schedule_3_Occupation	BV	150	DO	23	40151	TBD	TBD
Wednesday_Schedule_3_Active	BV	151	DO	24	40152	TBD	TBD
Wednesday_Schedule_3_Hours	AV	152	AO	97	40153	TBD	TBD
Wednesday_Schedule_3_Mins	AV	153	AO	98	40154	TBD	TBD
Wednesday_Schedule_3_Cool_Setpoint	AV	154	AO	99	40155	TBD	TBD
Wednesday_Schedule_3_Heat_Setpoint	AV	155	AO	100	40156	TBD	TBD
Wednesday_Schedule_4_Mode	MV	156	AO	101	40157	TBD	TBD
Wednesday_Schedule_4_Fan	MV	157	AO	102	40158	TBD	TBD
Wednesday_Schedule_4_Occupation	BV	158	DO	25	40159	TBD	TBD
Wednesday_Schedule_4_Active	BV	159	DO	26	40160	TBD	TBD
Wednesday_Schedule_4_Hours	AV	160	AO	103	40161	TBD	TBD
Wednesday_Schedule_4_Mins	AV	161	AO	104	40162	TBD	TBD
Wednesday_Schedule_4_Cool_Setpoint	AV	162	AO	105	40163	TBD	TBD
Wednesday_Schedule_4_Heat_Setpoint	AV	163	AO	106	40164	TBD	TBD
Thursday_Schedule_1_Mode	MV	164	AO	107	40165	TBD	TBD
Thursday_Schedule_1_Fan	MV	165	AO	108	40166	TBD	TBD
Thursday_Schedule_1_Occupation	BV	166	DO	27	40167	TBD	TBD
Thursday_Schedule_1_Active	BV	167	DO	28	40168	TBD	TBD
Thursday_Schedule_1_Hours	AV	168	AO	109	40169	TBD	TBD
Thursday_Schedule_1_Mins	AV	169	AO	110	40170	TBD	TBD
Thursday_Schedule_1_Cool_Setpoint	AV	170	AO	111	40171	TBD	TBD
Thursday_Schedule_1_Heat_Setpoint	AV	171	AO	112	40172	TBD	TBD
Thursday_Schedule_2_Mode	MV	172	AO	113	40173	TBD	TBD
Thursday_Schedule_2_Fan	MV	173	AO	114	40174	TBD	TBD
Thursday_Schedule_2_Occupation	BV	174	DO	29	40175	TBD	TBD
Thursday_Schedule_2_Active	BV	175	DO	30	40176	TBD	TBD
Thursday_Schedule_2_Hours	AV	176	AO	115	40177	TBD	TBD
Thursday_Schedule_2_Mins	AV	177	AO	116	40178	TBD	TBD
Thursday_Schedule_2_Cool_Setpoint	AV	178	AO	117	40179	TBD	TBD
Thursday_Schedule_2_Heat_Setpoint	AV	179	AO	118	40180	TBD	TBD
Thursday_Schedule_3_Mode	MV	180	AO	119	40181	TBD	TBD
Thursday_Schedule_3_Fan	MV	181	AO	120	40182	TBD	TBD
Thursday_Schedule_3_Occupation	BV	182	DO	31	40183	TBD	TBD
Thursday_Schedule_3_Active	BV	183	DO	32	40184	TBD	TBD

Thursday_Schedule_3_Hours	AV	184	AO	121	40185	TBD	TBD
Thursday_Schedule_3_Mins	AV	185	AO	122	40186	TBD	TBD
Thursday_Schedule_3_Cool_Setpoint	AV	186	AO	123	40187	TBD	TBD
Thursday_Schedule_3_Heat_Setpoint	AV	187	AO	124	40188	TBD	TBD
Thursday_Schedule_4_Mode	MV	188	AO	125	40189	TBD	TBD
Thursday_Schedule_4_Fan	MV	189	AO	126	40190	TBD	TBD
Thursday_Schedule_4_Occupation	BV	190	DO	33	40191	TBD	TBD
Thursday_Schedule_4_Active	BV	191	DO	34	40192	TBD	TBD
Thursday_Schedule_4_Hours	AV	192	AO	127	40193	TBD	TBD
Thursday_Schedule_4_Mins	AV	193	AO	128	40194	TBD	TBD
Thursday_Schedule_4_Cool_Setpoint	AV	194	AO	129	40195	TBD	TBD
Thursday_Schedule_4_Heat_Setpoint	AV	195	AO	130	40196	TBD	TBD
Friday_Schedule_1_Mode	MV	196	AO	131	40197	TBD	TBD
Friday_Schedule_1_Fan	MV	197	AO	132	40198	TBD	TBD
Friday_Schedule_1_Occupation	BV	198	DO	35	40199	TBD	TBD
Friday_Schedule_1_Active	BV	199	DO	36	40200	TBD	TBD
Friday_Schedule_1_Hours	AV	200	AO	133	40201	TBD	TBD
Friday_Schedule_1_Mins	AV	201	AO	134	40202	TBD	TBD
Friday_Schedule_1_Cool_Setpoint	AV	202	AO	135	40203	TBD	TBD
Friday_Schedule_1_Heat_Setpoint	AV	203	AO	136	40204	TBD	TBD
Friday_Schedule_2_Mode	MV	204	AO	137	40205	TBD	TBD
Friday_Schedule_2_Fan	MV	205	AO	138	40206	TBD	TBD
Friday_Schedule_2_Occupation	BV	206	DO	37	40207	TBD	TBD
Friday_Schedule_2_Active	BV	207	DO	38	40208	TBD	TBD
Friday_Schedule_2_Hours	AV	208	AO	139	40209	TBD	TBD
Friday_Schedule_2_Mins	AV	209	AO	140	40210	TBD	TBD
Friday_Schedule_2_Cool_Setpoint	AV	210	AO	141	40211	TBD	TBD
Friday_Schedule_2_Heat_Setpoint	AV	211	AO	142	40212	TBD	TBD
Friday_Schedule_3_Mode	MV	212	AO	143	40213	TBD	TBD
Friday_Schedule_3_Fan	MV	213	AO	144	40214	TBD	TBD
Friday_Schedule_3_Occupation	BV	214	DO	39	40215	TBD	TBD
Friday_Schedule_3_Active	BV	215	DO	40	40216	TBD	TBD
Friday_Schedule_3_Hours	AV	216	AO	145	40217	TBD	TBD
Friday_Schedule_3_Mins	AV	217	AO	146	40218	TBD	TBD
Friday_Schedule_3_Cool_Setpoint	AV	218	AO	147	40219	TBD	TBD
Friday_Schedule_3_Heat_Setpoint	AV	219	AO	148	40220	TBD	TBD
Friday_Schedule_4_Mode	MV	220	AO	149	40221	TBD	TBD
Friday_Schedule_4_Fan	MV	221	AO	150	40222	TBD	TBD

Friday_Schedule_4_Occupation	BV	222	DO	41	40223	TBD	TBD
Friday_Schedule_4_Active	BV	223	DO	42	40224	TBD	TBD
Friday_Schedule_4_Hours	AV	224	AO	151	40225	TBD	TBD
Friday_Schedule_4_Mins	AV	225	AO	152	40226	TBD	TBD
Friday_Schedule_4_Cool_Setpoint	AV	226	AO	153	40227	TBD	TBD
Friday_Schedule_4_Heat_Setpoint	AV	227	AO	154	40228	TBD	TBD
Saturday_Schedule_1_Mode	MV	228	AO	155	40229	TBD	TBD
Saturday_Schedule_1_Fan	MV	229	AO	156	40230	TBD	TBD
Saturday_Schedule_1_Occupation	BV	230	DO	43	40231	TBD	TBD
Saturday_Schedule_1_Active	BV	231	DO	44	40232	TBD	TBD
Saturday_Schedule_1_Hours	AV	232	AO	157	40233	TBD	TBD
Saturday_Schedule_1_Mins	AV	233	AO	158	40234	TBD	TBD
Saturday_Schedule_1_Cool_Setpoint	AV	234	AO	159	40235	TBD	TBD
Saturday_Schedule_1_Heat_Setpoint	AV	235	AO	160	40236	TBD	TBD
Saturday_Schedule_2_Mode	MV	236	AO	161	40237	TBD	TBD
Saturday_Schedule_2_Fan	MV	237	AO	162	40238	TBD	TBD
Saturday_Schedule_2_Occupation	BV	238	DO	45	40239	TBD	TBD
Saturday_Schedule_2_Active	BV	239	DO	46	40240	TBD	TBD
Saturday_Schedule_2_Hours	AV	240	AO	163	40241	TBD	TBD
Saturday_Schedule_2_Mins	AV	241	AO	164	40242	TBD	TBD
Saturday_Schedule_2_Cool_Setpoint	AV	242	AO	165	40243	TBD	TBD
Saturday_Schedule_2_Heat_Setpoint	AV	243	AO	166	40244	TBD	TBD
Saturday_Schedule_3_Mode	MV	244	AO	167	40245	TBD	TBD
Saturday_Schedule_3_Fan	MV	245	AO	168	40246	TBD	TBD
Saturday_Schedule_3_Occupation	BV	246	DO	47	40247	TBD	TBD
Saturday_Schedule_3_Active	BV	247	DO	48	40248	TBD	TBD
Saturday_Schedule_3_Hours	AV	248	AO	169	40249	TBD	TBD
Saturday_Schedule_3_Mins	AV	249	AO	170	40250	TBD	TBD
Saturday_Schedule_3_Cool_Setpoint	AV	250	AO	171	40251	TBD	TBD
Saturday_Schedule_3_Heat_Setpoint	AV	251	AO	172	40252	TBD	TBD
Saturday_Schedule_4_Mode	MV	252	AO	173	40253	TBD	TBD
Saturday_Schedule_4_Fan	MV	253	AO	174	40254	TBD	TBD
Saturday_Schedule_4_Occupation	BV	254	DO	49	40255	TBD	TBD
Saturday_Schedule_4_Active	BV	255	DO	50	40256	TBD	TBD
Saturday_Schedule_4_Hours	AV	256	AO	175	40257	TBD	TBD
Saturday_Schedule_4_Mins	AV	257	AO	176	40258	TBD	TBD
Saturday_Schedule_4_Cool_Setpoint	AV	258	AO	177	40259	TBD	TBD
Saturday_Schedule_4_Heat_Setpoint	AV	259	AO	178	40260	TBD	TBD

Sunday_Schedule_1_Mode	MV	260	AO	179	40261	TBD	TBD
Sunday_Schedule_1_Fan	MV	261	AO	180	40262	TBD	TBD
Sunday_Schedule_1_Occupation	BV	262	DO	51	40263	TBD	TBD
Sunday_Schedule_1_Active	BV	263	DO	52	40264	TBD	TBD
Sunday_Schedule_1_Hours	AV	264	AO	181	40265	TBD	TBD
Sunday_Schedule_1_Mins	AV	265	AO	182	40266	TBD	TBD
Sunday_Schedule_1_Cool_Setpoint	AV	266	AO	183	40267	TBD	TBD
Sunday_Schedule_1_Heat_Setpoint	AV	267	AO	184	40268	TBD	TBD
Sunday_Schedule_2_Mode	MV	268	AO	185	40269	TBD	TBD
Sunday_Schedule_2_Fan	MV	269	AO	186	40270	TBD	TBD
Sunday_Schedule_2_Occupation	BV	270	DO	53	40271	TBD	TBD
Sunday_Schedule_2_Active	BV	271	DO	54	40272	TBD	TBD
Sunday_Schedule_2_Hours	AV	272	AO	187	40273	TBD	TBD
Sunday_Schedule_2_Mins	AV	273	AO	188	40274	TBD	TBD
Sunday_Schedule_2_Cool_Setpoint	AV	274	AO	189	40275	TBD	TBD
Sunday_Schedule_2_Heat_Setpoint	AV	275	AO	190	40276	TBD	TBD
Sunday_Schedule_3_Mode	MV	276	AO	191	40277	TBD	TBD
Sunday_Schedule_3_Fan	MV	277	AO	192	40278	TBD	TBD
Sunday_Schedule_3_Occupation	BV	278	DO	55	40279	TBD	TBD
Sunday_Schedule_3_Active	BV	279	DO	56	40280	TBD	TBD
Sunday_Schedule_3_Hours	AV	280	AO	193	40281	TBD	TBD
Sunday_Schedule_3_Mins	AV	281	AO	194	40282	TBD	TBD
Sunday_Schedule_3_Cool_Setpoint	AV	282	AO	195	40283	TBD	TBD
Sunday_Schedule_3_Heat_Setpoint	AV	283	AO	196	40284	TBD	TBD
Sunday_Schedule_4_Mode	MV	284	AO	197	40285	TBD	TBD
Sunday_Schedule_4_Fan	MV	285	AO	198	40286	TBD	TBD
Sunday_Schedule_4_Occupation	BV	286	DO	57	40287	TBD	TBD
Sunday_Schedule_4_Active	BV	287	DO	58	40288	TBD	TBD
Sunday_Schedule_4_Hours	AV	288	AO	199	40289	TBD	TBD
Sunday_Schedule_4_Mins	AV	289	AO	200	40290	TBD	TBD
Sunday_Schedule_4_Cool_Setpoint	AV	290	AO	201	40291	TBD	TBD
Sunday_Schedule_4_Heat_Setpoint	AV	291	AO	202	40292	TBD	TBD

Appendix B.2. RP32H (IP-WIFI) Mappings to BACnet MS/TP, BACnet/IP, Metasys N2 and LonWorks

Fan_Recirc_Active	BI	0	DI	1	40001	TBD	TBD
Fan_Recirc_Timer	AV	1	AO	1	40002	TBD	TBD

Override_Cool_Setpoint	AV	2	AO	2	40003	TBD	TBD
Override_Heat_Setpoint	AV	3	AO	3	40004	TBD	TBD
Balance_Point_Low	AV	4	AO	4	40005	TBD	TBD
Balance_Point_High	AV	5	AO	5	40006	TBD	TBD
Cool_High_Setpoint	AV	6	AO	6	40007	TBD	TBD
Cool_Low_Setpoint	AV	7	AO	7	40008	TBD	TBD
Heat_High_Setpoint	AV	8	AO	8	40009	TBD	TBD
Heat_Low_Setpoint	AV	9	AO	9	40010	TBD	TBD
Relay_Function	MV	10	AO	10	40011	TBD	TBD
Relay_State	BV	11	DO	1	40012	TBD	TBD
Day_Of_Week	MI	12	AI	1	40013	TBD	TBD
Daylight_Savings_Time	BV	13	DO	2	40014	TBD	TBD
Time_Zone	MV	14	AO	11	40015	TBD	TBD
Indoor_Temp	AI	15	AI	2	40016	TBD	TBD
Outdoor_Temp	AI	16	AI	3	40017	TBD	TBD
Outdoor_Temp_Valid	BI	17	DI	2	40018	TBD	TBD
Mode	MV	18	AO	12	40019	TBD	TBD
Fan	MV	19	AO	13	40020	TBD	TBD
Recovery_Status	BI	20	DI	3	40021	TBD	TBD
Cool_Setpoint	AV	21	AO	14	40022	TBD	TBD
Heat_Setpoint	AV	22	AO	15	40023	TBD	TBD
Heat_Cool_Status	MI	23	AI	4	40024	TBD	TBD
Stage	AI	24	AI	5	40025	TBD	TBD
Override_Status	BI	25	AI	6	40026	TBD	TBD
Override_Timer_Rem_Hours	AV	26	AO	16	40027	TBD	TBD
Override_Timer_Rem_Mins	AV	27	AO	17	40028	TBD	TBD
Thermostat_Model	MI	28	AI	7	40029	TBD	TBD
Firmware_Version_A	AI	29	AI	8	40030	TBD	TBD
Firmware_Version_B	AI	30	AI	9	40031	TBD	TBD
DIP_Switch_Position_1	AI	31	AI	10	40032	TBD	TBD
DIP_Switch_Position_2	AI	32	AI	11	40033	TBD	TBD
DIP_Switch_Position_3	AI	33	AI	12	40034	TBD	TBD
DIP_Switch_Position_4	AI	34	AI	13	40035	TBD	TBD
DIP_Switch_Position_5	AI	35	AI	14	40036	TBD	TBD
DIP_Switch_Position_6	AI	36	AI	15	40037	TBD	TBD
DIP_Switch_Position_7	AI	37	AI	16	40038	TBD	TBD
DIP_Switch_Position_8	AI	38	AI	17	40039	TBD	TBD
Balance_Point_Compressor_State	MI	39	AI	18	40040	TBD	TBD

Balance_Point_Aux_Heat_State	MI	40	AI	19	40041	TBD	TBD
Damper_Time	AV	41	AO	18	40042	TBD	TBD
Damper_Max_Temp	AV	42	AO	19	40043	TBD	TBD
Damper_Min_Temp	AV	43	AO	20	40044	TBD	TBD
Damper_Max_Humidity	AV	44	AO	21	40045	TBD	TBD
Damper_Min_Humidity	AV	45	AO	22	40046	TBD	TBD
Dehumidify_Type	MV	46	AO	23	40047	TBD	TBD
Dehumidify_Above_Setpoint	AV	47	AO	24	40048	TBD	TBD
Dehumidify_Variance	AV	48	AO	25	40049	TBD	TBD
Humidify_Type	MV	49	AO	26	40050	TBD	TBD
Humidify_Below_Setpoint	AV	50	AO	27	40051	TBD	TBD
Humidify_Variance	AV	51	AO	28	40052	TBD	TBD
Year	AV	52	AO	29	40053	TBD	TBD
Month	AV	53	AO	30	40054	TBD	TBD
Day	AV	54	AO	31	40055	TBD	TBD
Vacation_Status	BV	55	DO	3	40056	TBD	TBD
Passive_Vacation_Type	MV	56	AO	32	40057	TBD	TBD
Passive_Start_Vacation_Year	AV	57	AO	33	40058	TBD	TBD
Passive_Start_Vacation_Month	AV	58	AO	34	40059	TBD	TBD
Passive_Start_Vacation_Day	AV	59	AO	35	40060	TBD	TBD
Passive_Start_Vacation_Hours	AV	60	AO	36	40061	TBD	TBD
Passive_Start_Vacation_Mins	AV	61	AO	37	40062	TBD	TBD
Passive_End_Vacation_Year	AV	62	AO	38	40063	TBD	TBD
Passive_End_Vacation_Month	AV	63	AO	39	40064	TBD	TBD
Passive_End_Vacation_Day	AV	64	AO	40	40065	TBD	TBD
Passive_End_Vacation_Hours	AV	65	AO	41	40066	TBD	TBD
Passive_End_Vacation_Mins	AV	66	AO	42	40067	TBD	TBD
Start_Vacation_Year	AI	67	AI	20	40068	TBD	TBD
Start_Vacation_Month	AI	68	AI	21	40069	TBD	TBD
Start_Vacation_Day	AI	69	AI	22	40070	TBD	TBD
Start_Vacation_Hours	AI	70	AI	23	40071	TBD	TBD
Start_Vacation_Mins	AI	71	AI	24	40072	TBD	TBD
End_Vacation_Year	AI	72	AI	25	40073	TBD	TBD
End_Vacation_Month	AI	73	AI	26	40074	TBD	TBD
End_Vacation_Day	AI	74	AI	27	40075	TBD	TBD
End_Vacation_Hours	AI	75	AI	28	40076	TBD	TBD
End_Vacation_Mins	AI	76	AI	29	40077	TBD	TBD
Start_Vacation_Mode	MV	77	AO	43	40078	TBD	TBD

Start_Vacation_Fan	MV	78	AO	44	40079	TBD	TBD
Start_Vacation_Cool_Setpoint	AV	79	AO	45	40080	TBD	TBD
Start_Vacation_Heat_Setpoint	AV	80	AO	46	40081	TBD	TBD
Monday_Schedule_1_Mode	MV	81	AO	47	40082	TBD	TBD
Monday_Schedule_1_Fan	MV	82	AO	48	40083	TBD	TBD
Monday_Schedule_1_Occupation	BV	83	DO	4	40084	TBD	TBD
Monday_Schedule_1_Active	BV	84	DO	5	40085	TBD	TBD
Monday_Schedule_1_Hours	AV	85	AO	49	40086	TBD	TBD
Monday_Schedule_1_Mins	AV	86	AO	50	40087	TBD	TBD
Monday_Schedule_1_Cool_Setpoint	AV	87	AO	51	40088	TBD	TBD
Monday_Schedule_1_Heat_Setpoint	AV	88	AO	52	40089	TBD	TBD
Monday_Schedule_2_Mode	MV	89	AO	53	40090	TBD	TBD
Monday_Schedule_2_Fan	MV	90	AO	54	40091	TBD	TBD
Monday_Schedule_2_Occupation	BV	91	DO	6	40092	TBD	TBD
Monday_Schedule_2_Active	BV	92	DO	7	40093	TBD	TBD
Monday_Schedule_2_Hours	AV	93	AO	55	40094	TBD	TBD
Monday_Schedule_2_Mins	AV	94	AO	56	40095	TBD	TBD
Monday_Schedule_2_Cool_Setpoint	AV	95	AO	57	40096	TBD	TBD
Monday_Schedule_2_Heat_Setpoint	AV	96	AO	58	40097	TBD	TBD
Monday_Schedule_3_Mode	MV	97	AO	59	40098	TBD	TBD
Monday_Schedule_3_Fan	MV	98	AO	60	40099	TBD	TBD
Monday_Schedule_3_Occupation	BV	99	DO	8	40100	TBD	TBD
Monday_Schedule_3_Active	BV	100	DO	9	40101	TBD	TBD
Monday_Schedule_3_Hours	AV	101	AO	61	40102	TBD	TBD
Monday_Schedule_3_Mins	AV	102	AO	62	40103	TBD	TBD
Monday_Schedule_3_Cool_Setpoint	AV	103	AO	63	40104	TBD	TBD
Monday_Schedule_3_Heat_Setpoint	AV	104	AO	64	40105	TBD	TBD
Monday_Schedule_4_Mode	MV	105	AO	65	40106	TBD	TBD
Monday_Schedule_4_Fan	MV	106	AO	66	40107	TBD	TBD
Monday_Schedule_4_Occupation	BV	107	DO	10	40108	TBD	TBD
Monday_Schedule_4_Active	BV	108	DO	11	40109	TBD	TBD
Monday_Schedule_4_Hours	AV	109	AO	67	40110	TBD	TBD
Monday_Schedule_4_Mins	AV	110	AO	68	40111	TBD	TBD
Monday_Schedule_4_Cool_Setpoint	AV	111	AO	69	40112	TBD	TBD
Monday_Schedule_4_Heat_Setpoint	AV	112	AO	70	40113	TBD	TBD
Tuesday_Schedule_1_Mode	MV	113	AO	71	40114	TBD	TBD
Tuesday_Schedule_1_Fan	MV	114	AO	72	40115	TBD	TBD
Tuesday_Schedule_1_Occupation	BV	115	DO	12	40116	TBD	TBD

Tuesday_Schedule_1_Active	BV	116	DO	13	40117	TBD	TBD
Tuesday_Schedule_1_Hours	AV	117	AO	73	40118	TBD	TBD
Tuesday_Schedule_1_Mins	AV	118	AO	74	40119	TBD	TBD
Tuesday_Schedule_1_Cool_Setpoint	AV	119	AO	75	40120	TBD	TBD
Tuesday_Schedule_1_Heat_Setpoint	AV	120	AO	76	40121	TBD	TBD
Tuesday_Schedule_2_Mode	MV	121	AO	77	40122	TBD	TBD
Tuesday_Schedule_2_Fan	MV	122	AO	78	40123	TBD	TBD
Tuesday_Schedule_2_Occupation	BV	123	DO	14	40124	TBD	TBD
Tuesday_Schedule_2_Active	BV	124	DO	15	40125	TBD	TBD
Tuesday_Schedule_2_Hours	AV	125	AO	79	40126	TBD	TBD
Tuesday_Schedule_2_Mins	AV	126	AO	80	40127	TBD	TBD
Tuesday_Schedule_2_Cool_Setpoint	AV	127	AO	81	40128	TBD	TBD
Tuesday_Schedule_2_Heat_Setpoint	AV	128	AO	82	40129	TBD	TBD
Tuesday_Schedule_3_Mode	MV	129	AO	83	40130	TBD	TBD
Tuesday_Schedule_3_Fan	MV	130	AO	84	40131	TBD	TBD
Tuesday_Schedule_3_Occupation	BV	131	DO	16	40132	TBD	TBD
Tuesday_Schedule_3_Active	BV	132	DO	17	40133	TBD	TBD
Tuesday_Schedule_3_Hours	AV	133	AO	85	40134	TBD	TBD
Tuesday_Schedule_3_Mins	AV	134	AO	86	40135	TBD	TBD
Tuesday_Schedule_3_Cool_Setpoint	AV	135	AO	87	40136	TBD	TBD
Tuesday_Schedule_3_Heat_Setpoint	AV	136	AO	88	40137	TBD	TBD
Tuesday_Schedule_4_Mode	MV	137	AO	89	40138	TBD	TBD
Tuesday_Schedule_4_Fan	MV	138	AO	90	40139	TBD	TBD
Tuesday_Schedule_4_Occupation	BV	139	DO	18	40140	TBD	TBD
Tuesday_Schedule_4_Active	BV	140	DO	19	40141	TBD	TBD
Tuesday_Schedule_4_Hours	AV	141	AO	91	40142	TBD	TBD
Tuesday_Schedule_4_Mins	AV	142	AO	92	40143	TBD	TBD
Tuesday_Schedule_4_Cool_Setpoint	AV	143	AO	93	40144	TBD	TBD
Tuesday_Schedule_4_Heat_Setpoint	AV	144	AO	94	40145	TBD	TBD
Wednesday_Schedule_1_Mode	MV	145	AO	95	40146	TBD	TBD
Wednesday_Schedule_1_Fan	MV	146	AO	96	40147	TBD	TBD
Wednesday_Schedule_1_Occupation	BV	147	DO	20	40148	TBD	TBD
Wednesday_Schedule_1_Active	BV	148	DO	21	40149	TBD	TBD
Wednesday_Schedule_1_Hours	AV	149	AO	97	40150	TBD	TBD
Wednesday_Schedule_1_Mins	AV	150	AO	98	40151	TBD	TBD
Wednesday_Schedule_1_Cool_Setpoint	AV	151	AO	99	40152	TBD	TBD
Wednesday_Schedule_1_Heat_Setpoint	AV	152	AO	100	40153	TBD	TBD
Wednesday_Schedule_2_Mode	MV	153	AO	101	40154	TBD	TBD

Wednesday_Schedule_2_Fan	MV	154	AO	102	40155	TBD	TBD
Wednesday_Schedule_2_Occupation	BV	155	DO	22	40156	TBD	TBD
Wednesday_Schedule_2_Active	BV	156	DO	23	40157	TBD	TBD
Wednesday_Schedule_2_Hours	AV	157	AO	103	40158	TBD	TBD
Wednesday_Schedule_2_Mins	AV	158	AO	104	40159	TBD	TBD
Wednesday_Schedule_2_Cool_Setpoint	AV	159	AO	105	40160	TBD	TBD
Wednesday_Schedule_2_Heat_Setpoint	AV	160	AO	106	40161	TBD	TBD
Wednesday_Schedule_3_Mode	MV	161	AO	107	40162	TBD	TBD
Wednesday_Schedule_3_Fan	MV	162	AO	108	40163	TBD	TBD
Wednesday_Schedule_3_Occupation	BV	163	DO	24	40164	TBD	TBD
Wednesday_Schedule_3_Active	BV	164	DO	25	40165	TBD	TBD
Wednesday_Schedule_3_Hours	AV	165	AO	109	40166	TBD	TBD
Wednesday_Schedule_3_Mins	AV	166	AO	110	40167	TBD	TBD
Wednesday_Schedule_3_Cool_Setpoint	AV	167	AO	111	40168	TBD	TBD
Wednesday_Schedule_3_Heat_Setpoint	AV	168	AO	112	40169	TBD	TBD
Wednesday_Schedule_4_Mode	MV	169	AO	113	40170	TBD	TBD
Wednesday_Schedule_4_Fan	MV	170	AO	114	40171	TBD	TBD
Wednesday_Schedule_4_Occupation	BV	171	DO	26	40172	TBD	TBD
Wednesday_Schedule_4_Active	BV	172	DO	27	40173	TBD	TBD
Wednesday_Schedule_4_Hours	AV	173	AO	115	40174	TBD	TBD
Wednesday_Schedule_4_Mins	AV	174	AO	116	40175	TBD	TBD
Wednesday_Schedule_4_Cool_Setpoint	AV	175	AO	117	40176	TBD	TBD
Wednesday_Schedule_4_Heat_Setpoint	AV	176	AO	118	40177	TBD	TBD
Thursday_Schedule_1_Mode	MV	177	AO	119	40178	TBD	TBD
Thursday_Schedule_1_Fan	MV	178	AO	120	40179	TBD	TBD
Thursday_Schedule_1_Occupation	BV	179	DO	28	40180	TBD	TBD
Thursday_Schedule_1_Active	BV	180	DO	29	40181	TBD	TBD
Thursday_Schedule_1_Hours	AV	181	AO	121	40182	TBD	TBD
Thursday_Schedule_1_Mins	AV	182	AO	122	40183	TBD	TBD
Thursday_Schedule_1_Cool_Setpoint	AV	183	AO	123	40184	TBD	TBD
Thursday_Schedule_1_Heat_Setpoint	AV	184	AO	124	40185	TBD	TBD
Thursday_Schedule_2_Mode	MV	185	AO	125	40186	TBD	TBD
Thursday_Schedule_2_Fan	MV	186	AO	126	40187	TBD	TBD
Thursday_Schedule_2_Occupation	BV	187	DO	30	40188	TBD	TBD
Thursday_Schedule_2_Active	BV	188	DO	31	40189	TBD	TBD
Thursday_Schedule_2_Hours	AV	189	AO	127	40190	TBD	TBD
Thursday_Schedule_2_Mins	AV	190	AO	128	40191	TBD	TBD
Thursday_Schedule_2_Cool_Setpoint	AV	191	AO	129	40192	TBD	TBD

Thursday_Schedule_2_Heat_Setpoint	AV	192	AO	130	40193	TBD	TBD
Thursday_Schedule_3_Mode	MV	193	AO	131	40194	TBD	TBD
Thursday_Schedule_3_Fan	MV	194	AO	132	40195	TBD	TBD
Thursday_Schedule_3_Occupation	BV	195	DO	32	40196	TBD	TBD
Thursday_Schedule_3_Active	BV	196	DO	33	40197	TBD	TBD
Thursday_Schedule_3_Hours	AV	197	AO	133	40198	TBD	TBD
Thursday_Schedule_3_Mins	AV	198	AO	134	40199	TBD	TBD
Thursday_Schedule_3_Cool_Setpoint	AV	199	AO	135	40200	TBD	TBD
Thursday_Schedule_3_Heat_Setpoint	AV	200	AO	136	40201	TBD	TBD
Thursday_Schedule_4_Mode	MV	201	AO	137	40202	TBD	TBD
Thursday_Schedule_4_Fan	MV	202	AO	138	40203	TBD	TBD
Thursday_Schedule_4_Occupation	BV	203	DO	34	40204	TBD	TBD
Thursday_Schedule_4_Active	BV	204	DO	35	40205	TBD	TBD
Thursday_Schedule_4_Hours	AV	205	AO	139	40206	TBD	TBD
Thursday_Schedule_4_Mins	AV	206	AO	140	40207	TBD	TBD
Thursday_Schedule_4_Cool_Setpoint	AV	207	AO	141	40208	TBD	TBD
Thursday_Schedule_4_Heat_Setpoint	AV	208	AO	142	40209	TBD	TBD
Friday_Schedule_1_Mode	MV	209	AO	143	40210	TBD	TBD
Friday_Schedule_1_Fan	MV	210	AO	144	40211	TBD	TBD
Friday_Schedule_1_Occupation	BV	211	DO	36	40212	TBD	TBD
Friday_Schedule_1_Active	BV	212	DO	37	40213	TBD	TBD
Friday_Schedule_1_Hours	AV	213	AO	145	40214	TBD	TBD
Friday_Schedule_1_Mins	AV	214	AO	146	40215	TBD	TBD
Friday_Schedule_1_Cool_Setpoint	AV	215	AO	147	40216	TBD	TBD
Friday_Schedule_1_Heat_Setpoint	AV	216	AO	148	40217	TBD	TBD
Friday_Schedule_2_Mode	MV	217	AO	149	40218	TBD	TBD
Friday_Schedule_2_Fan	MV	218	AO	150	40219	TBD	TBD
Friday_Schedule_2_Occupation	BV	219	DO	38	40220	TBD	TBD
Friday_Schedule_2_Active	BV	220	DO	39	40221	TBD	TBD
Friday_Schedule_2_Hours	AV	221	AO	151	40222	TBD	TBD
Friday_Schedule_2_Mins	AV	222	AO	152	40223	TBD	TBD
Friday_Schedule_2_Cool_Setpoint	AV	223	AO	153	40224	TBD	TBD
Friday_Schedule_2_Heat_Setpoint	AV	224	AO	154	40225	TBD	TBD
Friday_Schedule_3_Mode	MV	225	AO	155	40226	TBD	TBD
Friday_Schedule_3_Fan	MV	226	AO	156	40227	TBD	TBD
Friday_Schedule_3_Occupation	BV	227	DO	40	40228	TBD	TBD
Friday_Schedule_3_Active	BV	228	DO	41	40229	TBD	TBD
Friday_Schedule_3_Hours	AV	229	AO	157	40230	TBD	TBD

Friday_Schedule_3_Mins	AV	230	AO	158	40231	TBD	TBD
Friday_Schedule_3_Cool_Setpoint	AV	231	AO	159	40232	TBD	TBD
Friday_Schedule_3_Heat_Setpoint	AV	232	AO	160	40233	TBD	TBD
Friday_Schedule_4_Mode	MV	233	AO	161	40234	TBD	TBD
Friday_Schedule_4_Fan	MV	234	AO	162	40235	TBD	TBD
Friday_Schedule_4_Occupation	BV	235	DO	42	40236	TBD	TBD
Friday_Schedule_4_Active	BV	236	DO	43	40237	TBD	TBD
Friday_Schedule_4_Hours	AV	237	AO	163	40238	TBD	TBD
Friday_Schedule_4_Mins	AV	238	AO	164	40239	TBD	TBD
Friday_Schedule_4_Cool_Setpoint	AV	239	AO	165	40240	TBD	TBD
Friday_Schedule_4_Heat_Setpoint	AV	240	AO	166	40241	TBD	TBD
Saturday_Schedule_1_Mode	MV	241	AO	167	40242	TBD	TBD
Saturday_Schedule_1_Fan	MV	242	AO	168	40243	TBD	TBD
Saturday_Schedule_1_Occupation	BV	243	DO	44	40244	TBD	TBD
Saturday_Schedule_1_Active	BV	244	DO	45	40245	TBD	TBD
Saturday_Schedule_1_Hours	AV	245	AO	169	40246	TBD	TBD
Saturday_Schedule_1_Mins	AV	246	AO	170	40247	TBD	TBD
Saturday_Schedule_1_Cool_Setpoint	AV	247	AO	171	40248	TBD	TBD
Saturday_Schedule_1_Heat_Setpoint	AV	248	AO	172	40249	TBD	TBD
Saturday_Schedule_2_Mode	MV	249	AO	173	40250	TBD	TBD
Saturday_Schedule_2_Fan	MV	250	AO	174	40251	TBD	TBD
Saturday_Schedule_2_Occupation	BV	251	DO	46	40252	TBD	TBD
Saturday_Schedule_2_Active	BV	252	DO	47	40253	TBD	TBD
Saturday_Schedule_2_Hours	AV	253	AO	175	40254	TBD	TBD
Saturday_Schedule_2_Mins	AV	254	AO	176	40255	TBD	TBD
Saturday_Schedule_2_Cool_Setpoint	AV	255	AO	177	40256	TBD	TBD
Saturday_Schedule_2_Heat_Setpoint	AV	256	AO	178	40257	TBD	TBD
Saturday_Schedule_3_Mode	MV	257	AO	179	40258	TBD	TBD
Saturday_Schedule_3_Fan	MV	258	AO	180	40259	TBD	TBD
Saturday_Schedule_3_Occupation	BV	259	DO	48	40260	TBD	TBD
Saturday_Schedule_3_Active	BV	260	DO	49	40261	TBD	TBD
Saturday_Schedule_3_Hours	AV	261	AO	181	40262	TBD	TBD
Saturday_Schedule_3_Mins	AV	262	AO	182	40263	TBD	TBD
Saturday_Schedule_3_Cool_Setpoint	AV	263	AO	183	40264	TBD	TBD
Saturday_Schedule_3_Heat_Setpoint	AV	264	AO	184	40265	TBD	TBD
Saturday_Schedule_4_Mode	MV	265	AO	185	40266	TBD	TBD
Saturday_Schedule_4_Fan	MV	266	AO	186	40267	TBD	TBD
Saturday_Schedule_4_Occupation	BV	267	DO	50	40268	TBD	TBD

Saturday_Schedule_4_Active	BV	268	DO	51	40269	TBD	TBD
Saturday_Schedule_4_Hours	AV	269	AO	187	40270	TBD	TBD
Saturday_Schedule_4_Mins	AV	270	AO	188	40271	TBD	TBD
Saturday_Schedule_4_Cool_Setpoint	AV	271	AO	189	40272	TBD	TBD
Saturday_Schedule_4_Heat_Setpoint	AV	272	AO	190	40273	TBD	TBD
Sunday_Schedule_1_Mode	MV	273	AO	191	40274	TBD	TBD
Sunday_Schedule_1_Fan	MV	274	AO	192	40275	TBD	TBD
Sunday_Schedule_1_Occupation	BV	275	DO	52	40276	TBD	TBD
Sunday_Schedule_1_Active	BV	276	DO	53	40277	TBD	TBD
Sunday_Schedule_1_Hours	AV	277	AO	193	40278	TBD	TBD
Sunday_Schedule_1_Mins	AV	278	AO	194	40279	TBD	TBD
Sunday_Schedule_1_Cool_Setpoint	AV	279	AO	195	40280	TBD	TBD
Sunday_Schedule_1_Heat_Setpoint	AV	280	AO	196	40281	TBD	TBD
Sunday_Schedule_2_Mode	MV	281	AO	197	40282	TBD	TBD
Sunday_Schedule_2_Fan	MV	282	AO	198	40283	TBD	TBD
Sunday_Schedule_2_Occupation	BV	283	DO	54	40284	TBD	TBD
Sunday_Schedule_2_Active	BV	284	DO	55	40285	TBD	TBD
Sunday_Schedule_2_Hours	AV	285	AO	199	40286	TBD	TBD
Sunday_Schedule_2_Mins	AV	286	AO	200	40287	TBD	TBD
Sunday_Schedule_2_Cool_Setpoint	AV	287	AO	201	40288	TBD	TBD
Sunday_Schedule_2_Heat_Setpoint	AV	288	AO	202	40289	TBD	TBD
Sunday_Schedule_3_Mode	MV	289	AO	203	40290	TBD	TBD
Sunday_Schedule_3_Fan	MV	290	AO	204	40291	TBD	TBD
Sunday_Schedule_3_Occupation	BV	291	DO	56	40292	TBD	TBD
Sunday_Schedule_3_Active	BV	292	DO	57	40293	TBD	TBD
Sunday_Schedule_3_Hours	AV	293	AO	205	40294	TBD	TBD
Sunday_Schedule_3_Mins	AV	294	AO	206	40295	TBD	TBD
Sunday_Schedule_3_Cool_Setpoint	AV	295	AO	207	40296	TBD	TBD
Sunday_Schedule_3_Heat_Setpoint	AV	296	AO	208	40297	TBD	TBD
Sunday_Schedule_4_Mode	MV	297	AO	209	40298	TBD	TBD
Sunday_Schedule_4_Fan	MV	298	AO	210	40299	TBD	TBD
Sunday_Schedule_4_Occupation	BV	299	DO	58	40300	TBD	TBD
Sunday_Schedule_4_Active	BV	300	DO	59	40301	TBD	TBD
Sunday_Schedule_4_Hours	AV	301	AO	211	40302	TBD	TBD
Sunday_Schedule_4_Mins	AV	302	AO	212	40303	TBD	TBD
Sunday_Schedule_4_Cool_Setpoint	AV	303	AO	213	40304	TBD	TBD
Sunday_Schedule_4_Heat_Setpoint	AV	304	AO	214	40305	TBD	TBD

Appendix B.3. UP32 (IP-WIFI) Mappings to BACnet MS/TP, BACnet/IP, Metasys N2 and LonWorks

Fan_Recirc_Active	BI	0	DI	1	40001	TBD	TBD
Fan_Recirc_Timer	AV	1	AO	1	40002	TBD	TBD
Override_Cool_Setpoint	AV	2	AO	2	40003	TBD	TBD
Override_Heat_Setpoint	AV	3	AO	3	40004	TBD	TBD
Balance_Point_Low	AV	4	AO	4	40005	TBD	TBD
Balance_Point_High	AV	5	AO	5	40006	TBD	TBD
Cool_High_Setpoint	AV	6	AO	6	40007	TBD	TBD
Cool_Low_Setpoint	AV	7	AO	7	40008	TBD	TBD
Heat_High_Setpoint	AV	8	AO	8	40009	TBD	TBD
Heat_Low_Setpoint	AV	9	AO	9	40010	TBD	TBD
Digital_1	BI	10	DI	2	40011	TBD	TBD
Digital_2	BI	11	DI	3	40012	TBD	TBD
Occupancy_Input	AI	12	AI	1	40013	TBD	TBD
Day_Of_Week	MI	13	AI	2	40014	TBD	TBD
Daylight_Savings_Time	BV	14	DO	1	40015	TBD	TBD
Time_Zone	MV	15	AO	10	40016	TBD	TBD
Indoor_Temp	AI	16	AI	3	40017	TBD	TBD
Outdoor_Temp	AI	17	AI	4	40018	TBD	TBD
Outdoor_Temp_Valid	BI	18	DI	4	40019	TBD	TBD
Mode	MV	19	AO	11	40020	TBD	TBD
Fan	MV	20	AO	12	40021	TBD	TBD
Recovery_Status	BI	21	DI	5	40022	TBD	TBD
Cool_Setpoint	AV	22	AO	13	40023	TBD	TBD
Heat_Setpoint	AV	23	AO	14	40024	TBD	TBD
Heat_Cool_Status	MI	24	AI	5	40025	TBD	TBD
Stage	AI	25	AI	6	40026	TBD	TBD
Override_Status	BI	26	AI	7	40027	TBD	TBD
Override_Timer_Rem_Hours	AV	27	AO	15	40028	TBD	TBD
Override_Timer_Rem_Mins	AV	28	AO	16	40029	TBD	TBD
Thermostat_Model	MI	29	AI	8	40030	TBD	TBD
Firmware_Version_A	AI	30	AI	9	40031	TBD	TBD
Firmware_Version_B	AI	31	AI	10	40032	TBD	TBD
DIP_Switch_Position_1	AI	32	AI	11	40033	TBD	TBD
DIP_Switch_Position_2	AI	33	AI	12	40034	TBD	TBD
DIP_Switch_Position_3	AI	34	AI	13	40035	TBD	TBD
DIP_Switch_Position_4	AI	35	AI	14	40036	TBD	TBD

DIP_Switch_Position_5	AI	36	AI	15	40037	TBD	TBD
DIP_Switch_Position_6	AI	37	AI	16	40038	TBD	TBD
DIP_Switch_Position_7	AI	38	AI	17	40039	TBD	TBD
DIP_Switch_Position_8	AI	39	AI	18	40040	TBD	TBD
Balance_Point_Compressor_State	MI	40	AI	19	40041	TBD	TBD
Balance_Point_Aux_Heat_State	MI	41	AI	20	40042	TBD	TBD
Remote_Indoor_Sensor	AI	42	AI	21	40043	TBD	TBD
Remote_Indoor_Validity	BI	43	DI	6	40044	TBD	TBD
Remote_Outdoor_Sensor	AI	44	AI	22	40045	TBD	TBD
Remote_Outdoor_Validity	BI	45	DI	7	40046	TBD	TBD
Remote_Humidity_Sensor	AI	46	AI	23	40047	TBD	TBD
Remote_Humidity_Validity	BI	47	DI	8	40048	TBD	TBD
Remote_Aux_1_Sensor	AI	48	AI	24	40049	TBD	TBD
Remote_Aux_1_Validity	BI	49	DI	9	40050	TBD	TBD
Remote_Aux_2_Sensor	AI	50	AI	25	40051	TBD	TBD
Remote_Aux_2_Validity	BI	51	DI	10	40052	TBD	TBD
Remote_Aux_3_Sensor	AI	52	AI	26	40053	TBD	TBD
Remote_Aux_3_Validity	BI	53	DI	11	40054	TBD	TBD
Year	AV	54	AO	17	40055	TBD	TBD
Month	AV	55	AO	18	40056	TBD	TBD
Day	AV	56	AO	19	40057	TBD	TBD
Vacation_Status	BV	57	DO	2	40058	TBD	TBD
Passive_Vacation_Type	MV	58	AO	20	40059	TBD	TBD
Passive_Start_Vacation_Year	AV	59	AO	21	40060	TBD	TBD
Passive_Start_Vacation_Month	AV	60	AO	22	40061	TBD	TBD
Passive_Start_Vacation_Day	AV	61	AO	23	40062	TBD	TBD
Passive_Start_Vacation_Hours	AV	62	AO	24	40063	TBD	TBD
Passive_Start_Vacation_Mins	AV	63	AO	25	40064	TBD	TBD
Passive_End_Vacation_Year	AV	64	AO	26	40065	TBD	TBD
Passive_End_Vacation_Month	AV	65	AO	27	40066	TBD	TBD
Passive_End_Vacation_Day	AV	66	AO	28	40067	TBD	TBD
Passive_End_Vacation_Hours	AV	67	AO	29	40068	TBD	TBD
Passive_End_Vacation_Mins	AV	68	AO	30	40069	TBD	TBD
Start_Vacation_Year	AI	69	AI	27	40070	TBD	TBD
Start_Vacation_Month	AI	70	AI	28	40071	TBD	TBD
Start_Vacation_Day	AI	71	AI	29	40072	TBD	TBD
Start_Vacation_Hours	AI	72	AI	30	40073	TBD	TBD
Start_Vacation_Mins	AI	73	AI	31	40074	TBD	TBD

End_Vacation_Year	AI	74	AI	32	40075	TBD	TBD
End_Vacation_Month	AI	75	AI	33	40076	TBD	TBD
End_Vacation_Day	AI	76	AI	34	40077	TBD	TBD
End_Vacation_Hours	AI	77	AI	35	40078	TBD	TBD
End_Vacation_Mins	AI	78	AI	36	40079	TBD	TBD
Start_Vacation_Mode	MV	79	AO	31	40080	TBD	TBD
Start_Vacation_Fan	MV	80	AO	32	40081	TBD	TBD
Start_Vacation_Cool_Setpoint	AV	81	AO	33	40082	TBD	TBD
Start_Vacation_Heat_Setpoint	AV	82	AO	34	40083	TBD	TBD
Monday_Schedule_1_Mode	MV	83	AO	35	40084	TBD	TBD
Monday_Schedule_1_Fan	MV	84	AO	36	40085	TBD	TBD
Monday_Schedule_1_Occupation	BV	85	DO	3	40086	TBD	TBD
Monday_Schedule_1_Active	BV	86	DO	4	40087	TBD	TBD
Monday_Schedule_1_Hours	AV	87	AO	37	40088	TBD	TBD
Monday_Schedule_1_Mins	AV	88	AO	38	40089	TBD	TBD
Monday_Schedule_1_Cool_Setpoint	AV	89	AO	39	40090	TBD	TBD
Monday_Schedule_1_Heat_Setpoint	AV	90	AO	40	40091	TBD	TBD
Monday_Schedule_2_Mode	MV	91	AO	41	40092	TBD	TBD
Monday_Schedule_2_Fan	MV	92	AO	42	40093	TBD	TBD
Monday_Schedule_2_Occupation	BV	93	DO	5	40094	TBD	TBD
Monday_Schedule_2_Active	BV	94	DO	6	40095	TBD	TBD
Monday_Schedule_2_Hours	AV	95	AO	43	40096	TBD	TBD
Monday_Schedule_2_Mins	AV	96	AO	44	40097	TBD	TBD
Monday_Schedule_2_Cool_Setpoint	AV	97	AO	45	40098	TBD	TBD
Monday_Schedule_2_Heat_Setpoint	AV	98	AO	46	40099	TBD	TBD
Monday_Schedule_3_Mode	MV	99	AO	47	40100	TBD	TBD
Monday_Schedule_3_Fan	MV	100	AO	48	40101	TBD	TBD
Monday_Schedule_3_Occupation	BV	101	DO	7	40102	TBD	TBD
Monday_Schedule_3_Active	BV	102	DO	8	40103	TBD	TBD
Monday_Schedule_3_Hours	AV	103	AO	49	40104	TBD	TBD
Monday_Schedule_3_Mins	AV	104	AO	50	40105	TBD	TBD
Monday_Schedule_3_Cool_Setpoint	AV	105	AO	51	40106	TBD	TBD
Monday_Schedule_3_Heat_Setpoint	AV	106	AO	52	40107	TBD	TBD
Monday_Schedule_4_Mode	MV	107	AO	53	40108	TBD	TBD
Monday_Schedule_4_Fan	MV	108	AO	54	40109	TBD	TBD
Monday_Schedule_4_Occupation	BV	109	DO	9	40110	TBD	TBD
Monday_Schedule_4_Active	BV	110	DO	10	40111	TBD	TBD
Monday_Schedule_4_Hours	AV	111	AO	55	40112	TBD	TBD

Monday_Schedule_4_Mins	AV	112	AO	56	40113	TBD	TBD
Monday_Schedule_4_Cool_Setpoint	AV	113	AO	57	40114	TBD	TBD
Monday_Schedule_4_Heat_Setpoint	AV	114	AO	58	40115	TBD	TBD
Tuesday_Schedule_1_Mode	MV	115	AO	59	40116	TBD	TBD
Tuesday_Schedule_1_Fan	MV	116	AO	60	40117	TBD	TBD
Tuesday_Schedule_1_Occupation	BV	117	DO	11	40118	TBD	TBD
Tuesday_Schedule_1_Active	BV	118	DO	12	40119	TBD	TBD
Tuesday_Schedule_1_Hours	AV	119	AO	61	40120	TBD	TBD
Tuesday_Schedule_1_Mins	AV	120	AO	62	40121	TBD	TBD
Tuesday_Schedule_1_Cool_Setpoint	AV	121	AO	63	40122	TBD	TBD
Tuesday_Schedule_1_Heat_Setpoint	AV	122	AO	64	40123	TBD	TBD
Tuesday_Schedule_2_Mode	MV	123	AO	65	40124	TBD	TBD
Tuesday_Schedule_2_Fan	MV	124	AO	66	40125	TBD	TBD
Tuesday_Schedule_2_Occupation	BV	125	DO	13	40126	TBD	TBD
Tuesday_Schedule_2_Active	BV	126	DO	14	40127	TBD	TBD
Tuesday_Schedule_2_Hours	AV	127	AO	67	40128	TBD	TBD
Tuesday_Schedule_2_Mins	AV	128	AO	68	40129	TBD	TBD
Tuesday_Schedule_2_Cool_Setpoint	AV	129	AO	69	40130	TBD	TBD
Tuesday_Schedule_2_Heat_Setpoint	AV	130	AO	70	40131	TBD	TBD
Tuesday_Schedule_3_Mode	MV	131	AO	71	40132	TBD	TBD
Tuesday_Schedule_3_Fan	MV	132	AO	72	40133	TBD	TBD
Tuesday_Schedule_3_Occupation	BV	133	DO	15	40134	TBD	TBD
Tuesday_Schedule_3_Active	BV	134	DO	16	40135	TBD	TBD
Tuesday_Schedule_3_Hours	AV	135	AO	73	40136	TBD	TBD
Tuesday_Schedule_3_Mins	AV	136	AO	74	40137	TBD	TBD
Tuesday_Schedule_3_Cool_Setpoint	AV	137	AO	75	40138	TBD	TBD
Tuesday_Schedule_3_Heat_Setpoint	AV	138	AO	76	40139	TBD	TBD
Tuesday_Schedule_4_Mode	MV	139	AO	77	40140	TBD	TBD
Tuesday_Schedule_4_Fan	MV	140	AO	78	40141	TBD	TBD
Tuesday_Schedule_4_Occupation	BV	141	DO	17	40142	TBD	TBD
Tuesday_Schedule_4_Active	BV	142	DO	18	40143	TBD	TBD
Tuesday_Schedule_4_Hours	AV	143	AO	79	40144	TBD	TBD
Tuesday_Schedule_4_Mins	AV	144	AO	80	40145	TBD	TBD
Tuesday_Schedule_4_Cool_Setpoint	AV	145	AO	81	40146	TBD	TBD
Tuesday_Schedule_4_Heat_Setpoint	AV	146	AO	82	40147	TBD	TBD
Wednesday_Schedule_1_Mode	MV	147	AO	83	40148	TBD	TBD
Wednesday_Schedule_1_Fan	MV	148	AO	84	40149	TBD	TBD
Wednesday_Schedule_1_Occupation	BV	149	DO	19	40150	TBD	TBD

Wednesday_Schedule_1_Active	BV	150	DO	20	40151	TBD	TBD
Wednesday_Schedule_1_Hours	AV	151	AO	85	40152	TBD	TBD
Wednesday_Schedule_1_Mins	AV	152	AO	86	40153	TBD	TBD
Wednesday_Schedule_1_Cool_Setpoint	AV	153	AO	87	40154	TBD	TBD
Wednesday_Schedule_1_Heat_Setpoint	AV	154	AO	88	40155	TBD	TBD
Wednesday_Schedule_2_Mode	MV	155	AO	89	40156	TBD	TBD
Wednesday_Schedule_2_Fan	MV	156	AO	90	40157	TBD	TBD
Wednesday_Schedule_2_Occupation	BV	157	DO	21	40158	TBD	TBD
Wednesday_Schedule_2_Active	BV	158	DO	22	40159	TBD	TBD
Wednesday_Schedule_2_Hours	AV	159	AO	91	40160	TBD	TBD
Wednesday_Schedule_2_Mins	AV	160	AO	92	40161	TBD	TBD
Wednesday_Schedule_2_Cool_Setpoint	AV	161	AO	93	40162	TBD	TBD
Wednesday_Schedule_2_Heat_Setpoint	AV	162	AO	94	40163	TBD	TBD
Wednesday_Schedule_3_Mode	MV	163	AO	95	40164	TBD	TBD
Wednesday_Schedule_3_Fan	MV	164	AO	96	40165	TBD	TBD
Wednesday_Schedule_3_Occupation	BV	165	DO	23	40166	TBD	TBD
Wednesday_Schedule_3_Active	BV	166	DO	24	40167	TBD	TBD
Wednesday_Schedule_3_Hours	AV	167	AO	97	40168	TBD	TBD
Wednesday_Schedule_3_Mins	AV	168	AO	98	40169	TBD	TBD
Wednesday_Schedule_3_Cool_Setpoint	AV	169	AO	99	40170	TBD	TBD
Wednesday_Schedule_3_Heat_Setpoint	AV	170	AO	100	40171	TBD	TBD
Wednesday_Schedule_4_Mode	MV	171	AO	101	40172	TBD	TBD
Wednesday_Schedule_4_Fan	MV	172	AO	102	40173	TBD	TBD
Wednesday_Schedule_4_Occupation	BV	173	DO	25	40174	TBD	TBD
Wednesday_Schedule_4_Active	BV	174	DO	26	40175	TBD	TBD
Wednesday_Schedule_4_Hours	AV	175	AO	103	40176	TBD	TBD
Wednesday_Schedule_4_Mins	AV	176	AO	104	40177	TBD	TBD
Wednesday_Schedule_4_Cool_Setpoint	AV	177	AO	105	40178	TBD	TBD
Wednesday_Schedule_4_Heat_Setpoint	AV	178	AO	106	40179	TBD	TBD
Thursday_Schedule_1_Mode	MV	179	AO	107	40180	TBD	TBD
Thursday_Schedule_1_Fan	MV	180	AO	108	40181	TBD	TBD
Thursday_Schedule_1_Occupation	BV	181	DO	27	40182	TBD	TBD
Thursday_Schedule_1_Active	BV	182	DO	28	40183	TBD	TBD
Thursday_Schedule_1_Hours	AV	183	AO	109	40184	TBD	TBD
Thursday_Schedule_1_Mins	AV	184	AO	110	40185	TBD	TBD
Thursday_Schedule_1_Cool_Setpoint	AV	185	AO	111	40186	TBD	TBD
Thursday_Schedule_1_Heat_Setpoint	AV	186	AO	112	40187	TBD	TBD
Thursday_Schedule_2_Mode	MV	187	AO	113	40188	TBD	TBD

Thursday_Schedule_2_Fan	MV	188	AO	114	40189	TBD	TBD
Thursday_Schedule_2_Occupation	BV	189	DO	29	40190	TBD	TBD
Thursday_Schedule_2_Active	BV	190	DO	30	40191	TBD	TBD
Thursday_Schedule_2_Hours	AV	191	AO	115	40192	TBD	TBD
Thursday_Schedule_2_Mins	AV	192	AO	116	40193	TBD	TBD
Thursday_Schedule_2_Cool_Setpoint	AV	193	AO	117	40194	TBD	TBD
Thursday_Schedule_2_Heat_Setpoint	AV	194	AO	118	40195	TBD	TBD
Thursday_Schedule_3_Mode	MV	195	AO	119	40196	TBD	TBD
Thursday_Schedule_3_Fan	MV	196	AO	120	40197	TBD	TBD
Thursday_Schedule_3_Occupation	BV	197	DO	31	40198	TBD	TBD
Thursday_Schedule_3_Active	BV	198	DO	32	40199	TBD	TBD
Thursday_Schedule_3_Hours	AV	199	AO	121	40200	TBD	TBD
Thursday_Schedule_3_Mins	AV	200	AO	122	40201	TBD	TBD
Thursday_Schedule_3_Cool_Setpoint	AV	201	AO	123	40202	TBD	TBD
Thursday_Schedule_3_Heat_Setpoint	AV	202	AO	124	40203	TBD	TBD
Thursday_Schedule_4_Mode	MV	203	AO	125	40204	TBD	TBD
Thursday_Schedule_4_Fan	MV	204	AO	126	40205	TBD	TBD
Thursday_Schedule_4_Occupation	BV	205	DO	33	40206	TBD	TBD
Thursday_Schedule_4_Active	BV	206	DO	34	40207	TBD	TBD
Thursday_Schedule_4_Hours	AV	207	AO	127	40208	TBD	TBD
Thursday_Schedule_4_Mins	AV	208	AO	128	40209	TBD	TBD
Thursday_Schedule_4_Cool_Setpoint	AV	209	AO	129	40210	TBD	TBD
Thursday_Schedule_4_Heat_Setpoint	AV	210	AO	130	40211	TBD	TBD
Friday_Schedule_1_Mode	MV	211	AO	131	40212	TBD	TBD
Friday_Schedule_1_Fan	MV	212	AO	132	40213	TBD	TBD
Friday_Schedule_1_Occupation	BV	213	DO	35	40214	TBD	TBD
Friday_Schedule_1_Active	BV	214	DO	36	40215	TBD	TBD
Friday_Schedule_1_Hours	AV	215	AO	133	40216	TBD	TBD
Friday_Schedule_1_Mins	AV	216	AO	134	40217	TBD	TBD
Friday_Schedule_1_Cool_Setpoint	AV	217	AO	135	40218	TBD	TBD
Friday_Schedule_1_Heat_Setpoint	AV	218	AO	136	40219	TBD	TBD
Friday_Schedule_2_Mode	MV	219	AO	137	40220	TBD	TBD
Friday_Schedule_2_Fan	MV	220	AO	138	40221	TBD	TBD
Friday_Schedule_2_Occupation	BV	221	DO	37	40222	TBD	TBD
Friday_Schedule_2_Active	BV	222	DO	38	40223	TBD	TBD
Friday_Schedule_2_Hours	AV	223	AO	139	40224	TBD	TBD
Friday_Schedule_2_Mins	AV	224	AO	140	40225	TBD	TBD
Friday_Schedule_2_Cool_Setpoint	AV	225	AO	141	40226	TBD	TBD

Friday_Schedule_2_Heat_Setpoint	AV	226	AO	142	40227	TBD	TBD
Friday_Schedule_3_Mode	MV	227	AO	143	40228	TBD	TBD
Friday_Schedule_3_Fan	MV	228	AO	144	40229	TBD	TBD
Friday_Schedule_3_Occupation	BV	229	DO	39	40230	TBD	TBD
Friday_Schedule_3_Active	BV	230	DO	40	40231	TBD	TBD
Friday_Schedule_3_Hours	AV	231	AO	145	40232	TBD	TBD
Friday_Schedule_3_Mins	AV	232	AO	146	40233	TBD	TBD
Friday_Schedule_3_Cool_Setpoint	AV	233	AO	147	40234	TBD	TBD
Friday_Schedule_3_Heat_Setpoint	AV	234	AO	148	40235	TBD	TBD
Friday_Schedule_4_Mode	MV	235	AO	149	40236	TBD	TBD
Friday_Schedule_4_Fan	MV	236	AO	150	40237	TBD	TBD
Friday_Schedule_4_Occupation	BV	237	DO	41	40238	TBD	TBD
Friday_Schedule_4_Active	BV	238	DO	42	40239	TBD	TBD
Friday_Schedule_4_Hours	AV	239	AO	151	40240	TBD	TBD
Friday_Schedule_4_Mins	AV	240	AO	152	40241	TBD	TBD
Friday_Schedule_4_Cool_Setpoint	AV	241	AO	153	40242	TBD	TBD
Friday_Schedule_4_Heat_Setpoint	AV	242	AO	154	40243	TBD	TBD
Saturday_Schedule_1_Mode	MV	243	AO	155	40244	TBD	TBD
Saturday_Schedule_1_Fan	MV	244	AO	156	40245	TBD	TBD
Saturday_Schedule_1_Occupation	BV	245	DO	43	40246	TBD	TBD
Saturday_Schedule_1_Active	BV	246	DO	44	40247	TBD	TBD
Saturday_Schedule_1_Hours	AV	247	AO	157	40248	TBD	TBD
Saturday_Schedule_1_Mins	AV	248	AO	158	40249	TBD	TBD
Saturday_Schedule_1_Cool_Setpoint	AV	249	AO	159	40250	TBD	TBD
Saturday_Schedule_1_Heat_Setpoint	AV	250	AO	160	40251	TBD	TBD
Saturday_Schedule_2_Mode	MV	251	AO	161	40252	TBD	TBD
Saturday_Schedule_2_Fan	MV	252	AO	162	40253	TBD	TBD
Saturday_Schedule_2_Occupation	BV	253	DO	45	40254	TBD	TBD
Saturday_Schedule_2_Active	BV	254	DO	46	40255	TBD	TBD
Saturday_Schedule_2_Hours	AV	255	AO	163	40256	TBD	TBD
Saturday_Schedule_2_Mins	AV	256	AO	164	40257	TBD	TBD
Saturday_Schedule_2_Cool_Setpoint	AV	257	AO	165	40258	TBD	TBD
Saturday_Schedule_2_Heat_Setpoint	AV	258	AO	166	40259	TBD	TBD
Saturday_Schedule_3_Mode	MV	259	AO	167	40260	TBD	TBD
Saturday_Schedule_3_Fan	MV	260	AO	168	40261	TBD	TBD
Saturday_Schedule_3_Occupation	BV	261	DO	47	40262	TBD	TBD
Saturday_Schedule_3_Active	BV	262	DO	48	40263	TBD	TBD
Saturday_Schedule_3_Hours	AV	263	AO	169	40264	TBD	TBD

Saturday_Schedule_3_Mins	AV	264	AO	170	40265	TBD	TBD
Saturday_Schedule_3_Cool_Setpoint	AV	265	AO	171	40266	TBD	TBD
Saturday_Schedule_3_Heat_Setpoint	AV	266	AO	172	40267	TBD	TBD
Saturday_Schedule_4_Mode	MV	267	AO	173	40268	TBD	TBD
Saturday_Schedule_4_Fan	MV	268	AO	174	40269	TBD	TBD
Saturday_Schedule_4_Occupation	BV	269	DO	49	40270	TBD	TBD
Saturday_Schedule_4_Active	BV	270	DO	50	40271	TBD	TBD
Saturday_Schedule_4_Hours	AV	271	AO	175	40272	TBD	TBD
Saturday_Schedule_4_Mins	AV	272	AO	176	40273	TBD	TBD
Saturday_Schedule_4_Cool_Setpoint	AV	273	AO	177	40274	TBD	TBD
Saturday_Schedule_4_Heat_Setpoint	AV	274	AO	178	40275	TBD	TBD
Sunday_Schedule_1_Mode	MV	275	AO	179	40276	TBD	TBD
Sunday_Schedule_1_Fan	MV	276	AO	180	40277	TBD	TBD
Sunday_Schedule_1_Occupation	BV	277	DO	51	40278	TBD	TBD
Sunday_Schedule_1_Active	BV	278	DO	52	40279	TBD	TBD
Sunday_Schedule_1_Hours	AV	279	AO	181	40280	TBD	TBD
Sunday_Schedule_1_Mins	AV	280	AO	182	40281	TBD	TBD
Sunday_Schedule_1_Cool_Setpoint	AV	281	AO	183	40282	TBD	TBD
Sunday_Schedule_1_Heat_Setpoint	AV	282	AO	184	40283	TBD	TBD
Sunday_Schedule_2_Mode	MV	283	AO	185	40284	TBD	TBD
Sunday_Schedule_2_Fan	MV	284	AO	186	40285	TBD	TBD
Sunday_Schedule_2_Occupation	BV	285	DO	53	40286	TBD	TBD
Sunday_Schedule_2_Active	BV	286	DO	54	40287	TBD	TBD
Sunday_Schedule_2_Hours	AV	287	AO	187	40288	TBD	TBD
Sunday_Schedule_2_Mins	AV	288	AO	188	40289	TBD	TBD
Sunday_Schedule_2_Cool_Setpoint	AV	289	AO	189	40290	TBD	TBD
Sunday_Schedule_2_Heat_Setpoint	AV	290	AO	190	40291	TBD	TBD
Sunday_Schedule_3_Mode	MV	291	AO	191	40292	TBD	TBD
Sunday_Schedule_3_Fan	MV	292	AO	192	40293	TBD	TBD
Sunday_Schedule_3_Occupation	BV	293	DO	55	40294	TBD	TBD
Sunday_Schedule_3_Active	BV	294	DO	56	40295	TBD	TBD
Sunday_Schedule_3_Hours	AV	295	AO	193	40296	TBD	TBD
Sunday_Schedule_3_Mins	AV	296	AO	194	40297	TBD	TBD
Sunday_Schedule_3_Cool_Setpoint	AV	297	AO	195	40298	TBD	TBD
Sunday_Schedule_3_Heat_Setpoint	AV	298	AO	196	40299	TBD	TBD
Sunday_Schedule_4_Mode	MV	299	AO	197	40300	TBD	TBD
Sunday_Schedule_4_Fan	MV	300	AO	198	40301	TBD	TBD
Sunday_Schedule_4_Occupation	BV	301	DO	57	40302	TBD	TBD

Sunday_Schedule_4_Active	BV	302	DO	58	40303	TBD	TBD
Sunday_Schedule_4_Hours	AV	303	AO	199	40304	TBD	TBD
Sunday_Schedule_4_Mins	AV	304	AO	200	40305	TBD	TBD
Sunday_Schedule_4_Cool_Setpoint	AV	305	AO	201	40306	TBD	TBD
Sunday_Schedule_4_Heat_Setpoint	AV	306	AO	202	40307	TBD	TBD

Appendix B.4. UP32H (IP-WIFI) Mappings to BACnet MS/TP, BACnet/IP, Metasys N2 and LonWorks

Fan_Recirc_Active	BI	0	DI	1	40001	TBD	TBD
Fan_Recirc_Timer	AV	1	AO	2	40002	TBD	TBD
Override_Cool_Setpoint	AV	2	AO	3	40003	TBD	TBD
Override_Heat_Setpoint	AV	3	AO	4	40004	TBD	TBD
Balance_Point_Low	AV	4	AO	5	40005	TBD	TBD
Balance_Point_High	AV	5	AO	6	40006	TBD	TBD
Cool_High_Setpoint	AV	6	AO	7	40007	TBD	TBD
Cool_Low_Setpoint	AV	7	AO	8	40008	TBD	TBD
Heat_High_Setpoint	AV	8	AO	9	40009	TBD	TBD
Heat_Low_Setpoint	AV	9	AO	10	40010	TBD	TBD
Digital_1	BI	10	DI	11	40011	TBD	TBD
Digital_2	BI	11	DI	12	40012	TBD	TBD
Occupancy_Input	AI	12	AI	13	40013	TBD	TBD
Relay_Function	MV	13	AO	14	40014	TBD	TBD
Relay_State	BV	14	DO	15	40015	TBD	TBD
Day_Of_Week	MI	15	AI	16	40016	TBD	TBD
Daylight_Savings_Time	BV	16	DO	17	40017	TBD	TBD
Time_Zone	MV	17	AO	18	40018	TBD	TBD
Indoor_Temp	AI	18	AI	19	40019	TBD	TBD
Outdoor_Temp	AI	19	AI	20	40020	TBD	TBD
Outdoor_Temp_Valid	BI	20	DI	21	40021	TBD	TBD
Mode	MV	21	AO	22	40022	TBD	TBD
Fan	MV	22	AO	23	40023	TBD	TBD
Recovery_Status	BI	23	DI	24	40024	TBD	TBD
Cool_Setpoint	AV	24	AO	25	40025	TBD	TBD
Heat_Setpoint	AV	25	AO	26	40026	TBD	TBD
Heat_Cool_Status	MI	26	AI	27	40027	TBD	TBD
Stage	AI	27	AI	28	40028	TBD	TBD
Override_Status	BI	28	AI	29	40029	TBD	TBD

Override_Timer_Rem_Hours	AV	29	AO	30	40030	TBD	TBD
Override_Timer_Rem_Mins	AV	30	AO	31	40031	TBD	TBD
Thermostat_Model	MI	31	AI	32	40032	TBD	TBD
Firmware_Version_A	AI	32	AI	33	40033	TBD	TBD
Firmware_Version_B	AI	33	AI	34	40034	TBD	TBD
DIP_Switch_Position_1	AI	34	AI	35	40035	TBD	TBD
DIP_Switch_Position_2	AI	35	AI	36	40036	TBD	TBD
DIP_Switch_Position_3	AI	36	AI	1	40037	TBD	TBD
DIP_Switch_Position_4	AI	37	AI	2	40038	TBD	TBD
DIP_Switch_Position_5	AI	38	AI	3	40039	TBD	TBD
DIP_Switch_Position_6	AI	39	AI	4	40040	TBD	TBD
DIP_Switch_Position_7	AI	40	AI	5	40041	TBD	TBD
DIP_Switch_Position_8	AI	41	AI	6	40042	TBD	TBD
Balance_Point_Compressor_State	MI	42	AI	7	40043	TBD	TBD
Balance_Point_Aux_Heat_State	MI	43	AI	8	40044	TBD	TBD
Remote_Indoor_Sensor	AI	44	AI	9	40045	TBD	TBD
Remote_Indoor_Validity	BI	45	DI	10	40046	TBD	TBD
Remote_Outdoor_Sensor	AI	46	AI	11	40047	TBD	TBD
Remote_Outdoor_Validity	BI	47	DI	12	40048	TBD	TBD
Remote_Humidity_Sensor	AI	48	AI	13	40049	TBD	TBD
Remote_Humidity_Validity	BI	49	DI	14	40050	TBD	TBD
Remote_Aux_1_Sensor	AI	50	AI	15	40051	TBD	TBD
Remote_Aux_1_Validity	BI	51	DI	16	40052	TBD	TBD
Remote_Aux_2_Sensor	AI	52	AI	17	40053	TBD	TBD
Remote_Aux_2_Validity	BI	53	DI	18	40054	TBD	TBD
Remote_Aux_3_Sensor	AI	54	AI	19	40055	TBD	TBD
Remote_Aux_3_Validity	BI	55	DI	20	40056	TBD	TBD
Damper_Time	AV	56	AO	21	40057	TBD	TBD
Damper_Max_Temp	AV	57	AO	22	40058	TBD	TBD
Damper_Min_Temp	AV	58	AO	23	40059	TBD	TBD
Damper_Max_Humidity	AV	59	AO	24	40060	TBD	TBD
Damper_Min_Humidity	AV	60	AO	25	40061	TBD	TBD
Dehumidify_Type	MV	61	AO	26	40062	TBD	TBD
Dehumidify_Above_Setpoint	AV	62	AO	27	40063	TBD	TBD
Dehumidify_Variance	AV	63	AO	28	40064	TBD	TBD
Humidify_Type	MV	64	AO	29	40065	TBD	TBD
Humidify_Below_Setpoint	AV	65	AO	30	40066	TBD	TBD
Humidify_Variance	AV	66	AO	31	40067	TBD	TBD

Year	AV	67	AO	32	40068	TBD	TBD
Month	AV	68	AO	33	40069	TBD	TBD
Day	AV	69	AO	34	40070	TBD	TBD
Vacation_Status	BV	70	DO	35	40071	TBD	TBD
Passive_Vacation_Type	MV	71	AO	36	40072	TBD	TBD
Passive_Start_Vacation_Year	AV	72	AO	37	40073	TBD	TBD
Passive_Start_Vacation_Month	AV	73	AO	38	40074	TBD	TBD
Passive_Start_Vacation_Day	AV	74	AO	39	40075	TBD	TBD
Passive_Start_Vacation_Hours	AV	75	AO	40	40076	TBD	TBD
Passive_Start_Vacation_Mins	AV	76	AO	41	40077	TBD	TBD
Passive_End_Vacation_Year	AV	77	AO	42	40078	TBD	TBD
Passive_End_Vacation_Month	AV	78	AO	43	40079	TBD	TBD
Passive_End_Vacation_Day	AV	79	AO	44	40080	TBD	TBD
Passive_End_Vacation_Hours	AV	80	AO	45	40081	TBD	TBD
Passive_End_Vacation_Mins	AV	81	AO	46	40082	TBD	TBD
Start_Vacation_Year	AI	82	AI	47	40083	TBD	TBD
Start_Vacation_Month	AI	83	AI	48	40084	TBD	TBD
Start_Vacation_Day	AI	84	AI	49	40085	TBD	TBD
Start_Vacation_Hours	AI	85	AI	50	40086	TBD	TBD
Start_Vacation_Mins	AI	86	AI	51	40087	TBD	TBD
End_Vacation_Year	AI	87	AI	52	40088	TBD	TBD
End_Vacation_Month	AI	88	AI	53	40089	TBD	TBD
End_Vacation_Day	AI	89	AI	54	40090	TBD	TBD
End_Vacation_Hours	AI	90	AI	55	40091	TBD	TBD
End_Vacation_Mins	AI	91	AI	56	40092	TBD	TBD
Start_Vacation_Mode	MV	92	AO	57	40093	TBD	TBD
Start_Vacation_Fan	MV	93	AO	58	40094	TBD	TBD
Start_Vacation_Cool_Setpoint	AV	94	AO	59	40095	TBD	TBD
Start_Vacation_Heat_Setpoint	AV	95	AO	60	40096	TBD	TBD
Monday_Schedule_1_Mode	MV	96	AO	61	40097	TBD	TBD
Monday_Schedule_1_Fan	MV	97	AO	62	40098	TBD	TBD
Monday_Schedule_1_Occupation	BV	98	DO	63	40099	TBD	TBD
Monday_Schedule_1_Active	BV	99	DO	64	40100	TBD	TBD
Monday_Schedule_1_Hours	AV	100	AO	65	40101	TBD	TBD
Monday_Schedule_1_Mins	AV	101	AO	66	40102	TBD	TBD
Monday_Schedule_1_Cool_Setpoint	AV	102	AO	67	40103	TBD	TBD
Monday_Schedule_1_Heat_Setpoint	AV	103	AO	68	40104	TBD	TBD
Monday_Schedule_2_Mode	MV	104	AO	69	40105	TBD	TBD

Monday_Schedule_2_Fan	MV	105	AO	70	40106	TBD	TBD
Monday_Schedule_2_Occupation	BV	106	DO	71	40107	TBD	TBD
Monday_Schedule_2_Active	BV	107	DO	72	40108	TBD	TBD
Monday_Schedule_2_Hours	AV	108	AO	73	40109	TBD	TBD
Monday_Schedule_2_Mins	AV	109	AO	74	40110	TBD	TBD
Monday_Schedule_2_Cool_Setpoint	AV	110	AO	75	40111	TBD	TBD
Monday_Schedule_2_Heat_Setpoint	AV	111	AO	76	40112	TBD	TBD
Monday_Schedule_3_Mode	MV	112	AO	77	40113	TBD	TBD
Monday_Schedule_3_Fan	MV	113	AO	78	40114	TBD	TBD
Monday_Schedule_3_Occupation	BV	114	DO	79	40115	TBD	TBD
Monday_Schedule_3_Active	BV	115	DO	80	40116	TBD	TBD
Monday_Schedule_3_Hours	AV	116	AO	81	40117	TBD	TBD
Monday_Schedule_3_Mins	AV	117	AO	82	40118	TBD	TBD
Monday_Schedule_3_Cool_Setpoint	AV	118	AO	83	40119	TBD	TBD
Monday_Schedule_3_Heat_Setpoint	AV	119	AO	84	40120	TBD	TBD
Monday_Schedule_4_Mode	MV	120	AO	85	40121	TBD	TBD
Monday_Schedule_4_Fan	MV	121	AO	86	40122	TBD	TBD
Monday_Schedule_4_Occupation	BV	122	DO	87	40123	TBD	TBD
Monday_Schedule_4_Active	BV	123	DO	88	40124	TBD	TBD
Monday_Schedule_4_Hours	AV	124	AO	89	40125	TBD	TBD
Monday_Schedule_4_Mins	AV	125	AO	90	40126	TBD	TBD
Monday_Schedule_4_Cool_Setpoint	AV	126	AO	91	40127	TBD	TBD
Monday_Schedule_4_Heat_Setpoint	AV	127	AO	92	40128	TBD	TBD
Tuesday_Schedule_1_Mode	MV	128	AO	93	40129	TBD	TBD
Tuesday_Schedule_1_Fan	MV	129	AO	94	40130	TBD	TBD
Tuesday_Schedule_1_Occupation	BV	130	DO	95	40131	TBD	TBD
Tuesday_Schedule_1_Active	BV	131	DO	96	40132	TBD	TBD
Tuesday_Schedule_1_Hours	AV	132	AO	97	40133	TBD	TBD
Tuesday_Schedule_1_Mins	AV	133	AO	98	40134	TBD	TBD
Tuesday_Schedule_1_Cool_Setpoint	AV	134	AO	99	40135	TBD	TBD
Tuesday_Schedule_1_Heat_Setpoint	AV	135	AO	100	40136	TBD	TBD
Tuesday_Schedule_2_Mode	MV	136	AO	101	40137	TBD	TBD
Tuesday_Schedule_2_Fan	MV	137	AO	102	40138	TBD	TBD
Tuesday_Schedule_2_Occupation	BV	138	DO	103	40139	TBD	TBD
Tuesday_Schedule_2_Active	BV	139	DO	104	40140	TBD	TBD
Tuesday_Schedule_2_Hours	AV	140	AO	105	40141	TBD	TBD
Tuesday_Schedule_2_Mins	AV	141	AO	106	40142	TBD	TBD
Tuesday_Schedule_2_Cool_Setpoint	AV	142	AO	107	40143	TBD	TBD

Tuesday_Schedule_2_Heat_Setpoint	AV	143	AO	108	40144	TBD	TBD
Tuesday_Schedule_3_Mode	MV	144	AO	109	40145	TBD	TBD
Tuesday_Schedule_3_Fan	MV	145	AO	110	40146	TBD	TBD
Tuesday_Schedule_3_Occupation	BV	146	DO	111	40147	TBD	TBD
Tuesday_Schedule_3_Active	BV	147	DO	112	40148	TBD	TBD
Tuesday_Schedule_3_Hours	AV	148	AO	113	40149	TBD	TBD
Tuesday_Schedule_3_Mins	AV	149	AO	114	40150	TBD	TBD
Tuesday_Schedule_3_Cool_Setpoint	AV	150	AO	115	40151	TBD	TBD
Tuesday_Schedule_3_Heat_Setpoint	AV	151	AO	116	40152	TBD	TBD
Tuesday_Schedule_4_Mode	MV	152	AO	117	40153	TBD	TBD
Tuesday_Schedule_4_Fan	MV	153	AO	118	40154	TBD	TBD
Tuesday_Schedule_4_Occupation	BV	154	DO	119	40155	TBD	TBD
Tuesday_Schedule_4_Active	BV	155	DO	120	40156	TBD	TBD
Tuesday_Schedule_4_Hours	AV	156	AO	121	40157	TBD	TBD
Tuesday_Schedule_4_Mins	AV	157	AO	122	40158	TBD	TBD
Tuesday_Schedule_4_Cool_Setpoint	AV	158	AO	123	40159	TBD	TBD
Tuesday_Schedule_4_Heat_Setpoint	AV	159	AO	124	40160	TBD	TBD
Wednesday_Schedule_1_Mode	MV	160	AO	125	40161	TBD	TBD
Wednesday_Schedule_1_Fan	MV	161	AO	126	40162	TBD	TBD
Wednesday_Schedule_1_Occupation	BV	162	DO	127	40163	TBD	TBD
Wednesday_Schedule_1_Active	BV	163	DO	128	40164	TBD	TBD
Wednesday_Schedule_1_Hours	AV	164	AO	129	40165	TBD	TBD
Wednesday_Schedule_1_Mins	AV	165	AO	130	40166	TBD	TBD
Wednesday_Schedule_1_Cool_Setpoint	AV	166	AO	131	40167	TBD	TBD
Wednesday_Schedule_1_Heat_Setpoint	AV	167	AO	132	40168	TBD	TBD
Wednesday_Schedule_2_Mode	MV	168	AO	133	40169	TBD	TBD
Wednesday_Schedule_2_Fan	MV	169	AO	134	40170	TBD	TBD
Wednesday_Schedule_2_Occupation	BV	170	DO	135	40171	TBD	TBD
Wednesday_Schedule_2_Active	BV	171	DO	136	40172	TBD	TBD
Wednesday_Schedule_2_Hours	AV	172	AO	137	40173	TBD	TBD
Wednesday_Schedule_2_Mins	AV	173	AO	138	40174	TBD	TBD
Wednesday_Schedule_2_Cool_Setpoint	AV	174	AO	139	40175	TBD	TBD
Wednesday_Schedule_2_Heat_Setpoint	AV	175	AO	140	40176	TBD	TBD
Wednesday_Schedule_3_Mode	MV	176	AO	141	40177	TBD	TBD
Wednesday_Schedule_3_Fan	MV	177	AO	142	40178	TBD	TBD
Wednesday_Schedule_3_Occupation	BV	178	DO	143	40179	TBD	TBD
Wednesday_Schedule_3_Active	BV	179	DO	144	40180	TBD	TBD
Wednesday_Schedule_3_Hours	AV	180	AO	145	40181	TBD	TBD

Wednesday_Schedule_3_Mins	AV	181	AO	146	40182	TBD	TBD
Wednesday_Schedule_3_Cool_Setpoint	AV	182	AO	147	40183	TBD	TBD
Wednesday_Schedule_3_Heat_Setpoint	AV	183	AO	148	40184	TBD	TBD
Wednesday_Schedule_4_Mode	MV	184	AO	149	40185	TBD	TBD
Wednesday_Schedule_4_Fan	MV	185	AO	150	40186	TBD	TBD
Wednesday_Schedule_4_Occupation	BV	186	DO	151	40187	TBD	TBD
Wednesday_Schedule_4_Active	BV	187	DO	152	40188	TBD	TBD
Wednesday_Schedule_4_Hours	AV	188	AO	153	40189	TBD	TBD
Wednesday_Schedule_4_Mins	AV	189	AO	154	40190	TBD	TBD
Wednesday_Schedule_4_Cool_Setpoint	AV	190	AO	155	40191	TBD	TBD
Wednesday_Schedule_4_Heat_Setpoint	AV	191	AO	156	40192	TBD	TBD
Thursday_Schedule_1_Mode	MV	192	AO	157	40193	TBD	TBD
Thursday_Schedule_1_Fan	MV	193	AO	158	40194	TBD	TBD
Thursday_Schedule_1_Occupation	BV	194	DO	159	40195	TBD	TBD
Thursday_Schedule_1_Active	BV	195	DO	160	40196	TBD	TBD
Thursday_Schedule_1_Hours	AV	196	AO	161	40197	TBD	TBD
Thursday_Schedule_1_Mins	AV	197	AO	162	40198	TBD	TBD
Thursday_Schedule_1_Cool_Setpoint	AV	198	AO	163	40199	TBD	TBD
Thursday_Schedule_1_Heat_Setpoint	AV	199	AO	164	40200	TBD	TBD
Thursday_Schedule_2_Mode	MV	200	AO	165	40201	TBD	TBD
Thursday_Schedule_2_Fan	MV	201	AO	166	40202	TBD	TBD
Thursday_Schedule_2_Occupation	BV	202	DO	167	40203	TBD	TBD
Thursday_Schedule_2_Active	BV	203	DO	168	40204	TBD	TBD
Thursday_Schedule_2_Hours	AV	204	AO	169	40205	TBD	TBD
Thursday_Schedule_2_Mins	AV	205	AO	170	40206	TBD	TBD
Thursday_Schedule_2_Cool_Setpoint	AV	206	AO	171	40207	TBD	TBD
Thursday_Schedule_2_Heat_Setpoint	AV	207	AO	172	40208	TBD	TBD
Thursday_Schedule_3_Mode	MV	208	AO	173	40209	TBD	TBD
Thursday_Schedule_3_Fan	MV	209	AO	174	40210	TBD	TBD
Thursday_Schedule_3_Occupation	BV	210	DO	175	40211	TBD	TBD
Thursday_Schedule_3_Active	BV	211	DO	176	40212	TBD	TBD
Thursday_Schedule_3_Hours	AV	212	AO	177	40213	TBD	TBD
Thursday_Schedule_3_Mins	AV	213	AO	178	40214	TBD	TBD
Thursday_Schedule_3_Cool_Setpoint	AV	214	AO	179	40215	TBD	TBD
Thursday_Schedule_3_Heat_Setpoint	AV	215	AO	180	40216	TBD	TBD
Thursday_Schedule_4_Mode	MV	216	AO	181	40217	TBD	TBD
Thursday_Schedule_4_Fan	MV	217	AO	182	40218	TBD	TBD
Thursday_Schedule_4_Occupation	BV	218	DO	183	40219	TBD	TBD

Thursday_Schedule_4_Active	BV	219	DO	184	40220	TBD	TBD
Thursday_Schedule_4_Hours	AV	220	AO	185	40221	TBD	TBD
Thursday_Schedule_4_Mins	AV	221	AO	186	40222	TBD	TBD
Thursday_Schedule_4_Cool_Setpoint	AV	222	AO	187	40223	TBD	TBD
Thursday_Schedule_4_Heat_Setpoint	AV	223	AO	188	40224	TBD	TBD
Friday_Schedule_1_Mode	MV	224	AO	189	40225	TBD	TBD
Friday_Schedule_1_Fan	MV	225	AO	190	40226	TBD	TBD
Friday_Schedule_1_Occupation	BV	226	DO	191	40227	TBD	TBD
Friday_Schedule_1_Active	BV	227	DO	192	40228	TBD	TBD
Friday_Schedule_1_Hours	AV	228	AO	193	40229	TBD	TBD
Friday_Schedule_1_Mins	AV	229	AO	194	40230	TBD	TBD
Friday_Schedule_1_Cool_Setpoint	AV	230	AO	195	40231	TBD	TBD
Friday_Schedule_1_Heat_Setpoint	AV	231	AO	196	40232	TBD	TBD
Friday_Schedule_2_Mode	MV	232	AO	197	40233	TBD	TBD
Friday_Schedule_2_Fan	MV	233	AO	198	40234	TBD	TBD
Friday_Schedule_2_Occupation	BV	234	DO	199	40235	TBD	TBD
Friday_Schedule_2_Active	BV	235	DO	200	40236	TBD	TBD
Friday_Schedule_2_Hours	AV	236	AO	201	40237	TBD	TBD
Friday_Schedule_2_Mins	AV	237	AO	202	40238	TBD	TBD
Friday_Schedule_2_Cool_Setpoint	AV	238	AO	203	40239	TBD	TBD
Friday_Schedule_2_Heat_Setpoint	AV	239	AO	204	40240	TBD	TBD
Friday_Schedule_3_Mode	MV	240	AO	205	40241	TBD	TBD
Friday_Schedule_3_Fan	MV	241	AO	206	40242	TBD	TBD
Friday_Schedule_3_Occupation	BV	242	DO	207	40243	TBD	TBD
Friday_Schedule_3_Active	BV	243	DO	208	40244	TBD	TBD
Friday_Schedule_3_Hours	AV	244	AO	209	40245	TBD	TBD
Friday_Schedule_3_Mins	AV	245	AO	210	40246	TBD	TBD
Friday_Schedule_3_Cool_Setpoint	AV	246	AO	211	40247	TBD	TBD
Friday_Schedule_3_Heat_Setpoint	AV	247	AO	212	40248	TBD	TBD
Friday_Schedule_4_Mode	MV	248	AO	213	40249	TBD	TBD
Friday_Schedule_4_Fan	MV	249	AO	214	40250	TBD	TBD
Friday_Schedule_4_Occupation	BV	250	DO	1	40251	TBD	TBD
Friday_Schedule_4_Active	BV	251	DO	2	40252	TBD	TBD
Friday_Schedule_4_Hours	AV	252	AO	3	40253	TBD	TBD
Friday_Schedule_4_Mins	AV	253	AO	4	40254	TBD	TBD
Friday_Schedule_4_Cool_Setpoint	AV	254	AO	5	40255	TBD	TBD
Friday_Schedule_4_Heat_Setpoint	AV	255	AO	6	40256	TBD	TBD
Saturday_Schedule_1_Mode	MV	256	AO	7	40257	TBD	TBD

Saturday_Schedule_1_Fan	MV	257	AO	8	40258	TBD	TBD
Saturday_Schedule_1_Occupation	BV	258	DO	9	40259	TBD	TBD
Saturday_Schedule_1_Active	BV	259	DO	10	40260	TBD	TBD
Saturday_Schedule_1_Hours	AV	260	AO	11	40261	TBD	TBD
Saturday_Schedule_1_Mins	AV	261	AO	1	40262	TBD	TBD
Saturday_Schedule_1_Cool_Setpoint	AV	262	AO	2	40263	TBD	TBD
Saturday_Schedule_1_Heat_Setpoint	AV	263	AO	3	40264	TBD	TBD
Saturday_Schedule_2_Mode	MV	264	AO	4	40265	TBD	TBD
Saturday_Schedule_2_Fan	MV	265	AO	5	40266	TBD	TBD
Saturday_Schedule_2_Occupation	BV	266	DO	6	40267	TBD	TBD
Saturday_Schedule_2_Active	BV	267	DO	7	40268	TBD	TBD
Saturday_Schedule_2_Hours	AV	268	AO	8	40269	TBD	TBD
Saturday_Schedule_2_Mins	AV	269	AO	9	40270	TBD	TBD
Saturday_Schedule_2_Cool_Setpoint	AV	270	AO	10	40271	TBD	TBD
Saturday_Schedule_2_Heat_Setpoint	AV	271	AO	11	40272	TBD	TBD
Saturday_Schedule_3_Mode	MV	272	AO	12	40273	TBD	TBD
Saturday_Schedule_3_Fan	MV	273	AO	13	40274	TBD	TBD
Saturday_Schedule_3_Occupation	BV	274	DO	14	40275	TBD	TBD
Saturday_Schedule_3_Active	BV	275	DO	15	40276	TBD	TBD
Saturday_Schedule_3_Hours	AV	276	AO	16	40277	TBD	TBD
Saturday_Schedule_3_Mins	AV	277	AO	17	40278	TBD	TBD
Saturday_Schedule_3_Cool_Setpoint	AV	278	AO	18	40279	TBD	TBD
Saturday_Schedule_3_Heat_Setpoint	AV	279	AO	19	40280	TBD	TBD
Saturday_Schedule_4_Mode	MV	280	AO	20	40281	TBD	TBD
Saturday_Schedule_4_Fan	MV	281	AO	21	40282	TBD	TBD
Saturday_Schedule_4_Occupation	BV	282	DO	22	40283	TBD	TBD
Saturday_Schedule_4_Active	BV	283	DO	23	40284	TBD	TBD
Saturday_Schedule_4_Hours	AV	284	AO	24	40285	TBD	TBD
Saturday_Schedule_4_Mins	AV	285	AO	25	40286	TBD	TBD
Saturday_Schedule_4_Cool_Setpoint	AV	286	AO	26	40287	TBD	TBD
Saturday_Schedule_4_Heat_Setpoint	AV	287	AO	27	40288	TBD	TBD
Sunday_Schedule_1_Mode	MV	288	AO	28	40289	TBD	TBD
Sunday_Schedule_1_Fan	MV	289	AO	29	40290	TBD	TBD
Sunday_Schedule_1_Occupation	BV	290	DO	30	40291	TBD	TBD
Sunday_Schedule_1_Active	BV	291	DO	31	40292	TBD	TBD
Sunday_Schedule_1_Hours	AV	292	AO	32	40293	TBD	TBD
Sunday_Schedule_1_Mins	AV	293	AO	33	40294	TBD	TBD
Sunday_Schedule_1_Cool_Setpoint	AV	294	AO	34	40295	TBD	TBD

Sunday_Schedule_1_Heat_Setpoint	AV	295	AO	35	40296	TBD	TBD
Sunday_Schedule_2_Mode	MV	296	AO	36	40297	TBD	TBD
Sunday_Schedule_2_Fan	MV	297	AO	37	40298	TBD	TBD
Sunday_Schedule_2_Occupation	BV	298	DO	38	40299	TBD	TBD
Sunday_Schedule_2_Active	BV	299	DO	39	40300	TBD	TBD
Sunday_Schedule_2_Hours	AV	300	AO	40	40301	TBD	TBD
Sunday_Schedule_2_Mins	AV	301	AO	41	40302	TBD	TBD
Sunday_Schedule_2_Cool_Setpoint	AV	302	AO	42	40303	TBD	TBD
Sunday_Schedule_2_Heat_Setpoint	AV	303	AO	43	40304	TBD	TBD
Sunday_Schedule_3_Mode	MV	304	AO	44	40305	TBD	TBD
Sunday_Schedule_3_Fan	MV	305	AO	45	40306	TBD	TBD
Sunday_Schedule_3_Occupation	BV	306	DO	46	40307	TBD	TBD
Sunday_Schedule_3_Active	BV	307	DO	47	40308	TBD	TBD
Sunday_Schedule_3_Hours	AV	308	AO	48	40309	TBD	TBD
Sunday_Schedule_3_Mins	AV	309	AO	49	40310	TBD	TBD
Sunday_Schedule_3_Cool_Setpoint	AV	310	AO	50	40311	TBD	TBD
Sunday_Schedule_3_Heat_Setpoint	AV	311	AO	51	40312	TBD	TBD
Sunday_Schedule_4_Mode	MV	312	AO	52	40313	TBD	TBD
Sunday_Schedule_4_Fan	MV	313	AO	53	40314	TBD	TBD
Sunday_Schedule_4_Occupation	BV	314	DO	54	40315	TBD	TBD
Sunday_Schedule_4_Active	BV	315	DO	55	40316	TBD	TBD
Sunday_Schedule_4_Hours	AV	316	AO	56	40317	TBD	TBD
Sunday_Schedule_4_Mins	AV	317	AO	57	40318	TBD	TBD
Sunday_Schedule_4_Cool_Setpoint	AV	318	AO	58	40319	TBD	TBD
Sunday_Schedule_4_Heat_Setpoint	AV	319	AO	59	40320	TBD	TBD

Appendix C. "A" Bank DIP Switch Settings

Appendix C.1. "A" Bank DIP Switch Settings for MAC Address

Address	A0	A1	A2	A3	A4	A5	A6	A7
1	On	Off	Off	Off	Off	Off	Off	Off
2	Off	On	Off	Off	Off	Off	Off	Off
3	On	On	Off	Off	Off	Off	Off	Off
4	Off	Off	On	Off	Off	Off	Off	Off
5	On	Off	On	Off	Off	Off	Off	Off
6	Off	On	On	Off	Off	Off	Off	Off
7	On	On	On	Off	Off	Off	Off	Off
8	Off	Off	Off	On	Off	Off	Off	Off
9	On	Off	Off	On	Off	Off	Off	Off
10	Off	On	Off	On	Off	Off	Off	Off
11	On	On	Off	On	Off	Off	Off	Off
12	Off	Off	On	On	Off	Off	Off	Off
13	On	Off	On	On	Off	Off	Off	Off
14	Off	On	On	On	Off	Off	Off	Off
15	On	On	On	On	Off	Off	Off	Off
16	Off	Off	Off	Off	On	Off	Off	Off
17	On	Off	Off	Off	On	Off	Off	Off
18	Off	On	Off	Off	On	Off	Off	Off
19	On	On	Off	Off	On	Off	Off	Off
20	Off	Off	On	Off	On	Off	Off	Off
21	On	Off	On	Off	On	Off	Off	Off
22	Off	On	On	Off	On	Off	Off	Off
23	On	On	On	Off	On	Off	Off	Off
24	Off	Off	Off	On	On	Off	Off	Off
25	On	Off	Off	On	On	Off	Off	Off
26	Off	On	Off	On	On	Off	Off	Off
27	On	On	Off	On	On	Off	Off	Off
28	Off	Off	On	On	On	Off	Off	Off
29	On	Off	On	On	On	Off	Off	Off
30	Off	On	On	On	On	Off	Off	Off
31	On	On	On	On	On	Off	Off	Off
32	Off	Off	Off	Off	Off	On	Off	Off
33	On	Off	Off	Off	Off	On	Off	Off
34	Off	On	Off	Off	Off	On	Off	Off
35	On	On	Off	Off	Off	On	Off	Off
36	Off	Off	On	Off	Off	On	Off	Off
37	On	Off	On	Off	Off	On	Off	Off
38	Off	On	On	Off	Off	On	Off	Off
39	On	On	On	Off	Off	On	Off	Off
40	Off	Off	Off	On	Off	On	Off	Off
41	On	Off	Off	On	Off	On	Off	Off
42	Off	On	Off	On	Off	On	Off	Off
43	On	On	Off	On	Off	On	Off	Off
44	Off	Off	On	On	Off	On	Off	Off
45	On	Off	On	On	Off	On	Off	Off
46	Off	On	On	On	Off	On	Off	Off
47	On	On	On	On	Off	On	Off	Off

Address	A0	A1	A2	A3	A4	A5	A6	A7
48	Off	Off	Off	Off	On	On	Off	Off
49	On	Off	Off	Off	On	On	Off	Off
50	Off	On	Off	Off	On	On	Off	Off
51	On	On	Off	Off	On	On	Off	Off
52	Off	Off	On	Off	On	On	Off	Off
53	On	Off	On	Off	On	On	Off	Off
54	Off	On	On	Off	On	On	Off	Off
55	On	On	On	Off	On	On	Off	Off
56	Off	Off	Off	On	On	On	Off	Off
57	On	Off	Off	On	On	On	Off	Off
58	Off	On	Off	On	On	On	Off	Off
59	On	On	Off	On	On	On	Off	Off
60	Off	Off	On	On	On	On	Off	Off
61	On	Off	On	On	On	On	Off	Off
62	Off	On	On	On	On	On	Off	Off
63	On	On	On	On	On	On	Off	Off
64	Off	Off	Off	Off	Off	Off	On	Off
65	On	Off	Off	Off	Off	Off	On	Off
66	Off	On	Off	Off	Off	Off	On	Off
67	On	On	Off	Off	Off	Off	On	Off
68	Off	Off	On	Off	Off	Off	On	Off
69	On	Off	On	Off	Off	Off	On	Off
70	Off	On	On	Off	Off	Off	On	Off
71	On	On	On	Off	Off	Off	On	Off
72	Off	Off	Off	On	Off	Off	On	Off
73	On	Off	Off	On	Off	Off	On	Off
74	Off	On	Off	On	Off	Off	On	Off
75	On	On	Off	On	Off	Off	On	Off
76	Off	Off	On	On	Off	Off	On	Off
77	On	Off	On	On	Off	Off	On	Off
78	Off	On	On	On	Off	Off	On	Off
79	On	On	On	On	Off	Off	On	Off
80	Off	Off	Off	Off	On	Off	On	Off
81	On	Off	Off	Off	On	Off	On	Off
82	Off	On	Off	Off	On	Off	On	Off
83	On	On	Off	Off	On	Off	On	Off
84	Off	Off	On	Off	On	Off	On	Off
85	On	Off	On	Off	On	Off	On	Off
86	Off	On	On	Off	On	Off	On	Off
87	On	On	On	Off	On	Off	On	Off
88	Off	Off	Off	On	On	Off	On	Off
89	On	Off	Off	On	On	Off	On	Off
90	Off	On	Off	On	On	Off	On	Off
91	On	On	Off	On	On	Off	On	Off
92	Off	Off	On	On	On	Off	On	Off
93	On	Off	On	On	On	Off	On	Off
94	Off	On	On	On	On	Off	On	Off

Address	A0	A1	A2	A3	A4	A5	A6	A7
95	On	On	On	On	On	Off	On	Off
96	Off	Off	Off	Off	Off	On	On	Off
97	On	Off	Off	Off	Off	On	On	Off
98	Off	On	Off	Off	Off	On	On	Off
99	On	On	Off	Off	Off	On	On	Off
100	Off	Off	On	Off	Off	On	On	Off
101	On	Off	On	Off	Off	On	On	Off
102	Off	On	On	Off	Off	On	On	Off
103	On	On	On	Off	Off	On	On	Off
104	Off	Off	Off	On	Off	On	On	Off
105	On	Off	Off	On	Off	On	On	Off
106	Off	On	Off	On	Off	On	On	Off
107	On	On	Off	On	Off	On	On	Off
108	Off	Off	On	On	Off	On	On	Off
109	On	Off	On	On	Off	On	On	Off
110	Off	On	On	On	Off	On	On	Off
111	On	On	On	On	Off	On	On	Off
112	Off	Off	Off	Off	On	On	On	Off
113	On	Off	Off	Off	On	On	On	Off
114	Off	On	Off	Off	On	On	On	Off
115	On	On	Off	Off	On	On	On	Off
116	Off	Off	On	Off	On	On	On	Off
117	On	Off	On	Off	On	On	On	Off
118	Off	On	On	Off	On	On	On	Off
119	On	On	On	Off	On	On	On	Off
120	Off	Off	Off	On	On	On	On	Off
121	On	Off	Off	On	On	On	On	Off
122	Off	On	Off	On	On	On	On	Off
123	On	On	Off	On	On	On	On	Off
124	Off	Off	On	On	On	On	On	Off
125	On	Off	On	On	On	On	On	Off
126	Off	On	On	On	On	On	On	Off
127	On	On	On	On	On	On	On	Off
128	Off	Off	Off	Off	Off	Off	Off	On
129	On	Off	Off	Off	Off	Off	Off	On
130	Off	On	Off	Off	Off	Off	Off	On
131	On	On	Off	Off	Off	Off	Off	On
132	Off	Off	On	Off	Off	Off	Off	On
133	On	Off	On	Off	Off	Off	Off	On
134	Off	On	On	Off	Off	Off	Off	On
135	On	On	On	Off	Off	Off	Off	On
136	Off	Off	Off	On	Off	Off	Off	On
137	On	Off	Off	On	Off	Off	Off	On
138	Off	On	Off	On	Off	Off	Off	On
139	On	On	Off	On	Off	Off	Off	On
140	Off	Off	On	On	Off	Off	Off	On
141	On	Off	On	On	Off	Off	Off	On
142	Off	On	On	On	Off	Off	Off	On
143	On	On	On	On	Off	Off	Off	On

Address	A0	A1	A2	A3	A4	A5	A6	A7
144	Off	Off	Off	Off	On	Off	Off	On
145	On	Off	Off	Off	On	Off	Off	On
146	Off	On	Off	Off	On	Off	Off	On
147	On	On	Off	Off	On	Off	Off	On
148	Off	Off	On	Off	On	Off	Off	On
149	On	Off	On	Off	On	Off	Off	On
150	Off	On	On	Off	On	Off	Off	On
151	On	On	On	Off	On	Off	Off	On
152	Off	Off	Off	On	On	Off	Off	On
153	On	Off	Off	On	On	Off	Off	On
154	Off	On	Off	On	On	Off	Off	On
155	On	On	Off	On	On	Off	Off	On
156	Off	Off	On	On	On	Off	Off	On
157	On	Off	On	On	On	Off	Off	On
158	Off	On	On	On	On	Off	Off	On
159	On	On	On	On	On	Off	Off	On
160	Off	Off	Off	Off	Off	On	Off	On
161	On	Off	Off	Off	Off	On	Off	On
162	Off	On	Off	Off	Off	On	Off	On
163	On	On	Off	Off	Off	On	Off	On
164	Off	Off	On	Off	Off	On	Off	On
165	On	Off	On	Off	Off	On	Off	On
166	Off	On	On	Off	Off	On	Off	On
167	On	On	On	Off	Off	On	Off	On
168	Off	Off	Off	On	Off	On	Off	On
169	On	Off	Off	On	Off	On	Off	On
170	Off	On	Off	On	Off	On	Off	On
171	On	On	Off	On	Off	On	Off	On
172	Off	Off	On	On	Off	On	Off	On
173	On	Off	On	On	Off	On	Off	On
174	Off	On	On	On	Off	On	Off	On
175	On	On	On	On	Off	On	Off	On
176	Off	Off	Off	Off	On	On	Off	On
177	On	Off	Off	Off	On	On	Off	On
178	Off	On	Off	Off	On	On	Off	On
179	On	On	Off	Off	On	On	Off	On
180	Off	Off	On	Off	On	On	Off	On
181	On	Off	On	Off	On	On	Off	On
182	Off	On	On	Off	On	On	Off	On
183	On	On	On	Off	On	On	Off	On
184	Off	Off	Off	On	On	On	Off	On
185	On	Off	Off	On	On	On	Off	On
186	Off	On	Off	On	On	On	Off	On
187	On	On	Off	On	On	On	Off	On
188	Off	Off	On	On	On	On	Off	On
189	On	Off	On	On	On	On	Off	On
190	Off	On	On	On	On	On	Off	On
191	On	On	On	On	On	On	Off	On
192	Off	Off	Off	Off	Off	Off	On	On

Address	A0	A1	A2	A3	A4	A5	A6	A7
193	On	Off	Off	Off	Off	Off	On	On
194	Off	On	Off	Off	Off	Off	On	On
195	On	On	Off	Off	Off	Off	On	On
196	Off	Off	On	Off	Off	Off	On	On
197	On	Off	On	Off	Off	Off	On	On
198	Off	On	On	Off	Off	Off	On	On
199	On	On	On	Off	Off	Off	On	On
200	Off	Off	Off	On	Off	Off	On	On
201	On	Off	Off	On	Off	Off	On	On
202	Off	On	Off	On	Off	Off	On	On
203	On	On	Off	On	Off	Off	On	On
204	Off	Off	On	On	Off	Off	On	On
205	On	Off	On	On	Off	Off	On	On
206	Off	On	On	On	Off	Off	On	On
207	On	On	On	On	Off	Off	On	On
208	Off	Off	Off	Off	On	Off	On	On
209	On	Off	Off	Off	On	Off	On	On
210	Off	On	Off	Off	On	Off	On	On
211	On	On	Off	Off	On	Off	On	On
212	Off	Off	On	Off	On	Off	On	On
213	On	Off	On	Off	On	Off	On	On
214	Off	On	On	Off	On	Off	On	On
215	On	On	On	Off	On	Off	On	On
216	Off	Off	Off	On	On	Off	On	On
217	On	Off	Off	On	On	Off	On	On
218	Off	On	Off	On	On	Off	On	On
219	On	On	Off	On	On	Off	On	On
220	Off	Off	On	On	On	Off	On	On
221	On	Off	On	On	On	Off	On	On
222	Off	On	On	On	On	Off	On	On
223	On	On	On	On	On	Off	On	On
224	Off	Off	Off	Off	Off	On	On	On
225	On	Off	Off	Off	Off	On	On	On
226	Off	On	Off	Off	Off	On	On	On
227	On	On	Off	Off	Off	On	On	On
228	Off	Off	On	Off	Off	On	On	On
229	On	Off	On	Off	Off	On	On	On
230	Off	On	On	Off	Off	On	On	On
231	On	On	On	Off	Off	On	On	On
232	Off	Off	Off	On	Off	On	On	On
233	On	Off	Off	On	Off	On	On	On
234	Off	On	Off	On	Off	On	On	On
235	On	On	Off	On	Off	On	On	On
236	Off	Off	On	On	Off	On	On	On
237	On	Off	On	On	Off	On	On	On
238	Off	On	On	On	Off	On	On	On
239	On	On	On	On	Off	On	On	On
240	Off	Off	Off	Off	On	On	On	On
241	On	Off	Off	Off	On	On	On	On

Address	A0	A1	A2	A3	A4	A5	A6	A7
242	Off	On	Off	Off	On	On	On	On
243	On	On	Off	Off	On	On	On	On
244	Off	Off	On	Off	On	On	On	On
245	On	Off	On	Off	On	On	On	On
246	Off	On	On	Off	On	On	On	On
247	On	On	On	Off	On	On	On	On
248	Off	Off	Off	On	On	On	On	On
249	On	Off	Off	On	On	On	On	On
250	Off	On	Off	On	On	On	On	On
251	On	On	Off	On	On	On	On	On
252	Off	Off	On	On	On	On	On	On
253	On	Off	On	On	On	On	On	On
254	Off	On	On	On	On	On	On	On
255	On	On	On	On	On	On	On	On

Appendix D. Reference

Appendix D.1. Specifications



	ProtoNode FPC-N34	ProtoNode FPC-N35
Electrical Connections	One 6-pin Phoenix connector, one RS-485 +/- ground port, power +/- frame ground port One 3-pin RS-485 Phoenix connector, one RS-485 +/- ground port One Ethernet-10/100 Ethernet port	One 6-pin Phoenix connector, one RS-485 +/- ground port, power +/- frame ground port 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; OPC Self-tested for Compliance; 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 to 167°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 34: Specifications		

Appendix D.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 or 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 E. Limited 2 Year Warranty

FieldServer Technologies warrants its products to be free from defects in workmanship or material under normal use and service for two years after date of shipment. FieldServer Technologies 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 FieldServer Technologies 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 FieldServer Technologies 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 FieldServer Technology'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, FieldServer Technologies 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 FieldServer Technologies for damages including, but not limited to, consequential damages arising out of/or in connection with the use or performance of the product.