Cloud Enabled

ProtoNode Gateway

Startup Guide

750-426
03/2018

TO: **Owners, Operators and/or Maintenance Personnel**

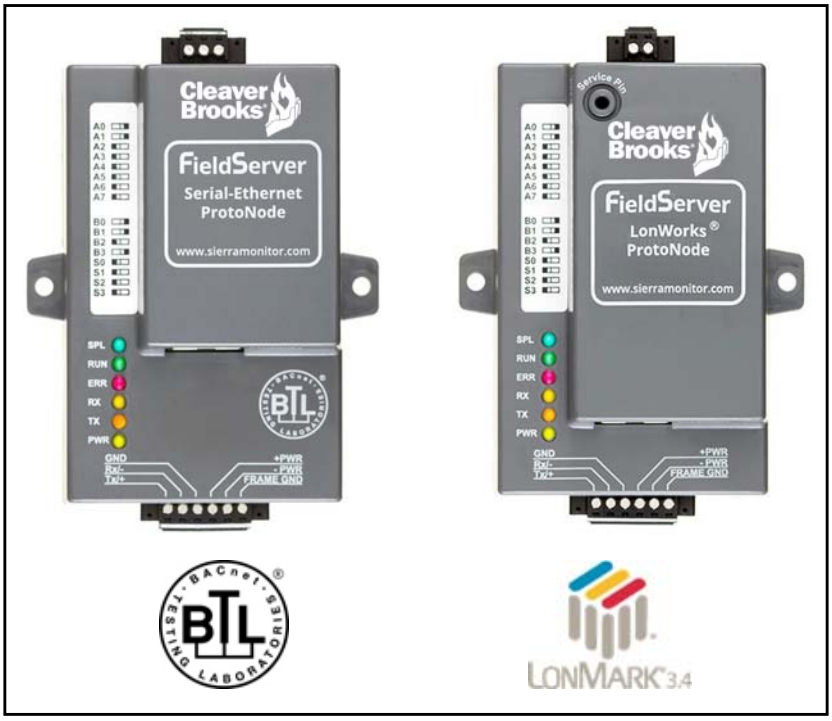
This operating manual presents information that will help to properly operate and care for the equipment. Study its contents carefully. The unit will provide good service and continued operation if proper operating and maintenance instructions are followed. No attempt should be made to operate the unit until the principles of operation and all of the components are thoroughly understood.

It is the responsibility of the owner to provide training and advice in all aspects of safety not only to his or her personnel, but to any contractors' personnel who will be servicing, repairing, or operating the equipment.

Cleaver-Brooks equipment is designed and engineered to give long life and excellent service on the job. The electrical and mechanical devices supplied as part of the unit were chosen because of their known ability to perform; however, proper operating techniques and maintenance procedures must be followed at all times.

It is solely the operator's responsibility to properly operate and maintain the equipment. No amount of written instructions can replace intelligent thinking and reasoning and this manual is not intended to relieve the operating personnel of the responsibility for proper operation. On the other hand, a thorough understanding of this manual is required before attempting to operate, maintain, service, or repair this equipment.

The operation of this equipment by the owner and any operating personnel must comply with all requirements or regulations of the insurance company and/or other authority having jurisdiction. In the event of any conflict or inconsistency between such requirements and the warnings or instructions contained herein, please contact Cleaver-Brooks before proceeding.



ProtoNode Gateway Cloud Enabled

RER (BACnet, N2, Modbus, Ethernet/IP)

and **LER** (LonWorks)

for interfacing Cleaver-Brooks products:

Falcon Hydronic, Falcon Steam, CB780, CB120, HSC, LCS, PCS, HAWK 1000, HAWK 2000, HAWK 4000, HAWK 4500, HAWK 5000, HAWK Master, HAWK ADAC, HAWK ICS, Shark100, Shark200, UDC2500, HSC Pump Interface, HSC Boiler Interface, CB780, CB783, FARC, HAWK 4000 V2, ADAC 1000

to Building Energy Management Systems:

BACnet MS/TP, BACnet/IP, Modbus TCP/IP, Modbus RTU, Metasys N2, Ethernet/IP and LonWorks

750-426
03/2018

Technical Support:

Thank you for purchasing the ProtoNode for Cleaver-Brooks products. For the latest edition of this Startup Guide, go to: http://www.cleaverbrooks.com/protonode

For ProtoNode Gateway technical support, please contact your Cleaver-Brooks authorized service representative. C-B representative contact information is available at www.cleaverbrooks.com/Find-a-Rep/Index.aspx

Sierra Monitor Corporation does not provide direct support. Should circumstances require, Cleaver-Brooks will contact Sierra Monitor Corporation on your behalf.

Support Contact Information:

Cleaver-Brooks
221 Law Street
Thomasville, GA 31792

Customer Service:
(229) 227-2614
(800) 250-5883 / (229) 226-3024

Website: www.CleaverBrooks.com

Quick Start Reference

Below is a basic sequence of steps required to configure and register a ProtoNode. It is recommended to become familiar with the manual in its entirety before beginning the registration process.

If using the ProtoNode for cloud-based data monitoring only (without protocol translation), steps 4, 5, 6, 8, and 13 below may be skipped.

1. First determine the configuration method (Auto-Discovery or Web Configurator) for devices to be connected to the ProtoNode (**Section 1.2**).
2. Record the ProtoNode part number in case needed for technical support (**Section 2.1**).
3. Set the device's COM settings and Node-ID for each of the devices that are to connect to the ProtoNode RER or LER (**Section 2.3**).
4. RER: Select the field protocol on the S Bank DIP Switches (**Section 2.4**).
5. BACnet MS/TP (RER): Set the MAC Address on the A Bank DIP Switches (**Section 2.5.1**).
6. BACnet MS/TP, Modbus RTU (RER): Set the baud rate of the field protocol on the B Bank DIP Switches (**Section 2.5.2**).
7. Connect ProtoNode 6 pin RS-485 connector to the RS-485 network that is connected to each of the C-B serial devices (**Section 3.2**).
8. Connect ProtoNode RER's 3 pin RS-485 port to the field protocol cabling, (**Section 3.3**) or connect the ProtoNode LER's 2 pin LonWorks port to the field protocol cabling (**Section 3.4).**
9. Connect power to the ProtoNode 6 pin connector (**Section 3.6**).
10. ***Optional, for Falcon controls only*** **-** Enable the ProtoNode "Auto-Discovery" mode on S Bank DIP Switches (**Section 2.4.1**). When power is applied it will take about 3 minutes for all the devices to be discovered and the configuration file to be built. Once Auto-Discovery is complete turn OFF the S3 DIP switch to save the configuration settings (**Section 3.5**).
11. Web Configurator Devices: Use a web browser to access the ProtoNode Web Configurator page; select the profiles of the devices attached to the ProtoNode and input the Node-ID from each device. Once devices are selected, the ProtoNode automatically builds and loads the appropriate configuration (**Section 4**).
12. BACnet/IP, Modbus TCP/IP, or cloud (RER): Use a web browser to access the ProtoNode Web Configurator page to change the IP Address. No changes to the configuration are necessary (**Section 4.4**).
13. LonWorks (LER): The ProtoNode must be commissioned on the LonWorks Network. This needs to be done by the LonWorks administrator using a LonWorks commissioning tool (**Section 7**).
14. Complete the registration process for the FieldPoP device cloud (**Section 8**).

BEFORE BEGINNING

In order to complete the ProtoNode registration and setup process, the following are required:

- A laptop computer for Internet access
- Ethernet cable
- IP address(es) to identify the ProtoNode and connected devices on plant network (**NOTE** - all devices connected via Ethernet to the ProtoNode will need an IP address on the same subnet)
- Email address for site/end user contact that will be the Enterprise Customer Admin for the site

The startup technician must be registered on the FieldPoP site as an OEM Manager.

Certifications

BACNET TESTING LABORATORY

The BTL Mark on ProtoNode RER 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. For the Protocol Implementation Conformance (PIC) statement go to:

http://www.sierramonitor.com/assets/blt933677195ae326eb/PDS_BACnet_PIC_Statement.pdf

LONMARK

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. Sierra Monitor Corporation 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

LIST OF FIGURES

1. INTRODUCTION

1.1 ProtoNode Gateway

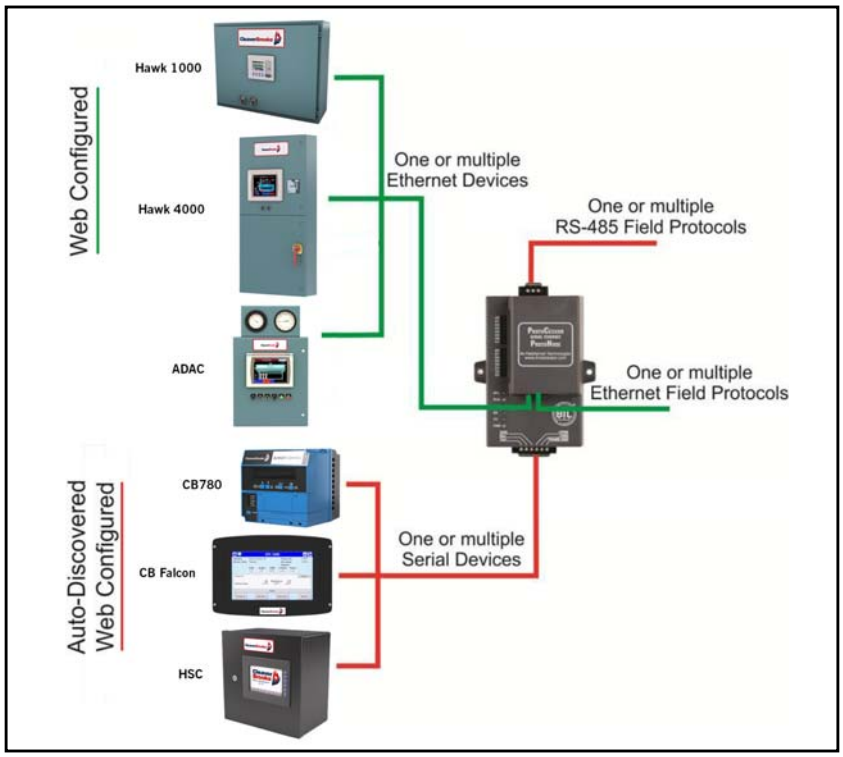
ProtoNode is an external, high performance **Building Automation multi-protocol gateway** that is configured to automatically communicate between any of Cleaver-Brooks' products (hereafter called “device”) to various building automation protocols. These protocols include BACnet® MS/TP, BACnet/IP, Metasys® N2 by JCI, Modbus TCP/IP, Modbus RTU, Ethernet/IP and LonWorks®.

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

We use 2 methods to dynamically configure the ProtoNode to support the devices with the selected protocol.

Auto-Discovery: Supported RS-485 devices can be automatically detected and identified for addition to the ProtoNode's configuration. (Section 1.2)

Web Configurator: Ethernet devices connected to the ProtoNode can not be Auto-Discovered. To add Ethernet devices to the gateway, profiles must be selected in the ProtoNode's Web Configurator. The Web Configurator shows all the stored profiles/devices on the ProtoNode. It will also show all the RS-485 devices that were previously discovered. After selecting the device, the Modbus Node-ID and, only for Ethernet Devices, the IP Address must also be entered. Once all the devices are selected and saved, the ProtoNode automatically builds and downloads the configuration for the desired protocol.



ProtoNode 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

1.2 Methods of Configuration - Cleaver-Brooks' Devices

The ProtoNode offers two methods of configuration:

- **Auto-Discovery** for RS-485 devices listed below in Figure 1.
- **Web Configurator** for Ethernet devices and RS-485 devices that cannot be identified by Auto-Discovery

A list of C-B products for use with the ProtoNode, together with their respective means of configuration, is shown in the table below.

Devices	Type of Communication	Type of Configuration
Falcon Hydronic	RS-485	Auto-Discovery/Web Configurator
Falcon Steam	RS-485	Auto-Discovery/Web Configurator
CB780	RS-485	Web Configurator
CB120	RS-485	Web Configurator
HSC Admin	RS-485	Auto-Discovery/Web Configurator
HSC BIM	RS-485	Web Configurator
HSC PIM	RS-485	Web Configurator
LCS	RS-485	Web Configurator
PCS	RS-485	Web Configurator
HAWK 1000	Ethernet	Web Configurator
HAWK 2000	Ethernet	Web Configurator
HAWK 4000	Ethernet	Web Configurator
HAWK 4500	Ethernet	Web Configurator
HAWK 5000	Ethernet	Web Configurator
HAWK Master	Ethernet	Web Configurator
HAWK ADAC	Ethernet	Web Configurator
HAWK ICS	Ethernet	Web Configurator
Shark 100	Ethernet	Web Configurator
Shark 200	Ethernet	Web Configurator
UDC2500	Ethernet	Web Configurator
HSC Pump Interface (PIM)	Ethernet	Web Configurator
HSC Boiler Interface (BIM)	Ethernet	Web Configurator
CB780 CB783 FARC	Ethernet	Web Configurator
HAWK 4000 V2	Ethernet	Web Configurator
ADAC 1000	Ethernet	Web Configurator

FIGURE 1 - Method of configuration for the devices

2. PROTONODE SETUP

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	Description
ProtoNode RER	833-06022-000	BACnet, N2, Modbus, Ethernet/IP
ProtoNode LER	833-06029-000	LonWorks

FIGURE 2 - ProtoNode Part Numbers

- RER units have the following 3 ports: RS-485 + Ethernet + RS-485
- LER units have the following 3 ports: LonWorks + Ethernet + RS-485

2.2 Point Count Capacity and Registers per Device

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

Model	Total Registers
ProtoNode RER	10,000
ProtoNode LER	5,000

FIGURE 3 - Supported Point Count Capacity

DEVICE	REGISTERS PER DEVICE
Falcon_Hydronic	92
Falcon_Steam	62
CB780	93
CB120	94
HSC	318
LCS	59
PCS	57
HAWK_1000	278
HAWK_2000	75
HAWK_4000	293
HAWK_5000	278
HAWK_Master	200
HAWK_ADAC	275
HAWK_ICS	146
Shark100	41
Shark200	50
UDC2500	42
HSC_Pump_Interface	47
HSC_Boiler_Interface	40
CB780_CB783_FARC	178
Hawk_4000_V2	378
ADAC_1000	338

FIGURE 4 - Modbus Registers per Device

2.3 Configuring Device Communications

2.3.1 Input COM Settings on all Serial Devices Connected to the ProtoNode

All of the connected serial devices MUST have the same Baud Rate, Data Bits, Stop Bits, and Parity settings as the ProtoNode.

Figure 5 specifies the device serial port settings required to communicate with the ProtoNode.

Port Setting	Falcon Steam & Hydronic	Other Serial Devices
Protocol	Modbus RTU	Modbus RTU
Baud Rate	38400	9600
Parity	None	None
Data Bits	8	8
Stop Bits	1	1

FIGURE 5 - COM Settings

2.3.2 Set Modbus Node-ID for each device attached to the ProtoNode

Set Modbus Node-ID for each of the devices attached to ProtoNode. The Modbus Node-ID's need to be uniquely assigned between 1 and 255. **The Modbus Node-ID that is assigned for each device needs to be documented.** The Modbus Node-IDs assigned are used for designating the Device Instance for BACnet/IP and BACnet MS/TP (Section 2.5.2)

The Metasys N2 and Modbus TCP/IP Field Protocol Node-IDs are automatically set to the same value as the Node-ID of the device.

2.3.3 Set IP Address for each Ethernet Device Connected to the ProtoNode

Ensure devices are set to Modbus TCP/IP to communicate with the ProtoNode.

- The device needs to be on the same IP subnet as the ProtoNode and the configuration PC.
- Record the following device information to start the setup:
  IP Address
  IP port
  Node-ID

NOTE: This information is required for Section 4.

2.4 Selecting the Desired Field Protocol

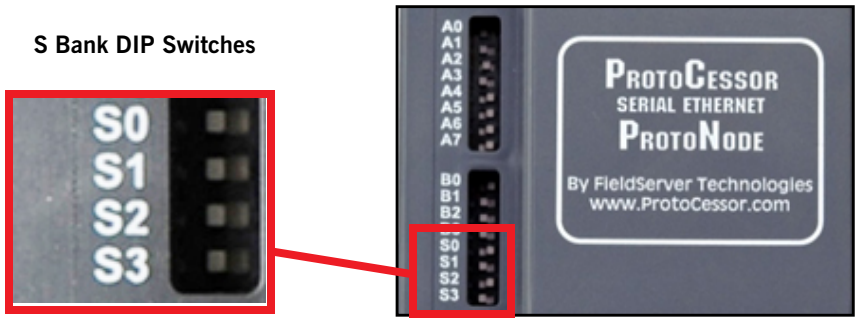
NOTE: If using the ProtoNode only for cloud-based data monitoring, Sections 2.4 and 2.5 may be skipped.

- ProtoNode RER units use the “S” bank of DIP switches (S0 - S2) to select the Field Protocol.

  See Figure 6 for the DIP switch settings.

  The OFF position is when the DIP switches are set closest to the outside of the box.

- ProtoNode LER units do not use the “S” bank DIP switches to select a Field Protocol. On ProtoNode LER units, these DIP switches are disabled; the Field Protocol is always LonWorks.



ProtoNode RER	S Bank DIP Switches		
Profile	**S0**	**S1**	**S2**
BACnet IP	Off	Off	Off
BACnet MSTP	On	Off	Off
Metasys N2	Off	On	Off
Modbus TCP & Modbus RTU	On	On	Off
Ethernet/IP	Off	Off	On
BACnet MS/TP (single node)	On	Off	On

S3 DIP Switch Auto-Discovery Mode	S3
Auto-Discovery ON - Build New Configuration	On
Auto-Discover OFF - Save Current Configuration	Off

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

FIGURE 6 - S Bank DIP Switches

2.4.1 Enabling Auto-Discovery

The S3 DIP switch is used to both enable Auto-Discovery of known devices attached to the Proto-Node, and to save the recently discovered configuration.

See the table in Figure 6 for the DIP switch setting to enable Auto-Discovery.

If the ProtoNode is being installed for the first time, set S3 to the ON position to enable Auto-Discovery.

The ON position is when the DIP switches are set closest to the inside of the box.

2.5 BMS Network Settings: MAC Address, Device Instance and Baud Rate

2.5.1 BACnet MS/TP (RER): Setting the MAC Address for BMS Network

Only 1 MAC address is set for the ProtoNode regardless of how many devices are connected.

Set the BACnet MS/TP MAC addresses of the ProtoNode to a value between 1 to 127 (MAC Master Addresses); this is so that the BMS Front End can find the ProtoNode via BACnet auto discovery.

Note: Never set a BACnet MS/TP MAC Address from 128 to 255. Addresses from 128 to 255 are 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 for the complete range of MAC Addresses and DIP switch settings.

NOTE: 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.

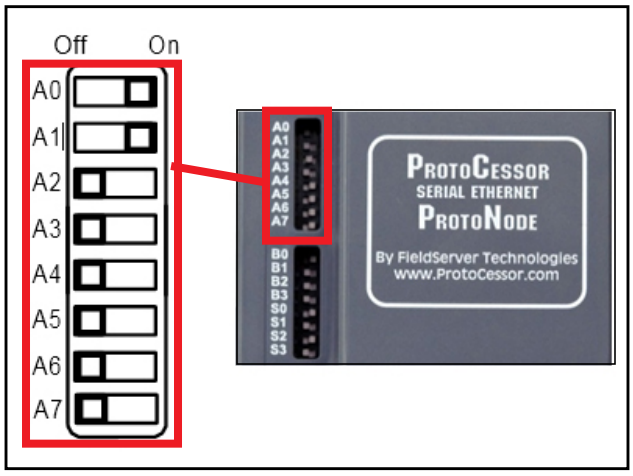


FIGURE 7 - MAC Address DIP Switches

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

2.5.2 BACnet (RER): Calculating the Default Device Instance

The Device Instance value is automatically generated using the following formula:

BACnet Device Instance = (Device Node ID) + (Default Node Offset)

NOTE: The default Node Offset is 50,000.

For example, if Device A has a Node ID of 1 and Device B has a Node ID of 2, then:

BACnet Device Instance A = (1) + (50000) = 50001

BACnet Device Instance B = (2) + (50000) = 50002

NOTE: The Node ID is set in Section 2.3.2.

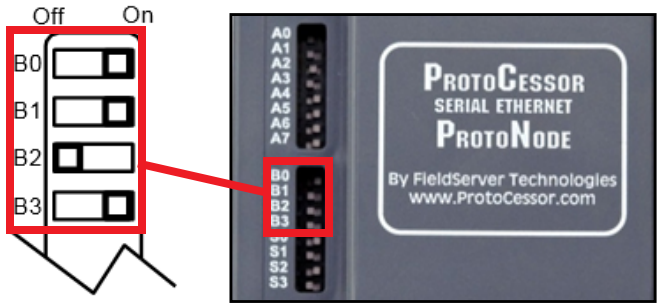
To reach a specific BACnet Device Instance result, refer to Section 5.

2.5.3 BACnet MS/TP: Setting the Baud Rate for BMS Network

DIP switches B0 – B3 can be used to set the field baud rate of the ProtoNode to match the baud rate required by the BMS for BACnet MS/TP.

The ProtoNode baud rate for Metasys N2 is set for 9600. DIP switches B0 – B3 are disabled for Metasys N2 on ProtoNode RER.

DIP switches B0 – B3 are disabled on ProtoNode LER (LonWorks).



Baud Rate DIP Switches

Table 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

*Factory default

FIGURE 8 - Baud Rate DIP Switches

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

3. INTERFACING PROTONODE TO DEVICES

3.1 ProtoNode Connection Ports

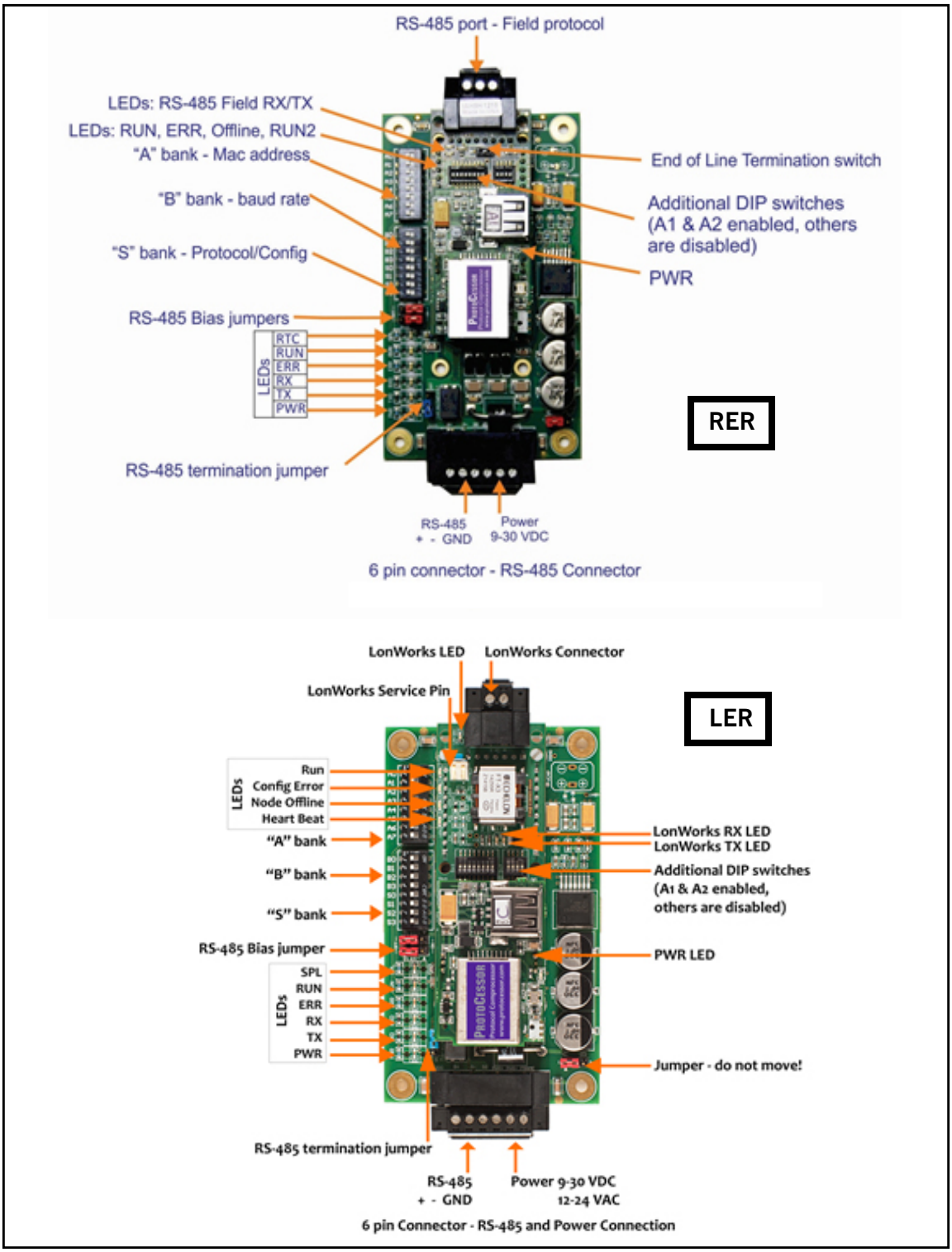


FIGURE 9 - ProtoNode Connection Ports

3.2 Device Connections to ProtoNode

ProtoNode 6 Pin Phoenix connector for RS-485 Devices

The 6 pin Phoenix connector is the same for ProtoNode RER (BACnet) and LER (LonWorks).

Pins 1 through 3 are for Modbus RS-485 devices. The RS-485 GND (Pin 3) is not typically connected.

Pins 4 through 6 are for power. **Do not connect power** (wait until Section 3.6).

Device Pins	ProtoNode Pin #	Pin assignment
Pin RS-485 +	Pin 1	RS-485 +
Pin RS-485 -	Pin 2	RS-485 -
Pin GND	Pin 3	RS-485 GND
Power In (+)	Pin 4	V +
Power In (-)	Pin 5	V -
Frame Ground	Pin 6	FRAME GND

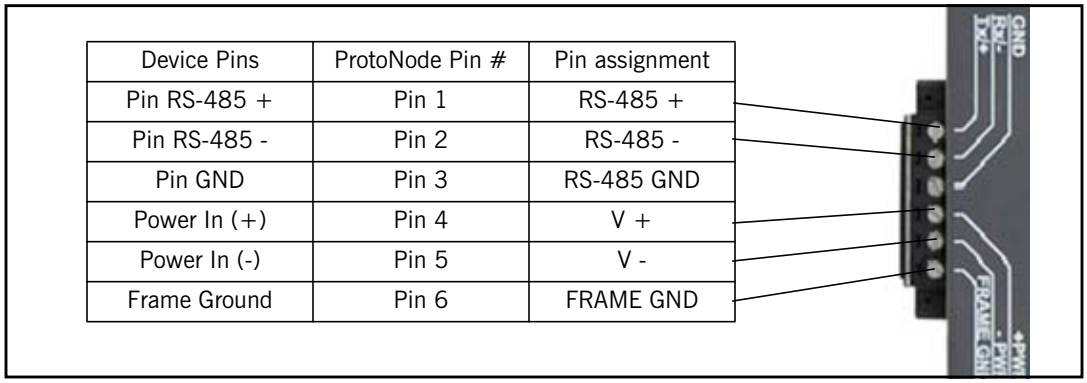


FIGURE 10 - RS-485 and Power Connections

3.2.1 Biasing the Modbus RS-485 Network

An RS-485 network with more than one device needs to have biasing to ensure proper communication. The biasing only needs to be done on one device.

The ProtoNode has 510 Ohm resistors that can be used to set the biasing. The ProtoNode's default positions from the factory for the biasing jumpers are OFF.

The OFF position is when the 2 RED biasing jumpers straddle the 4 pins closest to the outside of the board of the ProtoNode. See Figure 11.

Only turn biasing ON:

- **IF** the BMS cannot see more than one device connected to the ProtoNode
- **AND** all the settings (Modbus COM settings, wiring, and DIP switches) have been checked.

To turn biasing ON, move the 2 RED biasing jumpers to straddle the 4 pins closest to the inside of the board of the ProtoNode.

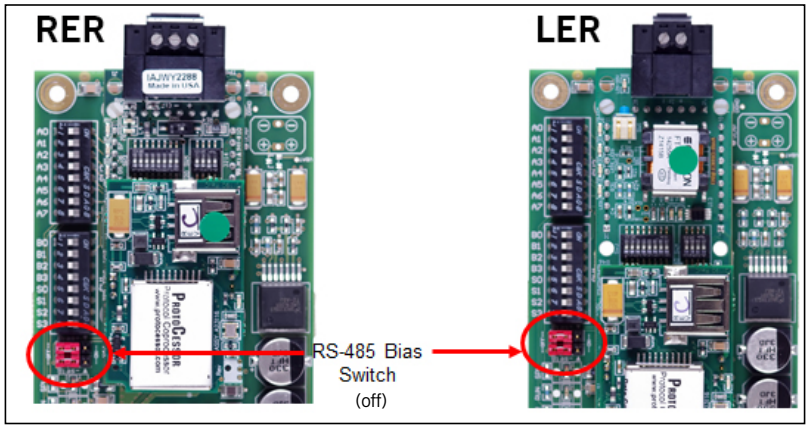


FIGURE 11 - RS-485 Bias Switch

3.2.2 End of Line Termination Switch for the Modbus RS-485 Device Network

On long RS-485 cabling runs, the RS-485 trunk must be properly terminated at each end.

The ProtoNode has an End Of Line (EOL) blue jumper. The default setting for this Blue EOL switch is OFF with the jumper straddling the pins closest to the inside of the board of the ProtoNode.

On short cabling runs the EOL switch does not to need to be turned ON.

If the ProtoNode is placed at one of the ends of the trunk, set the blue EOL jumper to the ON position straddling the pins closest to the outside of the board of the ProtoNode.

Always leave the single Red Jumper in the A position (default factory setting).

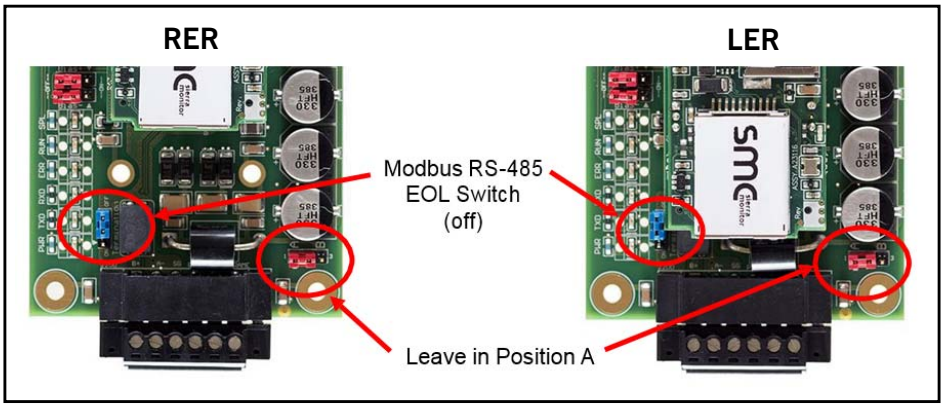


FIGURE 12 - RS-485 EOL Termination Switch

3.3 BACnet MS/TP or Metasys N2 (RER): Wiring Field Port to RS-485 Network

Connect the BACnet MS/TP or Metasys N2 RS-485 network wires to the 3-pin RS-485 connector on ProtoNode RER as shown below.

- Use standard grounding principles for RS-485 GND.

See Section 4.4 for information on connecting to BACnet/IP network.

If the ProtoNode is the last device on the BACnet MS/TP or Metasys N2 trunk, then the End-Of-Line Termination Switch needs to be enabled (Figure 14).

- The default setting from the factory is OFF (switch position = right side).
- To enable the EOL Termination, turn the EOL switch ON (switch position = left side).

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

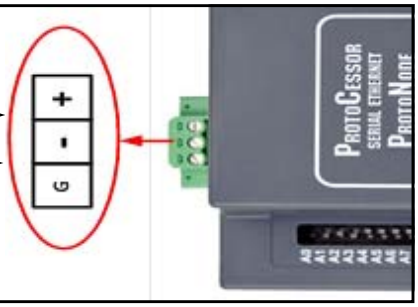


FIGURE 13 - Connection from ProtoNode to RS-485 Field Network

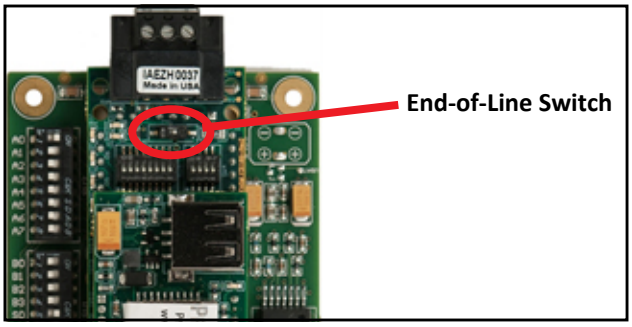


FIGURE 14 - RS-485 BMS Network EOL Switch

3.4 LonWorks (LER): Wiring LonWorks Devices to the LonWorks Terminal

Wire the LonWorks device network to the ProtoNode LonWorks Terminal.

- Use approved cable per the FT-10 installation guidelines
- LonWorks has no polarity.

FIGURE 15 - LonWorks Terminal

3.5 Auto-Discovery: After Completion - Turn Off to Save Configuration

NOTE: If Modbus TCP/IP was selected for the field/BMS protocol, skip this section. Auto-Discovery is NOT used for Modbus TCP/IP.

The S3 DIP Switch for Enabling Auto-Discovery should have been set in Section 2.4.1 before applying power to the ProtoNode. Do not Enable Auto-Discovery when the unit is powered.

When power is applied to a ProtoNode that is set to enable Auto-Discovery, it will take about 3 minutes to complete the discovery of all of the RS-485 devices attached to the ProtoNode.

- The "TX" LED will flash during Auto-Discovery
- Once Auto-Discovery is complete, the "TX" and "RX" LEDs should flash rapidly, indicating good communication between discovered devices
- **Once the ProtoNode has discovered all of the RS-485 devices, set the S3 DIP switch to the OFF position to save the current configuration.**

ProtoNode RER and LER	
S3 DIP Switch Auto-Discovery Mode	**S3**
Auto-Discovery ON - Build New Configuration	On
Auto-Discover OFF - Save Current Configuration	Off

FIGURE 16 - S3 DIP Switch setting for Auto Discovering Devices

3.6 Power-Up ProtoNode

Check power requirements in the table below:

Power Requirement for ProtoNode at 9V through 30 VDC or 12-24 VAC			
	Current Draw Type		
ProtoNode Family	12VDC/VAC	24VDC/VAC	30VDC
RER (Typical)	170mA	100mA	80mA
RER (Maximum)	240mA	140mA	100mA
LER (Typical)	210mA	130mA	90mA
LER (Maximum)	250mA	170mA	110mA
Note: These values are 'nominal' and a safety margin should be added to the power supply of the host system. A safety margin of 25% is recommended.			

FIGURE 17 - Required current draw for the ProtoNode

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

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

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

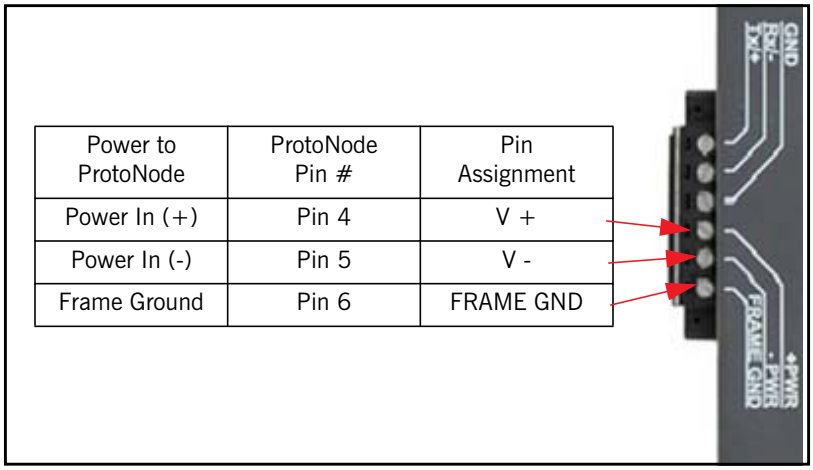


FIGURE 18 - Power Connections

4. WEB CONFIGURATOR

Use Protonode's Web Configurator to set up the gateway.

4.1 Connect the PC to ProtoNode via the Ethernet Port

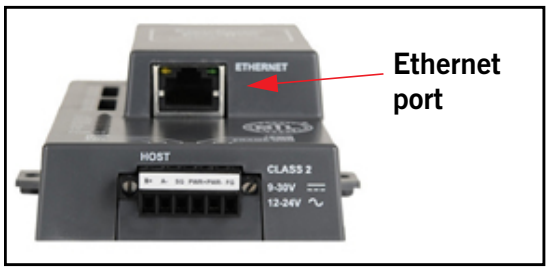


FIGURE 19 - Ethernet Port

- Connect a standard CAT5 Ethernet cable (Straight through or Cross-Over) between the PC and ProtoNode.
- The Default IP Address of ProtoNode is **192.168.1.24**, Subnet Mask is **255.255.255.0**. If the PC and ProtoNode are on different IP Networks, assign a static IP Address to the PC on the 192.168.1.xxx network.
- **For Windows 10:**

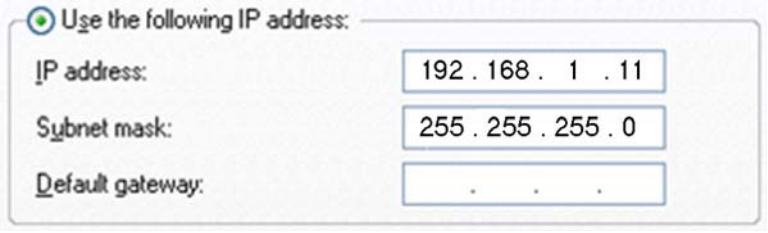
Right click on  > Control Panel > Network and Internet > Network and Sharing Center

> Change adapter settings

Right-click on Local Area Connection > Properties

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

Use the following IP Address:



Click OK twice.

4.2 Connecting to ProtoNode's Web Configurator

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

NOTE: If the IP Address of the ProtoNode has been changed by previous configuration, the assigned IP Address can be discovered using the FS Toolbox utility. See Appendix A.1 for instructions.

- Once at the Web App splash page, click the <Login> button.

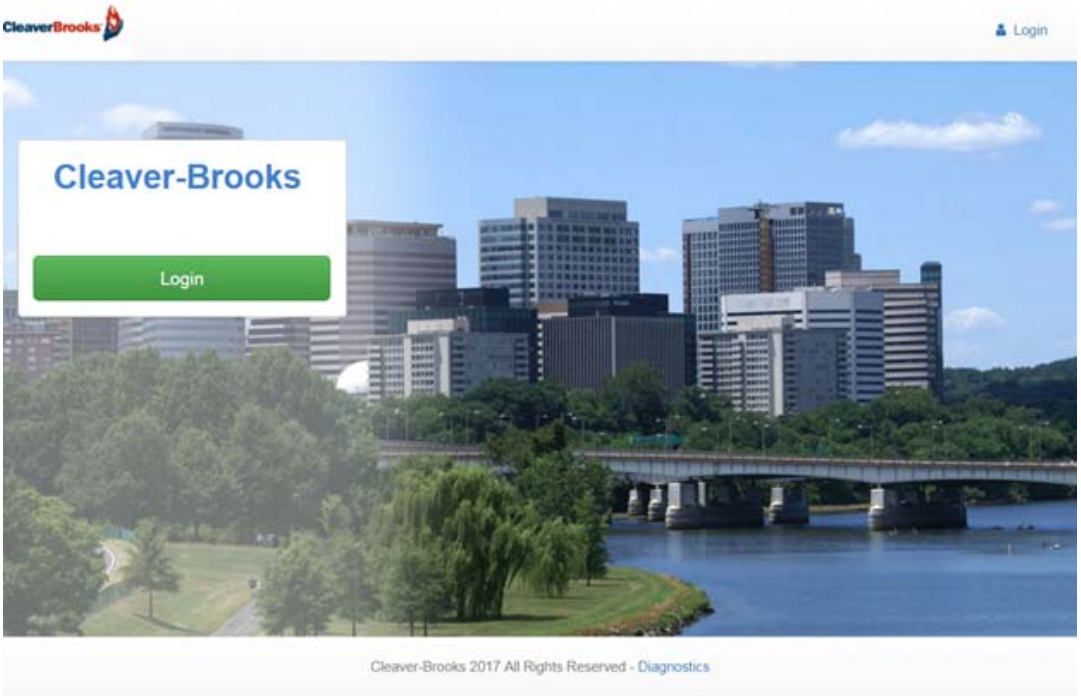


FIGURE 20 - Web App Splash Page

- Enter the previously set up or default user name and password.

NOTE: The default user name is “admin”. The default password is “admin”.

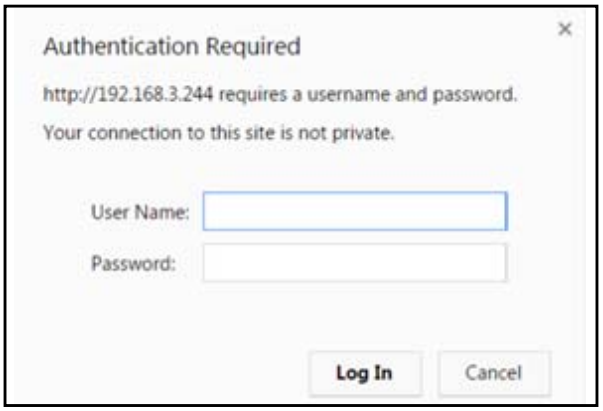


FIGURE 21 - Login Window

- From the Web App landing page (Figure 22), click the Configure tab.

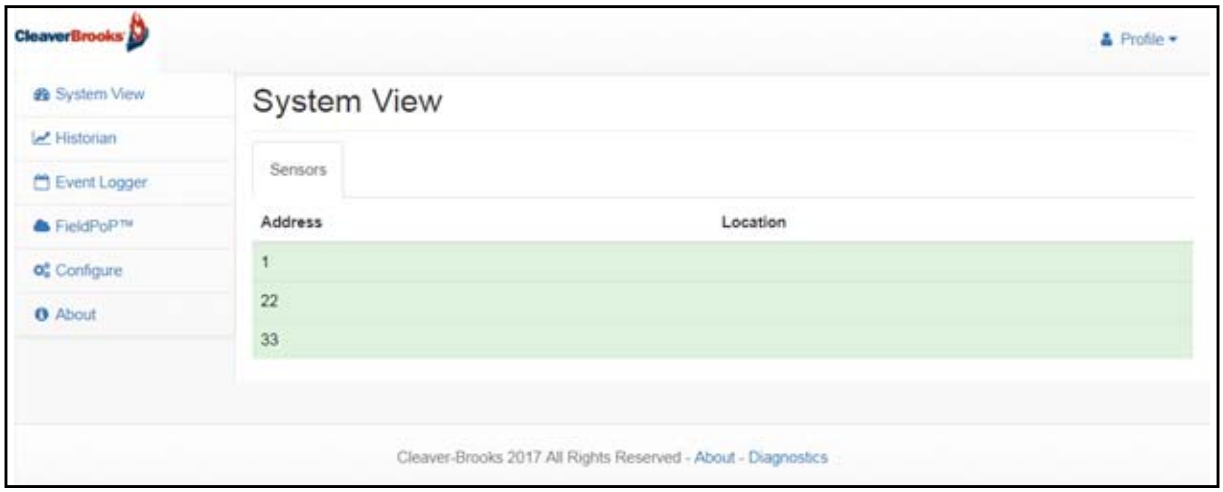


FIGURE 22 - Web App Landing Page

- Then click the <Profiles Configuration> button to go to the Web Configurator page.

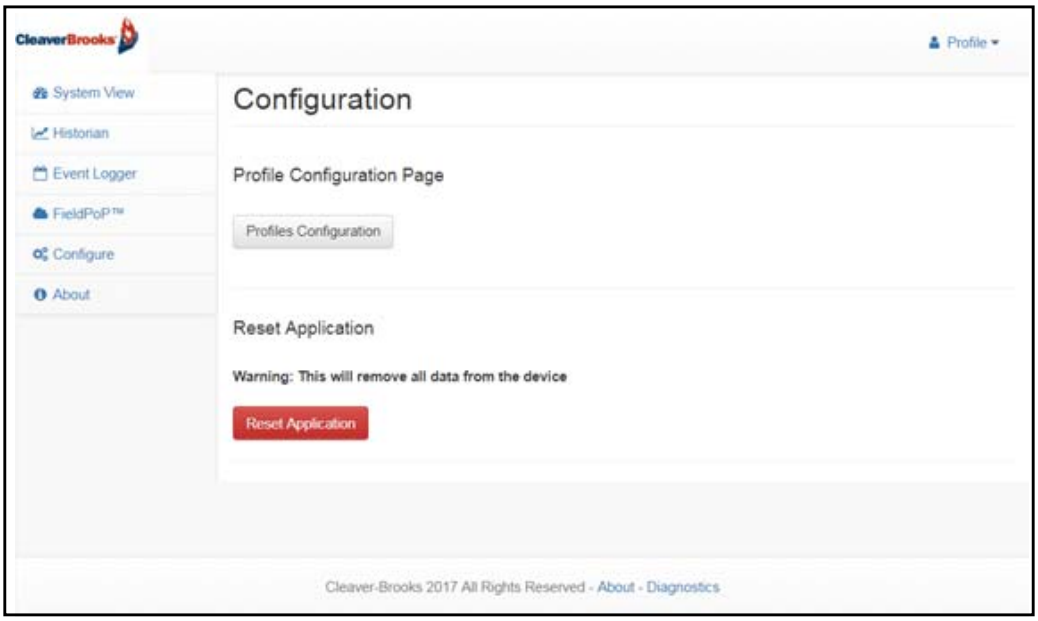


FIGURE 23 - Configuration Page

NOTE: The FieldPoP™ tab  (see Figure 23) allows users to connect to the SMC Cloud, Sierra Monitor's device cloud solution for IIoT. The SMC Cloud enables secure remote connection to field devices through a FieldServer and its local applications for configuration, management, maintenance. For more information about the SMC Cloud, refer to the SMC Cloud Start-up Guide.

NOTE: For Web App instructions to the System View, Historian and Event Logger functions, see the SMC Cloud Start-up Guide.

4.3 Selecting Profiles for Devices Connected to ProtoNode

In the Web Configurator, the Active Profiles section is shown on the lower left side of the screen.

The Active Profiles section lists the currently active device profiles, including previous Web Configurator additions and any devices identified by Auto-Discovery configuration methods. This list will be empty for new installations, or after clearing all configurations.

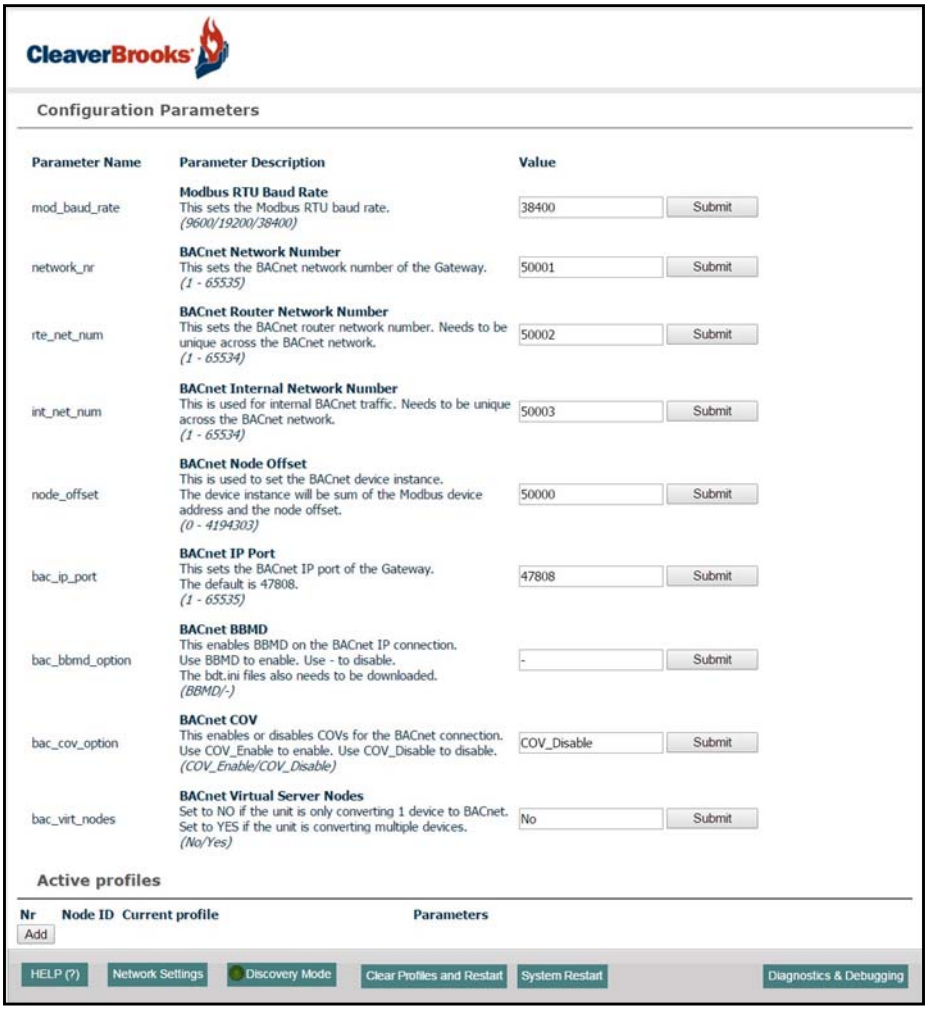


FIGURE 24 - Web Configurator Showing no Active Profiles

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.

For every device that is added, assign a unique Modbus Node-ID. This specification must match the device's network settings.

NOTE: If multiple devices are connected to the ProtoNode, set the BACnet Virtual Server Nodes field to "Yes"; otherwise leave the field on the default "No" setting.

Once the Profile for the device has been selected from the drop-down list, enter the value of the device's Node-ID which was assigned in Section 2.3.2

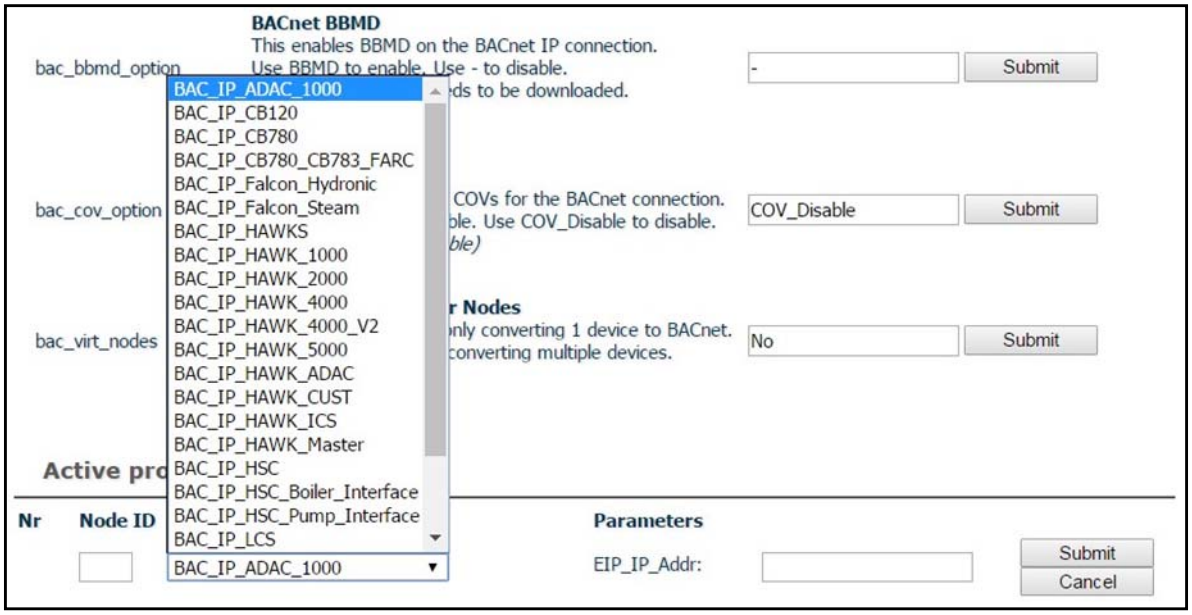


FIGURE 25 - Web Configurator showing available profiles for selection

- 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 shown in Figure 26.
- After adding profiles press <System Restart>

FIGURE 26 - Web Configurator Showing Active Profile Additions

NOTE: If the device is connected via EtherNet/IP, the "IP_Addr" under the Parameters heading must be gathered from settings on the device. This corresponds to the device IP Address (Section 2.3.3).

4.4 BACnet/IP and Modbus TCP/IP: Setting IP Address for Field Network

After setting a local PC to the same subnet as the ProtoNode (Section 5.1), open a web browser on the PC and enter the IP Address of the ProtoNode; the default address is 192.168.1.24.

The Web Configurator is displayed as the landing page (Figure 27).

To access the FieldServer Graphic User Interface (FS-GUI), click on the "Diagnostics & Debugging" button in the bottom right corner of the page.

FIGURE 27 - Web Configurator Screen with Active Profiles

From the FS-GUI landing page, click on "Setup" to expand the navigation tree and then select "Network Settings" to access the IP Settings menu.

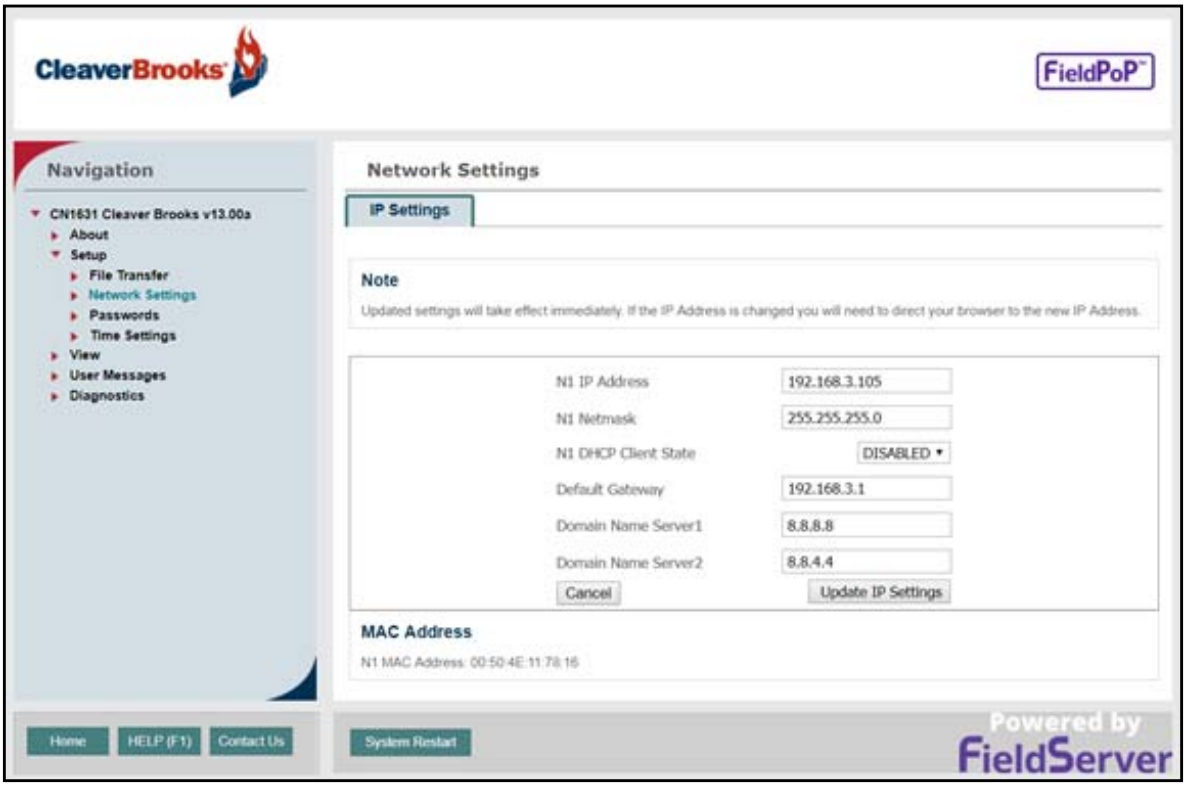


FIGURE 28 - Changing IP Address via FS-GUI

Modify the IP Address (N1 IP Address field) of the ProtoNode Ethernet port.

If necessary, change the Netmask (N1 Netmask field).

If necessary, change the IP Gateway (Default Gateway field).

DHCP Client State should remain disabled; Domain Name Server 1 and 2 should be left at their current values.

NOTE: If the ProtoNode is connected to a managed switch/router, the IP Gateway of the ProtoNode should be set to the IP Address of that managed switch/router.

Click the "System Restart" button at the bottom of the page to apply changes and restart the ProtoNode.

Unplug Ethernet cable from PC and connect it to the network switch or router.

Record the IP Address assigned to the ProtoNode for future reference.

NOTE: The FieldPoP™ button FieldPoP™ (see Figure 28) allows users to connect to the SMC Cloud, Sierra Monitor's device cloud solution for IIoT. The SMC Cloud enables secure remote connection to field devices through a FieldServer and its local applications for configuration, management, maintenance. For more information about the SMC Cloud, refer to the SMC Cloud Start-up Guide.

5. BACNET MS/TP AND BACNET/IP: SETTING NODE OFFSET TO ASSIGN SPECIFIC DEVICE INSTANCES

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

- If the IP Address of the ProtoNode has been changed by previous configuration, the assigned IP Address will need to be obtained from the network administrator.
- The Web Configurator will be displayed as the landing page.

Node_Offset field will be presented displaying the current value (default = 50,000). The values allowed for a BACnet Device Instance can range from 1 to 4,194,303.

- To assign a specific Device Instance (or range); change the Node_Offset value as needed using the calculation below:

  Device Instance (desired) = Node_Offset + Modbus Node_ID

  For example, if the desired Device Instance for the device 1 is 50,001 and the following is true:

  Device 1 has a Modbus Node-ID of 1
  Device 2 has a Modbus Node-ID of 22
  Device 3 has a Modbus Node-ID of 33

  Then plug the device 1's information into the formula to find the desired Node_Offset:

  50,001 = Node_Offset + 1
  50,000 = Node_Offset

  Once the Node_Offset value is input, it will be applied to all devices as shown below:

  Device 1 Instance will then be = 1,000 + Node_ID = 1,000 + 1 = 1,001
  Device 2 Instance will then be = 1,000 + Node_ID = 1,000 + 22 = 1,022
  Device 3 Instance will then be = 1,000 + Node_ID = 1,000 + 33 = 1,033

  Click “Submit” once the desired value is entered.

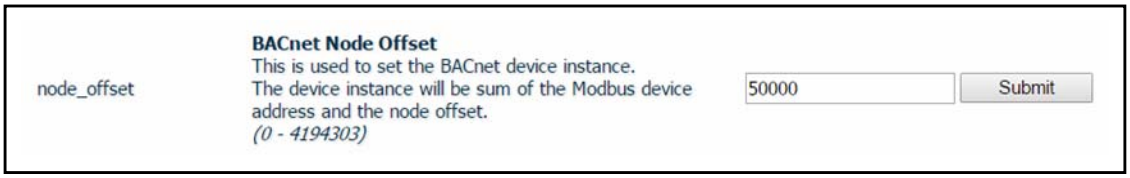


FIGURE 29 - Web Configurator Node Offset Field

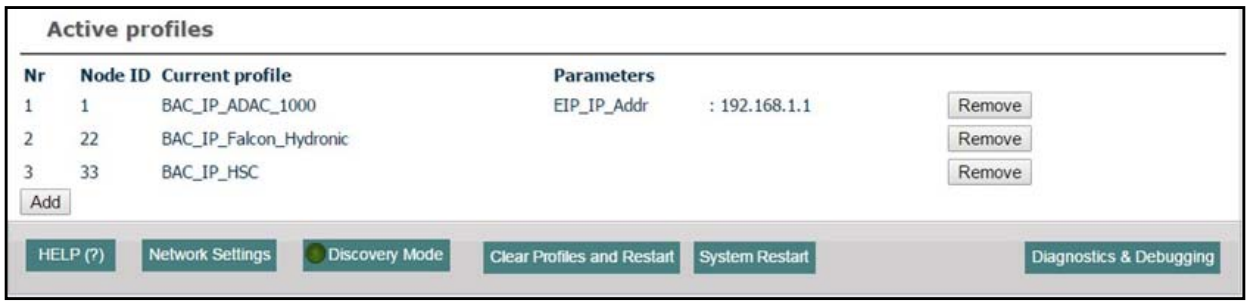


FIGURE 30 - Active Profiles

6. 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.
- If the IP address of the ProtoNode has been changed by previous configuration, you will need to get the assigned IP address from the network administrator.
- 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.

7. COMMISSIONING THE PROTONODE ON A LONWORKS NETWORK

Commissioning may only be performed by the LonWorks administrator.

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

If an XIF file is required, see 7.1 below.

FIGURE 31 - LonWorks Service Pin

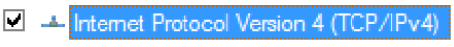
7.1 Downloading an XIF File

- Connect a CAT5 Ethernet cable (straight through or crossover) between the PC and the ProtoNode.
- The Default IP Address of the 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 10:

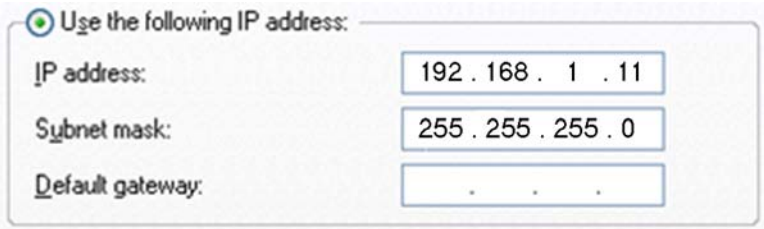
Right click on  > Control Panel > Network and Internet > Network and Sharing Center

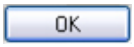
> Change adapter settings

Right-click on Local Area Connection > Properties

Highlight  > Properties

Use the following IP Address:



Click  twice.

- Open a web browser and go to the following address: [IP Address of ProtoNode]/fserver.xif.

  Example: 192.168.1.24/fserver.xif

- If the web browser prompts to save the file, save the file onto the local PC. If the web browser displays the xif file as a web page, save the file onto the local PC as “fserver.xif”.

FIGURE 32 - Generating an XIF File

8. SMC CLOUD USER SETUP, REGISTRATION AND LOGIN

8.1 User Setup

When configuring the ProtoNode, the startup technician will prepare an account for the individual who will be the Enterprise Customer Administrator for the site (see SMC Cloud Startup Guide 750-431 for OEM and Enterprise Customer user hierarchy). When configuration is complete, the ProtoNode should be disconnected from the installer's computer and connected to the company network. The Administrator should complete the registration process using an on-site computer with network access.

The Administrator invitee should receive a "Welcome to FieldPoP" email as shown below.

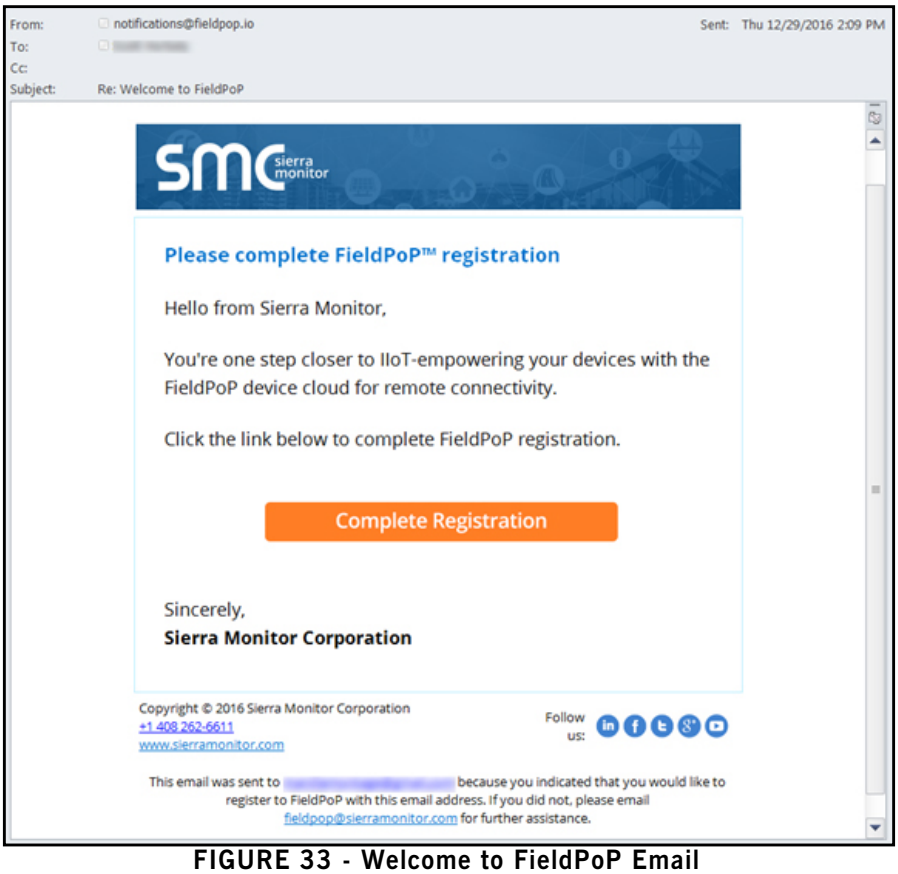


FIGURE 33 - Welcome to FieldPoP Email

NOTE: If no SMC Cloud email was received, check the spam/junk folder for an email from notification@fieldpop.io. Contact the manufacturer's support team if the email cannot be found.

Click the “Complete Registration” button and fill in user details accordingly.

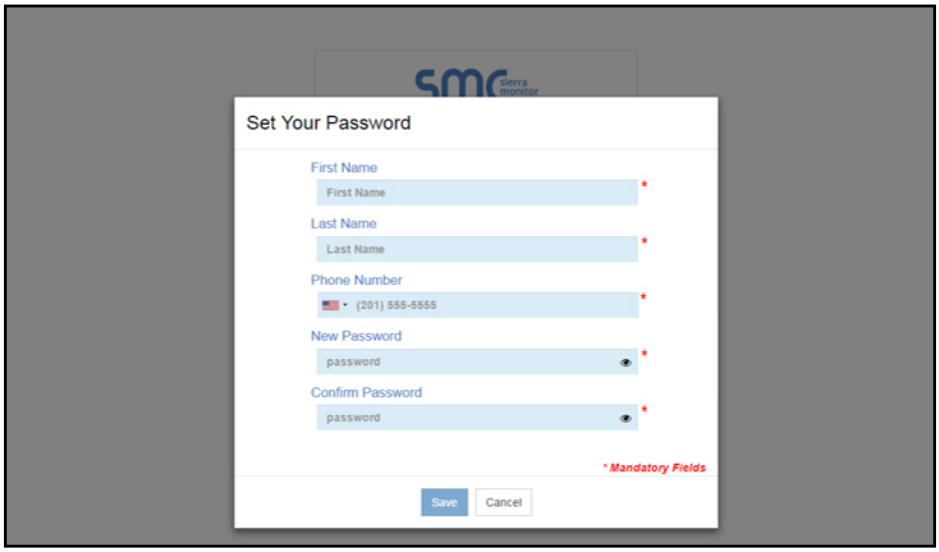


FIGURE 34 - Setting User Details

- Fill in the name, phone number and password fields.
- Click <Save> to save the user details.
- Record the email account and password for future use.

8.2 Registration Process

Once SMC Cloud user credentials have been generated, the ProtoNode can be registered onto the SMC Cloud server.

Click on the FieldPoP™ tab on the left-hand side of the screen.

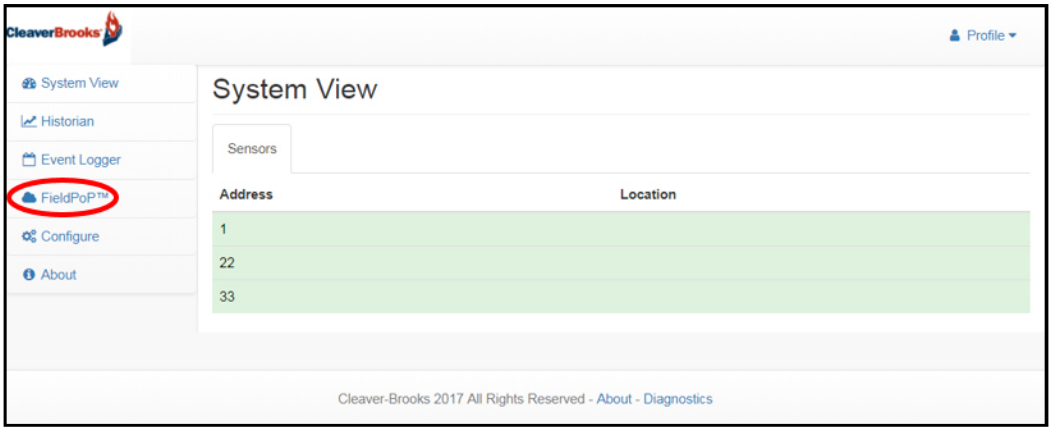


FIGURE 35 - Web App Landing Page - FieldPoP Tab

The following informational splash page will appear; click <Close> to view the registration page.

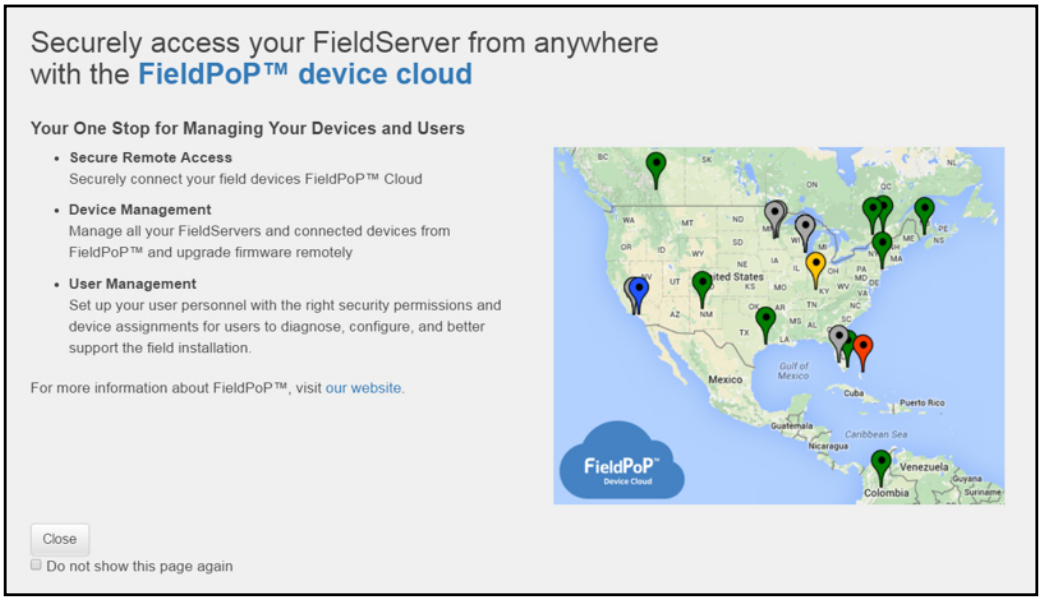


FIGURE 36 - Registration Information Page

If a warning message appears instead of the splash page, follow the suggestion presented. If the ProtoNode cannot reach the SMC Cloud server, the following message will appear:

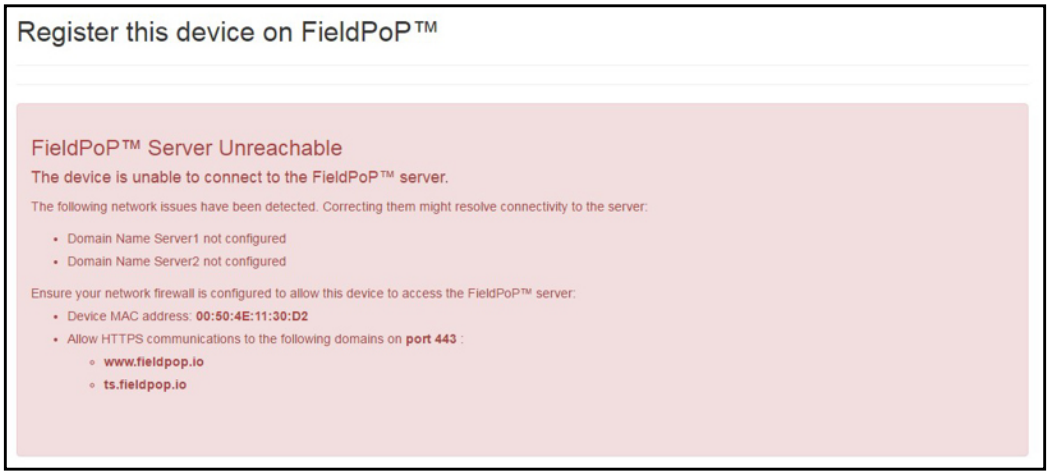


FIGURE 37 - SMC Cloud Connection Problems Message

Follow the directions presented in the warning message and check that the DNS settings are set up with the following Domain Name Server (DNS) settings:

DNS1=8.8.8.8
DNS2=8.8.4.4

Ensure that the ProtoNode is properly connected to the Internet

NOTE: If changes to the network settings are done, remember to click "Update IP Settings" and then power cycle the ProtoNode.

On the registration page, fill in user credentials and all other device information fields for registration of each individual ProtoNode in the field. The Username and Password are the same as those on the user's FieldPoP account.

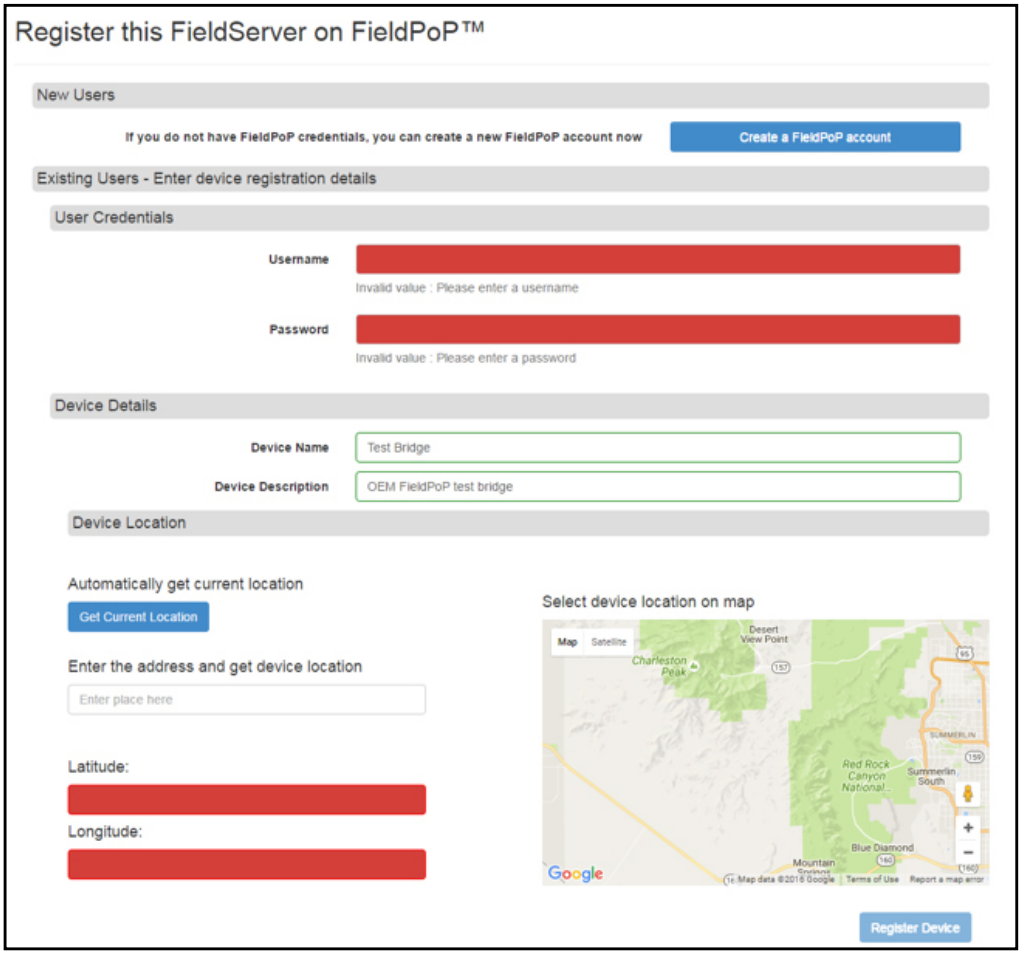


FIGURE 38 - SMC Cloud Registration Page

To input the device location do one of the following:

- Enter the address in the address field
- Click the <Get Current Location> button to auto-populate. **NOTE: This button will only work if location services have been enabled on the local browser. If using the Chrome browser and connected via LAN, this method will not work.**
- Drop a location directly on the Google map
- Enter the latitude and longitude manually

Click <Register Device>. Once the device has successfully been registered, the following screen will appear listing the device details and additional information auto-populated by the ProtoNode.

FIGURE 39 - Device Registered for SMC Cloud

8.3 Login

After the ProtoNode is registered, go to www.fieldpop.io and type in the appropriate login information as per registration credentials.

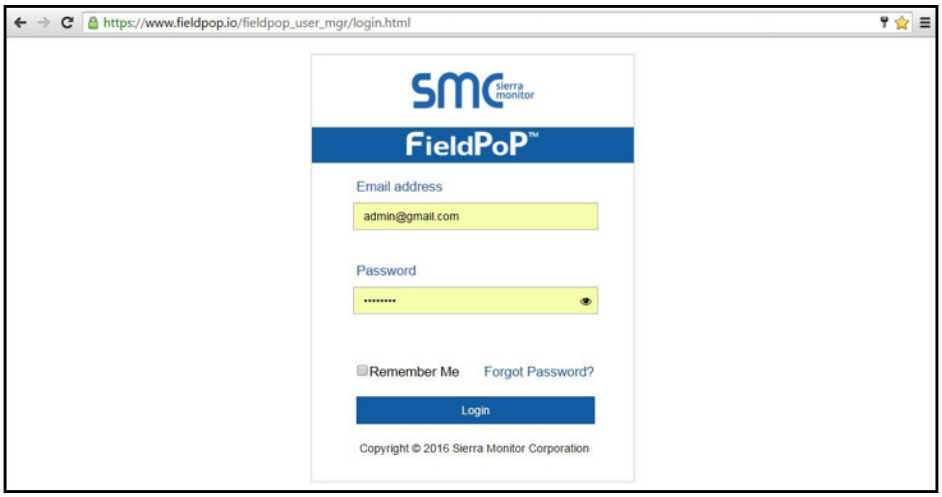


FIGURE 40 - SMC Cloud Login Page

If the login password is lost, see the SMC Cloud Start-up Guide for recovery instructions.

FIGURE 41 - SMC Cloud Landing Page

NOTE: For additional SMC Cloud instructions see the SMC Cloud Start-up Guide.

APPENDIX A. TROUBLESHOOTING

A.1. Lost or Incorrect IP Address

Ensure that FieldServer Toolbox is loaded onto the local PC. Otherwise, download the FieldServer-Toolbox.zip via the Sierra Monitor Resource Center Software Downloads.

Extract the executable file and complete the installation.

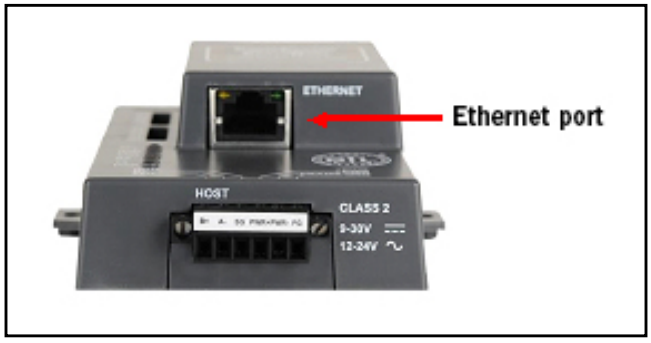
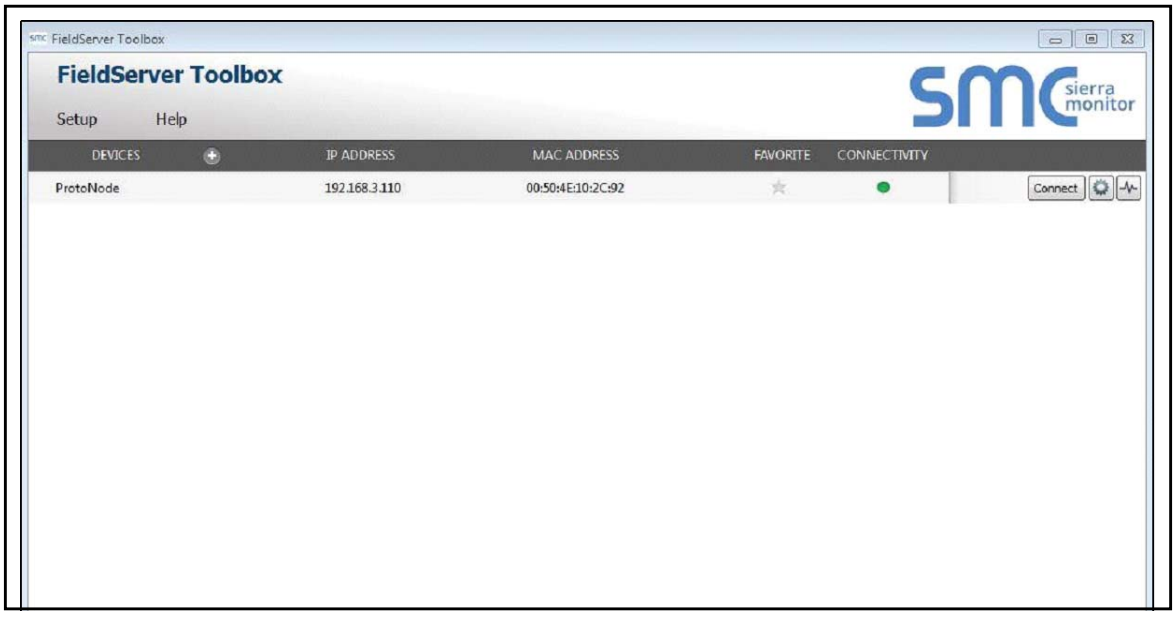


FIGURE 42 - Ethernet port location

Connect a standard CAT5 Ethernet cable between the user's PC and ProtoNode.

Double click on the FS Toolbox Utility and click Discover Now on the splash page.

Check for the IP Address of the desired gateway.



If correcting the IP Address of the gateway: click the settings icon on the same row as the gateway, then click Network Settings, change the IP Address and click Update IP Settings to save.

A.2. Viewing Diagnostic information

Type the IP address of the ProtoNode into your web browser or use the FieldServer Toolbox to connect to the ProtoNode.

Click on Diagnostics and Debugging button, then click on view, and then on connections.

If there are any errors showing on the Connection page, please refer to Appendix A.3 for the relevant wiring and settings.

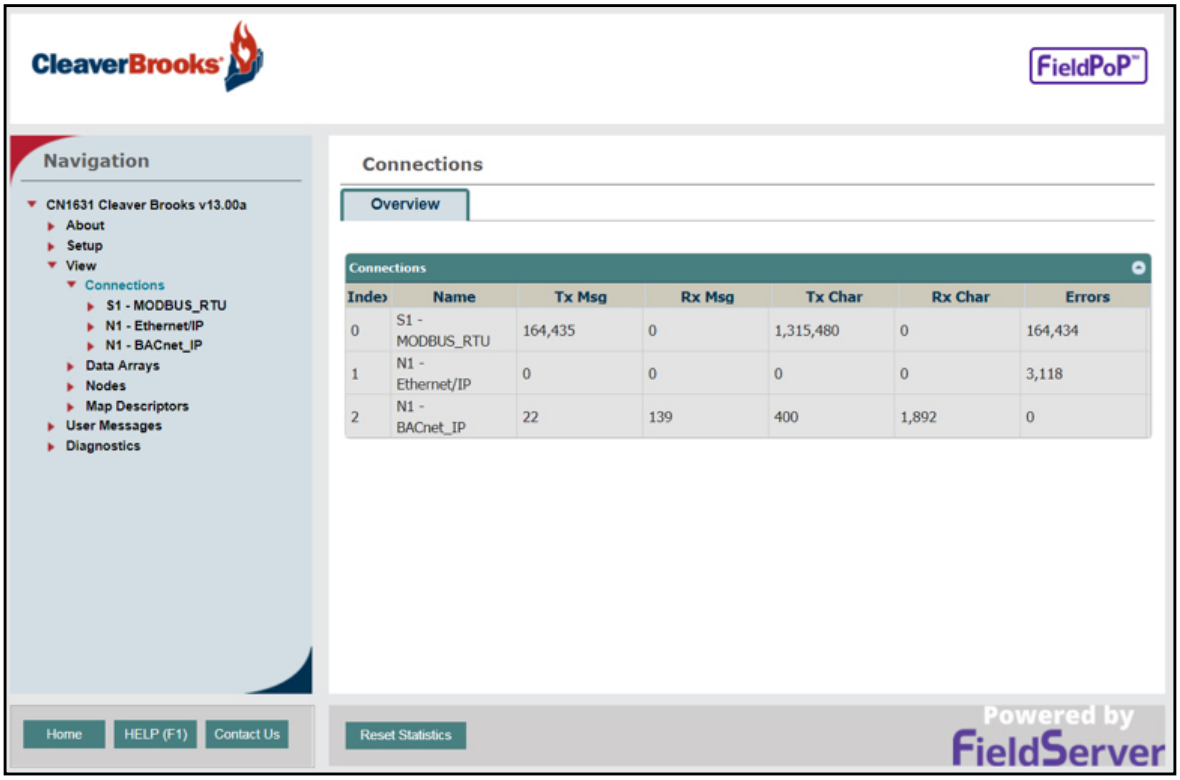


FIGURE 43 - Error messages screen

A.3. Check Wiring and Settings

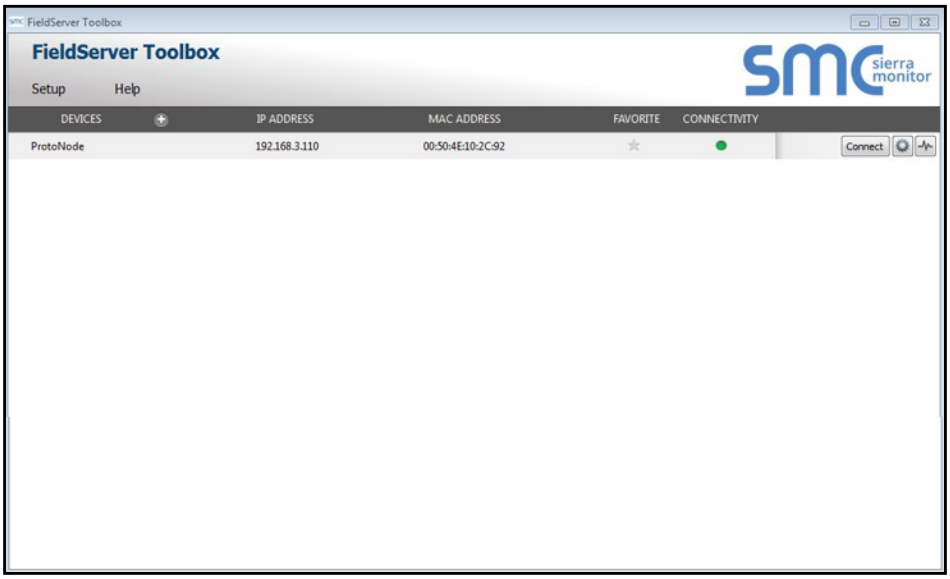
- No COMS on Modbus RTU side: If Tx/Rx are not flashing rapidly then there is a COM issue on the Modbus side. Check the following:

  LEDs on ProtoNode. (Appendix A.4)
  Check baud rate, parity, data bits, stop bits
  Check Modbus device address
  Verify wiring
  Verify the Modbus device is connected to the same subnet as the ProtoNode
  Verify the Modbus device was discovered in Web Configurator. (Section 4)

- Field COM problems:

  If Ethernet protocols are used, observe Ethernet LEDs on the ProtoNode (Appendix A.4)
  Check dipswitch settings (using correct baud rate and device instance)
  Verify IP Address setting
  Verify wiring

If the problem persists, a Diagnostic Capture needs to be taken and sent to Support. (Appendix A.5).



A.4. LED Diagnostics for Communications Between ProtoNode and Devices

See the diagram below for ProtoNode RER and LER LED Locations.

Table 2:

Tag	Description
SPL	The SPL LED will light if the unit is not getting a response from one or more of the configured devices. For LonWorks units, LED will light until the unit is commissioned on the LonWorks network.
RUN	The RUN LED will start flashing 20 seconds after power indicating normal operation.
ERR	The SYS ERR LED will go on solid 15 seconds after power up. It will turn off after 5 seconds. A steady red light will indicate there is a system error on ProtoNode. If this occurs, immediately report the related “system error” shown in the error screen of the GUI interface to Sierra Monitor Corporation for evaluation.
RX	The RX LED will flash when a message is received on the serial port on the 6-pin connector. If the serial port is not used, this LED is non-operational.
TX	The TX LED will flash when a message is sent on the serial port on the 6-pin connector. If the serial port is not used, this LED is non-operational.
PWR	This is the power light and should show steady green at all times when unit is powered.

A.5. Take Diagnostic Capture with the FieldServer Toolbox

Once the Diagnostic Capture is complete, email it to a customer service representative (found by visiting www.cleaverbrooks.com/Find-a-Rep/Index.aspx). The Diagnostic Capture will accelerate diagnosis of the problem.

Ensure that FieldServer Toolbox is loaded onto the local PC. Otherwise, download FieldServer-Toolbox.zip via the Sierra Monitor Resource Center Software Downloads.

Extract the executable file and complete the installation.

FIGURE 44 - Ethernet Port Location

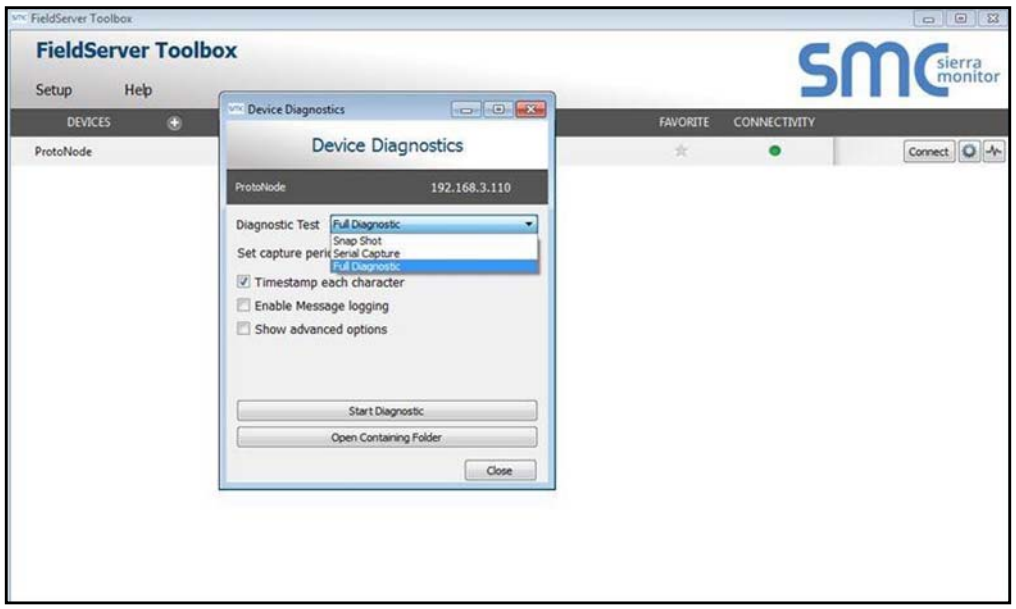
Connect a standard Cat 5 Ethernet cable between the PC and ProtoNode.

Double click on the FS Toolbox Utility

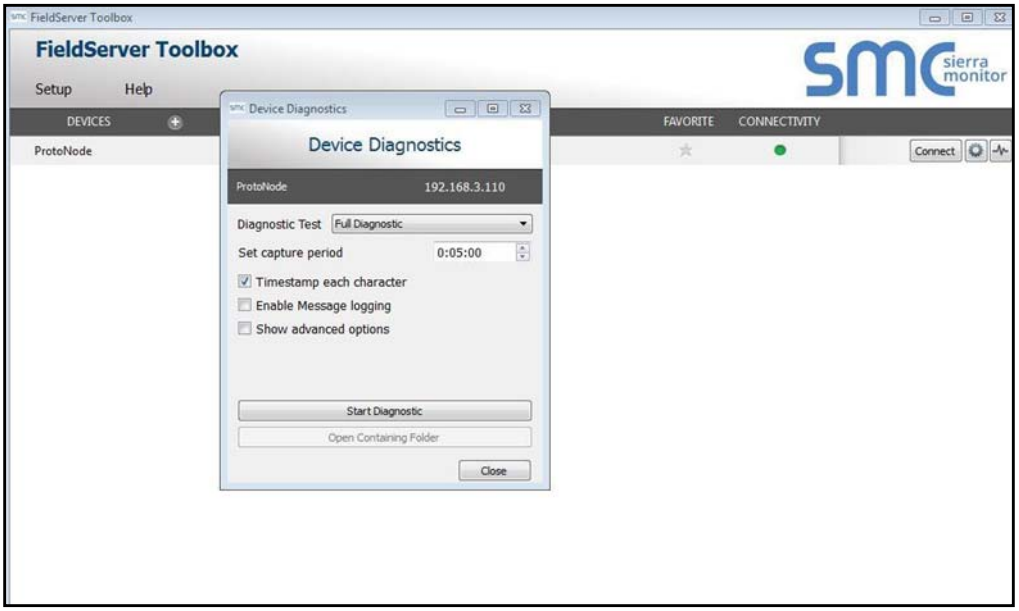
- Step 1: Take a Log

  Click on the diagnose icon  of the desired device.

- Ensure “Full Diagnostic” is selected. This is the default value, and should be used unless instructed otherwise by C-B tech support.



- Click on <Start Diagnostic>



- When the capture period is finished, the "Diagnostic Test Complete" window will appear
- Step 2: Send Log

Once the Diagnostic test is complete, a .zip file will be saved on the PC.

- Choose <Open> to launch explorer and have it point directly at the correct folder.
- Send the Diagnostic zip file to customer service representative (found by visiting www.cleaverbrooks.com/Find-a-Rep/Index.aspx)

A.6. Mounting ProtoNode

The following mounting options are available:

- Product comes with tabs for wall or surface mount. These can be snapped off if not required.
- DIN rail mounting bracket - ordered separately.

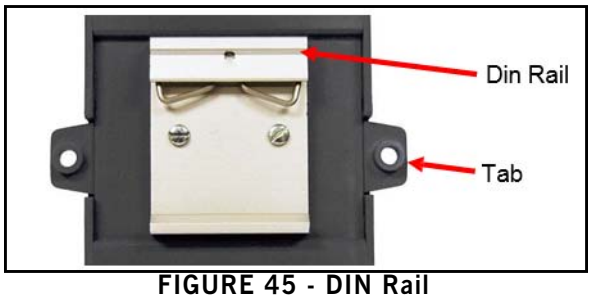


FIGURE 45 - DIN Rail

NOTE: Install only as instructed, failure to follow the installation guidelines or using screws without the DIN Rail Mounting Bracket could result in permanent damage to the product.

A.7. Update Firmware

To load a new version of the firmware, follow these instructions:

1. Extract and save the new file onto the local PC.
2. Open a web browser and type the IP Address of the FieldServer in the address bar.
   Default IP Address is 192.168.1.24
   Use the FS Toolbox utility if the IP Address is unknown (Appendix A.1)
3. Click on the "Diagnostics & Debugging" button.
4. In the Navigation Tree on the left hand side, do the following:
   a. Click on “Setup”
   b. Click on “File Transfer”
   c. Click on the “General” tab
5. In the General tab, click on “Choose Files” and select the web.img file extracted in step 1.
6. Click on the orange “Submit” button.
7. When the download is complete, click on the “System Restart” button.

A.8. BACnet: Setting Network_Number for more than one ProtoNode on Subnet

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

On the main Web Configuration screen, update the BACnet Network Number field and click submit. The default value is 50001.

FIGURE 46 - Web Configurator - Network Number Field

A.9. Securing ProtoNode with Passwords

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

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

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

If the password is lost, click cancel on the password authentication popup window, and email the password recovery token to a customer service representative (found by visiting www.cleaverbrooks.com/Find-a-Rep/Index.aspx) to receive a temporary password from the support team.

Access the ProtoNode to set a new password.

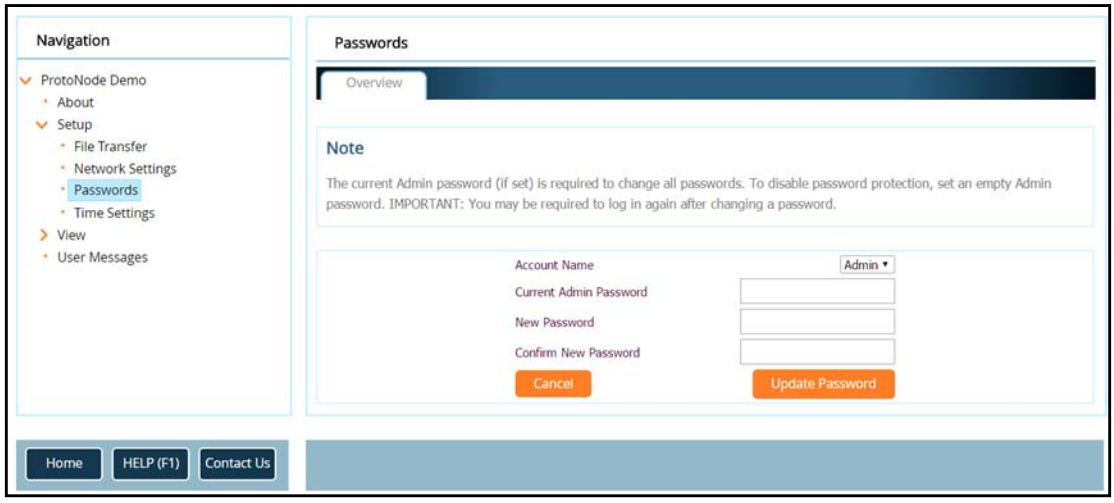


FIGURE 47 - FS-GUI Passwords Page

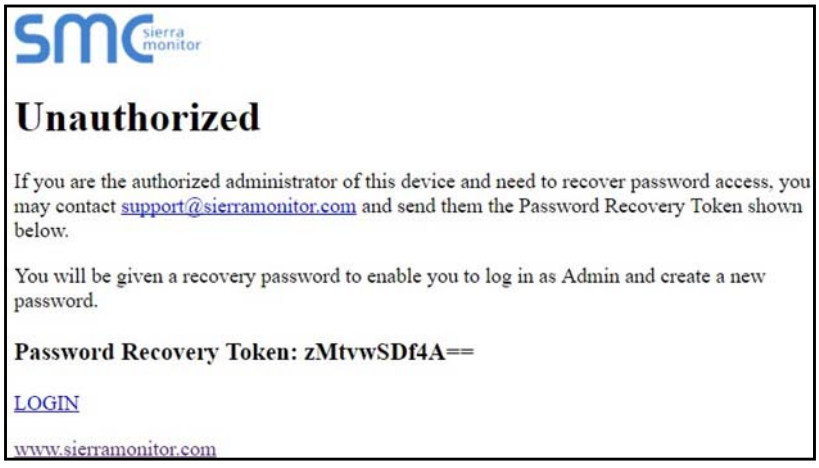


FIGURE 48 - Password Recovery Page

APPENDIX B — DATA POINT MAPPINGS for CLEAVER-BROOKS APPLICATIONS

B.1. FALCON HYDRONIC

FALCON HYDRONIC Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER							LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	(Bit)	EIP Tag Name	Lon Name	Lon SNVT Type
PumpC	BI	3	DI	3	30003	2	CFC_AB_XXX[0].2	nvoPumpC_XXX	SNVT_switch
Blower_Mtr	BI	4	DI	4	30003	3	CFC_AB_XXX[0].3	nvoBlwr_Mtr_XXX	SNVT_switch
Ext_Ignition	BI	5	DI	5	30003	4	CFC_AB_XXX[0].4	nvoExt_Ign_XXX	SNVT_switch
Pilot-MainDBI_Valve	BI	6	DI	6	30003	5	CFC_AB_XXX[0].5	nvoPlMnDBlVl_XXX	SNVT_switch
Main_Valve	BI	7	DI	7	30003	6	CFC_AB_XXX[0].6	nvoMainValve_XXX	SNVT_switch
Alarm	BI	8	DI	8	30003	7	CFC_AB_XXX[0].7	nvoAlarm_XXX	SNVT_switch
Interlock	BI	9	DI	9	30003	8	CFC_AB_XXX[0].8	nvoInterlock_XXX	SNVT_switch
PreIgn_Interlock	BI	10	DI	10	30003	9	CFC_AB_XXX[0].9	nvoPreIgnInt_XXX	SNVT_switch
Load_Control_In	BI	11	DI	11	30003	10	CFC_AB_XXX[0].10	nvoLdCtrlIn_XXX	SNVT_switch
Low_Fire_Switch	BI	12	DI	12	30003	11	CFC_AB_XXX[0].11	nvoLoFireSw_XXX	SNVT_switch
High_Fire_Switch	BI	13	DI	13	30003	12	CFC_AB_XXX[0].12	nvoHiFireSw_XXX	SNVT_switch
Stat_Demand	BI	14	DI	14	30003	13	CFC_AB_XXX[0].13	nvoStatDem_XXX	SNVT_switch
TimeOfDay	BI	15	DI	15	30003	14	CFC_AB_XXX[0].14	nvoTimeOfDay_XXX	SNVT_switch
Safety_Relay	BI	16	DI	16	30003	15	CFC_AB_XXX[0].15	nvoSafetyRel_XXX	SNVT_switch
Int_Air_Switch	BI	17	DI	17	30004	0	CFC_AB_XXX[1].0	nvoIntAirSw_XXX	SNVT_switch
Low_Water	BI	18	DI	18	30004	1	CFC_AB_XXX[1].1	nvoLoWater_XXX	SNVT_switch
Aux_Low_Water	BI	19	DI	19	30004	2	CFC_AB_XXX[1].2	nvoAuxLoWtr_XXX	SNVT_switch
High_Limit	BI	20	DI	20	30004	3	CFC_AB_XXX[1].3	nvoHiLimit_XXX	SNVT_switch
High_Gas_Press	BI	21	DI	21	30004	4	CFC_AB_XXX[1].4	nvoHiGasPrx_XXX	SNVT_switch
Low_Gas_Press	BI	22	DI	22	30004	5	CFC_AB_XXX[1].5	nvoLoGasPrx_XXX	SNVT_switch
Natural_Gas	BI	23	DI	23	30004	6	CFC_AB_XXX[1].6	nvoNatGas_XXX	SNVT_switch
Propane_Gas	BI	24	DI	24	30004	7	CFC_AB_XXX[1].7	nvoPropanGas_XXX	SNVT_switch
DEMAND SOURCE	AI	1	AI	1	30007		CFC_AI_XXX[0]	nvoDemSrc_XXX	SNVT_count_f
OUTLET WATER TEMP DEG F	AI	2	AI	2	30008		CFC_AR_XXX[0]	nvoOutWtrTmp_XXX	SNVT_temp_p
FIRING_RATE	AI	3	AI	3	30009		CFC_AI_XXX[1]	nvoFirRate_XXX	SNVT_count_f
FAN_SPEED	AI	4	AI	4	30010		CFC_AI_XXX[2]	nvoFanSpeed_XXX	SNVT_count_f
FLAME_SIGNAL	AI	5	AI	5	30011		CFC_AI_XXX[3]	nvoFlameSig_XXX	SNVT_count_f
INLET WATER TEMP DEG F	AI	6	AI	6	30012		CFC_AR_XXX[1]	nvoInlWtrTmp_XXX	SNVT_temp_p
DHW WATER TEMP DEG F	AI	7	AI	7	30013		CFC_AR_XXX[2]	nvoDHWWtrTmp_XXX	SNVT_temp_p
HEADER or ODT DEG F	AI	8	AI	8	30014		CFC_AR_XXX[3]	nvoHdrOrOdt_XXX	SNVT_temp_p
STACK TEMP DEG F	AI	9	AI	9	30015		CFC_AR_XXX[4]	nvoStkTemp_XXX	SNVT_temp_p
CH SETPOINT DEG F	AI	11	AI	11	30017		CFC_AR_XXX[5]	nvoCH_SP_XXX	SNVT_temp_p
DHW SETPOINT DEG F	AI	12	AI	12	30018		CFC_AR_XXX[6]	nvoDHW_SP_XXX	SNVT_temp_p
ANALOG_INPUT	AI	14	AI	14	30022		CFC_AI_XXX[4]	nvoAnaInput_XXX	SNVT_count_f
BURN_CTL_STATUS	AI	15	AI	15	30033		CFC_AI_XXX[5]	nvoBrnCtStat_XXX	SNVT_count_f
BURN_CTL_STATE	AI	16	AI	16	30034		CFC_AI_XXX[6]	nvoBrnCtlSte_XXX	SNVT_count_f
LOCKOUT_CODE	AI	17	AI	17	30035		CFC_AI_XXX[7]	nvoLockoutCd_XXX	SNVT_count_f
HOLD_CODE	AI	18	AI	18	30041		CFC_AI_XXX[8]	nvoHoldCode_XXX	SNVT_count_f
CH STATUS	AI	20	AI	20	30063		CFC_AI_XXX[9]	nvoCH_Status_XXX	SNVT_count_f
CH SETPOINT SOURCE	AI	21	AI	21	30066		CFC_AI_XXX[10]	nvoCH_SPSrc_XXX	SNVT_count_f
CH HEAT DEMAND	AI	22	AI	22	30067		CFC_AI_XXX[11]	nvoCH_HtDem_XXX	SNVT_count_f
CH BURNER DEMAND	AI	23	AI	23	30068		CFC_AI_XXX[12]	nvoCH_BrnDem_XXX	SNVT_count_f
CH REQUESTED RATE	AI	24	AI	24	30069		CFC_AI_XXX[13]	nvoCH_ReqRat_XXX	SNVT_count_f
CH FROST HEAT DEMAND	AI	25	AI	25	30070		CFC_AI_XXX[14]	nvoCH_FrHtDm_XXX	SNVT_count_f
CH FROST BURNER DEMAND	AI	26	AI	26	30071		CFC_AI_XXX[15]	nvoCHFrBrnDm_XXX	SNVT_count_f
DHW STATUS	AI	29	AI	29	30081		CFC_AI_XXX[16]	nvoDHW_Stat_XXX	SNVT_count_f
DHW SETPOINT SOURCE	AI	30	AI	30	30082		CFC_AI_XXX[17]	nvoDHW_SPSrc_XXX	SNVT_count_f

FALCON HYDRONIC Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER							LER	
	Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	(Bit)	EIP Tag Name	Lon Name	Lon SNVT Type
	DHW HEAT DEMAND	AI	32	AI	32	30084		CFC_AI_XXX[18]	nvoDHW_HtDem_XXX	SNVT_count_f
	DHW BURNER DEMAND	AI	33	AI	33	30085		CFC_AI_XXX[19]	nvoDHW_BrnDm_XXX	SNVT_count_f
	DHW REQUESTED RATE	AI	34	AI	34	30086		CFC_AI_XXX[20]	nvoDHW_ReqRt_XXX	SNVT_count_f
	CH PUMP STATUS	AI	39	AI	39	30097		CFC_AI_XXX[21]	nvoCH_PmpSt_XXX	SNVT_count_f
	DHW PUMP STATUS	AI	43	AI	43	30101		CFC_AI_XXX[22]	nvoDHWPmpSt_XXX	SNVT_count_f
	SYSTEM PUMP STATUS	AI	48	AI	48	30106		CFC_AI_XXX[23]	nvoSysPmpSt_XXX	SNVT_count_f
	BOILER PUMP STATUS	AI	51	AI	51	30109		CFC_AI_XXX[24]	nvoBlrPmpSt_XXX	SNVT_count_f
	AUXILIARY1 PUMP STATUS	AI	54	AI	54	30112		CFC_AI_XXX[25]	nvoAux1PmpSt_XXX	SNVT_count_f
	AUXILIARY2 PUMP STATUS	AI	55	AI	55	30114		CFC_AI_XXX[26]	nvoAux2PmpSt_XXX	SNVT_count_f
	BURNER_ENABLE	AI	57	AI	57	30204		CFC_AI_XXX[27]	nvoBrnrEnbl_XXX	SNVT_count_f
	LEAD/LAG SETPOINT DEG F	AI	60	AI	60	30547		CFC_AR_XXX[7]	nvoLL_SP_XXX	SNVT_temp_p
	LEAD/LAG_ENABLE	AI	61	AI	61	30556		CFC_AI_XXX[28]	nvoLL_Enbl_XXX	SNVT_count_f
	CYCLE_COUNT	AI	58	AI	58	30129-30		CFC_AD_XXX[0]	nvoCycCount_XXX	SNVT_count_f
	BURNER RUN_TIME	AI	59	AI	59	30131-32		CFC_AD_XXX[1]	nvoBrnRunTim_XXX	SNVT_time_hour
*	BOILER BURNER ENABLE	AV	1	AO	1	40204		CFC_AWI_XXX[0]	nviBrnrEnbl_XXX	SNVT_count_f
*	BOILER LEAD/LAG ENABLE	AV	11	AO	11	40556		CFC_AWI_XXX[1]	nviLL_Enbl_XXX	SNVT_count_f
*	BOILER CH SETPOINT DEG F	AV	21	AO	21	40212		CFC_AWR_XXX[0]	nviCH_SP_XXX	SNVT_temp_p
*	BOILER LEAD/LAG SETPOINT DEG F	AV	31	AO	31	40547		CFC_AWR_XXX[1]	nviLL_SP_XXX	SNVT_temp_p
	OUTLET WATER TEMP DEG C	AI	62	AI	62	30008		CFC_AR_XXX[8]		
	INLET WATER TEMP DEG C	AI	66	AI	66	30012		CFC_AR_XXX[9]		
	DHW WATER TEMP DEG C	AI	67	AI	67	30013		CFC_AR_XXX[10]		
	HEADER or ODT DEG C	AI	68	AI	68	30014		CFC_AR_XXX[11]		
	STACK TEMP DEG C	AI	69	AI	69	30015		CFC_AR_XXX[12]		
	CH SETPOINT DEG C	AI	71	AI	71	30017		CFC_AR_XXX[13]		
	DHW SETPOINT DEG C	AI	72	AI	72	30018		CFC_AR_XXX[14]		
	LEAD/LAG SETPOINT DEG C	AI	73	AI	73	30547		CFC_AR_XXX[15]		
*	BOILER CH SETPOINT DEG C	AV	41	AO	41	40212		CFC_AWR_XXX[2]		
*	BOILER LEAD/LAG SETPOINT DEG C	AV	51	AO	51	40547		CFC_AWR_XXX[3]		
	FIRING_RATE_PERCENT	AI	74	AI	74	30074		CFC_AI_XXX[29]		
	4-20Ma Remote Ctl Input	AI	75	AI	75	40016		CFC_AI_XXX[30]	nvo420mARmCt_XXX	SNVT_count_f
	Active LL Setpoint	AI	76	AI	76	40019		CFC_AI_XXX[31]	nvoActLLSP_XXX	SNVT_temp_p
	Alarm Reason	AI	77	AI	77	40036		CFC_AI_XXX[32]	nvoAlmRson_XXX	SNVT_count_f
	Annunciator First Out	AI	78	AI	78	40037		CFC_AI_XXX[33]	nvoAnn1stOut_XXX	SNVT_count_f
	Annunciator Hold	AI	79	AI	79	40038		CFC_AI_XXX[34]	nvoAnnHold_XXX	SNVT_count_f
	Outdoor Temperature	AI	80	AI	80	40171		CFC_AI_XXX[35]	nvoOutdrTmp_XXX	SNVT_temp_p
*	CH Pump Cycle Count	AV	61	AO	61	40133-34		CFC_AD_XXX[2]	nvi/nvoCHPmpCyCt_X XX	SNVT_count_f
	Lead Boiler Address	AI	81	AI	81	40802		CFC_AI_XXX[36]	nvoLdBlrAddr_XXX	SNVT_count_f
	Firing Rate Type	AI	82	AI	82	30193		CFC_AI_XXX[37]	nvoFirRteTyp_XXX	SNVT_count_f
	Master ID	AI	83	AI	83	30546		CFC_AI_XXX[38]	nvoMasterID_XXX	SNVT_count_f
	Slave Setpoint	AI	84	AI	84	30030		CFC_AI_XXX[39]	nvoSlaveSP_XXX	SNVT_temp_p
	Master OAT	AI	85	AI	85	30171		CFC_AI_XXX[40]	nvoMstrOAT_XXX	SNVT_temp_p
	Max Firing Rate	AI	86	AI	86	30194		CFC_AI_XXX[41]	nvoMxFirRate_XXX	SNVT_count_f
	Min Firing Rate	AI	87	AI	87	30196		CFC_AI_XXX[42]	nvoMnFirRate_XXX	SNVT_count_f

*Write point

B.2. FALCON STEAM

FALCON STEAM Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

		RER						LER	
	Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	(Bit)	EIP Tag Name	Lon Name	Lon SNVT Type
	PumpA	BI	1	DI	1	30003	0	CFS_AB[0].0	nvoPumpA_XXX	SNVT_switch
	PumpA	BI	1	DI	1	30003	0	CFS_AB_XXX[0].0	nvoPumpA_XXX	SNVT_switch
	PumpB	BI	2	DI	2	30003	1	CFS_AB_XXX[0].1	nvoPumpB_XXX	SNVT_switch
	PumpC	BI	3	DI	3	30003	2	CFS_AB_XXX[0].2	nvoPumpC_XXX	SNVT_switch
	Blower_Mtr	BI	4	DI	4	30003	3	CFS_AB_XXX[0].3	nvoBlwr_Mtr_XXX	SNVT_switch
	Ext_Ignition	BI	5	DI	5	30003	4	CFS_AB_XXX[0].4	nvoExt_Ign_XXX	SNVT_switch
	Pilot_Valve	BI	6	DI	6	30003	5	CFS_AB_XXX[0].5	nvoPilotVlv_XXX	SNVT_switch
	Main_Valve	BI	7	DI	7	30003	6	CFS_AB_XXX[0].6	nvoMainValve_XXX	SNVT_switch
	Alarm	BI	8	DI	8	30003	7	CFS_AB_XXX[0].7	nvoAlarm_XXX	SNVT_switch
	Interlock	BI	9	DI	9	30003	8	CFS_AB_XXX[0].8	nvoInterlock_XXX	SNVT_switch
	PreIgn_Interlock	BI	10	DI	10	30003	9	CFS_AB_XXX[0].9	nvoPreIgnInt_XXX	SNVT_switch
	Load_Control_In	BI	11	DI	11	30003	10	CFS_AB_XXX[0].10	nvoLdCtrlIn_XXX	SNVT_switch
	Low_Fire_Switch	BI	12	DI	12	30003	11	CFS_AB_XXX[0].11	nvoLoFireSw_XXX	SNVT_switch
	High_Fire_Switch	BI	13	DI	13	30003	12	CFS_AB_XXX[0].12	nvoHiFireSw_XXX	SNVT_switch
	Stat_Demand	BI	14	DI	14	30003	13	CFS_AB_XXX[0].13	nvoStatDem_XXX	SNVT_switch
	TimeOfDay	BI	15	DI	15	30003	14	CFS_AB_XXX[0].14	nvoTimeOfDay_XXX	SNVT_switch
	Safety_Relay	BI	16	DI	16	30003	15	CFS_AB_XXX[0].15	nvoSafetyRel_XXX	SNVT_switch
	Int_Air_Switch	BI	17	DI	17	30004	0	CFS_AB_XXX[1].0	nvoIntAirSw_XXX	SNVT_switch
	Low_Water	BI	18	DI	18	30004	1	CFS_AB_XXX[1].1	nvoLoWater_XXX	SNVT_switch
	Aux_Low_Water	BI	19	DI	19	30004	2	CFS_AB_XXX[1].2	nvoAuxLoWtr_XXX	SNVT_switch
	High_Limit	BI	20	DI	20	30004	3	CFS_AB_XXX[1].3	nvoHiLimit_XXX	SNVT_switch
	High_Gas_Press	BI	21	DI	21	30004	4	CFS_AB_XXX[1].4	nvoHiGasPrs_XXX	SNVT_switch
	Low_Gas_Press	BI	22	DI	22	30004	5	CFS_AB_XXX[1].5	nvoLoGasPrs_XXX	SNVT_switch
	High_Water	BI	23	DI	23	30004	6	CFS_AB_XXX[1].6	nvoHigh_Wtr_XXX	SNVT_switch
	Feed_Water	BI	24	DI	24	30004	7	CFS_AB_XXX[1].7	nvoFeed_Wtr_XXX	SNVT_switch
	DEMAND SOURCE	AI	1	AI	1	30007		CFS_AI_XXX[0]	nvoDemSrc_XXX	SNVT_count_f
	FIRING_RATE	AI	2	AI	2	30009		CFS_AI_XXX[1]	nvoFiringRat_XXX	SNVT_count_f
	FAN_SPEED	AI	3	AI	3	30010		CFS_AI_XXX[2]	nvoFanSpeed_XXX	SNVT_count_f
	FLAME_SIGNAL	AI	4	AI	4	30011		CFS_AI_XXX[3]	nvoFlameSig_XXX	SNVT_count_f
	STEAM_PRESSURE	AI	5	AI	5	30021		CFS_AI_XXX[4]	nvoStmPress_XXX	SNVT_count_f
	ANALOG_INPUT	AI	6	AI	6	30022		CFS_AI_XXX[5]	nvoAna_Input_XXX	SNVT_count_f
	ACTIVE_STEAM_SP	AI	7	AI	7	30023		CFS_AI_XXX[6]	nvoActStmSP_XXX	SNVT_count_f
	BURN_CTL_STATUS	AI	8	AI	8	30033		CFS_AI_XXX[7]	nvoBrnCtStat_XXX	SNVT_count_f
	BURN_CTL_STATE	AI	9	AI	9	30034		CFS_AI_XXX[8]	nvoBrnCtlSte_XXX	SNVT_count_f
	LOCKOUT_CODE	AI	10	AI	10	30035		CFS_AI_XXX[9]	nvoLockoutCd_XXX	SNVT_count_f
	HOLD_CODE	AI	11	AI	11	30041		CFS_AI_XXX[10]	nvoHoldCode_XXX	SNVT_count_f
	CYCLE_COUNT	AI	12	AI	12	30129-30		CFS_AI_XXX[11]	nvoCycCount_XXX	SNVT_count_f
	RUN_TIME	AI	13	AI	13	30131-32		CFS_AI_XXX[12]	nvoRunTime_XXX	SNVT_count_f
	BURNER_ENABLE	AI	16	AI	16	30204		CFS_AI_XXX[13]	nvoBrnrEnbl_XXX	SNVT_count_f
	STEAM_PRESSURE_SETPOINT	AI	14	AI	14	30221		CFS_AI_XXX[14]	nvoStmPrsSP_XXX	SNVT_count_f
	LEAD/LAG_STEAM_PRESS_SET POINT	AI	15	AI	15	30739		CFS_AI_XXX[15]	nvoLLStmPrSP_XXX	SNVT_count_f
	LEAD/LAG_HEADER_STEAM_PRESS	AI	17	AI	17	30807		CFS_AI_XXX[16]	nvoLLHdStmPr_XXX	SNVT_count_f
	VESSEL WATER TEMP (Deg C)	AI	18	AI	18	30008		CFS_AR_XXX[0]	nvoVesWtrTmp_XXX	SNVT_temp_p
	VESSEL WATER TEMP (Deg F)	AI	19	AI	19	30008		CFS_AR_XXX[1]		
*	BURNER ENABLE	AV	1	AO	1	40204		CFS_AWI_XXX[0]	nviBrnrEnbl_XXX	SNVT_count_f
*	STEAM_PRESSURE_SETPOINT	AV	21	AO	21	40221		CFS_AWI_XXX[1]	nviStmPrsSP_XXX	SNVT_count_f

FALCON STEAM Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

		RER						LER	
	Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	(Bit)	EIP Tag Name	Lon Name	Lon SNVT Type
*	LEAD/LAG_ENABLE	AV	11	AO	11	40556		CFS_AWI_XXX[2]	nviLL_Enbl_XXX	SNVT_count_f
*	LEAD/LAG_SETPOINT	AV	31	AO	31	40739		CFS_AWI_XXX[3]	nviLL_SP_XXX	SNVT_count_f
	FIRING_RATE_PERCENT	AI	20	AI	20	30074		CFC_AI_XXX[17]	nvoFirRtPct_XXX	SNVT_lev_percent
	4-20Ma Remote Ctl Input	AI	21	AI	21	40016		CFC_AI_XXX[18]	nvo420mARmCt_XX X	SNVT_count_f
	Active LL Setpoint	AI	22	AI	22	40019		CFC_AI_XXX[19]	nvoActLLSP_XXX	SNVT_temp_p
	Alarm Reason	AI	23	AI	23	40036		CFC_AI_XXX[20]	nvoAlmRson_XXX	SNVT_count_f
	Annunciator First Out	AI	24	AI	24	40037		CFC_AI_XXX[21]	nvoAnn1stOut_XXX	SNVT_count_f
	Annunciator Hold	AI	25	AI	25	40038		CFC_AI_XXX[22]	nvoAnnHold_XXX	SNVT_count_f
	Outdoor Temperature	AI	26	AI	26	40171		CFC_AI_XXX[23]	nvoOutdrTmp_XXX	SNVT_temp_p
*	CH Pump Cycle Count	AV	41	AO	41	40133-34		CFC_AI_XXX[24]	nvi/nvoCHPmpCyCt_ XXX	SNVT_count_f
	Lead Boiler Address	AI	27	AI	27	40802		CFC_AI_XXX[25]	nvoLdBlrAddr_XXX	SNVT_count_f
	Firing Rate Type	AI	28	AI	28	30193		CFC_AI_XXX[26]	nvoFirRteTyp_XXX	SNVT_count_f
	Master ID	AI	29	AI	29	30546		CFC_AI_XXX[27]	nvoMasterID_XXX	SNVT_count_f
	Slave Setpoint	AI	30	AI	30	30030		CFC_AI_XXX[28]	nvoSlaveSP_XXX	SNVT_temp_p
	Master OAT	AI	31	AI	31	30171		CFC_AI_XXX[29]	nvoMstrOAT_XXX	SNVT_temp_p
	Max Firing Rate	AI	32	AI	32	30194		CFC_AI_XXX[30]	nvoMxFirRate_XXX	SNVT_count_f
	Min Firing Rate	AI	33	AI	33	30196		CFC_AI_XXX[31]	nvoMnFirRate_XXX	SNVT_count_f

*Write point

B.3. CB780

CB780 Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER							LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	(Bit)	EIP Tag Name	Lon Name	Lon SNVT Type
BC_Initiate	BI	1	DI	1	40013	0	CB780_AB[0].0	nvoBCInitiat_XXX	SNVT_switch
BC_Standby	BI	2	DI	2	40013	1	CB780_AB[0].1	nvoBCStandby_XXX	SNVT_switch
BC_Purge	BI	3	DI	3	40013	2	CB780_AB[0].2	nvoBCPurge_XXX	SNVT_switch
BC_Pilot_Ignition	BI	4	DI	4	40013	3	CB780_AB[0].3	nvoBCPlt_Ign_XXX	SNVT_switch
BC_Main_Ignition	BI	5	DI	5	40013	4	CB780_AB[0].4	nvoBCMainIgn_XXX	SNVT_switch
BC_Run_Mode	BI	6	DI	6	40013	5	CB780_AB[0].5	nvoBCRunMode_XXX	SNVT_switch
BC_Postpurge	BI	7	DI	7	40013	6	CB780_AB[0].6	nvoBCPostprg_XXX	SNVT_switch
BC_Preignition	BI	8	DI	8	40013	7	CB780_AB[0].7	nvoBCPreIgn_XXX	SNVT_switch
BC_Alarm_Out	BI	9	DI	9	40013	13	CB780_AB[0].13	nvoBCAlmOut_XXX	SNVT_switch
BC_Lockout	BI	10	DI	10	40013	15	CB780_AB[0].15	nvoBCLockout_XXX	SNVT_switch
BC_Fault_Code	AI	1	AI	1	40001		CB780_AI[0]	nvoBCFltCode_XXX	SNVT_count_f
BC_Fault_String_Code	AI	2	AI	2	40002		CB780_AI[1]	nvoBCFltStCd_XXX	SNVT_count_f
BC_Sequence_State	AI	3	AI	3	40003		CB780_AI[2]	nvoBCSeqSt_XXX	SNVT_count_f
BC_State_String_Code_L1	AI	4	AI	4	40004		CB780_AI[3]	nvoBCStCdL1_XXX	SNVT_count_f
BC_State_String_Code_L2	AI	5	AI	5	40005		CB780_AI[4]	nvoBCStCdL2_XXX	SNVT_count_f
BC_Sequence_Time	AI	6	AI	6	40006		CB780_AI[5]	nvoBCSeqTime_XXX	SNVT_count_f
BC_Flame_Signal_Strength	AI	7	AI	7	40011		CB780_AI[6]	nvoBCFlSgStr_XXX	SNVT_count_f
BC_State_Bits	AI	8	AI	8	40013		CB780_AI[7]	nvoBCStatBts_XXX	SNVT_count_f
BC_Flt_Hist_Code_Rec1	AI	9	AI	9	40017		CB780_AI[8]	nvoBCFlCdRc1_XXX	SNVT_count_f
BC_Flt_Hist_String_Rec1	AI	10	AI	10	40018		CB780_AI[9]	nvoBCFlSgRc1_XXX	SNVT_count_f
BC_Flt_Hist_State_Rec1	AI	11	AI	11	40019		CB780_AI[10]	nvoBCFlStRc1_XXX	SNVT_count_f
BC_Flt_Hist_Line1_Rec1	AI	12	AI	12	40020		CB780_AI[11]	nvoBCFlL1Rc1_XXX	SNVT_count_f
BC_Flt_Hist_Line2_Rec1	AI	13	AI	13	40021		CB780_AI[12]	nvoBCFlL2Rc1_XXX	SNVT_count_f
BC_Flt_Hist_Time_Rec1	AI	14	AI	14	40022		CB780_AI[13]	nvoBCFlTmRc1_XXX	SNVT_count_f
BC_Flt_Hist_Code_Rec2	AI	15	AI	15	40027		CB780_AI[14]	nvoBCFlCdRc2_XXX	SNVT_count_f
BC_Flt_Hist_String_Rec2	AI	16	AI	16	40028		CB780_AI[15]	nvoBCFlSgRc2_XXX	SNVT_count_f
BC_Flt_Hist_State_Rec2	AI	17	AI	17	40029		CB780_AI[16]	nvoBCFlStRc2_XXX	SNVT_count_f
BC_Flt_Hist_Line1_Rec2	AI	18	AI	18	40030		CB780_AI[17]	nvoBCFlL1Rc2_XXX	SNVT_count_f
BC_Flt_Hist_Line2_Rec2	AI	19	AI	19	40031		CB780_AI[18]	nvoBCFlL2Rc2_XXX	SNVT_count_f
BC_Flt_Hist_Time_Rec2	AI	20	AI	20	40032		CB780_AI[19]	nvoBCFlTmRc2_XXX	SNVT_count_f
BC_Flt_Hist_Code_Rec3	AI	21	AI	21	40037		CB780_AI[20]	nvoBCFlCdRc3_XXX	SNVT_count_f
BC_Flt_Hist_String_Rec3	AI	22	AI	22	40038		CB780_AI[21]	nvoBCFlSgRc3_XXX	SNVT_count_f
BC_Flt_Hist_State_Rec3	AI	23	AI	23	40039		CB780_AI[22]	nvoBCFlStRc3_XXX	SNVT_count_f
BC_Flt_Hist_Line1_Rec3	AI	24	AI	24	40040		CB780_AI[23]	nvoBCFlL1Rc3_XXX	SNVT_count_f
BC_Flt_Hist_Line2_Rec3	AI	25	AI	25	40041		CB780_AI[24]	nvoBCFlL2Rc3_XXX	SNVT_count_f
BC_Flt_Hist_Time_Rec3	AI	26	AI	26	40042		CB780_AI[25]	nvoBCFlTmRc3_XXX	SNVT_count_f
BC_Flt_Hist_Code_Rec4	AI	27	AI	27	40047		CB780_AI[26]	nvoBCFlCdRc4_XXX	SNVT_count_f
BC_Flt_Hist_String_Rec4	AI	28	AI	28	40048		CB780_AI[27]	nvoBCFlSgRc4_XXX	SNVT_count_f
BC_Flt_Hist_State_Rec4	AI	29	AI	29	40049		CB780_AI[28]	nvoBCFlStRc4_XXX	SNVT_count_f
BC_Flt_Hist_Line1_Rec4	AI	30	AI	30	40050		CB780_AI[29]	nvoBCFlL1Rc4_XXX	SNVT_count_f
BC_Flt_Hist_Line2_Rec4	AI	31	AI	31	40051		CB780_AI[30]	nvoBCFlL2Rc4_XXX	SNVT_count_f
BC_Flt_Hist_Time_Rec4	AI	32	AI	32	40052		CB780_AI[31]	nvoBCFlTmRc4_XXX	SNVT_count_f
BC_Flt_Hist_Code_Rec5	AI	33	AI	33	40057		CB780_AI[32]	nvoBCFlCdRc5_XXX	SNVT_count_f
BC_Flt_Hist_String_Rec5	AI	34	AI	34	40058		CB780_AI[33]	nvoBCFlSgRc5_XXX	SNVT_count_f
BC_Flt_Hist_State_Rec5	AI	35	AI	35	40059		CB780_AI[34]	nvoBCFlStRc5_XXX	SNVT_count_f
BC_Flt_Hist_Line1_Rec5	AI	36	AI	36	40060		CB780_AI[35]	nvoBCFlL1Rc5_XXX	SNVT_count_f
BC_Flt_Hist_Line2_Rec5	AI	37	AI	37	40061		CB780_AI[36]	nvoBCFlL2Rc5_XXX	SNVT_count_f
BC_Flt_Hist_Time_Rec5	AI	38	AI	38	40062		CB780_AI[37]	nvoBCFlTmRc5_XXX	SNVT_count_f
BC_Flt_Hist_Code_Rec6	AI	39	AI	39	40067		CB780_AI[38]	nvoBCFlCdRc6_XXX	SNVT_count_f

CB780 Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER							LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	(Bit)	EIP Tag Name	Lon Name	Lon SNVT Type
BC_Flt_Hist_String_Rec6	AI	40	AI	40	40068		CB780_AI[39]	nvoBCFlSgRc6_XXX	SNVT_count_f
BC_Flt_Hist_State_Rec6	AI	41	AI	41	40069		CB780_AI[40]	nvoBCFlStRc6_XXX	SNVT_count_f
BC_Flt_Hist_Line1_Rec6	AI	42	AI	42	40070		CB780_AI[41]	nvoBCFlL1Rc6_XXX	SNVT_count_f
BC_Flt_Hist_Line2_Rec6	AI	43	AI	43	40071		CB780_AI[42]	nvoBCFlL2Rc6_XXX	SNVT_count_f
BC_Flt_Hist_Time_Rec6	AI	44	AI	44	40072		CB780_AI[43]	nvoBCFlTmRc6_XXX	SNVT_count_f
BC_Rem_Comd_Stat	AI	45	AI	45	40085		CB780_AI[44]	nvoBCRmCmdSt_XXX	SNVT_count_f
BC_Vlv_Prov_Mode	AI	46	AI	46	40104		CB780_AI[45]	nvoBCVlPrvMd_XXX	SNVT_count_f
BC_Vlv_Prov_Time	AI	47	AI	47	40106		CB780_AI[46]	nvoBCVlPrvTm_XXX	SNVT_count_f
BC_Rem_Command	AI	48	AI	48	40128		CB780_AI[47]	nvoBCRemCmd_XXX	SNVT_count_f
BC_Total_Cycles	AI	50	AI	50	40007		CB780_AI[48]	nvoBCTotCyc_XXX	SNVT_count_f
BC_Total_Hours	AI	51	AI	51	40009		CB780_AI[49]	nvoBCTotalHr_XXX	SNVT_time_hou r
BC_Flt_Hist_Cyc_Rec1	AI	52	AI	52	40023		CB780_AI[50]	nvoBCFlCyRc1_XXX	SNVT_count_f
BC_Flt_Hist_Hrs_Rec1	AI	53	AI	53	40025		CB780_AI[51]	nvoBCFlHrRc1_XXX	SNVT_count_f
BC_Flt_Hist_Cyc_Rec2	AI	54	AI	54	40033		CB780_AI[52]	nvoBCFlCyRc2_XXX	SNVT_count_f
BC_Flt_Hist_Hrs_Rec2	AI	55	AI	55	40035		CB780_AI[53]	nvoBCFlHrRc2_XXX	SNVT_count_f
BC_Flt_Hist_Cyc_Rec3	AI	56	AI	56	40043		CB780_AI[54]	nvoBCFlCyRc3_XXX	SNVT_count_f
BC_Flt_Hist_Hrs_Rec3	AI	57	AI	57	40045		CB780_AI[55]	nvoBCFlHrRc3_XXX	SNVT_count_f
BC_Flt_Hist_Cyc_Rec4	AI	58	AI	58	40053		CB780_AI[56]	nvoBCFlCyRc4_XXX	SNVT_count_f
BC_Flt_Hist_Hrs_Rec4	AI	59	AI	59	40055		CB780_AI[57]	nvoBCFlHrRc4_XXX	SNVT_count_f
BC_Flt_Hist_Cyc_Rec5	AI	60	AI	60	40063		CB780_AI[58]	nvoBCFlCyRc5_XXX	SNVT_count_f
BC_Flt_Hist_Hrs_Rec5	AI	61	AI	61	40065		CB780_AI[59]	nvoBCFlHrRc5_XXX	SNVT_count_f
BC_Flt_Hist_Cyc_Rec6	AI	62	AI	62	40073		CB780_AI[60]	nvoBCFlCyRc6_XXX	SNVT_count_f
BC_Flt_Hist_Hrs_Rec6	AI	63	AI	63	40075		CB780_AI[61]	nvoBCFlHrRc6_XXX	SNVT_count_f
* BC_Rem_Command	AV	1	AO	1	40128		CB780_AWI[0]	nviBCRemCmd_XXX	SNVT_count_f
ExpAnn_First_Out_Code	AI	49	AI	49	40014		CB780_AI[62]	nvoExAn1OtCd_XXX	SNVT_count_f
EA_Valve_POC	BI	11	DI	11	40015	4	CB780_AB[1].4	nvoEAVlvPOC_XXX	SNVT_switch
EA_Burner_Switch	BI	12	DI	12	40015	5	CB780_AB[1].5	nvoEABrnrSw_XXX	SNVT_switch
EA_Oper_Control	BI	13	DI	13	40015	6	CB780_AB[1].6	nvoEAOpCtrl_XXX	SNVT_switch
EA_Aux_Limit_1	BI	14	DI	14	40015	7	CB780_AB[1].7	nvoEAAuxLim1_XXX	SNVT_switch
EA_Aux_Limit_2	BI	15	DI	15	40015	8	CB780_AB[1].8	nvoEAAuxLim2_XXX	SNVT_switch
EA_LWCO	BI	16	DI	16	40015	9	CB780_AB[1].9	nvoEALWCO_XXX	SNVT_switch
EA_High_Limit	BI	17	DI	17	40015	10	CB780_AB[1].10	nvoEAHiLim_XXX	SNVT_switch
EA_Aux_Limit_3	BI	18	DI	18	40015	11	CB780_AB[1].11	nvoEAAuxLim3_XXX	SNVT_switch
EA_Oil_Select	BI	19	DI	19	40015	12	CB780_AB[1].12	nvoEAOilSel_XXX	SNVT_switch
EA_High_Oil_Press	BI	20	DI	20	40015	13	CB780_AB[1].13	nvoEAHiOilPr_XXX	SNVT_switch
EA_Low_Oil_Press	BI	21	DI	21	40015	14	CB780_AB[1].14	nvoEALoOilPr_XXX	SNVT_switch
EA_High_Oil_Temp	BI	22	DI	22	40015	15	CB780_AB[1].15	nvoEAHiOilTp_XXX	SNVT_switch
EA_Low_Oil_Temp	BI	23	DI	23	40015	16	CB780_AB[2].0	nvoEALoOilTp_XXX	SNVT_switch
EA_Gas_Select	BI	24	DI	24	40015	17	CB780_AB[2].1	nvoEAGasSel_XXX	SNVT_switch
EA_High_Gas_Press	BI	25	DI	25	40015	18	CB780_AB[2].2	nvoEAHiGasPr_XXX	SNVT_switch
EA_Low_Gas_Press	BI	26	DI	26	40015	19	CB780_AB[2].3	nvoEALoGasPr_XXX	SNVT_switch
EA_Air_Flow_Switch	BI	27	DI	27	40015	20	CB780_AB[2].4	nvoEAArFloSw_XXX	SNVT_switch
EA_Aux_Limit_4	BI	28	DI	28	40015	21	CB780_AB[2].5	nvoEAAuxLim4_XXX	SNVT_switch
EA_Aux_Limit_5	BI	29	DI	29	40015	22	CB780_AB[2].6	nvoEAAuxLim5_XXX	SNVT_switch

*Write point

B.4. CB120

CB120 Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER							LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	(Bit)	EIP Tag Name	Lon Name	Lon SNVT Type
Safety_Relay	BI	1	DI	1	40007	0	CB120_AB[0].0	nvoSafetyRel_XXX	SNVT_switch
Main_Valve_In	BI	2	DI	2	40007	1	CB120_AB[0].1	nvoMainVlvIn_XXX	SNVT_switch
Delayed_Valve_In	BI	3	DI	3	40007	2	CB120_AB[0].2	nvoDelVlvIn_XXX	SNVT_switch
Pilot_Valve_In	BI	4	DI	4	40007	3	CB120_AB[0].3	nvoPltVlvIn_XXX	SNVT_switch
Ignition_In	BI	5	DI	5	40007	4	CB120_AB[0].4	nvoIgnitnIn_XXX	SNVT_switch
Blower_In	BI	6	DI	6	40007	5	CB120_AB[0].5	nvoBlowerIn_XXX	SNVT_switch
Op_Cntrl	BI	7	DI	7	40007	6	CB120_AB[0].6	nvoOpCntrl_XXX	SNVT_switch
Run_Intlck	BI	8	DI	8	40007	7	CB120_AB[0].7	nvoRunIntlck_XXX	SNVT_switch
LAG1	BI	9	DI	9	40007	8	CB120_AB[0].8	nvoLAG1_XXX	SNVT_switch
LAG2	BI	10	DI	10	40007	11	CB120_AB[0].11	nvoLAG2_XXX	SNVT_switch
Fuel_Vlv_POC	BI	11	DI	11	40007	12	CB120_AB[0].12	nvoFuelVlPOC_XXX	SNVT_switch
High_Fire_Intlck	BI	12	DI	12	40007	13	CB120_AB[0].13	nvoHiFirIntl_XXX	SNVT_switch
Low_Fire_Start	BI	13	DI	13	40007	14	CB120_AB[0].14	nvoLoFirStrt_XXX	SNVT_switch
Ref_AC_Line	BI	14	DI	14	40007	15	CB120_AB[0].15	nvoRefACLine_XXX	SNVT_switch
Ignition_Out	BI	15	DI	15	40008	1	CB120_AB[1].1	nvoIgnOut_XXX	SNVT_switch
Pilot_Valve_Out	BI	16	DI	16	40008	2	CB120_AB[1].2	nvoPltVlvOut_XXX	SNVT_switch
Blower_Out	BI	17	DI	17	40008	3	CB120_AB[1].3	nvoBLoerOut_XXX	SNVT_switch
Main_Valve_Out	BI	18	DI	18	40008	4	CB120_AB[1].4	nvoMnVlvOut_XXX	SNVT_switch
Delayed_Valve_Out	BI	19	DI	19	40008	5	CB120_AB[1].5	nvoDelVlvOut_XXX	SNVT_switch
Internal_Safety_Out	BI	20	DI	20	40008	6	CB120_AB[1].6	nvoIntSftOut_XXX	SNVT_switch
LowFireOut	BI	21	DI	21	40008	8	CB120_AB[1].8	nvoLoFireOut_XXX	SNVT_switch
HighFireOut	BI	22	DI	22	40008	9	CB120_AB[1].9	nvoHiFireOut_XXX	SNVT_switch
Rel_to_ModOut	BI	23	DI	23	40008	10	CB120_AB[1].10	nvoRelModOut_XXX	SNVT_switch
Alarm_Out	BI	24	DI	24	40008	11	CB120_AB[1].11	nvoAlmOut_XXX	SNVT_switch
Status	AI	1	AI	1	40001		CB120_AI[0]	nvoStatus_XXX	SNVT_count_f
Msgn	AI	2	AI	2	40002		CB120_AI[1]	nvoMsgn_XXX	SNVT_count_f
Gstat	AI	3	AI	3	40003		CB120_AI[2]	nvoGstat_XXX	SNVT_count_f
Timer	AI	4	AI	4	40004		CB120_AI[3]	nvoTimer_XXX	SNVT_count_f
Flame	AI	5	AI	5	40005		CB120_AI[4]	nvoFlame_XXX	SNVT_count_f
Logstat	AI	6	AI	6	40006		CB120_AI[5]	nvoLogstat_XXX	SNVT_count_f
Lockout_Count	AI	7	AI	7	40015		CB120_AI[6]	nvoLockotCnt_XXX	SNVT_count_f
Sysmins	AI	8	AI	8	40009-10		CB120_AD[0]	nvoSysmins_XXX	SNVT_time_min
Bnrmins	AI	9	AI	9	40011-12		CB120_AD[1]	nvoBnrmins_XXX	SNVT_time_min
Cycles	AI	10	AI	10	40013-14		CB120_AD[2]	nvoCycles_XXX	SNVT_count_f
LOCKOUT1_MSG	AI	11	AI	11	40016		CB120_AI[7]	nvoLkot1Msg_XXX	SNVT_count_f
LOCKOUT1_MODULE	AI	12	AI	12	40017		CB120_AI[8]	nvoLkot1Mod_XXX	SNVT_count_f
LOCKOUT2_MSG	AI	13	AI	13	40022		CB120_AI[9]	nvoLkot2Msg_XXX	SNVT_count_f
LOCKOUT2_MODULE	AI	14	AI	14	40023		CB120_AI[10]	nvoLkot2Mod_XXX	SNVT_count_f
LOCKOUT3_MSG	AI	15	AI	15	40028		CB120_AI[11]	nvoLkot3Msg_XXX	SNVT_count_f
LOCKOUT3_MODULE	AI	16	AI	16	40029		CB120_AI[12]	nvoLkot3Mod_XXX	SNVT_count_f
LOCKOUT4_MSG	AI	17	AI	17	40034		CB120_AI[13]	nvoLkot4Msg_XXX	SNVT_count_f
LOCKOUT4_MODULE	AI	18	AI	18	40035		CB120_AI[14]	nvoLkot4Mod_XXX	SNVT_count_f
LOCKOUT5_MSG	AI	19	AI	19	40040		CB120_AI[15]	nvoLkot5Msg_XXX	SNVT_count_f
LOCKOUT5_MODULE	AI	20	AI	20	40041		CB120_AI[16]	nvoLkot5Mod_XXX	SNVT_count_f
LOCKOUT6_MSG	AI	21	AI	21	40046		CB120_AI[17]	nvoLkot6Msg_XXX	SNVT_count_f
LOCKOUT6_MODULE	AI	22	AI	22	40047		CB120_AI[18]	nvoLkot6Mod_XXX	SNVT_count_f
LOCKOUT7_MSG	AI	23	AI	23	40052		CB120_AI[19]	nvoLkot7Msg_XXX	SNVT_count_f
LOCKOUT7_MODULE	AI	24	AI	24	40053		CB120_AI[20]	nvoLkot7Mod_XXX	SNVT_count_f
LOCKOUT8_MSG	AI	25	AI	25	40058		CB120_AI[21]	nvoLkot8Msg_XXX	SNVT_count_f

CB120 Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER							LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	(Bit)	EIP Tag Name	Lon Name	Lon SNVT Type
LOCKOUT8_MODULE	AI	26	AI	26	40059		CB120_AI[22]	nvoLkot8Mod_XXX	SNVT_count_f
LOCKOUT9_MSG	AI	27	AI	27	40064		CB120_AI[23]	nvoLkot9Msg_XXX	SNVT_count_f
LOCKOUT9_MODULE	AI	28	AI	28	40065		CB120_AI[24]	nvoLkot9Mod_XXX	SNVT_count_f
LOCKOUT10_MSG	AI	29	AI	29	40070		CB120_AI[25]	nvoLkot10Msg_XXX	SNVT_count_f
LOCKOUT10_MODULE	AI	30	AI	30	40071		CB120_AI[26]	nvoLkot10Mod_XXX	SNVT_count_f
LOCKOUT1_BNRHRS	AI	31	AI	31	40018-19		CB120_AD[3]	nvoLk1BrnHrs_XXX	SNVT_time_hour
LOCKOUT1_BNRCYCS	AI	32	AI	32	40020-21		CB120_AD[4]	nvoLk1BrnCyc_XXX	SNVT_count_f
LOCKOUT2_BNRHRS	AI	33	AI	33	40024-25		CB120_AD[5]	nvoLk2BrnHrs_XXX	SNVT_time_hour
LOCKOUT2_BNRCYCS	AI	34	AI	34	40026-27		CB120_AD[6]	nvoLk2BrnCyc_XXX	SNVT_count_f
LOCKOUT3_BNRHRS	AI	35	AI	35	40030-31		CB120_AD[7]	nvoLk3BrnHrs_XXX	SNVT_time_hour
LOCKOUT3_BNRCYCS	AI	36	AI	36	40032-34		CB120_AD[8]	nvoLk3BrnCyc_XXX	SNVT_count_f
LOCKOUT4_BNRHRS	AI	37	AI	37	40036-37		CB120_AD[9]	nvoLk4BrnHrs_XXX	SNVT_time_hour
LOCKOUT4_BNRCYCS	AI	38	AI	38	40038-39		CB120_AD[10]	nvoLk4BrnCyc_XXX	SNVT_count_f
LOCKOUT5_BNRHRS	AI	39	AI	39	40042-43		CB120_AD[11]	nvoLk5BrnHrs_XXX	SNVT_time_hour
LOCKOUT5_BNRCYCS	AI	40	AI	40	40044-45		CB120_AD[12]	nvoLk5BrnCyc_XXX	SNVT_count_f
LOCKOUT6_BNRHRS	AI	41	AI	41	40048-49		CB120_AD[13]	nvoLk6BrnHrs_XXX	SNVT_time_hour
LOCKOUT6_BNRCYCS	AI	42	AI	42	40050-51		CB120_AD[14]	nvoLk6BrnCyc_XXX	SNVT_count_f
LOCKOUT7_BNRHRS	AI	43	AI	43	40054-55		CB120_AD[15]	nvoLk7BrnHrs_XXX	SNVT_time_hour
LOCKOUT7_BNRCYCS	AI	44	AI	44	40056-57		CB120_AD[16]	nvoLk7BrnCyc_XXX	SNVT_count_f
LOCKOUT8_BNRHRS	AI	45	AI	45	40060-61		CB120_AD[17]	nvoLk8BrnHrs_XXX	SNVT_time_hour
LOCKOUT8_BNRCYCS	AI	46	AI	46	40062-63		CB120_AD[18]	nvoLk8BrnCyc_XXX	SNVT_count_f
LOCKOUT9_BNRHRS	AI	47	AI	47	40066-67		CB120_AD[19]	nvoLk9BrnHrs_XXX	SNVT_time_hour
LOCKOUT9_BNRCYCS	AI	48	AI	48	40068-69		CB120_AD[20]	nvoLk9BrnCyc_XXX	SNVT_count_f
LOCKOUT10_BNRHRS	AI	49	AI	49	40072-73		CB120_AD[21]	nvoLk10BrnHr_XXX	SNVT_time_hour
LOCKOUT10_BNRCYCS	AI	50	AI	50	40074-75		CB120_AD[22]	nvoLk10BrnCy_XXX	SNVT_count_f
Op_Control	BI	25	DI	25	40901	0	CB120_AB[2].0	nvoOpControl_XXX	SNVT_switch
Aux_1	BI	26	DI	26	40901	1	CB120_AB[2].1	nvoAux1_XXX	SNVT_switch
Aux_2	BI	27	DI	27	40901	2	CB120_AB[2].2	nvoAux2_XXX	SNVT_switch
Aux_3	BI	28	DI	28	40901	3	CB120_AB[2].3	nvoAux3_XXX	SNVT_switch
High_water	BI	29	DI	29	40901	4	CB120_AB[2].4	nvoHiwater_XXX	SNVT_switch
Low_Water	BI	30	DI	30	40901	5	CB120_AB[2].5	nvoLoWater_XXX	SNVT_switch
High_Oil_Temp	BI	31	DI	31	40901	6	CB120_AB[2].6	nvoHiOilTemp_XXX	SNVT_switch
Low_Oil_Temp	BI	32	DI	32	40901	7	CB120_AB[2].7	nvoLoOilTemp_XXX	SNVT_switch
Low_Oil_Press	BI	33	DI	33	40902	0	CB120_AB[3].0	nvoLoOilPrs_XXX	SNVT_switch
Low_Atom_Media	BI	34	DI	34	40902	1	CB120_AB[3].1	nvoLoAtmMed_XXX	SNVT_switch
Low_Gas_Press	BI	35	DI	35	40902	2	CB120_AB[3].2	nvoLoGasPrs_XXX	SNVT_switch
High_Gas_Press	BI	36	DI	36	40902	3	CB120_AB[3].3	nvoHiGasPrs_XXX	SNVT_switch
Aux_Gas	BI	37	DI	37	40902	4	CB120_AWB[0].0	nvoAuxGas_XXX	SNVT_switch
High_Press	BI	38	DI	38	40902	5	CB120_AB[3].5	nvoHiPress_XXX	SNVT_switch
High_Temp	BI	39	DI	39	40902	6	CB120_AB[3].6	nvoHiTemp_XXX	SNVT_switch
Aux_4	BI	40	DI	40	40902	7	CB120_AB[3].7	nvoAux4_XXX	SNVT_switch
Aux_5	BI	41	DI	41	40903	0	CB120_AB[4].0	nvoAux5_XXX	SNVT_switch
Aux_6	BI	42	DI	42	40903	1	CB120_AB[4].1	nvoAux6_XXX	SNVT_switch
Aux_7	BI	43	DI	43	40903	2	CB120_AB[4].2	nvoAux7_XXX	SNVT_switch
Air_Flow	BI	44	DI	44	40903	3	CB120_AB[4].3	nvoAirFlo_XXX	SNVT_switch

B.5. HSC

HSC Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER						LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon Name	Lon SNVT Type
C Boiler 1 State	AI	1	AI	1	30021	HSC_AI_XXX[0]	nvoCBI1St_XXX	SNVT_count_inc_f
C Boiler 1 Alarm Word	AI	2	AI	2	30022	HSC_AI_XXX[1]	nvoCBI1AlWd_XXX	SNVT_count_inc_f
C Boiler 1 Hours Word 1	AI	3	AI	3	30023	HSC_AI_XXX[2]	nvoCBI1Hrs1_XXX	SNVT_time_hour
C Boiler 1 Hours Word 2	AI	4	AI	4	30024	HSC_AI_XXX[3]	nvoCBI1Hrs2_XXX	SNVT_time_hour
C Boiler 1 Cycles Word 1	AI	5	AI	5	30025	HSC_AI_XXX[4]	nvoCBI1Cyc1_XXX	SNVT_count_inc_f
C Boiler 1 Cycles Word 2	AI	6	AI	6	30026	HSC_AI_XXX[5]	nvoCBI1Cyc2_XXX	SNVT_count_inc_f
C Boiler 1 Status Bits	AI	7	AI	7	30027	HSC_AI_XXX[6]	nvoCBI1StBt_XXX	SNVT_count_inc_f
C Boiler 1 Inlet Temp	AI	8	AI	8	30028	HSC_AI_XXX[7]	nvoCBI1InTp_XXX	SNVT_temp_p
C Boiler 1 Fire Delay	AI	9	AI	9	30029	HSC_AI_XXX[8]	nvoCBI1FrDl_XXX	SNVT_count_inc_f
C Boiler 1 Outlet Temp	AI	10	AI	10	30030	HSC_AI_XXX[9]	nvoCBI1OtTp_XXX	SNVT_temp_p
C Boiler 2 State	AI	11	AI	11	30031	HSC_AI_XXX[10]	nvoCBI2St_XXX	SNVT_count_inc_f
C Boiler 2 Alarm Word	AI	12	AI	12	30032	HSC_AI_XXX[11]	nvoCBI2AlWd_XXX	SNVT_count_inc_f
C Boiler 2 Hours Word 1	AI	13	AI	13	30033	HSC_AI_XXX[12]	nvoCBI2Hrs1_XXX	SNVT_time_hour
C Boiler 2 Hours Word 2	AI	14	AI	14	30034	HSC_AI_XXX[13]	nvoCBI2Hrs2_XXX	SNVT_time_hour
C Boiler 2 Cycles Word 1	AI	15	AI	15	30035	HSC_AI_XXX[14]	nvoCBI2Cyc1_XXX	SNVT_count_inc_f
C Boiler 2 Cycles Word 2	AI	16	AI	16	30036	HSC_AI_XXX[15]	nvoCBI2Cyc2_XXX	SNVT_count_inc_f
C Boiler 2 Status Bits	AI	17	AI	17	30037	HSC_AI_XXX[16]	nvoCBI2StBt_XXX	SNVT_count_inc_f
C Boiler 2 Inlet Temp	AI	18	AI	18	30038	HSC_AI_XXX[17]	nvoCBI2InTp_XXX	SNVT_temp_p
C Boiler 2 Fire Delay	AI	19	AI	19	30039	HSC_AI_XXX[18]	nvoCBI2FrDl_XXX	SNVT_count_inc_f
C Boiler 2 Outlet Temp	AI	20	AI	20	30040	HSC_AI_XXX[19]	nvoCBI2OtTp_XXX	SNVT_temp_p
C Boiler 3 State	AI	21	AI	21	30041	HSC_AI_XXX[20]	nvoCBI3St_XXX	SNVT_count_inc_f
C Boiler 3 Alarm Word	AI	22	AI	22	30042	HSC_AI_XXX[21]	nvoCBI3AlWd_XXX	SNVT_count_inc_f
C Boiler 3 Hours Word 1	AI	23	AI	23	30043	HSC_AI_XXX[22]	nvoCBI3Hrs1_XXX	SNVT_time_hour
C Boiler 3 Hours Word 2	AI	24	AI	24	30044	HSC_AI_XXX[23]	nvoCBI3Hrs2_XXX	SNVT_time_hour
C Boiler 3 Cycles Word 1	AI	25	AI	25	30045	HSC_AI_XXX[24]	nvoCBI3Cyc1_XXX	SNVT_count_inc_f
C Boiler 3 Cycles Word 2	AI	26	AI	26	30046	HSC_AI_XXX[25]	nvoCBI3Cyc2_XXX	SNVT_count_inc_f
C Boiler 3 Status Bits	AI	27	AI	27	30047	HSC_AI_XXX[26]	nvoCBI3StBt_XXX	SNVT_count_inc_f
C Boiler 3 Inlet Temp	AI	28	AI	28	30048	HSC_AI_XXX[27]	nvoCBI3InTp_XXX	SNVT_temp_p
C Boiler 3 Fire Delay	AI	29	AI	29	30049	HSC_AI_XXX[28]	nvoCBI3FrDl_XXX	SNVT_count_inc_f
C Boiler 3 Outlet Temp	AI	30	AI	30	30050	HSC_AI_XXX[29]	nvoCBI3OtTp_XXX	SNVT_temp_p
C Boiler 4 State	AI	31	AI	31	30051	HSC_AI_XXX[30]	nvoCBI4St_XXX	SNVT_count_inc_f
C Boiler 4 Alarm Word	AI	32	AI	32	30052	HSC_AI_XXX[31]	nvoCBI4AlWd_XXX	SNVT_count_inc_f
C Boiler 4 Hours Word 1	AI	33	AI	33	30053	HSC_AI_XXX[32]	nvoCBI4Hrs1_XXX	SNVT_time_hour
C Boiler 4 Hours Word 2	AI	34	AI	34	30054	HSC_AI_XXX[33]	nvoCBI4Hrs2_XXX	SNVT_time_hour
C Boiler 4 Cycles Word 1	AI	35	AI	35	30055	HSC_AI_XXX[34]	nvoCBI4Cyc1_XXX	SNVT_count_inc_f
C Boiler 4 Cycles Word 2	AI	36	AI	36	30056	HSC_AI_XXX[35]	nvoCBI4Cyc2_XXX	SNVT_count_inc_f
C Boiler 4 Status Bits	AI	37	AI	37	30057	HSC_AI_XXX[36]	nvoCBI4StBt_XXX	SNVT_count_inc_f
C Boiler 4 Inlet Temp	AI	38	AI	38	30058	HSC_AI_XXX[37]	nvoCBI4InTp_XXX	SNVT_temp_p
C Boiler 4 Fire Delay	AI	39	AI	39	30059	HSC_AI_XXX[38]	nvoCBI4FrDl_XXX	SNVT_count_inc_f
C Boiler 4 Outlet Temp	AI	40	AI	40	30060	HSC_AI_XXX[39]	nvoCBI4OtTp_XXX	SNVT_temp_p
C Boiler 5 State	AI	41	AI	41	30061	HSC_AI_XXX[40]	nvoCBI5St_XXX	SNVT_count_inc_f
C Boiler 5 Alarm Word	AI	42	AI	42	30062	HSC_AI_XXX[41]	nvoCBI5AlWd_XXX	SNVT_count_inc_f
C Boiler 5 Hours Word 1	AI	43	AI	43	30063	HSC_AI_XXX[42]	nvoCBI5Hrs1_XXX	SNVT_time_hour
C Boiler 5 Hours Word 2	AI	44	AI	44	30064	HSC_AI_XXX[43]	nvoCBI5Hrs2_XXX	SNVT_time_hour
C Boiler 5 Cycles Word 1	AI	45	AI	45	30065	HSC_AI_XXX[44]	nvoCBI5Cyc1_XXX	SNVT_count_inc_f
C Boiler 5 Cycles Word 2	AI	46	AI	46	30066	HSC_AI_XXX[45]	nvoCBI5Cyc2_XXX	SNVT_count_inc_f
C Boiler 5 Status Bits	AI	47	AI	47	30067	HSC_AI_XXX[46]	nvoCBI5StBt_XXX	SNVT_count_inc_f
C Boiler 5 Inlet Temp	AI	48	AI	48	30068	HSC_AI_XXX[47]	nvoCBI5InTp_XXX	SNVT_temp_p
C Boiler 5 Fire Delay	AI	49	AI	49	30069	HSC_AI_XXX[48]	nvoCBI5FrDl_XXX	SNVT_count_inc_f

HSC Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER						LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon Name	Lon SNVT Type
C Boiler 5 Outlet Temp	AI	50	AI	50	30070	HSC_AI_XXX[49]	nvoCBI5OtTp_XXX	SNVT_temp_p
C Boiler 6 State	AI	51	AI	51	30071	HSC_AI_XXX[50]	nvoCBI6St_XXX	SNVT_count_inc_f
C Boiler 6 Alarm Word	AI	52	AI	52	30072	HSC_AI_XXX[51]	nvoCBI6AlWd_XXX	SNVT_count_inc_f
C Boiler 6 Hours Word 1	AI	53	AI	53	30073	HSC_AI_XXX[52]	nvoCBI6Hrs1_XXX	SNVT_time_hour
C Boiler 6 Hours Word 2	AI	54	AI	54	30074	HSC_AI_XXX[53]	nvoCBI6Hrs2_XXX	SNVT_time_hour
C Boiler 6 Cycles Word 1	AI	55	AI	55	30075	HSC_AI_XXX[54]	nvoCBI6Cyc1_XXX	SNVT_count_inc_f
C Boiler 6 Cycles Word 2	AI	56	AI	56	30076	HSC_AI_XXX[55]	nvoCBI6Cyc2_XXX	SNVT_count_inc_f
C Boiler 6 Status Bits	AI	57	AI	57	30077	HSC_AI_XXX[56]	nvoCBI6StBt_XXX	SNVT_count_inc_f
C Boiler 6 Inlet Temp	AI	58	AI	58	30078	HSC_AI_XXX[57]	nvoCBI6InTp_XXX	SNVT_temp_p
C Boiler 6 Fire Delay	AI	59	AI	59	30079	HSC_AI_XXX[58]	nvoCBI6FrDl_XXX	SNVT_count_inc_f
C Boiler 6 Outlet Temp	AI	60	AI	60	30080	HSC_AI_XXX[59]	nvoCBI6OtTp_XXX	SNVT_temp_p
C Boiler 7 State	AI	61	AI	61	30081	HSC_AI_XXX[60]	nvoCBI7St_XXX	SNVT_count_inc_f
C Boiler 7 Alarm Word	AI	62	AI	62	30082	HSC_AI_XXX[61]	nvoCBI7AlWd_XXX	SNVT_count_inc_f
C Boiler 7 Hours Word 1	AI	63	AI	63	30083	HSC_AI_XXX[62]	nvoCBI7Hrs1_XXX	SNVT_time_hour
C Boiler 7 Hours Word 2	AI	64	AI	64	30084	HSC_AI_XXX[63]	nvoCBI7Hrs2_XXX	SNVT_time_hour
C Boiler 7 Cycles Word 1	AI	65	AI	65	30085	HSC_AI_XXX[64]	nvoCBI7Cyc1_XXX	SNVT_count_inc_f
C Boiler 7 Cycles Word 2	AI	66	AI	66	30086	HSC_AI_XXX[65]	nvoCBI7Cyc2_XXX	SNVT_count_inc_f
C Boiler 7 Status Bits	AI	67	AI	67	30087	HSC_AI_XXX[66]	nvoCBI7StBt_XXX	SNVT_count_inc_f
C Boiler 7 Inlet Temp	AI	68	AI	68	30088	HSC_AI_XXX[67]	nvoCBI7InTp_XXX	SNVT_temp_p
C Boiler 7 Fire Delay	AI	69	AI	69	30089	HSC_AI_XXX[68]	nvoCBI7FrDl_XXX	SNVT_count_inc_f
C Boiler 7 Outlet Temp	AI	70	AI	70	30090	HSC_AI_XXX[69]	nvoCBI7OtTp_XXX	SNVT_temp_p
C Boiler 8 State	AI	71	AI	71	30091	HSC_AI_XXX[70]	nvoCBI8St_XXX	SNVT_count_inc_f
C Boiler 8 Alarm Word	AI	72	AI	72	30092	HSC_AI_XXX[71]	nvoCBI8AlWd_XXX	SNVT_count_inc_f
C Boiler 8 Hours Word 1	AI	73	AI	73	30093	HSC_AI_XXX[72]	nvoCBI8Hrs1_XXX	SNVT_time_hour
C Boiler 8 Hours Word 2	AI	74	AI	74	30094	HSC_AI_XXX[73]	nvoCBI8Hrs2_XXX	SNVT_time_hour
C Boiler 8 Cycles Word 1	AI	75	AI	75	30095	HSC_AI_XXX[74]	nvoCBI8Cyc1_XXX	SNVT_count_inc_f
C Boiler 8 Cycles Word 2	AI	76	AI	76	30096	HSC_AI_XXX[75]	nvoCBI8Cyc2_XXX	SNVT_count_inc_f
C Boiler 8 Status Bits	AI	77	AI	77	30097	HSC_AI_XXX[76]	nvoCBI8StBt_XXX	SNVT_count_inc_f
C Boiler 8 Inlet Temp	AI	78	AI	78	30098	HSC_AI_XXX[77]	nvoCBI8InTp_XXX	SNVT_temp_p
C Boiler 8 Fire Delay	AI	79	AI	79	30099	HSC_AI_XXX[78]	nvoCBI8FrDl_XXX	SNVT_count_inc_f
C Boiler 8 Outlet Temp	AI	80	AI	80	30100	HSC_AI_XXX[79]	nvoCBI8OtTp_XXX	SNVT_temp_p
C Boiler 9 State	AI	81	AI	81	30101	HSC_AI_XXX[80]	nvoCBI9St_XXX	SNVT_count_inc_f
C Boiler 9 Alarm Word	AI	82	AI	82	30102	HSC_AI_XXX[81]	nvoCBI9AlWd_XXX	SNVT_count_inc_f
C Boiler 9 Hours Word 1	AI	83	AI	83	30103	HSC_AI_XXX[82]	nvoCBI9Hrs1_XXX	SNVT_time_hour
C Boiler 9 Hours Word 2	AI	84	AI	84	30104	HSC_AI_XXX[83]	nvoCBI9Hrs2_XXX	SNVT_time_hour
C Boiler 9 Cycles Word 1	AI	85	AI	85	30105	HSC_AI_XXX[84]	nvoCBI9Cyc1_XXX	SNVT_count_inc_f
C Boiler 9 Cycles Word 2	AI	86	AI	86	30106	HSC_AI_XXX[85]	nvoCBI9Cyc2_XXX	SNVT_count_inc_f
C Boiler 9 Status Bits	AI	87	AI	87	30107	HSC_AI_XXX[86]	nvoCBI9StBt_XXX	SNVT_count_inc_f
C Boiler 9 Inlet Temp	AI	88	AI	88	30108	HSC_AI_XXX[87]	nvoCBI9InTp_XXX	SNVT_temp_p
C Boiler 9 Fire Delay	AI	89	AI	89	30109	HSC_AI_XXX[88]	nvoCBI9FrDl_XXX	SNVT_count_inc_f
C Boiler 9 Outlet Temp	AI	90	AI	90	30110	HSC_AI_XXX[89]	nvoCBI9OtTp_XXX	SNVT_temp_p
C Boiler 10 State	AI	91	AI	91	30111	HSC_AI_XXX[90]	nvoCBI10St_XXX	SNVT_count_inc_f
C Boiler 10 Alarm Word	AI	92	AI	92	30112	HSC_AI_XXX[91]	nvoCBI10AlWd_XXX	SNVT_count_inc_f
C Boiler 10 Hours Word 1	AI	93	AI	93	30113	HSC_AI_XXX[92]	nvoCBI10Hrs1_XXX	SNVT_time_hour
C Boiler 10 Hours Word 2	AI	94	AI	94	30114	HSC_AI_XXX[93]	nvoCBI10Hrs2_XXX	SNVT_time_hour
C Boiler 10 Cycles Word 1	AI	95	AI	95	30115	HSC_AI_XXX[94]	nvoCBI10Cyc1_XXX	SNVT_count_inc_f
C Boiler 10 Cycles Word 2	AI	96	AI	96	30116	HSC_AI_XXX[95]	nvoCBI10Cyc2_XXX	SNVT_count_inc_f
C Boiler 10 Status Bits	AI	97	AI	97	30117	HSC_AI_XXX[96]	nvoCBI10StBt_XXX	SNVT_count_inc_f
C Boiler 10 Inlet Temp	AI	98	AI	98	30118	HSC_AI_XXX[97]	nvoCBI10InTp_XXX	SNVT_temp_p
C Boiler 10 Fire Delay	AI	99	AI	99	30119	HSC_AI_XXX[98]	nvoCBI10FrDl_XXX	SNVT_count_inc_f

HSC Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER						LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon Name	Lon SNVT Type
C Boiler 10 Outlet Temp	AI	100	AI	100	30120	HSC_AI_XXX[99]	nvoCBI10OtTp_XXX	SNVT_temp_p
NC Boiler A State	AI	101	AI	101	30121	HSC_AI_XXX[100]	nvoNCBIASt_XXX	SNVT_count_inc_f
NC Boiler A Alarm Word	AI	102	AI	102	30122	HSC_AI_XXX[101]	nvoNCBIAAlWd_XXX	SNVT_count_inc_f
NC Boiler A Hours Word 1	AI	103	AI	103	30123	HSC_AI_XXX[102]	nvoNCBIAHrs1_XXX	SNVT_time_hour
NC Boiler A Hours Word 2	AI	104	AI	104	30124	HSC_AI_XXX[103]	nvoNCBIAHrs2_XXX	SNVT_time_hour
NC Boiler A Cycles Word 1	AI	105	AI	105	30125	HSC_AI_XXX[104]	nvoNCBIACyc1_XXX	SNVT_count_inc_f
NC Boiler A Cycles Word 2	AI	106	AI	106	30126	HSC_AI_XXX[105]	nvoNCBIACyc2_XXX	SNVT_count_inc_f
NC Boiler A Status Bits	AI	107	AI	107	30127	HSC_AI_XXX[106]	nvoNCBIAStBt_XXX	SNVT_count_inc_f
NC Boiler A Inlet Temp	AI	108	AI	108	30128	HSC_AI_XXX[107]	nvoNCBIAInTp_XXX	SNVT_temp_p
NC Boiler A Fire Delay	AI	109	AI	109	30129	HSC_AI_XXX[108]	nvoNCBIAFrDl_XXX	SNVT_count_inc_f
NC Boiler A Outlet Temp	AI	110	AI	110	30130	HSC_AI_XXX[109]	nvoNCBIAOtTp_XXX	SNVT_temp_p
NC Boiler B State	AI	111	AI	111	30131	HSC_AI_XXX[110]	nvoNCBIBSt_XXX	SNVT_count_inc_f
NC Boiler B Alarm Word	AI	112	AI	112	30132	HSC_AI_XXX[111]	nvoNCBIBAlWd_XXX	SNVT_count_inc_f
NC Boiler B Hours Word 1	AI	113	AI	113	30133	HSC_AI_XXX[112]	nvoNCBIBHrs1_XXX	SNVT_time_hour
NC Boiler B Hours Word 2	AI	114	AI	114	30134	HSC_AI_XXX[113]	nvoNCBIBHrs2_XXX	SNVT_time_hour
NC Boiler B Cycles Word 1	AI	115	AI	115	30135	HSC_AI_XXX[114]	nvoNCBIBCyc1_XXX	SNVT_count_inc_f
NC Boiler B Cycles Word 2	AI	116	AI	116	30136	HSC_AI_XXX[115]	nvoNCBIBCyc2_XXX	SNVT_count_inc_f
NC Boiler B Status Bits	AI	117	AI	117	30137	HSC_AI_XXX[116]	nvoNCBIBStBt_XXX	SNVT_count_inc_f
NC Boiler B Inlet Temp	AI	118	AI	118	30138	HSC_AI_XXX[117]	nvoNCBIBInTp_XXX	SNVT_temp_p
NC Boiler B Fire Delay	AI	119	AI	119	30139	HSC_AI_XXX[118]	nvoNCBIBFrDl_XXX	SNVT_count_inc_f
NC Boiler B Outlet Temp	AI	120	AI	120	30140	HSC_AI_XXX[119]	nvoNCBIBOtTp_XXX	SNVT_temp_p
NC Boiler C State	AI	121	AI	121	30141	HSC_AI_XXX[120]	nvoNCBICSt_XXX	SNVT_count_inc_f
NC Boiler C Alarm Word	AI	122	AI	122	30142	HSC_AI_XXX[121]	nvoNCBICAlWd_XXX	SNVT_count_inc_f
NC Boiler C Hours Word 1	AI	123	AI	123	30143	HSC_AI_XXX[122]	nvoNCBICHrs1_XXX	SNVT_time_hour
NC Boiler C Hours Word 2	AI	124	AI	124	30144	HSC_AI_XXX[123]	nvoNCBICHrs2_XXX	SNVT_time_hour
NC Boiler C Cycles Word 1	AI	125	AI	125	30145	HSC_AI_XXX[124]	nvoNCBICCyc1_XXX	SNVT_count_inc_f
NC Boiler C Cycles Word 2	AI	126	AI	126	30146	HSC_AI_XXX[125]	nvoNCBICCyc2_XXX	SNVT_count_inc_f
NC Boiler C Status Bits	AI	127	AI	127	30147	HSC_AI_XXX[126]	nvoNCBICStBt_XXX	SNVT_count_inc_f
NC Boiler C Inlet Temp	AI	128	AI	128	30148	HSC_AI_XXX[127]	nvoNCBICInTp_XXX	SNVT_temp_p
NC Boiler C Fire Delay	AI	129	AI	129	30149	HSC_AI_XXX[128]	nvoNCBICFrDl_XXX	SNVT_count_inc_f
NC Boiler C Outlet Temp	AI	130	AI	130	30150	HSC_AI_XXX[129]	nvoNCBICOtTp_XXX	SNVT_temp_p
NC Boiler D State	AI	131	AI	131	30151	HSC_AI_XXX[130]	nvoNCBIDSt_XXX	SNVT_count_inc_f
NC Boiler D Alarm Word	AI	132	AI	132	30152	HSC_AI_XXX[131]	nvoNCBIDAlWd_XXX	SNVT_count_inc_f
NC Boiler D Hours Word 1	AI	133	AI	133	30153	HSC_AI_XXX[132]	nvoNCBIDHrs1_XXX	SNVT_time_hour
NC Boiler D Hours Word 2	AI	134	AI	134	30154	HSC_AI_XXX[133]	nvoNCBIDHrs2_XXX	SNVT_time_hour
NC Boiler D Cycles Word 1	AI	135	AI	135	30155	HSC_AI_XXX[134]	nvoNCBIDCyc1_XXX	SNVT_count_inc_f
NC Boiler D Cycles Word 2	AI	136	AI	136	30156	HSC_AI_XXX[135]	nvoNCBIDCyc2_XXX	SNVT_count_inc_f
NC Boiler D Status Bits	AI	137	AI	137	30157	HSC_AI_XXX[136]	nvoNCBIDStBt_XXX	SNVT_count_inc_f
NC Boiler D Inlet Temp	AI	138	AI	138	30158	HSC_AI_XXX[137]	nvoNCBIDInTp_XXX	SNVT_temp_p
NC Boiler D Fire Delay	AI	139	AI	139	30159	HSC_AI_XXX[138]	nvoNCBIDFrDl_XXX	SNVT_count_inc_f
NC Boiler D Outlet Temp	AI	140	AI	140	30160	HSC_AI_XXX[139]	nvoNCBIDOtTp_XXX	SNVT_temp_p
NC Boiler E State	AI	141	AI	141	30161	HSC_AI_XXX[140]	nvoNCBIESt_XXX	SNVT_count_inc_f
NC Boiler E Alarm Word	AI	142	AI	142	30162	HSC_AI_XXX[141]	nvoNCBIEAlWd_XXX	SNVT_count_inc_f
NC Boiler E Hours Word 1	AI	143	AI	143	30163	HSC_AI_XXX[142]	nvoNCBIEHrs1_XXX	SNVT_time_hour
NC Boiler E Hours Word 2	AI	144	AI	144	30164	HSC_AI_XXX[143]	nvoNCBIEHrs2_XXX	SNVT_time_hour
NC Boiler E Cycles Word 1	AI	145	AI	145	30165	HSC_AI_XXX[144]	nvoNCBIECyc1_XXX	SNVT_count_inc_f
NC Boiler E Cycles Word 2	AI	146	AI	146	30166	HSC_AI_XXX[145]	nvoNCBIECyc2_XXX	SNVT_count_inc_f
NC Boiler E Status Bits	AI	147	AI	147	30167	HSC_AI_XXX[146]	nvoNCBIEStBt_XXX	SNVT_count_inc_f
NC Boiler E Inlet Temp	AI	148	AI	148	30168	HSC_AI_XXX[147]	nvoNCBIEInTp_XXX	SNVT_temp_p
NC Boiler E Fire Delay	AI	149	AI	149	30169	HSC_AI_XXX[148]	nvoNCBIEFrDl_XXX	SNVT_count_inc_f

HSC Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER						LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon Name	Lon SNVT Type
NC Boiler E Outlet Temp	AI	150	AI	150	30170	HSC_AI_XXX[149]	nvoNCBIEOtTp_XXX	SNVT_temp_p
NC Boiler F State	AI	151	AI	151	30171	HSC_AI_XXX[150]	nvoNCBIFSt_XXX	SNVT_count_inc_f
NC Boiler F Alarm Word	AI	152	AI	152	30172	HSC_AI_XXX[151]	nvoNCBIFAlWd_XXX	SNVT_count_inc_f
NC Boiler F Hours Word 1	AI	153	AI	153	30173	HSC_AI_XXX[152]	nvoNCBIFHrs1_XXX	SNVT_time_hour
NC Boiler F Hours Word 2	AI	154	AI	154	30174	HSC_AI_XXX[153]	nvoNCBIFHrs2_XXX	SNVT_time_hour
NC Boiler F Cycles Word 1	AI	155	AI	155	30175	HSC_AI_XXX[154]	nvoNCBIFCyc1_XXX	SNVT_count_inc_f
NC Boiler F Cycles Word 2	AI	156	AI	156	30176	HSC_AI_XXX[155]	nvoNCBIFCyc2_XXX	SNVT_count_inc_f
NC Boiler F Status Bits	AI	157	AI	157	30177	HSC_AI_XXX[156]	nvoNCBIFStBt_XXX	SNVT_count_inc_f
NC Boiler F Inlet Temp	AI	158	AI	158	30178	HSC_AI_XXX[157]	nvoNCBIFInTp_XXX	SNVT_temp_p
NC Boiler F Fire Delay	AI	159	AI	159	30179	HSC_AI_XXX[158]	nvoNCBIFFrDl_XXX	SNVT_count_inc_f
NC Boiler F Outlet Temp	AI	160	AI	160	30180	HSC_AI_XXX[159]	nvoNCBIFOtTp_XXX	SNVT_temp_p
NC Boiler G State	AI	161	AI	161	30181	HSC_AI_XXX[160]	nvoNCBIGSt_XXX	SNVT_count_inc_f
NC Boiler G Alarm Word	AI	162	AI	162	30182	HSC_AI_XXX[161]	nvoNCBIGAlWd_XXX	SNVT_count_inc_f
NC Boiler G Hours Word 1	AI	163	AI	163	30183	HSC_AI_XXX[162]	nvoNCBIGHrs1_XXX	SNVT_time_hour
NC Boiler G Hours Word 2	AI	164	AI	164	30184	HSC_AI_XXX[163]	nvoNCBIGHrs2_XXX	SNVT_time_hour
NC Boiler G Cycles Word 1	AI	165	AI	165	30185	HSC_AI_XXX[164]	nvoNCBIGCyc1_XXX	SNVT_count_inc_f
NC Boiler G Cycles Word 2	AI	166	AI	166	30186	HSC_AI_XXX[165]	nvoNCBIGCyc2_XXX	SNVT_count_inc_f
NC Boiler G Status Bits	AI	167	AI	167	30187	HSC_AI_XXX[166]	nvoNCBIGStBt_XXX	SNVT_count_inc_f
NC Boiler G Inlet Temp	AI	168	AI	168	30188	HSC_AI_XXX[167]	nvoNCBIGInTp_XXX	SNVT_temp_p
NC Boiler G Fire Delay	AI	169	AI	169	30189	HSC_AI_XXX[168]	nvoNCBIGFrDl_XXX	SNVT_count_inc_f
NC Boiler G Outlet Temp	AI	170	AI	170	30190	HSC_AI_XXX[169]	nvoNCBIGOtTp_XXX	SNVT_temp_p
NC Boiler H State	AI	171	AI	171	30191	HSC_AI_XXX[170]	nvoNCBIHSt_XXX	SNVT_count_inc_f
NC Boiler H Alarm Word	AI	172	AI	172	30192	HSC_AI_XXX[171]	nvoNCBIHAlWd_XXX	SNVT_count_inc_f
NC Boiler H Hours Word 1	AI	173	AI	173	30193	HSC_AI_XXX[172]	nvoNCBIHHrs1_XXX	SNVT_time_hour
NC Boiler H Hours Word 2	AI	174	AI	174	30194	HSC_AI_XXX[173]	nvoNCBIHHrs2_XXX	SNVT_time_hour
NC Boiler H Cycles Word 1	AI	175	AI	175	30195	HSC_AI_XXX[174]	nvoNCBIHCyc1_XXX	SNVT_count_inc_f
NC Boiler H Cycles Word 2	AI	176	AI	176	30196	HSC_AI_XXX[175]	nvoNCBIHCyc2_XXX	SNVT_count_inc_f
NC Boiler H Status Bits	AI	177	AI	177	30197	HSC_AI_XXX[176]	nvoNCBIHStBt_XXX	SNVT_count_inc_f
NC Boiler H Inlet Temp	AI	178	AI	178	30198	HSC_AI_XXX[177]	nvoNCBIHInTp_XXX	SNVT_temp_p
NC Boiler H Fire Delay	AI	179	AI	179	30199	HSC_AI_XXX[178]	nvoNCBIHFrDl_XXX	SNVT_count_inc_f
NC Boiler H Outlet Temp	AI	180	AI	180	30200	HSC_AI_XXX[179]	nvoNCBIHOtTp_XXX	SNVT_temp_p
NC Boiler I State	AI	181	AI	181	30201	HSC_AI_XXX[180]	nvoNCBIISt_XXX	SNVT_count_inc_f
NC Boiler I Alarm Word	AI	182	AI	182	30202	HSC_AI_XXX[181]	nvoNCBIIAlWd_XXX	SNVT_count_inc_f
NC Boiler I Hours Word 1	AI	183	AI	183	30203	HSC_AI_XXX[182]	nvoNCBIIHrs1_XXX	SNVT_time_hour
NC Boiler I Hours Word 2	AI	184	AI	184	30204	HSC_AI_XXX[183]	nvoNCBIIHrs2_XXX	SNVT_time_hour
NC Boiler I Cycles Word 1	AI	185	AI	185	30205	HSC_AI_XXX[184]	nvoNCBIICyc1_XXX	SNVT_count_inc_f
NC Boiler I Cycles Word 2	AI	186	AI	186	30206	HSC_AI_XXX[185]	nvoNCBIICyc2_XXX	SNVT_count_inc_f
NC Boiler I Status Bits	AI	187	AI	187	30207	HSC_AI_XXX[186]	nvoNCBIIStBt_XXX	SNVT_count_inc_f
NC Boiler I Inlet Temp	AI	188	AI	188	30208	HSC_AI_XXX[187]	nvoNCBIIInTp_XXX	SNVT_temp_p
NC Boiler I Fire Delay	AI	189	AI	189	30209	HSC_AI_XXX[188]	nvoNCBIIFrDl_XXX	SNVT_count_inc_f
NC Boiler I Outlet Temp	AI	190	AI	190	30210	HSC_AI_XXX[189]	nvoNCBIIOtTp_XXX	SNVT_temp_p
NC Boiler J State	AI	191	AI	191	30211	HSC_AI_XXX[190]	nvoNCBIJSt_XXX	SNVT_count_inc_f
NC Boiler J Alarm Word	AI	192	AI	192	30212	HSC_AI_XXX[191]	nvoNCBIJAlWd_XXX	SNVT_count_inc_f
NC Boiler J Hours Word 1	AI	193	AI	193	30213	HSC_AI_XXX[192]	nvoNCBIJHrs1_XXX	SNVT_time_hour
NC Boiler J Hours Word 2	AI	194	AI	194	30214	HSC_AI_XXX[193]	nvoNCBIJHrs2_XXX	SNVT_time_hour
NC Boiler J Cycles Word 1	AI	195	AI	195	30215	HSC_AI_XXX[194]	nvoNCBIJCyc1_XXX	SNVT_count_inc_f
NC Boiler J Cycles Word 2	AI	196	AI	196	30216	HSC_AI_XXX[195]	nvoNCBIJCyc2_XXX	SNVT_count_inc_f
NC Boiler J Status Bits	AI	197	AI	197	30217	HSC_AI_XXX[196]	nvoNCBIJStBt_XXX	SNVT_count_inc_f
NC Boiler J Inlet Temp	AI	198	AI	198	30218	HSC_AI_XXX[197]	nvoNCBIJInTp_XXX	SNVT_temp_p
NC Boiler J Fire Delay	AI	199	AI	199	30219	HSC_AI_XXX[198]	nvoNCBIJFrDl_XXX	SNVT_count_inc_f

HSC Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER						LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon Name	Lon SNVT Type
NC Boiler J Outlet Temp	AI	200	AI	200	30220	HSC_AI_XXX[199]	nvoNCBlJOtTp_XXX	SNVT_temp_p
Rem System Pump Module Input Word	AI	201	AI	201	30221	HSC_AI_XXX[200]	nvoRmSyPpInp_XXX	SNVT_count_inc_f
Rem System Pump Module Output Word	AI	202	AI	202	30222	HSC_AI_XXX[201]	nvoRmSyPpOut_XXX	SNVT_count_inc_f
Number of Remote System Pumps	AI	203	AI	203	30223	HSC_AI_XXX[202]	nvoNumSysPmp_XXX	SNVT_count_inc_f
Pump Module Analog In 1 Scaled Value	AI	247	AI	247	30224	HSC_AI_XXX[203]	nvoPumpModA1_XXX	SNVT_count_inc_f
Pump Module Analog In 2 Scaled Value	AI	248	AI	248	30226	HSC_AI_XXX[204]	nvoPumpModA2_XXX	SNVT_count_inc_f
System Pump Speed Requested	AI	249	AI	249	30228	HSC_AI_XXX[205]	nvoSyPmpSpRq_XXX	SNVT_count_inc_f
Pump PID Process Variable	AI	250	AI	250	30230	HSC_AI_XXX[206]	nvoPpPIDPrVr_XXX	SNVT_count_inc_f
Pump PID Setpoint	AI	251	AI	251	30232	HSC_AI_XXX[207]	nvoPumpPIDSP_XXX	SNVT_count_inc_f
Rem System Pump Lead Pump Number	AI	204	AI	204	30234	HSC_AI_XXX[208]	nvoRmPpLdNum_XXX	SNVT_count_inc_f
Rem System Pump Lag1 Pump Number	AI	205	AI	205	30235	HSC_AI_XXX[209]	nvoRmPpLg1Nm_XXX	SNVT_count_inc_f
Rem System Pump Lag2 Pump Number	AI	206	AI	206	30236	HSC_AI_XXX[210]	nvoRmPpLg2Nm_XXX	SNVT_count_inc_f
Rem System Pump Lag3 Pump Number	AI	207	AI	207	30237	HSC_AI_XXX[211]	nvoRmPpLg3Nm_XXX	SNVT_count_inc_f
Alarm Word 1 Value	AI	208	AI	208	30300	HSC_AI_XXX[212]	nvoAlm1Val_XXX	SNVT_count_inc_f
Alarm Word 2 Value	AI	209	AI	209	30301	HSC_AI_XXX[213]	nvoAlm2Val_XXX	SNVT_count_inc_f
Digital Input Word Value	AI	210	AI	210	30302	HSC_AI_XXX[214]	nvoDIWordVal_XXX	SNVT_count_inc_f
Digital Output Word 1 Value	AI	211	AI	211	30303	HSC_AI_XXX[215]	nvoDO1Value_XXX	SNVT_count_inc_f
Digital Output Word 2 Value	AI	212	AI	212	30304	HSC_AI_XXX[216]	nvoDO2Value_XXX	SNVT_count_inc_f
Number of Cond Boilers Running	AI	213	AI	213	30305	HSC_AI_XXX[217]	nvoNmCBlrRun_XXX	SNVT_count_inc_f
Number of Cond Boilers Requested	AI	214	AI	214	30306	HSC_AI_XXX[218]	nvoNmCBlrReq_XXX	SNVT_count_inc_f
Number of Non-Cond Boilers Running	AI	215	AI	215	30307	HSC_AI_XXX[219]	nvoNmNCBlRun_XXX	SNVT_count_inc_f
Number of Non-Cond Boilers Requested	AI	216	AI	216	30308	HSC_AI_XXX[220]	nvoNmNCBlReq_XXX	SNVT_count_inc_f
Number of Cond Boilers in System	AI	217	AI	217	30309	HSC_AI_XXX[221]	nvoNmCBlrSys_XXX	SNVT_count_inc_f
Number of Non-Cond Boilers in System	AI	218	AI	218	30310	HSC_AI_XXX[222]	nvoNmNCBlSys_XXX	SNVT_count_inc_f
Cond Lead Boiler Number	AI	219	AI	219	30311	HSC_AI_XXX[223]	nvoCLdBlrNum_XXX	SNVT_count_inc_f
Cond Lag1 Boiler Number	AI	220	AI	220	30312	HSC_AI_XXX[224]	nvoCLg1BlrNm_XXX	SNVT_count_inc_f
Cond Lag2 Boiler Number	AI	221	AI	221	30313	HSC_AI_XXX[225]	nvoCLg2BlrNm_XXX	SNVT_count_inc_f
Cond Lag3 Boiler Number	AI	222	AI	222	30314	HSC_AI_XXX[226]	nvoCLg3BlrNm_XXX	SNVT_count_inc_f
Cond Lag4 Boiler Number	AI	223	AI	223	30315	HSC_AI_XXX[227]	nvoCLg4BlrNm_XXX	SNVT_count_inc_f
Cond Lag5 Boiler Number	AI	224	AI	224	30316	HSC_AI_XXX[228]	nvoCLg5BlrNm_XXX	SNVT_count_inc_f
Cond Lag6 Boiler Number	AI	225	AI	225	30317	HSC_AI_XXX[229]	nvoCLg6BlrNm_XXX	SNVT_count_inc_f
Cond Lag7 Boiler Number	AI	226	AI	226	30318	HSC_AI_XXX[230]	nvoCLg7BlrNm_XXX	SNVT_count_inc_f
Cond Lag8 Boiler Number	AI	227	AI	227	30319	HSC_AI_XXX[231]	nvoCLg8BlrNm_XXX	SNVT_count_inc_f
Cond Lag9 Boiler Number	AI	228	AI	228	30320	HSC_AI_XXX[232]	nvoCLg9BlrNm_XXX	SNVT_count_inc_f
Non-Cond Lead Boiler Number	AI	229	AI	229	30321	HSC_AI_XXX[233]	nvoNCLdBlrNm_XXX	SNVT_count_inc_f
Non-Cond Lag1 Boiler Number	AI	230	AI	230	30322	HSC_AI_XXX[234]	nvoNCLg1BlNm_XXX	SNVT_count_inc_f
Non-Cond Lag2 Boiler Number	AI	231	AI	231	30323	HSC_AI_XXX[235]	nvoNCLg2BlNm_XXX	SNVT_count_inc_f
Non-Cond Lag3 Boiler Number	AI	232	AI	232	30324	HSC_AI_XXX[236]	nvoNCLg3BlNm_XXX	SNVT_count_inc_f
Non-Cond Lag4 Boiler Number	AI	233	AI	233	30325	HSC_AI_XXX[237]	nvoNCLg4BlNm_XXX	SNVT_count_inc_f
Non-Cond Lag5 Boiler Number	AI	234	AI	234	30326	HSC_AI_XXX[238]	nvoNCLg5BlNm_XXX	SNVT_count_inc_f
Non-Cond Lag6 Boiler Number	AI	235	AI	235	30327	HSC_AI_XXX[239]	nvoNCLg6BlNm_XXX	SNVT_count_inc_f
Non-Cond Lag7 Boiler Number	AI	236	AI	236	30328	HSC_AI_XXX[240]	nvoNCLg7BlNm_XXX	SNVT_count_inc_f
Non-Cond Lag8 Boiler Number	AI	237	AI	237	30329	HSC_AI_XXX[241]	nvoNCLg8BlNm_XXX	SNVT_count_inc_f
Non-Cond Lag9 Boiler Number	AI	238	AI	238	30330	HSC_AI_XXX[242]	nvoNCLg9BlNm_XXX	SNVT_count_inc_f
Damper Mod 1 Input (Prove) Data	AI	239	AI	239	30340	HSC_AI_XXX[243]	nvoDmpMd1Inp_XXX	SNVT_count_inc_f
Damper Mod 1 Output (Reqired) Data	AI	240	AI	240	30341	HSC_AI_XXX[244]	nvoDmpMd1Out_XXX	SNVT_count_inc_f
Damper Mod 2 Input (Prove) Data	AI	241	AI	241	30342	HSC_AI_XXX[245]	nvoDmpMd2Inp_XXX	SNVT_count_inc_f
Damper Mod 2 Output (Reqired) Data	AI	242	AI	242	30343	HSC_AI_XXX[246]	nvoDmpMd2Out_XXX	SNVT_count_inc_f
Damper Mod 3 Input (Prove) Data	AI	243	AI	243	30344	HSC_AI_XXX[247]	nvoDmpMd3Inp_XXX	SNVT_count_inc_f
Damper Mod 3 Output (Reqired) Data	AI	244	AI	244	30345	HSC_AI_XXX[248]	nvoDmpMd3Out_XXX	SNVT_count_inc_f

HSC Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

		RER						LER	
	Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon Name	Lon SNVT Type
	Damper Mod 4 Input (Prove) Data	AI	245	AI	245	30346	HSC_AI_XXX[249]	nvoDmpMd4Inp_XXX	SNVT_count_inc_f
	Damper Mod 4 Output (Reqired) Data	AI	246	AI	246	30347	HSC_AI_XXX[250]	nvoDmpMd4Out_XXX	SNVT_count_inc_f
	Cond Boiler Header Temp	AI	252	AI	252	40280	HSC_AR_XXX[0]	nvoCBlrHdrTp_XXX	SNVT_temp_p
	Main Supply Header Temp	AI	253	AI	253	40282	HSC_AR_XXX[1]	nvoMnSpHdrTp_XXX	SNVT_temp_p
	System Return Temp	AI	254	AI	254	40284	HSC_AR_XXX[2]	nvoSysRetTmp_XXX	SNVT_temp_p
	OA Temp or Remote Analog SP Value	AI	255	AI	255	40286	HSC_AR_XXX[3]	nvoOATRmSPVl_XXX	SNVT_count_inc_f
	DHW Setpoint	AI	256	AI	256	40300	HSC_AR_XXX[4]	nvoDHW_SP_XXX	SNVT_count_inc_f
	Cold Building Setpoint	AI	257	ADF	1	40304	HSC_AR_XXX[5]	nvoColdBldSP_XXX	SNVT_count_inc_f
	Remote Analog Input Setpoint Value	AI	258	ADF	2	40306	HSC_AR_XXX[6]	nviRemAISPVl_XXX	SNVT_count_inc_f
*	Remote Modbus Setpoint Value	AV	1	AO	1	40308	HSC_AWR_XXX[0]	nviRemMdSPVl_XXX	SNVT_count_inc_f
*	Remote Modbus Outdoor Air Temp	AV	2	AO	2	40310	HSC_AWR_XXX[1]	nviRemMd_OAT_XXX	SNVT_temp_p
*	Remote Modbus System Enable	AV	3	AO	3	40312	HSC_AWR_XXX[2]	nviRmMdSysEn_XXX	SNVT_count_inc_f
*	Modbus Heartbeat	AV	4	AO	4	40314	HSC_AWR_XXX[3]	nvoModHrtbt_XXX	SNVT_count_inc_f
	Deadband Cond/Non-Cond Mode Sw Temp	AI	259	ADF	3	40318	HSC_AR_XXX[7]	nvoDeadband_XXX	SNVT_temp_p
	OA Temp Low Value for Reset Curve	AI	260	ADF	4	40320	HSC_AR_XXX[8]	nvoOATLoVal_XXX	SNVT_temp_p
	OA Temp High Value for Reset Curve	AI	261	ADF	5	40322	HSC_AR_XXX[9]	nvoOATHiVal_XXX	SNVT_temp_p
	Loop Setpoint at Cold (low) OAT	AI	262	ADF	6	40324	HSC_AR_XXX[10]	nvoLpSPCold_XXX	SNVT_temp_p
	Loop Setpoint at Warm (high) OAT	AI	263	ADF	7	40326	HSC_AR_XXX[11]	nvoLpSPWarm_XXX	SNVT_temp_p
	Min Inlet Temp for Non-Cond Boilers	AI	264	ADF	8	40328	HSC_AR_XXX[12]	nvoMnInTp_NC_XXX	SNVT_temp_p
	Non-Cond Reset Shift	AI	265	ADF	9	40336	HSC_AR_XXX[13]	nvoNCResShft_XXX	SNVT_count_inc_f
	NC/Cond Switch Temp	AI	266	ADF	10	40338	HSC_AR_XXX[14]	nvoNC_CSwTmp_XXX	SNVT_temp_p
	Read only NC Header SP (active)	AI	267	ADF	11	40340	HSC_AR_XXX[15]	nvoNCHeadrSP_XXX	SNVT_count_inc_f
	Read only Cond Header SP (active)	AI	268	ADF	12	40342	HSC_AR_XXX[16]	nvoCHeaderSP_XXX	SNVT_count_inc_f
	System Mode	AI	312	ADF	13	40344	HSC_AR_XXX[17]	nvoSysMode_XXX	SNVT_count_inc_f
	Cond Boiler Status	AI	313	ADF	14	40345	HSC_AR_XXX[18]	nvoCBlrStat_XXX	SNVT_count_inc_f
	Non-Cond Boiler Status	AI	314	ADF	15	40346	HSC_AR_XXX[19]	nvoNCBlStat_XXX	SNVT_count_inc_f
	Firing rate for Cond boiler group	AI	269	ADF	16	40348	HSC_AR_XXX[20]	nvoFirRtCBlr_XXX	SNVT_count_inc_f
	Firing rate for non-Cond boiler group	AI	270	ADF	17	40350	HSC_AR_XXX[21]	nvoFirRtNCBl_XXX	SNVT_count_inc_f
	Warm Weather Shutdown Temp	AI	271	ADF	18	40352	HSC_AR_XXX[22]	nvoWmWtrShTp_XXX	SNVT_temp_p
	Cond Boiler 1 Run Hours	AI	272	ADF	19	40390	HSC_AD_XXX[0]	nvoCBl1RunHr_XXX	SNVT_time_hour
	Cond Boiler 2 Run Hours	AI	273	ADF	20	40392	HSC_AD_XXX[1]	nvoCBl2RunHr_XXX	SNVT_time_hour
	Cond Boiler 3 Run Hours	AI	274	ADF	21	40394	HSC_AD_XXX[2]	nvoCBl3RunHr_XXX	SNVT_time_hour
	Cond Boiler 4 Run Hours	AI	275	ADF	22	40396	HSC_AD_XXX[3]	nvoCBl4RunHr_XXX	SNVT_time_hour
	Cond Boiler 5 Run Hours	AI	276	ADF	23	40398	HSC_AD_XXX[4]	nvoCBl5RunHr_XXX	SNVT_time_hour
	Cond Boiler 6 Run Hours	AI	277	ADF	24	40400	HSC_AD_XXX[5]	nvoCBl6RunHr_XXX	SNVT_time_hour
	Cond Boiler 7 Run Hours	AI	278	ADF	25	40402	HSC_AD_XXX[6]	nvoCBl7RunHr_XXX	SNVT_time_hour
	Cond Boiler 8 Run Hours	AI	279	ADF	26	40404	HSC_AD_XXX[7]	nvoCBl8RunHr_XXX	SNVT_time_hour
	Cond Boiler 9 Run Hours	AI	280	ADF	27	40406	HSC_AD_XXX[8]	nvoCBl9RunHr_XXX	SNVT_time_hour
	Cond Boiler 10 Run Hours	AI	281	ADF	28	40408	HSC_AD_XXX[9]	nvoCBl10RnHr_XXX	SNVT_time_hour
	Non-Cond Boiler A Run Hours	AI	282	ADF	29	40410	HSC_AD_XXX[10]	nvoNCBlARnHr_XXX	SNVT_time_hour
	Non-Cond Boiler B Run Hours	AI	283	ADF	30	40412	HSC_AD_XXX[11]	nvoNCBlBRnHr_XXX	SNVT_time_hour
	Non-Cond Boiler C Run Hours	AI	284	ADF	31	40414	HSC_AD_XXX[12]	nvoNCBlCRnHr_XXX	SNVT_time_hour
	Non-Cond Boiler D Run Hours	AI	285	ADF	32	40416	HSC_AD_XXX[13]	nvoNCBlDRnHr_XXX	SNVT_time_hour
	Non-Cond Boiler E Run Hours	AI	286	ADF	33	40418	HSC_AD_XXX[14]	nvoNCBlERnHr_XXX	SNVT_time_hour
	Non-Cond Boiler F Run Hours	AI	287	ADF	34	40420	HSC_AD_XXX[15]	nvoNCBlFRnHr_XXX	SNVT_time_hour
	Non-Cond Boiler G Run Hours	AI	288	ADF	35	40422	HSC_AD_XXX[16]	nvoNCBlGRnHr_XXX	SNVT_time_hour
	Non-Cond Boiler H Run Hours	AI	289	ADF	36	40424	HSC_AD_XXX[17]	nvoNCBlHRnHr_XXX	SNVT_time_hour
	Non-Cond Boiler I Run Hours	AI	290	ADF	37	40426	HSC_AD_XXX[18]	nvoNCBlIRnHr_XXX	SNVT_time_hour
	Non-Cond Boiler J Run Hours	AI	291	ADF	38	40428	HSC_AD_XXX[19]	nvoNCBlJRnHr_XXX	SNVT_time_hour
	Cond Boiler 1 Run Cycles	AI	292	ADF	39	40430	HSC_AD_XXX[20]	nvoCBl1RunCy_XXX	SNVT_count_inc_f

HSC Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER						LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon Name	Lon SNVT Type
Cond Boiler 2 Run Cycles	AI	293	ADF	40	40432	HSC_AD_XXX[21]	nvoCBI2RunCy_XXX	SNVT_count_inc_f
Cond Boiler 3 Run Cycles	AI	294	ADF	41	40434	HSC_AD_XXX[22]	nvoCBI3RunCy_XXX	SNVT_count_inc_f
Cond Boiler 4 Run Cycles	AI	295	ADF	42	40436	HSC_AD_XXX[23]	nvoCBI4RunCy_XXX	SNVT_count_inc_f
Cond Boiler 5 Run Cycles	AI	296	ADF	43	40438	HSC_AD_XXX[24]	nvoCBI5RunCy_XXX	SNVT_count_inc_f
Cond Boiler 6 Run Cycles	AI	297	ADF	44	40440	HSC_AD_XXX[25]	nvoCBI6RunCy_XXX	SNVT_count_inc_f
Cond Boiler 7 Run Cycles	AI	298	ADF	45	40442	HSC_AD_XXX[26]	nvoCBI7RunCy_XXX	SNVT_count_inc_f
Cond Boiler 8 Run Cycles	AI	299	ADF	46	40444	HSC_AD_XXX[27]	nvoCBI8RunCy_XXX	SNVT_count_inc_f
Cond Boiler 9 Run Cycles	AI	300	ADF	47	40446	HSC_AD_XXX[28]	nvoCBI9RunCy_XXX	SNVT_count_inc_f
Cond Boiler 10 Run Cycles	AI	301	ADF	48	40448	HSC_AD_XXX[29]	nvoCBI10RnCy_XXX	SNVT_count_inc_f
Non-Cond Boiler A Run Cycles	AI	302	ADF	49	40450	HSC_AD_XXX[30]	nvoNCBIARnCy_XXX	SNVT_count_inc_f
Non-Cond Boiler B Run Cycles	AI	303	ADF	50	40452	HSC_AD_XXX[31]	nvoNCBIBRnCy_XXX	SNVT_count_inc_f
Non-Cond Boiler C Run Cycles	AI	304	ADF	51	40454	HSC_AD_XXX[32]	nvoNCBICRnCy_XXX	SNVT_count_inc_f
Non-Cond Boiler D Run Cycles	AI	305	ADF	52	40456	HSC_AD_XXX[33]	nvoNCBIDRnCy_XXX	SNVT_count_inc_f
Non-Cond Boiler E Run Cycles	AI	306	ADF	53	40458	HSC_AD_XXX[34]	nvoNCBIERnCy_XXX	SNVT_count_inc_f
Non-Cond Boiler F Run Cycles	AI	307	ADF	54	40460	HSC_AD_XXX[35]	nvoNCBIFRnCy_XXX	SNVT_count_inc_f
Non-Cond Boiler G Run Cycles	AI	308	ADF	55	40462	HSC_AD_XXX[36]	nvoNCBIGRnCy_XXX	SNVT_count_inc_f
Non-Cond Boiler H Run Cycles	AI	309	ADF	56	40464	HSC_AD_XXX[37]	nvoNCBIHRnCy_XXX	SNVT_count_inc_f
Non-Cond Boiler I Run Cycles	AI	310	ADF	57	40466	HSC_AD_XXX[38]	nvoNCBIIRnCy_XXX	SNVT_count_inc_f
Non-Cond Boiler J Run Cycles	AI	311	ADF	58	40468	HSC_AD_XXX[39]	nvoNCBIJRnCy_XXX	SNVT_count_inc_f

*Write point

B.6. LCS

LCS Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER						LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon Name	Lon SNVT Type
Tank 1 Level	AI	101	AI	1	40050	LCS_AI_XXX[0]	nvoTnk1Lvl_XXX	SNVT_count_inc
Tank 2 Level	AI	102	AI	2	40051	LCS_AI_XXX[1]	nvoTnk2Lvl_XXX	SNVT_count_inc
Primary Valve Postion	AI	103	AI	3	40052	LCS_AI_XXX[2]	nvoPriVlvPos_XXX	SNVT_lev_percent
Secondary Valve Postion	AI	104	AI	4	40053	LCS_AI_XXX[3]	nvoSecVlvPos_XXX	SNVT_lev_percent
Digital Inputs	AI	105	AI	5	40054	LCS_AI_XXX[4]	nvoDigInputs_XXX	SNVT_count
Digital Outputs	AI	106	AI	6	40055	LCS_AI_XXX[5]	nvoDigOutpts_XXX	SNVT_count
Alarm Word	AI	107	AI	7	40056	LCS_AI_XXX[6]	nvoAlmWord_XXX	SNVT_count
Tank 1 Level Setpoint	AI	108	AI	8	40057	LCS_AI_XXX[7]	nvoTnk1LvlSP_XXX	SNVT_count_inc
Tank 2 Level Setpoint	AI	109	AI	9	40058	LCS_AI_XXX[8]	nvoTnk2LvlSP_XXX	SNVT_count_inc
Common Alarm	BI	230	DI	30	10001	LCS_AB_XXX[0].0	nvoCommonAlm_XXX	SNVT_switch
Tank 1 LWCO Alarm	BI	231	DI	31	10002	LCS_AB_XXX[0].1	nvoT1LWCOAlm_XXX	SNVT_switch
Tank 1 LLW Alarm	BI	232	DI	32	10003	LCS_AB_XXX[0].2	nvoT1LLWAlm_XXX	SNVT_switch
Tank 1 LW Alarm	BI	233	DI	33	10004	LCS_AB_XXX[0].3	nvoT1LWAlm_XXX	SNVT_switch
Tank 1 HW Alarm	BI	234	DI	34	10005	LCS_AB_XXX[0].4	nvoT1HWAlm_XXX	SNVT_switch
Tank 1 HHW Alarm	BI	235	DI	35	10006	LCS_AB_XXX[0].5	nvoT1HHWAlm_XXX	SNVT_switch
Tank 2 LWCO Alarm	BI	236	DI	36	10007	LCS_AB_XXX[0].6	nvoT2LWCOAlm_XXX	SNVT_switch
Tank 2 LLW Alarm	BI	237	DI	37	10008	LCS_AB_XXX[0].7	nvoT2LLWAlm_XXX	SNVT_switch
Tank 2 LW Alarm	BI	238	DI	38	10009	LCS_AB_XXX[0].8	nvoT2LWAlm_XXX	SNVT_switch
Tank 2 HW Alarm	BI	239	DI	39	10010	LCS_AB_XXX[0].9	nvoT2HWAlm_XXX	SNVT_switch
Tank 2 HHW Alarm	BI	240	DI	40	10011	LCS_AB_XXX[0].10	nvoT2HHWAlm_XXX	SNVT_switch
Analog In Failure	BI	241	DI	41	10012	LCS_AB_XXX[0].11	nvoAI_Fail_XXX	SNVT_switch
Spare Alarm Bit 40056_12	BI	242	DI	42	10013	LCS_AB_XXX[0].12	nvoAlBt56_12_XXX	SNVT_switch
Spare Alarm Bit 40056_13	BI	243	DI	43	10014	LCS_AB_XXX[0].13	nvoAlBt56_13_XXX	SNVT_switch
Spare Alarm Bit 40056_14	BI	244	DI	44	10015	LCS_AB_XXX[0].14	nvoAlBt56_14_XXX	SNVT_switch
Spare Alarm Bit 40056_15	BI	245	DI	45	10016	LCS_AB_XXX[0].15	nvoAlBt56_15_XXX	SNVT_switch
Tank 1 LWCO Contacts	BI	246	DI	46	10017	LCS_AB_XXX[1].0	nvoT1LWCOCnt_XXX	SNVT_switch
Tank 1 LLW Contacts	BI	247	DI	47	10018	LCS_AB_XXX[1].1	nvoT1LLWCnt_XXX	SNVT_switch
Tank 1 LW Contacts	BI	248	DI	48	10019	LCS_AB_XXX[1].2	nvoT1LWCnt_XXX	SNVT_switch
Tank 1 HW Contacts	BI	249	DI	49	10020	LCS_AB_XXX[1].3	nvoT1HWCnt_XXX	SNVT_switch
Tank 1 HHW Contacts	BI	250	DI	50	10021	LCS_AB_XXX[1].4	nvoT1HHWCnt_XXX	SNVT_switch
Tank 2 LWCO Contacts	BI	251	DI	51	10022	LCS_AB_XXX[1].5	nvoT2LWCOCnt_XXX	SNVT_switch
Tank 2 LLW Contacts	BI	252	DI	52	10023	LCS_AB_XXX[1].6	nvoT2LLWCnt_XXX	SNVT_switch
Tank 2 LW Contacts	BI	253	DI	53	10024	LCS_AB_XXX[1].7	nvoT2LWCnt_XXX	SNVT_switch
Tank 2 HW Contacts	BI	254	DI	54	10025	LCS_AB_XXX[1].8	nvoT2HWCnt_XXX	SNVT_switch
Tank 2 HHW Contacts	BI	255	DI	55	10026	LCS_AB_XXX[1].9	nvoT2HHWCnt_XXX	SNVT_switch
Digital Input 1 Status	BI	256	DI	56	10027	LCS_AB_XXX[2].0	nvoDI1Status_XXX	SNVT_switch
Digital Input 2 Status	BI	257	DI	57	10028	LCS_AB_XXX[2].1	nvoDI2Status_XXX	SNVT_switch
Digital Input 3 Status	BI	258	DI	58	10029	LCS_AB_XXX[2].2	nvoDI3Status_XXX	SNVT_switch
Digital Input 4 Status	BI	259	DI	59	10030	LCS_AB_XXX[2].3	nvoDI4Status_XXX	SNVT_switch
Digital Input 5 Status	BI	260	DI	60	10031	LCS_AB_XXX[2].4	nvoDI5Status_XXX	SNVT_switch
Digital Input 6 Status	BI	261	DI	61	10032	LCS_AB_XXX[2].5	nvoDI6Status_XXX	SNVT_switch
Digital Input 7 Status	BI	262	DI	62	10033	LCS_AB_XXX[2].6	nvoDI7Status_XXX	SNVT_switch
Digital Input 8 Status	BI	263	DI	63	10034	LCS_AB_XXX[2].7	nvoDI8Status_XXX	SNVT_switch
Digital Input 9 Status	BI	264	DI	64	10035	LCS_AB_XXX[2].8	nvoDI9Status_XXX	SNVT_switch
Digital Input 10 Status	BI	265	DI	65	10036	LCS_AB_XXX[2].9	nvoDI10Stat_XXX	SNVT_switch
Digital Input 11 Status	BI	266	DI	66	10037	LCS_AB_XXX[2].10	nvoDI11Stat_XXX	SNVT_switch
Digital Input 12 Status	BI	267	DI	67	10038	LCS_AB_XXX[2].11	nvoDI12Stat_XXX	SNVT_switch
Digital Output 1 Status	BI	268	DI	68	10039	LCS_AB_XXX[2].12	nvoDO1Status_XXX	SNVT_switch
Digital Output 2 Status	BI	269	DI	69	10040	LCS_AB_XXX[2].13	nvoDO2Status_XXX	SNVT_switch
Digital Output 3 Status	BI	270	DI	70	10041	LCS_AB_XXX[3].0	nvoDO3Status_XXX	SNVT_switch
Digital Output 4 Status	BI	271	DI	71	10042	LCS_AB_XXX[3].1	nvoDO4Status_XXX	SNVT_switch
Digital Output 5 Status	BI	272	DI	72	10043	LCS_AB_XXX[3].2	nvoDO5Status_XXX	SNVT_switch
Digital Output 6 Status	BI	273	DI	73	10044	LCS_AB_XXX[3].3	nvoDO6Status_XXX	SNVT_switch
Digital Output 7 Status	BI	274	DI	74	10045	LCS_AB_XXX[3].4	nvoDO7Status_XXX	SNVT_switch
Digital Output 8 Status	BI	275	DI	75	10046	LCS_AB_XXX[3].5	nvoDO8Status_XXX	SNVT_switch
Digital Output 9 Status	BI	276	DI	76	10047	LCS_AB_XXX[3].6	nvoDO9Status_XXX	SNVT_switch
Digital Output 10 Status	BI	277	DI	77	10048	LCS_AB_XXX[3].7	nvoDO10Stat_XXX	SNVT_switch
Digital Output 11 Status	BI	278	DI	78	10049	LCS_AB_XXX[3].8	nvoDO11Stat_XXX	SNVT_switch
Digital Output 12 Status	BI	279	DI	79	10050	LCS_AB_XXX[3].9	nvoDO12Stat_XXX	SNVT_switch

B.7. PCS

PCS Modbus RTU Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER						LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon Name	Lon SNVT Type
Header Pressure/Tank Level	AI	1	AI	1	40050	PCS_AI_XXX[0]	nvoHdPrTnkLv_XXX	SNVT_count_inc_f
VSD Speed PID Loop Setpoint	AI	2	AI	2	40051	PCS_AI_XXX[1]	nvoVSDSpLpSP_XXX	SNVT_count_inc_f
Reserved	AI	3	AI	3	40052	PCS_AI_XXX[2]	nvoReserved_XXX	SNVT_count_inc_f
VSD Speed PID Loop Output	AI	4	AI	4	40053	PCS_AI_XXX[3]	nvoVSDSpLpOt_XXX	SNVT_lev_percent
Digital Input Word	AI	5	AI	5	40054	PCS_AI_XXX[4]	nvoDI_Word_XXX	SNVT_count
Digital Output Word	AI	6	AI	6	40055	PCS_AI_XXX[5]	nvoDO_Word_XXX	SNVT_count
Alarm Word 1	AI	7	AI	7	40056	PCS_AI_XXX[6]	nvoAlm_Word1_XXX	SNVT_count
Alarm Word 2	AI	8	AI	8	40057	PCS_AI_XXX[7]	nvoAlm_Word2_XXX	SNVT_count
Lead Pump	AI	9	AI	9	40058	PCS_AI_XXX[8]	nvoLeadPmp_XXX	SNVT_count_inc_f
Lag 1 Pump	AI	10	AI	10	40059	PCS_AI_XXX[9]	nvoLag1Pmp_XXX	SNVT_count_inc_f
Lag 2 Pump	AI	11	AI	11	40060	PCS_AI_XXX[10]	nvoLag2Pmp_XXX	SNVT_count_inc_f
Standby Pump	AI	12	AI	12	40061	PCS_AI_XXX[11]	nvoStndbyPmp_XXX	SNVT_count_inc_f
Pump 1 Hours (10 000s)	AI	13	AI	13	40062	PCS_AI_XXX[12]	nvoPmp1Hrs10_XXX	SNVT_time_hour
Pump 1 Hours (1s)	AI	14	AI	14	40063	PCS_AI_XXX[13]	nvoPmp1Hrs1_XXX	SNVT_time_hour
Pump 2 Hours (10 000s)	AI	15	AI	15	40064	PCS_AI_XXX[14]	nvoPmp2Hrs10_XXX	SNVT_time_hour
Pump 2 Hours (1s)	AI	16	AI	16	40065	PCS_AI_XXX[15]	nvoPmp2Hrs1_XXX	SNVT_time_hour
Pump 3 Hours (10 000s)	AI	17	AI	17	40066	PCS_AI_XXX[16]	nvoPmp3Hrs10_XXX	SNVT_time_hour
Pump 3 Hours (1s)	AI	18	AI	18	40067	PCS_AI_XXX[17]	nvoPmp3Hrs1_XXX	SNVT_time_hour
Pump 4 Hours (10 000s)	AI	19	AI	19	40068	PCS_AI_XXX[18]	nvoPmp4Hrs10_XXX	SNVT_time_hour
Pump 4 Hours (1s)	AI	20	AI	20	40069	PCS_AI_XXX[19]	nvoPmp4Hrs1_XXX	SNVT_time_hour
VSD Speed Output Signal	AI	21	AI	21	40070	PCS_AI_XXX[20]	nvoVSDSpOtSg_XXX	SNVT_switch
Pump 1 Fault	BI	1	DI	1	10001	PCS_AB_XXX[0].0	nvoPmp1Fault_XXX	SNVT_switch
Pump 2 Fault	BI	2	DI	2	10002	PCS_AB_XXX[0].1	nvoPmp2Fault_XXX	SNVT_switch
Pump 3 Fault	BI	3	DI	3	10003	PCS_AB_XXX[0].2	nvoPmp3Fault_XXX	SNVT_switch
Pump 4 Fault	BI	4	DI	4	10004	PCS_AB_XXX[0].3	nvoPmp4Fault_XXX	SNVT_switch
Header Pressure Low Alm	BI	5	DI	5	10005	PCS_AB_XXX[0].4	nvoHdrPrLoAl_XXX	SNVT_switch
Header Pressure High Alm	BI	6	DI	6	10006	PCS_AB_XXX[0].5	nvoHdrPrHiAl_XXX	SNVT_switch
Analog Signal Failure	BI	7	DI	7	10007	PCS_AB_XXX[0].6	nvoAnaSigFl_XXX	SNVT_switch
Datalog SD Card Full	BI	8	DI	8	10008	PCS_AB_XXX[0].7	nvoSDCardFul_XXX	SNVT_switch
Pump 1 in Manual Mode	BI	9	DI	9	10009	PCS_AB_XXX[0].8	nvoPmp1ManMd_XXX	SNVT_switch
Pump 2 in Manual Mode	BI	10	DI	10	10010	PCS_AB_XXX[0].9	nvoPmp2ManMd_XXX	SNVT_switch
Pump 3 in Manual Mode	BI	11	DI	11	10011	PCS_AB_XXX[0].10	nvoPmp3ManMd_XXX	SNVT_switch
Pump 4 in Manual Mode	BI	12	DI	12	10012	PCS_AB_XXX[0].11	nvoPmp4ManMd_XXX	SNVT_switch
Source Tank LWCO	BI	13	DI	13	10013	PCS_AB_XXX[0].12	nvoSrcTkLWCO_XXX	SNVT_switch
Low Battery	BI	14	DI	14	10014	PCS_AB_XXX[0].13	nvoLowBatt_XXX	SNVT_switch
External Alm	BI	15	DI	15	10015	PCS_AB_XXX[0].14	nvoExtAlm_XXX	SNVT_switch
Level Low Alm	BI	16	DI	16	10016	PCS_AB_XXX[0].15	nvoLvlLoAlm_XXX	SNVT_switch
Level High Alm	BI	17	DI	17	10017	PCS_AB_XXX[1].0	nvoLvlHiAlm_XXX	SNVT_switch
Alarm Word Bit 1	BI	18	DI	18	10018	PCS_AB_XXX[1].1	nvoAlmWdBit1_XXX	SNVT_switch
Alarm Word Bit 2	BI	19	DI	19	10019	PCS_AB_XXX[1].2	nvoAlmWdBit2_XXX	SNVT_switch
Alarm Word Bit 3	BI	20	DI	20	10020	PCS_AB_XXX[1].3	nvoAlmWdBit3_XXX	SNVT_switch
Alarm Word Bit 4	BI	21	DI	21	10021	PCS_AB_XXX[1].4	nvoAlmWdBit4_XXX	SNVT_switch
Alarm Word Bit 5	BI	22	DI	22	10022	PCS_AB_XXX[1].5	nvoAlmWdBit5_XXX	SNVT_switch
Alarm Word Bit 6	BI	23	DI	23	10023	PCS_AB_XXX[1].6	nvoAlmWdBit6_XXX	SNVT_switch
Alarm Word Bit 7	BI	24	DI	24	10024	PCS_AB_XXX[1].7	nvoAlmWdBit7_XXX	SNVT_switch
Alarm Word Bit 8	BI	25	DI	25	10025	PCS_AB_XXX[1].8	nvoAlmWdBit8_XXX	SNVT_switch
Alarm Word Bit 9	BI	26	DI	26	10026	PCS_AB_XXX[1].9	nvoAlmWdBit9_XXX	SNVT_switch
Alarm Word Bit 10	BI	27	DI	27	10027	PCS_AB_XXX[1].10	nvoAlWdBit10_XXX	SNVT_switch
Alarm Word Bit 11	BI	28	DI	28	10028	PCS_AB_XXX[1].11	nvoAlWdBit11_XXX	SNVT_switch
Alarm Word Bit 12	BI	29	DI	29	10029	PCS_AB_XXX[1].12	nvoAlWdBit12_XXX	SNVT_switch
Alarm Word Bit 13	BI	30	DI	30	10030	PCS_AB_XXX[1].13	nvoAlWdBit13_XXX	SNVT_switch
Alarm Word Bit 14	BI	31	DI	31	10031	PCS_AB_XXX[1].14	nvoAlWdBit14_XXX	SNVT_switch
Alarm Word Bit 15	BI	32	DI	32	10032	PCS_AB_XXX[1].15	nvoAlWdBit15_XXX	SNVT_switch
Pump 1 Run	BI	33	DI	33	10033	PCS_AB_XXX[2].0	nvoPmp1Run_XXX	SNVT_switch
Pump 2 Run	BI	34	DI	34	10034	PCS_AB_XXX[2].1	nvoPmp2Run_XXX	SNVT_switch
Pump 3 Run	BI	35	DI	35	10035	PCS_AB_XXX[2].2	nvoPmp3Run_XXX	SNVT_switch
Pump 4 Run	BI	36	DI	36	10036	PCS_AB_XXX[2].3	nvoPmp4Run_XXX	SNVT_switch

B.8. HAWK 1000

Hawk 1000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Drive Fault	BI	1	DI	1	10001	nvoDrvFlt_XXX	SNVT_switch
Modbus Comm Error	BI	2	DI	2	10002	nvoModCmEr_XXX	SNVT_switch
Lo Water	BI	3	DI	3	10003	nvoLoater_XXX	SNVT_switch
Burner Control Alm	BI	4	DI	4	10004	nvoBrnCtrAlm_XXX	SNVT_switch
Boiler Limits Open	BI	5	DI	5	10005	nvoBlrLimOpn_XXX	SNVT_switch
Hi Stack Temp Alm	BI	6	DI	6	10006	nvoHiStkTpAl_XXX	SNVT_switch
Hi Stack Temp Shutdown	BI	7	DI	7	10007	nvoHiStTpShd_XXX	SNVT_switch
External Interlock	BI	8	DI	8	10008	nvoExtIntrlk_XXX	SNVT_switch
I/O module fault	BI	9	DI	9	10009	nvoIOModFlt_XXX	SNVT_switch
Steam Sensor Fail	BI	10	DI	10	10010	nvoStmSenFl_XXX	SNVT_switch
Air Actuator Out Of Pos Alm	BI	11	DI	11	10011	nvoArAcPosAl_XXX	SNVT_switch
NG Actuator Out Of Pos Alm	BI	12	DI	12	10012	nvoNGAcPosAl_XXX	SNVT_switch
F/A Ratio Controller Fault	BI	13	DI	13	10013	nvoFARatCtFl_XXX	SNVT_switch
No Fuel Selected	BI	14	DI	14	10014	nvoNoFlSel_XXX	SNVT_switch
Lo ControlLogix Battery	BI	15	DI	15	10015	nvoLoPLCBat_XXX	SNVT_switch
Non Recycle Limit Relay Fail	BI	16	DI	16	10016	nvoNoRcLmRlF_XXX	SNVT_switch
Recyle Limit Relay Fail	BI	17	DI	17	10017	nvoRecLmRlFl_XXX	SNVT_switch
Remote Modulation Signal Fail	BI	18	DI	18	10018	nvoRemMdSgFl_XXX	SNVT_switch
Header Pressure Sensor Fail	BI	19	DI	19	10019	nvoHdPrSnFl_XXX	SNVT_switch
Temperature Channel 0-5 Failure	BI	20	DI	20	10020	nvoTpCh0_5Fl_XXX	SNVT_switch
Lo O2 Alm	BI	21	DI	21	10021	nvoLoO2Alm_XXX	SNVT_switch
Hi Limit Alm	BI	22	DI	22	10022	nvoHiLimAlm_XXX	SNVT_switch
ALWCO	BI	23	DI	23	10023	nvoALWCO_XXX	SNVT_switch
Lo Gas Pressure/Lo Oil Temp	BI	24	DI	24	10024	nvoLoGsPrOTp_XXX	SNVT_switch
Hi Gas Pressure/Hi Oil Temp	BI	25	DI	25	10025	nvoHiGsPrOTp_XXX	SNVT_switch
Lo Oil Pressure	BI	26	DI	26	10026	nvoLoOilPrs_XXX	SNVT_switch
Hi Oil Pressure	BI	27	DI	27	10027	nvoHiOilPrs_XXX	SNVT_switch
Oil Drawer Switch Not Made	BI	28	DI	28	10028	nvoOilDrwrSw_XXX	SNVT_switch
Lo Atomizing Air Pressure	BI	29	DI	29	10029	nvoLoAtmArPr_XXX	SNVT_switch
Lo Combustion Air Pressure	BI	30	DI	30	10030	nvoLoComArPr_XXX	SNVT_switch
AUX Alm 1	BI	31	DI	31	10031	nvoAUXAlm1_XXX	SNVT_switch
AUX Alm 2	BI	32	DI	32	10032	nvoAUXAlm2_XXX	SNVT_switch
Blower On	BI	33	DI	33	10033	nvoBlwOn_XXX	SNVT_switch
Purge Input	BI	34	DI	34	10034	nvoPrgIn_XXX	SNVT_switch
Release To Modulate Input	BI	35	DI	35	10035	nvoRel2ModIn_XXX	SNVT_switch
Lo Fire Switch	BI	36	DI	36	10036	nvoLoFirSw_XXX	SNVT_switch
Hi Fire Switch	BI	37	DI	37	10037	nvoHiFirSw_XXX	SNVT_switch
Ready to start/Limits Closed	BI	38	DI	38	10038	nvoRdy2Str_XXX	SNVT_switch
External Start Interlock	BI	39	DI	39	10039	nvoExtStInlk_XXX	SNVT_switch
ALFCO	BI	40	DI	40	10040	nvoALFCO_XXX	SNVT_switch
Pilot	BI	41	DI	41	10041	nvoPilot_XXX	SNVT_switch
Main Fuel Valve Open	BI	42	DI	42	10042	nvoMnFlVlvOp_XXX	SNVT_switch
Fuel 1 Selected	BI	43	DI	43	10043	nvoFl1Sel_XXX	SNVT_switch
Fuel 2 Selected	BI	44	DI	44	10044	nvoFl2Sel_XXX	SNVT_switch
Heart Beat To BMS	BI	45	DI	45	10045	nvoHrtBtBMS_XXX	SNVT_switch
LWCO Shutdown	BI	46	DI	46	10046	nvoLWCOShdn_XXX	SNVT_switch
Remote Enable Input	BI	47	DI	47	10047	nvoRmEnblInp_XXX	SNVT_switch
Burner Switch	BI	48	DI	48	10048	nvoBrnSw_XXX	SNVT_switch
Recycle Limit Relay	BI	49	DI	49	10049	nvoRecLimRel_XXX	SNVT_switch
External Device Start	BI	50	DI	50	10050	nvoExtDevSt_XXX	SNVT_switch
Non Recycle Limit Relay	BI	51	DI	51	10051	nvoNoRecLmRl_XXX	SNVT_switch
Drive to Lo Fire (FARC)	BI	52	DI	52	10052	nvoDrv2LoFir_XXX	SNVT_switch
Start Slave Blr (2 Blr LL)	BI	53	DI	53	10053	nvoStrtSlvBl_XXX	SNVT_switch
Load Demand Output	BI	54	DI	54	10054	nvoLdDemOut_XXX	SNVT_switch
Alm Output	BI	55	DI	55	10055	nvoAlmOut_XXX	SNVT_switch
Boiler Ready (LL)	BI	56	DI	56	10056	nvoBlrRdyLL_XXX	SNVT_switch
Boiler Load Demand	BI	57	DI	57	10057	nvoBlrLdDem_XXX	SNVT_switch
Firing Rate Remote/Llag	BI	58	DI	58	10058	nvoFrRatRmLL_XXX	SNVT_switch

Hawk 1000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Firing Rate Manual	BI	59	DI	59	10059	nvoFirRatMan_XXX	SNVT_switch
Firing Rate Auto	BI	60	DI	60	10060	nvoFrRatAuto_XXX	SNVT_switch
Hot Stand By	BI	61	DI	61	10061	nvoHotStndBy_XXX	SNVT_switch
Warm Up	BI	62	DI	62	10062	nvoWarmUp_XXX	SNVT_switch
Fuel 3 Selected	BI	63	DI	63	10063	nvoFl3Sel_XXX	SNVT_switch
Aux Alm 3	BI	64	DI	64	10064	nvoAuxAlm3_XXX	SNVT_switch
Steam or Hot Water 1 = Steam	BI	65	DI	65	10065	nvoStm_HWtr_XXX	SNVT_switch
Level Master Present	BI	66	DI	66	10066	nvoLvlMstPrs_XXX	SNVT_switch
Variable Speed Drive Present	BI	67	DI	67	10067	nvoVarSpDrPr_XXX	SNVT_switch
Economizer Present	BI	68	DI	68	10068	nvoEcPrs_XXX	SNVT_switch
Combustion Air Temp Present	BI	69	DI	69	10069	nvoCmArTpPrs_XXX	SNVT_switch
Economizer Inlet FW Sensor Present	BI	70	DI	70	10070	nvoEInFwSnPr_XXX	SNVT_switch
O2 Analyzer Present	BI	71	DI	71	10071	nvoO2AnlzrPr_XXX	SNVT_switch
Feedwater or Return Temp Present	BI	72	DI	72	10072	nvoFdWRtTpPr_XXX	SNVT_switch
Outdoor Reset Selected	BI	73	DI	73	10073	nvoOutResSel_XXX	SNVT_switch
Parallel Posing Selected	BI	74	DI	74	10074	nvoParPosSel_XXX	SNVT_switch
Two Boiler Lead Lag Master Select	BI	75	DI	75	10075	nvo2BLLMstSl_XXX	SNVT_switch
Two Boiler Lead Lag Slave Select	BI	76	DI	76	10076	nvo2BLLSlvSl_XXX	SNVT_switch
Master Panel Select	BI	77	DI	77	10077	nvoMstPnlSel_XXX	SNVT_switch
Hot Stand By Select	BI	78	DI	78	10078	nvoHotStbySl_XXX	SNVT_switch
Dual Setpoint Select	BI	79	DI	79	10079	nvoDualSPSel_XXX	SNVT_switch
Slot 8 Ch 0 Analog Input Selected	BI	80	DI	80	10080	nvoSlCh0AISl_XXX	SNVT_switch
Slot 8 Ch 1 Analog Input Selected	BI	81	DI	81	10081	nvoSlCh1AISl_XXX	SNVT_switch
Slot 8 Ch 2 Analog Input Selected	BI	82	DI	82	10082	nvoSlCh2AISl_XXX	SNVT_switch
Slot 8 Ch 3 Analog Input Selected	BI	83	DI	83	10083	nvoSlCh3AISl_XXX	SNVT_switch
Honeywell or Fireye 1 = Fireye	BI	84	DI	84	10084	nvoHnywFreye_XXX	SNVT_switch
Hi Water Alm	BI	85	DI	85	10085	nvoHiWtrAlm_XXX	SNVT_switch
Oil Actuator Out Of Pos Alm	BI	86	DI	86	10086	nvoOlAcPsAlm_XXX	SNVT_switch
FGR Actuator Out Of Pos Alm	BI	87	DI	87	10087	nvoFGRAcPsAl_XXX	SNVT_switch
Air Actuator Feedback Fail Lo Alm	BI	88	DI	88	10088	nvoAAcFdLoAl_XXX	SNVT_switch
Air Actuator Feedback Fail Hi Alm	BI	89	DI	89	10089	nvoAAcFdHiAl_XXX	SNVT_switch
NG Actuator Feedback Fail Lo Alm	BI	90	DI	90	10090	nvoNGAFdLoAl_XXX	SNVT_switch
NG Actuator Feedback Fail Hi Alm	BI	91	DI	91	10091	nvoNGAFdHiAl_XXX	SNVT_switch
Oil Actuator Feedback Fail Lo Alm	BI	92	DI	92	10092	nvoOilFdLoAl_XXX	SNVT_switch
Oil Actuator Feedback Fail Hi Alm	BI	93	DI	93	10093	nvoOilFdHiAl_XXX	SNVT_switch
FGR Actuator Feedback Fail Lo Alm	BI	94	DI	94	10094	nvoFGRFdLoAl_XXX	SNVT_switch
FGR Actuator Feedback Fail Hi Alm	BI	95	DI	95	10095	nvoFGRFdHiAl_XXX	SNVT_switch
VSD Deviation Alm	BI	96	DI	96	10096	nvoVSDDevAlm_XXX	SNVT_switch
Increase MSG Register Size Bit	BI	97	DI	97	10097	nvoIncMSGReg_XXX	SNVT_switch
Air/Fuel Deviation Alm	BI	98	DI	98	10098	nvoArFlDevAl_XXX	SNVT_switch
2nd Stage CEC Economizer Selected	BI	99	DI	99	10099	nvo2StCECEcS_XXX	SNVT_switch
Fuel3 Actuator Out Of Pos Alm	BI	100	DI	100	10100	nvoFl3AcPsAl_XXX	SNVT_switch
Fuel3 Actuator Feedback Fail Lo Alm	BI	101	DI	101	10101	nvoFl3AFdLoA_XXX	SNVT_switch
Fuel3 Actuator Feedback Fail Hi Alm	BI	102	DI	102	10102	nvoFl3AFdHiA_XXX	SNVT_switch
Stack Pressure Input Fail	BI	103	DI	103	10103	nvoStkPrInFl_XXX	SNVT_switch
Hi Stack Pressure Alm	BI	104	DI	104	10104	nvoHiStkPrAl_XXX	SNVT_switch
Stack Damper Not Open Alm	BI	105	DI	105	10105	nvoStDpNtOAl_XXX	SNVT_switch
O2 Calibration Failed	BI	106	DI	106	10106	nvoO2ClRtFld_XXX	SNVT_switch
Lo Steam Pressure/Water Temp Alm	BI	107	DI	107	10107	nvoLoStPWTAl_XXX	SNVT_switch
Processor Test Fail Alm	BI	108	DI	108	10108	nvoPrTstFlAl_XXX	SNVT_switch
O2 Trim Internal Alm	BI	109	DI	109	10109	nvoO2TrmInAl_XXX	SNVT_switch
Firetube or Flextube 1 = Flextube	BI	110	DI	110	10110	nvoFir_FlxTb_XXX	SNVT_switch
Reserved for Cleaver Brooks	BI	111	DI	111	10111	nvoAB_6_14_XXX	SNVT_switch
VSD Limits Internal Alm	BI	112	DI	112	10112	nvoVSDLmInAl_XXX	SNVT_switch
Gas Actuator 2 Out Of Pos Alm	BI	113	DI	113	10113	nvoGsAc2PsAl_XXX	SNVT_switch
Gas Actuator 2 Feedback Fail Lo Alm	BI	114	DI	114	10114	nvoGsAc2LoAl_XXX	SNVT_switch
Gas Actuator 2 Feedback Fail Hi Alm	BI	115	DI	115	10115	nvoGsAc2HiAl_XXX	SNVT_switch
Actuator Modbus Communication Error	BI	116	DI	116	10116	nvoAcModCmEr_XXX	SNVT_switch
Air Actuator Modbus Comm Error Node 1	BI	117	DI	117	10117	nvoAAcMdCEr1_XXX	SNVT_switch

Hawk 1000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Gas Actuator Modbus Comm Error Node 2	BI	118	DI	118	10118	nvoGsAMdCEr2_XXX	SNVT_switch
Gas Act 2 Modbus Comm Error Node 3	BI	119	DI	119	10119	nvoGsA2MdCE3_XXX	SNVT_switch
Oil Actuator Modbus Comm Error Node 5	BI	120	DI	120	10120	nvoOAcMdCEr5_XXX	SNVT_switch
FGR Actuator Modbus Comm Error Node 7	BI	121	DI	121	10121	nvoFGRAMdCE7_XXX	SNVT_switch
Reserved	BI	122	DI	122	10122	nvoAB_7_9_XXX	SNVT_switch
Reserved	BI	123	DI	123	10123	nvoAB_7_10_XXX	SNVT_switch
2nd Stg Outlet Wtr Temp Sensor Failed	BI	124	DI	124	10124	nvo2StOtWTSF_XXX	SNVT_switch
Wtr Temp Second Stg Out Hi	BI	125	DI	125	10125	nvoWT2StOtHi_XXX	SNVT_switch
Air Actuator Man Override Btn Press	BI	126	DI	126	10126	nvoAAcMnOBPr_XXX	SNVT_switch
Gas Actuator 1 Man Override Btn Press	BI	127	DI	127	10127	nvoGAc1MOBPr_XXX	SNVT_switch
Gas Actuator 2 Man Override Btn Press	BI	128	DI	128	10128	nvoGAc2MOBPr_XXX	SNVT_switch
Oil Actuator Man Override Btn Press	BI	129	DI	129	10129	nvoOAcMnOBPr_XXX	SNVT_switch
FGR Actuator Man Override Btn Press	BI	130	DI	130	10130	nvoFGRAMnOBP_XXX	SNVT_switch
Fuel 3 Act 1 Man Override Btn Press	BI	131	DI	131	10131	nvoFl3A1MOBP_XXX	SNVT_switch
Fuel 3 Act 2 Man Override Btn Press	BI	132	DI	132	10132	nvoFl3A2MOBP_XXX	SNVT_switch
Communication from BMS Failed	BI	133	DI	133	10133	nvoComBMSFld_XXX	SNVT_switch
Combustion Air Pressure Hi	BI	134	DI	134	10134	nvoComArPrHi_XXX	SNVT_switch
Wtr FLo Lo	BI	135	DI	135	10135	nvoWtrFloLo_XXX	SNVT_switch
Wtr Level Signal Failed	BI	136	DI	136	10136	nvoWtLvSgFld_XXX	SNVT_switch
Remote Setpoint Signal Failed	BI	137	DI	137	10137	nvoRmSPSgFld_XXX	SNVT_switch
Lo O2 Shutdown	BI	138	DI	138	10138	nvoLoO2Shdn_XXX	SNVT_switch
Air Actuator Fault	BI	139	DI	139	10139	nvoAirAcFlt_XXX	SNVT_switch
Fuel 1 Actuator 1 Fault	BI	140	DI	140	10140	nvoFl1Ac1Flt_XXX	SNVT_switch
Fuel 1 Actuator 2 Fault	BI	141	DI	141	10141	nvoFl1Ac2Flt_XXX	SNVT_switch
Fuel 2 Actuator 1 Fault	BI	142	DI	142	10142	nvoFl2Ac1Flt_XXX	SNVT_switch
Fuel 2 Actuator 2 Fault	BI	143	DI	143	10143	nvoFl2Ac2Flt_XXX	SNVT_switch
FGR Actuator Fault	BI	144	DI	144	10144	nvoFGRAcFlt_XXX	SNVT_switch
Fuel 2 Actuator 2 Pos Deviation	BI	145	DI	145	10145	nvoFl2Ac2PsD_XXX	SNVT_switch
Fuel 2 Actuator 2 Feedback Lo	BI	146	DI	146	10146	nvoFl2Ac2FLo_XXX	SNVT_switch
Fuel 2 Actuator 2 Feedback Hi	BI	147	DI	147	10147	nvoFl2Ac2FHi_XXX	SNVT_switch
Fuel 2 Actuator 2 Man PB Press	BI	148	DI	148	10148	nvoF2A2MnPBP_XXX	SNVT_switch
VFD Feedback Lo	BI	149	DI	149	10149	nvoVFDFdbkLo_XXX	SNVT_switch
VFD Feedback Hi	BI	150	DI	150	10150	nvoVFDFdbkHi_XXX	SNVT_switch
Master PIDE Instruction Fault	BI	151	DI	151	10151	nvoMPIDEInFl_XXX	SNVT_switch
FGEN Fault	BI	152	DI	152	10152	nvoFGENFlt_XXX	SNVT_switch
Outdoor Temp/Retrun Temp Sensor Failed	BI	153	DI	153	10153	nvoOTmpRTpFl_XXX	SNVT_switch
Combustion Air Temp Sensor Failed	BI	154	DI	154	10154	nvoCmATpSnFl_XXX	SNVT_switch
O2 Sensor Fault	BI	155	DI	155	10155	nvoO2SenFlt_XXX	SNVT_switch
AB[9]11	BI	156	DI	156	10156	nvoAB_9_11_XXX	SNVT_switch
AB[9]12	BI	157	DI	157	10157	nvoAB_9_12_XXX	SNVT_switch
AB[9]13	BI	158	DI	158	10158	nvoAB_9_13_XXX	SNVT_switch
AB[9]14	BI	159	DI	159	10159	nvoAB_9_14_XXX	SNVT_switch
Hawk 1000 system	BI	160	DI	160	10160	nvoH1000Sys_XXX	SNVT_switch
Flame Strength Honeywell	AI	1	AI	1	30001	nvoFlmStrHny_XXX	SNVT_count_f
Combustion Air Fan Speed	AI	2	AI	2	30003	nvoCmArFnSpd_XXX	SNVT_count_f
AR[2]	AI	3	AI	3	30005	nvoAR_2__XXX	SNVT_count_f
Boiler Efficiency	AI	4	AI	4	30007	nvoBlrEff_XXX	SNVT_lev_percent
Firing Rate	AI	5	AI	5	30009	nvoFirRat_XXX	SNVT_lev_percent
O2 Level	AI	6	AI	6	30011	nvoO2Lvl_XXX	SNVT_lev_percent
SP Steam Pressure/Wtr Temp	AI	7	AI	7	30013	nvoSPStPWtTp_XXX	SNVT_count_f
Wtr Level	AI	8	AI	8	30015	nvoWtrLvl_XXX	SNVT_press_f
Steam Pressure or Hot Wtr Temp	AI	9	AI	9	30017	nvoStPrHWTmp_XXX	SNVT_count_f
AR[9]	AI	10	AI	10	30019	nvoAR_9_XXX	SNVT_count_f
Stack Temp Before Economizer	AI	11	AI	11	30021	nvoStkTpBfEc_XXX	SNVT_temp_p
Combustion Air Temp	AI	12	AI	12	30023	nvoComAirTmp_XXX	SNVT_temp_p
Wtr Temp Shell/Outdoor Temp	AI	13	AI	13	30025	nvoWtTpShl_XXX	SNVT_temp_p
FeedWtr Temp/Econ Wtr Out Temp	AI	14	AI	14	30027	nvoFdWtTp_XXX	SNVT_temp_p
Stack Temp After Econ/Return HW	AI	15	AI	15	30029	nvoStkTmpEco_XXX	SNVT_temp_p
Economizer Wtr In Temp	AI	16	AI	16	30031	nvoEcWtInTmp_XXX	SNVT_temp_p

Hawk 1000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

		RER					LER	
	Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
	AI Slot8 Ch0 Value 2Stg Econ Temp IN	AI	17	AI	17	30033	nvoAISlCh0Vl_XXX	SNVT_count_f
	AI Slot8 Ch1 Value 2Stg Econ Temp OUT	AI	18	AI	18	30035	nvoAISlCh1Vl_XXX	SNVT_count_f
	AI Slot8 Ch2 Value (EU)	AI	19	AI	19	30037	nvoAISlCh2Vl_XXX	SNVT_count_f
	AI Slot8 Ch3 Value (EU)	AI	20	AI	20	30039	nvoAISlCh3Vl_XXX	SNVT_count_f
	Safety Valve Setting or Max Wtr Temp	AI	21	AI	21	30041	nvoSftVlvSet_XXX	SNVT_count_f
	Header Pressure or Temp 2 Boiler LL	AI	22	AI	22	30043	nvoHdPrTpBLL_XXX	SNVT_count_f
	SP 2 Boiler LL	AI	23	AI	23	30045	nvoSP2BlrLL_XXX	SNVT_count_f
	Boiler Off Point	AI	24	AI	24	30047	nvoBlrOffPt_XXX	SNVT_count_f
	Boiler On Point	AI	25	AI	25	30049	nvoBlrOnPt_XXX	SNVT_count_f
	Condensate Return Valve Output Command	AI	26	AI	26	30051	nvoCdRtVOtCm_XXX	SNVT_lev_percent
	Makeup Bypass Valve Output Command	AI	27	AI	27	30053	nvoMkByVOtCm_XXX	SNVT_lev_percent
	Slot8 Ch0 FLo Total	AI	28	AI	28	30055	nvoSlC0FlTo_XXX	SNVT_count_f
	Slot8 Ch1 FLo Total	AI	29	AI	29	30057	nvoSlC1FlTo_XXX	SNVT_count_f
	Slot8 Ch2 FLo Total	AI	30	AI	30	30059	nvoSlC2FlTo_XXX	SNVT_count_f
	Slot8 Ch3 FLo Total	AI	31	AI	31	30061	nvoSlC3FlTo_XXX	SNVT_count_f
	AR[31]	AI	32	AI	32	30063	nvoAR_31_XXX	SNVT_count_f
	AR[32]	AI	33	AI	33	30065	nvoAR_32_XXX	SNVT_count_f
	AR[33]	AI	34	AI	34	30067	nvoAR_33_XXX	SNVT_count_f
	AR[34]	AI	35	AI	35	30069	nvoAR_34_XXX	SNVT_count_f
	AR[35]	AI	36	AI	36	30071	nvoAR_35_XXX	SNVT_count_f
	AR[36]	AI	37	AI	37	30073	nvoAR_36_XXX	SNVT_count_f
	AR[37]	AI	38	AI	38	30075	nvoAR_37_XXX	SNVT_count_f
	AR[38]	AI	39	AI	39	30077	nvoAR_38_XXX	SNVT_count_f
	AR[39]	AI	40	AI	40	30079	nvoAR_39_XXX	SNVT_count_f
	AR[40]	AI	41	AI	41	30081	nvoAR_40_XXX	SNVT_count_f
	AR[41]	AI	42	AI	42	30083	nvoAR_41_XXX	SNVT_count_f
	AR[42]	AI	43	AI	43	30085	nvoAR_42_XXX	SNVT_count_f
	AR[43]	AI	44	AI	44	30087	nvoAR_43_XXX	SNVT_count_f
	AR[44]	AI	45	AI	45	30089	nvoAR_44_XXX	SNVT_count_f
	AR[45]	AI	46	AI	46	30091	nvoAR_45_XXX	SNVT_count_f
	AR[46]	AI	47	AI	47	30093	nvoAR_46_XXX	SNVT_count_f
	AR[47]	AI	48	AI	48	30095	nvoAR_47_XXX	SNVT_count_f
	AR[48]	AI	49	AI	49	30097	nvoAR_48_XXX	SNVT_count_f
	AR[49]	AI	50	AI	50	30099	nvoAR_49_XXX	SNVT_count_f
	Burner Control Status Line 1 Honeywell	AI	52	AI	52	30102	nvoBSt1Hnywl_XXX	SNVT_count_f
	Burner Control Status Line 2 Honeywell	AI	53	AI	53	30103	nvoBSt2Hnywl_XXX	SNVT_count_f
	Burner Control Status Line 1 Fireye	AI	54	AI	54	30104	nvoBSt1Freye_XXX	SNVT_count_f
	Burner Control Status Line 2 Fireye	AI	55	AI	55	30105	nvoBSt2Freye_XXX	SNVT_count_f
	Flame Signal Fireye	AI	56	AI	56	30106	nvoFlSgFrey_XXX	SNVT_count_f
	Fuel 1Type	AI	57	AI	57	30107	nvoFl1Type_XXX	SNVT_count_f
	Fuel 2 Type	AI	58	AI	58	30108	nvoFl2Type_XXX	SNVT_count_f
	Fuel 3 Type	AI	59	AI	59	30109	nvoFl3Type_XXX	SNVT_count_f
	Elapsed Time (First 16 Bits)	AI	61	AI	61	30111	nvoElpTm1_XXX	SNVT_time_hour
	Elapsed Time (Second 16 Bits)	AI	62	AI	62	30112	nvoElpTm2_XXX	SNVT_time_hour
	Number Of Cycles (First 16 Bits)	AI	63	AI	63	30113	nvoNumCyc1_XXX	SNVT_count_f
	Number Of Cycles (Second 16 Bits)	AI	64	AI	64	30114	nvoNumCyc2_XXX	SNVT_count_f
	AI[13]	AI	65	AI	65	30115	nvoAI_13_XXX	SNVT_count_f
	AI[14]	AI	66	AI	66	30116	nvoAI_14_XXX	SNVT_count_f
	Elapsed Time	AI	67	AI	67	30117	nvoElapTim_XXX	SNVT_time_hour
	Number Of Cycles	AI	68	AI	68	30119	nvoNumCyc_XXX	SNVT_count_f
*	Heart Beat From BMS	BV	1	DO	1	00001	nviHtBtFrBMS_XXX	SNVT_switch
*	Remote Start From BMS	BV	2	DO	2	00002	nviRmStFrBMS_XXX	SNVT_switch
*	AWB[0]2	BV	3	DO	3	00003	nviAWB_0_2_XXX	SNVT_switch
*	AWB[0]3	BV	4	DO	4	00004	nviAWB_0_3_XXX	SNVT_switch
*	AWB[0]4	BV	5	DO	5	00005	nviAWB_0_4_XXX	SNVT_switch
*	AWB[0]5	BV	6	DO	6	00006	nviAWB_0_5_XXX	SNVT_switch
*	AWB[0]6	BV	7	DO	7	00007	nviAWB_0_6_XXX	SNVT_switch
*	AWB[0]7	BV	8	DO	8	00008	nviAWB_0_7_XXX	SNVT_switch
*	AWB[0]8	BV	9	DO	9	00009	nviAWB_0_8_XXX	SNVT_switch

Hawk 1000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

		RER					LER	
	Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
*	AWB[0]9	BV	10	DO	10	00010	nviAWB_0_9_XXX	SNVT_switch
*	AWB[0]10	BV	11	DO	11	00011	nviAWB_0_10_XXX	SNVT_switch
*	AWB[0]11	BV	12	DO	12	00012	nviAWB_0_11_XXX	SNVT_switch
*	AWB[0]12	BV	13	DO	13	00013	nviAWB_0_12_XXX	SNVT_switch
*	AWB[0]13	BV	14	DO	14	00014	nviAWB_0_13_XXX	SNVT_switch
*	AWB[0]14	BV	15	DO	15	00015	nviAWB_0_14_XXX	SNVT_switch
*	AWB[0]15	BV	16	DO	16	00016	nviAWB_0_15_XXX	SNVT_switch
*	AWB[1]0	BV	17	DO	17	00017	nviAWB_1_0_XXX	SNVT_switch
*	AWB[1]1	BV	18	DO	18	00018	nviAWB_1_1_XXX	SNVT_switch
*	AWB[1]2	BV	19	DO	19	00019	nviAWB_1_2_XXX	SNVT_switch
*	AWB[1]3	BV	20	DO	20	00020	nviAWB_1_3_XXX	SNVT_switch
*	AWB[1]4	BV	21	DO	21	00021	nviAWB_1_4_XXX	SNVT_switch
*	AWB[1]5	BV	22	DO	22	00022	nviAWB_1_5_XXX	SNVT_switch
*	AWB[1]6	BV	23	DO	23	00023	nviAWB_1_6_XXX	SNVT_switch
*	AWB[1]7	BV	24	DO	24	00024	nviAWB_1_7_XXX	SNVT_switch
*	AWB[1]8	BV	25	DO	25	00025	nviAWB_1_8_XXX	SNVT_switch
*	AWB[1]9	BV	26	DO	26	00026	nviAWB_1_9_XXX	SNVT_switch
*	AWB[1]10	BV	27	DO	27	00027	nviAWB_1_10_XXX	SNVT_switch
*	AWB[1]11	BV	28	DO	28	00028	nviAWB_1_11_XXX	SNVT_switch
*	AWB[1]12	BV	29	DO	29	00029	nviAWB_1_12_XXX	SNVT_switch
*	AWB[1]13	BV	30	DO	30	00030	nviAWB_1_13_XXX	SNVT_switch
*	AWB[1]14	BV	31	DO	31	00031	nviAWB_1_14_XXX	SNVT_switch
*	AWB[1]15	BV	32	DO	32	00032	nviAWB_1_15_XXX	SNVT_switch
*	Rem Op SP Boiler	AV	1	AO	1	40001	nviRemOpSPBl_XXX	SNVT_count_f
*	Rem Firing Rate	AV	2	AO	2	40003	nviRemFirRat_XXX	SNVT_lev_percent
*	Rem Op SP 2 boiler Lead/Lag	AV	3	AO	3	40005	nviRmOSP2BLL_XXX	SNVT_count_f
*	AWR[3]	AV	4	AO	4	40007	nviAWR_3_XXX	SNVT_count_f
*	AWR[4]	AV	5	AO	5	40009	nviAWR_4_XXX	SNVT_count_f
*	AWR[5]	AV	6	AO	6	40011	nviAWR_5_XXX	SNVT_count_f
*	AWR[6]	AV	7	AO	7	40013	nviAWR_6_XXX	SNVT_count_f
*	AWR[7]	AV	8	AO	8	40015	nviAWR_7_XXX	SNVT_count_f
*	AWR[8]	AV	9	AO	9	40017	nviAWR_8_XXX	SNVT_count_f
*	AWR[9]	AV	10	AO	10	40019	nviAWR_9_XXX	SNVT_count_f

*Write point

B.9. HAWK 2000

Hawk 2000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Actuator Modbus Comm Fault	BI	2	DI	2	10002	nvoAcMdCmFlt_XXX	SNVT_switch
Lo Water Cutoff (LWCO)	BI	3	DI	3	10003	nvoLWCO_XXX	SNVT_switch
Burner Control Alarm	BI	4	DI	4	10004	nvoBrnCtrAlm_XXX	SNVT_switch
Boiler Limits Open	BI	5	DI	5	10005	nvoBlrLimOpn_XXX	SNVT_switch
Hi Stack Temp Alarm	BI	6	DI	6	10006	nvoHiStTmpAl_XXX	SNVT_switch
Hi-Hi Stack Temp Shutdown	BI	7	DI	7	10007	nvoHiHiStTSh_XXX	SNVT_switch
Ext Device Interlock Malfunction	BI	8	DI	8	10008	nvoExDvInMlf_XXX	SNVT_switch
I/O Module Fault	BI	9	DI	9	10009	nvoIOModFlt_XXX	SNVT_switch
Steam Press Supply Temp Sensor Fail	BI	10	DI	10	10010	nvoStPrSpSFl_XXX	SNVT_switch
Air Actuator Out Of Pos Alarm	BI	11	DI	11	10011	nvoAirAcPsAl_XXX	SNVT_switch
F1 Actuator Out Of Pos Alarm	BI	12	DI	12	10012	nvoF1AcPosAl_XXX	SNVT_switch
No Fuel Selected	BI	14	DI	14	10014	nvoNoFlSel_XXX	SNVT_switch
PLC Battery Not Detected/ Lo	BI	15	DI	15	10015	nvoPLCBatNo_XXX	SNVT_switch
Non Recycle Limit Relay Fail	BI	16	DI	16	10016	nvoNoRcLmRlF_XXX	SNVT_switch
Recyle Limit Relay Fail	BI	17	DI	17	10017	nvoRecLmRlFl_XXX	SNVT_switch
Remote Modulation Signal Fail	BI	18	DI	18	10018	nvoRemMdSgFl_XXX	SNVT_switch
Purge	BI	34	DI	34	10034	nvoPrg_XXX	SNVT_switch
Release To Modulate	BI	35	DI	35	10035	nvoRelToMod_XXX	SNVT_switch
Lo Fire Relay	BI	36	DI	36	10036	nvoLoFirRel_XXX	SNVT_switch
Hi Fire Relay	BI	37	DI	37	10037	nvoHiFirRel_XXX	SNVT_switch
Ready to Start/Limits Closed	BI	38	DI	38	10038	nvoRdy2Str_XXX	SNVT_switch
External Start Interlock	BI	39	DI	39	10039	nvoExtStInlk_XXX	SNVT_switch
ALFCO	BI	40	DI	40	10040	nvoALFCO_XXX	SNVT_switch
Pilot	BI	41	DI	41	10041	nvoPilot_XXX	SNVT_switch
Main Fuel	BI	42	DI	42	10042	nvoMainFl_XXX	SNVT_switch
Fuel 1 Selected	BI	43	DI	43	10043	nvoFl1Sel_XXX	SNVT_switch
Fuel 2 Selected	BI	44	DI	44	10044	nvoFl2Sel_XXX	SNVT_switch
Burner Control Alarm	BI	45	DI	45	10045	nvoBrnCtrAl_XXX	SNVT_switch
LWCO	BI	46	DI	46	10046	nvoLWCO2_XXX	SNVT_switch
Remote Enable Input	BI	47	DI	47	10047	nvoRmEnblInp_XXX	SNVT_switch
Recycle Limit Relay	BI	49	DI	49	10049	nvoRecLimRel_XXX	SNVT_switch
External Device Start (FAD)	BI	50	DI	50	10050	nvoExtDevSt_XXX	SNVT_switch
Non Recycle Limit Relay	BI	51	DI	51	10051	nvoNoRecLmRl_XXX	SNVT_switch
Alarm Horn Relay	BI	55	DI	55	10055	nvoAlmHrnRel_XXX	SNVT_switch
Boiler Load Demand	BI	57	DI	57	10057	nvoBlrLdDem_XXX	SNVT_switch
Firing Rate Remote	BI	58	DI	58	10058	nvoFirRatRem_XXX	SNVT_switch
Firing Rate Manual	BI	59	DI	59	10059	nvoFirRatMan_XXX	SNVT_switch
Firing Rate Auto	BI	60	DI	60	10060	nvoFrRatAuto_XXX	SNVT_switch
Hot Stand By	BI	61	DI	61	10061	nvoHotStndBy_XXX	SNVT_switch
Warm Up	BI	62	DI	62	10062	nvoWarmUp_XXX	SNVT_switch
Steam or Hot Water	BI	65	DI	65	10065	nvoStmHotWtr_XXX	SNVT_switch
Level Master Present	BI	66	DI	66	10066	nvoLvlMstPrs_XXX	SNVT_switch
Feedwater or Return Temp Sensor	BI	72	DI	72	10072	nvoFdWtRtTSn_XXX	SNVT_switch
Outdoor Temp Sensor	BI	73	DI	73	10073	nvoOutTmpSen_XXX	SNVT_switch
Parallel Posing Selected	BI	74	DI	74	10074	nvoParPosSel_XXX	SNVT_switch
Hot StandBy Operating Mode Selected	BI	78	DI	78	10078	nvoHotStByOp_XXX	SNVT_switch
Dual Setpoint Operating Mode Selected	BI	79	DI	79	10079	nvoDuSPOpMSl_XXX	SNVT_switch
Honeywell or Fireye	BI	84	DI	84	10084	nvoHnywlFrey_XXX	SNVT_switch
Hi Water Alarm	BI	85	DI	85	10085	nvoHiWtrAlm_XXX	SNVT_switch
Actuator Out Of Pos Alarm: F2	BI	86	DI	86	10086	nvoAcPsAl_F2_XXX	SNVT_switch
Actuator Out Of Pos Alarm: FGR	BI	87	DI	87	10087	nvoAcPsAlFGR_XXX	SNVT_switch
Actuator Out Of Pos Alarm: F1-2	BI	88	DI	88	10088	nvoAcPsAlF12_XXX	SNVT_switch
Actuator Out Of Pos Alarm: F2-2	BI	89	DI	89	10089	nvoAcPsAlF22_XXX	SNVT_switch
Modbus Comm Error: Air	BI	91	DI	91	10091	nvoMdCmErAir_XXX	SNVT_switch
Modbus Comm Error: F1	BI	92	DI	92	10092	nvoMdCmEr_F1_XXX	SNVT_switch
Modbus Comm Error: F2	BI	93	DI	93	10093	nvoMdCmEr_F2_XXX	SNVT_switch
Modbus Comm Error: FGR	BI	94	DI	94	10094	nvoMdCmErFGR_XXX	SNVT_switch
Modbus Comm Error: F1-2	BI	95	DI	95	10095	nvoMdCmErF12_XXX	SNVT_switch

Hawk 2000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Modbus Comm Error: F2-2	BI	96	DI	96	10096	nvoMdCmErF22_XXX	SNVT_switch
Firing Rate	AI	5	AI	5	30009	nvoFirRat_XXX	SNVT_lev_percent
Set Point - Steam Pres/ Water Temp	AI	7	AI	7	30013	nvoSPStPrWtT_XXX	SNVT_count_f
Water Level	AI	8	AI	8	30015	nvoWtrLvl_XXX	SNVT_press_f
Steam Pres or HW Temp	AI	9	AI	9	30017	nvoStPrHWTp_XXX	SNVT_count_f
Stack Temp Before Econ	AI	11	AI	11	30021	nvoStkTpBfEc_XXX	SNVT_temp_p
Water Temp Shell/ Outdoor Temp	AI	13	AI	13	30025	nvoWtTpShl_XXX	SNVT_temp_p
Boiler Off Point	AI	24	AI	24	30047	nvoBlrOffPt_XXX	SNVT_count_f
Boiler On Point	AI	25	AI	25	30049	nvoBlrOnPt_XXX	SNVT_count_f
Fuel 1 Type	AI	33	AI	33	30056	nvoFl1Type_XXX	SNVT_count_f
Fuel 2 Type	AI	34	AI	34	30057	nvoFl2Type_XXX	SNVT_count_f
Elapsed Time (First 16 Bits)	AI	37	AI	37	30060	nvoElpTm1_XXX	SNVT_time_hour
Elapsed Time (Second 16 Bits)	AI	38	AI	38	30061	nvoElpTm2_XXX	SNVT_time_hour
Number Of Cycles (First 16 Bits)	AI	39	AI	39	30062	nvoNumCyc1_XXX	SNVT_count_f
Number Of Cycles (Second 16 Bits)	AI	40	AI	40	30063	nvoNumCyc2_XXX	SNVT_count_f
Elapsed Time	AI	43	AI	43	30064	nvoElapTim_XXX	SNVT_time_hour
Number Of Cycles	AI	44	AI	44	30066	nvoNumCyc_XXX	SNVT_count_f

B.10. HAWK 4000

Hawk 4000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Drive Fault	BI	1	DI	1	10001	nvoDrvFlt_XXX	SNVT_switch
Modbus Comm Error	BI	2	DI	2	10002	nvoModCmEr_XXX	SNVT_switch
Lo Water	BI	3	DI	3	10003	nvoLoater_XXX	SNVT_switch
Burner Control Alm	BI	4	DI	4	10004	nvoBrnCtrAlm_XXX	SNVT_switch
Boiler Limits Open	BI	5	DI	5	10005	nvoBlrLimOpn_XXX	SNVT_switch
Hi Stack Temp Alm	BI	6	DI	6	10006	nvoHiStkTpAl_XXX	SNVT_switch
Hi Stack Temp Shutdown	BI	7	DI	7	10007	nvoHiStTpShd_XXX	SNVT_switch
External Interlock	BI	8	DI	8	10008	nvoExtIntrlk_XXX	SNVT_switch
I/O module fault	BI	9	DI	9	10009	nvoIOModFlt_XXX	SNVT_switch
Steam Sensor Fail	BI	10	DI	10	10010	nvoStmSenFl_XXX	SNVT_switch
Air Actuator Out Of Pos Alm	BI	11	DI	11	10011	nvoArAcPosAl_XXX	SNVT_switch
NG Actuator Out Of Pos Alm	BI	12	DI	12	10012	nvoNGAcPosAl_XXX	SNVT_switch
F/A Ratio Controller Fault	BI	13	DI	13	10013	nvoFARatCtFl_XXX	SNVT_switch
No Fuel Selected	BI	14	DI	14	10014	nvoNoFlSel_XXX	SNVT_switch
Lo ControlLogix Battery	BI	15	DI	15	10015	nvoLoPLCBat_XXX	SNVT_switch
Non Recycle Limit Relay Fail	BI	16	DI	16	10016	nvoNoRcLmRlF_XXX	SNVT_switch
Recyle Limit Relay Fail	BI	17	DI	17	10017	nvoRecLmRlFl_XXX	SNVT_switch
Rem Modulation Signal Fail	BI	18	DI	18	10018	nvoRemMdSgFl_XXX	SNVT_switch
Header Pressure Sensor Fail	BI	19	DI	19	10019	nvoHdPrSnFl_XXX	SNVT_switch
Temp Channel 0-5 Fail	BI	20	DI	20	10020	nvoTpCh0_5Fl_XXX	SNVT_switch
Lo O2 Alm	BI	21	DI	21	10021	nvoLoO2Alm_XXX	SNVT_switch
Hi Limit Alm	BI	22	DI	22	10022	nvoHiLimAlm_XXX	SNVT_switch
ALWCO	BI	23	DI	23	10023	nvoALWCO_XXX	SNVT_switch
Lo Gas Pressure/Lo Oil Temp	BI	24	DI	24	10024	nvoLoGsPrOTp_XXX	SNVT_switch
Hi Gas Pressure/Hi Oil Temp	BI	25	DI	25	10025	nvoHiGsPrOTp_XXX	SNVT_switch
Lo Oil Pressure	BI	26	DI	26	10026	nvoLoOilPrs_XXX	SNVT_switch
Hi Oil Pressure	BI	27	DI	27	10027	nvoHiOilPrs_XXX	SNVT_switch
Oil Drawer Switch Not Made	BI	28	DI	28	10028	nvoOilDrwrSw_XXX	SNVT_switch
Lo Atomizing Air Pressure	BI	29	DI	29	10029	nvoLoAtmArPr_XXX	SNVT_switch
Lo Combustion Air Pressure	BI	30	DI	30	10030	nvoLoComArPr_XXX	SNVT_switch
AUX Alm 1	BI	31	DI	31	10031	nvoAUXAlm1_XXX	SNVT_switch
AUX Alm 2	BI	32	DI	32	10032	nvoAUXAlm2_XXX	SNVT_switch
Blower On	BI	33	DI	33	10033	nvoBlwOn_XXX	SNVT_switch
Purge Input	BI	34	DI	34	10034	nvoPrgIn_XXX	SNVT_switch
Release To Modulate Input	BI	35	DI	35	10035	nvoRel2ModIn_XXX	SNVT_switch
Lo Fire Switch	BI	36	DI	36	10036	nvoLoFirSw_XXX	SNVT_switch
Hi Fire Switch	BI	37	DI	37	10037	nvoHiFirSw_XXX	SNVT_switch
Ready to start/Limits Closed	BI	38	DI	38	10038	nvoRdy2Str_XXX	SNVT_switch
External Start Interlock	BI	39	DI	39	10039	nvoExtStInlk_XXX	SNVT_switch
ALFCO	BI	40	DI	40	10040	nvoALFCO_XXX	SNVT_switch
Pilot	BI	41	DI	41	10041	nvoPilot_XXX	SNVT_switch
Main Fuel Valve Open	BI	42	DI	42	10042	nvoMnFlVlvOp_XXX	SNVT_switch
Fuel 1 Selected	BI	43	DI	43	10043	nvoFl1Sel_XXX	SNVT_switch
Fuel 2 Selected	BI	44	DI	44	10044	nvoFl2Sel_XXX	SNVT_switch
Heart Beat To BMS	BI	45	DI	45	10045	nvoHrtBtBMS_XXX	SNVT_switch
LWCO Shutdown	BI	46	DI	46	10046	nvoLWCOShdn_XXX	SNVT_switch
Rem Enable Input	BI	47	DI	47	10047	nvoRmEnblInp_XXX	SNVT_switch
Burner Switch	BI	48	DI	48	10048	nvoBrnSw_XXX	SNVT_switch
Recycle Limit Relay	BI	49	DI	49	10049	nvoRecLimRel_XXX	SNVT_switch
External Device Start	BI	50	DI	50	10050	nvoExtDevSt_XXX	SNVT_switch
Non Recycle Limit Relay	BI	51	DI	51	10051	nvoNoRecLmRl_XXX	SNVT_switch
Drive to Lo Fire (FARC)	BI	52	DI	52	10052	nvoDrv2LoFir_XXX	SNVT_switch
Start Slave Blr (2 Blr LL)	BI	53	DI	53	10053	nvoStrtSlvBl_XXX	SNVT_switch
Load Demand Output	BI	54	DI	54	10054	nvoLdDemOut_XXX	SNVT_switch
Alm Output	BI	55	DI	55	10055	nvoAlmOut_XXX	SNVT_switch
Boiler Ready (LL)	BI	56	DI	56	10056	nvoBlrRdyLL_XXX	SNVT_switch
Boiler Load Demand	BI	57	DI	57	10057	nvoBlrLdDem_XXX	SNVT_switch
Firing Rate Rem/Llag	BI	58	DI	58	10058	nvoFrRatRmLL_XXX	SNVT_switch

Hawk 4000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Firing Rate Manual	BI	59	DI	59	10059	nvoFirRatMan_XXX	SNVT_switch
Firing Rate Auto	BI	60	DI	60	10060	nvoFrRatAuto_XXX	SNVT_switch
Hot Stand By	BI	61	DI	61	10061	nvoHotStndBy_XXX	SNVT_switch
Warm Up	BI	62	DI	62	10062	nvoWarmUp_XXX	SNVT_switch
Fuel 3 Selected	BI	63	DI	63	10063	nvoFl3Sel_XXX	SNVT_switch
Aux Alm 3	BI	64	DI	64	10064	nvoAuxAlm3_XXX	SNVT_switch
Steam or Hot Water 1 = Steam	BI	65	DI	65	10065	nvoStm_HWtr_XXX	SNVT_switch
Level Master Present	BI	66	DI	66	10066	nvoLvlMstPrs_XXX	SNVT_switch
Variable Speed Drive Present	BI	67	DI	67	10067	nvoVarSpDrPr_XXX	SNVT_switch
Economizer Present	BI	68	DI	68	10068	nvoEcPrs_XXX	SNVT_switch
Combustion Air Temp Present	BI	69	DI	69	10069	nvoCmArTpPrs_XXX	SNVT_switch
Economizer Inlet FW Sensor Present	BI	70	DI	70	10070	nvoEInFwSnPr_XXX	SNVT_switch
O2 Analyzer Present	BI	71	DI	71	10071	nvoO2AnlzrPr_XXX	SNVT_switch
Feedwater or Return Temp Present	BI	72	DI	72	10072	nvoFdWRtTpPr_XXX	SNVT_switch
Outdoor Reset Selected	BI	73	DI	73	10073	nvoOutResSel_XXX	SNVT_switch
Parallel Posing Selected	BI	74	DI	74	10074	nvoParPosSel_XXX	SNVT_switch
Two Boiler Lead Lag Master Select	BI	75	DI	75	10075	nvo2BLLMstSl_XXX	SNVT_switch
Two Boiler Lead Lag Slave Select	BI	76	DI	76	10076	nvo2BLLSlvSl_XXX	SNVT_switch
Master Panel Select	BI	77	DI	77	10077	nvoMstPnlSel_XXX	SNVT_switch
Hot Stand By Select	BI	78	DI	78	10078	nvoHotStbySl_XXX	SNVT_switch
Dual Setpoint Select	BI	79	DI	79	10079	nvoDualSPSel_XXX	SNVT_switch
Slot 8 Ch 0 AI Selected	BI	80	DI	80	10080	nvoSlCh0AISl_XXX	SNVT_switch
Slot 8 Ch 1 AI Selected	BI	81	DI	81	10081	nvoSlCh1AISl_XXX	SNVT_switch
Slot 8 Ch 2 AI Selected	BI	82	DI	82	10082	nvoSlCh2AISl_XXX	SNVT_switch
Slot 8 Ch 3 AI Selected	BI	83	DI	83	10083	nvoSlCh3AISl_XXX	SNVT_switch
Honeywell or Fireye 1 = Fireye	BI	84	DI	84	10084	nvoHnywFreye_XXX	SNVT_switch
Hi Water Alm	BI	85	DI	85	10085	nvoHiWtrAlm_XXX	SNVT_switch
Oil Actuator Out Of Pos Alm	BI	86	DI	86	10086	nvoOlAcPsAlm_XXX	SNVT_switch
FGR Actuator Out Of Pos Alm	BI	87	DI	87	10087	nvoFGRAcPsAl_XXX	SNVT_switch
Air Actuator Feedback Fail Lo Alm	BI	88	DI	88	10088	nvoAAcFdLoAl_XXX	SNVT_switch
Air Actuator Feedback Fail Hi Alm	BI	89	DI	89	10089	nvoAAcFdHiAl_XXX	SNVT_switch
NG Actuator Feedback Fail Lo Alm	BI	90	DI	90	10090	nvoNGAFdLoAl_XXX	SNVT_switch
NG Actuator Feedback Fail Hi Alm	BI	91	DI	91	10091	nvoNGAFdHiAl_XXX	SNVT_switch
Oil Actuator Feedback Fail Lo Alm	BI	92	DI	92	10092	nvoOilFdLoAl_XXX	SNVT_switch
Oil Actuator Feedback Fail Hi Alm	BI	93	DI	93	10093	nvoOilFdHiAl_XXX	SNVT_switch
FGR Actuator Feedback Fail Lo Alm	BI	94	DI	94	10094	nvoFGRFdLoAl_XXX	SNVT_switch
FGR Actuator Feedback Fail Hi Alm	BI	95	DI	95	10095	nvoFGRFdHiAl_XXX	SNVT_switch
VSD Deviation Alm	BI	96	DI	96	10096	nvoVSDDevAlm_XXX	SNVT_switch
Increase MSG Reg Size Bit (CB Only)	BI	97	DI	97	10097	nvoIncRegSiz_XXX	SNVT_switch
Air/Fuel Deviation Alm	BI	98	DI	98	10098	nvoArFlDevAl_XXX	SNVT_switch
2nd Stage CEC Economizer Selected	BI	99	DI	99	10099	nvo2StCECEcS_XXX	SNVT_switch
Fuel3 Actuator Out Of Pos Alm	BI	100	DI	100	10100	nvoFl3AcPsAl_XXX	SNVT_switch
Fuel3 Actuator Feedback Fail Lo Alm	BI	101	DI	101	10101	nvoFl3AFdLoA_XXX	SNVT_switch
Fuel3 Actuator Feedback Fail Hi Alm	BI	102	DI	102	10102	nvoFl3AFdHiA_XXX	SNVT_switch
Stack Pressure Input Fail	BI	103	DI	103	10103	nvoStkPrInFl_XXX	SNVT_switch
Hi Stack Pressure Alm	BI	104	DI	104	10104	nvoHiStkPrAl_XXX	SNVT_switch
Stack Damper Not Open Alm	BI	105	DI	105	10105	nvoStDpNtOAl_XXX	SNVT_switch
O2 Calibration Failed	BI	106	DI	106	10106	nvoO2ClRtFld_XXX	SNVT_switch
Lo Steam Pressure/Water Temp Alm	BI	107	DI	107	10107	nvoLoStPWTAl_XXX	SNVT_switch
Processor Test Fail Alm	BI	108	DI	108	10108	nvoPrTstFlAl_XXX	SNVT_switch
O2 Trim Internal Alm	BI	109	DI	109	10109	nvoO2TrmInAl_XXX	SNVT_switch
Firetube or Flextube 1 = Flextube	BI	110	DI	110	10110	nvoFir_FlxTb_XXX	SNVT_switch
Reserved for Cleaver Brooks	BI	111	DI	111	10111	nvoAB_6_14_XXX	SNVT_switch
VSD Limits Internal Alm	BI	112	DI	112	10112	nvoVSDLmInAl_XXX	SNVT_switch
Gas Actuator 2 Out Of Pos Alm	BI	113	DI	113	10113	nvoGsAc2PsAl_XXX	SNVT_switch
Gas Actuator 2 Feedback Fail Lo Alm	BI	114	DI	114	10114	nvoGsAc2LoAl_XXX	SNVT_switch
Gas Actuator 2 Feedback Fail Hi Alm	BI	115	DI	115	10115	nvoGsAc2HiAl_XXX	SNVT_switch
Actuator Modbus Communication Error	BI	116	DI	116	10116	nvoAcModCmEr_XXX	SNVT_switch
Air Actuator Modbus Comm Error Node 1	BI	117	DI	117	10117	nvoAAcMdCEr1_XXX	SNVT_switch
Gas Actuator Modbus Comm Error Node 2	BI	118	DI	118	10118	nvoGsAMdCEr2_XXX	SNVT_switch

Hawk 4000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Gas Act 2 Modbus Comm Error Node 3	BI	119	DI	119	10119	nvoGsA2MdCE3_XXX	SNVT_switch
Oil Actuator Modbus Comm Error Node 5	BI	120	DI	120	10120	nvoOAcMdCEr5_XXX	SNVT_switch
FGR Actuator Modbus Comm Error Node 7	BI	121	DI	121	10121	nvoFGRAMdCE7_XXX	SNVT_switch
Reserved	BI	122	DI	122	10122	nvoAB_7_9_XXX	SNVT_switch
Reserved	BI	123	DI	123	10123	nvoAB_7_10_XXX	SNVT_switch
2nd Stage Outlet Wtr Temp Sensor Fail	BI	124	DI	124	10124	nvo2SOtWTSnF_XXX	SNVT_switch
Water Temp Second Stage Out Hi	BI	125	DI	125	10125	nvoWtTp2SOtH_XXX	SNVT_switch
Air Actuator Man Override Btn Press	BI	126	DI	126	10126	nvoAAcMnOBPr_XXX	SNVT_switch
Gas Actuator 1 Man Override Btn Press	BI	127	DI	127	10127	nvoGAc1MOBPr_XXX	SNVT_switch
Gas Actuator 2 Man Override Btn Press	BI	128	DI	128	10128	nvoGAc2MOBPr_XXX	SNVT_switch
Oil Actuator Man Override Btn Press	BI	129	DI	129	10129	nvoOAcMnOBPr_XXX	SNVT_switch
FGR Actuator Man Override Btn Press	BI	130	DI	130	10130	nvoFGRAMnOBP_XXX	SNVT_switch
Fuel 3 Act 1 Man Override Btn Press	BI	131	DI	131	10131	nvoFl3A1MOBP_XXX	SNVT_switch
Fuel 3 Act 2 Man Override Btn Press	BI	132	DI	132	10132	nvoFl3A2MOBP_XXX	SNVT_switch
Communication from BMS Failed	BI	133	DI	133	10133	nvoComBMSFld_XXX	SNVT_switch
Low O2 Shutdown	BI	134	DI	134	10134	nvoLoO2Shdn_XXX	SNVT_switch
AB[8]6	BI	135	DI	135	10135	nvoAB_8_6_XXX	SNVT_switch
AB[8]7	BI	136	DI	136	10136	nvoAB_8_7_XXX	SNVT_switch
AB[8]8	BI	137	DI	137	10137	nvoAB_8_8_XXX	SNVT_switch
AB[8]9	BI	138	DI	138	10138	nvoAB_8_9_XXX	SNVT_switch
AB[8]10	BI	139	DI	139	10139	nvoAB_8_10_XXX	SNVT_switch
AB[8]11	BI	140	DI	140	10140	nvoAB_8_11_XXX	SNVT_switch
AB[8]12	BI	141	DI	141	10141	nvoAB_8_12_XXX	SNVT_switch
AB[8]13	BI	142	DI	142	10142	nvoAB_8_13_XXX	SNVT_switch
AB[8]14	BI	143	DI	143	10143	nvoAB_8_14_XXX	SNVT_switch
AB[8]15	BI	144	DI	144	10144	nvoAB_8_15_XXX	SNVT_switch
AB[9]0	BI	145	DI	145	10145	nvoAB_9_0_XXX	SNVT_switch
AB[9]1	BI	146	DI	146	10146	nvoAB_9_1_XXX	SNVT_switch
AB[9]2	BI	147	DI	147	10147	nvoAB_9_2_XXX	SNVT_switch
AB[9]3	BI	148	DI	148	10148	nvoAB_9_3_XXX	SNVT_switch
AB[9]4	BI	149	DI	149	10149	nvoAB_9_4_XXX	SNVT_switch
AB[9]5	BI	150	DI	150	10150	nvoAB_9_5_XXX	SNVT_switch
AB[9]6	BI	151	DI	151	10151	nvoAB_9_6_XXX	SNVT_switch
AB[9]7	BI	152	DI	152	10152	nvoAB_9_7_XXX	SNVT_switch
AB[9]8	BI	153	DI	153	10153	nvoAB_9_8_XXX	SNVT_switch
AB[9]9	BI	154	DI	154	10154	nvoAB_9_9_XXX	SNVT_switch
AB[9]10	BI	155	DI	155	10155	nvoAB_9_10_XXX	SNVT_switch
AB[9]11	BI	156	DI	156	10156	nvoAB_9_11_XXX	SNVT_switch
AB[9]12	BI	157	DI	157	10157	nvoAB_9_12_XXX	SNVT_switch
AB[9]13	BI	158	DI	158	10158	nvoAB_9_13_XXX	SNVT_switch
AB[9]14	BI	159	DI	159	10159	nvoAB_9_14_XXX	SNVT_switch
AB[9]15	BI	160	DI	160	10160	nvoAB_9_15_XXX	SNVT_switch
Flame Strength Honeywell	AI	1	AI	1	30001	nvoFlmStrHny_XXX	SNVT_count_f
Combustion Air Fan Speed	AI	2	AI	2	30003	nvoCmArFnSpd_XXX	SNVT_count_f
AR[2]	AI	3	AI	3	30005	nvoAR_2__XXX	SNVT_count_f
Boiler Efficiency	AI	4	AI	4	30007	nvoBlrEff_XXX	SNVT_lev_percent
Firing Rate	AI	5	AI	5	30009	nvoFirRat_XXX	SNVT_lev_percent
O2 Level	AI	6	AI	6	30011	nvoO2Lvl_XXX	SNVT_lev_percent
SP Steam Pressure/Water Temp	AI	7	AI	7	30013	nvoSPStPWtTp_XXX	SNVT_count_f
Water Level	AI	8	AI	8	30015	nvoWtrLvl_XXX	SNVT_press_f
Steam Pressure or Hot Water Temp	AI	9	AI	9	30017	nvoStPrHWTmp_XXX	SNVT_count_f
AR[9]	AI	10	AI	10	30019	nvoAR_9_XXX	SNVT_count_f
Stack Temp Before Economizer	AI	11	AI	11	30021	nvoStkTpBfEc_XXX	SNVT_temp_p
Combustion Air Temp	AI	12	AI	12	30023	nvoComAirTmp_XXX	SNVT_temp_p
Water Temp Shell/Outdoor Temp	AI	13	AI	13	30025	nvoWtTpShl_XXX	SNVT_temp_p
Feedwater Temp/Econ Water Out Temp	AI	14	AI	14	30027	nvoFdWtTp_XXX	SNVT_temp_p
Stack Temp After Econ/Return HW	AI	15	AI	15	30029	nvoStkTmpEco_XXX	SNVT_temp_p
Economizer Water In Temp	AI	16	AI	16	30031	nvoEcWtInTmp_XXX	SNVT_temp_p
AI Slot8Ch0 Value/2Stg Econ Temp IN	AI	17	AI	17	30033	nvoAISlCh0Vl_XXX	SNVT_count_f
AI Slot8Ch1 Value/2Stg Econ Temp OUT	AI	18	AI	18	30035	nvoAISlCh1Vl_XXX	SNVT_count_f

Hawk 4000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
AI Slot8 Ch2 Value (EU)	AI	19	AI	19	30037	nvoAISICh2VI_XXX	SNVT_count_f
AI Slot8 Ch3 Value (EU)	AI	20	AI	20	30039	nvoAISICh3VI_XXX	SNVT_count_f
Safety Valve Setting or Max Water Temp	AI	21	AI	21	30041	nvoSftVlvSet_XXX	SNVT_count_f
Header Pressure or Temp 2 Boiler LL	AI	22	AI	22	30043	nvoHdPrTpBLL_XXX	SNVT_count_f
SP 2 Boiler LL	AI	23	AI	23	30045	nvoSP2BlrLL_XXX	SNVT_count_f
Boiler Off Point	AI	24	AI	24	30047	nvoBlrOffPt_XXX	SNVT_count_f
Boiler On Point	AI	25	AI	25	30049	nvoBlrOnPt_XXX	SNVT_count_f
Condensate Return Valve Output Command	AI	26	AI	26	30051	nvoCdRtVOtCm_XXX	SNVT_lev_percent
Makeup Bypass Valve Output Command	AI	27	AI	27	30053	nvoMkByVOtCm_XXX	SNVT_lev_percent
Slot8 Ch0 FLo Total	AI	28	AI	28	30055	nvoSIC0FlTo_XXX	SNVT_count_f
Slot8 Ch1 FLo Total	AI	29	AI	29	30057	nvoSIC1FlTo_XXX	SNVT_count_f
Slot8 Ch2 FLo Total	AI	30	AI	30	30059	nvoSIC2FlTo_XXX	SNVT_count_f
Slot8 Ch3 FLo Total	AI	31	AI	31	30061	nvoSIC3FlTo_XXX	SNVT_count_f
AR[31]	AI	32	AI	32	30063	nvoAR_31_XXX	SNVT_count_f
AR[32]	AI	33	AI	33	30065	nvoAR_32_XXX	SNVT_count_f
AR[33]	AI	34	AI	34	30067	nvoAR_33_XXX	SNVT_count_f
AR[34]	AI	35	AI	35	30069	nvoAR_34_XXX	SNVT_count_f
AR[35]	AI	36	AI	36	30071	nvoAR_35_XXX	SNVT_count_f
AR[36]	AI	37	AI	37	30073	nvoAR_36_XXX	SNVT_count_f
AR[37]	AI	38	AI	38	30075	nvoAR_37_XXX	SNVT_count_f
AR[38]	AI	39	AI	39	30077	nvoAR_38_XXX	SNVT_count_f
AR[39]	AI	40	AI	40	30079	nvoAR_39_XXX	SNVT_count_f
AR[40]	AI	41	AI	41	30081	nvoAR_40_XXX	SNVT_count_f
AR[41]	AI	42	AI	42	30083	nvoAR_41_XXX	SNVT_count_f
AR[42]	AI	43	AI	43	30085	nvoAR_42_XXX	SNVT_count_f
AR[43]	AI	44	AI	44	30087	nvoAR_43_XXX	SNVT_count_f
AR[44]	AI	45	AI	45	30089	nvoAR_44_XXX	SNVT_count_f
AR[45]	AI	46	AI	46	30091	nvoAR_45_XXX	SNVT_count_f
AR[46]	AI	47	AI	47	30093	nvoAR_46_XXX	SNVT_count_f
AR[47]	AI	48	AI	48	30095	nvoAR_47_XXX	SNVT_count_f
AR[48]	AI	49	AI	49	30097	nvoAR_48_XXX	SNVT_count_f
AR[49]	AI	50	AI	50	30099	nvoAR_49_XXX	SNVT_count_f
Burner Control Status Line 1 Honeywell	AI	52	AI	52	30102	nvoBSt1Hnywl_XXX	SNVT_count_f
Burner Control Status Line 2 Honeywell	AI	53	AI	53	30103	nvoBSt2Hnywl_XXX	SNVT_count_f
Burner Control Status Line 1 Fireye	AI	54	AI	54	30104	nvoBSt1Freye_XXX	SNVT_count_f
Burner Control Status Line 2 Fireye	AI	55	AI	55	30105	nvoBSt2Freye_XXX	SNVT_count_f
Flame Signal Fireye	AI	56	AI	56	30106	nvoFlSgFrey_XXX	SNVT_count_f
Fuel 1Type	AI	57	AI	57	30107	nvoFl1Type_XXX	SNVT_count_f
Fuel 2 Type	AI	58	AI	58	30108	nvoFl2Type_XXX	SNVT_count_f
Fuel 3 Type	AI	59	AI	59	30109	nvoFl3Type_XXX	SNVT_count_f
Elapsed Time (First 16 Bits)	AI	61	AI	61	30111	nvoElpTm1_XXX	SNVT_time_hour
Elapsed Time (Second 16 Bits)	AI	62	AI	62	30112	nvoElpTm2_XXX	SNVT_time_hour
Number Of Cycles (First 16 Bits)	AI	63	AI	63	30113	nvoNumCyc1_XXX	SNVT_count_f
Number Of Cycles (Second 16 Bits)	AI	64	AI	64	30114	nvoNumCyc2_XXX	SNVT_count_f
AI[13]	AI	65	AI	65	30115	nvoAI_13_XXX	SNVT_count_f
AI[14]	AI	66	AI	66	30116	nvoAI_14_XXX	SNVT_count_f
AI[15]	AI	67	AI	67	30117	nvoAI_15_XXX	SNVT_count_f
AI[16]	AI	68	AI	68	30118	nvoAI_16_XXX	SNVT_count_f
AI[17]	AI	69	AI	69	30119	nvoAI_17_XXX	SNVT_count_f
AI[18]	AI	70	AI	70	30120	nvoAI_18_XXX	SNVT_count_f
AI[19]	AI	71	AI	71	30121	nvoAI_19_XXX	SNVT_count_f
AI[20]	AI	72	AI	72	30122	nvoAI_20_XXX	SNVT_count_f
AI[21]	AI	73	AI	73	30123	nvoAI_21_XXX	SNVT_count_f
AI[22]	AI	74	AI	74	30124	nvoAI_22_XXX	SNVT_count_f
AI[23]	AI	75	AI	75	30125	nvoAI_23_XXX	SNVT_count_f
AI[24]	AI	76	AI	76	30126	nvoAI_24_XXX	SNVT_count_f
AI[25]	AI	77	AI	77	30127	nvoAI_25_XXX	SNVT_count_f
AI[26]	AI	78	AI	78	30128	nvoAI_26_XXX	SNVT_count_f
AI[27]	AI	79	AI	79	30129	nvoAI_27_XXX	SNVT_count_f
AI[28]	AI	80	AI	80	30130	nvoAI_28_XXX	SNVT_count_f

Hawk 4000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

		RER					LER	
	Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
	AI[29]	AI	81	AI	81	30131	nvoAI_29_XXX	SNVT_count_f
	Elapsed Time	AI	82	AI	82	30132	nvoElapTim_XXX	SNVT_time_hour
	Number Of Cycles	AI	83	AI	83	30134	nvoNumCyc_XXX	SNVT_count_f
*	Heart Beat From BMS	BV	1	DO	1	00001	nvoHtBtFrBMS_XXX	SNVT_switch
*	Rem Start From BMS	BV	2	DO	2	00002	nvoRmStFrBMS_XXX	SNVT_switch
*	AWB[0]2	BV	3	DO	3	00003	nvoAWB_0_2_XXX	SNVT_switch
*	AWB[0]3	BV	4	DO	4	00004	nvoAWB_0_3_XXX	SNVT_switch
*	AWB[0]4	BV	5	DO	5	00005	nvoAWB_0_4_XXX	SNVT_switch
*	AWB[0]5	BV	6	DO	6	00006	nvoAWB_0_5_XXX	SNVT_switch
*	AWB[0]6	BV	7	DO	7	00007	nvoAWB_0_6_XXX	SNVT_switch
*	AWB[0]7	BV	8	DO	8	00008	nvoAWB_0_7_XXX	SNVT_switch
*	AWB[0]8	BV	9	DO	9	00009	nvoAWB_0_8_XXX	SNVT_switch
*	AWB[0]9	BV	10	DO	10	00010	nvoAWB_0_9_XXX	SNVT_switch
*	AWB[0]10	BV	11	DO	11	00011	nvoAWB_0_10_XXX	SNVT_switch
*	AWB[0]11	BV	12	DO	12	00012	nvoAWB_0_11_XXX	SNVT_switch
*	AWB[0]12	BV	13	DO	13	00013	nvoAWB_0_12_XXX	SNVT_switch
*	AWB[0]13	BV	14	DO	14	00014	nvoAWB_0_13_XXX	SNVT_switch
*	AWB[0]14	BV	15	DO	15	00015	nvoAWB_0_14_XXX	SNVT_switch
*	AWB[0]15	BV	16	DO	16	00016	nvoAWB_0_15_XXX	SNVT_switch
*	AWB[1]0	BV	17	DO	17	00017	nvoAWB_1_0_XXX	SNVT_switch
*	AWB[1]1	BV	18	DO	18	00018	nvoAWB_1_1_XXX	SNVT_switch
*	AWB[1]2	BV	19	DO	19	00019	nvoAWB_1_2_XXX	SNVT_switch
*	AWB[1]3	BV	20	DO	20	00020	nvoAWB_1_3_XXX	SNVT_switch
*	AWB[1]4	BV	21	DO	21	00021	nvoAWB_1_4_XXX	SNVT_switch
*	AWB[1]5	BV	22	DO	22	00022	nvoAWB_1_5_XXX	SNVT_switch
*	AWB[1]6	BV	23	DO	23	00023	nvoAWB_1_6_XXX	SNVT_switch
*	AWB[1]7	BV	24	DO	24	00024	nvoAWB_1_7_XXX	SNVT_switch
*	AWB[1]8	BV	25	DO	25	00025	nvoAWB_1_8_XXX	SNVT_switch
*	AWB[1]9	BV	26	DO	26	00026	nvoAWB_1_9_XXX	SNVT_switch
*	AWB[1]10	BV	27	DO	27	00027	nvoAWB_1_10_XXX	SNVT_switch
*	AWB[1]11	BV	28	DO	28	00028	nvoAWB_1_11_XXX	SNVT_switch
*	AWB[1]12	BV	29	DO	29	00029	nvoAWB_1_12_XXX	SNVT_switch
*	AWB[1]13	BV	30	DO	30	00030	nvoAWB_1_13_XXX	SNVT_switch
*	AWB[1]14	BV	31	DO	31	00031	nvoAWB_1_14_XXX	SNVT_switch
*	AWB[1]15	BV	32	DO	32	00032	nvoAWB_1_15_XXX	SNVT_switch
*	Rem Op SP Boiler	AV	1	AO	1	40001	nvoRmOpSPBlr_XXX	SNVT_count_f
*	Rem Firing Rate	AV	2	AO	2	40003	nvoRemFirRat_XXX	SNVT_lev_percent
*	Rem Op SP 2 boiler Lead/Lag	AV	3	AO	3	40005	nvoRmOSP2BLL_XXX	SNVT_count_f
*	AWR[3]	AV	4	AO	4	40007	nvoAWR_3_XXX	SNVT_count_f
*	AWR[4]	AV	5	AO	5	40009	nvoAWR_4_XXX	SNVT_count_f
*	AWR[5]	AV	6	AO	6	40011	nvoAWR_5_XXX	SNVT_count_f
*	AWR[6]	AV	7	AO	7	40013	nvoAWR_6_XXX	SNVT_count_f
*	AWR[7]	AV	8	AO	8	40015	nvoAWR_7_XXX	SNVT_count_f
*	AWR[8]	AV	9	AO	9	40017	nvoAWR_8_XXX	SNVT_count_f
*	AWR[9]	AV	10	AO	10	40019	nvoAWR_9_XXX	SNVT_count_f

* Write point

B.11. HAWK 5000

Hawk 5000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Comb Air Blower Running	BI	1	DI	1	10001	nvoCmArBlRun_XXX	SNVT_switch
FSG Purge Cmd	BI	2	DI	2	10002	nvoFSGPrgCmd_XXX	SNVT_switch
FSG Release To Modulate Cmd	BI	3	DI	3	10003	nvoFSGRlMdCd_XXX	SNVT_switch
Actuators At Lo Fire	BI	4	DI	4	10004	nvoAcsALoFir_XXX	SNVT_switch
Actuators At Hi Fire	BI	5	DI	5	10005	nvoAcsAHiFir_XXX	SNVT_switch
Ready To Start/ Limits Closed	BI	6	DI	6	10006	nvoRdy2Str_XXX	SNVT_switch
Ext. Start Interlock Proven	BI	7	DI	7	10007	nvoExStInPrv_XXX	SNVT_switch
ALFCO	BI	8	DI	8	10008	nvoALFCO_XXX	SNVT_switch
FSG Pilot Terminal Energized	BI	9	DI	9	10009	nvoFSGPlTmEn_XXX	SNVT_switch
FSG Main Fuel Terminal Energized	BI	10	DI	10	10010	nvoFSGMnFTmE_XXX	SNVT_switch
Fuel Selector Switch - Fuel 1 Pos	BI	11	DI	11	10011	nvoFlSlSwFl1_XXX	SNVT_switch
Fuel Selector Switch - Fuel 2 Pos	BI	12	DI	12	10012	nvoFlSlSwFl2_XXX	SNVT_switch
FSG Burner Control Com Alm	BI	13	DI	13	10013	nvoFSGBrCtCA_XXX	SNVT_switch
Lo Water Cutoff (LWCO)	BI	14	DI	14	10014	nvoLWCO_XXX	SNVT_switch
FSG Lo Fire Cmd	BI	15	DI	15	10015	nvoFSGLoFrCm_XXX	SNVT_switch
Burner Start Relay Energized	BI	16	DI	16	10016	nvoBrnStRlEn_XXX	SNVT_switch
Hi Water Cutoff (HWCO)	BI	17	DI	17	10017	nvoHiWtrCtof_XXX	SNVT_switch
Yokagawa O2 Analyzer Ready Status	BI	18	DI	18	10018	nvoO2AnaRdSt_XXX	SNVT_switch
VSD Bypass Switch - Bypass Pos	BI	19	DI	19	10019	nvoVSDBypsSw_XXX	SNVT_switch
Hi Steam Press Switch	BI	20	DI	20	10020	nvoHiStPrsSw_XXX	SNVT_switch
Aux Lo Water Cutoff (ALWCO)	BI	21	DI	21	10021	nvoALWCO_XXX	SNVT_switch
Lo Gas Press/Oil Temp Switch (LGP/LOT)	BI	22	DI	22	10022	nvoLGP_LOT_XXX	SNVT_switch
Hi Gas Press/Oil Temp Switch (HGP/HOT)	BI	23	DI	23	10023	nvoHGP_HOT_XXX	SNVT_switch
Lo Oil Press (LOP)	BI	24	DI	24	10024	nvoLoOilPrs_XXX	SNVT_switch
Hi Oil Press (HOP)	BI	25	DI	25	10025	nvoHiOilPrs_XXX	SNVT_switch
Atomizing Media Flo and Press Switches	BI	26	DI	26	10026	nvoAtMdFlPrS_XXX	SNVT_switch
Lo Water Alm	BI	27	DI	27	10027	nvoLoaterAlm_XXX	SNVT_switch
Comb Air Press Switch	BI	28	DI	28	10028	nvoCmbArPrSw_XXX	SNVT_switch
Hi Water Alm	BI	29	DI	29	10029	nvoHiWtrAlm_XXX	SNVT_switch
Hi Stack/ Furnace Press Switch	BI	30	DI	30	10030	nvoHiStFrPrS_XXX	SNVT_switch
Lo Inst Air Press Switch	BI	31	DI	31	10031	nvoLoInArPrS_XXX	SNVT_switch
Oil Gun Inserted Limit Switch	BI	32	DI	32	10032	nvoOlGnInLmw_XXX	SNVT_switch
Recycle Limit Relay	BI	33	DI	33	10033	nvoRecLimRel_XXX	SNVT_switch
Ext. Device Start Interlock	BI	34	DI	34	10034	nvoExtDvStIn_XXX	SNVT_switch
Non-Recycle Limit Relay	BI	35	DI	35	10035	nvoNonRcLmRl_XXX	SNVT_switch
Proof Of Lo Fire	BI	36	DI	36	10036	nvoPrfFloFir_XXX	SNVT_switch
Proof Of Hi Fire	BI	37	DI	37	10037	nvoPrfHiFir_XXX	SNVT_switch
Load Demand	BI	38	DI	38	10038	nvoLdDem_XXX	SNVT_switch
Alm Bell Relay	BI	39	DI	39	10039	nvoAlmBelRel_XXX	SNVT_switch
Boiler Ready	BI	40	DI	40	10040	nvoBlrRdy_XXX	SNVT_switch
AB[2].8	BI	41	DI	41	10041	nvoAB_2_8_XXX	SNVT_switch
AB[2].9	BI	42	DI	42	10042	nvoAB_2_9_XXX	SNVT_switch
AB[2].10	BI	43	DI	43	10043	nvoAB_2_10_XXX	SNVT_switch
AB[2].11	BI	44	DI	44	10044	nvoAB_2_11_XXX	SNVT_switch
AB[2].12	BI	45	DI	45	10045	nvoAB_2_12_XXX	SNVT_switch
AB[2].13	BI	46	DI	46	10046	nvoAB_2_13_XXX	SNVT_switch
AB[2].14	BI	47	DI	47	10047	nvoAB_2_14_XXX	SNVT_switch
AB[2].15	BI	48	DI	48	10048	nvoAB_2_15_XXX	SNVT_switch
Bad QI- Steam Press (06:00)	BI	49	DI	49	10049	nvoBdStmPrs_XXX	SNVT_switch

Hawk 5000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Bad QI- Drum Level (06:01)	BI	50	DI	50	10050	nvoBdDrumLvl_XXX	SNVT_switch
Bad QI- Stack Temp (06:02)	BI	51	DI	51	10051	nvoBdStkTmp_XXX	SNVT_switch
Bad QI- Remote Modulation (06:03)	BI	52	DI	52	10052	nvoBdRemMod_XXX	SNVT_switch
Bad QI- Steam Flo (06:04)	BI	53	DI	53	10053	nvoBdStmFlo_XXX	SNVT_switch
Bad QI- Mud Drm Shell Tmp (06:05)	BI	54	DI	54	10054	nvoBdMdDrSTp_XXX	SNVT_switch
Bad QI- Act5 (VSD) FB (06:06)	BI	55	DI	55	10055	nvoBAc5VSDFB_XXX	SNVT_switch
Bad QI- Flue Gas O2 (06:07)	BI	56	DI	56	10056	nvoBdFluGsO2_XXX	SNVT_switch
Bad QI- F1 Flo or Usr Def (07:00)	BI	57	DI	57	10057	nvoBdF1FlUDf_XXX	SNVT_switch
Bad QI- F2 Flo or Usr Def (07:01)	BI	58	DI	58	10058	nvoBdF2FlUDf_XXX	SNVT_switch
Bad QI- Stack Draft or Usr Def (07:02)	BI	59	DI	59	10059	nvoBdStDrUDf_XXX	SNVT_switch
Bad QI- Feedwtr Flo or Usr Def (07:03)	BI	60	DI	60	10060	nvoBFdWFlUDf_XXX	SNVT_switch
Bad QI- Ecn Out FG Tmp -Usr Def (07:04	BI	61	DI	61	10061	nvoBEcOtFGTp_XXX	SNVT_switch
Bad QI- Ecn In FW Tmp - Usr Def (07:05	BI	62	DI	62	10062	nvoBEcInFWTp_XXX	SNVT_switch
Bad QI- Ecn Out FW Tmp -Usr Def (07:06	BI	63	DI	63	10063	nvoBdcOtFWTp_XXX	SNVT_switch
Bad QI- Air Flo or Usr Def (07:07)	BI	64	DI	64	10064	nvoBArFlUsDf_XXX	SNVT_switch
Bad QI- Actuator1 (Air) FB (09:00)	BI	65	DI	65	10065	nvoBdAc1ArFB_XXX	SNVT_switch
Bad QI- Actuator2 (F1) FB (09:01)	BI	66	DI	66	10066	nvoBdAc2F1FB_XXX	SNVT_switch
Bad QI- Actuator3 (F2) FB (09:02)	BI	67	DI	67	10067	nvoBdAc3F2FB_XXX	SNVT_switch
Bad QI- Actuator (FGR) FB (09:03)	BI	68	DI	68	10068	nvoBdAcFGRFB_XXX	SNVT_switch
Bad QI- Actuator8 (2nd Air) FB (09:04)	BI	69	DI	69	10069	nvoBAc82ArFB_XXX	SNVT_switch
Bad QI- Actuator9 (2nd F1) FB (09:05)	BI	70	DI	70	10070	nvoBAc92F1FB_XXX	SNVT_switch
Bad QI- Reserved (09:06)	BI	71	DI	71	10071	nvoBdQI09_06_XXX	SNVT_switch
Bad QI- Reserved (09:07)	BI	72	DI	72	10072	nvoBdQI09_07_XXX	SNVT_switch
HAlm - Steam Press (Xmtr)	BI	73	DI	73	10073	nvoHAl_StPrs_XXX	SNVT_switch
HAlm - Drum Level (xmtr)	BI	74	DI	74	10074	nvoHAl_DrLvl_XXX	SNVT_switch
HAlm - Stack Temp (Xmtr)	BI	75	DI	75	10075	nvoHAl_StTmp_XXX	SNVT_switch
HAlm - Remote Modulation Input	BI	76	DI	76	10076	nvoHAlRmMdIn_XXX	SNVT_switch
HAlm - Steam Flo (Xmtr)	BI	77	DI	77	10077	nvoHAl_StFlo_XXX	SNVT_switch
HAlm - Mud Drum Shell Temp (Xmtr)	BI	78	DI	78	10078	nvoHAlMdDShT_XXX	SNVT_switch
HAlm - VSD Speed Feedback (Xmtr)	BI	79	DI	79	10079	nvoHAlVSDSFd_XXX	SNVT_switch
HAlm - Flue Gas O2 (Xmtr)	BI	80	DI	80	10080	nvoHAlFlGsO2_XXX	SNVT_switch
HAlm - F1 Flo (Xmtr)	BI	81	DI	81	10081	nvoHAl_F1Flo_XXX	SNVT_switch
HAlm - F2 Flo (Xmtr)	BI	82	DI	82	10082	nvoHAl_F2Flo_XXX	SNVT_switch
HAlm - Stack Draft (Xmtr)	BI	83	DI	83	10083	nvoHAlStkDrt_XXX	SNVT_switch
HAlm - Feedwater Flo (Xmtr)	BI	84	DI	84	10084	nvoHAlFdWtFl_XXX	SNVT_switch
HAlm - Econ Outlet FG Temp (Xmtr)	BI	85	DI	85	10085	nvoHAlEcOtGT_XXX	SNVT_switch
HAlm - Econ Inlet FW Temp (Xmtr)	BI	86	DI	86	10086	nvoHAlEcIFWT_XXX	SNVT_switch
HAlm - Econ Outlet FW Temp (Xmtr)	BI	87	DI	87	10087	nvoHAlEcOFWT_XXX	SNVT_switch
HAlm - Air Flo Hi (Xmtr)	BI	88	DI	88	10088	nvoHAlArFlHi_XXX	SNVT_switch
HHAlm - Stack Tmp Hi-Hi SHUTDWN (Xmtr)	BI	89	DI	89	10089	nvoStkTpShdn_XXX	SNVT_switch
HAlm - Hi Water Cutoff (Contact)	BI	90	DI	90	10090	nvo_HiWtCtof_XXX	SNVT_switch
HAlm - Hi Gas Pressure (Contact)	BI	91	DI	91	10091	nvo_HiGsPrs_XXX	SNVT_switch
HAlm - Hi Oil Temp (Contact)	BI	92	DI	92	10092	nvo_HiOilTmp_XXX	SNVT_switch
HAlm - Hi Oil Pressure (Contact)	BI	93	DI	93	10093	nvo_HiOilPrs_XXX	SNVT_switch
HAlm - Hi Water Alm (Contact)	BI	94	DI	94	10094	nvo_HiWtrAl_XXX	SNVT_switch
HHAlm - Hi-Hi Furn Press SHTDWN	BI	95	DI	95	10095	nvoHiFrPrShd_XXX	SNVT_switch
Reserved	BI	96	DI	96	10096	nvoAB5_15_XXX	SNVT_switch
LAlm - Steam Press (Xmtr)	BI	97	DI	97	10097	nvoLAl_StPrs_XXX	SNVT_switch
LAlm - Drum Level (Xmtr)	BI	98	DI	98	10098	nvoLAl_DrLvl_XXX	SNVT_switch
LAlm - Stack Temp (Xmtr)	BI	99	DI	99	10099	nvoLAl_StTmp_XXX	SNVT_switch

Hawk 5000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
LAlm - Remote Modulation	BI	100	DI	100	10100	nvoLAlRmMdIn_XXX	SNVT_switch
LAlm - Steam Flo (Xmtr)	BI	101	DI	101	10101	nvoLAl_StFlo_XXX	SNVT_switch
LAlm - Mud Drum Shell Temp (Xmtr)	BI	102	DI	102	10102	nvoLAlMdDShT_XXX	SNVT_switch
LAlm - VSD Speed Feedback	BI	103	DI	103	10103	nvoLAlVSDSFd_XXX	SNVT_switch
LAlm - Flo Gas O2 (Xmtr)	BI	104	DI	104	10104	nvoLAlFlGsO2_XXX	SNVT_switch
LAlm - F1 Flo (Xmtr)	BI	105	DI	105	10105	nvoLAl_F1Flo_XXX	SNVT_switch
LAlm - F2 Flo (Xmtr)	BI	106	DI	106	10106	nvoLAl_F2Flo_XXX	SNVT_switch
LAlm - Stack Draft (Xmtr)	BI	107	DI	107	10107	nvoLAlStkDrt_XXX	SNVT_switch
LAlm - Feedwtr Flo (Xmtr)	BI	108	DI	108	10108	nvoLAlFdWtFl_XXX	SNVT_switch
LAlm - Econ Outlet FG Temp (Xmtr)	BI	109	DI	109	10109	nvoLAlEcOtGT_XXX	SNVT_switch
LAlm - Econ Inlet Feedwtr Temp (Xmtr)	BI	110	DI	110	10110	nvoLAlEcIFWT_XXX	SNVT_switch
LAlm - Econ Outlet Feedwtr Temp (Xmtr)	BI	111	DI	111	10111	nvoLAlEcOFWT_XXX	SNVT_switch
LAlm - Air Flo (Xmtr)	BI	112	DI	112	10112	nvoLAlArFlHi_XXX	SNVT_switch
LAlm - Lo wtr Cutoff (Contact)	BI	113	DI	113	10113	nvo_LotrCtof_XXX	SNVT_switch
LAlm - Aux Lo wtr Cutoff (Contact)	BI	114	DI	114	10114	nvoAxLotCtof_XXX	SNVT_switch
LAlm - Lo Gas Press (Contact)	BI	115	DI	115	10115	nvo_LoGsPrs_XXX	SNVT_switch
LAlm - Lo Oil Temp (Contact)	BI	116	DI	116	10116	nvo_LoOilTmp_XXX	SNVT_switch
LAlm - Lo Oil Press (Contact)	BI	117	DI	117	10117	nvo_LoOilPrs_XXX	SNVT_switch
LAlm - Lo wtr Alm (Contact)	BI	118	DI	118	10118	nvo_LotrAl_XXX	SNVT_switch
LAlm - Lo Comb Air Press (Contact)	BI	119	DI	119	10119	nvoLoCmbArPr_XXX	SNVT_switch
LAlm - Lo Inst Air Press (Contact)	BI	120	DI	120	10120	nvoLoInsArPr_XXX	SNVT_switch
LLAlm - Flo Gas O2 Lo-Lo SHUTDOWN	BI	121	DI	121	10121	nvoFGO2LoShd_XXX	SNVT_switch
AB[7].9	BI	122	DI	122	10122	nvoAB_7_9_XXX	SNVT_switch
AB[7].10	BI	123	DI	123	10123	nvoAB_7_10_XXX	SNVT_switch
AB[7].11	BI	124	DI	124	10124	nvoAB_7_11_XXX	SNVT_switch
AB[7].12	BI	125	DI	125	10125	nvoAB_7_12_XXX	SNVT_switch
AB[7].13	BI	126	DI	126	10126	nvoAB_7_13_XXX	SNVT_switch
AB[7].14	BI	127	DI	127	10127	nvoAB_7_14_XXX	SNVT_switch
AB[7].15	BI	128	DI	128	10128	nvoAB_7_15_XXX	SNVT_switch
Burner Control Alm (Contact)	BI	129	DI	129	10129	nvoBrnCtrAlm_XXX	SNVT_switch
Yokagawa O2 Analyzer Not Ready	BI	130	DI	130	10130	nvoO2AnNtRdy_XXX	SNVT_switch
Lo Atomizing Media (Contact)	BI	131	DI	131	10131	nvoLoAtmMed_XXX	SNVT_switch
Oil Gun Pos Switch Not Made (Contact)	BI	132	DI	132	10132	nvoOlGnPsSw_XXX	SNVT_switch
Recycle Limit Relay (RLR) Fault	BI	133	DI	133	10133	nvoRecLmRlFl_XXX	SNVT_switch
Non-Recycle Limit Relay (NRLR) Fault	BI	134	DI	134	10134	nvoNRLR_Flt_XXX	SNVT_switch
Actuator1 (Air) Out Of Pos Alm	BI	135	DI	135	10135	nvoAc1PosAlm_XXX	SNVT_switch
Actuator2 (F1) Out Of Pos Alm	BI	136	DI	136	10136	nvoAc2PosAlm_XXX	SNVT_switch
Actuator3 (F2) Out Of Pos Alm	BI	137	DI	137	10137	nvoAc3PosAlm_XXX	SNVT_switch
Actuator (FGR) Out Of Pos Alm	BI	138	DI	138	10138	nvoAcPosAlm_XXX	SNVT_switch
Act1 (Air) Feedback Outside Cal Rng	BI	139	DI	139	10139	nvoAc1OtClRg_XXX	SNVT_switch
Act2 (F1) Feedback Outside Cal Rng	BI	140	DI	140	10140	nvoAc2OtClRg_XXX	SNVT_switch
Act3 (F2) Feedback Outside Cal Rng	BI	141	DI	141	10141	nvoAc3OtClRg_XXX	SNVT_switch
Actu (FGR) Feedback Outside Cal Rng	BI	142	DI	142	10142	nvoAcuOtClRg_XXX	SNVT_switch
Ext. Start Interlock Not Closed Alm	BI	143	DI	143	10143	nvoEStInNClA_XXX	SNVT_switch
Actuator5 (VSD) FB / CVDeviation Alm	BI	144	DI	144	10144	nvoAc5CVDvAl_XXX	SNVT_switch
A-B VSD Fault Alm	BI	145	DI	145	10145	nvoABVSDFlAl_XXX	SNVT_switch
Modbus Comm Error	BI	146	DI	146	10146	nvoModCmEr_XXX	SNVT_switch
I/O Module ## Fault Detected Alm	BI	147	DI	147	10147	nvoIOMdFltDt_XXX	SNVT_switch
Burner Control Fault Alm	BI	148	DI	148	10148	nvoBrCtrFlAl_XXX	SNVT_switch
Hi Limit Cutoff Alm	BI	149	DI	149	10149	nvoHiLmCtfAl_XXX	SNVT_switch

Hawk 5000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
CPU Battery Alm	BI	150	DI	150	10150	nvoCPUBatAlm_XXX	SNVT_switch
Actuator8 (2nd Air) Out Of Pos Alm	BI	151	DI	151	10151	nvoAc8PosAlm_XXX	SNVT_switch
Actuator9 (2nd F1) Out Of Pos Alm	BI	152	DI	152	10152	nvoAc9PosAlm_XXX	SNVT_switch
Actuator8 (2nd Air) FB Outside Cal Rng	BI	153	DI	153	10153	nvoAc8FBOCRg_XXX	SNVT_switch
Actuator9 (2nd F1) FB Outside Cal Rng	BI	154	DI	154	10154	nvoAc9FBOCRg_XXX	SNVT_switch
Reserved	BI	155	DI	155	10155	nvoAB9_10_XXX	SNVT_switch
Reserved	BI	156	DI	156	10156	nvoAB9_11_XXX	SNVT_switch
Reserved	BI	157	DI	157	10157	nvoAB9_12_XXX	SNVT_switch
No Fuel Selected	BI	158	DI	158	10158	nvoNoFlSel_XXX	SNVT_switch
EIP Comm Link FAULT - Master Panel	BI	159	DI	159	10159	nvoEIPCmLkFl_XXX	SNVT_switch
Reserved	BI	160	DI	160	10160	nvoAB9_15_XXX	SNVT_switch
HAlm - Usr Def (07:00)	BI	161	DI	161	10161	nvoHAl_07_00_XXX	SNVT_switch
HAlm - Usr Def (07:01)	BI	162	DI	162	10162	nvoHAl_07_01_XXX	SNVT_switch
HAlm - Usr Def (07:02)	BI	163	DI	163	10163	nvoHAl_07_02_XXX	SNVT_switch
HAlm - Usr Def (07:03)	BI	164	DI	164	10164	nvoHAl_07_03_XXX	SNVT_switch
HAlm - Usr Def (07:04)	BI	165	DI	165	10165	nvoHAl_07_04_XXX	SNVT_switch
HAlm - Usr Def (07:05)	BI	166	DI	166	10166	nvoHAl_07_05_XXX	SNVT_switch
HAlm - Usr Def (07:06)	BI	167	DI	167	10167	nvoHAl_07_06_XXX	SNVT_switch
HAlm - Usr Def (07:07)	BI	168	DI	168	10168	nvoHAl_07_07_XXX	SNVT_switch
Input Bad Quality - Usr Def (07:00)	BI	169	DI	169	10169	nvoBdQl07_00_XXX	SNVT_switch
Input Bad Quality - Usr Def (07:01)	BI	170	DI	170	10170	nvoBdQl07_01_XXX	SNVT_switch
Input Bad Quality - Usr Def (07:02)	BI	171	DI	171	10171	nvoBdQl07_02_XXX	SNVT_switch
Input Bad Quality - Usr Def (07:03)	BI	172	DI	172	10172	nvoBdQl07_03_XXX	SNVT_switch
Input Bad Quality - Usr Def (07:04)	BI	173	DI	173	10173	nvoBdQl07_04_XXX	SNVT_switch
Input Bad Quality - Usr Def (07:05)	BI	174	DI	174	10174	nvoBdQl07_05_XXX	SNVT_switch
Input Bad Quality - Usr Def (07:06)	BI	175	DI	175	10175	nvoBdQl07_06_XXX	SNVT_switch
Input Bad Quality - Usr Def (07:07)	BI	176	DI	176	10176	nvoBdQl07_07_XXX	SNVT_switch
LAlm - Usr Def (07:00)	BI	177	DI	177	10177	nvoLAl_07_00_XXX	SNVT_switch
LAlm - Usr Def (07:01)	BI	178	DI	178	10178	nvoLAl_07_01_XXX	SNVT_switch
LAlm - Usr Def (07:02)	BI	179	DI	179	10179	nvoLAl_07_02_XXX	SNVT_switch
LAlm - Usr Def (07:03)	BI	180	DI	180	10180	nvoLAl_07_03_XXX	SNVT_switch
LAlm - Usr Def (07:04)	BI	181	DI	181	10181	nvoLAl_07_04_XXX	SNVT_switch
LAlm - Usr Def (07:05)	BI	182	DI	182	10182	nvoLAl_07_05_XXX	SNVT_switch
LAlm - Usr Def (07:06)	BI	183	DI	183	10183	nvoLAl_07_06_XXX	SNVT_switch
LAlm - Usr Def (07:07)	BI	184	DI	184	10184	nvoLAl_07_07_XXX	SNVT_switch
Reserved	BI	185	DI	185	10185	nvoAB11_8_XXX	SNVT_switch
Reserved	BI	186	DI	186	10186	nvoAB11_9_XXX	SNVT_switch
Reserved	BI	187	DI	187	10187	nvoAB11_10_XXX	SNVT_switch
Reserved	BI	188	DI	188	10188	nvoAB11_11_XXX	SNVT_switch
Reserved	BI	189	DI	189	10189	nvoAB11_12_XXX	SNVT_switch
Reserved	BI	190	DI	190	10190	nvoAB11_13_XXX	SNVT_switch
Reserved	BI	191	DI	191	10191	nvoAB11_14_XXX	SNVT_switch
Reserved	BI	192	DI	192	10192	nvoAB11_15_XXX	SNVT_switch
Steam Press	AI	1	AI	1	30001	nvoStmPrs_XXX	SNVT_count_f
Drum Level	AI	2	AI	2	30003	nvoDrumLvl_XXX	SNVT_count_f
Stack Temp	AI	3	AI	3	30005	nvoStkTmp_XXX	SNVT_count_f
Remote Modulation	AI	4	AI	4	30007	nvoRemMod_XXX	SNVT_count_f
Steam Flo	AI	5	AI	5	30009	nvoStmFlo_XXX	SNVT_count_f
Mud Drum Shell Temp	AI	6	AI	6	30011	nvoMdDrShTp_XXX	SNVT_count_f
VSD Speed Feedback	AI	7	AI	7	30013	nvoVSDSpFdbk_XXX	SNVT_count_f

Hawk 5000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Flue Gas O2	AI	8	AI	8	30015	nvoFluGsO2_XXX	SNVT_count_f
F1 Flo or Usr Def	AI	9	AI	9	30017	nvoF1Flr_XXX	SNVT_count_f
F2 Flo or Usr Def	AI	10	AI	10	30019	nvoF2Flr_XXX	SNVT_count_f
Stack Draft or Usr Def	AI	11	AI	11	30021	nvoStkDraft_XXX	SNVT_count_f
Feedwtr Flo or Usr Def	AI	12	AI	12	30023	nvoFdwtrFlr_XXX	SNVT_count_f
Econ Outlet FG Temp or Usr Def	AI	13	AI	13	30025	nvoEcOtFGTmp_XXX	SNVT_count_f
Econ Inlet FW Temp or Usr Def	AI	14	AI	14	30027	nvoEcInFWTmp_XXX	SNVT_count_f
Econ Outlet FW Temp or Usr Def	AI	15	AI	15	30029	nvoEcOtFWTmp_XXX	SNVT_count_f
Air Flo or Usr Def	AI	16	AI	16	30031	nvoAirFlr_XXX	SNVT_count_f
Steam Press SP	AI	17	AI	17	30033	nvoStmPrsSP_XXX	SNVT_count_f
Drum Level SP	AI	18	AI	18	30035	nvoDrumLvlSP_XXX	SNVT_count_f
Flue Gas O2 SP	AI	19	AI	19	30037	nvoFluGsO2SP_XXX	SNVT_count_f
Boiler Effiiciency	AI	20	AI	20	30039	nvoBlrEff_XXX	SNVT_count_f
VSD Motor KW	AI	21	AI	21	30041	nvoVSDMtrKW_XXX	SNVT_count_f
VSD Motor Current	AI	22	AI	22	30043	nvoVSDMtrCur_XXX	SNVT_count_f
Firing Rate	AI	23	AI	23	30045	nvoFirRat_XXX	SNVT_count_f
Drum Level %	AI	24	AI	24	30047	nvoDrmLvlPer_XXX	SNVT_count_f
Jackshaft Actuator (Pct)	AI	25	AI	25	30049	nvoJckshftAc_XXX	SNVT_count_f
Actuator7 (Feedwtr Valve) (Pct)	AI	26	AI	26	30051	nvoAc7FdwtVl_XXX	SNVT_count_f
Actuator5 (VSD) (Pct)	AI	27	AI	27	30053	nvoAc5VSD_XXX	SNVT_count_f
Actuator6 (Outlet Damper) (Pct)	AI	28	AI	28	30055	nvoAc6OtDmpr_XXX	SNVT_count_f
Actuator1 (Air) CV (POSP_SP)	AI	29	AI	29	30057	nvoAc1AirCV_XXX	SNVT_count_f
Actuator2 (F1) CV (POSP_SP)	AI	30	AI	30	30059	nvoAc2F1CV_XXX	SNVT_count_f
Actuator3 (F2) CV (POSP_SP)	AI	31	AI	31	30061	nvoAc3F2CV_XXX	SNVT_count_f
Actuator4 (FGR) CV (POSP_ SP)	AI	32	AI	32	30063	nvoAc4FGRCV_XXX	SNVT_count_f
VSD Speed (Hz)	AI	33	AI	33	30065	nvoVSDSpd_XXX	SNVT_count_f
Boiler Number Derrived From IP Address	AI	34	AI	34	30067	nvoBlrNum_XXX	SNVT_count_f
Reserved	AI	35	AI	35	30069	nvoAR_34_XXX	SNVT_count_f
Reserved	AI	36	AI	36	30071	nvoAR_35_XXX	SNVT_count_f
Reserved	AI	37	AI	37	30073	nvoAR_36_XXX	SNVT_count_f
Reserved	AI	38	AI	38	30075	nvoAR_37_XXX	SNVT_count_f
Reserved	AI	39	AI	39	30077	nvoAR_38_XXX	SNVT_count_f
Reserved	AI	40	AI	40	30079	nvoAR_39_XXX	SNVT_count_f
Elapsed Time	AI	41	AI	41	30081	nvoElapTim_XXX	SNVT_count_f
Number Of Cycles	AI	42	AI	42	30082	nvoNumCyc_XXX	SNVT_count_f
Steam Press (06:00)	AI	43	AI	43	30083	nvoStmPrs6_XXX	SNVT_count_f
Drum Level (06:01)	AI	44	AI	44	30084	nvoDrumLvl6_XXX	SNVT_count_f
Stack Temp (06:02)	AI	45	AI	45	30085	nvoStkTmp6_XXX	SNVT_count_f
Remote Modulation (06:03)	AI	46	AI	46	30086	nvoRemMod6_XXX	SNVT_count_f
Steam Flo (06:04)	AI	47	AI	47	30087	nvoStmFlo6_XXX	SNVT_count_f
Mud Drum Shell Temp (06:05)	AI	48	AI	48	30088	nvoMdDrShTp6_XXX	SNVT_count_f
Actuator5 (VSD) FB (06:06)	AI	49	AI	49	30089	nvoAc5VSDFB6_XXX	SNVT_count_f
Flue Gas O2 (06:07)	AI	50	AI	50	30090	nvoFluGsO26_XXX	SNVT_count_f
F1 Flo or Usr Def (07:00)	AI	51	AI	51	30091	nvoF1Flr7_XXX	SNVT_count_f
F2 Flo or Usr Def (07:01)	AI	52	AI	52	30092	nvoF2Flr7_XXX	SNVT_count_f
Stack Draft or Usr Def (07:02)	AI	53	AI	53	30093	nvoStkDraft7_XXX	SNVT_count_f
Feedwtr Flo or Usr Def (07:03)	AI	54	AI	54	30094	nvoFdwtrFlr7_XXX	SNVT_count_f
Econ Outlet FG Temp or Usr Def (07:04)	AI	55	AI	55	30095	nvoEcOtFGTp7_XXX	SNVT_count_f
Econ Inlet FW Temp or Usr Def (07:05)	AI	56	AI	56	30096	nvoEcInFWTp7_XXX	SNVT_count_f
Econ Outlet FW Temp or Usr Def (07:06)	AI	57	AI	57	30097	nvoEcOtFWTp7_XXX	SNVT_count_f

Hawk 5000 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Air Flo or Usr Def (07:07)	AI	58	AI	58	30098	nvoAirFlr7_XXX	SNVT_count_f
Alm Tickler State Register	AI	59	AI	59	30099	nvoAlTckStRg_XXX	SNVT_count_f
Fuel 1 Type	AI	60	AI	60	30100	nvoFl1Type_XXX	SNVT_count_f
Fuel 2 Type	AI	61	AI	61	30101	nvoFl2Type_XXX	SNVT_count_f
Flame Strength - CB120	AI	62	AI	62	30102	nvoFlmStr120_XXX	SNVT_count_f
Flame Strength - CB780	AI	63	AI	63	30103	nvoFlmStr780_XXX	SNVT_count_f
Main Flame Flicker	AI	64	AI	64	30104	nvoMnFlmFlck_XXX	SNVT_count_f
Reserved	AI	65	AI	65	30105	nvoAD_24_XXX	SNVT_count_f
Reserved	AI	66	AI	66	30106	nvoAD_25_XXX	SNVT_count_f
Burner Control Status Line 00	AI	67	AI	67	30107	nvoBrCtrStL0_XXX	SNVT_count_f
Burner Control Diagnostics 05	AI	68	AI	68	30108	nvoBrCtrDg05_XXX	SNVT_count_f
Failed I/O Module Number	AI	69	AI	69	30109	nvoFldIOMdNm_XXX	SNVT_count_f
IP Address 00	AI	70	AI	70	30110	nvoIPAddr00_XXX	SNVT_count_f
IP Address 01	AI	71	AI	71	30111	nvoIPAddr01_XXX	SNVT_count_f
IP Address 02	AI	72	AI	72	30112	nvoIPAddr02_XXX	SNVT_count_f
IP Address 03	AI	73	AI	73	30113	nvoIPAddr03_XXX	SNVT_count_f
IP Address 04	AI	74	AI	74	30114	nvoIPAddr04_XXX	SNVT_count_f

B.12. HAWK MASTER PANEL

Hawk Master Panel Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Boiler A Ethernet Comm Error	BI	1287	DI	1	11287	nvoBAEthCmEr_XXX	SNVT_switch
Boiler B Ethernet Comm Error	BI	1288	DI	2	11288	nvoBBEthCmEr_XXX	SNVT_switch
Boiler C Ethernet Comm Error	BI	1289	DI	3	11289	nvoBCEthCmEr_XXX	SNVT_switch
Boiler D Ethernet Comm Error	BI	1290	DI	4	11290	nvoBDEthCmEr_XXX	SNVT_switch
Steam/Water Sensor Fail	BI	1291	DI	5	11291	nvoStmWtSnFl_XXX	SNVT_switch
Low Steam Pressure	BI	1292	DI	6	11292	nvoLoStmPrs_XXX	SNVT_switch
Boiler A Power Failure	BI	1293	DI	7	11293	nvoBlrAPwrFl_XXX	SNVT_switch
Boiler B Power Failure	BI	1294	DI	8	11294	nvoBlrBPwrFl_XXX	SNVT_switch
Boiler C Power Failure	BI	1295	DI	9	11295	nvoBlrCPwrFl_XXX	SNVT_switch
Boiler D Power Failure	BI	1296	DI	10	11296	nvoBlrDPwrFl_XXX	SNVT_switch
Boiler A Ready	BI	1297	DI	11	11297	nvoBlrARdy_XXX	SNVT_switch
Boiler B Ready	BI	1298	DI	12	11298	nvoBlrBRdy_XXX	SNVT_switch
Boiler C Ready	BI	1299	DI	13	11299	nvoBlrCRdy_XXX	SNVT_switch
Boiler D Ready	BI	1300	DI	14	11300	nvoBlrDRdy_XXX	SNVT_switch
Power To Boiler A	BI	1301	DI	15	11301	nvoPwrBlrA_XXX	SNVT_switch
Power To Boiler B	BI	1302	DI	16	11302	nvoPwrBlrB_XXX	SNVT_switch
Power To Boiler C	BI	1303	DI	17	11303	nvoPwrBlrC_XXX	SNVT_switch
Power To Boiler D	BI	1304	DI	18	11304	nvoPwrBlrD_XXX	SNVT_switch
Boiler A Start Output	BI	1305	DI	19	11305	nvoBlrAStOut_XXX	SNVT_switch
Boiler B Start Output	BI	1306	DI	20	11306	nvoBlrBStOut_XXX	SNVT_switch
Boiler C Start Output	BI	1307	DI	21	11307	nvoBlrCStOut_XXX	SNVT_switch
Boiler D Start Output	BI	1308	DI	22	11308	nvoBlrDStOut_XXX	SNVT_switch
Unison Modulation	BI	1309	DI	23	11309	nvoUnisonMod_XXX	SNVT_switch
L/Lag Modulation	BI	1310	DI	24	11310	nvoL_LagMod_XXX	SNVT_switch
English System	BI	1311	DI	25	11311	nvoEnglshSys_XXX	SNVT_switch
Metric System	BI	1312	DI	26	11312	nvoMetricSys_XXX	SNVT_switch
Auto Rotation On	BI	1313	DI	27	11313	nvoAutoRotOn_XXX	SNVT_switch
AMB[1]11	BI	1314	DI	28	11314	nvoAMB_1_11_XXX	SNVT_switch
AMB[1]12	BI	1315	DI	29	11315	nvoAMB_1_12_XXX	SNVT_switch
AMB[1]13	BI	1316	DI	30	11316	nvoAMB_1_13_XXX	SNVT_switch
AMB[1]14	BI	1317	DI	31	11317	nvoAMB_1_14_XXX	SNVT_switch
AMB[1]15	BI	1318	DI	32	11318	nvoAMB_1_15_XXX	SNVT_switch
Boiler E Ethernet Comm Error	BI	1319	DI	33	11319	nvoBEEthCmEr_XXX	SNVT_switch
Boiler F Ethernet Comm Error	BI	1320	DI	34	11320	nvoBFEthCmEr_XXX	SNVT_switch
Boiler G Ethernet Comm Error	BI	1321	DI	35	11321	nvoBGEthCmEr_XXX	SNVT_switch
Boiler H Ethernet Comm Error	BI	1322	DI	36	11322	nvoBHEthCmEr_XXX	SNVT_switch
I/O Module Failure	BI	1323	DI	37	11323	nvoIOModFl_XXX	SNVT_switch
AMB[2]5	BI	1324	DI	38	11324	nvoAMB_2_5_XXX	SNVT_switch
Boiler E Power Failure	BI	1325	DI	39	11325	nvoBlrEPwrFl_XXX	SNVT_switch
Boiler F Power Failure	BI	1326	DI	40	11326	nvoBlrFPwrFl_XXX	SNVT_switch
Boiler G Power Failure	BI	1327	DI	41	11327	nvoBlrGPwrFl_XXX	SNVT_switch
Boiler H Power Failure	BI	1328	DI	42	11328	nvoBlrHPwrFl_XXX	SNVT_switch
Boiler E Ready	BI	1329	DI	43	11329	nvoBlrERdy_XXX	SNVT_switch
Boiler F Ready	BI	1330	DI	44	11330	nvoBlrFRdy_XXX	SNVT_switch
Boiler G Ready	BI	1331	DI	45	11331	nvoBlrGRdy_XXX	SNVT_switch
Boiler H Ready	BI	1332	DI	46	11332	nvoBlrHRdy_XXX	SNVT_switch
Power To Boiler E	BI	1333	DI	47	11333	nvoPwrBlrE_XXX	SNVT_switch
Power To Boiler F	BI	1334	DI	48	11334	nvoPwrBlrF_XXX	SNVT_switch
Power To Boiler G	BI	1335	DI	49	11335	nvoPwrBlrG_XXX	SNVT_switch
Power To Boiler H	BI	1336	DI	50	11336	nvoPwrBlrH_XXX	SNVT_switch
Boiler E Start Output	BI	1337	DI	60	11337	nvoBlrEStOut_XXX	SNVT_switch
Boiler F Start Output	BI	1338	DI	61	11338	nvoBlrFStOut_XXX	SNVT_switch
Boiler G Start Output	BI	1339	DI	62	11339	nvoBlrGStOut_XXX	SNVT_switch

Hawk Master Panel Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Boiler H Start Output	BI	1340	DI	63	11340	nvoBlrHStOut_XXX	SNVT_switch
AMB[3]6	BI	1341	DI	64	11341	nvoAMB_3_6_XXX	SNVT_switch
AMB[3]7	BI	1342	DI	65	11342	nvoAMB_3_7_XXX	SNVT_switch
AMB[3]8	BI	1343	DI	66	11343	nvoAMB_3_8_XXX	SNVT_switch
AMB[3]9	BI	1344	DI	67	11344	nvoAMB_3_9_XXX	SNVT_switch
AMB[3]10	BI	1345	DI	68	11345	nvoAMB_3_10_XXX	SNVT_switch
AMB[3]11	BI	1346	DI	69	11346	nvoAMB_3_11_XXX	SNVT_switch
AMB[3]12	BI	1347	DI	70	11347	nvoAMB_3_12_XXX	SNVT_switch
AMB[3]13	BI	1348	DI	71	11348	nvoAMB_3_13_XXX	SNVT_switch
AMB[3]14	BI	1349	DI	72	11349	nvoAMB_3_14_XXX	SNVT_switch
AMB[3]15	BI	1350	DI	73	11350	nvoAMB_3_15_XXX	SNVT_switch
Number of units	AI	613	AI	1	31105	nvoNumUnits_XXX	SNVT_count_f
Boiler A Sequence Status	AI	614	AI	2	31106	nvoBlrASeqSt_XXX	SNVT_count_f
Boiler B Sequence Status	AI	615	AI	3	31107	nvoBlrBSeqSt_XXX	SNVT_count_f
Boiler C Sequence Status	AI	616	AI	4	31108	nvoBlrCSeqSt_XXX	SNVT_count_f
Boiler D Sequence Status	AI	617	AI	5	31109	nvoBlrDSeqSt_XXX	SNVT_count_f
Auto Sequence Rotation Days Set	AI	618	AI	6	31110	nvoAtSqRtDSt_XXX	SNVT_count_f
Blr A Run Time Since Last Rot (Days)	AI	619	AI	7	31111	nvoARnTmRtDy_XXX	SNVT_count_f
Blr A Run Time Since Last Rot (Hrs)	AI	620	AI	8	31112	nvoARnTmRtHr_XXX	SNVT_time_hour
Blr A Run Time Since Last Rot (Min)	AI	621	AI	9	31113	nvoARnTmRtMn_XXX	SNVT_time_min
Blr B Run Time Since Last Rot (Days)	AI	622	AI	10	31114	nvoBRnTmRtDy_XXX	SNVT_count_f
Blr B Run Time Since Last Rot (Hrs)	AI	623	AI	11	31115	nvoBRnTmRtHr_XXX	SNVT_time_hour
Blr B Run Time Since Last Rot (Min)	AI	624	AI	12	31116	nvoBRnTmRtMn_XXX	SNVT_time_min
Blr C Run Time Since Last Rot (Days)	AI	625	AI	13	31117	nvoCRnTmRtDy_XXX	SNVT_count_f
Blr C Run Time Since Last Rot (Hrs)	AI	626	AI	14	31118	nvoCRnTmRtHr_XXX	SNVT_time_hour
Blr C Run Time Since Last Rot (Min)	AI	627	AI	15	31119	nvoCRnTmRtMn_XXX	SNVT_time_min
Blr D Run Time Since Last Rot (Days)	AI	628	AI	16	31120	nvoDRnTmRtDy_XXX	SNVT_count_f
Blr D Run Time Since Last Rot (Hrs)	AI	629	AI	17	31121	nvoDRnTmRtHr_XXX	SNVT_time_hour
Blr D Run Time Since Last Rot (Min)	AI	630	AI	18	31122	nvoDRnTmRtMn_XXX	SNVT_time_min
AMI[18]	AI	631	AI	19	31123	nvoAMI_18_XXX	SNVT_count_f
AMI[19]	AI	632	AI	20	31124	nvoAMI_19_XXX	SNVT_count_f
AMI[20]	AI	633	AI	21	31125	nvoAMI_20_XXX	SNVT_count_f
Boiler E Sequence Status	AI	634	AI	22	31126	nvoBlrESeqSt_XXX	SNVT_count_f
Boiler F Sequence Status	AI	635	AI	23	31127	nvoBlrFSeqSt_XXX	SNVT_count_f
Boiler G Sequence Status	AI	636	AI	24	31128	nvoBlrGSeqSt_XXX	SNVT_count_f
Boiler H Sequence Status	AI	637	AI	25	31129	nvoBlrHSeqSt_XXX	SNVT_count_f
AMI[25]	AI	638	AI	26	31130	nvoAMI_25_XXX	SNVT_count_f
Blr E Run Time Since Last Rot (Days)	AI	639	AI	27	31131	nvoERnTmRtDy_XXX	SNVT_count_f
Blr E Run Time Since Last Rot (Hrs)	AI	640	AI	28	31132	nvoERnTmRtHr_XXX	SNVT_time_hour
Blr E Run Time Since Last Rot (Min)	AI	641	AI	29	31133	nvoERnTmRtMn_XXX	SNVT_time_min
Blr F Run Time Since Last Rot (Days)	AI	642	AI	30	31134	nvoFRnTmRtDy_XXX	SNVT_count_f
Blr F Run Time Since Last Rot (Hrs)	AI	643	AI	31	31135	nvoFRnTmRtHr_XXX	SNVT_time_hour
Blr F Run Time Since Last Rot (Min)	AI	644	AI	32	31136	nvoFRnTmRtMn_XXX	SNVT_time_min
Blr G Run Time Since Last Rot (Days)	AI	645	AI	33	31137	nvoGRnTmRtDy_XXX	SNVT_count_f
Blr G Run Time Since Last Rot (Hrs)	AI	646	AI	34	31138	nvoGRnTmRtHr_XXX	SNVT_time_hour
Blr G Run Time Since Last Rot (Min)	AI	647	AI	35	31139	nvoGRnTmRtMn_XXX	SNVT_time_min
Blr H Run Time Since Last Rot (Days)	AI	648	AI	36	31140	nvoHRnTmRtDy_XXX	SNVT_count_f
Blr H Run Time Since Last Rot (Hrs)	AI	649	AI	37	31141	nvoHRnTmRtHr_XXX	SNVT_time_hour
Blr H Run Time Since Last Rot (Min)	AI	650	AI	38	31142	nvoHRnTmRtMn_XXX	SNVT_time_min
Blr A Lead Lag Entered Seq	AI	651	AI	39	31143	nvoALLEntSq_XXX	SNVT_count_f
Blr B Lead Lag Entered Seq	AI	652	AI	40	31144	nvoBLLEntSq_XXX	SNVT_count_f
Blr C Lead Lag Entered Seq	AI	653	AI	41	31145	nvoCLLEntSq_XXX	SNVT_count_f
Blr D Lead Lag Entered Seq	AI	654	AI	42	31146	nvoDLLEntSq_XXX	SNVT_count_f
Blr E Lead Lag Entered Seq	AI	655	AI	43	31147	nvoeLLEntSq_XXX	SNVT_count_f
Blr F Lead Lag Entered Seq	AI	656	AI	44	31148	nvoFLLEntSq_XXX	SNVT_count_f

Hawk Master Panel Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

		RER				LER	
	Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
	Blr G Lead Lag Entered Seq	AI	657	AI	45	31149	nvoGLLEntSq_XXX	SNVT_count_f
	Blr H Lead Lag Entered Seq	AI	658	AI	46	31150	nvoHLLEntSq_XXX	SNVT_count_f
	Blr A Lead Lag Working Seq	AI	659	AI	47	31151	nvoALLWrkSq_XXX	SNVT_count_f
	Blr B Lead Lag Working Seq	AI	660	AI	48	31152	nvoBLLWrkSq_XXX	SNVT_count_f
	Blr C Lead Lag Working Seq	AI	661	AI	49	31153	nvoCLLWrkSq_XXX	SNVT_count_f
	Blr D Lead Lag Working Seq	AI	662	AI	50	31154	nvoDLLWrkSq_XXX	SNVT_count_f
	Blr E Lead Lag Working Seq	AI	663	AI	51	31155	nvoeLLWrkSq_XXX	SNVT_count_f
	Blr F Lead Lag Working Seq	AI	664	AI	52	31156	nvoFLLWrkSq_XXX	SNVT_count_f
	Blr G Lead Lag Working Seq	AI	665	AI	53	31157	nvoGLLWrkSq_XXX	SNVT_count_f
	Blr H Lead Lag Working Seq	AI	666	AI	54	31158	nvoHLLWrkSq_XXX	SNVT_count_f
	Max Pressure/Temp	AI	401	AI	55	30801	nvoMaxPrsTmp_XXX	SNVT_count_f
	Lead Boiler On Point	AI	402	AI	56	30803	nvoLdBlrOnPt_XXX	SNVT_count_f
	Lead Boiler Off Point	AI	403	AI	57	30805	nvoLdBlrOfPt_XXX	SNVT_count_f
	Operating Pressure/Temp	AI	404	AI	58	30807	nvoOpPrsTmp_XXX	SNVT_count_f
	Low SP Limit	AI	405	AI	59	30809	nvoLoSPLim_XXX	SNVT_count_f
	High SP Limit	AI	406	AI	60	30811	nvoHiSPLim_XXX	SNVT_count_f
	Days Till Auto Seq Rotation	AI	407	AI	61	30813	nvoDyAtSqRot_XXX	SNVT_count_f
	Hours Till Auto Seq Rotation	AI	408	AI	62	30815	nvoHrAtSqRot_XXX	SNVT_count_f
	Minutes Till Auto Seq Rotation	AI	409	AI	63	30817	nvoMnAtSqRot_XXX	SNVT_count_f
	Seconds Till Auto Seq Rotation	AI	410	AI	64	30819	nvoScAtSqRot_XXX	SNVT_count_f
	Control Output Boiler A	AI	411	AI	65	30821	nvoCtrOutBlA_XXX	SNVT_lev_percent
	Control Output Boiler B	AI	412	AI	66	30823	nvoCtrOutBlB_XXX	SNVT_lev_percent
	Control Output Boiler C	AI	413	AI	67	30825	nvoCtrOutBlC_XXX	SNVT_lev_percent
	Control Output Boiler D	AI	414	AI	68	30827	nvoCtrOutBlD_XXX	SNVT_lev_percent
	Control Output Boiler E	AI	415	AI	69	30829	nvoCtrOutBlE_XXX	SNVT_lev_percent
	Control Output Boiler F	AI	416	AI	70	30831	nvoCtrOutBlF_XXX	SNVT_lev_percent
	Control Output Boiler G	AI	417	AI	71	30833	nvoCtrOutBlG_XXX	SNVT_lev_percent
	Control Output Boiler H	AI	418	AI	72	30835	nvoCtrOutBlH_XXX	SNVT_lev_percent
	Steam Pressure (Water Temp) SP	AI	419	AI	73	30837	nvoStmPrsSP_XXX	SNVT_count_f
	AMR[19]	AI	420	AI	74	30839	nvoAMR_19_XXX	SNVT_count_f
	AMR[20]	AI	421	AI	75	30841	nvoAMR_20_XXX	SNVT_count_f
	AMR[21]	AI	422	AI	76	30843	nvoAMR_21_XXX	SNVT_count_f
	AMR[22]	AI	423	AI	77	30845	nvoAMR_22_XXX	SNVT_count_f
	AMR[23]	AI	424	AI	78	30847	nvoAMR_23_XXX	SNVT_count_f
	AMR[24]	AI	425	AI	79	30849	nvoAMR_24_XXX	SNVT_count_f
	AMR[25]	AI	426	AI	80	30851	nvoAMR_25_XXX	SNVT_count_f
*	Master Write Bit	BV	1	DO	1	00001	nvoMstWrtBit_XXX	SNVT_switch
*	Setpoint Value Write	AV	51	AO	51	40051	nvoSPValWrt_XXX	SNVT_count_f
*	N510[0]	AV	1	AO	1	40001	nvoN510_0_XXX	SNVT_count_f
*	Lag 1 Start Timer Set	AV	2	AO	2	40002	nvoL1StrTmSt_XXX	SNVT_time_sec
*	Lag 1 Start Point	AV	3	AO	3	40003	nvoLg1StrPt_XXX	SNVT_count_f
*	Lag 1 Stop Point	AV	4	AO	4	40004	nvoLg1StpPt_XXX	SNVT_count_f
*	Lag 1 Stop Timer Set	AV	5	AO	5	40005	nvoL1StpTmSt_XXX	SNVT_time_sec
*	N510[5]	AV	6	AO	6	40006	nvoN510_5_XXX	SNVT_count_f
*	Lag 2 Start Timer Set	AV	7	AO	7	40007	nvoL2StrTmSt_XXX	SNVT_time_sec
*	Lag 2 Start Point	AV	8	AO	8	40008	nvoLg2StrPt_XXX	SNVT_count_f
*	Lag 2 Stop Point	AV	9	AO	9	40009	nvoLg2StpPt_XXX	SNVT_count_f
*	Lag 2 Stop Timer Set	AV	10	AO	10	40010	nvoL2StpTmSt_XXX	SNVT_time_sec
*	N510[10]	AV	11	AO	11	40011	nvoN510_10_XXX	SNVT_count_f
*	Lag 3 Start Timer Set	AV	12	AO	12	40012	nvoL3StrTmSt_XXX	SNVT_time_sec
*	Lag 3 Start Point	AV	13	AO	13	40013	nvoLg3StrPt_XXX	SNVT_count_f
*	Lag 3 Stop Point	AV	14	AO	14	40014	nvoLg3StpPt_XXX	SNVT_count_f
*	Lag 3 Stop Timer Set	AV	15	AO	15	40015	nvoL3StpTmSt_XXX	SNVT_time_sec
*	Lead Boiler Selection	AV	16	AO	16	40016	nvoLdBlrSel_XXX	SNVT_count_f
*	Lag 1 Boiler Selection	AV	17	AO	17	40017	nvoLg1BlrSel_XXX	SNVT_count_f

Hawk Master Panel Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

		RER					LER	
	Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
*	Lag 2 Boiler Selection	AV	18	AO	18	40018	nvoLg2BlrSel_XXX	SNVT_count_f
*	Lag 3 Boiler Selection	AV	19	AO	19	40019	nvoLg3BlrSel_XXX	SNVT_count_f
*	Lag 4 Boiler Selection	AV	20	AO	20	40020	nvoLg4BlrSel_XXX	SNVT_count_f
*	Lag 5 Boiler Selection	AV	21	AO	21	40021	nvoLg5BlrSel_XXX	SNVT_count_f
*	Lag 6 Boiler Selection	AV	22	AO	22	40022	nvoLg6BlrSel_XXX	SNVT_count_f
*	Lag 7 Boiler Selection	AV	23	AO	23	40023	nvoLg7BlrSel_XXX	SNVT_count_f
*	Lag 4 Start Timer Set	AV	24	AO	24	40024	nvoL4StrTmSt_XXX	SNVT_time_sec
*	Lag 4 Start Point	AV	25	AO	25	40025	nvoLg4StrPt_XXX	SNVT_count_f
*	Lag 4 Stop Point	AV	26	AO	26	40026	nvoLg4StpPt_XXX	SNVT_count_f
*	Lag 4 Stop Timer Set	AV	27	AO	27	40027	nvoL4StpTmSt_XXX	SNVT_time_sec
*	Lag 5 Start Timer Set	AV	28	AO	28	40028	nvoL5StrTmSt_XXX	SNVT_time_sec
*	Lag 5 Start Point	AV	29	AO	29	40029	nvoLg5StrPt_XXX	SNVT_count_f
*	Lag 5 Stop Point	AV	30	AO	30	40030	nvoLg5StpPt_XXX	SNVT_count_f
*	Lag 5 Stop Timer Set	AV	31	AO	31	40031	nvoL5StpTmSt_XXX	SNVT_time_sec
*	Lag 6 Start Timer Set	AV	32	AO	32	40032	nvoL6StrTmSt_XXX	SNVT_time_sec
*	Lag 6 Start Point	AV	33	AO	33	40033	nvoLg6StrPt_XXX	SNVT_count_f
*	Lag 6 Stop Point	AV	34	AO	34	40034	nvoLg6StpPt_XXX	SNVT_count_f
*	Lag 6 Stop Timer Set	AV	35	AO	35	40035	nvoL6StpTmSt_XXX	SNVT_time_sec
*	Lag 7 Start Timer Set	AV	36	AO	36	40036	nvoL7StrTmSt_XXX	SNVT_time_sec
*	Lag 7 Start Point	AV	37	AO	37	40037	nvoLg7StrPt_XXX	SNVT_count_f
*	Lag 7 Stop Point	AV	38	AO	38	40038	nvoLg7StpPt_XXX	SNVT_count_f
*	Lag 7 Stop Timer Set	AV	39	AO	39	40039	nvoL7StpTmSt_XXX	SNVT_time_sec
*	N510[39]	AV	40	AO	40	40040	nvoN510_39_XXX	SNVT_count_f
*	N510[40]	AV	41	AO	41	40041	nvoN510_40_XXX	SNVT_count_f
*	N510[41]	AV	42	AO	42	40042	nvoN510_41_XXX	SNVT_count_f
*	N510[42]	AV	43	AO	43	40043	nvoN510_42_XXX	SNVT_count_f
*	N510[43]	AV	44	AO	44	40044	nvoN510_43_XXX	SNVT_count_f
*	N510[44]	AV	45	AO	45	40045	nvoN510_44_XXX	SNVT_count_f
*	N510[45]	AV	46	AO	46	40046	nvoN510_45_XXX	SNVT_count_f
*	N510[46]	AV	47	AO	47	40047	nvoN510_46_XXX	SNVT_count_f
*	N510[47]	AV	48	AO	48	40048	nvoN510_47_XXX	SNVT_count_f
*	N510[48]	AV	49	AO	49	40049	nvoN510_48_XXX	SNVT_count_f
*	N510[49]	AV	50	AO	50	40050	nvoN510_49_XXX	SNVT_count_f

*Write point

B.13. ADAC

ADAC Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Deaerator Lvl BAD QUALITY	BI	1	DI	1	11351	nvoDeLvlBdQu_XXX	SNVT_switch
Deaerator Lvl Hi	BI	2	DI	2	11352	nvoDeaLvlHi_XXX	SNVT_switch
Deaerator Lvl Lo	BI	3	DI	3	11353	nvoDeaLvlLo_XXX	SNVT_switch
Deaerator Lvl Lo-Lo (LWCO)	BI	4	DI	4	11354	nvoDeaLWCO_XXX	SNVT_switch
Feed Pump 1 Flt	BI	5	DI	5	11355	nvoFdPmp1Flt_XXX	SNVT_switch
Feed Pump 2 Flt	BI	6	DI	6	11356	nvoFdPmp2Flt_XXX	SNVT_switch
Feed Pump 3 Flt	BI	7	DI	7	11357	nvoFdPmp3Flt_XXX	SNVT_switch
Feed Pump 4 Flt	BI	8	DI	8	11358	nvoFdPmp4Flt_XXX	SNVT_switch
Feed Pump 5 Flt	BI	9	DI	9	11359	nvoFdPmp5Flt_XXX	SNVT_switch
Feed Pump 6 Flt	BI	10	DI	10	11360	nvoFdPmp6Flt_XXX	SNVT_switch
Feed Pump 1 OVERLOAD	BI	11	DI	11	11361	nvoFdP1OvrLd_XXX	SNVT_switch
Feed Pump 2 OVERLOAD	BI	12	DI	12	11362	nvoFdP2OvrLd_XXX	SNVT_switch
Feed Pump 3 OVERLOAD	BI	13	DI	13	11363	nvoFdP3OvrLd_XXX	SNVT_switch
Feed Pump 4 OVERLOAD	BI	14	DI	14	11364	nvoFdP4OvrLd_XXX	SNVT_switch
Feed Pump 5 OVERLOAD	BI	15	DI	15	11365	nvoFdP5OvrLd_XXX	SNVT_switch
Feed Pump 6 OVERLOAD	BI	16	DI	16	11366	nvoFdP6OvrLd_XXX	SNVT_switch
Spare	BI	17	DI	17	11367	nvoDAB1_1_0_$node_id	SNVT_switch
Spare	BI	18	DI	18	11368	nvoDAB1_1_1_$node_id	SNVT_switch
Spare	BI	19	DI	19	11369	nvoDAB1_1_2_$node_id	SNVT_switch
Deaerator Temp BAD QUALITY	BI	20	DI	20	11370	nvoDeaTpBdQu_XXX	SNVT_switch
Deaerator Temp Lo	BI	21	DI	21	11371	nvoDeaTmpLo_XXX	SNVT_switch
Deaerator Temp Hi	BI	22	DI	22	11372	nvoDeaTmpHi_XXX	SNVT_switch
Deaerator Pressure BAD QUALITY	BI	23	DI	23	11373	nvoDeaPrBdQu_XXX	SNVT_switch
Deaerator Pressure Lo	BI	24	DI	24	11374	nvoDeaPrsLo_XXX	SNVT_switch
Deaerator Pressure Hi	BI	25	DI	25	11375	nvoDeaPrsHi_XXX	SNVT_switch
Boiler Feed Wtr Header Pressure BQ	BI	26	DI	26	11376	nvoBFdWHdPBQ_XXX	SNVT_switch
Boiler Feed Wtr Header Pressure Lo	BI	27	DI	27	11377	nvoBFdWHdPLo_XXX	SNVT_switch
Boiler Feed Wtr Header Pressure Hi	BI	28	DI	28	11378	nvoBFdWHdPHi_XXX	SNVT_switch
DAB1[1]12	BI	29	DI	29	11379	nvoDAB1_1_12_XXX	SNVT_switch
DAB1[1]13	BI	30	DI	30	11380	nvoDAB1_1_13_XXX	SNVT_switch
DAB1[1]14	BI	31	DI	31	11381	nvoDAB1_1_14_XXX	SNVT_switch
DAB1[1]15	BI	32	DI	32	11382	nvoDAB1_1_15_XXX	SNVT_switch
DAB1[2]0	BI	33	DI	33	11383	nvoDAB1_2_0_XXX	SNVT_switch
DAB1[2]1	BI	34	DI	34	11384	nvoDAB1_2_1_XXX	SNVT_switch
DAB1[2]2	BI	35	DI	35	11385	nvoDAB1_2_2_XXX	SNVT_switch
DAB1[2]3	BI	36	DI	36	11386	nvoDAB1_2_3_XXX	SNVT_switch
DAB1[2]4	BI	37	DI	37	11387	nvoDAB1_2_4_XXX	SNVT_switch
DAB1[2]5	BI	38	DI	38	11388	nvoDAB1_2_5_XXX	SNVT_switch
DAB1[2]6	BI	39	DI	39	11389	nvoDAB1_2_6_XXX	SNVT_switch
DAB1[2]7	BI	40	DI	40	11390	nvoDAB1_2_7_XXX	SNVT_switch
DAB1[2]8	BI	41	DI	41	11391	nvoDAB1_2_8_XXX	SNVT_switch
DAB1[2]9	BI	42	DI	42	11392	nvoDAB1_2_9_XXX	SNVT_switch
DAB1[2]10	BI	43	DI	43	11393	nvoDAB1_2_10_XXX	SNVT_switch
DAB1[2]11	BI	44	DI	44	11394	nvoDAB1_2_11_XXX	SNVT_switch
DAB1[2]12	BI	45	DI	45	11395	nvoDAB1_2_12_XXX	SNVT_switch
DAB1[2]13	BI	46	DI	46	11396	nvoDAB1_2_13_XXX	SNVT_switch
DAB1[2]14	BI	47	DI	47	11397	nvoDAB1_2_14_XXX	SNVT_switch
DAB1[2]15	BI	48	DI	48	11398	nvoDAB1_2_15_XXX	SNVT_switch

ADAC Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Feed Pump 1 ON	BI	49	DI	49	11399	nvoFdPmp1ON_XXX	SNVT_switch
Feed Pump 2 ON	BI	50	DI	50	11400	nvoFdPmp2ON_XXX	SNVT_switch
Feed Pump 3 ON	BI	51	DI	51	11401	nvoFdPmp3ON_XXX	SNVT_switch
Feed Pump 4 ON	BI	52	DI	52	11402	nvoFdPmp4ON_XXX	SNVT_switch
Feed Pump 5 ON	BI	53	DI	53	11403	nvoFdPmp5ON_XXX	SNVT_switch
Feed Pump 6 ON	BI	54	DI	54	11404	nvoFdPmp6ON_XXX	SNVT_switch
Feed Pump 1 In AUTO	BI	55	DI	55	11405	nvoFdP1InAut_XXX	SNVT_switch
Feed Pump 2 In AUTO	BI	56	DI	56	11406	nvoFdP2InAut_XXX	SNVT_switch
Feed Pump 3 In AUTO	BI	57	DI	57	11407	nvoFdP3InAut_XXX	SNVT_switch
Feed Pump 4 In AUTO	BI	58	DI	58	11408	nvoFdP4InAut_XXX	SNVT_switch
Feed Pump 5 In AUTO	BI	59	DI	59	11409	nvoFdP5InAut_XXX	SNVT_switch
Feed Pump 6 In AUTO	BI	60	DI	60	11410	nvoFdP6InAut_XXX	SNVT_switch
Deaerator No Alarms Relay OK	BI	61	DI	61	11411	nvoDeaNoAlms_XXX	SNVT_switch
YelLo Stack Light ON	BI	62	DI	62	11412	nvoYelStkLt_XXX	SNVT_switch
Green Stack Light ON	BI	63	DI	63	11413	nvoGrnStkLt_XXX	SNVT_switch
Red Stack Light ON	BI	64	DI	64	11414	nvoRedStkLt_XXX	SNVT_switch
Chemical Feed ON	BI	65	DI	65	11415	nvoChmFdON_XXX	SNVT_switch
Deaerator Feed Wtr Valve Open	BI	66	DI	66	11416	nvoDeFdWVlOp_XXX	SNVT_switch
Feed Pumps ALT MODE ON	BI	67	DI	67	11417	nvoFdPAltMd_XXX	SNVT_switch
DA Lo-Lo Wtr Cutoff Relay Energized	BI	68	DI	68	11418	nvoDACtoRlEn_XXX	SNVT_switch
Deaerator 2nd Feed Wtr Valve Open	BI	69	DI	69	11419	nvoD2FdWVlOp_XXX	SNVT_switch
Boiler Feed Pump 1 FLo Flt	BI	70	DI	70	11420	nvoFdP1FloFl_XXX	SNVT_switch
Boiler Feed Pump 2 FLo Flt	BI	71	DI	71	11421	nvoFdP2FloFl_XXX	SNVT_switch
Boiler Feed Pump 3 FLo Flt	BI	72	DI	72	11422	nvoFdP3FloFl_XXX	SNVT_switch
Boiler Feed Pump 4 FLo Flt	BI	73	DI	73	11423	nvoFdP4FloFl_XXX	SNVT_switch
Boiler Feed Pump 5 FLo Flt	BI	74	DI	74	11424	nvoFdP5FloFl_XXX	SNVT_switch
Boiler Feed Pump 6 FLo Flt	BI	75	DI	75	11425	nvoFdP6FloFl_XXX	SNVT_switch
PLC Battery Lo Replace Battery	BI	76	DI	76	11426	nvoPLCBatLo_XXX	SNVT_switch
Feed Pump 1 VSD Speed Feedback Bad Q	BI	77	DI	77	11427	nvoFdP1VSDBQ_XXX	SNVT_switch
Feed Pump 2 VSD Speed Feedback Bad Q	BI	78	DI	78	11428	nvoFdP2VSDBQ_XXX	SNVT_switch
Feed Pump 3 VSD Speed Feedback Bad Q	BI	79	DI	79	11429	nvoFdP3VSDBQ_XXX	SNVT_switch
Feed Pump 4 VSD Speed Feedback Bad Q	BI	80	DI	80	11430	nvoFdP4VSDBQ_XXX	SNVT_switch
Feed Pump 5 VSD Speed Feedback Bad Q	BI	81	DI	81	11431	nvoFdP5VSDBQ_XXX	SNVT_switch
Feed Pump 6 VSD Speed Feedback Bad Q	BI	82	DI	82	11432	nvoFdP6VSDBQ_XXX	SNVT_switch
DAB1[5]2	BI	83	DI	83	11433	nvoDAB1_5_2_XXX	SNVT_switch
DAB1[5]3	BI	84	DI	84	11434	nvoDAB1_5_3_XXX	SNVT_switch
DAB1[5]4	BI	85	DI	85	11435	nvoDAB1_5_4_XXX	SNVT_switch
DAB1[5]5	BI	86	DI	86	11436	nvoDAB1_5_5_XXX	SNVT_switch
DAB1[5]6	BI	87	DI	87	11437	nvoDAB1_5_6_XXX	SNVT_switch
DAB1[5]7	BI	88	DI	88	11438	nvoDAB1_5_7_XXX	SNVT_switch
DAB1[5]8	BI	89	DI	89	11439	nvoDAB1_5_8_XXX	SNVT_switch
DAB1[5]9	BI	90	DI	90	11440	nvoDAB1_5_9_XXX	SNVT_switch
DAB1[5]10	BI	91	DI	91	11441	nvoDAB1_5_10_XXX	SNVT_switch
DAB1[5]11	BI	92	DI	92	11442	nvoDAB1_5_11_XXX	SNVT_switch
DAB1[5]12	BI	93	DI	93	11443	nvoDAB1_5_12_XXX	SNVT_switch
DAB1[5]13	BI	94	DI	94	11444	nvoDAB1_5_13_XXX	SNVT_switch
DAB1[5]14	BI	95	DI	95	11445	nvoDAB1_5_14_XXX	SNVT_switch
DAB1[5]15	BI	96	DI	96	11446	nvoDAB1_5_15_XXX	SNVT_switch
Surge Tank Lvl BAD QUALITY	BI	97	DI	97	11447	nvoSgTkLvlBQ_XXX	SNVT_switch
Surge Tank Lvl Hi	BI	98	DI	98	11448	nvoSgTkLvlHi_XXX	SNVT_switch

ADAC Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Surge Tank Lvl Lo	BI	99	DI	99	11449	nvoSgTkLvlLo_XXX	SNVT_switch
Surge Tank Temp BAD QUALITY	BI	100	DI	100	11450	nvoSgTkTmpBQ_XXX	SNVT_switch
Surge Tank Temp Lo	BI	101	DI	101	11451	nvoSgTkTmpLo_XXX	SNVT_switch
Surge Tank Temp Hi	BI	102	DI	102	11452	nvoSgTkTmpHi_XXX	SNVT_switch
Transfer Pump 1 Flt	BI	103	DI	103	11453	nvoXfrPm1Flt_XXX	SNVT_switch
Transfer Pump 2 Flt	BI	104	DI	104	11454	nvoXfrPm2Flt_XXX	SNVT_switch
Transfer Pump 3 Flt	BI	105	DI	105	11455	nvoXfrPm3Flt_XXX	SNVT_switch
Transfer Pump 1 OVERLOAD	BI	106	DI	106	11456	nvoXfrP1OvLd_XXX	SNVT_switch
Transfer Pump 2OVERLOAD	BI	107	DI	107	11457	nvoXfrP2OvLd_XXX	SNVT_switch
Transfer Pump 3OVERLOAD	BI	108	DI	108	11458	nvoXfrP3OvLd_XXX	SNVT_switch
Surge Tank Lo-Lo (LWCO)	BI	109	DI	109	11459	nvoSgTkLWCO_XXX	SNVT_switch
Surge Tank Header Pressure Hi	BI	110	DI	110	11460	nvoSgTkHdPHi_XXX	SNVT_switch
Surge Tank Header Pressure Lo	BI	111	DI	111	11461	nvoSgTkHdPLo_XXX	SNVT_switch
Surge Tank Header Pressure BAD QUALITY	BI	112	DI	112	11462	nvoSgTkHPrBQ_XXX	SNVT_switch
DAB1[7]0	BI	113	DI	113	11463	nvoDAB1_7_0_XXX	SNVT_switch
DAB1[7]1	BI	114	DI	114	11464	nvoDAB1_7_1_XXX	SNVT_switch
DAB1[7]2	BI	115	DI	115	11465	nvoDAB1_7_2_XXX	SNVT_switch
Surge 2nd Feed Wtr Valve Open	BI	116	DI	116	11466	nvoSg2FdWVlO_XXX	SNVT_switch
Transfer Pump 1 FLo Flt	BI	117	DI	117	11467	nvoXfr1FloFl_XXX	SNVT_switch
Transfer Pump 2 FLo Flt	BI	118	DI	118	11468	nvoXfr2FloFl_XXX	SNVT_switch
Transfer Pump 3 FLo Flt	BI	119	DI	119	11469	nvoXfr3FloFl_XXX	SNVT_switch
Transfer Pump 1 VSD Speed Feedback BQ	BI	120	DI	120	11470	nvoXfr1VSDBQ_XXX	SNVT_switch
Transfer Pump 2 VSD Speed Feedback BQ	BI	121	DI	121	11471	nvoXfr2VSDBQ_XXX	SNVT_switch
Transfer Pump 3 VSD Speed Feedback BQ	BI	122	DI	122	11472	nvoXfr3VSDBQ_XXX	SNVT_switch
DAB1[7]10	BI	123	DI	123	11473	nvoDAB1_7_10_XXX	SNVT_switch
DAB1[7]11	BI	124	DI	124	11474	nvoDAB1_7_11_XXX	SNVT_switch
DAB1[7]12	BI	125	DI	125	11475	nvoDAB1_7_12_XXX	SNVT_switch
DAB1[7]13	BI	126	DI	126	11476	nvoDAB1_7_13_XXX	SNVT_switch
DAB1[7]14	BI	127	DI	127	11477	nvoDAB1_7_14_XXX	SNVT_switch
DAB1[7]15	BI	128	DI	128	11478	nvoDAB1_7_15_XXX	SNVT_switch
Surge Tank No Alarms Relay OK	BI	129	DI	129	11479	nvoSTNoAlRel_XXX	SNVT_switch
YelLo Stack Light ON	BI	130	DI	130	11480	nvoSTYlStkLt_XXX	SNVT_switch
Green Stack Light ON	BI	131	DI	131	11481	nvoSTGrStkLt_XXX	SNVT_switch
RED Stack Light ON	BI	132	DI	132	11482	nvoSTRdStkLt_XXX	SNVT_switch
Surge Tank Feed Wtr Valve Open	BI	133	DI	133	11483	nvoSTFdWtVlO_XXX	SNVT_switch
ST Lo Lo Wtr Cutoff Relay Energized	BI	134	DI	134	11484	nvoSTCtoRlEn_XXX	SNVT_switch
Transfer Pump 1 ON	BI	135	DI	135	11485	nvoXfrPm1ON_XXX	SNVT_switch
Transfer Pump 2 ON	BI	136	DI	136	11486	nvoXfrPm2ON_XXX	SNVT_switch
Transfer Pump 3 ON	BI	137	DI	137	11487	nvoXfrPm3ON_XXX	SNVT_switch
Transfer Pump 1 In AUTO	BI	138	DI	138	11488	nvoXfP1InAut_XXX	SNVT_switch
Transfer Pump 2 In AUTO	BI	139	DI	139	11489	nvoXfP2InAut_XXX	SNVT_switch
Transfer Pump 3 In AUTO	BI	140	DI	140	11490	nvoXfP3InAut_XXX	SNVT_switch
Transfer Pumps ALT MODE ON	BI	141	DI	141	11491	nvoXfPAlMdOn_XXX	SNVT_switch
DAB1[8]13	BI	142	DI	142	11492	nvoDAB1_8_13_XXX	SNVT_switch
DAB1[8]14	BI	143	DI	143	11493	nvoDAB1_8_14_XXX	SNVT_switch
DAB1[8]15	BI	144	DI	144	11494	nvoDAB1_8_15_XXX	SNVT_switch
DAB1[9]0	BI	145	DI	145	11495	nvoDAB1_9_0_XXX	SNVT_switch
DAB1[9]1	BI	146	DI	146	11496	nvoDAB1_9_1_XXX	SNVT_switch
DAB1[9]2	BI	147	DI	147	11497	nvoDAB1_9_2_XXX	SNVT_switch
DAB1[9]3	BI	148	DI	148	11498	nvoDAB1_9_3_XXX	SNVT_switch

ADAC Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
DAB1[9]4	BI	149	DI	149	11499	nvoDAB1_9_4_XXX	SNVT_switch
DAB1[9]5	BI	150	DI	150	11500	nvoDAB1_9_5_XXX	SNVT_switch
DAB1[9]6	BI	151	DI	151	11501	nvoDAB1_9_6_XXX	SNVT_switch
DAB1[9]7	BI	152	DI	152	11502	nvoDAB1_9_7_XXX	SNVT_switch
DAB1[9]8	BI	153	DI	153	11503	nvoDAB1_9_8_XXX	SNVT_switch
DAB1[9]9	BI	154	DI	154	11504	nvoDAB1_9_9_XXX	SNVT_switch
DAB1[9]10	BI	155	DI	155	11505	nvoDAB1_9_10_XXX	SNVT_switch
DAB1[9]11	BI	156	DI	156	11506	nvoDAB1_9_11_XXX	SNVT_switch
DAB1[9]12	BI	157	DI	157	11507	nvoDAB1_9_12_XXX	SNVT_switch
DAB1[9]13	BI	158	DI	158	11508	nvoDAB1_9_13_XXX	SNVT_switch
DAB1[9]14	BI	159	DI	159	11509	nvoDAB1_9_14_XXX	SNVT_switch
DAB1[9]15	BI	160	DI	160	11510	nvoDAB1_9_15_XXX	SNVT_switch
Feed Pump 1 Run Time	AI	1	AI	1	30853	nvoFdPm1RnTm_XXX	SNVT_time_hour
Feed Pump 2 Run Time	AI	2	AI	2	30855	nvoFdPm2RnTm_XXX	SNVT_time_hour
Feed Pump 3 Run Time	AI	3	AI	3	30857	nvoFdPm3RnTm_XXX	SNVT_time_hour
Feed Pump 4 Run Time	AI	4	AI	4	30859	nvoFdPm4RnTm_XXX	SNVT_time_hour
Feed Pump 5 Run Time	AI	5	AI	5	30861	nvoFdPm5RnTm_XXX	SNVT_time_hour
Feed Pump 6 Run Time	AI	6	AI	6	30863	nvoFdPm6RnTm_XXX	SNVT_time_hour
DAR1[6]	AI	7	AI	7	30865	nvoDAR1_6_XXX	SNVT_time_sec
DAR1[7]	AI	8	AI	8	30867	nvoDAR1_7_XXX	SNVT_count_f
DAR1[8]	AI	9	AI	9	30869	nvoDAR1_8_XXX	SNVT_count_f
Stop Lag Feed Pump Limit	AI	10	AI	10	30871	nvoStLgFdPLm_XXX	SNVT_count_f
Alternate Feed Pumps	AI	11	AI	11	30873	nvoAltFdPmps_XXX	SNVT_time_hour
Start Chemical Feed Time Delay	AI	12	AI	12	30875	nvoStrChFTDl_XXX	SNVT_time_sec
Stop Chemical Feed Time Delay	AI	13	AI	13	30877	nvoStpChFTDl_XXX	SNVT_time_sec
DAR1[14]	AI	14	AI	14	30879	nvoDAR1_14_XXX	SNVT_count_f
Deaerator Temp	AI	15	AI	15	30881	nvoDeaTmp_XXX	SNVT_temp_p
Deaerator Tank Pressure	AI	16	AI	16	30883	nvoDeaTnkPrs_XXX	SNVT_count_f
Deaerator Tank Wtr Lvl	AI	17	AI	17	30885	nvoDeaTnWtLv_XXX	SNVT_count_f
Deaerator Feed Wtr (MUV) Signal	AI	18	AI	18	30887	nvoDeaMUVSig_XXX	SNVT_lev_percent
Deaerator Steam PRValve Signal	AI	19	AI	19	30889	nvoDeaStPRVS_XXX	SNVT_lev_percent
Boiler Feed Wtr Header Pressure	AI	20	AI	20	30891	nvoBFdWtHdPr_XXX	SNVT_count_f
Deaerator 2nd Feed Wtr (MUV) Signal	AI	21	AI	21	30893	nvoDea2MUVSg_XXX	SNVT_lev_percent
Start Lag Feed Pump Limit	AI	22	AI	22	30895	nvoStrLgFPLm_XXX	SNVT_count_f
DA Lvl - Pump Auto-Restart Lvl	AI	23	AI	23	30897	nvoDALvPmAut_XXX	SNVT_count_f
DAR1[24]	AI	24	AI	24	30899	nvoDAR1_24_XXX	SNVT_count_f
DAR1[25]	AI	25	AI	25	30901	nvoDAR1_25_XXX	SNVT_count_f
DAR1[26]	AI	26	AI	26	30903	nvoDAR1_26_XXX	SNVT_count_f
DAR1[27]	AI	27	AI	27	30905	nvoDAR1_27_XXX	SNVT_count_f
DAR1[28]	AI	28	AI	28	30907	nvoDAR1_28_XXX	SNVT_count_f
DAR1[29]	AI	29	AI	29	30909	nvoDAR1_29_XXX	SNVT_count_f
DAR1[30]	AI	30	AI	30	30911	nvoDAR1_30_XXX	SNVT_count_f
DAR1[31]	AI	31	AI	31	30913	nvoDAR1_31_XXX	SNVT_count_f
DAR1[32]	AI	32	AI	32	30915	nvoDAR1_32_XXX	SNVT_count_f
DAR1[33]	AI	33	AI	33	30917	nvoDAR1_33_XXX	SNVT_count_f
DAR1[34]	AI	34	AI	34	30919	nvoDAR1_34_XXX	SNVT_count_f
DAR1[35]	AI	35	AI	35	30921	nvoDAR1_35_XXX	SNVT_count_f
DAR1[36]	AI	36	AI	36	30923	nvoDAR1_36_XXX	SNVT_count_f
DAR1[37]	AI	37	AI	37	30925	nvoDAR1_37_XXX	SNVT_count_f
DAR1[38]	AI	38	AI	38	30927	nvoDAR1_38_XXX	SNVT_count_f

ADAC Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Surge Header Pressure	AI	39	AI	39	30929	nvoSrgHdrPrs_XXX	SNVT_count_f
Surge Tank Temp	AI	40	AI	40	30931	nvoSrgTnkTmp_XXX	SNVT_temp_p
Surge Tank Wtr Lvl	AI	41	AI	41	30933	nvoSgTkWtrLv_XXX	SNVT_count_f
Surge Tank Feed Wtr (MUV) Signal	AI	42	AI	42	30935	nvoSgTkFdWSg_XXX	SNVT_lev_percent
Transfer Pump 1 Run Time	AI	43	AI	43	30937	nvoXfrP1RnTm_XXX	SNVT_time_hour
Transfer Pump 2 Run Time	AI	44	AI	44	30939	nvoXfrP2RnTm_XXX	SNVT_time_hour
Transfer Pump 3 Run Time	AI	45	AI	45	30941	nvoXfrP3RnTm_XXX	SNVT_time_hour
Alternate Transfer Pumps	AI	46	AI	46	30943	nvoAltXfrPs_XXX	SNVT_time_hour
Stop Transfer Lag Feed Pump Limit	AI	47	AI	47	30945	nvoSpXfLFPLm_XXX	SNVT_count_f
Surge Tank 2nd Feed Wtr (MUV) Signal	AI	48	AI	48	30947	nvoSgT2FWSig_XXX	SNVT_lev_percent
Start Lag Feed Pump Limit	AI	49	AI	49	30949	nvoSTStLgFPL_XXX	SNVT_count_f
Surge Lvl - Pump Auto-Restart Lvl	AI	50	AI	50	30951	nvoSLvPARStL_XXX	SNVT_count_f
DAR1[51]	AI	51	AI	51	30953	nvoDAR1_51_XXX	SNVT_count_f
DAR1[52]	AI	52	AI	52	30955	nvoDAR1_52_XXX	SNVT_count_f
DAR1[53]	AI	53	AI	53	30957	nvoDAR1_53_XXX	SNVT_count_f
DAR1[54]	AI	54	AI	54	30959	nvoDAR1_54_XXX	SNVT_count_f
DAR1[55]	AI	55	AI	55	30961	nvoDAR1_55_XXX	SNVT_count_f
DAR1[56]	AI	56	AI	56	30963	nvoDAR1_56_XXX	SNVT_count_f
DAR1[57]	AI	57	AI	57	30965	nvoDAR1_57_XXX	SNVT_count_f
DAR1[58]	AI	58	AI	58	30967	nvoDAR1_58_XXX	SNVT_count_f
DAR1[59]	AI	59	AI	59	30969	nvoDAR1_59_XXX	SNVT_count_f
DAR1[60]	AI	60	AI	60	30971	nvoDAR1_60_XXX	SNVT_count_f
DAR1[61]	AI	61	AI	61	30973	nvoDAR1_61_XXX	SNVT_count_f
DAR1[62]	AI	62	AI	62	30975	nvoDAR1_62_XXX	SNVT_count_f
DAR1[63]	AI	63	AI	63	30977	nvoDAR1_63_XXX	SNVT_count_f
DAR1[64]	AI	64	AI	64	30979	nvoDAR1_64_XXX	SNVT_count_f
DAR1[65]	AI	65	AI	65	30981	nvoDAR1_65_XXX	SNVT_count_f
Feed Pump 1 LEAD/LAG Status	AI	66	AI	66	30983	nvoFdPm1LLSt_XXX	SNVT_count_f
Feed Pump 2 LEAD/LAG Status	AI	67	AI	67	31159	nvoFdPm2LLSt_XXX	SNVT_count_f
Feed Pump 3 LEAD/LAG Status	AI	68	AI	68	31160	nvoFdPm3LLSt_XXX	SNVT_count_f
Feed Pump 4 LEAD/LAG Status	AI	69	AI	69	31161	nvoFdPm4LLSt_XXX	SNVT_count_f
Feed Pump 5 LEAD/LAG Status	AI	70	AI	70	31162	nvoFdPm5LLSt_XXX	SNVT_count_f
Feed Pump 6 LEAD/LAG Status	AI	71	AI	71	31163	nvoFdPm6LLSt_XXX	SNVT_count_f
DAI1[6]	AI	72	AI	72	31164	nvoDAI1_6_XXX	SNVT_count_f
DAI1[7]	AI	73	AI	73	31165	nvoDAI1_7_XXX	SNVT_count_f
DAI1[8]	AI	74	AI	74	31166	nvoDAI1_8_XXX	SNVT_count_f
DAI1[9]	AI	75	AI	75	31167	nvoDAI1_9_XXX	SNVT_count_f
DAI1[10]	AI	76	AI	76	31168	nvoDAI1_10_XXX	SNVT_count_f
DAI1[11]	AI	77	AI	77	31169	nvoDAI1_11_XXX	SNVT_count_f
DAI1[12]	AI	78	AI	78	31170	nvoDAI1_12_XXX	SNVT_count_f
DAI1[13]	AI	79	AI	79	31171	nvoDAI1_13_XXX	SNVT_count_f
DAI1[14]	AI	80	AI	80	31172	nvoDAI1_14_XXX	SNVT_count_f
DAI1[15]	AI	81	AI	81	31173	nvoDAI1_15_XXX	SNVT_count_f
DAI1[16]	AI	82	AI	82	31174	nvoDAI1_16_XXX	SNVT_count_f
DAI1[17]	AI	83	AI	83	31175	nvoDAI1_17_XXX	SNVT_count_f
DAI1[18]	AI	84	AI	84	31176	nvoDAI1_18_XXX	SNVT_count_f
DAI1[19]	AI	85	AI	85	31177	nvoDAI1_19_XXX	SNVT_count_f
Transfer Pump 1 LEAD/LAG Status	AI	86	AI	86	31178	nvoXfrP1LLSt_XXX	SNVT_count_f
Transfer Pump 2 LEAD/LAG Status	AI	87	AI	87	31179	nvoXfrP2LLSt_XXX	SNVT_count_f
Transfer Pump 3 LEAD/LAG Status	AI	88	AI	88	31180	nvoXfrP3LLSt_XXX	SNVT_count_f

ADAC Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
DAI1[23]	AI	89	AI	89	31181	nvoDAI1_23_XXX	SNVT_count_f
DAI1[24]	AI	90	AI	90	31182	nvoDAI1_24_XXX	SNVT_count_f
DAI1[25]	AI	91	AI	91	31183	nvoDAI1_25_XXX	SNVT_count_f
DAI1[26]	AI	92	AI	92	31184	nvoDAI1_26_XXX	SNVT_count_f
DAI1[27]	AI	93	AI	93	31185	nvoDAI1_27_XXX	SNVT_count_f
DAI1[28]	AI	94	AI	94	31186	nvoDAI1_28_XXX	SNVT_count_f
DAI1[29]	AI	95	AI	95	31187	nvoDAI1_29_XXX	SNVT_count_f
DAI1[30]	AI	96	AI	96	31188	nvoDAI1_30_XXX	SNVT_count_f
DAI1[31]	AI	97	AI	97	31189	nvoDAI1_31_XXX	SNVT_count_f
DAI1[32]	AI	98	AI	98	31190	nvoDAI1_32_XXX	SNVT_count_f
DAI1[33]	AI	99	AI	99	31191	nvoDAI1_33_XXX	SNVT_count_f
DAI1[34]	AI	100	AI	100	31192	nvoDAI1_34_XXX	SNVT_count_f
DAI1[35]	AI	101	AI	101	31193	nvoDAI1_35_XXX	SNVT_count_f
DAI1[36]	AI	102	AI	102	31194	nvoDAI1_36_XXX	SNVT_count_f
DAI1[37]	AI	103	AI	103	31195	nvoDAI1_37_XXX	SNVT_count_f
DAI1[38]	AI	104	AI	104	31196	nvoDAI1_38_XXX	SNVT_count_f
DAI1[39]	AI	105	AI	105	31197	nvoDAI1_39_XXX	SNVT_count_f

B.14. HAWK ICS

Hawk ICS Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER					RER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Drive Fault	BI	1	DI	1	10001	nvoDrvFlt_XXX	SNVT_switch
Modbus Com Error	BI	2	DI	2	10002	nvoModCmEr_XXX	SNVT_switch
Low Water	BI	3	DI	3	10003	nvoLoWtr_XXX	SNVT_switch
BC Alarm	BI	4	DI	4	10004	nvoBCAlm_XXX	SNVT_switch
Boiler Limits Open	BI	5	DI	5	10005	nvoBlrLimOpn_XXX	SNVT_switch
High Stack Temp Alarm	BI	6	DI	6	10006	nvoHiStTmpAl_XXX	SNVT_switch
High Stack Temp SD	BI	7	DI	7	10007	nvoHiStkTpSD_XXX	SNVT_switch
External Interlock	BI	8	DI	8	10008	nvoExtIntrlk_XXX	SNVT_switch
I/O module fault	BI	9	DI	9	10009	nvoIOModFlt_XXX	SNVT_switch
Steam Sensor Fail	BI	10	DI	10	10010	nvoStmSenFl_XXX	SNVT_switch
Air Drive out of Position Alarm	BI	11	DI	11	10011	nvoArDrvPsAl_XXX	SNVT_switch
Gas Drive out of Position Alarm	BI	12	DI	12	10012	nvoGsDrvPsAl_XXX	SNVT_switch
F/A Ratio Controller Fault	BI	13	DI	13	10013	nvoFARatCtFl_XXX	SNVT_switch
No Fuel Selected	BI	14	DI	14	10014	nvoNoFlSel_XXX	SNVT_switch
Low Clogix Battery	BI	15	DI	15	10015	nvoLoPLCBat_XXX	SNVT_switch
Non Recycle Limit Relay Fail	BI	16	DI	16	10016	nvoNoRcLmRlF_XXX	SNVT_switch
Recyle Limit Relay Fail	BI	17	DI	17	10017	nvoRecLmRlFl_XXX	SNVT_switch
Remote Modulation Signal Fail	BI	18	DI	18	10018	nvoRemMdSgFl_XXX	SNVT_switch
Header Sensor Fail	BI	19	DI	19	10019	nvoHdrSenFl_XXX	SNVT_switch
TC Channel Fail	BI	20	DI	20	10020	nvoTCChFl_XXX	SNVT_switch
Low O2 Alarm	BI	21	DI	21	10021	nvoLoO2Alm_XXX	SNVT_switch
High Limit Alarm	BI	22	DI	22	10022	nvoHiLimAlm_XXX	SNVT_switch
ALWCO	BI	23	DI	23	10023	nvoALWCO_XXX	SNVT_switch
Low Gas Pressure/Low Oil Temp	BI	24	DI	24	10024	nvoLoGsPrOTp_XXX	SNVT_switch
High Gas Pressure/High Oil Temp	BI	25	DI	25	10025	nvoHiGsPrOTp_XXX	SNVT_switch
Low Oil Pressure	BI	26	DI	26	10026	nvoLoOilPrs_XXX	SNVT_switch
High Oil Pressure	BI	27	DI	27	10027	nvoHiOilPrs_XXX	SNVT_switch
Oil Drawer Switch Not Made	BI	28	DI	28	10028	nvoOilDrwrSw_XXX	SNVT_switch
Low Atomizing Air Pressure	BI	29	DI	29	10029	nvoLoAtmArPr_XXX	SNVT_switch
Low Combustion Air Pressure	BI	30	DI	30	10030	nvoLoComArPr_XXX	SNVT_switch
AUX Alarm 1	BI	31	DI	31	10031	nvoAUXAlm1_XXX	SNVT_switch
AUX Alarm 2	BI	32	DI	32	10032	nvoAUXAlm2_XXX	SNVT_switch
Blower On	BI	33	DI	33	10033	nvoBlwOn_XXX	SNVT_switch
Purge Input	BI	34	DI	34	10034	nvoPrgIn_XXX	SNVT_switch
Release To modulate Input	BI	35	DI	35	10035	nvoRel2ModIn_XXX	SNVT_switch
Low Fire Switch	BI	36	DI	36	10036	nvoLoFirSw_XXX	SNVT_switch
High Fire Switch	BI	37	DI	37	10037	nvoHiFirSw_XXX	SNVT_switch
Ready to start/Limits Closed	BI	38	DI	38	10038	nvoRdy2Str_XXX	SNVT_switch
External Start Interlock	BI	39	DI	39	10039	nvoExtStInlk_XXX	SNVT_switch
ALFCO	BI	40	DI	40	10040	nvoALFCO_XXX	SNVT_switch
Pilot	BI	41	DI	41	10041	nvoPilot_XXX	SNVT_switch
Main Fuel Valve Open	BI	42	DI	42	10042	nvoMnFlVlvOp_XXX	SNVT_switch
Fuel 1 Selected	BI	43	DI	43	10043	nvoFl1Sel_XXX	SNVT_switch
Fuel 2 Selected	BI	44	DI	44	10044	nvoFl2Sel_XXX	SNVT_switch
FSG Alarm	BI	45	DI	45	10045	nvoFSGAlm_XXX	SNVT_switch
LWCO Shutdown	BI	46	DI	46	10046	nvoLWCOShdn_XXX	SNVT_switch
Remote enable input	BI	47	DI	47	10047	nvoRmEnblInp_XXX	SNVT_switch
Burner Switch	BI	48	DI	48	10048	nvoBrnSw_XXX	SNVT_switch
Recycle Limit Relay	BI	49	DI	49	10049	nvoRecLimRel_XXX	SNVT_switch

Hawk ICS Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					RER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
External Device Start	BI	50	DI	50	10050	nvoExtDevSt_XXX	SNVT_switch
Non Recycle Limit Relay	BI	51	DI	51	10051	nvoNoRecLmRl_XXX	SNVT_switch
Drive to Low Fire (FARC)	BI	52	DI	52	10052	nvoDrv2LoFir_XXX	SNVT_switch
Start Slave Blr (2 Blr LL)	BI	53	DI	53	10053	nvoStrtSlvBl_XXX	SNVT_switch
Load Demand Output	BI	54	DI	54	10054	nvoLdDemOut_XXX	SNVT_switch
Alarm Output	BI	55	DI	55	10055	nvoAlmOut_XXX	SNVT_switch
Boiler Ready (LL)	BI	56	DI	56	10056	nvoBlrRdyLL_XXX	SNVT_switch
Boiler Load Demand	BI	57	DI	57	10057	nvoBlrLdDem_XXX	SNVT_switch
Firing Rate Remote/Llag	BI	58	DI	58	10058	nvoFrRatRmLL_XXX	SNVT_switch
Firing Rate Manual	BI	59	DI	59	10059	nvoFirRatMan_XXX	SNVT_switch
Firing Rate Auto	BI	60	DI	60	10060	nvoFrRatAuto_XXX	SNVT_switch
Hot Stand By	BI	61	DI	61	10061	nvoHotStndBy_XXX	SNVT_switch
Warm Up	BI	62	DI	62	10062	nvoWarmUp_XXX	SNVT_switch
Fuel 3 Selected	BI	63	DI	63	10063	nvoFl3Sel_XXX	SNVT_switch
Aux Alarm 3	BI	64	DI	64	10064	nvoAuxAlm3_XXX	SNVT_switch
Steam or Hot Water	BI	65	DI	65	10065	nvoStmHotWtr_XXX	SNVT_switch
Level Master Present	BI	66	DI	66	10066	nvoLvlMstPrs_XXX	SNVT_switch
Variable Speed Drive Present	BI	67	DI	67	10067	nvoVarSpDrPr_XXX	SNVT_switch
Economizer Present	BI	68	DI	68	10068	nvoEcPrs_XXX	SNVT_switch
Combustion Air Temp Present	BI	69	DI	69	10069	nvoCmArTpPrs_XXX	SNVT_switch
Oil Temp Sensor Present	BI	70	DI	70	10070	nvoOlTpSenPr_XXX	SNVT_switch
O2 Analyzer Present	BI	71	DI	71	10071	nvoO2AnlzrPr_XXX	SNVT_switch
Feedwater or Return Temp Present	BI	72	DI	72	10072	nvoFdWRtTpPr_XXX	SNVT_switch
Outdoor Reset Selected	BI	73	DI	73	10073	nvoOutResSel_XXX	SNVT_switch
Parallel Positioning Selected	BI	74	DI	74	10074	nvoParPsngSl_XXX	SNVT_switch
Two boiler lead lag master select	BI	75	DI	75	10075	nvo2BLLMstSl_XXX	SNVT_switch
Two boiler lead lag slave select	BI	76	DI	76	10076	nvo2BLLSlvSl_XXX	SNVT_switch
Master panel select	BI	77	DI	77	10077	nvoMstPnlSel_XXX	SNVT_switch
Hot stand by select	BI	78	DI	78	10078	nvoHotStbySl_XXX	SNVT_switch
Dual setpoint select	BI	79	DI	79	10079	nvoDualSPSel_XXX	SNVT_switch
Gas Flow Select	BI	80	DI	80	10080	nvoGsFloSel_XXX	SNVT_switch
Oil Flow Select	BI	81	DI	81	10081	nvoOilFloSel_XXX	SNVT_switch
Steam Flow Select	BI	82	DI	82	10082	nvoStmFloSel_XXX	SNVT_switch
Water Flow Select	BI	83	DI	83	10083	nvoWtrFloSel_XXX	SNVT_switch
Honeywell or Fireye	BI	84	DI	84	10084	nvoHnywlFrey_XXX	SNVT_switch
High Water Alarm	BI	85	DI	85	10085	nvoHiWtrAlm_XXX	SNVT_switch
Oil Drive out of Position Alarm	BI	86	DI	86	10086	nvoOlDrvPsAl_XXX	SNVT_switch
FGR Drive out of Position Alarm	BI	87	DI	87	10087	nvoFGRDrPsAl_XXX	SNVT_switch
Air Actuator FB Alarm Low	BI	88	DI	88	10088	nvoArAcFBALo_XXX	SNVT_switch
Air Actuator FB Alarm High	BI	89	DI	89	10089	nvoArAcFBAHi_XXX	SNVT_switch
Fuel1 Actuator FB Alarm Low	BI	90	DI	90	10090	nvoFl1AcFBLo_XXX	SNVT_switch
Fuel1 Actuator FB Alarm High	BI	91	DI	91	10091	nvoFl1AcFBHi_XXX	SNVT_switch
Fuel2 Actuator FB Alarm Low	BI	92	DI	92	10092	nvoFl2AcFBLo_XXX	SNVT_switch
Fuel2 Actuator FB Alarm High	BI	93	DI	93	10093	nvoFl2AcFBHi_XXX	SNVT_switch
FGR Actuator FB Alarm Low	BI	94	DI	94	10094	nvoFGRAcFBLo_XXX	SNVT_switch
FGR Actuator FB Alarm High	BI	95	DI	95	10095	nvoFGRAcFBHi_XXX	SNVT_switch
VSD Deviation Alarm	BI	96	DI	96	10096	nvoVSDDevAlm_XXX	SNVT_switch
Flame Strength Honeywell	AI	1	AI	1	30001	nvoFlmStrHny_XXX	SNVT_count_f
Combustion Air Fan Speed	AI	2	AI	2	30003	nvoCmArFnSpd_XXX	SNVT_count_f
Blower Motor Kw	AI	3	AI	3	30005	nvoBlwMtrKw_XXX	SNVT_count_f

Hawk ICS Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER					RER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	Lon Name	Lon SNVT Type
Boiler Efficiency	AI	4	AI	4	30007	nvoBlrEff_XXX	SNVT_lev_percent
Firing Rate	AI	5	AI	5	30009	nvoFirRat_XXX	SNVT_lev_percent
O2 Level	AI	6	AI	6	30011	nvoO2Lvl_XXX	SNVT_lev_percent
Set Point Steam Pressure/Water Temp	AI	7	AI	7	30013	nvoSPStPWtTp_XXX	SNVT_count_f
Water Level	AI	8	AI	8	30015	nvoWtrLvl_XXX	SNVT_press_f
Steam Pressure or HW Temp	AI	9	AI	9	30017	nvoSTProHWTp_XXX	SNVT_count_f
Combustion Air Pressure	AI	10	AI	10	30019	nvoComAirPrs_XXX	SNVT_count_f
Stack Temp Before Econ	AI	11	AI	11	30021	nvoStkTpBfEc_XXX	SNVT_temp_p
Combustion Air Temp	AI	12	AI	12	30023	nvoComAirTmp_XXX	SNVT_temp_p
Water Temp Shell/Outdoor Temp	AI	13	AI	13	30025	nvoWtTpShl_XXX	SNVT_temp_p
Feedwater Temp/Econ Water Out Temp	AI	14	AI	14	30027	nvoFdWtTp_XXX	SNVT_temp_p
Stack Temp After Econ/Return HW	AI	15	AI	15	30029	nvoStkTmpEco_XXX	SNVT_temp_p
Economizer Water In Temp	AI	16	AI	16	30031	nvoEcWtInTmp_XXX	SNVT_temp_p
Analog Input User Defined #1 Input	AI	17	AI	17	30033	nvoAIUsDf1In_XXX	SNVT_count_f
Analog Input User Defined #2 Input	AI	18	AI	18	30035	nvoAIUsDf2In_XXX	SNVT_count_f
Analog Input User Defined #3 Input	AI	19	AI	19	30037	nvoAIUsDf3In_XXX	SNVT_count_f
Analog Input User Defined #4 Input	AI	20	AI	20	30039	nvoAIUsDf4In_XXX	SNVT_count_f
Safety Valve Setting or Max Water Temp	AI	21	AI	21	30041	nvoSftVlvSet_XXX	SNVT_count_f
Header Pressure or temp 2 Boiler LL	AI	22	AI	22	30043	nvoHdPrTpBLL_XXX	SNVT_count_f
Set Point 2 Boiler LL	AI	23	AI	23	30045	nvoSP2BlrLL_XXX	SNVT_count_f
Boiler Off Point	AI	24	AI	24	30047	nvoBlrOffPt_XXX	SNVT_count_f
Boiler On Point	AI	25	AI	25	30049	nvoBlrOnPt_XXX	SNVT_count_f
AR[25] Future	AI	26	AI	26	30051	nvoAR_25_XXX	SNVT_count_f
AR[26] Future	AI	27	AI	27	30053	nvoAR_26_XXX	SNVT_count_f
Brnr Control Status Line 1 Honeywell	AI	28	AI	28	30055	nvoBCtSL1Hy_XXX	SNVT_count_f
Brnr Control Status Line 2 Honeywell	AI	29	AI	29	30056	nvoBCtSL2Hy_XXX	SNVT_count_f
Brnr Control Status Line 1 Fireye	AI	30	AI	30	30057	nvoBCtSL1Fr_XXX	SNVT_count_f
Brnr Control Status Line 2 Fireye	AI	31	AI	31	30058	nvoBCtSL2Fr_XXX	SNVT_count_f
Flame Signal Fireye	AI	32	AI	32	30059	nvoFlSgFrey_XXX	SNVT_count_f
Fuel 1 Type	AI	33	AI	33	30060	nvoFl1Type_XXX	SNVT_count_f
Fuel 2 Type	AI	34	AI	34	30061	nvoFl2Type_XXX	SNVT_count_f
Fuel 3 Type	AI	35	AI	35	30062	nvoFl3Type_XXX	SNVT_count_f
Boiler ID	AI	36	AI	36	30063	nvoBlrID_XXX	SNVT_count_f
Elapsed Time (First 16 Bits)	AI	37	AI	37	30064	nvoElpTm1_XXX	SNVT_time_hour
Elapsed Time (Second 16 Bits)	AI	38	AI	38	30065	nvoElpTm2_XXX	SNVT_time_hour
Number Of Cycles (First 16 Bits)	AI	39	AI	39	30066	nvoNumCyc1_XXX	SNVT_count_f
Number Of Cycles (Second 16 Bits)	AI	40	AI	40	30067	nvoNumCyc2_XXX	SNVT_count_f
AI[13] Future	AI	41	AI	41	30068	nvoAI_13_XXX	SNVT_count_f
AI[14] Future	AI	42	AI	42	30069	nvoAI_14_XXX	SNVT_count_f
Elapsed Time	AI	43	AI	43	30070	nvoElapTim_XXX	SNVT_time_hour
Number Of Cycles	AI	44	AI	44	30072	nvoNumCyc_XXX	SNVT_count_f

B.15. SHARK 100

Shark 100 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER						LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon Name	Lon SNVT Type
Volts A-N	AI	1	AI	1	41000	S100_AR_XXX[0]	nvoVoltsAN_XXX	SNVT_count_inc_f
Volts B-N	AI	2	AI	2	41002	S100_AR_XXX[1]	nvoVoltsBN_XXX	SNVT_count_inc_f
Volts C-N	AI	3	AI	3	41004	S100_AR_XXX[2]	nvoVoltsCN_XXX	SNVT_count_inc_f
Volts A-B	AI	4	AI	4	41006	S100_AR_XXX[3]	nvoVoltsAB_XXX	SNVT_count_inc_f
Volts B-C	AI	5	AI	5	41008	S100_AR_XXX[4]	nvoVoltsBC_XXX	SNVT_count_inc_f
Volts C-A	AI	6	AI	6	41010	S100_AR_XXX[5]	nvoVoltsCA_XXX	SNVT_count_inc_f
Amps A	AI	7	AI	7	41012	S100_AR_XXX[6]	nvoAmpsA_XXX	SNVT_count_inc_f
Amps B	AI	8	AI	8	41014	S100_AR_XXX[7]	nvoAmpsB_XXX	SNVT_count_inc_f
Amps C	AI	9	AI	9	41016	S100_AR_XXX[8]	nvoAmpsC_XXX	SNVT_count_inc_f
Watts 3-Ph total	AI	10	AI	10	41018	S100_AR_XXX[9]	nvoWatt3PhTo_XXX	SNVT_count_inc_f
VARs 3-Ph total	AI	11	AI	11	41020	S100_AR_XXX[10]	nvoVAR3PhTot_XXX	SNVT_count_inc_f
VAs 3-Ph total	AI	12	AI	12	41022	S100_AR_XXX[11]	nvoVA3PhTot_XXX	SNVT_count_inc_f
Power Factor 3-Ph total	AI	13	AI	13	41024	S100_AR_XXX[12]	nvoPF3PhTot_XXX	SNVT_count_inc_f
Frequency	AI	14	AI	14	41026	S100_AR_XXX[13]	nvoFreq_XXX	SNVT_count_inc_f
Neutral Current	AI	15	AI	15	41028	S100_AR_XXX[14]	nvoNeutCurr_XXX	SNVT_count_inc_f
W-hours Received	AI	16	AI	16	41100	S100_AD_XXX[0]	nvoWh_Rec_XXX	SNVT_count_inc_f
W-hours Delivered	AI	17	AI	17	41102	S100_AD_XXX[1]	nvoWh_Del_XXX	SNVT_count_inc_f
W-hours Net	AI	18	AI	18	41104	S100_AD_XXX[2]	nvoWh_Net_XXX	SNVT_count_inc_f
W-hours Total	AI	19	AI	19	41106	S100_AD_XXX[3]	nvoWh_Tot_XXX	SNVT_count_inc_f
VAR-hours Positive	AI	20	AI	20	41108	S100_AD_XXX[4]	nvoVARh_Pos_XXX	SNVT_count_inc_f
VAR-hours Negative	AI	21	AI	21	41110	S100_AD_XXX[5]	nvoVARh_Neg_XXX	SNVT_count_inc_f
VAR-hours Net	AI	22	AI	22	41112	S100_AD_XXX[6]	nvoVARh_Net_XXX	SNVT_count_inc_f
VAR-hours Total	AI	23	AI	23	41114	S100_AD_XXX[7]	nvoVARh_Tot_XXX	SNVT_count_inc_f
VA-hours Total	AI	24	AI	24	41116	S100_AD_XXX[8]	nvoVAh_Tot_XXX	SNVT_count_inc_f
Positive Watts 3-Ph Avg	AI	25	AI	25	42006	S100_AR_XXX[15]	nvoPsWt3PhAv_XXX	SNVT_count_inc_f
Positive VARs 3-Ph Avg	AI	26	AI	26	42008	S100_AR_XXX[16]	nvoPsVAR3PhA_XXX	SNVT_count_inc_f
Negative Watts 3-Ph Avg	AI	27	AI	27	42010	S100_AR_XXX[17]	nvoNgWt3PhAv_XXX	SNVT_count_inc_f
Negative VARs 3-Ph Avg	AI	28	AI	28	42012	S100_AR_XXX[18]	nvoNgVAR3PhA_XXX	SNVT_count_inc_f
VAs 3-Ph Avg	AI	29	AI	29	42014	S100_AR_XXX[19]	nvoVA3Ph_Avg_XXX	SNVT_count_inc_f
Positive PF 3-Ph Avg	AI	30	AI	30	42016	S100_AR_XXX[20]	nvoPsPF3PhAv_XXX	SNVT_count_inc_f
Negative PF 3-PF Avg	AI	31	AI	31	42018	S100_AR_XXX[21]	nvoNgPF3PhAv_XXX	SNVT_count_inc_f
Positive Watts 3-Ph Max Avg Demand	AI	32	AI	32	43118	S100_AR_XXX[22]	nvoPWt3PMADm_XXX	SNVT_count_inc_f
Positive VARs 3-Ph Max Avg Demand	AI	33	AI	33	43120	S100_AR_XXX[23]	nvoPVAR3PMAD_XXX	SNVT_count_inc_f
Negative Watts 3-Ph Max Avg Demand	AI	34	AI	34	43122	S100_AR_XXX[24]	nvoNWt3PMADm_XXX	SNVT_count_inc_f
Negative VARs 3-Ph Max Avg Demand	AI	35	AI	35	43124	S100_AR_XXX[25]	nvoNVAR3PMAD_XXX	SNVT_count_inc_f
Volts A-N %THD	AI	36	AI	36	44000	S100_AI_XXX[0]	nvoVltAN_THD_XXX	SNVT_lev_percent
Volts B-N %THD	AI	37	AI	37	44001	S100_AI_XXX[1]	nvoVltBN_THD_XXX	SNVT_lev_percent
Volts C-N %THD	AI	38	AI	38	44002	S100_AI_XXX[2]	nvoVltCN_THD_XXX	SNVT_lev_percent
Amps A %THD	AI	39	AI	39	44003	S100_AI_XXX[3]	nvoAmpA_THD_XXX	SNVT_lev_percent
Amps B %THD	AI	40	AI	40	44004	S100_AI_XXX[4]	nvoAmpB_THD_XXX	SNVT_lev_percent
Amps C %THD	AI	41	AI	41	44005	S100_AI_XXX[5]	nvoAmpC_THD_XXX	SNVT_lev_percent

B.16. SHARK 200

Shark 200 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER						LER	
Point Name	BACnet Data Type	BACnet Object Id	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon Name	Lon SNVT Type
Volts A-N	AI	1	AI	1	41000	S200_AR_XXX[0]	nvoVolts_AN_XXX	SNVT_count_inc_f
Volts B-N	AI	2	AI	2	41002	S200_AR_XXX[1]	nvoVolts_BN_XXX	SNVT_count_inc_f
Volts C-N	AI	3	AI	3	41004	S200_AR_XXX[2]	nvoVolts_CN_XXX	SNVT_count_inc_f
Volts A-B	AI	4	AI	4	41006	S200_AR_XXX[3]	nvoVolts_AB_XXX	SNVT_count_inc_f
Volts B-C	AI	5	AI	5	41008	S200_AR_XXX[4]	nvoVolts_BC_XXX	SNVT_count_inc_f
Volts C-A	AI	6	AI	6	41010	S200_AR_XXX[5]	nvoVolts_CA_XXX	SNVT_count_inc_f
Amps A	AI	7	AI	7	41012	S200_AR_XXX[6]	nvoAmps_A_XXX	SNVT_count_inc_f
Amps B	AI	8	AI	8	41014	S200_AR_XXX[7]	nvoAmps_B_XXX	SNVT_count_inc_f
Amps C	AI	9	AI	9	41016	S200_AR_XXX[8]	nvoAmps_C_XXX	SNVT_count_inc_f
Watts 3-Ph total	AI	10	AI	10	41018	S200_AR_XXX[9]	nvoWatt3PhTo_XXX	SNVT_count_inc_f
VARs 3-Ph total	AI	11	AI	11	41020	S200_AR_XXX[10]	nvoVAR3PhTot_XXX	SNVT_count_inc_f
VAs 3-Ph total	AI	12	AI	12	41022	S200_AR_XXX[11]	nvoVA_3PhTot_XXX	SNVT_count_inc_f
Power Factor 3-Ph total	AI	13	AI	13	41024	S200_AR_XXX[12]	nvoPF_3PhTot_XXX	SNVT_count_inc_f
Frequency	AI	14	AI	14	41026	S200_AR_XXX[13]	nvoFreq_XXX	SNVT_count_inc_f
Neutral Current	AI	15	AI	15	41028	S200_AR_XXX[14]	nvoNeut_Crnt_XXX	SNVT_count_inc_f
Watts Phase A	AI	16	AI	16	41030	S200_AR_XXX[15]	nvoWatts_PhA_XXX	SNVT_count_inc_f
Watts Phase B	AI	17	AI	17	41032	S200_AR_XXX[16]	nvoWatts_PhB_XXX	SNVT_count_inc_f
Watts Phase C	AI	18	AI	18	41034	S200_AR_XXX[17]	nvoWatts_PhC_XXX	SNVT_count_inc_f
VARs Phase A	AI	19	AI	19	41036	S200_AR_XXX[18]	nvoVARs_PhA_XXX	SNVT_count_inc_f
VARs Phase B	AI	20	AI	20	41038	S200_AR_XXX[19]	nvoVARs_PhB_XXX	SNVT_count_inc_f
VARs Phase C	AI	21	AI	21	41040	S200_AR_XXX[20]	nvoVARs_PhC_XXX	SNVT_count_inc_f
VAs Phase A	AI	22	AI	22	41042	S200_AR_XXX[21]	nvoVAs_PhA_XXX	SNVT_count_inc_f
VAs Phase B	AI	23	AI	23	41044	S200_AR_XXX[22]	nvoVAs_PhB_XXX	SNVT_count_inc_f
VAs Phase C	AI	24	AI	24	41046	S200_AR_XXX[23]	nvoVAs_PhC_XXX	SNVT_count_inc_f
Power Factor Phase A	AI	25	AI	25	41048	S200_AR_XXX[24]	nvoPF_PhA_XXX	SNVT_count_inc_f
Power Factor Phase B	AI	26	AI	26	41050	S200_AR_XXX[25]	nvoPF_PhB_XXX	SNVT_count_inc_f
Power Factor Phase C	AI	27	AI	27	41052	S200_AR_XXX[26]	nvoPF_PhC_XXX	SNVT_count_inc_f
W-hours Received	AI	28	AI	28	41500	S200_AD_XXX[0]	nvoWh_Rec_XXX	SNVT_count_inc_f
W-hours Delivered	AI	29	AI	29	41502	S200_AD_XXX[1]	nvoWh_Del_XXX	SNVT_count_inc_f
W-hours Net	AI	30	AI	30	41504	S200_AD_XXX[2]	nvoWh_Net_XXX	SNVT_count_inc_f
W-hours Total	AI	31	AI	31	41506	S200_AD_XXX[3]	nvoWh_Tot_XXX	SNVT_count_inc_f
VAR-hours Positive	AI	32	AI	32	41508	S200_AD_XXX[4]	nvoVARh_Pos_XXX	SNVT_count_inc_f
VAR-hours Negative	AI	33	AI	33	41510	S200_AD_XXX[5]	nvoVARh_Neg_XXX	SNVT_count_inc_f
VAR-hours Net	AI	34	AI	34	41512	S200_AD_XXX[6]	nvoVARh_Net_XXX	SNVT_count_inc_f
VAR-hours Total	AI	35	AI	35	41514	S200_AD_XXX[7]	nvoVARh_Tot_XXX	SNVT_count_inc_f
Amps A Avg	AI	36	AI	36	42000	S200_AR_XXX[27]	nvoAmpA_Avg_XXX	SNVT_count_inc_f
Amps B Avg	AI	37	AI	37	42002	S200_AR_XXX[28]	nvoAmpB_Avg_XXX	SNVT_count_inc_f
Amps C Avg	AI	38	AI	38	42004	S200_AR_XXX[29]	nvoAmpC_Avg_XXX	SNVT_count_inc_f
Positive Watts 3-Ph Avg	AI	39	AI	39	42006	S200_AR_XXX[30]	nvoPsWat3PAv_XXX	SNVT_count_inc_f
Positive VARs 3-Ph Avg	AI	40	AI	40	42008	S200_AR_XXX[31]	nvoPsVAR3PAv_XXX	SNVT_count_inc_f
Negative Watts 3-Ph Avg	AI	41	AI	41	42010	S200_AR_XXX[32]	nvoNgWat3PAv_XXX	SNVT_count_inc_f
Negative VARs 3-Ph Avg	AI	42	AI	42	42012	S200_AR_XXX[33]	nvoNgVAR3PAv_XXX	SNVT_count_inc_f
VAs 3-Ph Avg	AI	43	AI	43	42014	S200_AR_XXX[34]	nvoVA_3PhAvg_XXX	SNVT_count_inc_f
Positive PF 3-Ph Avg	AI	44	AI	44	42016	S200_AR_XXX[35]	nvoPsPF3PhAv_XXX	SNVT_count_inc_f
Negative PF 3-PF Avg	AI	45	AI	45	42018	S200_AR_XXX[36]	nvoNgPF3PhAv_XXX	SNVT_count_inc_f
VA-hours Total	AI	46	AI	46	43048	S200_AD_XXX[8]	nvoVAh_Tot_XXX	SNVT_count_inc_f
Positive Watts 3-Ph Max Avg Demand	AI	51	AI	51	49018	S200_AR_XXX[37]	nvoPWt3PMADm_XXX	SNVT_count_inc_f
Positive VARs 3-Ph Max Avg Demand	AI	52	AI	52	49020	S200_AR_XXX[38]	nvoPVr3PMADm_XXX	SNVT_count_inc_f
Negative Watts 3-Ph Max Avg Demand	AI	53	AI	53	49022	S200_AR_XXX[39]	nvoNWt3PMADm_XXX	SNVT_count_inc_f
Negative VARs 3-Ph Max Avg Demand	AI	54	AI	54	49024	S200_AR_XXX[40]	nvoNVr3PMADm_XXX	SNVT_count_inc_f

B.17. UDC 2500

UDC 2500 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER						LER	
Point Name	BACnet Data Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon SNVT Name	Lon SNVT Name
PV	AI	1	AI	1	40001	UDC2500_AI_XXX[0]	nvoPV_XXX	SNVT_count_f
RV	AI	2	AI	2	40002	UDC2500_AI_XXX[1]	nvoRV_XXX	SNVT_count_f
Input1	AI	3	AI	3	40005	UDC2500_AI_XXX[2]	nvoInput1_XXX	SNVT_count_f
Input2	AI	4	AI	4	40006	UDC2500_AI_XXX[3]	nvoInput2_XXX	SNVT_count_f
Direction	AI	5	AI	5	40008	UDC2500_AI_XXX[4]	nvoDirection_XXX	SNVT_count_f
PVLow	AI	6	AI	6	40012	UDC2500_AI_XXX[5]	nvoPVLow_XXX	SNVT_count_f
PVHigh	AI	7	AI	7	40013	UDC2500_AI_XXX[6]	nvoPVHigh_XXX	SNVT_count_f
Alm1Action	AI	8	AI	8	40016	UDC2500_AI_XXX[7]	nvoAlm1Act_XXX	SNVT_count_f
Alm2Action	AI	9	AI	9	40026	UDC2500_AI_XXX[8]	nvoAlm2Act_XXX	SNVT_count_f
AlarmStat1_16	AI	10	AI	10	47153	UDC2500_AI_XXX[9]	nvoAlmS1_16_XXX	SNVT_count_f
AlarmStat17_32	AI	11	AI	11	47154	UDC2500_AI_XXX[10]	nvoAlmS17_32_XXX	SNVT_count_f
WorkingSP	AV	1	AO	1	40003	UDC2500_AWI_XXX[0]	nvi/nvoWorkingSP_XXX	SNVT_count_f
Output	AV	2	AO	2	40004	UDC2500_AWI_XXX[1]	nvi/nvoOutput_XXX	SNVT_count_f
Gain1	AV	3	AO	3	40007	UDC2500_AWI_XXX[2]	nvi/nvoGain1_XXX	SNVT_count_f
Reset1	AV	4	AO	4	40009	UDC2500_AWI_XXX[3]	nvi/nvoReset1_XXX	SNVT_count_f
Rate1	AV	5	AO	5	40010	UDC2500_AWI_XXX[4]	nvi/nvoRate1_XXX	SNVT_count_f
CycleTime1	AV	6	AO	6	40011	UDC2500_AWI_XXX[5]	nvi/nvoCycTime1_XXX	SNVT_count_f
Alm1SP1	AV	7	AO	7	40014	UDC2500_AWI_XXX[6]	nvi/nvoAlm1SP1_XXX	SNVT_count_f
Alm1SP2	AV	8	AO	8	40015	UDC2500_AWI_XXX[7]	nvi/nvoAlm1SP2_XXX	SNVT_count_f
Gain2	AV	9	AO	9	40017	UDC2500_AWI_XXX[8]	nvi/nvoGain2_XXX	SNVT_count_f
Deadband	AV	10	AO	10	40018	UDC2500_AWI_XXX[9]	nvi/nvoDeadband_XXX	SNVT_count_f
Reset2	AV	11	AO	11	40019	UDC2500_AWI_XXX[10]	nvi/nvoReset2_XXX	SNVT_count_f
Rate2	AV	12	AO	12	40020	UDC2500_AWI_XXX[11]	nvi/nvoRate2_XXX	SNVT_count_f
CycleTime2	AV	13	AO	13	40021	UDC2500_AWI_XXX[12]	nvi/nvoCycTime2_XXX	SNVT_count_f
SP1_LSP1	AV	14	AO	14	40022	UDC2500_AWI_XXX[13]	nvi/nvoSP1_LSP1_XXX	SNVT_count_f
LSP2	AV	15	AO	15	40023	UDC2500_AWI_XXX[14]	nvi/nvoLSP2_XXX	SNVT_count_f
Alm2SP1	AV	16	AO	16	40024	UDC2500_AWI_XXX[15]	nvi/nvoAlm2SP1_XXX	SNVT_count_f
Alm2SP2	AV	17	AO	17	40025	UDC2500_AWI_XXX[16]	nvi/nvoAlm2SP2_XXX	SNVT_count_f
SPLowLimit	AV	18	AO	18	40027	UDC2500_AWI_XXX[17]	nvi/nvoSPLoLim_XXX	SNVT_count_f
SPHighLimit	AV	19	AO	19	40028	UDC2500_AWI_XXX[18]	nvi/nvoSPHiLim_XXX	SNVT_count_f
WorkingSPa	AV	20	AO	20	40029	UDC2500_AWI_XXX[19]	nvi/nvoWrkngSPa_XXX	SNVT_count_f
OutputLowLimit	AV	21	AO	21	40030	UDC2500_AWI_XXX[20]	nvi/nvoOutLoLim_XXX	SNVT_count_f
OutputHighLimit	AV	22	AO	22	40031	UDC2500_AWI_XXX[21]	nvi/nvoOutHiLim_XXX	SNVT_count_f
OutputWorkValue	AV	23	AO	23	40032	UDC2500_AWI_XXX[22]	nvi/nvoOutWrkVal_XXX	SNVT_count_f
PVOverride	AV	24	AO	24	40033	UDC2500_AWI_XXX[23]	nvi/nvoPVOverrde_XXX	SNVT_count_f
SPOverride	AV	25	AO	25	40034	UDC2500_AWI_XXX[24]	nvi/nvoSPOverrde_XXX	SNVT_count_f
OutOverride	AV	26	AO	26	40035	UDC2500_AWI_XXX[25]	nvi/nvoOutOverrd_XXX	SNVT_count_f
Ratio	AV	27	AO	27	40036	UDC2500_AWI_XXX[26]	nvi/nvoRatio_XXX	SNVT_count_f
Bias	AV	28	AO	28	40037	UDC2500_AWI_XXX[27]	nvi/nvoBias_XXX	SNVT_count_f
LocRemSP	AV	29	AO	29	40253	UDC2500_AWI_XXX[28]	nvi/nvoLocRemSP_XXX	SNVT_count_f
AutoMan	AV	30	AO	30	40251	UDC2500_AWI_XXX[29]	nvi/nvoAutoMan_XXX	SNVT_count_f
SPState	AV	31	AO	31	40252	UDC2500_AWI_XXX[30]	nvi/nvoSPState_XXX	SNVT_count_f

B.18. PUMP INTERFACE MODULE

Pump Interface Module Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER						LER	
Point Name	BACnet Data Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon SNVT Name	Lon SNVT Name
Input Word	AI	1	AI	1	30021	LCS_AI_XXX[0]	nvoInputWrd_XXX	SNVT_count_f
Output Word	AI	2	AI	2	30022	LCS_AI_XXX[1]	nvoOutputWrd_XXX	SNVT_count_f
Number of Pumps	AI	3	AI	3	30023	LCS_AI_XXX[2]	nvoNumPmps_XXX	SNVT_count_f
Analog In 1 Scaled Value	AI	4	AI	4	30024-25	LCS_AR_XXX[0]	nvoAI1SclVal_XXX	SNVT_count_f
Analog In 2 Scaled Value	AI	5	AI	5	30026-27	LCS_AR_XXX[1]	nvoAI2SclVal_XXX	SNVT_count_f
PID Output Scaled Value	AI	6	AI	6	30028-29	LCS_AR_XXX[2]	nvoPIDOtScVl_XXX	SNVT_count_f
PID PV Scaled Value	AI	7	AI	7	30030-31	LCS_AR_XXX[3]	nvoPIDPVScVl_XXX	SNVT_count_f
PID SP Scaled Value	AI	8	AI	8	30032-33	LCS_AR_XXX[4]	nvoPIDSPScVl_XXX	SNVT_count_f
Lead Pump Number	AI	9	AI	9	30034	LCS_AI_XXX[3]	nvoLdPmpNum_XXX	SNVT_count_f
Lag1 Pump Number	AI	10	AI	10	30035	LCS_AI_XXX[4]	nvoLag1PmpNm_XXX	SNVT_count_f
Lag2 Pump Number	AI	11	AI	11	30036	LCS_AI_XXX[5]	nvoLag2PmpNm_XXX	SNVT_count_f
Lag3 Pump Number	AI	12	AI	12	30037	LCS_AI_XXX[6]	nvoLag3PmpNm_XXX	SNVT_count_f
Pump 1 Run Input	BI	1	DI	1	10001	LCS_AB_XXX[0].0	nvoP1RunInpt_XXX	SNVT_switch
Pump 2 Run Input	BI	2	DI	2	10002	LCS_AB_XXX[0].1	nvoP2RunInpt_XXX	SNVT_switch
Pump 3 Run Input	BI	3	DI	3	10003	LCS_AB_XXX[0].2	nvoP3RunInpt_XXX	SNVT_switch
Pump 4 Run Input	BI	4	DI	4	10004	LCS_AB_XXX[0].3	nvoP4RunInpt_XXX	SNVT_switch
Pump 1 Auto Input	BI	5	DI	5	10005	LCS_AB_XXX[0].4	nvoP1AutInpt_XXX	SNVT_switch
Pump 2 Auto Input	BI	6	DI	6	10006	LCS_AB_XXX[0].5	nvoP2AutInpt_XXX	SNVT_switch
Pump 3 Auto Input	BI	7	DI	7	10007	LCS_AB_XXX[0].6	nvoP3AutInpt_XXX	SNVT_switch
Pump 4 Auto Input	BI	8	DI	8	10008	LCS_AB_XXX[0].7	nvoP4AutInpt_XXX	SNVT_switch
Pump Run Request	BI	9	DI	9	10009	LCS_AB_XXX[0].8	nvoPmpRunReq_XXX	SNVT_switch
30021_9	BI	10	DI	10	10010	LCS_AB_XXX[0].9	nvo30021_9_XXX	SNVT_switch
30021_10	BI	11	DI	11	10011	LCS_AB_XXX[0].10	nvo30021_10_XXX	SNVT_switch
30021_11	BI	12	DI	12	10012	LCS_AB_XXX[0].11	nvo30021_11_XXX	SNVT_switch
30021_12	BI	13	DI	13	10013	LCS_AB_XXX[0].12	nvo30021_12_XXX	SNVT_switch
30021_13	BI	14	DI	14	10014	LCS_AB_XXX[0].13	nvo30021_13_XXX	SNVT_switch
30021_14	BI	15	DI	15	10015	LCS_AB_XXX[0].14	nvo30021_14_XXX	SNVT_switch
30021_15	BI	16	DI	16	10016	LCS_AB_XXX[0].15	nvo30021_15_XXX	SNVT_switch
Pump 1 Run Output	BI	17	DI	17	10017	LCS_AB_XXX[1].0	nvoP1RunOut_XXX	SNVT_switch
Pump 2 Run Output	BI	18	DI	18	10018	LCS_AB_XXX[1].1	nvoP2RunOut_XXX	SNVT_switch
Pump 3 Run Output	BI	19	DI	19	10019	LCS_AB_XXX[1].2	nvoP3RunOut_XXX	SNVT_switch
Pump 4 Run Output	BI	20	DI	20	10020	LCS_AB_XXX[1].3	nvoP4RunOut_XXX	SNVT_switch
Alarm Output	BI	21	DI	21	10021	LCS_AB_XXX[1].4	nvoAlarmOut_XXX	SNVT_switch
Alarm Blinker	BI	22	DI	22	10022	LCS_AB_XXX[1].5	nvoAlmBlnkr_XXX	SNVT_switch
Pumps Off	BI	23	DI	23	10023	LCS_AB_XXX[1].6	nvoPmpsOff_XXX	SNVT_switch
30022_7	BI	24	DI	24	10024	LCS_AB_XXX[1].7	nvo30022_7_XXX	SNVT_switch
30022_8	BI	25	DI	25	10025	LCS_AB_XXX[1].8	nvo30022_8_XXX	SNVT_switch
30022_9	BI	26	DI	26	10026	LCS_AB_XXX[1].9	nvo30022_9_XXX	SNVT_switch
30022_10	BI	27	DI	27	10027	LCS_AB_XXX[1].10	nvo30022_10_XXX	SNVT_switch
30022_11	BI	28	DI	28	10028	LCS_AB_XXX[1].11	nvo30022_11_XXX	SNVT_switch
30022_12	BI	29	DI	29	10029	LCS_AB_XXX[1].12	nvo30022_12_XXX	SNVT_switch
30022_13	BI	30	DI	30	10030	LCS_AB_XXX[1].13	nvo30022_13_XXX	SNVT_switch
30022_14	BI	31	DI	31	10031	LCS_AB_XXX[1].14	nvo30022_14_XXX	SNVT_switch
OAT Pumps Off	BI	32	DI	32	10032	LCS_AB_XXX[1].15	nviOATPmpOff_XXX	SNVT_switch
Remote Setpoint Write	AV	1	AO	1	40021-22	LCS_AWR_XXX[0]	nviRemSPWr_XXX	SNVT_count_f
Modulation Output Override	AV	2	AO	2	40029-30	LCS_AWR_XXX[1]	nviModOtOvrd_XXX	SNVT_count_f
Heartbeat Write Tag	AV	3	AO	3	40025	LCS_AWI_XXX[1]	nviHrtBtWrt_XXX	SNVT_count_f

B.19. BOILER INTERFACE MODULE

Boiler Interface Module Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER						LER	
Point Name	BACnet Data Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon SNVT Name	Lon SNVT Name
Boiler Status	AI	1	AI	1	30021	BIM_AI_XXX[0]	nvoBlrStatus_XXX	SNVT_count_f
Alarm Word	AI	2	AI	2	30022	BIM_AI_XXX[1]	nvoAlmWord_XXX	SNVT_count_f
Hours Word 1	AI	3	AI	3	30023	BIM_AI_XXX[2]	nvoHrsWord1_XXX	SNVT_count_f
Hours Word 2	AI	4	AI	4	30024	BIM_AI_XXX[3]	nvoHrsWord2_XXX	SNVT_count_f
Cycles Word 1	AI	5	AI	5	30025	BIM_AI_XXX[4]	nvoCycWord1_XXX	SNVT_count_f
Cycles Word 2	AI	6	AI	6	30026	BIM_AI_XXX[5]	nvoCycWord2_XXX	SNVT_count_f
Bits	AI	7	AI	7	30027		nvoBits_XXX	SNVT_count_f
Inlet Temp	AI	8	AI	8	30028	BIM_AI_XXX[6]	nvoInletTmp_XXX	SNVT_count_f
Fire Delay	AI	9	AI	9	30029	BIM_AI_XXX[7]	nvoFireDelay_XXX	SNVT_count_f
Outlet Temp	AI	10	AI	10	30030	BIM_AI_XXX[8]	nvoOutletTmp_XXX	SNVT_count_f
Firing Rate	AI	11	AI	11	30031	BIM_AI_XXX[9]	nvoFirRate_XXX	SNVT_count_f
Digital Inputs	AI	12	AI	12	30032	BIM_AI_XXX[10]	nvoDigInputs_XXX	SNVT_count_f
Digital Outputs	AI	13	AI	13	30033	BIM_AI_XXX[11]	nvoDigOutpts_XXX	SNVT_count_f
LFH Active	BI	1	DI	1	10001	BIM_AB_XXX[0].0	nvoLFHActive_XXX	SNVT_switch
Min Outlet Temp Met	BI	2	DI	2	10002	BIM_AB_XXX[0].1	nvoMnOtTmpMt_XXX	SNVT_switch
Spare	BI	3	DI	3	10003	BIM_AB_XXX[0].2	nvoSpare1_XXX	SNVT_switch
Alarm Output	BI	4	DI	4	10004	BIM_AB_XXX[0].3	nvoAlmOutput_XXX	SNVT_switch
Spare	BI	5	DI	5	10005	BIM_AB_XXX[0].4	nvoSpare2_XXX	SNVT_switch
Boiler Run Output	BI	6	DI	6	10006	BIM_AB_XXX[0].5	nvoBlrRunOut_XXX	SNVT_switch
Pump Run Output	BI	7	DI	7	10007	BIM_AB_XXX[0].6	nvoPmpRunOut_XXX	SNVT_switch
Damper Output	BI	8	DI	8	10008	BIM_AB_XXX[0].7	nvoDmpOutput_XXX	SNVT_switch
Valve Output	BI	9	DI	9	10009	BIM_AB_XXX[0].8	nvoVlvOutput_XXX	SNVT_switch
Alarm Input	BI	10	DI	10	10010	BIM_AB_XXX[0].9	nvoAlmInput_XXX	SNVT_switch
Boiler Ready Input	BI	11	DI	11	10011	BIM_AB_XXX[0].10	nvoBlrRdyInp_XXX	SNVT_switch
Pump Prove Input	BI	12	DI	12	10012	BIM_AB_XXX[0].11	nvoPmpPrvInp_XXX	SNVT_switch
Boiler Prove Input	BI	13	DI	13	10013	BIM_AB_XXX[0].12	nvoBlrPrvInp_XXX	SNVT_switch
Damper Prove Input	BI	14	DI	14	10014	BIM_AB_XXX[0].13	nvoDmpPrvInp_XXX	SNVT_switch
Spare	BI	15	DI	15	10015	BIM_AB_XXX[0].14	nvoSpare3_XXX	SNVT_switch
Spare	BI	16	DI	16	10016	BIM_AB_XXX[0].15	nvoSpare4_XXX	SNVT_switch
DHW1 Setpoint	AV	1	AO	1	40301-02	BIM_AWR_XXX[0]	nviDHW1SP_XXX	SNVT_count_f
DHW2 Setpoint	AV	2	AO	2	40303-04	BIM_AWR_XXX[1]	nviDHW2SP_XXX	SNVT_count_f
AQ304	AV	3	AO	3	40305-06	BIM_AWR_XXX[2]	nviAQ304_XXX	SNVT_count_f
AQ306	AV	4	AO	4	40307-08	BIM_AWR_XXX[3]	nviAQ306_XXX	SNVT_count_f
Remote Setpoint Write	AV	5	AO	5	40309-10	BIM_AWR_XXX[4]	nviRemSPWrt_XXX	SNVT_count_f
DHW1 Enable	AV	6	AO	6	40310	BIM_AWI_XXX[0]	nviDHW1Enbl_XXX	SNVT_count_f
DHW2 Enable	AV	7	AO	7	40311	BIM_AWI_XXX[1]	nviDHW2Enbl_XXX	SNVT_count_f
Remote Enable	AV	8	AO	8	40312	BIM_AWI_XXX[2]	nviRemEnbl_XXX	SNVT_count_f
Heartbeat Write Tag	AV	9	AO	9	40316	BIM_AWI_XXX[3]	nviHrBtWrtTg_XXX	SNVT_count_f
Hours	AI	14	AI	14	30034-35	BIM_AD_XXX[0]	nvoHours_XXX	SNVT_count_f
Cycles	AI	15	AI	15	30036-37	BIM_AD_XXX[1]	nvoCycles_XXX	SNVT_count_f

B.20. FARC CB780/783

FARC CB 780/783 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks

	RER						LER	
Point Name	BACnet Data Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon SNVT Name	Lon SNVT Name
BC_Initiate	BI	1	DI	1	10001	FARC_AB_XXX[0].0	nvoBCInitit_XXX	SNVT_switch
BC_Standby	BI	2	DI	2	10002	FARC_AB_XXX[0].1	nvoBCStndby_XXX	SNVT_switch
BC_Purge	BI	3	DI	3	10003	FARC_AB_XXX[0].2	nvoBCPurge_XXX	SNVT_switch
BC_Pilot_Ignition	BI	4	DI	4	10004	FARC_AB_XXX[0].3	nvoBCPltIgn_XXX	SNVT_switch
BC_Main_Ignition	BI	5	DI	5	10005	FARC_AB_XXX[0].4	nvoBCMnIgn_XXX	SNVT_switch
BC_Run_Mode	BI	6	DI	6	10006	FARC_AB_XXX[0].5	nvoBCRunMde_XXX	SNVT_switch
BC_Postpurge	BI	7	DI	7	10007	FARC_AB_XXX[0].6	nvoBCPstPrg_XXX	SNVT_switch
BC_Preignition	BI	8	DI	8	10008	FARC_AB_XXX[0].7	nvoBCPreIgn_XXX	SNVT_switch
BC_Alarm_Out	BI	9	DI	9	10009	FARC_AB_XXX[0].8	nvoBCAlmOut_XXX	SNVT_switch
BC_Lockout	BI	10	DI	10	10010	FARC_AB_XXX[0].9	nvoBCLckout_XXX	SNVT_switch
EA_Valve_POC	BI	11	DI	11	10011	FARC_AB_XXX[0].10	nvoEAVlvPOC_XXX	SNVT_switch
EA_Burner_Switch	BI	12	DI	12	10012	FARC_AB_XXX[0].11	nvoEABrnSw_XXX	SNVT_switch
EA_Oper_Control	BI	13	DI	13	10013	FARC_AB_XXX[0].12	nvoEAOpCtrl_XXX	SNVT_switch
EA_Aux_Limit_1	BI	14	DI	14	10014	FARC_AB_XXX[0].13	nvoEAAuxLm1_XXX	SNVT_switch
EA_Aux_Limit_2	BI	15	DI	15	10015	FARC_AB_XXX[0].14	nvoEAAuxLm2_XXX	SNVT_switch
EA_LWCO	BI	16	DI	16	10016	FARC_AB_XXX[0].15	nvoEALWCO_XXX	SNVT_switch
EA_High_Limit	BI	17	DI	17	10017	FARC_AB_XXX[1].0	nvoEAHiLim_XXX	SNVT_switch
EA_Aux_Limit_3	BI	18	DI	18	10018	FARC_AB_XXX[1].1	nvoEAAuxLm3_XXX	SNVT_switch
EA_Oil_Select	BI	19	DI	19	10019	FARC_AB_XXX[1].2	nvoEAOilSel_XXX	SNVT_switch
EA_High_Oil_Press	BI	20	DI	20	10020	FARC_AB_XXX[1].3	nvoEAHiOilPr_XXX	SNVT_switch
EA_Low_Oil_Press	BI	21	DI	21	10021	FARC_AB_XXX[1].4	nvoEALoOilPr_XXX	SNVT_switch
EA_High_Oil_Temp	BI	22	DI	22	10022	FARC_AB_XXX[1].5	nvoEAHiOilTp_XXX	SNVT_switch
EA_Low_Oil_Temp	BI	23	DI	23	10023	FARC_AB_XXX[1].6	nvoEALoOilTp_XXX	SNVT_switch
EA_Gas_Select	BI	24	DI	24	10024	FARC_AB_XXX[1].7	nvoEAGasSel_XXX	SNVT_switch
EA_High_Gas_Press	BI	25	DI	25	10025	FARC_AB_XXX[1].8	nvoEAHiGasPr_XXX	SNVT_switch
EA_Low_Gas_Press	BI	26	DI	26	10026	FARC_AB_XXX[1].9	nvoEALoGasPr_XXX	SNVT_switch
EA_Air_Flow_Switch	BI	27	DI	27	10027	FARC_AB_XXX[1].10	nvoEAAirFlSw_XXX	SNVT_switch
EA_Aux_Limit_4	BI	28	DI	28	10028	FARC_AB_XXX[1].11	nvoEAAuxLim4_XXX	SNVT_switch
EA_Aux_Limit_5	BI	29	DI	29	10029	FARC_AB_XXX[1].12	nvoEAAuxLim5_XXX	SNVT_switch
BC_Fault_Code	AI	1	AI	1	40001	FARC_AI_XXX[0]	nvoBCFltCd_XXX	SNVT_count_f
BC_Fault_String_Code	AI	2	AI	2	40002	FARC_AI_XXX[1]	nvoBCFlStrCd_XXX	SNVT_count_f
BC_Sequence_State	AI	3	AI	3	40003	FARC_AI_XXX[2]	nvoBCSeqStat_XXX	SNVT_count_f
BC_State_String_Code_L1	AI	4	AI	4	40004	FARC_AI_XXX[3]	nvoBCStStCL1_XXX	SNVT_count_f
BC_State_String_Code_L2	AI	5	AI	5	40005	FARC_AI_XXX[4]	nvoBCStStCL2_XXX	SNVT_count_f
BC_Sequence_Time	AI	6	AI	6	40006	FARC_AI_XXX[5]	nvoBCSeqTme_XXX	SNVT_count_f
BC_Flame_Signal_Strength	AI	7	AI	7	40011	FARC_AI_XXX[6]	nvoBCFlSgStr_XXX	SNVT_count_f
BC_State_Bits	AI	8	AI	8	40012	FARC_AI_XXX[7]	nvoBCStBits_XXX	SNVT_count_f
BC_Flt_Hist_Code_Rec1	AI	9	AI	9	40017	FARC_AI_XXX[8]	nvoBCFlHCdR1_XXX	SNVT_count_f
BC_Flt_Hist_String_Rec1	AI	10	AI	10	40018	FARC_AI_XXX[9]	nvoBCFHStrR1_XXX	SNVT_count_f
BC_Flt_Hist_State_Rec1	AI	11	AI	11	40019	FARC_AI_XXX[10]	nvoBCFHStr1_XXX	SNVT_count_f
BC_Flt_Hist_Line1_Rec1	AI	12	AI	12	40020	FARC_AI_XXX[11]	nvoBCFlHL1R1_XXX	SNVT_count_f
BC_Flt_Hist_Line2_Rec1	AI	13	AI	13	40021	FARC_AI_XXX[12]	nvoBCFlHL2R1_XXX	SNVT_count_f
BC_Flt_Hist_Time_Rec1	AI	14	AI	14	40022	FARC_AI_XXX[13]	nvoBCFlHTmR1_XXX	SNVT_count_f
BC_Flt_Hist_Code_Rec2	AI	15	AI	15	40027	FARC_AI_XXX[14]	nvoBCFlHCdR2_XXX	SNVT_count_f
BC_Flt_Hist_String_Rec2	AI	16	AI	16	40028	FARC_AI_XXX[15]	nvoBCFHStrR2_XXX	SNVT_count_f
BC_Flt_Hist_State_Rec2	AI	17	AI	17	40029	FARC_AI_XXX[16]	nvoBCFHStr2_XXX	SNVT_count_f
BC_Flt_Hist_Line1_Rec2	AI	18	AI	18	40030	FARC_AI_XXX[17]	nvoBCFlHL1R2_XXX	SNVT_count_f
BC_Flt_Hist_Line2_Rec2	AI	19	AI	19	40031	FARC_AI_XXX[18]	nvoBCFlHL2R2_XXX	SNVT_count_f
BC_Flt_Hist_Time_Rec2	AI	20	AI	20	40032	FARC_AI_XXX[19]	nvoBCFlHTmR2_XXX	SNVT_count_f

FARC CB 780/783 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER						LER	
Point Name	BACnet Data Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon SNVT Name	Lon SNVT Name
BC_Flt_Hist_Code_Rec3	AI	21	AI	21	40037	FARC_AI_XXX[20]	nvoBCFlHCdR3_XXX	SNVT_count_f
BC_Flt_Hist_String_Rec3	AI	22	AI	22	40038	FARC_AI_XXX[21]	nvoBCFHStrR3_XXX	SNVT_count_f
BC_Flt_Hist_State_Rec3	AI	23	AI	23	40039	FARC_AI_XXX[22]	nvoBCFHStr3_XXX	SNVT_count_f
BC_Flt_Hist_Line1_Rec3	AI	24	AI	24	40040	FARC_AI_XXX[23]	nvoBCFlHL1R3_XXX	SNVT_count_f
BC_Flt_Hist_Line2_Rec3	AI	25	AI	25	40041	FARC_AI_XXX[24]	nvoBCFlHL2R3_XXX	SNVT_count_f
BC_Flt_Hist_Time_Rec3	AI	26	AI	26	40042	FARC_AI_XXX[25]	nvoBCFlHTmR3_XXX	SNVT_count_f
BC_Flt_Hist_Code_Rec4	AI	27	AI	27	40047	FARC_AI_XXX[26]	nvoBCFlHCdR4_XXX	SNVT_count_f
BC_Flt_Hist_String_Rec4	AI	28	AI	28	40048	FARC_AI_XXX[27]	nvoBCFHStrR4_XXX	SNVT_count_f
BC_Flt_Hist_State_Rec4	AI	29	AI	29	40049	FARC_AI_XXX[28]	nvoBCFHStr4_XXX	SNVT_count_f
BC_Flt_Hist_Line1_Rec4	AI	30	AI	30	40050	FARC_AI_XXX[29]	nvoBCFlHL1R4_XXX	SNVT_count_f
BC_Flt_Hist_Line1_Rec5	AI	31	AI	31	40051	FARC_AI_XXX[30]	nvoBCFlHL1R5_XXX	SNVT_count_f
BC_Flt_Hist_Line2_Rec4	AI	32	AI	32	40052	FARC_AI_XXX[31]	nvoBCFlHL2R4_XXX	SNVT_count_f
BC_Flt_Hist_Time_Rec4	AI	33	AI	33	40057	FARC_AI_XXX[32]	nvoBCFlHTmR4_XXX	SNVT_count_f
BC_Flt_Hist_Code_Rec5	AI	34	AI	34	40058	FARC_AI_XXX[33]	nvoBCFlHCdR5_XXX	SNVT_count_f
BC_Flt_Hist_String_Rec5	AI	35	AI	35	40059	FARC_AI_XXX[34]	nvoBCFHStrR5_XXX	SNVT_count_f
BC_Flt_Hist_State_Rec5	AI	36	AI	36	40060	FARC_AI_XXX[35]	nvoBCFHStr5_XXX	SNVT_count_f
BC_Flt_Hist_Line2_Rec5	AI	37	AI	37	40061	FARC_AI_XXX[36]	nvoBCFlHL2R5_XXX	SNVT_count_f
BC_Flt_Hist_Time_Rec5	AI	38	AI	38	40062	FARC_AI_XXX[37]	nvoBCFlHTmR5_XXX	SNVT_count_f
BC_Flt_Hist_Code_Rec6	AI	39	AI	39	40067	FARC_AI_XXX[38]	nvoBCFlHCdR6_XXX	SNVT_count_f
BC_Flt_Hist_String_Rec6	AI	40	AI	40	40068	FARC_AI_XXX[39]	nvoBCFHStrR6_XXX	SNVT_count_f
BC_Flt_Hist_State_Rec6	AI	41	AI	41	40069	FARC_AI_XXX[40]	nvoBCFHStr6_XXX	SNVT_count_f
BC_Flt_Hist_Line1_Rec6	AI	42	AI	42	40070	FARC_AI_XXX[41]	nvoBCFlHL1R6_XXX	SNVT_count_f
BC_Flt_Hist_Line2_Rec6	AI	43	AI	43	40071	FARC_AI_XXX[42]	nvoBCFlHL2R6_XXX	SNVT_count_f
BC_Flt_Hist_Time_Rec6	AI	44	AI	44	40072	FARC_AI_XXX[43]	nvoBCFlHTmR6_XXX	SNVT_count_f
BC_Rem_Comd_Stat	AI	45	AI	45	40085	FARC_AI_XXX[44]	nvoBCRmCmdSt_XXX	SNVT_count_f
BC_Vlv_Prov_Mode	AI	46	AI	46	40104	FARC_AI_XXX[45]	nvoBCVlvPrMd_XXX	SNVT_count_f
BC_Vlv_Prov_Time	AI	47	AI	47	40106	FARC_AI_XXX[46]	nvoBCVlvPrTm_XXX	SNVT_count_f
BC_Rem_Command	AI	48	AI	48	40128	FARC_AI_XXX[47]	nvoBCRemCmd_XXX	SNVT_count_f
EA_First_Out_Code	AI	49	AI	49	40014	FARC_AI_XXX[48]	nvoEA1stOtCd_XXX	SNVT_count_f
BC_Total_Cycles	AI	50	AI	50	40007	FARC_AD_XXX[0]	nvoBCTotCyc_XXX	SNVT_count_f
BC_Total_Hours	AI	51	AI	51	40009	FARC_AD_XXX[1]	nvoBCTotHrs_XXX	SNVT_time_hour
BC_Flt_Hist_Cyc_Rec1	AI	52	AI	52	40023	FARC_AD_XXX[2]	nvoBCFlHCyR1_XXX	SNVT_count_f
BC_Flt_Hist_Hrs_Rec1	AI	53	AI	53	40025	FARC_AD_XXX[3]	nvoBCFlHHrR1_XXX	SNVT_count_f
BC_Flt_Hist_Cyc_Rec2	AI	54	AI	54	40033	FARC_AD_XXX[4]	nvoBCFlHCyR2_XXX	SNVT_count_f
BC_Flt_Hist_Hrs_Rec2	AI	55	AI	55	40035	FARC_AD_XXX[5]	nvoBCFlHHrR2_XXX	SNVT_count_f
BC_Flt_Hist_Cyc_Rec3	AI	56	AI	56	40043	FARC_AD_XXX[6]	nvoBCFlHCyR3_XXX	SNVT_count_f
BC_Flt_Hist_Hrs_Rec3	AI	57	AI	57	40045	FARC_AD_XXX[7]	nvoBCFlHHrR3_XXX	SNVT_count_f
BC_Flt_Hist_Cyc_Rec4	AI	58	AI	58	40053	FARC_AD_XXX[8]	nvoBCFlHCyR4_XXX	SNVT_count_f
BC_Flt_Hist_Hrs_Rec4	AI	59	AI	59	40055	FARC_AD_XXX[9]	nvoBCFlHHrR4_XXX	SNVT_count_f
BC_Flt_Hist_Cyc_Rec5	AI	60	AI	60	40063	FARC_AD_XXX[10]	nvoBCFlHCyR5_XXX	SNVT_count_f
BC_Flt_Hist_Hrs_Rec5	AI	61	AI	61	40065	FARC_AD_XXX[11]	nvoBCFlHHrR5_XXX	SNVT_count_f
BC_Flt_Hist_Cyc_Rec6	AI	62	AI	62	40073	FARC_AD_XXX[12]	nvoBCFlHCyR6_XXX	SNVT_count_f
BC_Flt_Hist_Hrs_Rec6	AI	63	AI	63	40075	FARC_AD_XXX[13]	nvoBCFlHHrR6_XXX	SNVT_count_f
EA_State_Bits	AI	64	AI	64	40015	FARC_AD_XXX[14]	nvoEAStBits_XXX	SNVT_count_f
Program Mode	AI	65	AI	65	40130	FARC_AI_XXX[49]	nvoProgMode_XXX	SNVT_count_f
Fault Code	AI	66	AI	66	40131	FARC_AI_XXX[50]	nvoFltCd_XXX	SNVT_count_f
Operational Status	AI	67	AI	67	40132	FARC_AI_XXX[51]	nvoOpStatus_XXX	SNVT_count_f
Air Position	AI	68	AI	68	40133	FARC_AI_XXX[52]	nvoAirPos_XXX	SNVT_count_f
Active Fuel Position	AI	69	AI	69	40134	FARC_AI_XXX[53]	nvoActFuelPs_XXX	SNVT_count_f
FGR Position	AI	70	AI	70	40135	FARC_AI_XXX[54]	nvoFGRPos_XXX	SNVT_count_f

FARC CB 780/783 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER						LER	
Point Name	BACnet Data Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon SNVT Name	Lon SNVT Name
Fuel ID	AI	71	AI	71	40136	FARC_AI_XXX[55]	nvoFuelID_XXX	SNVT_count_f
Diagnostic Bits	AI	72	AI	72	40139	FARC_AI_XXX[56]	nvoDiagBits_XXX	SNVT_count_f
Firing Rate Input	AI	73	AI	73	40140	FARC_AI_XXX[57]	nvoFirRatInp_XXX	SNVT_count_f
Manual Pot Input	AI	74	AI	74	40141	FARC_AI_XXX[58]	nvoManPotInp_XXX	SNVT_count_f
Aux Input	AI	75	AI	75	40142	FARC_AI_XXX[59]	nvoAuxInput_XXX	SNVT_count_f
Hold	AI	76	AI	76	40144	FARC_AI_XXX[60]	nvoHold_XXX	SNVT_count_f
Fuel 1 Closed Endpoint	AI	77	AI	77	40353	FARC_AI_XXX[61]	nvoFl1ClsPt_XXX	SNVT_count_f
Fuel 1 Open Endpoint	AI	78	AI	78	40354	FARC_AI_XXX[62]	nvoFl1OpnPt_XXX	SNVT_count_f
Fuel 2 Closed Endpoint	AI	79	AI	79	40355	FARC_AI_XXX[63]	nvoFl2ClsPt_XXX	SNVT_count_f
Fuel 2 Open Endpoint	AI	80	AI	80	40356	FARC_AI_XXX[64]	nvoFl2OpnPt_XXX	SNVT_count_f
Inactive Motor Position	AI	81	AI	81	40357	FARC_AI_XXX[65]	nvoInacMtrPs_XXX	SNVT_count_f
Registers 40353-40357 Current	AI	82	AI	82	40358	FARC_AI_XXX[66]	nvoR40353_57_XXX	SNVT_count_f
Air Closed Endpoint	AI	83	AI	83	40359	FARC_AI_XXX[67]	nvoAirClsPt_XXX	SNVT_count_f
Air Open Endpoint	AI	84	AI	84	40360	FARC_AI_XXX[68]	nvoAirOpnPt_XXX	SNVT_count_f
FGR Closed Endpoint	AI	85	AI	85	40361	FARC_AI_XXX[69]	nvoFGRClsPt_XXX	SNVT_count_f
FGR Open Endpoint	AI	86	AI	86	40362	FARC_AI_XXX[70]	nvoFGROpnPt_XXX	SNVT_count_f
Registers 40359-40363 Current	AI	87	AI	87	40364	FARC_AI_XXX[71]	nvoR40359_63_XXX	SNVT_count_f
R7999 Fault Info Word 0	AI	88	AI	88	40365	FARC_AI_XXX[72]	nvoR7999Wd0_XXX	SNVT_count_f
R7999 Fault Info Word 1	AI	89	AI	89	40366	FARC_AI_XXX[73]	nvoR7999Wd1_XXX	SNVT_count_f
R7999 Fault Info Word 2	AI	90	AI	90	40367	FARC_AI_XXX[74]	nvoR7999Wd2_XXX	SNVT_count_f
R7999 Fault Info Word 3	AI	91	AI	91	40368	FARC_AI_XXX[75]	nvoR7999Wd3_XXX	SNVT_count_f
R7999 Fault Info Word 4	AI	92	AI	92	40369	FARC_AI_XXX[76]	nvoR7999Wd4_XXX	SNVT_count_f
R7999 Fault Info Word 5	AI	93	AI	93	40370	FARC_AI_XXX[77]	nvoR7999Wd5_XXX	SNVT_count_f
R7999 Fault Info Word 6	AI	94	AI	94	40371	FARC_AI_XXX[78]	nvoR7999Wd6_XXX	SNVT_count_f
R7999 Fault Info Word 7	AI	95	AI	95	40372	FARC_AI_XXX[79]	nvoR7999Wd7_XXX	SNVT_count_f
R7999 Fault Info Word 8	AI	96	AI	96	40373	FARC_AI_XXX[80]	nvoR7999Wd8_XXX	SNVT_count_f
R7999 Fault Info Word 9	AI	97	AI	97	40374	FARC_AI_XXX[81]	nvoR7999Wd9_XXX	SNVT_count_f
R7999 Fault Info Word 10	AI	98	AI	98	40375	FARC_AI_XXX[82]	nvoR7999Wd10_XXX	SNVT_count_f
R7999 Fault Info Word 11	AI	99	AI	99	40376	FARC_AI_XXX[83]	nvoR7999Wd11_XXX	SNVT_count_f
R7999 Fault Info Word 12	AI	100	AI	100	40377	FARC_AI_XXX[84]	nvoR7999Wd12_XXX	SNVT_count_f
R7999 Fault Info Word 13	AI	101	AI	101	40378	FARC_AI_XXX[85]	nvoR7999Wd13_XXX	SNVT_count_f
R7999 Fault Info Word 14	AI	102	AI	102	40379	FARC_AI_XXX[86]	nvoR7999Wd14_XXX	SNVT_count_f
R7999 Fault Info Word 15	AI	103	AI	103	40380	FARC_AI_XXX[87]	nvoR7999Wd15_XXX	SNVT_count_f
R7999 Fault Info Word 16	AI	104	AI	104	40381	FARC_AI_XXX[88]	nvoR7999Wd16_XXX	SNVT_count_f
R7999 Fault Info Word 17	AI	105	AI	105	40382	FARC_AI_XXX[89]	nvoR7999Wd17_XXX	SNVT_count_f
R7999 Fault Info Word 18	AI	106	AI	106	40383	FARC_AI_XXX[90]	nvoR7999Wd18_XXX	SNVT_count_f
R7999 Fault Info Word 19	AI	107	AI	107	40384	FARC_AI_XXX[91]	nvoR7999Wd19_XXX	SNVT_count_f
R7999 Fault Info Word 20	AI	108	AI	108	40385	FARC_AI_XXX[92]	nvoR7999Wd20_XXX	SNVT_count_f
R7999 Fault Info Word 21	AI	109	AI	109	40386	FARC_AI_XXX[93]	nvoR7999Wd21_XXX	SNVT_count_f
R7999 Fault Info Word 22	AI	110	AI	110	40387	FARC_AI_XXX[94]	nvoR7999Wd22_XXX	SNVT_count_f
R7999 Fault Info Word 23	AI	111	AI	111	40388	FARC_AI_XXX[95]	nvoR7999Wd23_XXX	SNVT_count_f
R7999 Fault Info Word 24	AI	112	AI	112	40389	FARC_AI_XXX[96]	nvoR7999Wd24_XXX	SNVT_count_f
R7999 Fault Info Word 25	AI	113	AI	113	40390	FARC_AI_XXX[97]	nvoR7999Wd25_XXX	SNVT_count_f
R7999 Fault Info Word 26	AI	114	AI	114	40391	FARC_AI_XXX[98]	nvoR7999Wd26_XXX	SNVT_count_f
R7999 Fault Info Word 27	AI	115	AI	115	40392	FARC_AI_XXX[99]	nvoR7999Wd27_XXX	SNVT_count_f
R7999 Fault Info Word 28	AI	116	AI	116	40393	FARC_AI_XXX[100]	nvoR7999Wd28_XXX	SNVT_count_f
R7999 Fault Info Word 29	AI	117	AI	117	40394	FARC_AI_XXX[101]	nvoR7999Wd29_XXX	SNVT_count_f
R7999 Fault Info Word 30	AI	118	AI	118	40395	FARC_AI_XXX[102]	nvoR7999Wd30_XXX	SNVT_count_f
R7999 Fault Info Word 31	AI	119	AI	119	40396	FARC_AI_XXX[103]	nvoR7999Wd31_XXX	SNVT_count_f
R7999 Fault Info Word 32	AI	120	AI	120	40397	FARC_AI_XXX[104]	nvoR7999Wd32_XXX	SNVT_count_f

FARC CB 780/783 Mappings to BACnet MS/TP, BACnet/IP, Metasys N2, Modbus and LonWorks (Continued)

	RER						LER	
Point Name	BACnet Data Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	EIP Tag Name	Lon SNVT Name	Lon SNVT Name
R7999 Fault Info Word 33	AI	121	AI	121	40398	FARC_AI_XXX[105]	nvoR7999Wd33_XXX	SNVT_count_f
R7999 Fault Info Word 34	AI	122	AI	122	40399	FARC_AI_XXX[106]	nvoR7999Wd34_XXX	SNVT_count_f
R7999 Fault Info Word 35	AI	123	AI	123	40400	FARC_AI_XXX[107]	nvoR7999Wd35_XXX	SNVT_count_f
Air Total Resistance	AI	124	AI	124	40401	FARC_AI_XXX[108]	nvoAirTotRes_XXX	SNVT_count_f
Fuel 1 Total Resistance	AI	125	AI	125	40402	FARC_AI_XXX[109]	nvoFl1TotRes_XXX	SNVT_count_f
Fuel 2 Total Resistance	AI	126	AI	126	40403	FARC_AI_XXX[110]	nvoFl2TotRes_XXX	SNVT_count_f
FGR Total Resistance	AI	127	AI	127	40404	FARC_AI_XXX[111]	nvoFGRTotRes_XXX	SNVT_count_f
Air Resistance Change	AI	128	AI	128	40405	FARC_AI_XXX[112]	nvoAirResChg_XXX	SNVT_count_f
Registers 40401-40405 Current	AI	129	AI	129	40406	FARC_AI_XXX[113]	nvoR40401_05_XXX	SNVT_count_f
Fuel 1 Resistance Change	AI	130	AI	130	40407	FARC_AI_XXX[114]	nvoFl1ResChg_XXX	SNVT_count_f
Fuel 2 Resistance Change	AI	131	AI	131	40408	FARC_AI_XXX[115]	nvoFl2ResChg_XXX	SNVT_count_f
FGR Resistance Change	AI	132	AI	132	40409	FARC_AI_XXX[116]	nvoFGRResChg_XXX	SNVT_count_f
Registers 40407-40411 Current	AI	133	AI	133	40412	FARC_AI_XXX[117]	nvoR40407_11_XXX	SNVT_count_f
Air Purge Preset Position	AI	134	AI	134	40413	FARC_AI_XXX[118]	nvoArPrPrePs_XXX	SNVT_count_f
Fuel Purge Preset Position	AI	135	AI	135	40414	FARC_AI_XXX[119]	nvoFlPrPrePs_XXX	SNVT_count_f
FGR Purge Preset Position	AI	136	AI	136	40415	FARC_AI_XXX[120]	nvoFGRPrPrPs_XXX	SNVT_count_f
Air Lightoff Preset Position	AI	137	AI	137	40416	FARC_AI_XXX[121]	nvoArLtPrePs_XXX	SNVT_count_f
Fuel Lightoff Preset Position	AI	138	AI	138	40417	FARC_AI_XXX[122]	nvoFlLtPrePs_XXX	SNVT_count_f
Registers 40413-40417 Current	AI	139	AI	139	40418	FARC_AI_XXX[123]	nvoR40413_17_XXX	SNVT_count_f
Lightoff Preset FGR	AI	140	AI	140	40419	FARC_AI_XXX[124]	nvoLtOPreFGR_XXX	SNVT_count_f
Air Standby Position	AI	141	AI	141	40420	FARC_AI_XXX[125]	nvoArStndPos_XXX	SNVT_count_f
Fuel Standby Position	AI	142	AI	142	40421	FARC_AI_XXX[126]	nvoFlStndPos_XXX	SNVT_count_f
FGR Standby Position	AI	143	AI	143	40422	FARC_AI_XXX[127]	nvoFGRStdPos_XXX	SNVT_count_f
Non-Sel. Fuel Standby Pos.	AI	144	AI	144	40423	FARC_AI_XXX[128]	nvoNSlFlStPs_XXX	SNVT_count_f
Registers 40419-40423 Current	AI	145	AI	145	40424	FARC_AI_XXX[129]	nvoR40419_23_XXX	SNVT_count_f
Cycles	AI	146	AI	146	40137	FARC_AD_XXX[15]	nvoCycles_XXX	SNVT_count_f
LCO Cycle Count	AI	147	AI	147	40410	FARC_AD_XXX[16]	nvoLCOCycCnt_XXX	SNVT_count_f
Running Time Hours	AI	148	AI	148	40437	FARC_AD_XXX[17]	nvoRunTmHrs_XXX	SNVT_time_hour
Running Time Minutes	AI	149	AI	149	40438	FARC_AD_XXX[18]	nvoRunTmMin_XXX	SNVT_time_min

B.21. HAWK 4000 V2

HAWK_4000_V2 Modbus RTU Mappings to BACnet, Metasys N2 and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Drive Fault	BI	1	DI	1	10001	nvoDrvFlt_XXX	SNVT_switch
Modbus Comm Error	BI	2	DI	2	10002	nvoModCmEr_XXX	SNVT_switch
Lo Water	BI	3	DI	3	10003	nvoLoater_XXX	SNVT_switch
Burner Control Alm	BI	4	DI	4	10004	nvoBrnCtrAlm_XXX	SNVT_switch
Boiler Limits Open	BI	5	DI	5	10005	nvoBlrLimOpn_XXX	SNVT_switch
Hi Stack Temp Alm	BI	6	DI	6	10006	nvoHiStkTpAl_XXX	SNVT_switch
Hi Stack Temp Shutdown	BI	7	DI	7	10007	nvoHiStTpShd_XXX	SNVT_switch
External Interlock	BI	8	DI	8	10008	nvoExtIntrlk_XXX	SNVT_switch
I/O module fault	BI	9	DI	9	10009	nvoIOModFlt_XXX	SNVT_switch
Steam Sensor Fail	BI	10	DI	10	10010	nvoStmSenFl_XXX	SNVT_switch
Air Actuator Out Of Pos Alm	BI	11	DI	11	10011	nvoArAcPosAl_XXX	SNVT_switch
NG Actuator Out Of Pos Alm	BI	12	DI	12	10012	nvoNGAcPosAl_XXX	SNVT_switch
F/A Ratio Controller Fault	BI	13	DI	13	10013	nvoFARatCtFl_XXX	SNVT_switch
No Fuel Selected	BI	14	DI	14	10014	nvoNoFlSel_XXX	SNVT_switch
Low ControlLogix Battery	BI	15	DI	15	10015	nvoLoPLCBat_XXX	SNVT_switch
Non Recycle Limit Relay Fail	BI	16	DI	16	10016	nvoNoRcLmRlF_XXX	SNVT_switch
Recyle Limit Relay Fail	BI	17	DI	17	10017	nvoRecLmRlFl_XXX	SNVT_switch
Rem Modulation Signal Fail	BI	18	DI	18	10018	nvoRemMdSgFl_XXX	SNVT_switch
Header Pressure Sensor Fail	BI	19	DI	19	10019	nvoHdPrSnFl_XXX	SNVT_switch
Temp Channel 0-5 Fail	BI	20	DI	20	10020	nvoTpCh0_5Fl_XXX	SNVT_switch
Lo O2 Alm	BI	21	DI	21	10021	nvoLoO2Alm_XXX	SNVT_switch
Hi Limit Alm	BI	22	DI	22	10022	nvoHiLimAlm_XXX	SNVT_switch
ALWCO	BI	23	DI	23	10023	nvoALWCO_XXX	SNVT_switch
Lo Gas Pressure/Lo Oil Temp	BI	24	DI	24	10024	nvoLoGsPrOTp_XXX	SNVT_switch
Hi Gas Pressure/Hi Oil Temp	BI	25	DI	25	10025	nvoHiGsPrOTp_XXX	SNVT_switch
Lo Oil Pressure	BI	26	DI	26	10026	nvoLoOilPrs_XXX	SNVT_switch
Hi Oil Pressure	BI	27	DI	27	10027	nvoHiOilPrs_XXX	SNVT_switch
Oil Drawer Switch Not Made	BI	28	DI	28	10028	nvoOilDrwrSw_XXX	SNVT_switch
Lo Atomizing Air Pressure	BI	29	DI	29	10029	nvoLoAtmArPr_XXX	SNVT_switch
Lo Combustion Air Pressure	BI	30	DI	30	10030	nvoLoComArPr_XXX	SNVT_switch
Stack Damper High Pressure	BI	31	DI	31	10031	nvoStDmHiPrs_XXX	SNVT_switch
AUX Alm 2	BI	32	DI	32	10032	nvoAUXAlm2_XXX	SNVT_switch
Blower On	BI	33	DI	33	10033	nvoBlwOn_XXX	SNVT_switch
Purge Input	BI	34	DI	34	10034	nvoPrgIn_XXX	SNVT_switch
Release To Modulate Input	BI	35	DI	35	10035	nvoRel2ModIn_XXX	SNVT_switch
Lo Fire Switch	BI	36	DI	36	10036	nvoLoFirSw_XXX	SNVT_switch
Hi Fire Switch	BI	37	DI	37	10037	nvoHiFirSw_XXX	SNVT_switch
Ready to start/Limits Closed	BI	38	DI	38	10038	nvoRdy2Str_XXX	SNVT_switch
External Start Interlock	BI	39	DI	39	10039	nvoExtStInlk_XXX	SNVT_switch
ALFCO	BI	40	DI	40	10040	nvoALFCO_XXX	SNVT_switch
Pilot	BI	41	DI	41	10041	nvoPilot_XXX	SNVT_switch
Main Fuel Valve Open	BI	42	DI	42	10042	nvoMnFlVlvOp_XXX	SNVT_switch
Fuel 1 Selected	BI	43	DI	43	10043	nvoFl1Sel_XXX	SNVT_switch
Fuel 2 Selected	BI	44	DI	44	10044	nvoFl2Sel_XXX	SNVT_switch
Heart Beat To BMS	BI	45	DI	45	10045	nvoHrtBtBMS_XXX	SNVT_switch
LWCO Shutdown	BI	46	DI	46	10046	nvoLWCOShdn_XXX	SNVT_switch
Rem Enable Input	BI	47	DI	47	10047	nvoRmEnblInp_XXX	SNVT_switch
Burner Switch	BI	48	DI	48	10048	nvoBrnSw_XXX	SNVT_switch
Recycle Limit Relay	BI	49	DI	49	10049	nvoRecLimRel_XXX	SNVT_switch
External Device Start	BI	50	DI	50	10050	nvoExtDevSt_XXX	SNVT_switch

HAWK_4000_V2 Modbus RTU Mappings to BACnet, Metasys N2 and LonWorks (Continued)

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Non Recycle Limit Relay	BI	51	DI	51	10051	nvoNoRecLmRl_XXX	SNVT_switch
Drive to Lo Fire (FARC)	BI	52	DI	52	10052	nvoDrv2LoFir_XXX	SNVT_switch
Start Slave Blr (2 Blr LL)	BI	53	DI	53	10053	nvoStrtSlvBl_XXX	SNVT_switch
Load Demand Output	BI	54	DI	54	10054	nvoLdDemOut_XXX	SNVT_switch
Alm Output	BI	55	DI	55	10055	nvoAlmOut_XXX	SNVT_switch
Boiler Ready (LL)	BI	56	DI	56	10056	nvoBlrRdyLL_XXX	SNVT_switch
Boiler Load Demand	BI	57	DI	57	10057	nvoBlrLdDem_XXX	SNVT_switch
Firing Rate Rem/Llag	BI	58	DI	58	10058	nvoFrRatRmLL_XXX	SNVT_switch
Firing Rate Manual	BI	59	DI	59	10059	nvoFirRatMan_XXX	SNVT_switch
Firing Rate Auto	BI	60	DI	60	10060	nvoFrRatAuto_XXX	SNVT_switch
Hot Stand By	BI	61	DI	61	10061	nvoHotStndBy_XXX	SNVT_switch
Warm Up	BI	62	DI	62	10062	nvoWarmUp_XXX	SNVT_switch
Fuel 3 Selected	BI	63	DI	63	10063	nvoFl3Sel_XXX	SNVT_switch
Aux Alm 3	BI	64	DI	64	10064	nvoAuxAlm3_XXX	SNVT_switch
Steam or Hot Water 1 = Steam	BI	65	DI	65	10065	nvoStm_HWtr_XXX	SNVT_switch
Level Master Present	BI	66	DI	66	10066	nvoLvlMstPrs_XXX	SNVT_switch
Variable Speed Drive Present	BI	67	DI	67	10067	nvoVarSpDrPr_XXX	SNVT_switch
Economizer Present	BI	68	DI	68	10068	nvoEcPrs_XXX	SNVT_switch
Combustion Air Temp Present	BI	69	DI	69	10069	nvoCmArTpPrs_XXX	SNVT_switch
Economizer Inlet FW Sensor Present	BI	70	DI	70	10070	nvoEInFwSnPr_XXX	SNVT_switch
O2 Analyzer Present	BI	71	DI	71	10071	nvoO2AnlzrPr_XXX	SNVT_switch
Feedwater or Return Temp Present	BI	72	DI	72	10072	nvoFdWRtTpPr_XXX	SNVT_switch
Outdoor Reset Selected	BI	73	DI	73	10073	nvoOutResSel_XXX	SNVT_switch
Parallel Posing Selected	BI	74	DI	74	10074	nvoParPosSel_XXX	SNVT_switch
Two Boiler Lead Lag Master Select	BI	75	DI	75	10075	nvo2BLLMstSl_XXX	SNVT_switch
Two Boiler Lead Lag Slave Select	BI	76	DI	76	10076	nvo2BLLSlvSl_XXX	SNVT_switch
Master Panel Select	BI	77	DI	77	10077	nvoMstPnlSel_XXX	SNVT_switch
Hot Stand By Select	BI	78	DI	78	10078	nvoHotStbySl_XXX	SNVT_switch
Dual Setpoint Select	BI	79	DI	79	10079	nvoDualSPSel_XXX	SNVT_switch
Slot 8 Ch 0 AI Selected	BI	80	DI	80	10080	nvoSlCh0AISl_XXX	SNVT_switch
Slot 8 Ch 1 AI Selected	BI	81	DI	81	10081	nvoSlCh1AISl_XXX	SNVT_switch
Slot 8 Ch 2 AI Selected	BI	82	DI	82	10082	nvoSlCh2AISl_XXX	SNVT_switch
Slot 8 Ch 3 AI Selected	BI	83	DI	83	10083	nvoSlCh3AISl_XXX	SNVT_switch
Honeywell or Fireye 1 = Fireye	BI	84	DI	84	10084	nvoHnywFreye_XXX	SNVT_switch
Hi Water Alm	BI	85	DI	85	10085	nvoHiWtrAlm_XXX	SNVT_switch
Oil Actuator Out Of Pos Alm	BI	86	DI	86	10086	nvoOlAcPsAlm_XXX	SNVT_switch
FGR Actuator Out Of Pos Alm	BI	87	DI	87	10087	nvoFGRAcPsAl_XXX	SNVT_switch
Air Actuator Feedback Fail Lo Alm	BI	88	DI	88	10088	nvoAAcFdLoAl_XXX	SNVT_switch
Air Actuator Feedback Fail Hi Alm	BI	89	DI	89	10089	nvoAAcFdHiAl_XXX	SNVT_switch
NG Actuator Feedback Fail Lo Alm	BI	90	DI	90	10090	nvoNGAFdLoAl_XXX	SNVT_switch
NG Actuator Feedback Fail Hi Alm	BI	91	DI	91	10091	nvoNGAFdHiAl_XXX	SNVT_switch
Oil Actuator Feedback Fail Lo Alm	BI	92	DI	92	10092	nvoOilFdLoAl_XXX	SNVT_switch
Oil Actuator Feedback Fail Hi Alm	BI	93	DI	93	10093	nvoOilFdHiAl_XXX	SNVT_switch
FGR Actuator Feedback Fail Lo Alm	BI	94	DI	94	10094	nvoFGRFdLoAl_XXX	SNVT_switch
FGR Actuator Feedback Fail Hi Alm	BI	95	DI	95	10095	nvoFGRFdHiAl_XXX	SNVT_switch
VSD Deviation Alm	BI	96	DI	96	10096	nvoVSDDevAlm_XXX	SNVT_switch
Increase MSG Reg Size Bit (CB Only)	BI	97	DI	97	10097	nvoIncRegSiz_XXX	SNVT_switch
Air/Fuel Deviation Alm	BI	98	DI	98	10098	nvoArFlDevAl_XXX	SNVT_switch
2nd Stage CEC Economizer Selected	BI	99	DI	99	10099	nvo2StCECEcS_XXX	SNVT_switch
Fuel3 Actuator Out Of Pos Alm	BI	100	DI	100	10100	nvoFl3AcPsAl_XXX	SNVT_switch
Fuel3 Actuator Feedback Fail Lo Alm	BI	101	DI	101	10101	nvoFl3AFdLoA_XXX	SNVT_switch
Fuel3 Actuator Feedback Fail Hi Alm	BI	102	DI	102	10102	nvoFl3AFdHiA_XXX	SNVT_switch

HAWK_4000_V2 Modbus RTU Mappings to BACnet, Metasys N2 and LonWorks (Continued)

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Stack Pressure Input Fail	BI	103	DI	103	10103	nvoStkPrInFl_XXX	SNVT_switch
Hi Stack Pressure Alm	BI	104	DI	104	10104	nvoHiStkPrAl_XXX	SNVT_switch
Stack Damper Not Open Alm	BI	105	DI	105	10105	nvoStDpNtOAl_XXX	SNVT_switch
O2 Calibration Failed	BI	106	DI	106	10106	nvoO2ClRtFld_XXX	SNVT_switch
Lo Steam Pressure/Water Temp Alm	BI	107	DI	107	10107	nvoLoStPWTAl_XXX	SNVT_switch
Processor Test Fail Alm	BI	108	DI	108	10108	nvoPrTstFlAl_XXX	SNVT_switch
O2 Trim Internal Alm	BI	109	DI	109	10109	nvoO2TrmInAl_XXX	SNVT_switch
Firetube or Flextube 1 = Flextube	BI	110	DI	110	10110	nvoFir_FlxTb_XXX	SNVT_switch
Reserved for Cleaver Brooks	BI	111	DI	111	10111	nvoAB_6_14_XXX	SNVT_switch
VSD Limits Internal Alm	BI	112	DI	112	10112	nvoVSDLmInAl_XXX	SNVT_switch
Gas Actuator 2 Out Of Pos Alm	BI	113	DI	113	10113	nvoGsAc2PsAl_XXX	SNVT_switch
Gas Actuator 2 Feedback Fail Lo Alm	BI	114	DI	114	10114	nvoGsAc2LoAl_XXX	SNVT_switch
Gas Actuator 2 Feedback Fail Hi Alm	BI	115	DI	115	10115	nvoGsAc2HiAl_XXX	SNVT_switch
Actuator Modbus Communication Error	BI	116	DI	116	10116	nvoAcModCmEr_XXX	SNVT_switch
Air Actuator Modbus Comm Error Node 1	BI	117	DI	117	10117	nvoAAcMdCEr1_XXX	SNVT_switch
Gas Actuator Modbus Comm Error Node 2	BI	118	DI	118	10118	nvoGsAMdCEr2_XXX	SNVT_switch
Gas Act 2 Modbus Comm Error Node 3	BI	119	DI	119	10119	nvoGsA2MdCE3_XXX	SNVT_switch
Oil Actuator Modbus Comm Error Node 5	BI	120	DI	120	10120	nvoOAcMdCEr5_XXX	SNVT_switch
FGR Actuator Modbus Comm Error Node 7	BI	121	DI	121	10121	nvoFGRAMdCE7_XXX	SNVT_switch
Reserved	BI	122	DI	122	10122	nvoAB_7_9_XXX	SNVT_switch
Reserved	BI	123	DI	123	10123	nvoAB_7_10_XXX	SNVT_switch
2nd Stage Outlet Wtr Temp Sensor Fail	BI	124	DI	124	10124	nvo2SOtWTSnF_XXX	SNVT_switch
Water Temp Second Stage Out Hi	BI	125	DI	125	10125	nvoWtTp2SOtH_XXX	SNVT_switch
Air Actuator Man Override Btn Press	BI	126	DI	126	10126	nvoAAcMnOBPr_XXX	SNVT_switch
Gas Actuator 1 Man Override Btn Press	BI	127	DI	127	10127	nvoGAc1MOBPr_XXX	SNVT_switch
Gas Actuator 2 Man Override Btn Press	BI	128	DI	128	10128	nvoGAc2MOBPr_XXX	SNVT_switch
Oil Actuator Man Override Btn Press	BI	129	DI	129	10129	nvoOAcMnOBPr_XXX	SNVT_switch
FGR Actuator Man Override Btn Press	BI	130	DI	130	10130	nvoFGRAMnOBP_XXX	SNVT_switch
Fuel 3 Act 1 Man Override Btn Press	BI	131	DI	131	10131	nvoFl3A1MOBP_XXX	SNVT_switch
Fuel 3 Act 2 Man Override Btn Press	BI	132	DI	132	10132	nvoFl3A2MOBP_XXX	SNVT_switch
Communication from BMS Failed	BI	133	DI	133	10133	nvoComBMSFld_XXX	SNVT_switch
CAP High	BI	134	DI	134	10134	nvoCAPHi_XXX	SNVT_switch
Water Flow Low	BI	135	DI	135	10135	nvoWtrFlLo_XXX	SNVT_switch
Water Level Signal Failed	BI	136	DI	136	10136	nvoWtrLvSgFl_XXX	SNVT_switch
Remote Setpoint Signal Failed	BI	137	DI	137	10137	nvoRmSPSigFl_XXX	SNVT_switch
Low O2 Shutdown	BI	138	DI	138	10138	nvoLoO2Shdn_XXX	SNVT_switch
Air Actuator Fault	BI	139	DI	139	10139	nvoAirActFlt_XXX	SNVT_switch
Fuel 1 Actuator 1 Fault	BI	140	DI	140	10140	nvoF1Act1Flt_XXX	SNVT_switch
Fuel 1 Actuator 2 Fault	BI	141	DI	141	10141	nvoF1Act2Flt_XXX	SNVT_switch
Fuel 2 Actuator 1 Fault	BI	142	DI	142	10142	nvoF2Act1Flt_XXX	SNVT_switch
Fuel 2 Actuator 2 Fault	BI	143	DI	143	10143	nvoF2Act2Flt_XXX	SNVT_switch
FGR Actuator Fault	BI	144	DI	144	10144	nvoFGRActFlt_XXX	SNVT_switch
Fuel 2 Actuator 2 Position Deviation	BI	145	DI	145	10145	nvoF2Ac2PsDv_XXX	SNVT_switch
Fuel 2 Actuator 2 Feedback Low	BI	146	DI	146	10146	nvoF2Ac2FBLo_XXX	SNVT_switch
Fuel 2 Actuator 2 Feedback High	BI	147	DI	147	10147	nvoF2Ac2FBHi_XXX	SNVT_switch
Fuel 2 Actuator 2 Manual PB Pressed	BI	148	DI	148	10148	nvoF2A2MnPBP_XXX	SNVT_switch
VFD Feedback Low	BI	149	DI	149	10149	nvoVFDFBLo_XXX	SNVT_switch
VFD Feedback High	BI	150	DI	150	10150	nvoVFDFBHi_XXX	SNVT_switch
Master PIDE Instruction Fault	BI	151	DI	151	10151	nvoMstPIDFlt_XXX	SNVT_switch
FGEN Fault	BI	152	DI	152	10152	nvoFGENFlt_XXX	SNVT_switch
Outdoor Temp Sensor Failed	BI	153	DI	153	10153	nvoOutTpSnFl_XXX	SNVT_switch
Combustion Air Temp Sensor Failed	BI	154	DI	154	10154	nvoCmArTpSFl_XXX	SNVT_switch

HAWK_4000_V2 Modbus RTU Mappings to BACnet, Metasys N2 and LonWorks (Continued)

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Yokogawa O2 Sensor Fault	BI	155	DI	155	10155	nvoYokO2SnFl_XXX	SNVT_switch
Mix O2 Sensor Calibration Fail	BI	156	DI	156	10156	nvoMxO2SnClF_XXX	SNVT_switch
Mix O2 Enable	BI	157	DI	157	10157	nvoMxO2Enbl_XXX	SNVT_switch
Air Actuator Not at Purge	BI	158	DI	158	10158	nvoArAcNoPrg_XXX	SNVT_switch
VFD Not at Purge	BI	159	DI	159	10159	nvoVFDNotPrg_XXX	SNVT_switch
Hawk 1000 system	BI	160	DI	160	10160	nvoH1000Sys_XXX	SNVT_switch
Hawk 4000 Next Gen	BI	161	DI	161	10161	nvoH4000NxGn_XXX	SNVT_switch
Stack Temp Econ Out Sensor Failed	BI	162	DI	162	10162	nvoStTpEcOSF_XXX	SNVT_switch
Econ In Water Temp Sensor Failed	BI	163	DI	163	10163	nvoEcInWtTSF_XXX	SNVT_switch
Fuel 3 Actuator 1 Fault	BI	164	DI	164	10164	nvoF3Act1Flt_XXX	SNVT_switch
Fuel 3 Actuator 2 Position Deviation	BI	165	DI	165	10165	nvoF3Ac2PsDv_XXX	SNVT_switch
Fuel 3 Actuator 2 Feedback Low	BI	166	DI	166	10166	nvoF3Ac2FBLo_XXX	SNVT_switch
Fuel 3 Actuator 2 Feedback High	BI	167	DI	167	10167	nvoF3Ac2FBHi_XXX	SNVT_switch
Fuel 3 Actuator 2 Fault	BI	168	DI	168	10168	nvoF3Act2Flt_XXX	SNVT_switch
Fuel 3 Actuator 1 Modbus Comm Error	BI	169	DI	169	10169	nvoF3A1MdCmE_XXX	SNVT_switch
Fuel 3 Actuator 2 Modbus Comm Error	BI	170	DI	170	10170	nvoF3A2MdCmE_XXX	SNVT_switch
Fuel 2 Actuator 2 Modbus Comm Error	BI	171	DI	171	10171	nvoF2A2MdCmE_XXX	SNVT_switch
Return Temp Sensor Failed	BI	172	DI	172	10172	nvoRtTmpSnFl_XXX	SNVT_switch
Water Shell Temp Sensor Failed	BI	173	DI	173	10173	nvoWtShTpSFl_XXX	SNVT_switch
Feedwater/Econ Out Temp Sensor Failed	BI	174	DI	174	10174	nvoFWEcOtTSF_XXX	SNVT_switch
Feedwater Level Control Option Selected	BI	175	DI	175	10175	nvoFWLvCOSel_XXX	SNVT_switch
FGR Not at Purge	BI	176	DI	176	10176	nvoFGRNotPrg_XXX	SNVT_switch
Slot8 Ch0 Bad Quality	BI	177	DI	177	10177	nvoS8Ch0BdQu_XXX	SNVT_switch
Slot8 Ch0 Low Alarm	BI	178	DI	178	10178	nvoS8Ch0LoAl_XXX	SNVT_switch
Slot8 Ch0 High Alarm	BI	179	DI	179	10179	nvoS8Ch0HiAl_XXX	SNVT_switch
Slot8 Ch1 Bad Quality	BI	180	DI	180	10180	nvoS8Ch1BdQu_XXX	SNVT_switch
Slot8 Ch1 Low Alarm	BI	181	DI	181	10181	nvoS8Ch1LoAl_XXX	SNVT_switch
Slot8 Ch1 High Alarm	BI	182	DI	182	10182	nvoS8Ch1HiAl_XXX	SNVT_switch
Slot8 Ch2 Bad Quality/Mix O2 Signal Fail	BI	183	DI	183	10183	nvoS8Ch2BdQu_XXX	SNVT_switch
Slot8 Ch2 Low Alarm	BI	184	DI	184	10184	nvoS8Ch2LoAl_XXX	SNVT_switch
Slot8 Ch2 High Alarm	BI	185	DI	185	10185	nvoS8Ch2HiAl_XXX	SNVT_switch
Slot8 Ch3 Bad Quality	BI	186	DI	186	10186	nvoS8Ch3BdQu_XXX	SNVT_switch
Slot8 Ch3 Low Alarm	BI	187	DI	187	10187	nvoS8Ch3LoAl_XXX	SNVT_switch
Slot8 Ch3 High Alarm	BI	188	DI	188	10188	nvoS8Ch3HiAl_XXX	SNVT_switch
Slot8 Ch4 Bad Quality	BI	189	DI	189	10189	nvoS8Ch4BdQu_XXX	SNVT_switch
Slot8 Ch4 Low Alarm	BI	190	DI	190	10190	nvoS8Ch4LoAl_XXX	SNVT_switch
Slot8 Ch4 High Alarm	BI	191	DI	191	10191	nvoS8Ch4HiAl_XXX	SNVT_switch
Isolation Valve Selected	BI	192	DI	192	10192	nvoIsoVlvSel_XXX	SNVT_switch
Slot8 Ch5 Bad Quality	BI	193	DI	193	10193	nvoS8Ch5BdQu_XXX	SNVT_switch
Slot8 Ch5 Low Alarm	BI	194	DI	194	10194	nvoS8Ch5LoAl_XXX	SNVT_switch
Slot8 Ch5 High Alarm	BI	195	DI	195	10195	nvoS8Ch5HiAl_XXX	SNVT_switch
Slot8 Ch6 Bad Quality	BI	196	DI	196	10196	nvoS8Ch6BdQu_XXX	SNVT_switch
Slot8 Ch6 Low Alarm	BI	197	DI	197	10197	nvoS8Ch6LoAl_XXX	SNVT_switch
Slot8 Ch6 High Alarm	BI	198	DI	198	10198	nvoS8Ch6HiAl_XXX	SNVT_switch
Slot8 Ch7 Bad Quality	BI	199	DI	199	10199	nvoS8Ch7BdQu_XXX	SNVT_switch
Slot8 Ch7 Low Alarm	BI	200	DI	200	10200	nvoS8Ch7LoAl_XXX	SNVT_switch
Slot8 Ch7 High Alarm	BI	201	DI	201	10201	nvoS8Ch7HiAl_XXX	SNVT_switch
VFD EtherNet Comm Error	BI	202	DI	202	10202	nvoVFDEtCmEr_XXX	SNVT_switch
Slot 8 Ch 4 Analog Input Selected	BI	203	DI	203	10203	nvoS8Ch4AISl_XXX	SNVT_switch
Slot 8 Ch 5 Analog Input Selected	BI	204	DI	204	10204	nvoS8Ch5AISl_XXX	SNVT_switch
Slot 8 Ch 6 Analog Input Selected	BI	205	DI	205	10205	nvoS8Ch6AISl_XXX	SNVT_switch
Slot 8 Ch 7 Analog Input Selected	BI	206	DI	206	10206	nvoS8Ch7AISl_XXX	SNVT_switch
Isolation Valve Out of Position	BI	207	DI	207	10207	nvoIsoVlOtPs_XXX	SNVT_switch

HAWK_4000_V2 Modbus RTU Mappings to BACnet, Metasys N2 and LonWorks (Continued)

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
AB[12]15	BI	208	DI	208	10208	nvoAB_12_15_XXX	SNVT_switch
Air Actuator 2 Position Deviation	BI	209	DI	209	10209	nvoArAc2PsDv_XXX	SNVT_switch
Air Actuator 2 Feedback Low	BI	210	DI	210	10210	nvoArAc2FBLo_XXX	SNVT_switch
Air Actuator 2 Feedback High	BI	211	DI	211	10211	nvoArAc2FBHi_XXX	SNVT_switch
Air Actuator 2 Modbus Comm Error (Node 4)	BI	212	DI	212	10212	nvoArA2MdCmE_XXX	SNVT_switch
Air Actuator 2 Manual PB Pressed	BI	213	DI	213	10213	nvoArA2MnPBP_XXX	SNVT_switch
Air Actuator 2 Fault	BI	214	DI	214	10214	nvoAirAct2Fl_XXX	SNVT_switch
Air Actuator 2 Not At Purge	BI	215	DI	215	10215	nvoArAc2NoPr_XXX	SNVT_switch
Air Actuator 2 Not At Lightoff	BI	216	DI	216	10216	nvoArAc2NoLt_XXX	SNVT_switch
Air Actuator Not At Lightoff	BI	217	DI	217	10217	nvoArAcNotLt_XXX	SNVT_switch
Fuel Actuator 1 Not At Lightoff	BI	218	DI	218	10218	nvoFlA1NoLt_XXX	SNVT_switch
Fuel Actuator 2 Not At Lightoff	BI	219	DI	219	10219	nvoFlA2NoLt_XXX	SNVT_switch
FGR Actuator Not At Lightoff	BI	220	DI	220	10220	nvoFGRAcNoLt_XXX	SNVT_switch
VFD Not At Lightoff	BI	221	DI	221	10221	nvoVFDNoLt_XXX	SNVT_switch
AB[13]13	BI	222	DI	222	10222	nvoAB_13_13_XXX	SNVT_switch
AB[13]14	BI	223	DI	223	10223	nvoAB_13_14_XXX	SNVT_switch
AB[13]15	BI	224	DI	224	10224	nvoAB_13_15_XXX	SNVT_switch
AB[14]0	BI	225	DI	225	10225	nvoAB_14_0_XXX	SNVT_switch
AB[14]1	BI	226	DI	226	10226	nvoAB_14_1_XXX	SNVT_switch
AB[14]2	BI	227	DI	227	10227	nvoAB_14_2_XXX	SNVT_switch
AB[14]3	BI	228	DI	228	10228	nvoAB_14_3_XXX	SNVT_switch
AB[14]4	BI	229	DI	229	10229	nvoAB_14_4_XXX	SNVT_switch
AB[14]5	BI	230	DI	230	10230	nvoAB_14_5_XXX	SNVT_switch
AB[14]6	BI	231	DI	231	10231	nvoAB_14_6_XXX	SNVT_switch
AB[14]7	BI	232	DI	232	10232	nvoAB_14_7_XXX	SNVT_switch
AB[14]8	BI	233	DI	233	10233	nvoAB_14_8_XXX	SNVT_switch
AB[14]9	BI	234	DI	234	10234	nvoAB_14_9_XXX	SNVT_switch
AB[14]10	BI	235	DI	235	10235	nvoAB_14_10_XXX	SNVT_switch
AB[14]11	BI	236	DI	236	10236	nvoAB_14_11_XXX	SNVT_switch
AB[14]12	BI	237	DI	237	10237	nvoAB_14_12_XXX	SNVT_switch
AB[14]13	BI	238	DI	238	10238	nvoAB_14_13_XXX	SNVT_switch
AB[14]14	BI	239	DI	239	10239	nvoAB_14_14_XXX	SNVT_switch
AB[14]15	BI	240	DI	240	10240	nvoAB_14_15_XXX	SNVT_switch
Flame Strength Honeywell	AI	1	AI	1	30001	nvoFlmStrHny_XXX	SNVT_count_f
Combustion Air Fan Speed	AI	2	AI	2	30003	nvoCmArFnSpd_XXX	SNVT_count_f
AR[2]	AI	3	AI	3	30005	nvoArFnVFDMt_XXX	SNVT_count_f
Boiler Efficiency	AI	4	AI	4	30007	nvoBlrEff_XXX	SNVT_lev_percent
Firing Rate	AI	5	AI	5	30009	nvoFirRat_XXX	SNVT_lev_percent
O2 Level	AI	6	AI	6	30011	nvoO2Lvl_XXX	SNVT_lev_percent
SP Steam Pressure/Water Temp	AI	7	AI	7	30013	nvoSPStPWtTp_XXX	SNVT_count_f
Water Level	AI	8	AI	8	30015	nvoWtrLvl_XXX	SNVT_press_f
Steam Pressure or Hot Water Temp	AI	9	AI	9	30017	nvoStPrHWTmp_XXX	SNVT_count_f
AR[9]	AI	10	AI	10	30019	nvoAR_9_XXX	SNVT_count_f
Stack Temp Before Economizer	AI	11	AI	11	30021	nvoStkTpBfEc_XXX	SNVT_temp_p
Combustion Air Temp	AI	12	AI	12	30023	nvoComAirTmp_XXX	SNVT_temp_p
Water Temp Shell/Outdoor Temp	AI	13	AI	13	30025	nvoWtTpShl_XXX	SNVT_temp_p
Feedwater Temp/Econ Water Out Temp	AI	14	AI	14	30027	nvoFdWtTp_XXX	SNVT_temp_p
Stack Temp After Econ/Return HW	AI	15	AI	15	30029	nvoStkTmpEco_XXX	SNVT_temp_p
Economizer Water In Temp	AI	16	AI	16	30031	nvoEcWtInTmp_XXX	SNVT_temp_p
AI Slot8Ch0 Value/2Stg Econ Temp IN	AI	17	AI	17	30033	nvoAISlCh0Vl_XXX	SNVT_count_f
AI Slot8Ch1 Value/2Stg Econ Temp OUT	AI	18	AI	18	30035	nvoAISlCh1Vl_XXX	SNVT_count_f
AI Slot8 Ch2 Value (EU)	AI	19	AI	19	30037	nvoAISlCh2Vl_XXX	SNVT_count_f
AI Slot8 Ch3 Value (EU)	AI	20	AI	20	30039	nvoAISlCh3Vl_XXX	SNVT_count_f
Safety Valve Setting or Max Water Temp	AI	21	AI	21	30041	nvoSftVlvSet_XXX	SNVT_count_f
Header Pressure or Temp 2 Boiler LL	AI	22	AI	22	30043	nvoHdPrTpBLL_XXX	SNVT_count_f
SP 2 Boiler LL	AI	23	AI	23	30045	nvoSP2BlrLL_XXX	SNVT_count_f
Boiler Off Point	AI	24	AI	24	30047	nvoBlrOffPt_XXX	SNVT_count_f
Boiler On Point	AI	25	AI	25	30049	nvoBlrOnPt_XXX	SNVT_count_f
Condensate Return Valve Output Command	AI	26	AI	26	30051	nvoCdRtVOtCm_XXX	SNVT_lev_percent
Makeup Bypass Valve Output Command	AI	27	AI	27	30053	nvoMkByVOtCm_XXX	SNVT_lev_percent
Slot8 Ch0 FLo Total	AI	28	AI	28	30055	nvoSlC0FlTo_XXX	SNVT_count_f
Slot8 Ch1 FLo Total	AI	29	AI	29	30057	nvoSlC1FlTo_XXX	SNVT_count_f
Slot8 Ch2 FLo Total	AI	30	AI	30	30059	nvoSlC2FlTo_XXX	SNVT_count_f
Slot8 Ch3 FLo Total	AI	31	AI	31	30061	nvoSlC3FlTo_XXX	SNVT_count_f
Slot8 Ch4 Flo Total	AI	32	AI	32	30063	nvoSlC4FlTo_XXX	SNVT_count_f
Slot8 Ch5 Flo Total	AI	33	AI	33	30065	nvoSlC5FlTo_XXX	SNVT_count_f

HAWK_4000_V2 Modbus RTU Mappings to BACnet, Metasys N2 and LonWorks (Continued)

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Slot8 Ch6 Flo Total	AI	34	AI	34	30067	nvoSlC6FlTo_XXX	SNVT_count_f
Slot8 Ch7 Flo Total	AI	35	AI	35	30069	nvoSlC7FlTo_XXX	SNVT_count_f
Slot8 Ch4 EU	AI	36	AI	36	30071	nvoSlC4_EU_XXX	SNVT_count_f
Slot8 Ch5 EU	AI	37	AI	37	30073	nvoSlC5_EU_XXX	SNVT_count_f
Slot8 Ch6 EU	AI	38	AI	38	30075	nvoSlC6_EU_XXX	SNVT_count_f
Slot8 Ch7 EU	AI	39	AI	39	30077	nvoSlC7_EU_XXX	SNVT_count_f
Stack Pressure	AI	40	AI	40	30079	nvoStkPrs_XXX	SNVT_count_f
AR[40]	AI	41	AI	41	30081	nvoAR_40_XXX	SNVT_count_f
AR[41]	AI	42	AI	42	30083	nvoAR_41_XXX	SNVT_count_f
AR[42]	AI	43	AI	43	30085	nvoAR_42_XXX	SNVT_count_f
AR[43]	AI	44	AI	44	30087	nvoAR_43_XXX	SNVT_count_f
AR[44]	AI	45	AI	45	30089	nvoAR_44_XXX	SNVT_count_f
AR[45]	AI	46	AI	46	30091	nvoAR_45_XXX	SNVT_count_f
AR[46]	AI	47	AI	47	30093	nvoAR_46_XXX	SNVT_count_f
AR[47]	AI	48	AI	48	30095	nvoAR_47_XXX	SNVT_count_f
AR[48]	AI	49	AI	49	30097	nvoAR_48_XXX	SNVT_count_f
AR[49]	AI	50	AI	50	30099	nvoAR_49_XXX	SNVT_count_f
Burner Control Status Line 1 Honeywell	AI	52	AI	52	30102	nvoBSt1Hnywl_XXX	SNVT_count_f
Burner Control Status Line 2 Honeywell	AI	53	AI	53	30103	nvoBSt2Hnywl_XXX	SNVT_count_f
Burner Control Status Line 1 Fireye	AI	54	AI	54	30104	nvoBSt1Freye_XXX	SNVT_count_f
Burner Control Status Line 2 Fireye	AI	55	AI	55	30105	nvoBSt2Freye_XXX	SNVT_count_f
Flame Signal Fireye	AI	56	AI	56	30106	nvoFlSgFrey_XXX	SNVT_count_f
Fuel 1Type	AI	57	AI	57	30107	nvoFl1Type_XXX	SNVT_count_f
Fuel 2 Type	AI	58	AI	58	30108	nvoFl2Type_XXX	SNVT_count_f
Fuel 3 Type	AI	59	AI	59	30109	nvoFl3Type_XXX	SNVT_count_f
Elapsed Time (First 16 Bits)	AI	61	AI	61	30111	nvoElpTm1_XXX	SNVT_time_hour
Elapsed Time (Second 16 Bits)	AI	62	AI	62	30112	nvoElpTm2_XXX	SNVT_time_hour
Number Of Cycles (First 16 Bits)	AI	63	AI	63	30113	nvoNumCyc1_XXX	SNVT_count_f
Number Of Cycles (Second 16 Bits)	AI	64	AI	64	30114	nvoNumCyc2_XXX	SNVT_count_f
AI[13]	AI	65	AI	65	30115	nvoAI_13_XXX	SNVT_count_f
AI[14]	AI	66	AI	66	30116	nvoAI_14_XXX	SNVT_count_f
AI[15]	AI	67	AI	67	30117	nvoAI_15_XXX	SNVT_count_f
AI[16]	AI	68	AI	68	30118	nvoAI_16_XXX	SNVT_count_f
AI[17]	AI	69	AI	69	30119	nvoAI_17_XXX	SNVT_count_f
AI[18]	AI	70	AI	70	30120	nvoAI_18_XXX	SNVT_count_f
AI[19]	AI	71	AI	71	30121	nvoAI_19_XXX	SNVT_count_f
AI[20]	AI	72	AI	72	30122	nvoAI_20_XXX	SNVT_count_f
AI[21]	AI	73	AI	73	30123	nvoAI_21_XXX	SNVT_count_f
AI[22]	AI	74	AI	74	30124	nvoAI_22_XXX	SNVT_count_f
AI[23]	AI	75	AI	75	30125	nvoAI_23_XXX	SNVT_count_f
AI[24]	AI	76	AI	76	30126	nvoAI_24_XXX	SNVT_count_f
AI[25]	AI	77	AI	77	30127	nvoAI_25_XXX	SNVT_count_f
AI[26]	AI	78	AI	78	30128	nvoAI_26_XXX	SNVT_count_f
AI[27]	AI	79	AI	79	30129	nvoAI_27_XXX	SNVT_count_f
AI[28]	AI	80	AI	80	30130	nvoAI_28_XXX	SNVT_count_f
AI[29]	AI	81	AI	81	30131	nvoAI_29_XXX	SNVT_count_f
Elapsed Time	AI	82	AI	82	30132	nvoElapTim_XXX	SNVT_time_hour
Number Of Cycles	AI	83	AI	83	30134	nvoNumCyc_XXX	SNVT_count_f
AB[0]	AI	201	AI	201	30201	nvoAB_0_XXX	SNVT_count_f
AB[1]	AI	202	AI	202	30202	nvoAB_1_XXX	SNVT_count_f
AB[2]	AI	203	AI	203	30203	nvoAB_2_XXX	SNVT_count_f
AB[3]	AI	204	AI	204	30204	nvoAB_3_XXX	SNVT_count_f
AB[4]	AI	205	AI	205	30205	nvoAB_4_XXX	SNVT_count_f
AB[5]	AI	206	AI	206	30206	nvoAB_5_XXX	SNVT_count_f
AB[6]	AI	207	AI	207	30207	nvoAB_6_XXX	SNVT_count_f
AB[7]	AI	208	AI	208	30208	nvoAB_7_XXX	SNVT_count_f
AB[8]	AI	209	AI	209	30209	nvoAB_8_XXX	SNVT_count_f
AB[9]	AI	210	AI	210	30210	nvoAB_9_XXX	SNVT_count_f
AB[10]	AI	211	AI	211	30211	nvoAB_10_XXX	SNVT_count_f
AB[11]	AI	212	AI	212	30212	nvoAB_11_XXX	SNVT_count_f
AB[12]	AI	213	AI	213	30213	nvoAB_12_XXX	SNVT_count_f
AB[13]	AI	214	AI	214	30214	nvoAB_13_XXX	SNVT_count_f
AB[14]	AI	215	AI	215	30215	nvoAB_14_XXX	SNVT_count_f
Heart Beat From BMS	BV	1	DO	1	00001	nvoHtBtFrBMS_XXX	SNVT_switch
Rem Start From BMS	BV	2	DO	2	00002	nvoRmStFrBMS_XXX	SNVT_switch
AWB[0]2	BV	3	DO	3	00003	nvoAWB_0_2_XXX	SNVT_switch

HAWK_4000_V2 Modbus RTU Mappings to BACnet, Metasys N2 and LonWorks (Continued)

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
AWB[0]3	BV	4	DO	4	00004	nvoAWB_0_3_XXX	SNVT_switch
AWB[0]4	BV	5	DO	5	00005	nvoAWB_0_4_XXX	SNVT_switch
AWB[0]5	BV	6	DO	6	00006	nvoAWB_0_5_XXX	SNVT_switch
AWB[0]6	BV	7	DO	7	00007	nvoAWB_0_6_XXX	SNVT_switch
AWB[0]7	BV	8	DO	8	00008	nvoAWB_0_7_XXX	SNVT_switch
AWB[0]8	BV	9	DO	9	00009	nvoAWB_0_8_XXX	SNVT_switch
AWB[0]9	BV	10	DO	10	00010	nvoAWB_0_9_XXX	SNVT_switch
AWB[0]10	BV	11	DO	11	00011	nvoAWB_0_10_XXX	SNVT_switch
AWB[0]11	BV	12	DO	12	00012	nvoAWB_0_11_XXX	SNVT_switch
AWB[0]12	BV	13	DO	13	00013	nvoAWB_0_12_XXX	SNVT_switch
AWB[0]13	BV	14	DO	14	00014	nvoAWB_0_13_XXX	SNVT_switch
AWB[0]14	BV	15	DO	15	00015	nvoAWB_0_14_XXX	SNVT_switch
AWB[0]15	BV	16	DO	16	00016	nvoAWB_0_15_XXX	SNVT_switch
AWB[1]0	BV	17	DO	17	00017	nvoAWB_1_0_XXX	SNVT_switch
AWB[1]1	BV	18	DO	18	00018	nvoAWB_1_1_XXX	SNVT_switch
AWB[1]2	BV	19	DO	19	00019	nvoAWB_1_2_XXX	SNVT_switch
AWB[1]3	BV	20	DO	20	00020	nvoAWB_1_3_XXX	SNVT_switch
AWB[1]4	BV	21	DO	21	00021	nvoAWB_1_4_XXX	SNVT_switch
AWB[1]5	BV	22	DO	22	00022	nvoAWB_1_5_XXX	SNVT_switch
AWB[1]6	BV	23	DO	23	00023	nvoAWB_1_6_XXX	SNVT_switch
AWB[1]7	BV	24	DO	24	00024	nvoAWB_1_7_XXX	SNVT_switch
AWB[1]8	BV	25	DO	25	00025	nvoAWB_1_8_XXX	SNVT_switch
AWB[1]9	BV	26	DO	26	00026	nvoAWB_1_9_XXX	SNVT_switch
AWB[1]10	BV	27	DO	27	00027	nvoAWB_1_10_XXX	SNVT_switch
AWB[1]11	BV	28	DO	28	00028	nvoAWB_1_11_XXX	SNVT_switch
AWB[1]12	BV	29	DO	29	00029	nvoAWB_1_12_XXX	SNVT_switch
AWB[1]13	BV	30	DO	30	00030	nvoAWB_1_13_XXX	SNVT_switch
AWB[1]14	BV	31	DO	31	00031	nvoAWB_1_14_XXX	SNVT_switch
AWB[1]15	BV	32	DO	32	00032	nvoAWB_1_15_XXX	SNVT_switch
Rem Op SP Boiler	AV	1	AO	1	40001	nvoRmOpSPBlr_XXX	SNVT_count_f
Rem Firing Rate	AV	2	AO	2	40003	nvoRemFirRat_XXX	SNVT_lev_percent
Rem Op SP 2 boiler Lead/Lag	AV	3	AO	3	40005	nvoRmOSP2BLL_XXX	SNVT_count_f
AWR[3]	AV	4	AO	4	40007	nvoAWR_3_XXX	SNVT_count_f
AWR[4]	AV	5	AO	5	40009	nvoAWR_4_XXX	SNVT_count_f
AWR[5]	AV	6	AO	6	40011	nvoAWR_5_XXX	SNVT_count_f
AWR[6]	AV	7	AO	7	40013	nvoAWR_6_XXX	SNVT_count_f
AWR[7]	AV	8	AO	8	40015	nvoAWR_7_XXX	SNVT_count_f
AWR[8]	AV	9	AO	9	40017	nvoAWR_8_XXX	SNVT_count_f
AWR[9]	AV	10	AO	10	40019	nvoAWR_9_XXX	SNVT_count_f

B.22. ADAC 1000

ADAC_1000 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Deaerator Lvl BAD QUALITY	BI	1	DI	1	10001	nvoDeLvlBdQu_XXX	SNVT_switch
Deaerator Lvl Hi	BI	2	DI	2	10002	nvoDeaLvlHi_XXX	SNVT_switch
Deaerator Lvl Lo	BI	3	DI	3	10003	nvoDeaLvlLo_XXX	SNVT_switch
Deaerator Lvl Lo-Lo (LWCO)	BI	4	DI	4	10004	nvoDeaLWCO_XXX	SNVT_switch
Feed Pump 1 Flt	BI	5	DI	5	10005	nvoFdPmp1Flt_XXX	SNVT_switch
Feed Pump 2 Flt	BI	6	DI	6	10006	nvoFdPmp2Flt_XXX	SNVT_switch
Feed Pump 3 Flt	BI	7	DI	7	10007	nvoFdPmp3Flt_XXX	SNVT_switch
Feed Pump 4 Flt	BI	8	DI	8	10008	nvoFdPmp4Flt_XXX	SNVT_switch
Feed Pump 5 Flt	BI	9	DI	9	10009	nvoFdPmp5Flt_XXX	SNVT_switch
Feed Pump 6 Flt	BI	10	DI	10	10010	nvoFdPmp6Flt_XXX	SNVT_switch
Feed Pump 1 OVERLOAD	BI	11	DI	11	10011	nvoFdP1OvrLd_XXX	SNVT_switch
Feed Pump 2 OVERLOAD	BI	12	DI	12	10012	nvoFdP2OvrLd_XXX	SNVT_switch
Feed Pump 3 OVERLOAD	BI	13	DI	13	10013	nvoFdP3OvrLd_XXX	SNVT_switch
Feed Pump 4 OVERLOAD	BI	14	DI	14	10014	nvoFdP4OvrLd_XXX	SNVT_switch
Feed Pump 5 OVERLOAD	BI	15	DI	15	10015	nvoFdP5OvrLd_XXX	SNVT_switch
Feed Pump 6 OVERLOAD	BI	16	DI	16	10016	nvoFdP6OvrLd_XXX	SNVT_switch
Spare	BI	17	DI	17	10017	nvoDAB1_1_0_XXX	SNVT_switch
Spare	BI	18	DI	18	10018	nvoDAB1_1_1_XXX	SNVT_switch
Spare	BI	19	DI	19	10019	nvoDAB1_1_2_XXX	SNVT_switch
Deaerator Temperature BAD QUALITY	BI	20	DI	20	10020	nvoDeaTpBdQu_XXX	SNVT_switch
Deaerator Temperature LOW	BI	21	DI	21	10021	nvoDeaTmpLo_XXX	SNVT_switch
Deaerator Temperature HIGH	BI	22	DI	22	10022	nvoDeaTmpHi_XXX	SNVT_switch
Deaerator Pressure BAD QUALITY	BI	23	DI	23	10023	nvoDeaPrBdQu_XXX	SNVT_switch
Deaerator Pressure LOW	BI	24	DI	24	10024	nvoDeaPrsLo_XXX	SNVT_switch
Deaerator Pressure HIGH	BI	25	DI	25	10025	nvoDeaPrsHi_XXX	SNVT_switch
Boiler Feed Water Header Pressure BQ	BI	26	DI	26	10026	nvoBFdWHdPBQ_XXX	SNVT_switch
Boiler Feed Water Header Pressure LOW	BI	27	DI	27	10027	nvoBFdWHdPLo_XXX	SNVT_switch
Boiler Feed Water Header Pressure HIGH	BI	28	DI	28	10028	nvoBFdWHdPHi_XXX	SNVT_switch
Tray Temperature/User Def 0 Bad Quality	BI	29	DI	29	10029	nvoTTBadQual_XXX	SNVT_switch
Tray Temperature/User Def 0 LOW	BI	30	DI	30	10030	nvoTTLow_XXX	SNVT_switch
Tray Temperature/User Def 0 HIGH	BI	31	DI	31	10031	nvoTTHigh_XXX	SNVT_switch
Reserved for CB - ADAC 1000 Single	BI	32	DI	32	10032	nvoADAC1000S_XXX	SNVT_switch
Feed Pump 1 VSD Bypass	BI	33	DI	33	10033	nvoFP1VSDByp_XXX	SNVT_switch
Feed Pump 2 VSD Bypass	BI	34	DI	34	10034	nvoFP2VSDByp_XXX	SNVT_switch
Feed Pump 3 VSD Bypass	BI	35	DI	35	10035	nvoFP3VSDByp_XXX	SNVT_switch
Feed Pump 4 VSD Bypass	BI	36	DI	36	10036	nvoFP4VSDByp_XXX	SNVT_switch
Feed Pump 5 VSD Bypass	BI	37	DI	37	10037	nvoFP5VSDByp_XXX	SNVT_switch
Feed Pump 6 VSD Bypass	BI	38	DI	38	10038	nvoFP6VSDByp_XXX	SNVT_switch
Tray Pressure/User Def 1 Bad Quality	BI	39	DI	39	10039	nvoTPBadQual_XXX	SNVT_switch
Tray Pressure/User Def 1 LOW	BI	40	DI	40	10040	nvoTPLow_XXX	SNVT_switch
Tray Pressure/User Def 1 HIGH	BI	41	DI	41	10041	nvoTPHigh_XXX	SNVT_switch
Transfer Pump 1 VSD Bypass	BI	42	DI	42	10042	nvoTP1VSDByp_XXX	SNVT_switch
Transfer Pump 2 VSD Bypass	BI	43	DI	43	10043	nvoTP2VSDByp_XXX	SNVT_switch
Transfer Pump 3 VSD Bypass	BI	44	DI	44	10044	nvoTP3VSDByp_XXX	SNVT_switch
Feed Pump Lead Lag Write Permissive	BI	45	DI	45	10045	nvoFPLLWrtPr_XXX	SNVT_switch
Spare	BI	46	DI	46	10046	nvoDAB1_2_13_XXX	SNVT_switch
BMS Heartbeat Fault	BI	47	DI	47	10047	nvoBMSHrtFlt_XXX	SNVT_switch
ADAC PLC Heartbeat to BMS	BI	48	DI	48	10048	nvoADACPLCHB_XXX	SNVT_switch
Feed Pump 1 ON	BI	49	DI	49	10049	nvoFdPmp1ON_XXX	SNVT_switch
Feed Pump 2 ON	BI	50	DI	50	10050	nvoFdPmp2ON_XXX	SNVT_switch
Feed Pump 3 ON	BI	51	DI	51	10051	nvoFdPmp3ON_XXX	SNVT_switch
Feed Pump 4 ON	BI	52	DI	52	10052	nvoFdPmp4ON_XXX	SNVT_switch
Feed Pump 5 ON	BI	53	DI	53	10053	nvoFdPmp5ON_XXX	SNVT_switch
Feed Pump 6 ON/DA Bypass	BI	54	DI	54	10054	nvoFdPmp6ON_XXX	SNVT_switch
Feed Pump 1 In AUTO	BI	55	DI	55	10055	nvoFdP1InAut_XXX	SNVT_switch

ADAC_1000 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks (Continued)

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Feed Pump 2 In AUTO	BI	56	DI	56	10056	nvoFdP2InAut_XXX	SNVT_switch
Feed Pump 3 In AUTO	BI	57	DI	57	10057	nvoFdP3InAut_XXX	SNVT_switch
Feed Pump 4 In AUTO	BI	58	DI	58	10058	nvoFdP4InAut_XXX	SNVT_switch
Feed Pump 5 In AUTO	BI	59	DI	59	10059	nvoFdP5InAut_XXX	SNVT_switch
Feed Pump 6 In AUTO	BI	60	DI	60	10060	nvoFdP6InAut_XXX	SNVT_switch
Deaerator No Alarms Relay OK	BI	61	DI	61	10061	nvoDeaNoAlms_XXX	SNVT_switch
Yellow Stack Light ON	BI	62	DI	62	10062	nvoYelStkLt_XXX	SNVT_switch
Green Stack Light ON	BI	63	DI	63	10063	nvoGrnStkLt_XXX	SNVT_switch
Red Stack Light ON	BI	64	DI	64	10064	nvoRedStkLt_XXX	SNVT_switch
Chemical Feed ON	BI	65	DI	65	10065	nvoChmFdON_XXX	SNVT_switch
Deaerator Feed Wtr Valve Open	BI	66	DI	66	10066	nvoDeFdWVlOp_XXX	SNVT_switch
Feed Pumps ALT MODE ON	BI	67	DI	67	10067	nvoFdPAltMd_XXX	SNVT_switch
DA Lo-Lo Wtr Cutoff Relay Energized	BI	68	DI	68	10068	nvoDACtoRlEn_XXX	SNVT_switch
Deaerator 2nd Feed Wtr Valve Open	BI	69	DI	69	10069	nvoD2FdWVlOp_XXX	SNVT_switch
Boiler Feed Pump 1 Flow Fault	BI	70	DI	70	10070	nvoFdP1FloFl_XXX	SNVT_switch
Boiler Feed Pump 2 Flow Fault	BI	71	DI	71	10071	nvoFdP2FloFl_XXX	SNVT_switch
Boiler Feed Pump 3 Flow Fault	BI	72	DI	72	10072	nvoFdP3FloFl_XXX	SNVT_switch
Boiler Feed Pump 4 Flow Fault	BI	73	DI	73	10073	nvoFdP4FloFl_XXX	SNVT_switch
Boiler Feed Pump 5 Flow Fault	BI	74	DI	74	10074	nvoFdP5FloFl_XXX	SNVT_switch
Boiler Feed Pump 6 Flow Fault	BI	75	DI	75	10075	nvoFdP6FloFl_XXX	SNVT_switch
PLC Battery Low. Replace Battery	BI	76	DI	76	10076	nvoPLCBatLo_XXX	SNVT_switch
Feed Pump 1 VSD Speed Feedback Bad Q	BI	77	DI	77	10077	nvoFdP1VSDBQ_XXX	SNVT_switch
Feed Pump 2 VSD Speed Feedback Bad Q	BI	78	DI	78	10078	nvoFdP2VSDBQ_XXX	SNVT_switch
Feed Pump 3 VSD Speed Feedback Bad Q	BI	79	DI	79	10079	nvoFdP3VSDBQ_XXX	SNVT_switch
Feed Pump 4 VSD Speed Feedback Bad Q	BI	80	DI	80	10080	nvoFdP4VSDBQ_XXX	SNVT_switch
Feed Pump 5 VSD Speed Feedback Bad Q	BI	81	DI	81	10081	nvoFdP5VSDBQ_XXX	SNVT_switch
Feed Pump 6 VSD Speed Feedback Bad Q	BI	82	DI	82	10082	nvoFdP6VSDBQ_XXX	SNVT_switch
Recirculation Valve Close	BI	83	DI	83	10083	nvoRecVlvCls_XXX	SNVT_switch
Feed Pumps Lead Lag Enabled	BI	84	DI	84	10084	nvoFPLLEnbl_XXX	SNVT_switch
Feed Pumps Auto Restart Enabled	BI	85	DI	85	10085	nvoFPAutReEn_XXX	SNVT_switch
Remote Set Point Active	BI	86	DI	86	10086	nvoRemSPAct_XXX	SNVT_switch
User Def Ch2 Bad Quality	BI	87	DI	87	10087	nvoCh2BadQ_XXX	SNVT_switch
User Def Ch2 LOW	BI	88	DI	88	10088	nvoCh2Low_XXX	SNVT_switch
User Def Ch2 HIGH	BI	89	DI	89	10089	nvoCh2High_XXX	SNVT_switch
User Def Ch3 Bad Quality	BI	90	DI	90	10090	nvoCh3BadQ_XXX	SNVT_switch
User Def Ch3 LOW	BI	91	DI	91	10091	nvoCh3Low_XXX	SNVT_switch
User Def Ch3 HIGH	BI	92	DI	92	10092	nvoCh3High_XXX	SNVT_switch
Spare45	BI	93	DI	93	10093	nvoDAB1_5_12_XXX	SNVT_switch
Spare46	BI	94	DI	94	10094	nvoDAB1_5_13_XXX	SNVT_switch
Spare47	BI	95	DI	95	10095	nvoDAB1_5_14_XXX	SNVT_switch
Reserved for CB - ADAC 1000 Dual	BI	96	DI	96	10096	nvoADAC1000D_XXX	SNVT_switch
Surge Tank Level BAD QUALITY	BI	97	DI	97	10097	nvoSgTkLvlBQ_XXX	SNVT_switch
Surge Tank Level HIGH	BI	98	DI	98	10098	nvoSgTkLvlHi_XXX	SNVT_switch
Surge Tank Level LOW	BI	99	DI	99	10099	nvoSgTkLvlLo_XXX	SNVT_switch
Surge Tank Temperature BAD QUALITY	BI	100	DI	100	10100	nvoSgTkTmpBQ_XXX	SNVT_switch
Surge Tank Temperature LOW	BI	101	DI	101	10101	nvoSgTkTmpLo_XXX	SNVT_switch
Surge Tank Temperature HIGH	BI	102	DI	102	10102	nvoSgTkTmpHi_XXX	SNVT_switch
Transfer Pump 1 FAULT	BI	103	DI	103	10103	nvoXfrPm1Flt_XXX	SNVT_switch
Transfer Pump 2 FAULT	BI	104	DI	104	10104	nvoXfrPm2Flt_XXX	SNVT_switch
Transfer Pump 3 FAULT	BI	105	DI	105	10105	nvoXfrPm3Flt_XXX	SNVT_switch
Transfer Pump 1 OVERLOAD	BI	106	DI	106	10106	nvoXfrP1OvLd_XXX	SNVT_switch
Transfer Pump 2OVERLOAD	BI	107	DI	107	10107	nvoXfrP2OvLd_XXX	SNVT_switch
Transfer Pump 3OVERLOAD	BI	108	DI	108	10108	nvoXfrP3OvLd_XXX	SNVT_switch
Surge Tank LOW-LOW (LWCO)	BI	109	DI	109	10109	nvoSgTkLWCO_XXX	SNVT_switch
Surge Tank Header Pressure HIGH	BI	110	DI	110	10110	nvoSgTkHdPHi_XXX	SNVT_switch
Surge Tank Header Pressure LOW	BI	111	DI	111	10111	nvoSgTkHdPLo_XXX	SNVT_switch
Surge Tank Header Pressure BAD QUALITY	BI	112	DI	112	10112	nvoSgTkHPrBQ_XXX	SNVT_switch

ADAC_1000 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks (Continued)

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Transfer Pump Lead Lag Write Permissive	BI	113	DI	113	10113	nvoTrPmpLLWr_XXX	SNVT_switch
PLC IO Module Fault	BI	114	DI	114	10114	nvoPLCIOFlt_XXX	SNVT_switch
Spare	BI	115	DI	115	10115	nvoDAB1_7_2_XXX	SNVT_switch
Surge 2nd Feed Water Valve Open	BI	116	DI	116	10116	nvoSg2FdWVlO_XXX	SNVT_switch
Transfer Pump 1 Flow Fault	BI	117	DI	117	10117	nvoXfr1FloFl_XXX	SNVT_switch
Transfer Pump 2 Flow Fault	BI	118	DI	118	10118	nvoXfr2FloFl_XXX	SNVT_switch
Transfer Pump 3 Flow Fault	BI	119	DI	119	10119	nvoXfr3FloFl_XXX	SNVT_switch
Transfer Pump 1 VSD Speed Feedback BQ	BI	120	DI	120	10120	nvoXfr1VSDBQ_XXX	SNVT_switch
Transfer Pump 2 VSD Speed Feedback BQ	BI	121	DI	121	10121	nvoXfr2VSDBQ_XXX	SNVT_switch
Transfer Pump 3 VSD Speed Feedback BQ	BI	122	DI	122	10122	nvoXfr3VSDBQ_XXX	SNVT_switch
Spare62	BI	123	DI	123	10123	nvoDAB1_7_10_XXX	SNVT_switch
Spare63	BI	124	DI	124	10124	nvoDAB1_7_11_XXX	SNVT_switch
Spare64	BI	125	DI	125	10125	nvoDAB1_7_12_XXX	SNVT_switch
Transfer Pump 1 VSD Bypass	BI	126	DI	126	10126	nvoTPm1VSDBy_XXX	SNVT_switch
Transfer Pump 2 VSD Bypass	BI	127	DI	127	10127	nvoTPm2VSDBy_XXX	SNVT_switch
Transfer Pump 3 VSD Bypass	BI	128	DI	128	10128	nvoTPm3VSDBy_XXX	SNVT_switch
Surge Tank No Alarms Relay OK	BI	129	DI	129	10129	nvoSTNoAlRel_XXX	SNVT_switch
Yellow Stack Light ON	BI	130	DI	130	10130	nvoSTYlStkLt_XXX	SNVT_switch
Green Stack Light ON	BI	131	DI	131	10131	nvoSTGrStkLt_XXX	SNVT_switch
RED Stack Light ON	BI	132	DI	132	10132	nvoSTRdStkLt_XXX	SNVT_switch
Surge Tank Feed Water Valve Open	BI	133	DI	133	10133	nvoSTFdWtVlO_XXX	SNVT_switch
ST Low Low Water Cutoff Relay Energized	BI	134	DI	134	10134	nvoSTCtoRlEn_XXX	SNVT_switch
Transfer Pump 1 ON	BI	135	DI	135	10135	nvoXfrPm1ON_XXX	SNVT_switch
Transfer Pump 2 ON	BI	136	DI	136	10136	nvoXfrPm2ON_XXX	SNVT_switch
Transfer Pump 3 ON	BI	137	DI	137	10137	nvoXfrPm3ON_XXX	SNVT_switch
Transfer Pump 1 In AUTO	BI	138	DI	138	10138	nvoXfP1InAut_XXX	SNVT_switch
Transfer Pump 2 In AUTO	BI	139	DI	139	10139	nvoXfP2InAut_XXX	SNVT_switch
Transfer Pump 3 In AUTO	BI	140	DI	140	10140	nvoXfP3InAut_XXX	SNVT_switch
Transfer Pumps ALT MODE ON	BI	141	DI	141	10141	nvoXfPAlMdOn_XXX	SNVT_switch
Transfer Pumps Lead Lag Enabled	BI	142	DI	142	10142	nvoTrPmLLEn_XXX	SNVT_switch
Transfer Pumps Auto Restart Enabled	BI	143	DI	143	10143	nvoTrPmAtRes_XXX	SNVT_switch
Spare70	BI	144	DI	144	10144	nvoDAB1_8_15_XXX	SNVT_switch
DAB1[9]0	BI	145	DI	145	10145	nvoDAB1_9_0_XXX	SNVT_switch
DAB1[9]1	BI	146	DI	146	10146	nvoDAB1_9_1_XXX	SNVT_switch
DAB1[9]2	BI	147	DI	147	10147	nvoDAB1_9_2_XXX	SNVT_switch
DAB1[9]3	BI	148	DI	148	10148	nvoDAB1_9_3_XXX	SNVT_switch
DAB1[9]4	BI	149	DI	149	10149	nvoDAB1_9_4_XXX	SNVT_switch
DAB1[9]5	BI	150	DI	150	10150	nvoDAB1_9_5_XXX	SNVT_switch
DAB1[9]6	BI	151	DI	151	10151	nvoDAB1_9_6_XXX	SNVT_switch
DAB1[9]7	BI	152	DI	152	10152	nvoDAB1_9_7_XXX	SNVT_switch
DAB1[9]8	BI	153	DI	153	10153	nvoDAB1_9_8_XXX	SNVT_switch
DAB1[9]9	BI	154	DI	154	10154	nvoDAB1_9_9_XXX	SNVT_switch
DAB1[9]10	BI	155	DI	155	10155	nvoDAB1_9_10_XXX	SNVT_switch
DAB1[9]11	BI	156	DI	156	10156	nvoDAB1_9_11_XXX	SNVT_switch
DAB1[9]12	BI	157	DI	157	10157	nvoDAB1_9_12_XXX	SNVT_switch
DAB1[9]13	BI	158	DI	158	10158	nvoDAB1_9_13_XXX	SNVT_switch
DAB1[9]14	BI	159	DI	159	10159	nvoDAB1_9_14_XXX	SNVT_switch
DAB1[9]15	BI	160	DI	160	10160	nvoDAB1_9_15_XXX	SNVT_switch
Feed Pump 1 Run Time	AI	1	AI	1	30001	nvoFdPm1RnTm_XXX	SNVT_time_hour
Feed Pump 2 Run Time	AI	2	AI	2	30003	nvoFdPm2RnTm_XXX	SNVT_time_hour
Feed Pump 3 Run Time	AI	3	AI	3	30005	nvoFdPm3RnTm_XXX	SNVT_time_hour
Feed Pump 4 Run Time	AI	4	AI	4	30007	nvoFdPm4RnTm_XXX	SNVT_time_hour
Feed Pump 5 Run Time	AI	5	AI	5	30009	nvoFdPm5RnTm_XXX	SNVT_time_hour
Feed Pump 6 Run Time	AI	6	AI	6	30011	nvoFdPm6RnTm_XXX	SNVT_time_hour
DAR1[6]	AI	7	AI	7	30013	nvoDAR1_6_XXX	SNVT_time_sec
DAR1[7]	AI	8	AI	8	30015	nvoDAR1_7_XXX	SNVT_count_f
DAR1[8]	AI	9	AI	9	30017	nvoDAR1_8_XXX	SNVT_count_f

ADAC_1000 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks (Continued)

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
DAR1[9]	AI	10	AI	10	30019	nvoDAR1_9_XXX	SNVT_count_f
Stop Lag Feed Pump Limit	AI	11	AI	11	30021	nvoStLgFdPLm_XXX	SNVT_count_f
Alternate Feed Pumps	AI	12	AI	12	30023	nvoAltFdPmps_XXX	SNVT_time_hour
Start Chemical Feed Time Delay	AI	13	AI	13	30025	nvoStrChFTDl_XXX	SNVT_time_sec
Stop Chemical Feed Time Delay	AI	14	AI	14	30027	nvoStpChFTDl_XXX	SNVT_time_sec
DAR1[14]	AI	15	AI	15	30029	nvoDAR1_14_XXX	SNVT_count_f
Deaerator Temp	AI	16	AI	16	30031	nvoDeaTmp_XXX	SNVT_temp_p
Deaerator Tank Pressure	AI	17	AI	17	30033	nvoDeaTnkPrs_XXX	SNVT_count_f
Deaerator Tank Wtr Lvl	AI	18	AI	18	30035	nvoDeaTnWtLv_XXX	SNVT_count_f
Deaerator Feed Wtr (MUV) Signal	AI	19	AI	19	30037	nvoDeaMUVSig_XXX	SNVT_lev_percent
Deaerator Steam PRValve Signal	AI	20	AI	20	30039	nvoDeaStPRVS_XXX	SNVT_lev_percent
Boiler Feed Wtr Header Pressure	AI	21	AI	21	30041	nvoBFdWtHdPr_XXX	SNVT_count_f
2nd Feed Water (MUV) Signal	AI	22	AI	22	30043	nvoDea2MUVSg_XXX	SNVT_lev_percent
Start Lag Feed Pump Limit	AI	23	AI	23	30045	nvoStrLgFPLm_XXX	SNVT_count_f
DA Level - Pump Auto-Restart Level	AI	24	AI	24	30047	nvoDALvPmAut_XXX	SNVT_count_f
Boiler Feed Water Header Pressure SetPt	AI	25	AI	25	30049	nvoBFWHdPrSP_XXX	SNVT_count_f
Over Flow Valve Signal	AI	26	AI	26	30051	nvoOvFlVlvSg_XXX	SNVT_count_f
User Cfg 0 EU/Tray Temperature	AI	27	AI	27	30053	nvoUsr0TT_XXX	SNVT_count_f
User Cfg 1 EU/Tray Pressure	AI	28	AI	28	30055	nvoUsr1TP_XXX	SNVT_count_f
User Cfg 2 EU	AI	29	AI	29	30057	nvoUsr2EU_XXX	SNVT_count_f
User Cfg 3 EU	AI	30	AI	30	30059	nvoUsr3EU_XXX	SNVT_count_f
Spare	AI	31	AI	31	30061	nvoDAR1_30_XXX	SNVT_count_f
User Cfg 0 Flow Total	AI	32	AI	32	30063	nvoUsr0FlTot_XXX	SNVT_count_f
User Cfg 1 Flow Total	AI	33	AI	33	30065	nvoUsr1FlTot_XXX	SNVT_count_f
User Cfg 2 Flow Total	AI	34	AI	34	30067	nvoUsr2FlTot_XXX	SNVT_count_f
User Cfg 3 Flow Total	AI	35	AI	35	30069	nvoUsr3FlTot_XXX	SNVT_count_f
Spare	AI	36	AI	36	30071	nvoDAR1_35_XXX	SNVT_count_f
Spare102	AI	37	AI	37	30073	nvoDAR1_36_XXX	SNVT_count_f
Spare103	AI	38	AI	38	30075	nvoDAR1_37_XXX	SNVT_count_f
Spare104	AI	39	AI	39	30077	nvoDAR1_38_XXX	SNVT_count_f
Surge Header Pressure	AI	40	AI	40	30079	nvoSrgHdrPrs_XXX	SNVT_count_f
Surge Tank Temperature	AI	41	AI	41	30081	nvoSrgTnkTmp_XXX	SNVT_temp_p
Surge Tank Water Level	AI	42	AI	42	30083	nvoSgTkWtrLv_XXX	SNVT_count_f
Surge Tank Feed Water (MUV) Signal	AI	43	AI	43	30085	nvoSgTkFdWSg_XXX	SNVT_lev_percent
Transfer Pump 1 Run Time	AI	44	AI	44	30087	nvoXfrP1RnTm_XXX	SNVT_time_hour
Transfer Pump 2 Run Time	AI	45	AI	45	30089	nvoXfrP2RnTm_XXX	SNVT_time_hour
Transfer Pump 3 Run Time	AI	46	AI	46	30091	nvoXfrP3RnTm_XXX	SNVT_time_hour
Alternate Transfer Pumps	AI	47	AI	47	30093	nvoAltXfrPs_XXX	SNVT_time_hour
Stop Lag Transfer Pump Limit	AI	48	AI	48	30095	nvoSpXfLFPLm_XXX	SNVT_count_f
Surge Tank 2nd Feed Water (MUV) Signal	AI	49	AI	49	30097	nvoSgT2FWSig_XXX	SNVT_lev_percent
Start Lag Transfer Pump Limit	AI	50	AI	50	30099	nvoSTStLgFPL_XXX	SNVT_count_f
Surge Level - Tr Pump Auto-Restart Level	AI	51	AI	51	30101	nvoSLvPARStL_XXX	SNVT_count_f
Start Surge Chemical Feed Time Delay	AI	52	AI	52	30103	nvoStrSrChFT_XXX	SNVT_count_f
Stop Surge Chemical Feed Time Delay	AI	53	AI	53	30105	nvoStpSrChFT_XXX	SNVT_count_f
Transfer Header Pressure SetPt	AI	54	AI	54	30107	nvoTrnHdPrSP_XXX	SNVT_count_f
Surge Level - Transfer Valve Bias Setpoint 1	AI	55	AI	55	30109	nvoSLVlBSP1_XXX	SNVT_count_f
Surge Level - Transfer Valve Bias Setpoint 2	AI	56	AI	56	30111	nvoSLVlBSP2_XXX	SNVT_count_f
Spare114	AI	57	AI	57	30113	nvoDAR1_56_XXX	SNVT_count_f
Spare115	AI	58	AI	58	30115	nvoDAR1_57_XXX	SNVT_count_f
Spare116	AI	59	AI	59	30117	nvoDAR1_58_XXX	SNVT_count_f
Spare117	AI	60	AI	60	30119	nvoDAR1_59_XXX	SNVT_count_f
Spare118	AI	61	AI	61	30121	nvoDAR1_60_XXX	SNVT_count_f
Spare119	AI	62	AI	62	30123	nvoDAR1_61_XXX	SNVT_count_f
Spare120	AI	63	AI	63	30125	nvoDAR1_62_XXX	SNVT_count_f
Spare121	AI	64	AI	64	30127	nvoDAR1_63_XXX	SNVT_count_f
Spare122	AI	65	AI	65	30129	nvoDAR1_64_XXX	SNVT_count_f
Spare123	AI	66	AI	66	30131	nvoDAR1_65_XXX	SNVT_count_f

ADAC_1000 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks (Continued)

	Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
	Feed Pump 1 LEAD/LAG Status	AI	67	AI	67	30133	nvoFdPm1LLSt_XXX	SNVT_count_f
	Feed Pump 2 LEAD/LAG Status	AI	68	AI	68	30134	nvoFdPm2LLSt_XXX	SNVT_count_f
	Feed Pump 3 LEAD/LAG Status	AI	69	AI	69	30135	nvoFdPm3LLSt_XXX	SNVT_count_f
	Feed Pump 4 LEAD/LAG Status	AI	70	AI	70	30136	nvoFdPm4LLSt_XXX	SNVT_count_f
	Feed Pump 5 LEAD/LAG Status	AI	71	AI	71	30137	nvoFdPm5LLSt_XXX	SNVT_count_f
	Feed Pump 6 LEAD/LAG Status	AI	72	AI	72	30138	nvoFdPm6LLSt_XXX	SNVT_count_f
	DAI1[6]	AI	73	AI	73	30139	nvoDAI1_6_XXX	SNVT_count_f
	DAI1[7]	AI	74	AI	74	30140	nvoDAI1_7_XXX	SNVT_count_f
	DAI1[8]	AI	75	AI	75	30141	nvoDAI1_8_XXX	SNVT_count_f
	DAI1[9]	AI	76	AI	76	30142	nvoDAI1_9_XXX	SNVT_count_f
	DAI1[10]	AI	77	AI	77	30143	nvoDAI1_10_XXX	SNVT_count_f
	DAI1[11]	AI	78	AI	78	30144	nvoDAI1_11_XXX	SNVT_count_f
	DAI1[12]	AI	79	AI	79	30145	nvoDAI1_12_XXX	SNVT_count_f
	DAI1[13]	AI	80	AI	80	30146	nvoDAI1_13_XXX	SNVT_count_f
	DAI1[14]	AI	81	AI	81	30147	nvoDAI1_14_XXX	SNVT_count_f
	DAI1[15]	AI	82	AI	82	30148	nvoDAI1_15_XXX	SNVT_count_f
	DAI1[16]	AI	83	AI	83	30149	nvoDAI1_16_XXX	SNVT_count_f
	DAI1[17]	AI	84	AI	84	30150	nvoDAI1_17_XXX	SNVT_count_f
	DAI1[18]	AI	85	AI	85	30151	nvoDAI1_18_XXX	SNVT_count_f
	DAI1[19]	AI	86	AI	86	30152	nvoDAI1_19_XXX	SNVT_count_f
	Transfer Pump 1 LEAD/LAG Status	AI	87	AI	87	30153	nvoXfrP1LLSt_XXX	SNVT_count_f
	Transfer Pump 2 LEAD/LAG Status	AI	88	AI	88	30154	nvoXfrP2LLSt_XXX	SNVT_count_f
	Transfer Pump 3 LEAD/LAG Status	AI	89	AI	89	30155	nvoXfrP3LLSt_XXX	SNVT_count_f
	DAI1[23]	AI	90	AI	90	30156	nvoDAI1_23_XXX	SNVT_count_f
	DAI1[24]	AI	91	AI	91	30157	nvoDAI1_24_XXX	SNVT_count_f
	DAI1[25]	AI	92	AI	92	30158	nvoDAI1_25_XXX	SNVT_count_f
	DAI1[26]	AI	93	AI	93	30159	nvoDAI1_26_XXX	SNVT_count_f
	DAI1[27]	AI	94	AI	94	30160	nvoDAI1_27_XXX	SNVT_count_f
	DAI1[28]	AI	95	AI	95	30161	nvoDAI1_28_XXX	SNVT_count_f
	DAI1[29]	AI	96	AI	96	30162	nvoDAI1_29_XXX	SNVT_count_f
	DAI1[30]	AI	97	AI	97	30163	nvoDAI1_30_XXX	SNVT_count_f
	DAI1[31]	AI	98	AI	98	30164	nvoDAI1_31_XXX	SNVT_count_f
	DAI1[32]	AI	99	AI	99	30165	nvoDAI1_32_XXX	SNVT_count_f
	DAI1[33]	AI	100	AI	100	30166	nvoDAI1_33_XXX	SNVT_count_f
	DAI1[34]	AI	101	AI	101	30167	nvoDAI1_34_XXX	SNVT_count_f
	DAI1[35]	AI	102	AI	102	30168	nvoDAI1_35_XXX	SNVT_count_f
	DAI1[36]	AI	103	AI	103	30169	nvoDAI1_36_XXX	SNVT_count_f
	DAI1[37]	AI	104	AI	104	30170	nvoDAI1_37_XXX	SNVT_count_f
	DAI1[38]	AI	105	AI	105	30171	nvoDAI1_38_XXX	SNVT_count_f
	DAI1[39]	AI	106	AI	106	30172	nvoDAI1_39_XXX	SNVT_count_f
	DAB1[0]	AI	201	AI	201	30201	nvoDAB1_0_XXX	SNVT_count_f
	DAB1[1]	AI	202	AI	202	30202	nvoDAB1_1_XXX	SNVT_count_f
	DAB1[2]	AI	203	AI	203	30203	nvoDAB1_2_XXX	SNVT_count_f
	DAB1[3]	AI	204	AI	204	30204	nvoDAB1_3_XXX	SNVT_count_f
	DAB1[4]	AI	205	AI	205	30205	nvoDAB1_4_XXX	SNVT_count_f
	DAB1[5]	AI	206	AI	206	30206	nvoDAB1_5_XXX	SNVT_count_f
	DAB1[6]	AI	207	AI	207	30207	nvoDAB1_6_XXX	SNVT_count_f
	DAB1[7]	AI	208	AI	208	30208	nvoDAB1_7_XXX	SNVT_count_f
	DAB1[8]	AI	209	AI	209	30209	nvoDAB1_8_XXX	SNVT_count_f
	DAB1[9]	AI	210	AI	210	30210	nvoDAB1_9_XXX	SNVT_count_f
*	BMS Heartbeat bit	BV	1	DO	1	1	nviHBfromBMS_XXX	SNVT_switch
*	Enter BFP LEAD/LAG Order PB	BV	2	DO	2	2	nviBFPLLOrPB_XXX	SNVT_switch
*	Enter TP LEAD/LAG Order PB	BV	3	DO	3	3	nviTPLLOrdPB_XXX	SNVT_switch
*	DAWB[0]3	BV	4	DO	4	4	nviDAWB0_3_XXX	SNVT_switch
*	DAWB[0]4	BV	5	DO	5	5	nviDAWB0_4_XXX	SNVT_switch
*	DAWB[0]5	BV	6	DO	6	6	nviDAWB0_5_XXX	SNVT_switch
*	DAWB[0]6	BV	7	DO	7	7	nviDAWB0_6_XXX	SNVT_switch

ADAC_1000 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks (Continued)

	Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
*	DAWB[0]7	BV	8	DO	8	8	nviDAWB0_7_XXX	SNVT_switch
*	DAWB[0]8	BV	9	DO	9	9	nviDAWB0_8_XXX	SNVT_switch
*	DAWB[0]9	BV	10	DO	10	10	nviDAWB0_9_XXX	SNVT_switch
*	DAWB[0]10	BV	11	DO	11	11	nviDAWB0_10_XXX	SNVT_switch
*	DAWB[0]11	BV	12	DO	12	12	nviDAWB0_11_XXX	SNVT_switch
*	DAWB[0]12	BV	13	DO	13	13	nviDAWB0_12_XXX	SNVT_switch
*	DAWB[0]13	BV	14	DO	14	14	nviDAWB0_13_XXX	SNVT_switch
*	DAWB[0]14	BV	15	DO	15	15	nviDAWB0_14_XXX	SNVT_switch
*	DAWB[0]15	BV	16	DO	16	16	nviDAWB0_15_XXX	SNVT_switch
*	DAWB[1]0	BV	17	DO	17	17	nviDAWB1_0_XXX	SNVT_switch
*	DAWB[1]1	BV	18	DO	18	18	nviDAWB1_1_XXX	SNVT_switch
*	DAWB[1]2	BV	19	DO	19	19	nviDAWB1_2_XXX	SNVT_switch
*	DAWB[1]3	BV	20	DO	20	20	nviDAWB1_3_XXX	SNVT_switch
*	DAWB[1]4	BV	21	DO	21	21	nviDAWB1_4_XXX	SNVT_switch
*	DAWB[1]5	BV	22	DO	22	22	nviDAWB1_5_XXX	SNVT_switch
*	DAWB[1]6	BV	23	DO	23	23	nviDAWB1_6_XXX	SNVT_switch
*	DAWB[1]7	BV	24	DO	24	24	nviDAWB1_7_XXX	SNVT_switch
*	DAWB[1]8	BV	25	DO	25	25	nviDAWB1_8_XXX	SNVT_switch
*	DAWB[1]9	BV	26	DO	26	26	nviDAWB1_9_XXX	SNVT_switch
*	DAWB[1]10	BV	27	DO	27	27	nviDAWB1_10_XXX	SNVT_switch
*	DAWB[1]11	BV	28	DO	28	28	nviDAWB1_11_XXX	SNVT_switch
*	DAWB[1]12	BV	29	DO	29	29	nviDAWB1_12_XXX	SNVT_switch
*	DAWB[1]13	BV	30	DO	30	30	nviDAWB1_13_XXX	SNVT_switch
*	DAWB[1]14	BV	31	DO	31	31	nviDAWB1_14_XXX	SNVT_switch
*	DAWB[1]15	BV	32	DO	32	32	nviDAWB1_15_XXX	SNVT_switch
*	BFP 1 LEAD/LAG Order	AV	1	AO	1	40001	nviBFP1LLOrd_XXX	SNVT_count_f
*	BFP 2 LEAD/LAG Order	AV	2	AO	2	40002	nviBFP2LLOrd_XXX	SNVT_lev_percent
*	BFP 3 LEAD/LAG Order	AV	3	AO	3	40003	nviBFP3LLOrd_XXX	SNVT_count_f
*	BFP 4 LEAD/LAG Order	AV	4	AO	4	40004	nviBFP4LLOrd_XXX	SNVT_count_f
*	BFP 5 LEAD/LAG Order	AV	5	AO	5	40005	nviBFP5LLOrd_XXX	SNVT_count_f
*	DAWI[5]	AV	6	AO	6	40006	nviDAWI_5_XXX	SNVT_count_f
*	TP 1 LEAD/LAG Order	AV	7	AO	7	40007	nviTP1LLOrd_XXX	SNVT_count_f
*	TP 2 LEAD/LAG Order	AV	8	AO	8	40008	nviTP2LLOrd_XXX	SNVT_count_f
*	TP 2 LEAD/LAG Order	AV	9	AO	9	40009	nviTP3LLOrd_XXX	SNVT_count_f
*	DAWI[9]	AV	10	AO	10	40010	nviDAWI_9_XXX	SNVT_count_f
*	DAWI[10]	AV	11	AO	11	40011	nviDAWI_10_XXX	SNVT_count_f
*	DAWI[11]	AV	12	AO	12	40012	nviDAWI_11_XXX	SNVT_count_f
*	DAWI[12]	AV	13	AO	13	40013	nviDAWI_12_XXX	SNVT_count_f
*	DAWI[13]	AV	14	AO	14	40014	nviDAWI_13_XXX	SNVT_count_f
*	DAWI[14]	AV	15	AO	15	40015	nviDAWI_14_XXX	SNVT_count_f
*	DAWI[15]	AV	16	AO	16	40016	nviDAWI_15_XXX	SNVT_count_f
*	DAWI[16]	AV	17	AO	17	40017	nviDAWI_16_XXX	SNVT_count_f
*	DAWI[17]	AV	18	AO	18	40018	nviDAWI_17_XXX	SNVT_count_f
*	DAWI[18]	AV	19	AO	19	40019	nviDAWI_18_XXX	SNVT_count_f
*	DAWI[19]	AV	20	AO	20	40020	nviDAWI_19_XXX	SNVT_count_f
*	FW Header Pressure Setpoint	AV	21	AO	21	40030	nviFWHdPrsSP_XXX	SNVT_count_f
*	DAWR[1]	AV	22	AO	22	40032	nviDAWR_1_XXX	SNVT_count_f
*	DAWR[2]	AV	23	AO	23	40034	nviDAWR_2_XXX	SNVT_count_f
*	DAWR[3]	AV	24	AO	24	40036	nviDAWR_3_XXX	SNVT_count_f
*	DAWR[4]	AV	25	AO	25	40038	nviDAWR_4_XXX	SNVT_count_f
*	DAWR[5]	AV	26	AO	26	40040	nviDAWR_5_XXX	SNVT_count_f
*	DAWR[6]	AV	27	AO	27	40042	nviDAWR_6_XXX	SNVT_count_f
*	DAWR[7]	AV	28	AO	28	40044	nviDAWR_7_XXX	SNVT_count_f
*	DAWR[8]	AV	29	AO	29	40046	nviDAWR_8_XXX	SNVT_count_f
*	DAWR[9]	AV	30	AO	30	40048	nviDAWR_9_XXX	SNVT_count_f

* Write point

B.23. HAWK 4500

Hawk 4500 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Drive Fault	BI	1	DI	1	10001	nvoDrvFlt_XXX	SNVT_switch
Modbus Comm Error	BI	2	DI	2	10002	nvoModCmEr_XXX	SNVT_switch
Lo Water	BI	3	DI	3	10003	nvoLoater_XXX	SNVT_switch
Burner Control Alm	BI	4	DI	4	10004	nvoBrnCtrAlm_XXX	SNVT_switch
Boiler Limits Open	BI	5	DI	5	10005	nvoBlrLimOpn_XXX	SNVT_switch
Hi Stack Temp Alm	BI	6	DI	6	10006	nvoHiStkTpAl_XXX	SNVT_switch
Hi Stack Temp Shutdown	BI	7	DI	7	10007	nvoHiStTpShd_XXX	SNVT_switch
External Interlock	BI	8	DI	8	10008	nvoExtIntrlk_XXX	SNVT_switch
I/O module fault	BI	9	DI	9	10009	nvoIOModFlt_XXX	SNVT_switch
Steam Sensor Fail	BI	10	DI	10	10010	nvoStmSenFl_XXX	SNVT_switch
Air Actuator Out Of Pos Alm	BI	11	DI	11	10011	nvoArAcPosAl_XXX	SNVT_switch
NG Actuator Out Of Pos Alm	BI	12	DI	12	10012	nvoNGAcPosAl_XXX	SNVT_switch
F/A Ratio Controller Fault(Not Used)	BI	13	DI	13	10013	nvoFARatCtFl_XXX	SNVT_switch
No Fuel Selected	BI	14	DI	14	10014	nvoNoFlSel_XXX	SNVT_switch
Low ControlLogix Battery(Not Used)	BI	15	DI	15	10015	nvoLoPLCBat_XXX	SNVT_switch
Non Recycle Limit Relay Fail	BI	16	DI	16	10016	nvoNoRcLmRlF_XXX	SNVT_switch
Recyle Limit Relay Fail	BI	17	DI	17	10017	nvoRecLmRlFl_XXX	SNVT_switch
Rem Modulation Signal Fail	BI	18	DI	18	10018	nvoRemMdSgFl_XXX	SNVT_switch
Header Pressure Sensor Fail	BI	19	DI	19	10019	nvoHdPrSnFl_XXX	SNVT_switch
Temp Channel 0-5 Fail	BI	20	DI	20	10020	nvoTpCh0_5Fl_XXX	SNVT_switch
Lo O2 Alm	BI	21	DI	21	10021	nvoLoO2Alm_XXX	SNVT_switch
Hi Limit Alm	BI	22	DI	22	10022	nvoHiLimAlm_XXX	SNVT_switch
ALWCO	BI	23	DI	23	10023	nvoALWCO_XXX	SNVT_switch
Lo Gas Pressure/Lo Oil Temp	BI	24	DI	24	10024	nvoLoGsPrOTp_XXX	SNVT_switch
Hi Gas Pressure/Hi Oil Temp	BI	25	DI	25	10025	nvoHiGsPrOTp_XXX	SNVT_switch
Lo Oil Pressure	BI	26	DI	26	10026	nvoLoOilPrs_XXX	SNVT_switch
Hi Oil Pressure	BI	27	DI	27	10027	nvoHiOilPrs_XXX	SNVT_switch
Oil Drawer Switch Not Made	BI	28	DI	28	10028	nvoOilDrwrSw_XXX	SNVT_switch
Lo Atomizing Air Pressure	BI	29	DI	29	10029	nvoLoAtmArPr_XXX	SNVT_switch
Lo Combustion Air Pressure	BI	30	DI	30	10030	nvoLoComArPr_XXX	SNVT_switch
Stack Damper High Pressure	BI	31	DI	31	10031	nvoStDmHiPrs_XXX	SNVT_switch
Low Pilot Gas Pressure	BI	32	DI	32	10032	nvoLoPtGsPrs_XXX	SNVT_switch
Blower On	BI	33	DI	33	10033	nvoBlwOn_XXX	SNVT_switch
Purge Input	BI	34	DI	34	10034	nvoPrgIn_XXX	SNVT_switch
Release To Modulate Input	BI	35	DI	35	10035	nvoRel2ModIn_XXX	SNVT_switch
Lo Fire Switch	BI	36	DI	36	10036	nvoLoFirSw_XXX	SNVT_switch
Hi Fire Switch	BI	37	DI	37	10037	nvoHiFirSw_XXX	SNVT_switch
Ready to start/Limits Closed	BI	38	DI	38	10038	nvoRdy2Str_XXX	SNVT_switch
External Start Interlock	BI	39	DI	39	10039	nvoExtStInlk_XXX	SNVT_switch
ALFCO	BI	40	DI	40	10040	nvoALFCO_XXX	SNVT_switch
Pilot	BI	41	DI	41	10041	nvoPilot_XXX	SNVT_switch
Main Fuel Valve Open	BI	42	DI	42	10042	nvoMnFlVlvOp_XXX	SNVT_switch
Fuel 1 Selected	BI	43	DI	43	10043	nvoFl1Sel_XXX	SNVT_switch
Fuel 2 Selected	BI	44	DI	44	10044	nvoFl2Sel_XXX	SNVT_switch
Heart Beat To BMS	BI	45	DI	45	10045	nvoHrtBtBMS_XXX	SNVT_switch
LWCO Shutdown	BI	46	DI	46	10046	nvoLWCOShdn_XXX	SNVT_switch
Rem Enable Input	BI	47	DI	47	10047	nvoRmEnblInp_XXX	SNVT_switch
Burner Switch	BI	48	DI	48	10048	nvoBrnSw_XXX	SNVT_switch
Recycle Limit Relay	BI	49	DI	49	10049	nvoRecLimRel_XXX	SNVT_switch
External Device Start	BI	50	DI	50	10050	nvoExtDevSt_XXX	SNVT_switch

Hawk 4500 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Non Recycle Limit Relay	BI	51	DI	51	10051	nvoNoRecLmRl_XXX	SNVT_switch
Drive to Lo Fire (FARC)	BI	52	DI	52	10052	nvoDrv2LoFir_XXX	SNVT_switch
Start Slave Blr (2 Blr LL)	BI	53	DI	53	10053	nvoStrtSlvBl_XXX	SNVT_switch
Load Demand Output	BI	54	DI	54	10054	nvoLdDemOut_XXX	SNVT_switch
Alm Output	BI	55	DI	55	10055	nvoAlmOut_XXX	SNVT_switch
Boiler Ready (LL)	BI	56	DI	56	10056	nvoBlrRdyLL_XXX	SNVT_switch
Boiler Load Demand	BI	57	DI	57	10057	nvoBlrLdDem_XXX	SNVT_switch
Firing Rate Rem/Llag	BI	58	DI	58	10058	nvoFrRatRmLL_XXX	SNVT_switch
Firing Rate Manual	BI	59	DI	59	10059	nvoFirRatMan_XXX	SNVT_switch
Firing Rate Auto	BI	60	DI	60	10060	nvoFrRatAuto_XXX	SNVT_switch
Hot Stand By	BI	61	DI	61	10061	nvoHotStndBy_XXX	SNVT_switch
Warm Up	BI	62	DI	62	10062	nvoWarmUp_XXX	SNVT_switch
Fuel 3 Selected	BI	63	DI	63	10063	nvoFl3Sel_XXX	SNVT_switch
Aux Alm 3	BI	64	DI	64	10064	nvoAuxAlm3_XXX	SNVT_switch
Steam or Hot Water 1 = Steam	BI	65	DI	65	10065	nvoStm_HWtr_XXX	SNVT_switch
Level Master Present	BI	66	DI	66	10066	nvoLvlMstPrs_XXX	SNVT_switch
Variable Speed Drive Present	BI	67	DI	67	10067	nvoVarSpDrPr_XXX	SNVT_switch
Economizer Present	BI	68	DI	68	10068	nvoEcPrs_XXX	SNVT_switch
Combustion Air Temp Present	BI	69	DI	69	10069	nvoCmArTpPrs_XXX	SNVT_switch
Economizer Inlet FW Sensor Present	BI	70	DI	70	10070	nvoEInFwSnPr_XXX	SNVT_switch
O2 Analyzer Present	BI	71	DI	71	10071	nvoO2AnlzrPr_XXX	SNVT_switch
Feedwater or Return Temp Present	BI	72	DI	72	10072	nvoFdWRtTpPr_XXX	SNVT_switch
Outdoor Reset Selected	BI	73	DI	73	10073	nvoOutResSel_XXX	SNVT_switch
Parallel Posing Selected	BI	74	DI	74	10074	nvoParPosSel_XXX	SNVT_switch
Full Metering Selected	BI	75	DI	75	10075	nvoFulMtrSel_XXX	SNVT_switch
Hawk 4500 IWT	BI	76	DI	76	10076	nvoHwk45IWT_XXX	SNVT_switch
Master Panel Select	BI	77	DI	77	10077	nvoMstPnlSel_XXX	SNVT_switch
Hot Stand By Select	BI	78	DI	78	10078	nvoHotStbySl_XXX	SNVT_switch
Dual Setpoint Select	BI	79	DI	79	10079	nvoDualSPSel_XXX	SNVT_switch
Slot 8 Ch 0 AI Selected	BI	80	DI	80	10080	nvoSlCh0AISl_XXX	SNVT_switch
Slot 8 Ch 1 AI Selected	BI	81	DI	81	10081	nvoSlCh1AISl_XXX	SNVT_switch
Slot 8 Ch 2 AI Selected	BI	82	DI	82	10082	nvoSlCh2AISl_XXX	SNVT_switch
Slot 8 Ch 3 AI Selected	BI	83	DI	83	10083	nvoSlCh3AISl_XXX	SNVT_switch
Honeywell or Fireye 1 = Fireye	BI	84	DI	84	10084	nvoHnywFreye_XXX	SNVT_switch
Hi Water Alm	BI	85	DI	85	10085	nvoHiWtrAlm_XXX	SNVT_switch
Oil Actuator Out Of Pos Alm	BI	86	DI	86	10086	nvoOlAcPsAlm_XXX	SNVT_switch
FGR Actuator Out Of Pos Alm	BI	87	DI	87	10087	nvoFGRAcPsAl_XXX	SNVT_switch
Air Actuator Feedback Fail Lo Alm	BI	88	DI	88	10088	nvoAAcFdLoAl_XXX	SNVT_switch
Air Actuator Feedback Fail Hi Alm	BI	89	DI	89	10089	nvoAAcFdHiAl_XXX	SNVT_switch
NG Actuator Feedback Fail Lo Alm	BI	90	DI	90	10090	nvoNGAFdLoAl_XXX	SNVT_switch
NG Actuator Feedback Fail Hi Alm	BI	91	DI	91	10091	nvoNGAFdHiAl_XXX	SNVT_switch
Oil Actuator Feedback Fail Lo Alm	BI	92	DI	92	10092	nvoOilFdLoAl_XXX	SNVT_switch
Oil Actuator Feedback Fail Hi Alm	BI	93	DI	93	10093	nvoOilFdHiAl_XXX	SNVT_switch
FGR Actuator Feedback Fail Lo Alm	BI	94	DI	94	10094	nvoFGRFdLoAl_XXX	SNVT_switch
FGR Actuator Feedback Fail Hi Alm	BI	95	DI	95	10095	nvoFGRFdHiAl_XXX	SNVT_switch
VSD Deviation Alm	BI	96	DI	96	10096	nvoVSDDevAlm_XXX	SNVT_switch
Increase MSG Reg Size Bit (CB Only)	BI	97	DI	97	10097	nvoIncRegSiz_XXX	SNVT_switch
Air/Fuel Deviation Alm	BI	98	DI	98	10098	nvoArFlDevAl_XXX	SNVT_switch
2nd Stage CEC Economizer Selected	BI	99	DI	99	10099	nvo2StCECEcS_XXX	SNVT_switch
Fuel3 Actuator Out Of Pos Alm	BI	100	DI	100	10100	nvoFl3AcPsAl_XXX	SNVT_switch
Fuel3 Actuator Feedback Fail Lo Alm	BI	101	DI	101	10101	nvoFl3AFdLoA_XXX	SNVT_switch
Fuel3 Actuator Feedback Fail Hi Alm	BI	102	DI	102	10102	nvoFl3AFdHiA_XXX	SNVT_switch

Hawk 4500 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Stack Pressure Input Fail	BI	103	DI	103	10103	nvoStkPrInFl_XXX	SNVT_switch
Hi Stack Pressure Alm	BI	104	DI	104	10104	nvoHiStkPrAl_XXX	SNVT_switch
Stack Damper Not Open Alm	BI	105	DI	105	10105	nvoStDpNtOAl_XXX	SNVT_switch
O2 Calibration Failed	BI	106	DI	106	10106	nvoO2ClRtFld_XXX	SNVT_switch
Lo Steam Pressure/Water Temp Alm	BI	107	DI	107	10107	nvoLoStPWTAl_XXX	SNVT_switch
Processor Test Fail Alm	BI	108	DI	108	10108	nvoPrTstFlAl_XXX	SNVT_switch
O2 Trim Internal Alm	BI	109	DI	109	10109	nvoO2TrmInAl_XXX	SNVT_switch
Firetube or Flextube 1 = Flextube	BI	110	DI	110	10110	nvoFir_FlxTb_XXX	SNVT_switch
Reserved for Cleaver Brooks	BI	111	DI	111	10111	nvoAB_6_14_XXX	SNVT_switch
VSD Limits Internal Alm	BI	112	DI	112	10112	nvoVSDLmInAl_XXX	SNVT_switch
Gas Actuator 2 Out Of Pos Alm	BI	113	DI	113	10113	nvoGsAc2PsAl_XXX	SNVT_switch
Gas Actuator 2 Feedback Fail Lo Alm	BI	114	DI	114	10114	nvoGsAc2LoAl_XXX	SNVT_switch
Gas Actuator 2 Feedback Fail Hi Alm	BI	115	DI	115	10115	nvoGsAc2HiAl_XXX	SNVT_switch
Actuator Modbus Communication Error	BI	116	DI	116	10116	nvoAcModCmEr_XXX	SNVT_switch
Air Actuator Modbus Comm Error Node 1	BI	117	DI	117	10117	nvoAAcMdCEr1_XXX	SNVT_switch
Gas Actuator Modbus Comm Error Node 2	BI	118	DI	118	10118	nvoGsAMdCEr2_XXX	SNVT_switch
Gas Act 2 Modbus Comm Error Node 3	BI	119	DI	119	10119	nvoGsA2MdCE3_XXX	SNVT_switch
Oil Actuator Modbus Comm Error Node 5	BI	120	DI	120	10120	nvoOAcMdCEr5_XXX	SNVT_switch
FGR Actuator Modbus Comm Error Node 7	BI	121	DI	121	10121	nvoFGRAMdCE7_XXX	SNVT_switch
Reserved	BI	122	DI	122	10122	nvoAB_7_9_XXX	SNVT_switch
Reserved	BI	123	DI	123	10123	nvoAB_7_10_XXX	SNVT_switch
2nd Stage Outlet Wtr Temp Sensor Fail	BI	124	DI	124	10124	nvo2SOtWTSnF_XXX	SNVT_switch
Water Temp Second Stage Out Hi	BI	125	DI	125	10125	nvoWtTp2SOtH_XXX	SNVT_switch
Air Actuator Man Override Btn Press	BI	126	DI	126	10126	nvoAAcMnOBPr_XXX	SNVT_switch
Gas Actuator 1 Man Override Btn Press	BI	127	DI	127	10127	nvoGAc1MOBPr_XXX	SNVT_switch
Gas Actuator 2 Man Override Btn Press	BI	128	DI	128	10128	nvoGAc2MOBPr_XXX	SNVT_switch
Oil Actuator Man Override Btn Press	BI	129	DI	129	10129	nvoOAcMnOBPr_XXX	SNVT_switch
FGR Actuator Man Override Btn Press	BI	130	DI	130	10130	nvoFGRAMnOBP_XXX	SNVT_switch
Fuel 3 Act 1 Man Override Btn Press	BI	131	DI	131	10131	nvoFl3A1MOBP_XXX	SNVT_switch
Fuel 3 Act 2 Man Override Btn Press	BI	132	DI	132	10132	nvoFl3A2MOBP_XXX	SNVT_switch
Communication from BMS Failed	BI	133	DI	133	10133	nvoComBMSFld_XXX	SNVT_switch
CAP High	BI	134	DI	134	10134	nvoCAPHi_XXX	SNVT_switch
Water Flow Low	BI	135	DI	135	10135	nvoWtrFlLo_XXX	SNVT_switch
Water Level Signal Failed	BI	136	DI	136	10136	nvoWtrLvSgFl_XXX	SNVT_switch
Remote Setpoint Signal Failed	BI	137	DI	137	10137	nvoRmSPSigFl_XXX	SNVT_switch
Low O2 Shutdown	BI	138	DI	138	10138	nvoLoO2Shdn_XXX	SNVT_switch
Air Actuator Fault	BI	139	DI	139	10139	nvoAirActFlt_XXX	SNVT_switch
Fuel 1 Actuator 1 Fault	BI	140	DI	140	10140	nvoF1Act1Flt_XXX	SNVT_switch
Fuel 1 Actuator 2 Fault	BI	141	DI	141	10141	nvoF1Act2Flt_XXX	SNVT_switch
Fuel 2 Actuator 1 Fault	BI	142	DI	142	10142	nvoF2Act1Flt_XXX	SNVT_switch
Fuel 2 Actuator 2 Fault	BI	143	DI	143	10143	nvoF2Act2Flt_XXX	SNVT_switch
FGR Actuator Fault	BI	144	DI	144	10144	nvoFGRActFlt_XXX	SNVT_switch
Fuel 2 Actuator 2 Position Deviation	BI	145	DI	145	10145	nvoF2Ac2PsDv_XXX	SNVT_switch
Fuel 2 Actuator 2 Feedback Low	BI	146	DI	146	10146	nvoF2Ac2FBLo_XXX	SNVT_switch
Fuel 2 Actuator 2 Feedback High	BI	147	DI	147	10147	nvoF2Ac2FBHi_XXX	SNVT_switch
Fuel 2 Actuator 2 Manual PB Pressed	BI	148	DI	148	10148	nvoF2A2MnPBP_XXX	SNVT_switch
VFD Feedback Low	BI	149	DI	149	10149	nvoVFDFBLo_XXX	SNVT_switch
VFD Feedback High	BI	150	DI	150	10150	nvoVFDFBHi_XXX	SNVT_switch
Master PIDE Instruction Fault	BI	151	DI	151	10151	nvoMstPIDFlt_XXX	SNVT_switch
FGEN Fault	BI	152	DI	152	10152	nvoFGENFlt_XXX	SNVT_switch
Outdoor Temp Sensor Failed	BI	153	DI	153	10153	nvoOutTpSnFl_XXX	SNVT_switch
Combustion Air Temp Sensor Failed	BI	154	DI	154	10154	nvoCmArTpSFl_XXX	SNVT_switch

Hawk 4500 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Yokogawa O2 Sensor Fault	BI	155	DI	155	10155	nvoYokO2SnFl_XXX	SNVT_switch
Mix O2 Sensor Calibration Fail	BI	156	DI	156	10156	nvoMxO2SnClF_XXX	SNVT_switch
Mix O2 Enable	BI	157	DI	157	10157	nvoMxO2Enbl_XXX	SNVT_switch
Air Actuator Not at Purge	BI	158	DI	158	10158	nvoArAcNoPrg_XXX	SNVT_switch
VFD Not at Purge	BI	159	DI	159	10159	nvoVFDNotPrg_XXX	SNVT_switch
Hawk 1000 system	BI	160	DI	160	10160	nvoH1000Sys_XXX	SNVT_switch
Hawk 4000 Next Gen	BI	161	DI	161	10161	nvoH4000NxGn_XXX	SNVT_switch
Stack Temp Econ Out Sensor Failed	BI	162	DI	162	10162	nvoStTpEcOSF_XXX	SNVT_switch
Econ In Water Temp Sensor Failed	BI	163	DI	163	10163	nvoEcInWtTSF_XXX	SNVT_switch
Fuel 3 Actuator 1 Fault	BI	164	DI	164	10164	nvoF3Act1Flt_XXX	SNVT_switch
Fuel 3 Actuator 2 Position Deviation	BI	165	DI	165	10165	nvoF3Ac2PsDv_XXX	SNVT_switch
Fuel 3 Actuator 2 Feedback Low	BI	166	DI	166	10166	nvoF3Ac2FBLo_XXX	SNVT_switch
Fuel 3 Actuator 2 Feedback High	BI	167	DI	167	10167	nvoF3Ac2FBHi_XXX	SNVT_switch
Fuel 3 Actuator 2 Fault	BI	168	DI	168	10168	nvoF3Act2Flt_XXX	SNVT_switch
Fuel 3 Actuator 1 Modbus Comm Error	BI	169	DI	169	10169	nvoF3A1MdCmE_XXX	SNVT_switch
Fuel 3 Actuator 2 Modbus Comm Error	BI	170	DI	170	10170	nvoF3A2MdCmE_XXX	SNVT_switch
Fuel 2 Actuator 2 Modbus Comm Error	BI	171	DI	171	10171	nvoF2A2MdCmE_XXX	SNVT_switch
Return Temp Sensor Failed	BI	172	DI	172	10172	nvoRtTmpSnFl_XXX	SNVT_switch
Water Shell Temp Sensor Failed	BI	173	DI	173	10173	nvoWtShTpSFl_XXX	SNVT_switch
Feedwater/Econ Out Temp Sensor Failed	BI	174	DI	174	10174	nvoFWEcOtTSF_XXX	SNVT_switch
Feedwater Level Control Option Selected	BI	175	DI	175	10175	nvoFWLvCOSel_XXX	SNVT_switch
AB[10]15	BI	176	DI	176	10176	nvoAB_10_15_XXX	SNVT_switch
Slot8 Ch0 Bad Quality	BI	177	DI	177	10177	nvoS8Ch0BdQu_XXX	SNVT_switch
Slot8 Ch0 Low Alarm	BI	178	DI	178	10178	nvoS8Ch0LoAl_XXX	SNVT_switch
Slot8 Ch0 High Alarm	BI	179	DI	179	10179	nvoS8Ch0HiAl_XXX	SNVT_switch
Slot8 Ch1 Bad Quality	BI	180	DI	180	10180	nvoS8Ch1BdQu_XXX	SNVT_switch
Slot8 Ch1 Low Alarm	BI	181	DI	181	10181	nvoS8Ch1LoAl_XXX	SNVT_switch
Slot8 Ch1 High Alarm	BI	182	DI	182	10182	nvoS8Ch1HiAl_XXX	SNVT_switch
Slot8 Ch2 Bad Quality/Mix O2 Signal Fail	BI	183	DI	183	10183	nvoS8Ch2BdQu_XXX	SNVT_switch
Slot8 Ch2 Low Alarm	BI	184	DI	184	10184	nvoS8Ch2LoAl_XXX	SNVT_switch
Slot8 Ch2 High Alarm	BI	185	DI	185	10185	nvoS8Ch2HiAl_XXX	SNVT_switch
Slot8 Ch3 Bad Quality	BI	186	DI	186	10186	nvoS8Ch3BdQu_XXX	SNVT_switch
Slot8 Ch3 Low Alarm	BI	187	DI	187	10187	nvoS8Ch3LoAl_XXX	SNVT_switch
Slot8 Ch3 High Alarm	BI	188	DI	188	10188	nvoS8Ch3HiAl_XXX	SNVT_switch
Slot8 Ch4 Bad Quality	BI	189	DI	189	10189	nvoS8Ch4BdQu_XXX	SNVT_switch
Slot8 Ch4 Low Alarm	BI	190	DI	190	10190	nvoS8Ch4LoAl_XXX	SNVT_switch
Slot8 Ch4 High Alarm	BI	191	DI	191	10191	nvoS8Ch4HiAl_XXX	SNVT_switch
AB[11]15	BI	192	DI	192	10192	nvoAB_11_15_XXX	SNVT_switch
Slot8 Ch5 Bad Quality	BI	193	DI	193	10193	nvoS8Ch5BdQu_XXX	SNVT_switch
Slot8 Ch5 Low Alarm	BI	194	DI	194	10194	nvoS8Ch5LoAl_XXX	SNVT_switch
Slot8 Ch5 High Alarm	BI	195	DI	195	10195	nvoS8Ch5HiAl_XXX	SNVT_switch
Slot8 Ch6 Bad Quality	BI	196	DI	196	10196	nvoS8Ch6BdQu_XXX	SNVT_switch
Slot8 Ch6 Low Alarm	BI	197	DI	197	10197	nvoS8Ch6LoAl_XXX	SNVT_switch
Slot8 Ch6 High Alarm	BI	198	DI	198	10198	nvoS8Ch6HiAl_XXX	SNVT_switch
Slot8 Ch7 Bad Quality	BI	199	DI	199	10199	nvoS8Ch7BdQu_XXX	SNVT_switch
Slot8 Ch7 Low Alarm	BI	200	DI	200	10200	nvoS8Ch7LoAl_XXX	SNVT_switch
Slot8 Ch7 High Alarm	BI	201	DI	201	10201	nvoS8Ch7HiAl_XXX	SNVT_switch
VFD EtherNet Comm Error	BI	202	DI	202	10202	nvoVFDEtCmEr_XXX	SNVT_switch
Slot 8 Ch 4 Analog Input Selected	BI	203	DI	203	10203	nvoS8Ch4AISl_XXX	SNVT_switch
Slot 8 Ch 5 Analog Input Selected	BI	204	DI	204	10204	nvoS8Ch5AISl_XXX	SNVT_switch
Slot 8 Ch 6 Analog Input Selected	BI	205	DI	205	10205	nvoS8Ch6AISl_XXX	SNVT_switch
Slot 8 Ch 7 Analog Input Selected	BI	206	DI	206	10206	nvoS8Ch7AISl_XXX	SNVT_switch

Hawk 4500 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
AB[12]14	BI	207	DI	207	10207	nvoAB_12_14_XXX	SNVT_switch
AB[12]15	BI	208	DI	208	10208	nvoAB_12_15_XXX	SNVT_switch
Air Actuator 2 Position Deviation	BI	209	DI	209	10209	nvoArAc2PsDv_XXX	SNVT_switch
Air Actuator 2 Feedback Low	BI	210	DI	210	10210	nvoArAc2FBLo_XXX	SNVT_switch
Air Actuator 2 Feedback High	BI	211	DI	211	10211	nvoArAc2FBHi_XXX	SNVT_switch
Air Actuator 2 Modbus Comm Error (Node 4)	BI	212	DI	212	10212	nvoArA2MdCmE_XXX	SNVT_switch
Air Actuator 2 Manual PB Pressed	BI	213	DI	213	10213	nvoArA2MnPBP_XXX	SNVT_switch
Air Actuator 2 Fault	BI	214	DI	214	10214	nvoAirAct2Fl_XXX	SNVT_switch
Air Actuator 2 Not At Purge	BI	215	DI	215	10215	nvoArAc2NoPr_XXX	SNVT_switch
Air Actuator 2 Not At Lightoff	BI	216	DI	216	10216	nvoArAc2NoLt_XXX	SNVT_switch
Air Actuator Not At Lightoff	BI	217	DI	217	10217	nvoArAcNotLt_XXX	SNVT_switch
Fuel Actuator 1 Not At Lightoff	BI	218	DI	218	10218	nvoFlA1NoLt_XXX	SNVT_switch
Fuel Actuator 2 Not At Lightoff	BI	219	DI	219	10219	nvoFlA2NoLt_XXX	SNVT_switch
FGR Actuator Not At Lightoff	BI	220	DI	220	10220	nvoFGRAcNoLt_XXX	SNVT_switch
VFD Not At Lightoff	BI	221	DI	221	10221	nvoVFDNoLt_XXX	SNVT_switch
AB[13]13	BI	222	DI	222	10222	nvoAB_13_13_XXX	SNVT_switch
AB[13]14	BI	223	DI	223	10223	nvoAB_13_14_XXX	SNVT_switch
AB[13]15	BI	224	DI	224	10224	nvoAB_13_15_XXX	SNVT_switch
AB[14]0	BI	225	DI	225	10225	nvoAB_14_0_XXX	SNVT_switch
AB[14]1	BI	226	DI	226	10226	nvoAB_14_1_XXX	SNVT_switch
AB[14]2	BI	227	DI	227	10227	nvoAB_14_2_XXX	SNVT_switch
AB[14]3	BI	228	DI	228	10228	nvoAB_14_3_XXX	SNVT_switch
AB[14]4	BI	229	DI	229	10229	nvoAB_14_4_XXX	SNVT_switch
AB[14]5	BI	230	DI	230	10230	nvoAB_14_5_XXX	SNVT_switch
AB[14]6	BI	231	DI	231	10231	nvoAB_14_6_XXX	SNVT_switch
AB[14]7	BI	232	DI	232	10232	nvoAB_14_7_XXX	SNVT_switch
AB[14]8	BI	233	DI	233	10233	nvoAB_14_8_XXX	SNVT_switch
AB[14]9	BI	234	DI	234	10234	nvoAB_14_9_XXX	SNVT_switch
AB[14]10	BI	235	DI	235	10235	nvoAB_14_10_XXX	SNVT_switch
AB[14]11	BI	236	DI	236	10236	nvoAB_14_11_XXX	SNVT_switch
AB[14]12	BI	237	DI	237	10237	nvoAB_14_12_XXX	SNVT_switch
AB[14]13	BI	238	DI	238	10238	nvoAB_14_13_XXX	SNVT_switch
AB[14]14	BI	239	DI	239	10239	nvoAB_14_14_XXX	SNVT_switch
AB[14]15	BI	240	DI	240	10240	nvoAB_14_15_XXX	SNVT_switch
Combustion Air Temp Low	BI	241	DI	241	10241	nvoComArTpLo_XXX	SNVT_switch
Combustion Air Temp High	BI	242	DI	242	10242	nvoComArTpHi_XXX	SNVT_switch
Atomize Steam Control Selected	BI	243	DI	243	10243	nvoAtStCtSel_XXX	SNVT_switch
Atomize Steam Diff Press Selected	BI	244	DI	244	10244	nvoAtStDfPrS_XXX	SNVT_switch
Atom Steam Cold Start Press. Selected	BI	245	DI	245	10245	nvoAtSCdSPrS_XXX	SNVT_switch
Air Preheater Control Selected	BI	246	DI	246	10246	nvoArPrCtrSl_XXX	SNVT_switch
Comb. Air Min Temp. Selected	BI	247	DI	247	10247	nvoCmArMnTpS_XXX	SNVT_switch
Drum Transmitter Present	BI	248	DI	248	10248	nvoDrmTrnPrs_XXX	SNVT_switch
Header Transmitter Present	BI	249	DI	249	10249	nvoHdrTrnPrs_XXX	SNVT_switch
Drum Transmitter is Primary	BI	250	DI	250	10250	nvoDrmTrnPri_XXX	SNVT_switch
Header Transmitter Primary	BI	251	DI	251	10251	nvoHdrTrnPri_XXX	SNVT_switch
Flame Scanner 1 Selected	BI	252	DI	252	10252	nvoFlScn1Sel_XXX	SNVT_switch
Flame Scanner 2 Selected	BI	253	DI	253	10253	nvoFlScn2Sel_XXX	SNVT_switch
Combustion Air Temp Hold	BI	254	DI	254	10254	nvoCmArTpHld_XXX	SNVT_switch
Atom. Air Press Low Fire Hold	BI	255	DI	255	10255	nvoAtArPLFrH_XXX	SNVT_switch
Steam Atom. Not at Lightoff	BI	256	DI	256	10256	nvoStAtNoLtO_XXX	SNVT_switch
Alarm Warn Active	BI	257	BD	1	10257	nvoAlmWrnAct_XXX	SNVT_switch
Alarm Trip Active	BI	258	BD	2	10258	nvoAlmTrpAct_XXX	SNVT_switch

Hawk 4500 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Alarm Warn Annunciate	BI	259	BD	3	10259	nvoAlmWrnAnn_XXX	SNVT_switch
Alarm Trip Annunciate	BI	260	BD	4	10260	nvoAlmTrpAnn_XXX	SNVT_switch
Water Level Low	BI	261	BD	5	10261	nvoWtrLvlLo_XXX	SNVT_switch
Water Level High	BI	262	BD	6	10262	nvoWtrLvlHi_XXX	SNVT_switch
High O2 Shutdown	BI	263	BD	7	10263	nvoHiO2Shtdn_XXX	SNVT_switch
High Air/Fuel Deviation (Full Metered)	BI	264	BD	8	10264	nvoHiArFlDev_XXX	SNVT_switch
High FGR Flow Deviation (Full Metered)	BI	265	BD	9	10265	nvoHiFGRFlDv_XXX	SNVT_switch
High-High FGR Flow Deviation (Full Metrd)	BI	266	BD	10	10266	nvoHHFGRFlDv_XXX	SNVT_switch
Flow Bad Quality (Full Metered)	BI	267	BD	11	10267	nvoFlwBdQual_XXX	SNVT_switch
Trip (Full Metered)	BI	268	BD	12	10268	nvoTrip_XXX	SNVT_switch
AB[16]12	BI	269	BD	13	10269	nvoAB_16_12_XXX	SNVT_switch
AB[16]13	BI	270	BD	14	10270	nvoAB_16_13_XXX	SNVT_switch
AB[16]14	BI	271	BD	15	10271	nvoAB_16_14_XXX	SNVT_switch
AB[16]15	BI	272	BD	16	10272	nvoAB_16_15_XXX	SNVT_switch
Flame Strength Honeywell	AI	1	AI	1	30001	nvoFlmStrHny_XXX	SNVT_count_f
Combustion Air Fan Speed (Hz)	AI	2	AI	2	30003	nvoCmArFnSpd_XXX	SNVT_count_f
Air Fan VFD Motor KW	AI	3	AI	3	30005	nvoArFnVFDMt_XXX	SNVT_count_f
Boiler Efficiency	AI	4	AI	4	30007	nvoBlrEff_XXX	SNVT_lev_percent
Firing Rate	AI	5	AI	5	30009	nvoFirRat_XXX	SNVT_lev_percent
O2 Level	AI	6	AI	6	30011	nvoO2Lvl_XXX	SNVT_lev_percent
SP Steam Pressure/Water Temp	AI	7	AI	7	30013	nvoSPStPWtTp_XXX	SNVT_count_f
Water Level	AI	8	AI	8	30015	nvoWtrLvl_XXX	SNVT_press_f
Steam Pressure or Hot Water Temp	AI	9	AI	9	30017	nvoStPrHWTmp_XXX	SNVT_count_f
AR[9]	AI	10	AI	10	30019	nvoAR_9_XXX	SNVT_count_f
Stack Temp Before Economizer	AI	11	AI	11	30021	nvoStkTpBfEc_XXX	SNVT_temp_p
Combustion Air Temp	AI	12	AI	12	30023	nvoComAirTmp_XXX	SNVT_temp_p
Water Temp Shell/Outdoor Temp	AI	13	AI	13	30025	nvoWtTpShl_XXX	SNVT_temp_p
Feedwater Temp/Econ Water Out Temp	AI	14	AI	14	30027	nvoFdWtTp_XXX	SNVT_temp_p
Stack Temp After Econ/Return HW	AI	15	AI	15	30029	nvoStkTmpEco_XXX	SNVT_temp_p
Economizer Water In Temp	AI	16	AI	16	30031	nvoEcWtInTmp_XXX	SNVT_temp_p
AI Slot8Ch0 Value/2Stg Econ Temp IN	AI	17	AI	17	30033	nvoAISlCh0Vl_XXX	SNVT_count_f
AI Slot8Ch1 Value/2Stg Econ Temp OUT	AI	18	AI	18	30035	nvoAISlCh1Vl_XXX	SNVT_count_f
AI Slot8 Ch2 Value (EU)	AI	19	AI	19	30037	nvoAISlCh2Vl_XXX	SNVT_count_f
AI Slot8 Ch3 Value (EU)	AI	20	AI	20	30039	nvoAISlCh3Vl_XXX	SNVT_count_f
Safety Valve Setting or Max Water Temp	AI	21	AI	21	30041	nvoSftVlvSet_XXX	SNVT_count_f
Header Pressure or Temp 2 Boiler LL	AI	22	AI	22	30043	nvoHdPrTpBLL_XXX	SNVT_count_f
SP 2 Boiler LL	AI	23	AI	23	30045	nvoSP2BlrLL_XXX	SNVT_count_f
Boiler Off Point	AI	24	AI	24	30047	nvoBlrOffPt_XXX	SNVT_count_f
Boiler On Point	AI	25	AI	25	30049	nvoBlrOnPt_XXX	SNVT_count_f
Condensate Return Valve Output Command	AI	26	AI	26	30051	nvoCdRtVOtCm_XXX	SNVT_lev_percent
Makeup Bypass Valve Output Command	AI	27	AI	27	30053	nvoMkByVOtCm_XXX	SNVT_lev_percent
Slot8 Ch0 Flo Total	AI	28	AI	28	30055	nvoSl8C0FlTo_XXX	SNVT_count_f
Slot8 Ch1 Flo Total	AI	29	AI	29	30057	nvoSl8C1FlTo_XXX	SNVT_count_f
Slot8 Ch2 Flo Total	AI	30	AI	30	30059	nvoSl8C2FlTo_XXX	SNVT_count_f
Slot8 Ch3 Flo Total	AI	31	AI	31	30061	nvoSl8C3FlTo_XXX	SNVT_count_f
Slot8 Ch4 FloTotal	AI	32	AI	32	30063	nvoSl8C4FlTo_XXX	SNVT_count_f
Slot8 Ch5 Flo Total	AI	33	AI	33	30065	nvoSl8C5FlTo_XXX	SNVT_count_f
Slot8 Ch6 Flo Total	AI	34	AI	34	30067	nvoSl8C6FlTo_XXX	SNVT_count_f
Slot8 Ch7 Flo Total	AI	35	AI	35	30069	nvoSl8C7FlTo_XXX	SNVT_count_f
Slot8 Ch4 EU	AI	36	AI	36	30071	nvoSl8Ch4EU_XXX	SNVT_count_f
Slot8 Ch5 EU	AI	37	AI	37	30073	nvoSl8Ch5EU_XXX	SNVT_count_f
Slot8 Ch6 EU	AI	38	AI	38	30075	nvoSl8Ch6EU_XXX	SNVT_count_f

Hawk 4500 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks

Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
Slot8 Ch7 EU	AI	39	AI	39	30077	nvoSl8Ch7EU_XXX	SNVT_count_f
Stack Pressure	AI	40	AI	40	30079	nvoStkPrs_XXX	SNVT_count_f
AR[40]	AI	41	AI	41	30081	nvoAR_40_XXX	SNVT_count_f
Remote Setpoint	AI	42	AI	42	30083	nvoRemSP_XXX	SNVT_count_f
Remote Firing Rate	AI	43	AI	43	30085	nvoRemFirRt_XXX	SNVT_count_f
Slot 10 Ch 0 (Air Flow) EU	AI	44	AI	44	30087	nvoS10C0AFlE_XXX	SNVT_count_f
Slot 10 Ch 1 (Fuel 1 Flow) EU	AI	45	AI	45	30089	nvoS10C1F1FE_XXX	SNVT_count_f
Slot 10 Ch 2 (Fuel 2 Flow) EU	AI	46	AI	46	30091	nvoS10C2F2FE_XXX	SNVT_count_f
Slot 10 Ch 3 (FGR Flow) EU	AI	47	AI	47	30093	nvoS10C3FGRE_XXX	SNVT_count_f
Slot 10 Ch 4 (Nat Gas Temp) EU	AI	48	AI	48	30095	nvoS10C4NtGE_XXX	SNVT_count_f
Slot 10 Ch 5 EU	AI	49	AI	49	30097	nvoS10C5EU_XXX	SNVT_count_f
Slot 10 Ch 6 EU	AI	50	AI	50	30099	nvoS10C6EU_XXX	SNVT_count_f
Slot 10 Ch 7 EU	AI	51	AI	51	30101	nvoS10C7EU_XXX	SNVT_count_f
Slot 10 Ch 0 (Air Flow) Flow Total	AI	52	AI	52	30103	nvoS10C0AFlF_XXX	SNVT_count_f
Slot 10 Ch 1 (Fuel 1 Flow) Flow Total	AI	53	AI	53	30105	nvoS10C1F1FF_XXX	SNVT_count_f
Slot 10 Ch 2 (Fuel 2 Flow) Flow Total	AI	54	AI	54	30107	nvoS10C2F2FF_XXX	SNVT_count_f
Slot 10 Ch 3 (FGR Flow) Flow Total	AI	55	AI	55	30109	nvoS10C3FGRF_XXX	SNVT_count_f
Slot 10 Ch 4 (Nat Gas Temp) Flow Total	AI	56	AI	56	30111	nvoS10C4NtGF_XXX	SNVT_count_f
Slot 10 Ch 5 Flow Total	AI	57	AI	57	30113	nvoS10C5FlTo_XXX	SNVT_count_f
Slot 10 Ch 6 Flow Total	AI	58	AI	58	30115	nvoS10C6FlTo_XXX	SNVT_count_f
Slot 10 Ch 7 Flow Total	AI	59	AI	59	30117	nvoS10C7FlTo_XXX	SNVT_count_f
AR[59]	AI	60	AI	60	30119	nvoAR_59_XXX	SNVT_count_f
Burner Control Status Line 1 Honeywell	AI	61	AI	61	30122	nvoBSt1Hnywl_XXX	SNVT_count_f
Burner Control Status Line 2 Honeywell	AI	62	AI	62	30123	nvoBSt2Hnywl_XXX	SNVT_count_f
Burner Control Status Line 1 Fireye	AI	63	AI	63	30124	nvoBSt1Freye_XXX	SNVT_count_f
Burner Control Status Line 2 Fireye	AI	64	AI	64	30125	nvoBSt2Freye_XXX	SNVT_count_f
Flame Signal Fireye	AI	65	AI	65	30126	nvoFlSgFrey_XXX	SNVT_count_f
Fuel 1Type	AI	66	AI	66	30127	nvoFl1Type_XXX	SNVT_count_f
Fuel 2 Type	AI	67	AI	67	30128	nvoFl2Type_XXX	SNVT_count_f
Fuel 3 Type	AI	68	AI	68	30129	nvoFl3Type_XXX	SNVT_count_f
Elapsed Time (First 16 Bits)	AI	69	AI	69	30130	nvoElpTm1_XXX	SNVT_time_hour
Elapsed Time (Second 16 Bits)	AI	70	AI	70	30131	nvoElpTm2_XXX	SNVT_time_hour
Number Of Cycles (First 16 Bits)	AI	71	AI	71	30132	nvoNumCyc1_XXX	SNVT_count_f
Number Of Cycles (Second 16 Bits)	AI	72	AI	72	30133	nvoNumCyc2_XXX	SNVT_count_f
AI[13]	AI	73	AI	73	30134	nvoAI_13_XXX	SNVT_count_f
AI[14]	AI	74	AI	74	30135	nvoAI_14_XXX	SNVT_count_f
AI[15]	AI	75	AI	75	30136	nvoAI_15_XXX	SNVT_count_f
AI[16]	AI	76	AI	76	30137	nvoAI_16_XXX	SNVT_count_f
AI[17]	AI	77	AI	77	30138	nvoAI_17_XXX	SNVT_count_f
AI[18]	AI	78	AI	78	30139	nvoAI_18_XXX	SNVT_count_f
AI[19]	AI	79	AI	79	30140	nvoAI_19_XXX	SNVT_count_f
AI[20]	AI	80	AI	80	30141	nvoAI_20_XXX	SNVT_count_f
AI[21]	AI	81	AI	81	30142	nvoAI_21_XXX	SNVT_count_f
AI[22]	AI	82	AI	82	30143	nvoAI_22_XXX	SNVT_count_f
AI[23]	AI	83	AI	83	30144	nvoAI_23_XXX	SNVT_count_f
AI[24]	AI	84	AI	84	30145	nvoAI_24_XXX	SNVT_count_f
AI[25]	AI	85	AI	85	30146	nvoAI_25_XXX	SNVT_count_f
AI[26]	AI	86	AI	86	30147	nvoAI_26_XXX	SNVT_count_f
AI[27]	AI	87	AI	87	30148	nvoAI_27_XXX	SNVT_count_f
AI[28]	AI	88	AI	88	30149	nvoAI_28_XXX	SNVT_count_f
AI[29]	AI	89	AI	89	30150	nvoAI_29_XXX	SNVT_count_f
Elapsed Time	AI	90	AI	90	30152	nvoElapTim_XXX	SNVT_time_hour

Hawk 4500 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks

	Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
	Number Of Cycles	AI	91	AI	91	30154	nvoNumCyc_XXX	SNVT_count_f
	AB[0]	AI	201	AI	201	30201	nvoAB_0_XXX	SNVT_count_f
	AB[1]	AI	202	AI	202	30202	nvoAB_1_XXX	SNVT_count_f
	AB[2]	AI	203	AI	203	30203	nvoAB_2_XXX	SNVT_count_f
	AB[3]	AI	204	AI	204	30204	nvoAB_3_XXX	SNVT_count_f
	AB[4]	AI	205	AI	205	30205	nvoAB_4_XXX	SNVT_count_f
	AB[5]	AI	206	AI	206	30206	nvoAB_5_XXX	SNVT_count_f
	AB[6]	AI	207	AI	207	30207	nvoAB_6_XXX	SNVT_count_f
	AB[7]	AI	208	AI	208	30208	nvoAB_7_XXX	SNVT_count_f
	AB[8]	AI	209	AI	209	30209	nvoAB_8_XXX	SNVT_count_f
	AB[9]	AI	210	AI	210	30210	nvoAB_9_XXX	SNVT_count_f
	AB[10]	AI	211	AI	211	30211	nvoAB_10_XXX	SNVT_count_f
	AB[11]	AI	212	AI	212	30212	nvoAB_11_XXX	SNVT_count_f
	AB[12]	AI	213	AI	213	30213	nvoAB_12_XXX	SNVT_count_f
	AB[13]	AI	214	AI	214	30214	nvoAB_13_XXX	SNVT_count_f
	AB[14]	AI	215	AI	215	30215	nvoAB_14_XXX	SNVT_count_f
*	Heart Beat From BMS	BV	1	DO	1	00001	nvoHtBtFrBMS_XXX	SNVT_switch
*	Rem Start From BMS	BV	2	DO	2	00002	nvoRmStFrBMS_XXX	SNVT_switch
*	AWB[0]2	BV	3	DO	3	00003	nvoAWB_0_2_XXX	SNVT_switch
*	AWB[0]3	BV	4	DO	4	00004	nvoAWB_0_3_XXX	SNVT_switch
*	AWB[0]4	BV	5	DO	5	00005	nvoAWB_0_4_XXX	SNVT_switch
*	AWB[0]5	BV	6	DO	6	00006	nvoAWB_0_5_XXX	SNVT_switch
*	AWB[0]6	BV	7	DO	7	00007	nvoAWB_0_6_XXX	SNVT_switch
*	AWB[0]7	BV	8	DO	8	00008	nvoAWB_0_7_XXX	SNVT_switch
*	AWB[0]8	BV	9	DO	9	00009	nvoAWB_0_8_XXX	SNVT_switch
*	AWB[0]9	BV	10	DO	10	00010	nvoAWB_0_9_XXX	SNVT_switch
*	AWB[0]10	BV	11	DO	11	00011	nvoAWB_0_10_XXX	SNVT_switch
*	AWB[0]11	BV	12	DO	12	00012	nvoAWB_0_11_XXX	SNVT_switch
*	AWB[0]12	BV	13	DO	13	00013	nvoAWB_0_12_XXX	SNVT_switch
*	AWB[0]13	BV	14	DO	14	00014	nvoAWB_0_13_XXX	SNVT_switch
*	AWB[0]14	BV	15	DO	15	00015	nvoAWB_0_14_XXX	SNVT_switch
*	AWB[0]15	BV	16	DO	16	00016	nvoAWB_0_15_XXX	SNVT_switch
*	AWB[1]0	BV	17	DO	17	00017	nvoAWB_1_0_XXX	SNVT_switch
*	AWB[1]1	BV	18	DO	18	00018	nvoAWB_1_1_XXX	SNVT_switch
*	AWB[1]2	BV	19	DO	19	00019	nvoAWB_1_2_XXX	SNVT_switch
*	AWB[1]3	BV	20	DO	20	00020	nvoAWB_1_3_XXX	SNVT_switch
*	AWB[1]4	BV	21	DO	21	00021	nvoAWB_1_4_XXX	SNVT_switch
*	AWB[1]5	BV	22	DO	22	00022	nvoAWB_1_5_XXX	SNVT_switch
*	AWB[1]6	BV	23	DO	23	00023	nvoAWB_1_6_XXX	SNVT_switch
*	AWB[1]7	BV	24	DO	24	00024	nvoAWB_1_7_XXX	SNVT_switch
*	AWB[1]8	BV	25	DO	25	00025	nvoAWB_1_8_XXX	SNVT_switch
*	AWB[1]9	BV	26	DO	26	00026	nvoAWB_1_9_XXX	SNVT_switch
*	AWB[1]10	BV	27	DO	27	00027	nvoAWB_1_10_XXX	SNVT_switch
*	AWB[1]11	BV	28	DO	28	00028	nvoAWB_1_11_XXX	SNVT_switch
*	AWB[1]12	BV	29	DO	29	00029	nvoAWB_1_12_XXX	SNVT_switch
*	AWB[1]13	BV	30	DO	30	00030	nvoAWB_1_13_XXX	SNVT_switch
*	AWB[1]14	BV	31	DO	31	00031	nvoAWB_1_14_XXX	SNVT_switch
*	AWB[1]15	BV	32	DO	32	00032	nvoAWB_1_15_XXX	SNVT_switch
*	Rem Op SP Boiler	AV	1	AO	1	40001	nvoRmOpSPBlr_XXX	SNVT_count_f
*	Rem Firing Rate	AV	2	AO	2	40003	nvoRemFirRat_XXX	SNVT_lev_percent
*	Rem Op SP 2 boiler Lead/Lag	AV	3	AO	3	40005	nvoRmOSP2BLL_XXX	SNVT_count_f
*	AWR[3]	AV	4	AO	4	40007	nvoAWR_3_XXX	SNVT_count_f

Hawk 4500 EtherNet/IP Mappings to BACnet, Metasys N2 and LonWorks

	Point Name	BACnet Object Type	BACnet Object ID	N2 Data Type	N2 Point Address	Modbus Register	LonWorks Name	LonWorks SNVT
*	AWR[4]	AV	5	AO	5	40009	nvoAWR_4_XXX	SNVT_count_f
*	AWR[5]	AV	6	AO	6	40011	nvoAWR_5_XXX	SNVT_count_f
*	AWR[6]	AV	7	AO	7	40013	nvoAWR_6_XXX	SNVT_count_f
*	AWR[7]	AV	8	AO	8	40015	nvoAWR_7_XXX	SNVT_count_f
*	AWR[8]	AV	9	AO	9	40017	nvoAWR_8_XXX	SNVT_count_f
*	AWR[9]	AV	10	AO	10	40019	nvoAWR_9_XXX	SNVT_count_f

* Write point

APPENDIX C — "A" BANK DIP SWITCH SETTINGS

Address	A0	A1	A2	A3	A4	A5	A6	A7
0	Off	Off	Off	Off	Off	Off	Off	Off
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
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

Address	A0	A1	A2	A3	A4	A5	A6	A7
94	Off	On	On	On	On	Off	On	Off
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

Address	A0	A1	A2	A3	A4	A5	A6	A7
143	On	On	On	On	Off	Off	Off	On
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

Address	A0	A1	A2	A3	A4	A5	A6	A7
192	Off	Off	Off	Off	Off	Off	On	On
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

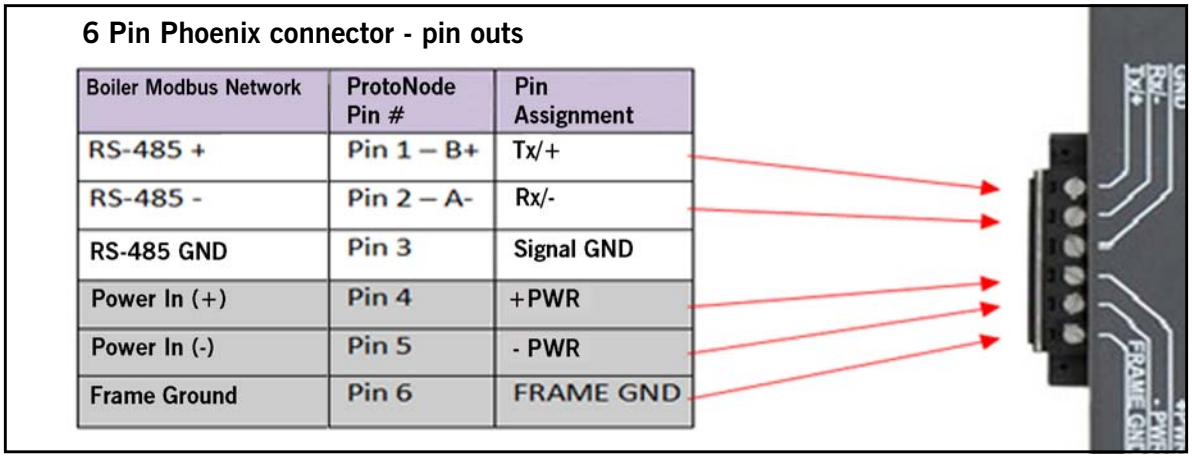
Address	A0	A1	A2	A3	A4	A5	A6	A7
241	On	Off	Off	Off	On	On	On	On
242	Off	On	Off	Off	On	On	On	On
243	On	On	Off	Off	On	On	On	On
244	Off	Off	On	Off	On	On	On	On
245	On	Off	On	Off	On	On	On	On
246	Off	On	On	Off	On	On	On	On
247	On	On	On	Off	On	On	On	On
248	Off	Off	Off	On	On	On	On	On
249	On	Off	Off	On	On	On	On	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 — INTERFACING PROTONODE GATEWAY TO BOILER NETWORKS

D.1. Boiler Network Wiring Connections to ProtoNode RER and LER

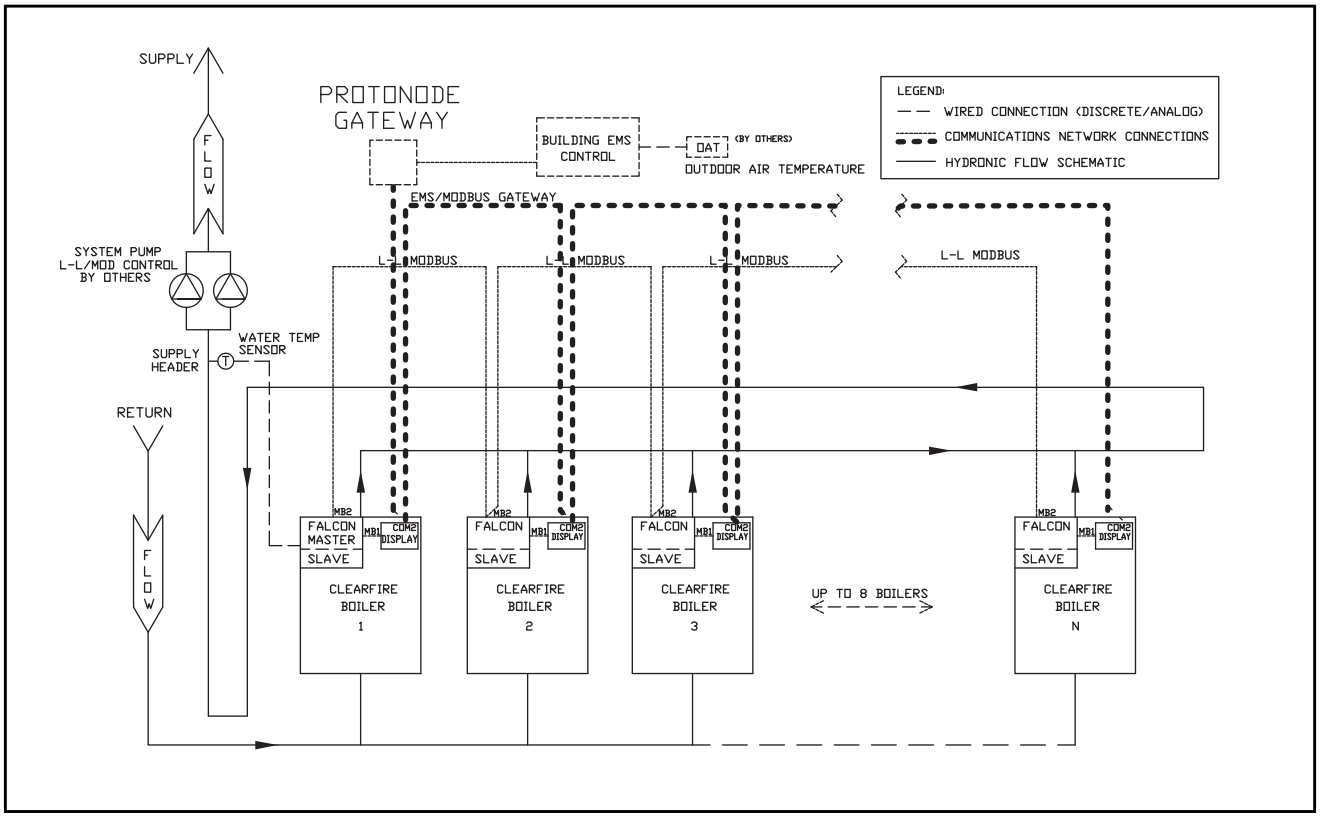
6 Pin Phoenix connector - pin outs

Boiler Modbus Network	ProtoNode Pin #	Pin Assignment
RS-485 +	Pin 1 – B+	Tx/+
RS-485 -	Pin 2 – A-	Rx/-
RS-485 GND	Pin 3	Signal GND
Power In (+)	Pin 4	+PWR
Power In (-)	Pin 5	- PWR
Frame Ground	Pin 6	FRAME GND



D.2. ClearFire Boiler Modbus Network

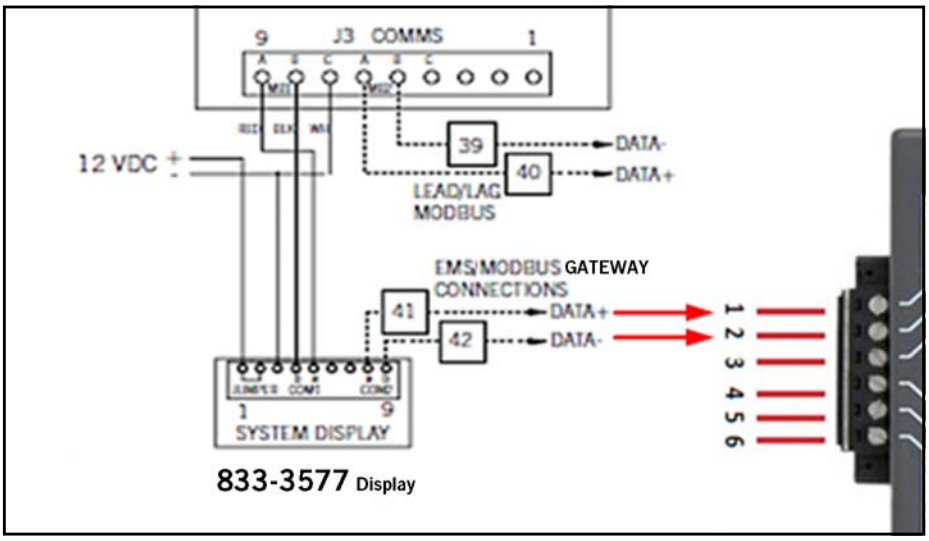
The diagram below shows a typical application using the ProtoNode Gateway in a ClearFire Lead Lag system

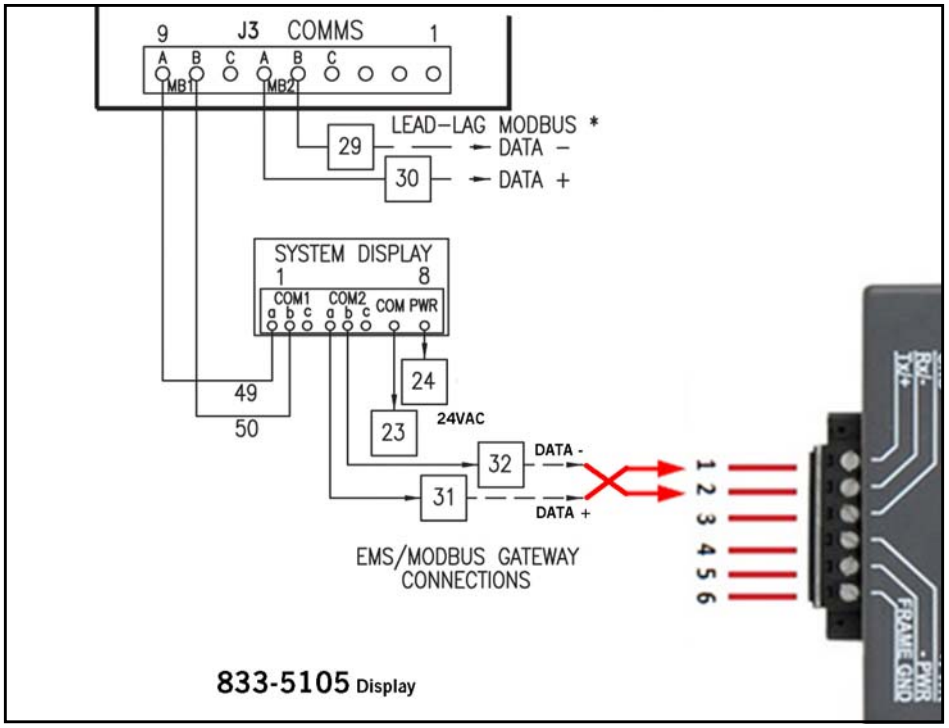


NOTE: In the diagram above there are two independent Modbus networks. One is dedicated for Falcon lead lag control; the other is dedicated to the building EMS gateway interface. **DO NOT CROSS-CONNECT THESE TWO MODBUS NETWORKS.**

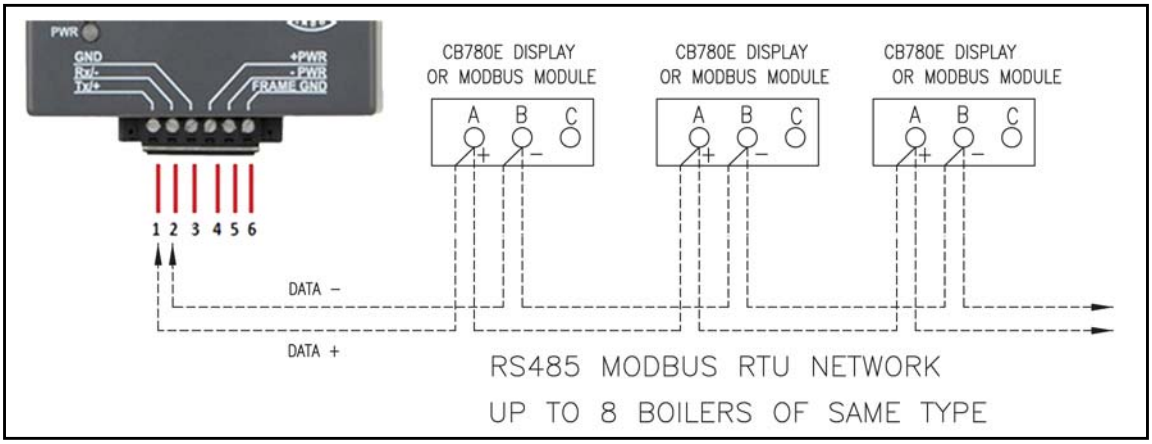
D.3 Falcon System Display Modbus Gateway Connection (COM2) Wiring to the ProtoNode

- Connect Falcon Display COM 2 port (Modbus A) to Pin 1, labeled Tx/+ on the ProtoNode's 6 pin Phoenix connector.
- Connect Falcon Display COM 2 port (Modbus B) to Pin 2, labeled Rx/- on the ProtoNode's 6 pin Phoenix connector.
- Ground does not need to be grounded to the ProtoNode.
- **NOTE: the A and B terminal designations on the ProtoNode 6-pin connector do not match the corresponding terminals on the Falcon or CB780E:**
  A+ (Falcon/CB780E) is wired to B+ (ProtoNode)
  B- (Falcon/CB780E) is wired to A- (ProtoNode)

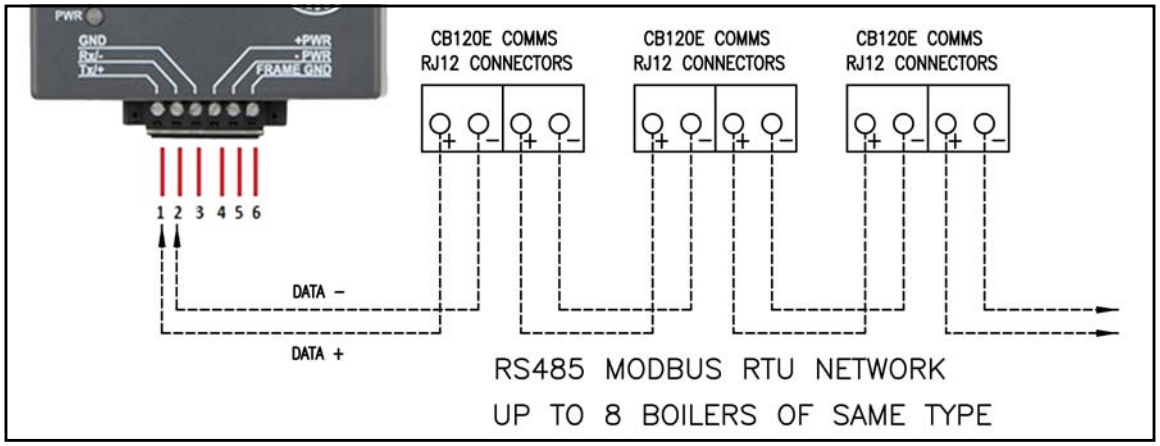




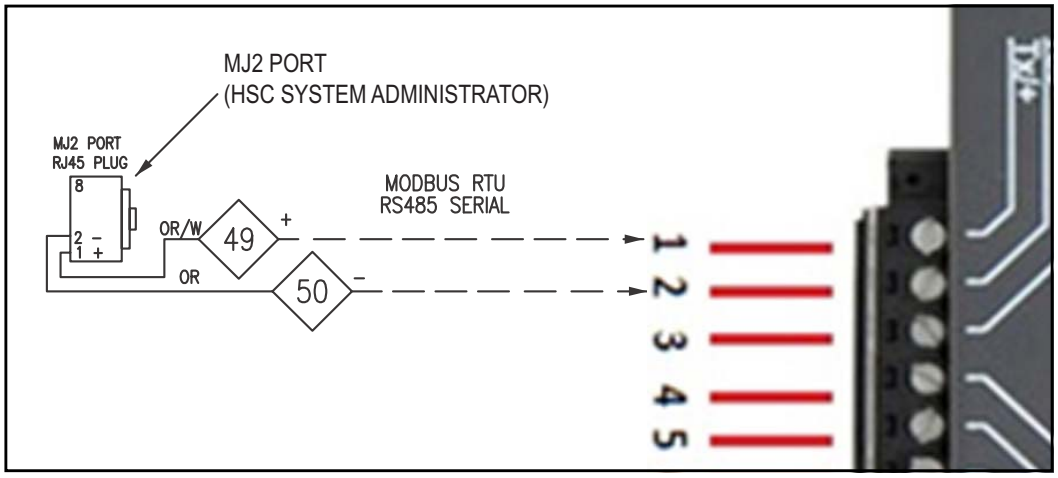
D.4 CB780E Modbus connections to ProtoNode



D.5. CB120E Modbus connections to ProtoNode



D.6. HSC Modbus connections to ProtoNode



APPENDIX E — SPECIFICATIONS / UL COMPLIANCE

E.1 Specifications

	ProtoNode RER	ProtoNode LER
Electrical Connections	One 6-pin Phoenix connector with: RS-485 port (+ / - / gnd) Power port (+ / - / Frame-gnd) One 3-pin Phoenix connector with: RS-485 port (+ / - / gnd) One Ethernet 10/100BaseT port	One 6-pin Phoenix connector with: RS-485 port (+ / - / gnd) Power port (+ / - / Frame-gnd) One Ethernet 10/100BaseT 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 to167°F)	
Surge Suppression	EN61000-4-2 ESD EN61000-4-3 EMC EN61000-4-4 EFT	
Humidity:	5 - 90% RH (non-condensing)	
(Specifications subject to change without notice)		

E.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 F — LIMITED 2 YEAR WARRANTY

Cleaver-Brooks warrants this product to be free from defects in workmanship or material under normal use and service for two years after date of shipment. C-B 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 C-B 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 C-B 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 C-B'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, C-B 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 C-B for damages including, but not limited to, consequential damages arising out of/or in connection with the use or performance of the product.


CleaverBrooks