E8951

Modbus-to-BACnet Protocol Converter

Product Overview

The E8951 is a protocol conversion gateway that adapts supported Veris Modbus RTU energy meters to building automation systems using BACnet protocol over either IP or MS/TP physical layer interfaces. The E8951 supports up to 32 meters or 10,000 total measurement points (number of output points varies by meter model). It is pre-programmed to discover any supported meters and automatically configure them for BACnet MS/TP or BACnet/IP. Each Modbus meter is presented as a BACnet device, with a unique BACnet **device_ID** and a full set of measurement data and configuration objects. Little configuration is required. The user sets up communication and protocol parameters using DIP switches and/or a built-in web server Graphical User Interface (GUI).

Product Identification

E8951 Modbus-to-BACnet Protocol Converter
Supported Veris Meters: Enercept H8035/6 Series, E50C2, E50C3*, E51C2, E51C3*, H81xx Series (with the H8163-CB Modbus RTU Communication Board), H8238 Series, H8436/7 Series, H704/H663 Series, E30xA/B/C Series, and U013-0010/0011 I/O modules.

** The E8951 does not support the logging functionality of these meters.*
Refer to Appendix 3 to determine how many meters of each type can be supported.

Specifications

DOWNSTREAM (DEVICE) INTERFACES	
Physical Layer	2-wire RS-485
Line Termination	Internal, 120 Ω
Line Polarization	Internal
Protocol	Modbus RTU
Baud Rate	9600 to 38400 (selections vary with Modbus devices used)
Number of Devices Supported	Up to 32 devices (not to exceed 10,000 total BACnet data objects)
UPSTREAM (CONTROLLER) ETHERNET INTERFACE	
Physical Layer	10/100 Mb Ethernet
Protocol	BACnet IP
UPSTREAM (CONTROLLER) SERIAL INTERFACE	
Physical Layer	2-wire RS-485
Protocol	BACnet MS/TP
Baud Rate	9600, 19200, 38400, and 76800
INPUT POWER REQUIREMENTS	
Supply Voltage	Class 2 9 to 30 Vdc or 12 to 24 Vac
Nominal Current Draw @ 12V	240 mA
ENVIRONMENTAL	
Operating Temperature Range	-40 to 60 °C (-40 to 140 °F)
Operating Humidity Range	5 to 90% RH non-condensing
Agency Approvals	CE; TUV approved to UL916

NOTICE

- **This product is not intended for life or safety applications.**
- **Do not install this product in hazardous or classified locations.**
- **The installer is responsible for conformance to all applicable codes.**

Control system design must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to acheive a safe state during and after a path failure. Examples of critical control functions are emergency stop and over-travel stop.

⚠ WARNING

LOSS OF CONTROL
- Assure that the system will reach a safe state during and after a control path failure.
- Separate or redundant control paths must be provided for critical control functions.
- Test the effect of transmission delays or failures of communication links.[1]
- Each implementation of equipment using communication links must be individually and thoroughly tested for proper operation before placing it in service.

Failure to follow these instructions may cause injury, death or equipment damage.

[1]For additional information about anticipated transmission delays or failures of the link, refer to NEMA ICS 1.1 (latest edition). *Safety Guidelins for the Application, Installation, and Maintenance of Solid-State Control* or its equivalent in your specific country, language, and/or location.

Veris Industries assumes no responsibility for any consequences arising out of the use of this material.

FCC PART 15 INFORMATION
NOTE: This equipment has been tested by the manufacturer and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Modifications to this product without the express authorization of Veris Industries nullify this statement.

The CE mark indicates RoHS2 compliance. Please refer to the CE Declaration of Conformity for additional details.

  USA 800.354.8556 or +1.503.598.4564 / support@veris.com

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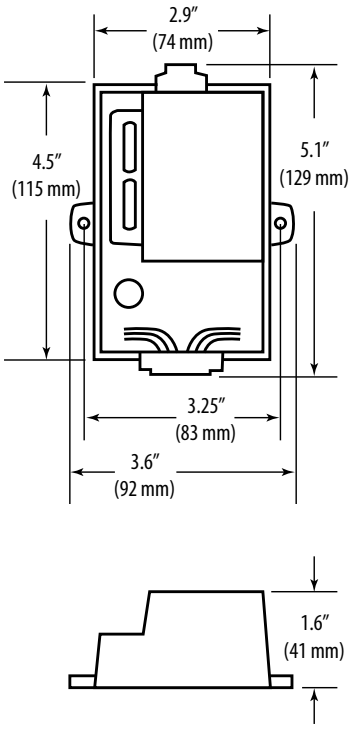
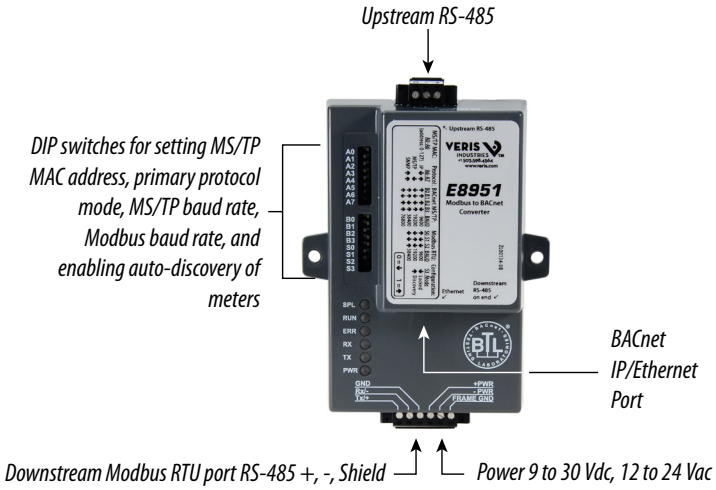
Dimensions



Product Diagram



LED Blink Codes

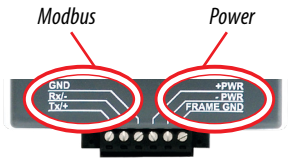
LED	Color	Description
SPL	Blue	Solid blue indicates that a meter that was discovered at power-up is no longer communicating.
RUN	Dark Green	Slow blink (one second on, one second off) after the product has initialized (approximately 40 seconds after the unit is powered or reset). This indicates normal operation.
ERR	Red	This illuminates blink briefly when the Run LED first comes on (about 15 seconds after the unit is powered or reset). A steady red light indicates the unit needs attention.
RX	Yellow	Indicates the device is receiving data on the downstream Modbus link.
TX	Orange	Indicates the device is transmitting data on the downstream Modbus link.
PWR	Light Green	This is always on when the unit is powered.

Installation

The E8951 can be DIN rail mounted, using the supplied DIN rail mounting clip, or screw-mounted directly to a wall or other flat surface using the mounting holes on either side of the housing.

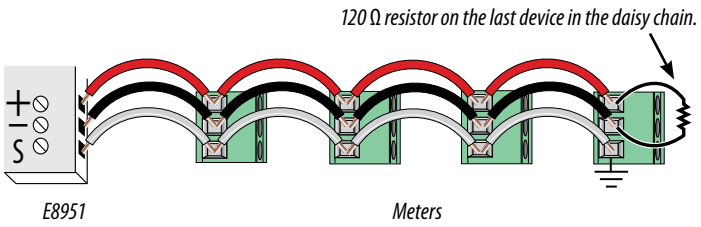
6-Pin Connector

Pin #	Pin Assignment
Pin 1	RS-485 + (Modbus)
Pin 2	RS-485 - (Modbus)
Pin 3	RS-485 Shield
Pin 4	V +
Pin 5	V -
Pin 6	FRAME GND



1. Refer to the Installation Guides for the specific meter devices used to locate instructions on connecting the meters and changing their configuration settings.

2. Connect the Modbus outputs of the devices to the Modbus side of the E8951.

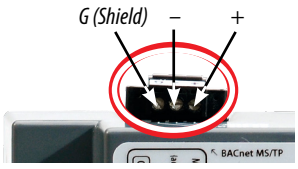


- Wire the RS-485 bus as a daisy chain from device to device (up to 32 supported devices) without any stubs. Use a 120 Ω termination resistor (not included) on the device farthest from the E8951. An additional 120Ω termination and Modbus line polarization are provided internal to the E8951.
- Connect shield to earth ground somewhere on the RS-485 bus (only in one location, to avoid ground loops). The shield is not internally connected to earth ground.
- Use wire with an insulation rating sufficient for the location where the meter is installed (e.g. Belden 1120A for installation in panels with up to 600 VAC).

3. Connect 9 to 30 Vdc or 12 to 24 Vac to the +PWR/-PWR terminals of the 6-pin connector.

4. Connect the Upstream RS-485 connections on the E8951 to the field controller or other RS-485 interface according to its guidelines.

Pin Label	Pin #	Pin assignment
+	Pin 1	RS-485 + (MS/TP)
-	Pin 2	RS-485 - (MS/TP)
G	Pin 3	RS-485 Shield



Once the wiring connections are complete, configure the E8951 protocol settings using either the DIP switches or the GUI, then configure the Modbus settings on the Modbus meters. Power on the meters first, so that they initialize and are ready to communicate, then power up the E8951 to start the discovery process.

Configuration

Configuration Using DIP Switches (BACnet MS/TP Only)

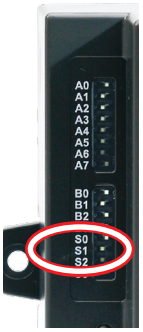
The product can easily be configured to connect via BACnet MS/TP without connecting a PC via Ethernet to run the GUI as long as you don't need to change the settings for the **E3x_RTC_Control** (default is BACnet Time Sync) and **Disc_Length** (default is 32, meaning it will scan Modbus addresses 1 through 32 for supported devices). When using a protocol mode other than MS/TP or when you need to set these other parameters, you will need to set up an Ethernet connection to a web browser and use the GUI. See the "Configuration Using the GUI" section of this document for further information.

Configuration (cont.)

The unit is shipped with a default setting that allows MS/TP configuration using the DIP switches on the top of the unit. This setting is the first parameter (**Config_Method**) in the GUI, and must be left in the "DIP Switches" mode (0) or the DIP switch settings will be ignored and overridden by corresponding parameter stings in the GUI.

Use DIP switches S0 to S2 to set the Modbus baud rate to 9600, 19200, or 38400. The default baud rate is 9600, because this rate is available on all the devices supported by the E8951. If all connected devices support a faster rate, use the highest rate in common to improve performance. Set the E8951 and all Modbus devices in the series to the same rate. Set all devices to NO parity.

Baud Rate	S0 – S2 DIP Switches		
	S0	S1	S2
9600 Baud	⇨	⇦	⇦
19200 Baud	⇦	⇨	⇦
38400 Baud	⇦	⇦	⇨



Protocol Mode Selection

Use DIP switches A6 and A7 to select the primary protocol mode (BACnet MS/TP, BACnet IP or SNMP). See "Appendix 2: DIP Switch Address Settings" on page 160 for the A0 to A6 switch settings in BACnet MS/TP mode. Using the GUI to configure modes other than MS/TP is recommended to provide access to full functionality.

Protocol Mode	A6	A7
BACnet MS/TP	x	⇦
BACnet IP	⇦	⇦
SNMP	⇦	⇦

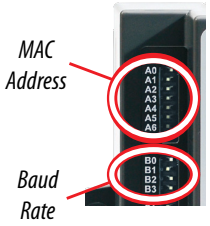
Upstream RS-485 Setup for either BACnet MS/TP or Modbus RTU

1. If using BACnet MS/TP mode and you are using the DIP configuration mode (selectable in the GUI), set the MAC address using DIP switches A0-A6. See "Appendix 2: DIP Switch Address Settings" on page 160 for a full table of valid address switch settings.

   If you are using any mode other than BACnet MS/TP, want to use the upstream RS-485 interface for Modbus RTU and you are using the DIP configuration mode (selectable in the GUI), you can use switches A0-A5 to set the upstream Modbus address from 0-63. If you need to set a Modbus RTU address larger than 63 or a Modbus parity selection other than "None", you will need to change the Configuration Method to "GUI" and use the GUI to select them.

2. If using BACnet MS/TP mode and you are using the DIP configuration mode (selectable in the GUI), set the MS/TP baud rate using DIP switches B0-B3.

Baud	B0	B1	B2	B3
9600	⇨	⇨	⇨	⇦
19200	⇦	⇦	⇦	⇨
38400	⇨	⇨	⇦	⇨
76800	⇨	⇦	⇨	⇨



Configuration (cont.)

Discovery Mode Setting

1. Leave DIP switch S3 in the "Discovery Mode" position for normal operation.

Mode	S3
Discovery	⇨
Locked	⇦

Set BACnet MS/TP Protocol Parameters

1. Device_ID – The default **Device_ID** for the virtual router in the E8951 is set by the **Device_Offset** parameter, which has a factory default value of 50000. Supported meters discovered by the E8951 will have **Device_ID** values that are the sum of this **Device_Offset** parameter and the Modbus address of the discovered meter. Once you are connected to a BACnet system, you can set individual **Device_ID** of any of them to any valid value by writing a new value to the **Device_ID** property of the Device object. Alternately, you can read and/or change the **Device_Offset** parameter by accessing object AV2 (of the virtual router) via BACnet.

2. BACnet network number – The E8951 gateway creates a BACnet virtual router and separate BACnet devices for each device discovered at a Modbus address polled behind this virtual router, allowing the devices to be discoverable and independently accessed via BACnet, even if the virtual router is connected by MS/TP, using a single MAC address. To use this product with MS/TP, the BACnet system must support the discovery and use of a BACnet router on the MS/TP trunk and any devices beyond it. This virtual router creates an exclusive BACnet network on which the meter's BACnet devices reside. This network must have a BACnet network number that is different from any other networks in the entire BACnet enterprise. When multiple E8951 products are added anywhere in the enterprise, each one must have a unique network number. Failure to set an exclusive value in this field causes communication conflicts in the BACnet system. You can read and/or change this internal network number via BACnet as object AV1 (of the virtual router). The factory default value of this network number is 50.

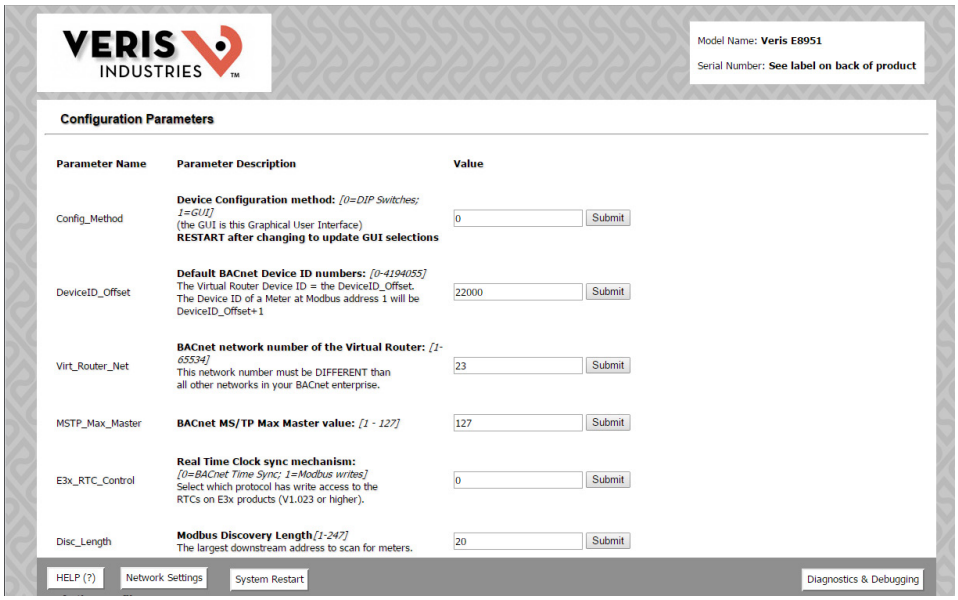
   Enter a non-conflicting value and click Submit. Valid network numbers range from 1 to 5534; if values outside this range are entered, the network number will be set to 5. The new value is first used at the next power-up or system restart. If using an external BACnet router to connect the E8951 as an MS/TP device, it is recommended that the router also be restarted after the E8951 has completed discovery when the network number is changed (to allow the external router to re-discover the E8951 with its new internal network number).

3. Max_Master – The factory default for **Max_Master** is 127. It is a writable property of the Device object of the virtual router in the E8951.

Configuration (cont.)

Accessing the Graphical User Interface

If the E8951 IP address parameters are already configured to work on the network and they are being accessed from a PC on that same network, open a web browser and enter the IP address of the E8951 into the address/URL field on the browser. Click Enter. The GUI launches and appears, as shown, in the browser window.



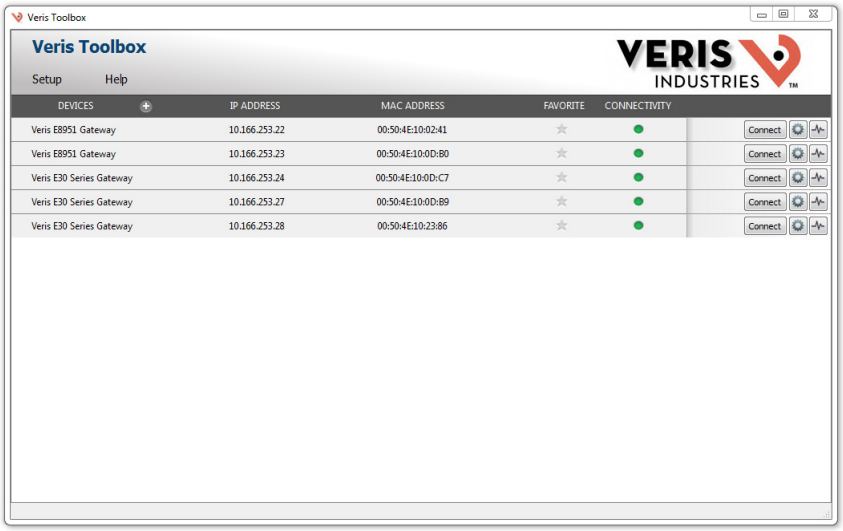
If the E8951 IP address parameters are not configured for the network you can either use a PC-based tool called the Veris Toolbox, which can be downloaded from the Veris website at www.veris.com (see"Using the Veris Toolbox to Set Up the IP Address for Use on Your Network" on page 7) or, connect a PC directly and access the GUI as described in the section "Using the GUI to Set Up the IP Address for Use on Your Network" on page 9.

Using the Veris Toolbox to Set Up the IP Address for Use on Your Network

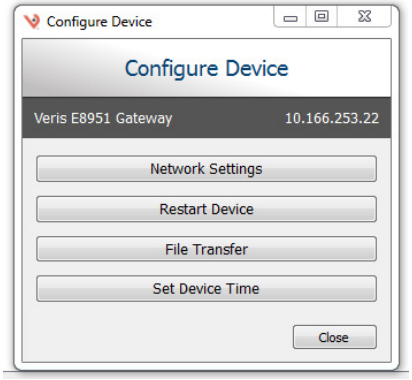
1. Download the Veris Toolbox software onto a PC from www.Veris.com/BACnet.
2. Extract the software from the zip file.
3. Run the Setup.exe file and follow the installation instructions.
4. Either connect the E8951 Ethernet interface to the same network subnet as your PC or connect a cable between them directly. You will not need to change any network settings on the PC for the Toolbox software to find the E8951.
5. Apply power to the E8951.

Configuration (cont.)

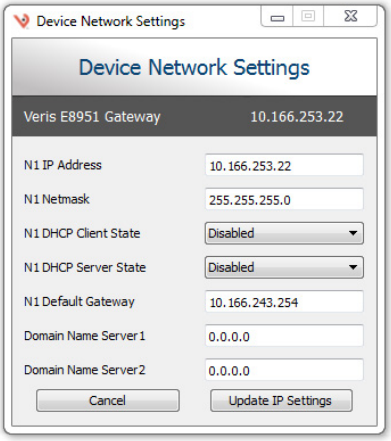
6. Launch the Veris Toolbox software. It will discover the E8951, regardless of its IP settings.



7. Click the gear-shaped configuration icon near the right edge of the window on the line that shows the device you wish to configure. The Configure Device dialog will appear.



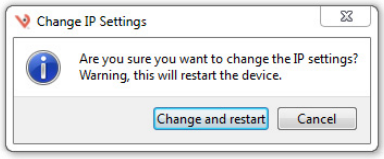
8. Click the Network Settings button. The Device Network Settings dialog will appear. This dialog shows all the current IP settings of the E8951.



9. Enter the network settings needed to operate properly on your network.

Configuration (cont.)

10. Click the Update IP Settings button. The Change IP Settings confirmation dialog will appear.

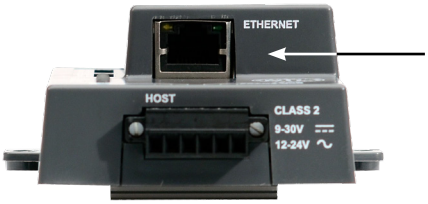


Confirm that the settings you entered are correct and click the Change and Restart button. The E8951 will reset and power up with the new settings. If you watch the Veris Toolbox screen, the entry for the old address will soon show a lost connection. Eventually a new entry with the new IP address will appear and the old entry will be deleted.

11. Disconnect the E8951 and connect it to the network on which it will be used.

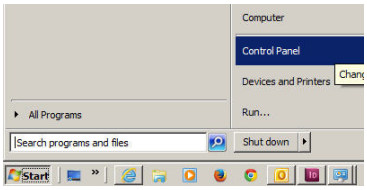
Using the GUI to Set Up the IP Address for Use on Your Network

1. Connect a standard CAT5 Ethernet cable between a PC and E8951. If the user followed the Installation procedure in this document, then this cable is already in place.



Ethernet/BACnet IP port location

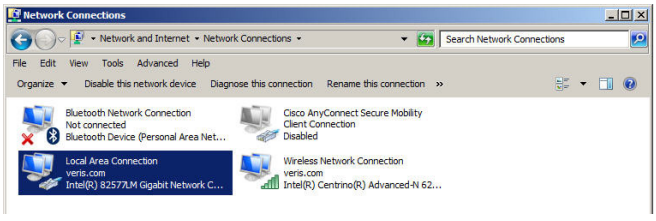
2. Temporarily change the IP address of the PC to a static value on the same subnet as the E8951. For example: If the E8951 is set to its factory default IP address of 192.168.1.24, set the PC to an unused static IP address on the 192.168.1.xxx subnet (where xxx is any value between 1 and 255, except 24). Set the subnet mask to 255.255.255.0 (the screen captures in this example were taken using Windows 7; other operating systems will look different).



a. Open the Control Panel:

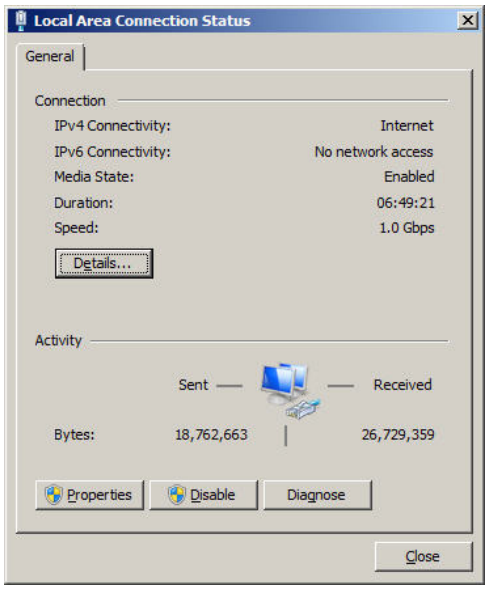
b. In the Control Panel, select Network and Sharing Center. In the Sharing Center, select Change Adapter Settings in the list at the upper left corner.

c. Select the connection for the network that the E8951 is included on.

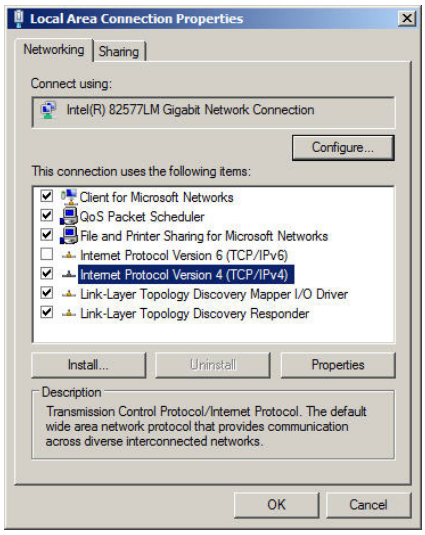


When the Local Area Connection Status dialog box appears, click on Properties.

Configuration (cont.)

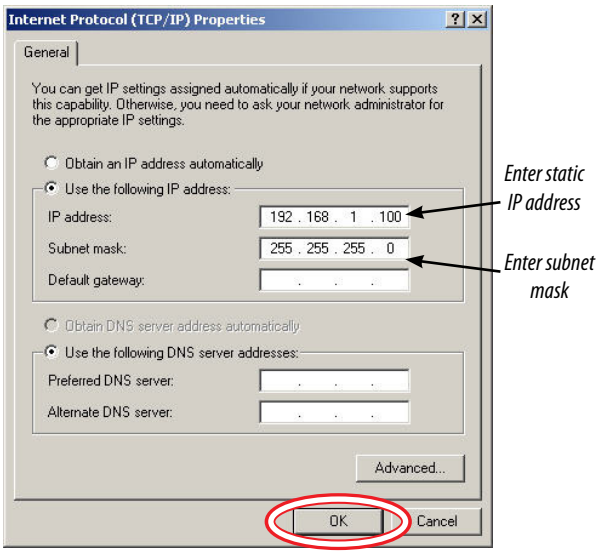


d. Highlight Internet Protocol Version 4 (TCP/IPv4), and click OK.



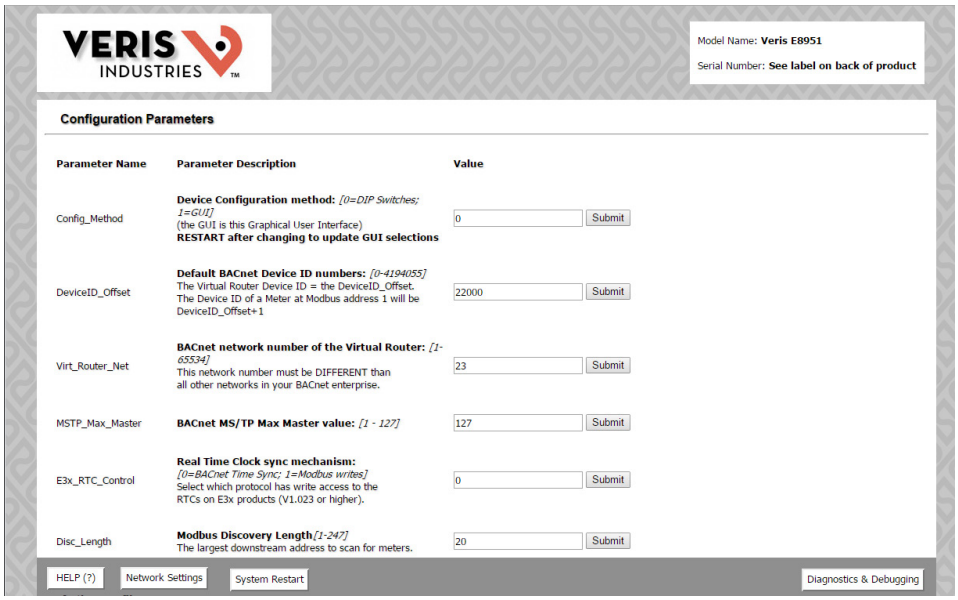
e. Select <Use the following IP Address>. Make note of the IP address that appears, then enter the static IP address (e.g. if the E8951 is still set to its default address of 192.168.1.24, then change it to 192.168.1.100). Enter 255.255.255.0 for the subnet mask. Click OK.

Configuration (cont.)



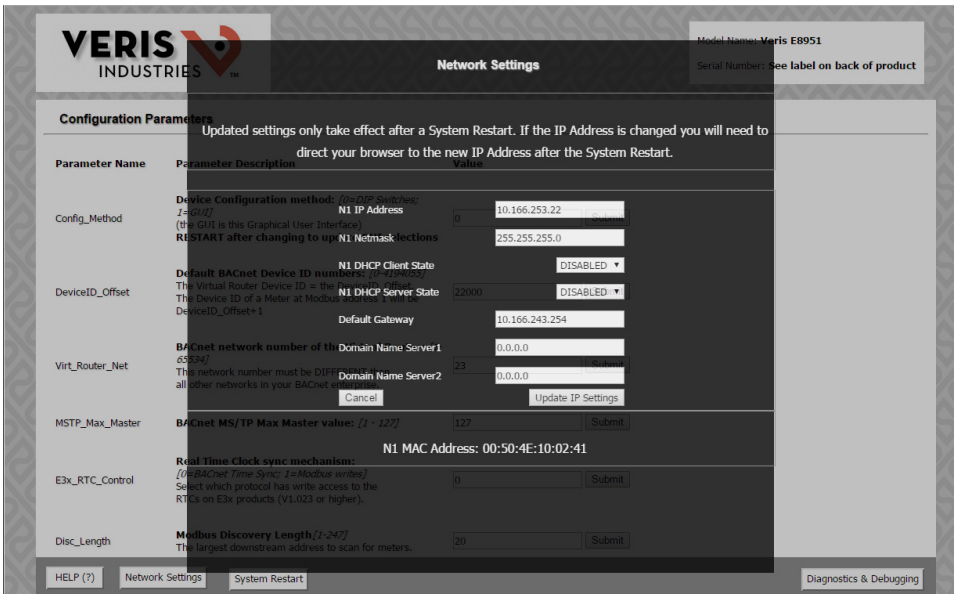
f. Click OK.

3. Open a PC web browser and enter the IP address of the E8951 (default address is 192.168.1.24) to access the GUI. The GUI launches and appears in the browser window.
4. When finished using the GUI, unplug the Ethernet cable from the PC and restore the IP settings as needed.
5. Access the GUI according the instructions in the "Accessing the Graphical User Interface" section.



To set the IP address parameters, click the Network Settings button. The Network Settings overlay appears.

Configuration (cont.)



Have the desired IP settings ready in advance (contact the system administrator). IP parameters for use with BACnet IP are static, not dynamic.

6. Set the IP address for use on the BACnet/IP network:

   a. From the navigation tree (left column) on the GUI, click on Setup and then Network Settings to enter the Edit IP Address Settings menu.

   b. Enter the desired IP address in the **N1_IP_Address** field (in the format xxx.xxx.xxx.xxx)

   c. If necessary, change the Subnet Mask by entering the appropriate new value in the **N1_Netmask** field

   d. If the E8951 is connected to an Ethernet gateway, enter its IP address in the Default Gateway field. This is especially critical if the E8951 will be used as a BACnet BBMD device.

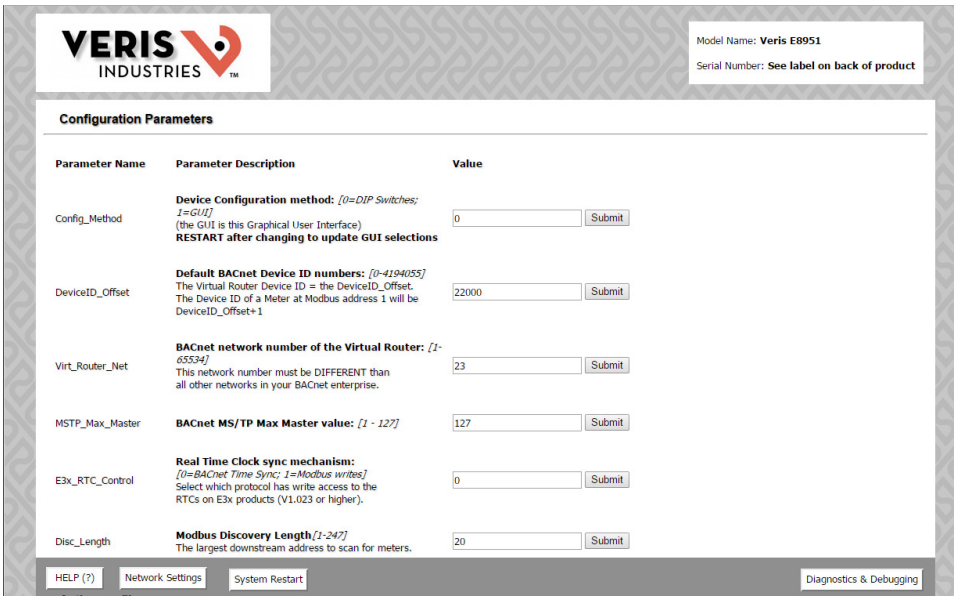
   e. Click the Update IP button and wait for the E8951 to fully initialize.

   f. If the IP address was changed to a different subnet, disconnect the E8951 from the PC or subnet it was on for configuration and connect it to the subnet it is now configured to match. The GUI will only connect when the E8951 is installed on a network that matches the settings and the new IP address is entered into a web browser on a PC properly configured for the network.

Configuration (cont.)

Using the GUI to Set the Configuration Parameters for the Communication Protocols

You can fully configure the product for any protocol mode using a web browser via Ethernet to run the GUI. Access the GUI according the instructions in the "Accessing the Graphical User Interface" section.



The home screen on the GUI provides fields for configuration of the E8951. Each option field has a Submit button to the right. When changing the value in any field, click Submit to enter and store the new value. The GUI prompts the user to restart the system. Changes to the first three parameters will affect which other parameters are visible, so you should restart your system after submitting a change to any of these. If multiple values (other than the first three parameters) are changed, it is easiest to submit all changes and restart only once when finished with the entire screen. Press the Submit button to the right of any parameter you change to apply it before changing a different one. To restart, click the System Restart button in the row at the bottom of the screen. The restart takes several seconds, during which the server may lose its connection. Messages appear at the top of the screen indicating current status, but do not perform any actions. Simply allow the tool to complete the restart cycle.

The first selection in the GUI is **Config_Method**, which has two choices: "0 = DIP Switches" or "1 = GUI". (Note: If you change this mode, restart the E8951 using the Restart System button at the bottom of the page and wait for the page to reload before proceeding). The unit is shipped with this set to 0 so that it can be configured for simple applications by simply setting the DIP switches (like the previous model E8950). To use this method, leave this setting at 0, and use the DIP switches as directed in the Installation section. You can use the GUI just to set the basic BACnet parameters or access them via BACnet.

To use the full set of functionality, set **Config_Method** to 1 and restart the E8951 by pressing the Restart System button at the bottom of the page.

When the unit powers back up and the GUI web page refreshes, continue.

The second selection is:

1. Locked: Used for all normal product operation. It is provided as a tool for high-level technical support. The gateway retains its current profile configuration when powered.
2. Discovery mode (default): Deletes profiles and rediscovers them when the device is powered again. The results are the same, unless the profile configuration is intentionally altered. Profile selection and discovery are especially important when using BACnet or SNMP protocols. For normal operation, always use discovery mode.

The third selection in the GUI is **Protocol_Mode**, used to select the combination of protocols the product communicates with. The E8951 supports four protocols, some of which can operate simultaneously. The table below shows which protocols are supported in each mode.

Configuration (cont.)

Protocol Mode	Primary Protocol	Ethernet Protocol	RS-485 Protocol
1	BACnet MS/TP	Modbus TCP	BACnet MS/TP
2	BACnet IP	BACnet IP/Modbus TCP	Modbus RTU
3	SNMP	SNMP/Modbus TCP	Modbus RTU
4	Modbus	Modbus TCP	Modbus RTU

To select a primary protocol mode, enter the corresponding number into the text field adjacent to the Primary Protocol option and click the Submit button to the left of the text field. A prompt appears at the top of the screen instructing the user to restart the system. When finished, the screen refreshes itself with the appropriate fields for the selected mode.

The next GUI selection, in any protocol mode, is the **Downstream_Baud** rate selection. This baud rate and the baud rate of all attached Modbus Meters must all be set to the same value.

Note - Parity is not used for downstream devices. The Parity setting of all downstream Modbus meters should be set to "None".

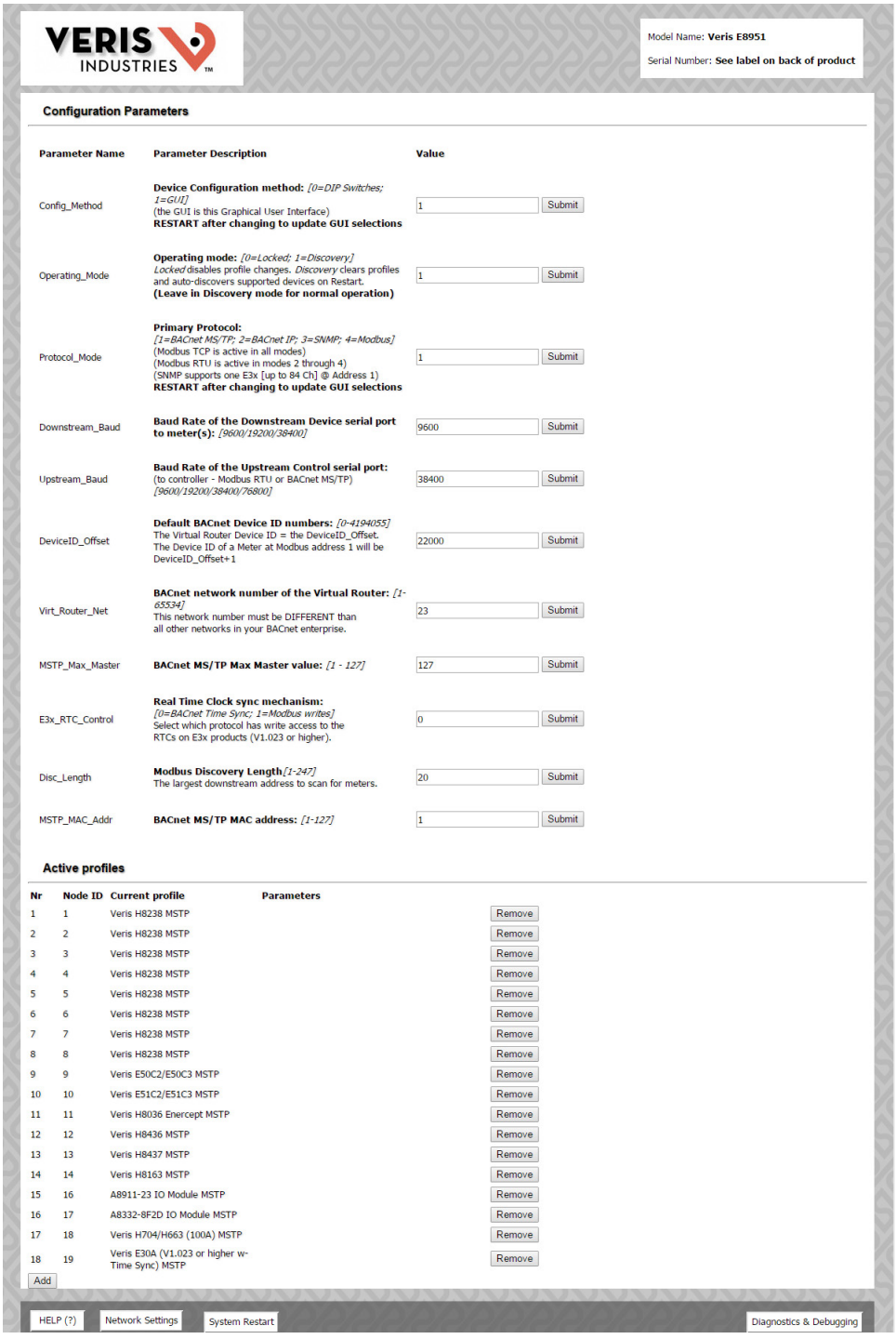
If you have selected BACnet IP, SNMP or Modbus mode, the next selection is **Modbus_Address**, which sets the Modbus address(es) for the E8951 when access with Modbus RTU with the RS-485 serial connection.

The next selection (in BACnet IP, SNMP or Modbus modes) is **Modbus_Parity**, which sets the parity of the upstream serial connection. If using Modbus RTU protocol, set this to match your Modbus master. If not, ignore this field.

The following sections show the field selections (with factory default values) specific to each of the four **Protocol_Modes**.

Configuration (cont.)

1. BACnet MS/TP protocol mode



The **DeviceID_Offset** parameter is used to assign **Device_IDs** on power-up or on restart until they have been overwritten via BACnet. Enter a different value here and click submit. The new value is first used at the next power-up or system restart. Valid **Device_ID** numbers range from 1 to 4194303. Since the numbers assigned during discovery are the sum of the Offset and the Modbus address (which can be any value from 1 to 247), the Offset values entered in the GUI must be no larger than 4194057.

Configuration (cont.)

The E8951 gateway creates a BACnet virtual router and separate BACnet devices for each device discovered at every Modbus address polled behind this virtual router, allowing the devices to be discoverable and independently accessed via BACnet, even if the virtual router is connected by MS/TP, using a single MAC address. To use this product with MS/TP, the BACnet system must support the discovery and use of a BACnet router on the MS/TP trunk and any devices beyond it. This virtual router creates an exclusive BACnet network on which the meter's BACnet devices reside. This network must have a BACnet network number that is different from any other networks in the entire BACnet enterprise. When multiple E8951 products are added anywhere in the enterprise, each one must have a unique network number. Failure to set an exclusive value in this field causes communication conflicts in the BACnet system.

Enter a non-conflicting value for the **DeviceID_Offset** parameter and click Submit. Valid network numbers range from 1 to 65534; if other values are entered, the network number defaults to 5. The new value is first used at the next power-up or system restart. If using an external BACnet router to connect the E8951 as an MS/TP device, it is recommended that the router also be restarted after the E8951 has completed discovery, when the network number is changed.

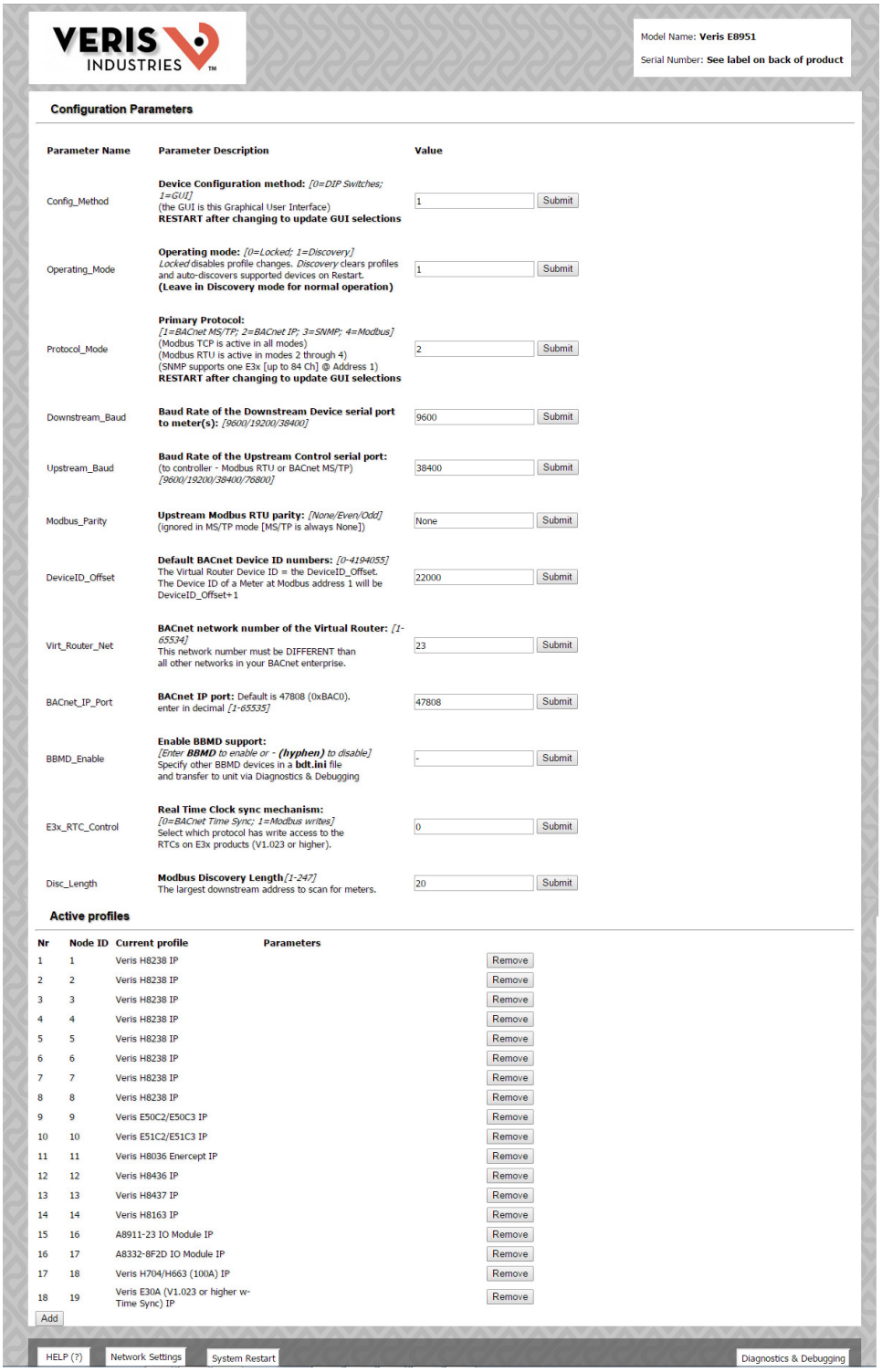
The next field for the BACnet MS/TP protocol mode is the **MSTP_Max_Master**, which allows this value to be set prior to using BACnet software to access the E8951. The default value of 127 works regardless of the addresses the MS/TP network uses, but selecting a lower value may optimize the network. Do not set this value lower than the highest address on the network. To set this value via BACnet, write to the **Max_Master** property of the device object for the E8951's virtual router.

The next field for the BACnet MS/TP protocol mode is the **MSTP_MAC_Addr**, which sets the MAC address for the virtual router. The E8951 panel(s) are devices on the internal BACnet network and are not directly addressable as MAC addresses on the MS/TP network.

The final field for the BACnet MS/TP mode is **E3x_RTC_Control**, which is only relevant if E3xAxxx meters are used with the E8951. This parameter selects which protocol (BACnet or Modbus) has write access to the RTC (Real Time Clock) on E3xA products. If 0 (BACnet) is selected, the RTC is set using the BACnet Time Synchronization service. If 1 (Modbus) is selected, the RTC is set by writing to the appropriate Modbus registers.

Configuration (cont.)

2. BACnet IP protocol mode



VERIS INDUSTRIES

Model Name: **Veris E8951**
Serial Number: **See label on back of product**

Configuration Parameters

Parameter Name	Parameter Description	Value
Config_Method	**Device Configuration method:** *[0=DIP Switches; 1=GUI]* (the GUI is this Graphical User Interface) **RESTART after changing to update GUI selections**	1 Submit
Operating_Mode	**Operating mode:** *[0=Locked; 1=Discovery]* *Locked* disables profile changes. *Discovery* clears profiles and auto-discovers supported devices on Restart. **(Leave in Discovery mode for normal operation)**	1 Submit
Protocol_Mode	**Primary Protocol:** *[1=BACnet MS/TP; 2=BACnet IP; 3=SNMP; 4=Modbus]* (Modbus TCP is active in all modes) (Modbus RTU is active in modes 2 through 4) (SNMP supports one E3x [up to 84 Ch] @ Address 1) **RESTART after changing to update GUI selections**	2 Submit
Downstream_Baud	**Baud Rate of the Downstream Device serial port to meter(s):** *[9600/19200/38400]*	9600 Submit
Upstream_Baud	**Baud Rate of the Upstream Control serial port:** (to controller - Modbus RTU or BACnet MS/TP) *[9600/19200/38400/76800]*	38400 Submit
Modbus_Parity	**Upstream Modbus RTU parity:** *[None/Even/Odd]* (ignored in MS/TP mode [MS/TP is always None])	None Submit
DeviceID_Offset	**Default BACnet Device ID numbers:** *[0-4194055]* The Virtual Router Device ID = the DeviceID_Offset. The Device ID of a Meter at Modbus address 1 will be DeviceID_Offset+1	22000 Submit
Virt_Router_Net	**BACnet network number of the Virtual Router:** *[1-65534]* This network number must be DIFFERENT than all other networks in your BACnet enterprise.	23 Submit
BACnet_IP_Port	**BACnet IP port:** Default is 47808 (0xBAC0). enter in decimal *[1-65535]*	47808 Submit
BBMD_Enable	**Enable BBMD support:** *[Enter **BBMD** to enable or - **(hyphen)** to disable]* Specify other BBMD devices in a **bdt.ini** file and transfer to unit via Diagnostics & Debugging	- Submit
E3x_RTC_Control	**Real Time Clock sync mechanism:** *[0=BACnet Time Sync; 1=Modbus writes]* Select which protocol has write access to the RTCs on E3x products (V1.023 or higher).	0 Submit
Disc_Length	**Modbus Discovery Length** *[1-247]* The largest downstream address to scan for meters.	20 Submit

Active profiles

Nr	Node ID	Current profile	Parameters	
1	1	Veris H8238 IP		Remove
2	2	Veris H8238 IP		Remove
3	3	Veris H8238 IP		Remove
4	4	Veris H8238 IP		Remove
5	5	Veris H8238 IP		Remove
6	6	Veris H8238 IP		Remove
7	7	Veris H8238 IP		Remove
8	8	Veris H8238 IP		Remove
9	9	Veris E50C2/E50C3 IP		Remove
10	10	Veris E51C2/E51C3 IP		Remove
11	11	Veris H8036 Enercept IP		Remove
12	12	Veris H8436 IP		Remove
13	13	Veris H8437 IP		Remove
14	14	Veris H8163 IP		Remove
15	16	A8911-23 IO Module IP		Remove
16	17	A8332-8F2D IO Module IP		Remove
17	18	Veris H704/H663 (100A) IP		Remove
18	19	Veris E30A (V1.023 or higher w-Time Sync) IP		Remove

Add

HELP (?) Network Settings System Restart Diagnostics & Debugging

BACnet IP mode uses the same **DeviceID_Offset**, **Virt_Router_Net** and **E3x_RTC_Control** parameters described above for BACnet MS/TP mode. One additional parameter, **BACnet_IP_Port**, is used to set the UDP port. Most BACnet systems use the default port (47808 decimal, 0xBAC0 hex) that is recommended in the BACnet standard as the only UDP port. Some large systems need to segment the enterprise and use more than one port. If so, enter the number of the port you need to use to access this device. BACnet IP mode does not use **MSTP_Max_Master** or **MSTP_MAC_Addr**.

Configuration (cont.)

BACnet IP mode adds another field called **BBMD_Enable**. See "BACnet Broadcast Management Device (BBMD) Support" on page 22 for a full description of how to enable and use BBMD support.

3. Simple Network Management Protocol (SNMP) mode

Note: SNMP mode only supports a single E30A/E31A meter with up to 84 circuits. It does not support more than one E30A/E31A or other meters. Firmware version V1.023 or higher must be installed and address DIP switches must be set to address 1.

SNMP mode uses four unique parameters. The **SNMP_Community** strings are used to control access to the device. Whatever values are entered here must also be used in the MIB browser or SNMP access software to communicate with this device. The **Read_Community** string is used to enable reading data. The **Write_Community** string is used to enable writing data. The **Trap_Community** string is used to enable the receipt of event notifications.

The last parameter, **SNMP_Notif_IP** is used to set the IP address of the client that used to receive SNMP event notifications, such as alarms.

Operating the E8951

Restart the E8951 by using the button at the bottom of the GUI or by cycling the power. It takes about 30 seconds to initialize completely and be ready for external communication.

Configuration (cont.)

Profile Assignment

Profile assignment in Discovery mode is automatic. Upon power-up/reset, with the device in Discovery mode (DIP switch S3 is to the right), each Modbus address is queried for a slave ID. Any devices that respond with a slave ID matching a supported device are given a unique device object and a full set of data objects to match the device.

All supported Veris meters are discovered and assigned one of the profiles (see "Appendix 1: Data Objects for Supported Metering Devices" on page 24) if they are connected, powered, and configured properly.

The Add/Remove/Edit buttons on the GUI can be used to alter the assignments, but this is not recommended for general use, as the profiles could be assigned to products they do not support. If a meter is not discovered because it is not connected, powered, or configured properly, adding the profile manually will not make it work. Any changes to the profile assignments made manually through the GUI will be discarded when the E8951 is power-cycled or reset in Discovery mode.

Turn on the E8951

1. Set the configuration mode switch (S3) to the Discovery position.

2. Apply power to the E8951. It can take up to 2-3 minutes to discover all the Modbus RTU meters, build a configuration file, and install the device on BACnet MS/TP. Scanning begins at address 1 and continues in numerical sequence, mapping meters as they are discovered. To shorten this time, use lower Modbus addresses for the meters so that they will be discovered and mapped more quickly. After the meters at the lower addresses are discovered, the E8951 continues scanning the remaining addresses in the background, without affecting operation.

3. Optional: Lock the configuration. If no more devices will be added to or removed from the Modbus trunk, lock the device mapping by setting the mode from Discovery to Locked (slide DIP switch S3 to the left or change the corresponding setting in the GUI). This causes the E8951 to set up the same devices at power-up, without repeating the Discovery process. In Normal mode, the power-up time improves, but BACnet devices are created whether the device responds or not, and new devices are not discovered.

Configuration Mode	S3
Normal	⇦
Discovery	⇨

Determine the best mode for the application. Discovery mode queries and re-discovers devices each time the E8951 is power-cycled or reset, so use this mode when you anticipate adding, removing, or changing Modbus devices. Locked mode creates the same set of BACnet device objects when the E8951 is power-cycled or reset, even if objects change, are removed, or cease to communicate. Power-up time is faster in Locked mode.

BACnet Programming Information

BACnet PICS (Protocol Implementation Conformance Statement)

Vendor Name: Veris Industries
BACnet Vendor ID 133
Product Name: E8951 Modbus-to-BACnet Protocol Converter
Product Model Number: E8951 w/Modbus Energy Meter
Product Description: Modbus-to-BACnet Protocol Converter
Protocol Conversions: Converts Modbus RTU to BACnet IP and BACnet MS/TP for supported products from Veris Industries
BACnet Protocol Version: Version 1 Revision 12

BACnet Standardized Device Profile (Annex L) – [Note: E8951 is a gateway device]

- BACnet Application Specific Controller (B-ASC)

BACnet Interoperability Building Blocks Supported (Annex K):

- K.1.2 BIBB - Data Sharing - ReadProperty-B (DS-RP-B)
- K.1.4 BIBB - Data Sharing - ReadPropertyMultiple-B (DS-RPM-B)
- K.1.8 BIBB - Data Sharing - WriteProperty-B (DS-WP-B)
- K.1.10 BIBB - Data Sharing - WritePropertyMultiple-B (DS-WPM-B)
- K.1.12 BIBB - Data Sharing - COV-B (DS-COV-B)
- K.2.2 BIBB - Alarm and Event - Notification Internal-B (AE-N-I-B)
- K.2.5 BIBB - Alarm and Event - ACK-B (AE-ACK-B)
- K.2.11 BIBB - Alarm and Event - Information-B (AE-INFO-B)
- K.5.2 BIBB - Device Management - Dynamic Device Binding-B (DM-DDB-B)
- K.5.4 BIBB - Device Management - Dynamic Object Binding-B (DM-DOB-B)
- K.5.6 BIBB - Device Management - DeviceCommunicationControl-B (DM-DCC-B)
- K.5.12 BIBB - Device Management - TimeSyncronization-B (DM-TS-B)
- K.5.22 BIBB - Device Management - List Manipulation-B (DM-LM-B)

Standard Object Types Supported

- Device Object
- Analog Input
- Analog Output*
- Analog Value
- Binary Input*
- Binary Output*
- Binary Value*
- Multi State Input*
- Multi State Output*
- Multi State Value*
- Notification Class Object*

** Supported by device driver, but not used by current device profiles*

Unsupported Properties and Restrictions

- Does not support BACnet CreateObject
- Does not support BACnet DeleteObject
- Does not support any proprietary properties
- No proprietary properties exist
- No range restrictions exist
- **Max_Master** is writable, but it reverts to 127 when the E8951 is reset or powered-up.

Data Link Layer Options:

- BACnet IP, (Annex J)

BACnet Programming Information (cont.)

- MS/TP master (Clause 9), baud rate up to 76.8 kbps

Networking Options:

- BACnet/IP Broadcast Management Device (BBMD)
- Registrations by Foreign Devices

Character Sets Supported:

- ISO 10646 (UTF-8) / ANSI X3.4

General Programming Information

The E8951, in Discovery mode, queries each Modbus address, from 1 to 247 for a slave ID. For each address queried, if a meter responds with a **slave_ID** that matches those supported by the E8951, a BACnet device object and a full set of data objects are created (see "Appendix 1: Data Objects for Supported Metering Devices" on page 24).

The initial **Object_Identifier** (**Device_ID**) property value of each device object discovered is the sum of the **Device_ID** offset programmed into the E8951 and the Modbus address of the meter. The factory default value of the offset is 50000; use the GUI to change this value. The new value will be applied the next time the E8951 is power cycled or reset. Once a device's **Object_Identifier** is overwritten, changes to the ID Offset will no longer affect that **Object_Identifier**, even in Discovery mode. Make further changes to the value by writing the **Object_Identifier** property.

The default **Object_Name** property value of each device object is an abbreviated name of the meter series discovered with an underscore and the Modbus address of the meter appended to it. The **Object_Name** is a writable property. Once a device's **Object_Name** is overwritten, the **Object_Name** will not revert to the initial default, even in Discovery mode. Make further changes to the value by writing the **Object_Name** property.

The default description property value of each device object is the Modbus slave ID returned by the meter discovered. The description is not a writable property.

The E8951 supports **Subscribe_COV**, with default COV increment values assigned as shown in the data object tables (see "Appendix 3: Quick Guide to Calculate the Number of Meters Supported" on page 162). If these values are not appropriate for a specific application, write them as needed when they are subscribed. On subsequent power cycles, no subscriptions are active and the COV increments return to their default values.

With few exceptions, any data values written to AV objects are accepted (without error) by the data object and passed through to the corresponding Modbus register. There is no direct indication via the BACnet protocol if invalid values are rejected. After an invalid value is written to the **Present_Value** of an AV, subsequent reads of that property return the new (invalid) value until the next time the E8951 scans and updates the AV objects (this may take several seconds, depending on the overall configuration and timing of the scan sequence). The tables in Appendix 1 specify valid values for AV objects of each supported model.

BACnet Network Management – Important Steps to Avoid Conflicts

BACnet configuration uses two default settings that might need to be changed, depending on the application.

a. Virtual router network ID number. Every logical network segment (IP subnet, MS/TP trunk, etc.) in an entire system must have a (16-bit) network ID number that is unique from all other BACnet networks in the enterprise. The BACnet network administrator assigns this network ID so that no two ID numbers conflict (whether using BACnet/IP or MS/TP). Within each segment, every device is physically identified by the combination of its 8-bit MAC address and the 16-bit network ID number.

To support multiple meter panels (panel 1 and panel 2 are separate) with a single gateway, the E8951 creates a virtual BACnet router that presents multiple BACnet devices using a single (its own) MS/TP MAC address. Each E8951 must have its own (internal) network ID, and it creates a device object for itself and one for each Modbus address discovered.

The factory default network address is 50 (decimal). If that number is already in use in the system, assign a unique address using the GUI on the built-in web server (this requires an Ethernet connection to a web browser; see "BACnet Programming Information" on page 20 for instructions on changing configuration settings using the GUI). Valid network numbers range from 1 to 65534; if other values are entered, the network number defaults to 5.

BACnet Programming Information (cont.)

b. Device_ID Offset. Every BACnet device must have a BACnet **Device_ID** number that is unique throughout the entire enterprise. Since the E8951 presents every Modbus meter as a BACnet device, each connected meter that has a Modbus address must have a BACnet **Device_ID**.

By default, each device discovered receives a **Device_ID** number that is the sum of an offset value (default is 50000) and the Modbus address of the device. If these **Device_ID** numbers cause a conflict with existing devices in the system, or if the system includes multiple E8951, change the **Device_ID** numbers before connecting the E8951 to the system. This can be managed one of two ways:

i. Connect to the E8951 directly (offline from the system) with the devices (meters). After the E8951 discovers the devices and assigns their default ID numbers, the user can choose new **Device_ID** values and write these to each device using BACnet software. Subsequent discoveries will not overwrite these values with defaults even if the E8951 is then set to Discovery mode.

ii. Use the GUI on the built-in web server to modify the offset value used to calculate default **Device_IDs** in the discovery process (this requires an Ethernet connection to a web browser; see "BACnet Programming Information" on page 20 for instructions on changing configuration settings using the GUI). The E8951 retains this offset value and uses it to assign **Device_ID** numbers every time power is cycled if the E8951 is in Discovery mode. Valid **Device_ID** numbers range from 1 to 4194303. Since the numbers assigned during discovery are the sum of the Offset and the Modbus address (which can be any value from 1 to 247), any Offset values entered in the GUI must be less than 4194057.

BACnet Broadcast Management Device (BBMD) Support

When the E8951 is in BACnet IP mode, it can be configured as a BBMD device by entering "BBMD" in the Enable BBMD Support field in the GUI, adding devices to a comma separated value text file named bdt.ini, and loading it onto the device. The example below shows the syntax required for the bdt.ini file. All lines beginning with two forward slashes are interpreted as comments. Use exactly one line per device added, separated by commas (no spaces). The file must include an entry (line) for each BBMD device in the BACnet enterprise, including the E8951 itself. Note: the default gateway address in the network setup must be correct for BBMD support to operate correctly. Once edited, upload the btd.ini file to the gateway through the GUI. Click the <Diagnostics and Debugging> button in the lower right corner of the GUI and follow the folder tree under Navigation to the following folder: "Veris E8951 Gateway/Setup/File Transfer." Select the "General" tab (this is important - using the wrong tab can overwrite critical files). Click the <Browse> button and select your bdt.ini file. Then click <Submit>. The GUI quickly indicates "The file was updated successfully." Click the <System Restart> button, click <OK> on the confirmation dialog and wait for the gateway to reinitialize (takes about 30 seconds). BBMD changes are made by uploading a new btd.ini file. After setting the GUI to enable BBMD support and transferring a new or revised bdt.ini file, restart the E8951 to load the file. BBMD support can be disabled in the GUI by entering "-" (a hyphen) in the Enable BBMD Support filed in the GUI.

```
// Bdt.ini
// The format of this table must be (without the forward slashes - they are comment indicators):
//
//BBMD IP_Address , BBMD port , BBMD subnet Mask
//
147.26.116.217,47808,255.255.255.255
172.16.17.198,47808,255.255.255.255
```


Troubleshooting

Issue	Solution
Modbus device is not discovered as expected.	Use the main screen of the E8951 GUI to confirm which meters have been discovered.
	Verify that the Modbus device is a model specifically supported by the E8951 (see "Appendix 1: Data Objects for Supported Metering Devices" on page 24).
	Verify that the meter is connected to a control power source and is operating normally.
	Verify that the Modbus 2-wire RS-485 connection is correctly wired from the E8951 to all other Modbus devices and that the chain is terminated at both ends with 120 Ω resistors (not included).
	Verify that the Modbus RTU baud is set to the same rate on all Modbus devices and that parity on all devices is set to "none."
	Verify that the E8951 is powered and operating (the light green LED is on).
	Verify that the E8951 is in Discovery mode.

China RoHS Compliance Information (EFUP Table)

部件名称	产品中有毒有害物质或元素的名称及含量Substances					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯(PBB)	多溴二苯醚(PBDE)
电子线路板	X	0	0	0	0	0

0 = 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下.

X = 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求.

Z000057-0A

Appendix 1: Data Objects for Supported Metering Devices

Enercept H8035 Series Energy Meters (all models)

The H8035 Series has three data objects and operates at 9600 baud.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Analog_input Objects (read-only)						
kWh Energy: Total	Accumulated real energy	AI1	kWH	0	40259/40260	
kW: Total	Total instantaneous real power	AI2	kW	1	40261/40262	
Analog_value Objects (can be written as well as read)						
kWh Energy Reset	Write zero to reset	AV1	n/a	32767	40001	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

Enercept H8036 Series Energy Meters (all models)

The H8036 Series has 28 data objects and operates at 9600 baud.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Analog_input Objects (read-only)						
kWh Energy: Total	Accumulated Real Energy	AI1	kWh	0	40259/260	
kW: Total	Total Instantaneous Real Power	AI2	kW	1	40261/262	
kVAR: Total	Total Instantaneous Reactive Power	AI3	kVAR	1	40263/264	
kVA: Total	Total Instantaneous Apparent Power	AI4	kVA	1	40265/266	
PF: Total	Total Power Factor	AI5	PF	0.01	40267/268	
Volts: L-L Avg	Voltage L-L average of active phases	AI6	Volts	5	40269/270	
Volts: L-N Avg	Voltage L-N average of active phases	AI7	Volts	5	40271/272	
Amps: Avg	Current Avg of active phases	AI8	Amps	5	40273/274	
kW: Ph A	Instantaneous Real Power Phase A	AI9	kW	1	40275/276	
kW: Ph B	Instantaneous Real Power Phase B	AI10	kW	1	40277/278	
kW: Ph C	Instantaneous Real Power Phase C	AI11	kW	1	40279/280	
PF: Ph A	Instantaneous Power Factor Phase A	AI12	PF	0.01	40281/282	
PF: Ph B	Instantaneous Power Factor Phase B	AI13	PF	0.01	40283/284	
PF: Ph C	Instantaneous Power Factor Phase C	AI14	PF	0.01	40285/286	
Volts: Ph A-B	Instantaneous Voltage Phase A to Phase B	AI15	Volts	5	40287/288	
Volts: Ph B-C	Instantaneous Voltage Phase B to Phase C	AI16	Volts	5	40289/290	
Volts: Ph A-C	Instantaneous Voltage Phase A to Phase C	AI17	Volts	5	40291/292	
Volts: Ph A-N	Instantaneous Voltage Phase A to Neutral	AI18	Volts	5	40293/294	
Volts: Ph B-N	Instantaneous Voltage Phase B to Neutral	AI19	Volts	5	40295/296	
Volts: Ph C-N	Instantaneous Voltage Phase C to Neutral	AI20	Volts	5	40297/298	
Amps: Ph A	Instantaneous Current Phase A	AI21	Amps	5	40299/300	
Amps: Ph B	Instantaneous Current Phase B	AI22	Amps	5	40301/302	
Amps: Ph C	Instantaneous Current Phase C	AI23	Amps	5	40303/304	
kW: Average	Average Real Power since last reset	AI24	kW	1	40305/306	
kW: Min	Minimum Real Power since last reset	AI25	kW	1	40307/308	
kW: Max	Maximum Real Power since last reset	AI26	kW	1	40309/310	
Analog_Value Objects (can be written as well as read)						
kWh Energy Reset	Write Zero to reset	AV1	n/a	32767	40001	
kW Average, Min, Max Reset	Write Zero to reset	AV2	n/a	32767	40026	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E50C2 and E50C3 Uni-Directional Energy Meters

The E50C2/C3 has 63 data objects and operates at 9600, 19200 or 38400 baud. The E8951 does not support the logging functionality of the E50C3.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Analog_input Objects (read-only)						
kWh Energy: Total	Accumulated Real Energy	AI1	kWh	0	259/260	Resolution is limited by data type (when value exceeds 7 digits, reset more often to maximize resolution)
kW: Total	Total Instantaneous Real Power	AI2	kW	1	261/262	
kVAR: Total	Total Instantaneous Reactive Power	AI3	kVAR	1	263/264	
KVA: Total	Total Instantaneous Apparent Power	AI4	kVA	1	265/266	
PF: Total	Total Instantaneous Power Factor	AI5	PF	0.01	267/268	
Volts: L-L Avg	Voltage L-L average of active phases	AI6	Volts	5	269/270	
Volts: L-N Avg	Voltage L-N average of active phases	AI7	Volts	5	271/272	
Amps: Avg	Current Avg of active phases	AI8	Amps	5	273/274	
kW: Ph A	Instantaneous Real Power Phase A	AI9	kW	1	275/276	
kW: Ph B	Instantaneous Real Power Phase B	AI10	kW	1	277/278	
kW: Ph C	Instantaneous Real Power Phase C	AI11	kW	1	279/280	
PF: Ph A	Instantaneous Power Factor Phase A	AI12	PF	0.01	281/282	
PF: Ph B	Instantaneous Power Factor Phase B	AI13	PF	0.01	283/284	
PF: Ph C	Instantaneous Power Factor Phase C	AI14	PF	0.01	285/286	
Volts: Ph A-B	Instantaneous Voltage Phase A to Phase B	AI15	Volts	5	287/288	
Volts: Ph B-C	Instantaneous Voltage Phase B to Phase C	AI16	Volts	5	289/290	
Volts: Ph A-C	Instantaneous Voltage Phase A to Phase C	AI17	Volts	5	291/292	
Volts: Ph A-N	Instantaneous Voltage Phase A to Neutral	AI18	Volts	5	293/294	
Volts: Ph B-N	Instantaneous Voltage Phase B to Neutral	AI19	Volts	5	295/296	
Volts: Ph C-N	Instantaneous Voltage Phase C to Neutral	AI20	Volts	5	297/298	
Amps: Ph A	Instantaneous Current Phase A	AI21	Amps	5	299/300	
Amps: Ph B	Instantaneous Current Phase B	AI22	Amps	5	301/302	
Amps: Ph C	Instantaneous Current Phase C	AI23	Amps	5	303/304	
Reserved	Reserved	AI24	n/a	0	305/306	
Frequency	Instantaneous Frequency	AI25	Hz	0.01	307/308	Returns QNAN if frequency is out of range (or no voltage input present on Phase A)
kVAh: Total	Accumulated Apparent Energy Consumption	AI26	kWh	0	309/310	The UNITS property of this object reports kWh because there is no unit type in this verision of the BACnet standard for kVARh.
kVARh: Total	Accumulated Reactive Energy Consumption	AI27	kWh	0	311/312	The UNITS property of this object reports kWh because there is no unit type in this verision of the BACnet standard for kVARh.
kVA: Ph A	Instantaneous Apparent Power Phase A	AI28	kVA	1	313/314	
kVA: Ph B	Instantaneous Apparent Power Phase B	AI29	kVA	1	315/316	
kVA: Ph C	Instantaneous Apparent Power Phase C	AI30	kVA	1	317/318	
kVAR: Ph A	Instantaneous Reactive Power Phase A	AI31	kVAR	1	319/320	
kVAR: Ph B	Instantaneous Reactive Power Phase B	AI32	kVAR	1	321/322	
kVAR: Ph C	Instantaneous Reactive Power Phase C	AI33	kVAR	1	323/324	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E50C2 and E50C3 Uni-Directional Energy Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
kW: Demand	Total Real Power Present Demand	AI34	kW	1	325/326	
kVAR: Demand	Total Reactive Power Present Demand	AI35	kVAR	1	327/328	
kVA: Demand	Total Apparent Power Present Demand	AI36	kVA	1	329/330	
kW: Max Demand	Total Real Power Max. Demand	AI37	kW	0	331/332	This retains the largest value measured for Total Real Power Demand (AI34) for any single demand interval since the Max Demand was last explicitly reset via AV1 (this also resets when the demand interval changes).
kVAR: Max Demand	Total Reactive Power Max. Demand	AI38	kVAR	0	333/334	This retains the largest value measured for Total Reactive Power Demand (AI35) for any single demand interval since the Max Demand was last explicitly reset via AV1 (this also resets when the demand interval changes).
kVA: Max Demand	Total Apparent Power Max. Demand	AI39	kVA	0	335/336	This retains the largest value measured for Total Apparent Power Demand (AI36) for any single demand interval since the Max Demand was last explicitly reset via AV1 (this also resets when the demand interval changes).
Pulse Counter 1 (Real Energy)	Pulse Counter 1 (Real Energy)	AI40	n/a	0	337/338	Contact closure counter for Real Energy pulse output. Check Pulse setup on the LCD display for the weight of each pulse output count. These values are derived from 32 bit integer counter and roll over to 0 when the integer counters do. Write 16498 (0x4072) to the Present_Value property of Analog_Value object AV1 to reset both Pulse Counters to 0.
Pulse Counter 2	Pulse Counter 2	AI41	n/a	0	339/340	Contact closure counter for Reactive Energy pulse output. Check Pulse setup on the LCD display for the weight of each pulse output count. These values are derived from 32 bit integer counter and roll over to 0 when the integer counters do. Write 16498 (0x4072) to the Present_Value property of Analog_Value object AV1 to reset both Pulse Counters to 0.
kWh: Ph A	Real Energy Consumption - Phase A	AI42	kWh	1	341/342	
kWh: Ph B	Real Energy Consumption - Phase B	AI43	kWh	1	343/344	
kWh: Ph C	Real Energy Consumption - Phase C	AI44	kWh	1	345/346	
Max_Power	Max Power	AI45	kW	0	135	
Reserved_AI77	(Reserved AI77)	AI46	n/a	65535	136	
Energy_Resets	Count of Energy_Resets	AI47	n/a	0	147	
Reserved_AI79	Reserved_AI79	AI48	n/a	65535	148	
Reserved_AI80	Reserved_AI80	AI49	n/a	65535	151	
Power_Up_Count	Count of Power Up Cycles	AI50	n/a	0	152	
Output_Config	Output Configuration	AI51	n/a	0	153	
Alarm Error Bitmap	Bitmap of all alarm bits	AI52	n/a	0	146	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E50C2 and E50C3 Uni-Directional Energy Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Analog_Value Objects (can be written as well as read)						
Reset: write values to reset configs	30078=Acc 21211=Dmd 21212=Max 16498=Puls	AV1	n/a	0	129	Reset (aka Command Register): - Write 30078 (0x757E) to clear all Energy Accumulators to 0 (All). - Write 21211 (0x52DB) to begin new Demand Sub-Interval calculation cycle. Takes effect at the end of the next 1 second calculation cycle. Write no more frequently than every 10 seconds. - Write 21212 (0x52DC) to reset Max Demand values to Present Demand Values. Takes effect at the end of the next 1 second calculation cycle. Write no more frequently than every 10 seconds. - Write 16498 (0x4072) to clear Pulse Counts to zero. - Read always returns 0.
System Type (being metered)	10=1ph 11=2ph 12=2ph+N 31=3ph-Y 40=3ph+N	AV2	n/a	0	130	10 = Single Phase: A + N 11 = Single Phase: A + B 12 = Single Split Phase: A + B + N 31 = 3 phase Δ, A + B + C, no N 40 = 3 phase Y, A + B + C + N
CT Ratio Primary	CT Ratio Primary (5A to 32000A)	AV3	Amps	0	131	Current Transducer Size - Primary Current Range
CT Ratio Secondary	CT Ratio Secondary (1=1VAC 3=1/3VAC)	AV4	n/a	0	132	Current Transducer Type – Secondary Interface - Enter 1 for CTs with 1V outputs - Enter 3 for CTs with 1/3V outputs
PT Ratio	Potential Transformer Ratio (1 = no PT)	AV5	n/a	0	133	PT Ratio: The meter scales this value by 100 (i.e. entering 200 yields a potential transformer ratio of 2:1). The default is 100 (1.00:1), which is with no PT attached. Set this value before setting the system voltage (below)
System Voltage	Line-Line Voltage of Service Metered	AV6	Volts	0	134	System Voltage: This voltage is line to line, unless in system type 10 (AV2), which is line to neutral. The meter uses this value to calculate the full scale power for the pulse configuration (below), and as full scale for phase loss (AV8). The meter will refuse voltages outside the range of 82-660 volts when divided by the PT Ratio (above).
Display Units	Display Units (0=IEC 1=iEEE)	AV7	n/a	0	137	Display Units: 0 = IEC (U, V, P, Q, S) 1 = IEEE (default: VLL, VLN, W, VAR, VA)
Phase Loss Voltage Threshold	Phase Loss Thresh (% of System Voltage)	AV8	Percent	0	142	Phase Loss Voltage Threshold in percent of System Voltage (in object AV6). Default is 10 (10%). Any phase (as configured in AV2) whose level drops below this threshold triggers a Phase Loss alert. E.g., if the System voltage is set to 480 V L-L, the nominal L-N voltage for each phase should be 277 V. When the threshold is set to 10%, if any phase drops below 27.7 V, or if any L-L voltage drops below 48 V the corresponding phase loss alarm bit is true.

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E50C2 and E50C3 Uni-Directional Energy Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Phase Loss Imbalance Threshold	Phase Loss Imbalance (% L-L variation)	AV9	Percent	0	143	Phase Loss Imbalance Threshold in Percent. Default is 25% phase to phase difference. For a 3-phase Y (3 + N) system type (40 in object AV2), both Line to Neutral and Line to Line voltages are tested. In a 3-phase Δ System type (31 in object AV2), only Line to Line voltages are examined. In a single split-phase (2 + N) system type (12 in object AV2), just the line to neutral voltage are compared. E.g., if the System Type is 40 (3-phase with Neutral) and the Phase Loss Imbalance Threshold is 25%, a Phase Imbalance is indicated when the L-L voltage between any two phases drops to less than 75% of the L-L voltage between any other two phases or when the L-N voltage of any phase drops to less than 75% of the L-N voltage of any other phase.
Num of Sub-Intrvl per Dem Intrvl	1=most recent; n(2-6)=avg of last n	AV10	n/a	0	149	Number of Sub-Intervals per Demand Interval. Sets the number of sub-intervals that make a single demand interval. For block demand, set this to 1. Default is 1. When Sub-Interval Length (in object AV11) is set to 0 (sync-to-comms mode), the value of this object is ignored.
Sub-Interval Length	10 to 32767 seconds (0= Sync-to-Comms)	AV11	Seconds	0	150	Sub-Interval Length in hundredths of a second. For sync-to-comms mode, which allows manual triggering of demand intervals and the logging of another Trend_Log record, set this value to 0 and write 21211 to the reset register (object AV1) each time the sub-interval must be externally reset. Default is 90000 (15 minutes). This variable is tied directly to the Log_Interval property of all three Trend_Log objects (their value is always the same as this one). Changing any of these four properties changes all of them.

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E51C2 and E51C3 Bi-Directional Energy Meters

The E51C2/C3 has 94 data objects and operates at 9600, 19200 or 38400 baud. The E8951 does not support the logging functionality of the E51C3.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Analog_input Objects (read-only)						
kWh: Net	Accumulated Net Real Energy	AI1	kWh	0	257/258	Resolution is limited by data type (when value exceeds 7 digits; reset more often to maximize resolution)
kWh: Import	Real Energy: Import (Quadrants 1 & 4)	AI2	kWh	0	259/260	
kWh: Export	Real Energy: Export (Quadrants 2 & 3)	AI3	kWh	0	261/262	
kVARh: Quad 1	Reactive Energy: Quad 1 (Lags Import)	AI4	n/a	0	263/264	The UNITS property of this object will report n/a because there is no unit type in this verision of the BACnet standard for kVARh.
kVARh: Quad 2	Reactive Energy: Quad 2 (Leads Export)	AI5	n/a	0	265/266	The UNITS property of this object will report n/a because there is no unit type in this verision of the BACnet standard for kVARh.
kVARh: Quad 3	Reactive Energy: Quad 3 (Lags Export)	AI6	n/a	0	267/268	The UNITS property of this object will report n/a because there is no unit type in this verision of the BACnet standard for kVARh.
kVARh: Quad 4	Reactive Energy: Quad 4 (Leads Import)	AI7	n/a	0	269/270	The UNITS property of this object will report n/a because there is no unit type in this verision of the BACnet standard for kVARh.
kVAh: Net	Apparent Energy: Net	AI8	n/a	0	271/272	The UNITS property of this object will report n/a because there is no unit type in this verision of the BACnet standard for kVAh.
kVAh: Import	Apparent Energy: Import (Quads 1 & 4)	AI9	n/a	0	273/274	The UNITS property of this object will report n/a because there is no unit type in this verision of the BACnet standard for kVAh.
kVAh: Export	Apparent Energy: Export (Quads 2 & 3)	AI10	n/a	0	275/276	The UNITS property of this object will report n/a because there is no unit type in this verision of the BACnet standard for kVAh.
kW: Total Net	Total Net Instantaneous Real Power	AI11	kW	1	277/278	
kVAR: Total Net	Total Net Instantaneous Reactive Power	AI12	kVAR	1	279/280	
kVA: Total Net	Total Net Instantaneous Apparent Power	AI13	kVA	1	281/282	
PF: Total	Total Instantaneous Power Factor	AI14	PF	0.01	283/284	
Volts: L-L Avg	Voltage L-L average of active phases	AI15	Volts	5	285/286	
Volts: L-N Avg	Voltage L-N average of active phases	AI16	Volts	5	287/288	
Amps: Avg	Current Avg of active phases	AI17	Amps	5	289/290	
Frequency	Instantaneous Frequency	AI18	Hz	0.01	291/292	Will return QNAN if frequency is out of range (or no voltage input present on Phase A)
kW: Demand	Total Real Power Present Demand	AI19	kW	1	293/294	
kVAR: Demand	Total Reactive Power Present Demand	AI20	kVAR	1	295/296	
kVA: Demand	Total Apparent Power Present Demand	AI21	kVA	1	297/298	
kW: Total Import Max. Demand	Total Import Real Power Max. Demand	AI22	kW	0	299/300	This retains the largest positive (Import) value measured for Total Real Power Demand (AI19) for any single demand interval since the Max Demand were last explicitly reset via AV1 (this is also reset when the demand interval is changed).

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E51C2 and E51C3 Bi-Directional Energy Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
kVAR: Total Import Max. Demand	Total Import Reactive Power Max. Demand	AI23	kVAR	0	301/302	This retains the largest positive (Import) value measured for Total Reactive Power Demand (AI20) for any single demand interval since the Max Demand were last explicitly reset via AV1 (this is also reset when the demand interval is changed).
kVA: Total Import Max. Demand	Total Import Apparent Power Max. Demand	AI24	kVA	0	303/304	This retains the largest positive (Import) value measured for Total Apparent Power Demand (AI21) for any single demand interval since the Max Demand were last explicitly reset via AV1 (this is also reset when the demand interval is changed).
kW: Total Export Max. Demand	Total Export Real Power Max. Demand	AI25	kW	0	305/306	This retains the largest negative (Export) value measured for Total Real Power Demand (AI19) for any single demand interval since the Max Demand were last explicitly reset via AV1 (this is also reset when the demand interval is changed).
kVAR: Total Export Max. Demand	Total Export Reactive Power Max. Demand	AI26	kVAR	0	307/308	This retains the largest negative (Export) value measured for Total Reactive Power Demand (AI20) for any single demand interval since the Max Demand were last explicitly reset via AV1 (this is also reset when the demand interval is changed).
kVA: Total Export Max. Demand	Total Export Apparent Power Max. Demand	AI27	kVA	0	309/310	This retains the largest negative (Export) value measured for Total Apparent Power Demand (AI21) for any single demand interval since the Max Demand were last explicitly reset via AV1 (this is also reset when the demand interval is changed).
Reserved_AI28	(Reserved_AI28)	AI28	kVA	1	311/312	This retains the largest negative (Export) value measured for Total Apparent Power Demand (AI21) for any single demand interval since the Max Demand were last explicitly reset via AV1 (this is also reset when the demand interval is changed).
Pulse Counter 1 Import Real Energy	Pulse Counter 1 Import Real Energy	AI29	n/a	0	313/314	Contact closure counter for Real Energy Import pulse output. Check Pulse setup on the LCD display for the weight of each pulse output count. These values are derived from 32 bit integer counter and roll over to 0 when the integer counters do. Write 16498 (0x4072) to the Present_Value property of Analog_Value object AV1 to reset both Pulse Counters to 0.
Pulse Counter 2 Export Real Energy	Pulse Counter 2 Export Real Energy	AI30	n/a	0	315/316	Contact closure counter for Real Energy Export pulse output (there is no physical output for this, but the pulses are counted anyway). Check Pulse setup on the LCD display for the weight of each pulse output count. These values are derived from 32 bit integer counter and roll over to 0 when the integer counters do. Write 16498 (0x4072) to the Present_Value property of Analog_Value object AV1 to reset both Pulse Counters to 0.
kWh Energy: Import Ph A	Accumulated Real Energy Import Ph A	AI31	kWh	0	317/318	
kWh Energy: Import Ph B	Accumulated Real Energy Import Ph B	AI32	kWh	0	319/320	
kWh Energy: Import Ph C	Accumulated Real Energy Import Ph C	AI33	kWh	0	321/322	
kWh Energy: Export Ph A	Accumulated Real Energy Export Ph A	AI34	kWh	0	323/324	
kWh Energy: Export Ph B	Accumulated Real Energy Export Ph B	AI35	kWh	0	325/326	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E51C2 and E51C3 Bi-Directional Energy Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
kWh Energy: Export Ph C	Accumulated Real Energy Export Ph C	AI36	kWh	0	327/328	
kVARh: Q1 Ph A	Accumulated Q1 Reactive Energy Ph A	AI37	kWh	0	329/330	
kVARh: Q1 Ph B	Accumulated Q1 Reactive Energy Ph B	AI38	kWh	0	331/332	
kVARh: Q1 Ph C	Accumulated Q1 Reactive Energy Ph C	AI39	kWh	0	333/334	
kVARh: Q2 Ph A	Accumulated Q2 Reactive Energy Ph A	AI40	kWh	0	335/336	
kVARh: Q2 Ph B	Accumulated Q2 Reactive Energy Ph B	AI41	kWh	0	337/338	
kVARh: Q2 Ph C	Accumulated Q2 Reactive Energy Ph C	AI42	kWh	0	339/340	
kVARh: Q3 Ph A	Accumulated Q3 Reactive Energy Ph A	AI43	kWh	0	341/342	
kVARh: Q3 Ph B	Accumulated Q3 Reactive Energy Ph B	AI44	kWh	0	343/344	
kVARh: Q3 Ph C	Accumulated Q3 Reactive Energy Ph C	AI45	kWh	0	345/346	
kVARh: Q4 Ph A	Accumulated Q4 Reactive Energy Ph A	AI46	kWh	0	347/348	
kVARh: Q4 Ph B	Accumulated Q4 Reactive Energy Ph B	AI47	kWh	0	349/350	
kVARh: Q4 Ph C	Accumulated Q4 Reactive Energy Ph C	AI48	kWh	0	351/352	
kVAh: Import Ph A	Accumulated Appar. Energy Import Ph A	AI49	kWh	0	353/354	
kVAh: Import Ph B	Accumulated Appar. Energy Import Ph B	AI50	kWh	0	355/356	
kVAh: Import Ph C	Accumulated Appar. Energy Import Ph C	AI51	kWh	0	357/358	
kVAh: Export Ph A	Accumulated Appar. Energy Export Ph A	AI52	kWh	0	359/360	
kVAh: Export Ph B	Accumulated Appar. Energy Export Ph B	AI53	kWh	0	361/362	
kVAh: Export Ph C	Accumulated Appar. Energy Export Ph C	AI54	kWh	0	363/364	
kW: Ph A	Instantaneous Real Power Phase A	AI55	kW	1	365/366	
kW: Ph B	Instantaneous Real Power Phase B	AI56	kW	1	367/368	
kW: Ph C	Instantaneous Real Power Phase C	AI57	kW	1	369/370	
kVAR: Ph A	Instantaneous Reactive Power Phase A	AI58	kVAR	1	371/372	
kVAR: Ph B	Instantaneous Reactive Power Phase B	AI59	kVAR	1	373/374	
kVAR: Ph C	Instantaneous Reactive Power Phase C	AI60	kVAR	1	375/376	
kVA: Ph A	Instantaneous Apparent Power Phase A	AI61	kVA	1	377/378	
kVA: Ph B	Instantaneous Apparent Power Phase B	AI62	kVA	1	379/380	
kVA: Ph C	Instantaneous Apparent Power Phase C	AI63	kVA	1	381/382	
PF: Ph A	Instantaneous Power Factor Phase A	AI64	PF	0.01	383/384	
PF: Ph B	Instantaneous Power Factor Phase B	AI65	PF	0.01	385/386	
PF: Ph C	Instantaneous Power Factor Phase C	AI66	PF	0.01	387/388	
Volts: Ph A-B	Instantaneous Voltage Phase A to Phase B	AI67	Volts	5	389/390	
Volts: Ph B-C	Instantaneous Voltage Phase B to Phase C	AI68	Volts	5	391/392	
Volts: Ph A-C	Instantaneous Voltage Phase A to Phase C	AI69	Volts	5	393/394	
Volts: Ph A-N	Instantaneous Voltage Phase A to Neutral	AI70	Volts	5	395/396	
Volts: Ph B-N	Instantaneous Voltage Phase B to Neutral	AI71	Volts	5	397/398	
Volts: Ph C-N	Instantaneous Voltage Phase C to Neutral	AI72	Volts	5	399/400	
Amps: Ph A	Instantaneous Current Phase A	AI73	Amps	5	401/402	
Amps: Ph B	Instantaneous Current Phase B	AI74	Amps	5	403/404	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E51C2 and E51C3 Bi-Directional Energy Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Amps: Ph C	Instantaneous Current Phase C	AI75	Amps	5	405/406	
Max_Power	Max Power	AI76	kW	0	135	
Reserved_AI77	(Reserved AI77)	AI77	n/a	65535	136	
Energy_Resets	Count of Energy_Resets	AI78	n/a	0	147	
Reserved_AI79	Reserved_AI79	AI79	n/a	65535	148	
Reserved_AI80	Reserved_AI80	AI80	n/a	65535	151	
Power_Up_Count	Count of Power Up Cycles	AI81	n/a	0	152	
Output_Config	Output Configuration	AI82	n/a	0	153	
Alarm Error Bitmap	Bitmap of all alarm bits	AI83	n/a	0	146	
Analog_Value Objects (can be written as well as read)						
Reset: write values to reset configs	30078=Acc 21211=Dmd 21212=Max 16498=Puls	AV1	n/a	0	129	Reset (aka Command Register): - Write 30078 (0x757E) to clear all Energy Accumulators to 0 (All). - Write 21211 (0x52DB) to begin new Demand Sub-Interval calculation cycle. Takes effect at the end of the next 1 second calculation cycle. For proper operation, write no more frequently than every 10 seconds. - Write 21212 (0x52DC) to reset Max Demand values to Present Demand Values. Takes effect at the end of the next 1 second calculation cycle. For proper operation, write no more frequently than every 10 seconds. - Write 16498 (0x4072) to clear Pulse Counts to zero. - Read always returns 0.
System Type (being metered)	10=1ph 11=2ph 12=2ph+N 31=3ph-Y 40=3ph+N	AV2	n/a	0	130	10 = Single Phase: A + N 11 = Single Phase: A + B 12 = Single Split Phase: A + B + 31 = 3 phase Δ, A + B + C, no N 40 = 3 phase Y, A + B + C + N
CT Ratio Primary	CT Ratio Primary (5A to 32000A)	AV3	Amps	0	131	Current Transducer Size - Primary Current Range
CT Ratio Secondary	CT Ratio Secondary (1=1VAC 3=1/3VAC)	AV4	n/a	0	132	Current Transducer Type – Secondary Interface - Enter 1 for CTs with 1V outputs - Enter 3 for CTs with 1/3V outputs
PT Ratio	Potential Transformer Ratio (1= no PT)	AV5	n/a	0	133	PT Ratio: The meter scales this value by 100 (i.e. entering 200 yields a potential transformer ratio of 2:1). The default is 100 (1.00:1), which is with no PT attached. Set this value before setting the system voltage (below)
System Voltage	Line-Line Voltage of Service Metered	AV6	Volts	0	134	System Voltage: This voltage is line to line, unless in system type 10 (AV2), which is line to neutral. The meter uses this value to calculate the full scale power for the pulse configuration (below), and as full scale for phase loss (AV8). The meter will refuse voltages that are outside the range of 82-660 volts when divided by the PT Ratio (above).
Display Units	Display Units (0=IEC 1=iEEE)	AV7	n/a	0	137	Display Units: 0 = IEC (U, V, P, Q, S), 1 = IEEE (default: VLL, VLN, W, VAR, VA)

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E51C2 and E51C3 Bi-Directional Energy Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Phase Loss Voltage Threshold	Phase Loss Thresh (% of System Voltage)	AV8	Percent	0	142	Phase Loss Voltage Threshold in percent of System Voltage (in object AV6). Default is 10 (10%). Any phase (as configured in AV2) whose level drops below this threshold triggers a Phase Loss alert. E.g., if the System voltage is set to 480 V L-L, the L-N voltage for each phase should be 277 V. When the threshold is set to 10%, if any phase drops below 27.7, or if any L-L voltage drops below 48 V, the corresponding phase loss alarm bit will be true.
Phase Loss Imbalance Threshold	Phase Loss Imbalance (% L-L variation)	AV9	Percent	0	143	Phase Loss Imbalance Threshold in Percent. Default is 25% phase to phase difference. For a 3-phase Y (3 + N) system type (40 in object AV2), both Line to Neutral and Line to Line voltages are tested. In a 3-phase Δ System type (31 in object AV2), only Line to Line voltages are examined. In a single split-phase (2 + N) system type (12 in object AV2), just the line to neutral voltage are compared. E.g., if the System Type is 40 (3-phase with Neutral) and the Phase Loss Imbalance Threshold is 25%, a Phase Imbalance is indicated when the L-L voltage between any two phases drops to less than 75% of the L-L voltage between any other two phases or when the L-N voltage of any phase drops to less than 75% of the L-N voltage of any other phase.
Num of Sub-Intrvl per Dem Intrvl	1=most recent; n(2-6)=avg of last n	AV10	n/a	0	149	Number of Sub-Intervals per Demand Interval. Sets the number of sub-intervals that make a single demand interval. For block demand, set this to 1. Default is 1. When Sub-Interval Length (in object AV11) is set to 0 (sync-to-comms mode), the value of this object is ignored.
Sub-Interval Length	10 to 32767 seconds (0= Sync-to-Comms)	AV11	Seconds	0	150	Sub-Interval Length in hundredths of a second. For sync-to-comms mode, which allows manual triggering of demand intervals and the logging of another Trend_Log record, set this value to 0 and write 21211 to the reset register (object AV1) each time the sub-interval must be externally reset. Default is 90000 (15 minutes). This variable is tied directly to the Log_Interval property of all three Trend_Log objects (their value is always the same as this one). Changing any of these four properties changes all of them.

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H8436 Series Energy Meters (H8436V, H8436VB & H8436VBS)

The H8436 has 34 data objects and operates at 9600 or 19200 baud.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Analog_input Objects (read-only)						
kWh Energy: Total	Accumulated Real Energy	AI1	kWh	0	259/260	
kW: Total	Total Instantaneous Real Power	AI2	kW	1	261/262	
kVA: Total	Total Instantaneous Apparent Power	AI3	kVA	1	263/264	
kVAR: Total	Total Instantaneous Reactive Power	AI4	kVAR	1	265/266	
PF: Total	Total Instantaneous Power Factor	AI5	PF	0.01	267/268	
Volts: L-L Avg	Voltage L-L average of active phases	AI6	Volts	5	269/270	
Volts: L-N Avg	Voltage L-N average of active phases	AI7	Volts	5	271/272	
Amps: Avg	Current Avg of active phases	AI8	Amps	5	273/274	
kW: Ph A	Instantaneous Real Power Phase A	AI9	kW	1	275/276	
kW: Ph B	Instantaneous Real Power Phase B	AI10	kW	1	277/278	
kW: Ph C	Instantaneous Real Power Phase C	AI11	kW	1	279/280	
PF: Ph A	Instantaneous Power Factor Phase A	AI12	PF	0.01	281/282	
PF: Ph B	Instantaneous Power Factor Phase B	AI13	PF	0.01	283/284	
PF: Ph C	Instantaneous Power Factor Phase C	AI14	PF	0.01	285/286	
Volts: Ph A-B	Instantaneous Voltage Phase A to Phase B	AI15	Volts	5	287/288	
Volts: Ph B-C	Instantaneous Voltage Phase B to Phase C	AI16	Volts	5	289/290	
Volts: Ph A-C	Instantaneous Voltage Phase A to Phase C	AI17	Volts	5	291/292	
Volts: Ph A-N	Instantaneous Voltage Phase A to Neutral	AI18	Volts	5	293/294	
Volts: Ph B-N	Instantaneous Voltage Phase B to Neutral	AI19	Volts	5	295/296	
Volts: Ph C-N	Instantaneous Voltage Phase C to Neutral	AI20	Volts	5	297/298	
Amps: Ph A	Instantaneous Current Phase A	AI21	Amps	5	299/300	
Amps: Ph B	Instantaneous Current Phase B	AI22	Amps	5	301/302	
Amps: Ph C	Instantaneous Current Phase C	AI23	Amps	5	303/304	
Alarm Error Bitmap	Alarm Error Bitmap	AI24	n/a	0	146	
Count of Energy Accumulator Resets	Count of Energy Accumulator Resets	AI25	n/a	0	147	
Analog_Value Objects (can be written as well as read)						
Reset: write values to reset configs	30078= Clear All Accumulators	AV1	n/a	0	129	Reset: - Write 30078 to clear all energy accumulators to 0 (All). - Read always returns 0
System Type	10, 11, 12, 30, 31, 32, 40, 42, 44	AV2	n/a	0	130	
CT Ratio Primary	CT Ratio Primary (1A to 32767A)	AV3	n/a	0	131	
CT Ratio Secondary	CT Ratio Secondary (1=1AC 5=5A)	AV4	n/a	0	132	Not used on H84xx-V models (reads 32768)
PT Ratio Primary	Potential Transformer Ratio Primary	AV5	n/a	0	133	
PT Ratio Scale (0 = No PT)	0, 1, 10, 100 (0 = no PT)	AV6	n/a	0	134	
PT Ratio Secondary	100, 110, 115, 120	AV7	n/a	0	135	
Service Frequency	50 or 60 Hz	AV8	Hz	0	136	
Display Units	Display Units (0=IEC 1=IEEE)	AV9	n/a	0	137	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H8437 Series Energy Meters (H8437V, H8437VB & H8437VBS)

The H8437 has 66 data objects and operates at 9600 or 19200 baud.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Analog_input Objects (read-only)						
kWh Energy: Total	Accumulated Real Energy	AI1	kWh	0	259/260	
kW: Total	Total Instantaneous Real Power	AI2	kW	1	261/262	
KVA: Total	Total Instantaneous Apparent Power	AI3	kVA	1	263/264	
kVAR: Total	Total Instantaneous Reactive Power	AI4	kVAR	1	265/266	
PF: Total	Total Instantaneous Power Factor	AI5	PF	0.01	267/268	
Volts: L-L Avg	Voltage L-L average of active phases	AI6	Volts	5	269/270	
Volts: L-N Avg	Voltage L-N average of active phases	AI7	Volts	5	271/272	
Amps: Avg	Current Avg of active phases	AI8	Amps	5	273/274	
kW: Ph A	Instantaneous Real Power Phase A	AI9	kW	1	275/276	
kW: Ph B	Instantaneous Real Power Phase B	AI10	kW	1	277/278	
kW: Ph C	Instantaneous Real Power Phase C	AI11	kW	1	279/280	
PF: Ph A	Instantaneous Power Factor Phase A	AI12	PF	0.01	281/282	
PF: Ph B	Instantaneous Power Factor Phase B	AI13	PF	0.01	283/284	
PF: Ph C	Instantaneous Power Factor Phase C	AI14	PF	0.01	285/286	
Volts: Ph A-B	Instantaneous Voltage Phase A to Phase B	AI15	Volts	5	287/288	
Volts: Ph B-C	Instantaneous Voltage Phase B to Phase C	AI16	Volts	5	289/290	
Volts: Ph A-C	Instantaneous Voltage Phase A to Phase C	AI17	Volts	5	291/292	
Volts: Ph A-N	Instantaneous Voltage Phase A to Neutral	AI18	Volts	5	293/294	
Volts: Ph B-N	Instantaneous Voltage Phase B to Neutral	AI19	Volts	5	295/296	
Volts: Ph C-N	Instantaneous Voltage Phase C to Neutral	AI20	Volts	5	297/298	
Amps: Ph A	Instantaneous Current Phase A	AI21	Amps	5	299/300	
Amps: Ph B	Instantaneous Current Phase B	AI22	Amps	5	301/302	
Amps: Ph C	Instantaneous Current Phase C	AI23	Amps	5	303/304	
Amps: Neutral	Instantaneous Neutral Current	AI24	Amps	0.1	305/306	
Frequency	Instantaneous Frequency	AI25	Hz	0.01	307/308	
kW: Total Min	Total Real Power Minimum Value	AI26	kW	0	309/310	
kW: Total Max	Total Real Power Maximum Value	AI27	kW	0	311/312	
kVAh: Total	Accumulated Apparent Energy Consumption	AI28	n/a	0	313/314	
kVARh: Total	Accumulated Reactive Energy Consumption	AI29	n/a	0	315/316	
kVA: Ph A	Instantaneous Apparent Power Phase A	AI30	kVA	1	317/318	
kVA: Ph B	Instantaneous Apparent Power Phase B	AI31	kVA	1	319/320	
kVA: Ph C	Instantaneous Apparent Power Phase C	AI32	kVA	1	321/322	
kVAR: Ph A	Instantaneous Reactive Power Phase A	AI33	kVAR	1	323/324	
kVAR: Ph B	Instantaneous Reactive Power Phase B	AI34	kVAR	1	325/326	
kVAR: Ph C	Instantaneous Reactive Power Phase C	AI35	kVAR	1	327/328	
kW: Demand	Total Real Power Present Demand	AI36	kW	0	329/330	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H8437 Series Energy Meters (H8437V, H8437VB & H8437VBS), cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
kVA: Demand	Total Apparent Power Present Demand	AI37	kVA	0	331/332	
kVAR: Demand	Total Reactive Power Present Demand	AI38	kVAR	0	333/334	
kW: Max Demand	Total Real Power Max. Demand	AI39	kW	0	335/336	
kVA: Max Demand	Total Apparent Power Max. Demand	AI40	kVA	0	337/338	
kVAR: Max Demand	Total Reactive Power Max. Demand	AI41	kVAR	0	339/340	
Usage Hours	Hours: >0.1A on at least one phase	AI42	Hours	0	341/342	
Usage Minutes (0.0-59.9)	Minutes: >0.1A on at least one phase	AI43	Minutes	10	343/344	
Total Hours	Total Hours since last timer reset	AI44	Hours	0	345/346	This combination timer counts the total time for which the absolute current on at least one phase is >0.1 Amp.
Total Minutes (0.0-59.9)	Total Minutes since last timer reset	AI45	Minutes	10	347/348	This combination timer counts the total time for which the absolute current on at least one phase is >0.1 Amp.
Percent Usage	Usage Hours / Total Hours	AI46	Percent	5	349/350	This timer counts the total time since the usage timer was reset.
Volts THD: Ph A-N	Instantaneous THD Voltage Ph A - Neutral	AI47	Percent	5	351/352	Percent Usage = Usage Time / Total Time .
Volts THD: Ph B-N	Instantaneous THD Voltage Ph B - Neutral	AI48	Percent	5	353/354	
Volts THD: Ph C-N	Instantaneous THD Voltage Ph C - Neutral	AI49	Percent	5	355/356	
Volts THD: Ph A-B	Instantaneous THD Voltage Ph A - Ph B	AI50	Percent	5	357/358	
Volts THD: Ph B-C	Instantaneous THD Voltage Ph B - Ph C	AI51	Percent	5	359/360	
Volts THD: Ph A-C	Instantaneous THD Voltage Ph A - Ph C	AI52	Percent	5	361/362	
Amps THD: Ph A	Instantaneous THD Current Phase A	AI53	Percent	5	363/364	
Amps THD: Ph B	Instantaneous THD Current Phase B	AI54	Percent	5	365/366	
Amps THD: Ph C	Instantaneous THD Current Phase C	AI55	Percent	5	367/368	
Alarm Error Bitmap	Alarm Error Bitmap	AI56	n/a	0	146	Error Bitmap: bit 0: Phase A Voltage out of range bit 1: Phase B Voltage out of range bit 2: Phase C Voltage out of range bit 3: Phase A Current out of range bit 4: Phase B Current out of range bit 5: Phase C Current out of range bit 6: Frequency out of range or insufficient voltage on Phase A to determine frequency range of 45-65 Hz. bit 7: Reserved for future use bit 8: Phase Loss A bit 9: Phase Loss B bit 10: Phase Loss C bit 11-15: Reserved for future use
Count of Energy Accumulator Resets	Count of Energy Accumulator Resets	AI57	n/a	0	147	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H8437 Series Energy Meters (H8437V, H8437VB & H8437VBS), cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Analog_value Objects (can be written as well as read)						
Reset: write values to reset configs	30078=Acc 14255=MnMx 21212=Dmd 10001=Tmr	AV1	n/a	0	129	Reset: - Write 30078 to clear all Energy Accumulators to 0 (All). - Write 14255 to reset all Power Min/Max to Present Values (H84xx EDS Only). - Write 21212 to reset Peak Demand values to Present Demand Values (H84xx EDS Only). - Write 10001 to clear the Usage Timers to 0 (H84xx EDS Only). - Read always returns 0
System Type	10; 11; 12; 30; 31; 32; 40; 42; 44	AV2	n/a	0	130	
CT Ratio Primary	CT Ratio Primary (1A to 32767A)	AV3	n/a	0	131	
CT Ratio Secondary	CT Ratio Secondary (1=1AC 5=5A)	AV4	n/a	0	132	Not used on H84xxV (reads 32768)
PT Ratio Primary	Potential Transformer Ratio Primary	AV5	n/a	0	133	
PT Ratio Scale (0 = No PT)	0; 1; 10; 100 (0 = no PT)	AV6	n/a	0	134	
PT Ratio Secondary	100; 110; 115; 120	AV7	n/a	0	135	
Service Frequency	50 or 60 Hz	AV8	Hz	0	136	
Display Units	Display Units (0=IEC 1=IEEE)	AV9	n/a	0	137	
(Power) Demand Block Interval	1 to 60 Minutes	AV10	n/a	0	149	(Power) Demand Block Interval – Used for PQS (P=Real Power KW, Q=Reactive Power KVAR, and S=Apparent Power KVA) demand calculations.
Num of Power Dem. Block Sub-Intrvl.	Subset of Block interval	AV11	n/a	0	150	Number of Power Demand Block Sub-Intervals - Sets the number of sub-intervals per Demand Block Interval (above). The method of demand calculation is set as follows: 0 = Sliding Block. Like rolling block, but with a subinterval of 15 seconds; used for Demand Intervals ≤ 15 minutes, or 60 seconds for intervals > 15 minutes 1 = Block. Fixed block with no sub-intervals. >1 = Rolling Block. The number of sub-intervals per block. This value must divide evenly into the Block Demand Interval (above). For example, if the Demand Block Interval is 15 minutes, valid Sub-Interval values are: 3, 5, or 15. If the value of 3 is chosen, then there will be 3 subintervals of 5 minutes each.

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H8238 Series Multi-Circuit Meters (H8238, H8238E & H8238EL)

The H8238 contains up to 8 logical meters, each with 91 data objects, for a total of 728 Data objects for one H8238 if all 8 meters are enabled.

The H8238 operates at 9600 or 19200 baud.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Analog_input Objects (read-only)						
kWh Energy: Total	Accumulated Real Energy	AI1	kWh	0	259/260	
kW: Total	Total Instantaneous Real Power	AI2	kW	1	261/262	
kVAR: Total	Total Instantaneous Reactive Power	AI3	kVAR	1	263/264	
KVA: Total	Total Instantaneous Apparent Power	AI4	kVA	1	265/266	
PF: Total	Total Instantaneous Power Factor	AI5	PF	0.01	267/268	
Volts: L-L Avg	Voltage L-L average of active phases	AI6	Volts	5	269/270	
Volts: L-N Avg	Voltage L-N average of active phases	AI7	Volts	5	271/272	
Amps: Avg	Current Avg of active phases	AI8	Amps	5	273/274	
Frequency	Instantaneous Frequency	AI9	Hz	0.01	275/276	Frequency: measured from the phase A voltage input. Range is 40 to 70 Hz. If voltage is insufficient for an accurate frequency determination, this register reads as 0xFFFF for integer and 0x7FC00000 for float.
kW: Ph A	Instantaneous Real Power Phase A	AI10	kW	1	277/278	
kW: Ph B	Instantaneous Real Power Phase B	AI11	kW	1	279/280	
kW: Ph C	Instantaneous Real Power Phase C	AI12	kW	1	281/282	
PF: Ph A	Instantaneous Power Factor Phase A	AI13	PF	0.01	283/284	
PF: Ph B	Instantaneous Power Factor Phase B	AI14	PF	0.01	285/286	
PF: Ph C	Instantaneous Power Factor Phase C	AI15	PF	0.01	287/288	
Volts: Ph A-B	Instantaneous Voltage Phase A to Phase B	AI16	Volts	5	289/290	
Volts: Ph B-C	Instantaneous Voltage Phase B to Phase C	AI17	Volts	5	291/292	
Volts: Ph A-C	Instantaneous Voltage Phase A to Phase C	AI18	Volts	5	293/294	
Volts: Ph A-N	Instantaneous Voltage Phase A to Neutral	AI19	Volts	5	295/296	
Volts: Ph B-N	Instantaneous Voltage Phase B to Neutral	AI20	Volts	5	297/298	
Volts: Ph C-N	Instantaneous Voltage Phase C to Neutral	AI21	Volts	5	299/300	
Amps: Ph A	Instantaneous Current Phase A	AI22	Amps	5	301/302	
Amps: Ph B	Instantaneous Current Phase B	AI23	Amps	5	303/304	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H8238 Series Multi-Circuit Meters (H8238, H8238E & H8238EL), cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Amps: Ph C	Instantaneous Current Phase C	AI24	Amps	5	305/306	
Amps: Neutral	Instantaneous Neutral Current	AI25	Amps	0.1	307/308	Only Active in 6-Meter mode (reads 65535 in 8-meter mode)
kW: Average	Average Real Power since last reset	AI26	kW	1	309/310	
kW: Min	Minimum Real Power since last reset	AI27	kW	1	311/312	
kW: Max	Maximum Real Power since last reset	AI28	kW	1	313/314	
Firmware Revision - Reset System	Firmware Revision - Reset System	AI29	n/a	0	43	
Firmware Revision - Operating System	Firmware Revision - Operating System	AI30	n/a	0	44	
Serial number MSW	MSW of unsigned-long integer	AI31	n/a	0	45	
Serial number LSW	LSW of unsigned-long integer	AI32	n/a	0	46	
Error Register	0=no error; 1=NV Ram error; others rsvd	AI33	n/a	0	47	Reports internal errors detected by the microcontroller. The ALIVE LED is steadily lit (not blinking) if any errors are detected.
Device ID	15027=8-meter config; 15027=6-meter	AI34	n/a	0	48	
Meter Alarm Status (non-latching)	bitmap of 8 alarms - bits 9-15 are all 0	AI35	n/a	0	49	Holds the instantaneous state of the meter alarms. The bits in this register are only set while the alarm condition exists. These alarms cannot be reset by the user. Only set the Over Voltage Alarm when its time-delay condition is satisfied (see AV4). bit 0 = over current bit 1 = under current bit 2 = over kVA bit 3 = under kVA bit 4 = over voltage bit 5 = under voltage bit 6 = phase loss A bit 7 = phase loss B bit 8 = phase loss C bits 9-15 = 0
Over Voltage Set Counter	Over Voltage Set Counter	AI36	n/a	0	50	
Over Voltage Reset Counter	Over Voltage Reset Counter	AI37	n/a	0	51	
Under Voltage Set Counter	Under Voltage Set Counter	AI38	n/a	0	52	
Under Voltage Reset Counter	Under Voltage Reset Counter	AI39	n/a	0	53	
Phase Loss A Set Counter	Phase Loss A Set Counter	AI40	n/a	0	54	
Phase Loss A Reset Counter	Phase Loss A Reset Counter	AI41	n/a	0	55	
Phase Loss B Set Counter	Phase Loss B Set Counter	AI42	n/a	0	56	
Phase Loss B Reset Counter	Phase Loss B Reset Counter	AI43	n/a	0	57	
Phase Loss C Set Counter	Phase Loss C Set Counter	AI44	n/a	0	58	
Phase Loss C Reset Counter	Phase Loss C Reset Counter	AI45	n/a	0	59	
Over Current Set Counter	Over Current Set Counter	AI46	n/a	0	60	
Over Current Reset Counter	Over Current Reset Counter	AI47	n/a	0	61	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H8238 Series Multi-Circuit Meters (H8238, H8238E & H8238EL), cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Under Current Set Counter	Under Current Set Counter	AI48	n/a	0	62	
Under Current Reset Counter	Under Current Reset Counter	AI49	n/a	0	63	
Over kVA Set Counter	Over kVA Set Counter	AI50	n/a	0	64	
Over kVA Reset Counter	Over kVA Reset Counter	AI51	n/a	0	65	
Under kVA Set Counter	Under kVA Set Counter	AI52	n/a	0	66	
Under kVA Reset Counter	Under kVA Reset Counter	AI53	n/a	0	67	
Modbus addr as conf by DIP switches	integer value (1-247) addr of 1st meter	AI54	n/a	0	68	
Baud rate as conf by DIP switches	integer (2400; 4800; 9600; 19200)	AI55	n/a	0	69	
Analog_value Objects (can be written as well as read)						
Reset Min/Max/Avg Real Power	Write Zero to Reset Min/Max/ Avg kW	AV1	n/a	0	28	Returns random values if read.
Reset Energy Consumption	Write Zero to Reset kWh Accumulator	AV2	n/a	0	1	Returns random values if read.
CT Scale	Amp rating of CT used (integer)	AV3	Amps	0	30	Sets the size of the external 5-Amp CTs used. Range is 1 to 5999. E.g. for 10A:5A CTs, set register to 10; for 4000A:5A CTs, set register to 4000.
Over Voltage (AV6) Alarm Threshold	Alarm if L-L Voltage>threshold > 10 sec	AV4	Volts	0	31	Occurs if the average L-L voltage (AI6) is greater than this threshold for at least 10 seconds. Units are absolute voltage (using integer multiplier). Range = 0 to 65535; Default = 65535
Under Voltage (AV6) Alarm Threshold	Alarm if L-L Voltage<threshold (ever)	AV5	Volts	0	32	Occurs if the average L-L voltage (AI6) is less than this threshold at any time. Units are absolute voltage (using integer multiplier). Range = 0 to 65535; Default = 0
Over Current (AV8) Alarm Threshold	Alarm if Avg Current>threshold (ever)	AV6	Amps	0	33	Occurs if the average current (AI8) is greater than this threshold at any time. Units are absolute current (usinginteger multiplier). Range = 0 to 65535; Default = 65535
Under Current (AV8) Alarm Threshold	Alarm if Avg Current<threshold (ever)	AV7	Amps	0	34	Occurs if the average current (AI8) is less than this threshold at any time. Units are absolute current (usinginteger multiplier). Range = 0 to 65535; Default = 0
Over kVA (AV5) Alarm Threshold	Alarm if kVA>threshold (ever)	AV8	kVA	0	35	Occurs if the total apparent power (AI5) is greater than this threshold at any time. Units are absolute kVA (using integer multiplier). Range = 0 to 65535; Default = 65535
Under kVA (AV5) Alarm Threshold	Alarm if kVA<threshold (ever)	AV9	kVA	0	36	Occurs if the total apparent power (AI5) is less than this threshold at any time. Units are absolute kVA (using integer multiplier). Range = 0 to 65535; Default = 0

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H8238 Series Multi-Circuit Meters (H8238, H8238E & H8238EL), cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Meter Alarm Status (Latching)	bitmap of 8 alarms - bits 9-15 are all 0	AV10	n/a	0	37	Holds the state of the meter alarm latches. These alarms are latching and must be cleared by the user. To reset any alarm, read the register and then write the register with the desired alarm bit cleared. Writing a 1 to any bit has no effect. bit 0 = over current bit 1 = under current bit 2 = over kVA bit 3 = under kVA bit 4 = over voltage bit 5 = under voltage bit 6 = phase loss A bit 7 = phase loss B bit 8 = phase loss C bits 9-15 = 0
Phase Loss Threshold	Integer % of other phases	AV11	Percent	0	38	Phase Loss Threshold (0 to 100%, default = 65535): these exist independently for all 3 phases (A, B, C). This register sets the alarm threshold for all three phases. This setting is the percent deviation of a phase from the average of all 3 phases (register 8). The decision logic is constructed so that normal power-ups do not trigger alarms. A phase loss alarm will occur only if the following conditions are met: 1. The average L-L voltage (register 8) is greater than 25V. 2. The L-N voltage on a phase (register 20, 21, or 22) is less than the percent deviation set by this threshold. 3. This threshold is set between 0 and 100%.
Meter Name: First 2 characters	First 2 ASCII characters (Default=MT)	AV12	n/a	0	39	AV12 – AV15 is a decimal representation of two ASCII characters used for the meter name. Allowed characters are 21h through 7Dh, excluding 5Ch. The high order byte is the high-order character. For example: AV12 Present Value = 19796 ⇨ 4D54 (hex) M = 4D (hex) T = 54 (hex)
Meter Name: Second 2 characters	Second 2 ASCII characters (Default=Rx)	AV13	n/a	0	40	
Board Name: First 2 characters	First 2 ASCII characters (Default=BR)	AV14	n/a	0	41	
Board Name: Second 2 characters	Second 2 ASCII characters (Default=C1)	AV15	n/a	0	42	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H8238 Series Multi-Circuit Meters (H8238, H8238E & H8238EL), cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Meter Enable Register	bitmap of 8 meters: 0=off; 1=on; 9-15=0	AV16	n/a	0	73	Meter Enable Register: allows the user to enable or disable selected meters on the board. A disabled meter will not respond to any Modbus queries. A 1 indicates an enabled meter; a 0 indicates a disabled meter. This register can only be written to meter #1. When read from meters 2 through 8, the high bit (bit 15) is always set as a flag that the register may not be written to that meter. When in 6-meter mode, bit 6 and bit 7 may not be set and will always read as 0. bit 0 = Meter #1 (always reads as 1, cannot be reset) bit 1 = Meter #2 bit 2 = Meter #3 bit 3 = Meter #4 bit 4 = Meter #5 bit 5 = Meter #6 bit 6 = Meter #7 bit 7 = Meter #8 bits 8-14 = 0 bit 15 = 0 if read from Meter #1; 1 if read from Meters #2-#8
Critical Alarm Register	info only: set 0=critical; 1=not; 9-15=0	AV17	n/a	0	74	Critical Alarm Register: allows the user to indicate which of the meter's alarms are critical and non-critical. This product takes no action on the contents of this register. It is provided for monitoring systems' use. A 1 indicates a critical alarm; a 0 indicates a non-critical alarm. bit 0 = over current bit 1 = under current bit 2 = over kVA bit 3 = under kVA bit 4 = over voltage bit 5 = under voltage bit 6 = phase loss A bit 7 = phase loss B bit 8 = phase loss C bits 9-15 = 0
Binary_Input Objects						
Non-Latching Alarm - Over Current	1=Active; 0=Inactive	BI1	74:0			
Non-Latching Alarm - Under Current	1=Active; 0=Inactive	BI2	74:1			
Non-Latching Alarm - Over kVA	1=Active; 0=Inactive	BI3	74:2			
Non-Latching Alarm - Under kVA	1=Active; 0=Inactive	BI4	74:3			
Non-Latching Alarm - Over Voltage	1=Active; 0=Inactive	BI5	74:4			
Non-Latching Alarm - Under Voltage	1=Active; 0=Inactive	BI6	74:5			
Non-Latching Alarm - Phase Loss - A	1=Active; 0=Inactive	BI7	74:6			
Non-Latching Alarm - Phase Loss - B	1=Active; 0=Inactive	BI8	74:7			
Non-Latching Alarm - Phase Loss - C	1=Active; 0=Inactive	BI9	74:8			
Binary_Value Objects						
Latching Alarm - Over Current	1=Active; 0=Inactive; write 0 to clear	BV1	37:0			
Latching Alarm - Under Current	1=Active; 0=Inactive; write 0 to clear	BV2	37:1			

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H8238 Series Multi-Circuit Meters (H8238, H8238E & H8238EL), cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Latching Alarm - Over kVA	1=Active; 0=Inactive; write 0 to clear	BV3	37:2			
Latching Alarm - Under kVA	1=Active; 0=Inactive; write 0 to clear	BV4	37:3			
Latching Alarm - Over Voltage	1=Active; 0=Inactive; write 0 to clear	BV5	37:4			
Latching Alarm - Under Voltage	1=Active; 0=Inactive; write 0 to clear	BV6	37:5			
Latching Alarm - Phase Loss - A	1=Active; 0=Inactive; write 0 to clear	BV7	37:6			
Latching Alarm - Phase Loss - B	1=Active; 0=Inactive; write 0 to clear	BV8	37:7			
Latching Alarm - Phase Loss - C	1=Active; 0=Inactive; write 0 to clear	BV9	37:8			

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H8163 Series Energy Meter with H8163-CB Modbus Communication Board

The H8163 Series has 54 data objects and operates at 9600 or 19200 baud. All date/time values (AI39-47 and AV5-7) for the H8163 are float representations of hexadecimal data with two values packed into each word, one in the lower byte (LSB) and one in the upper byte (MSB). Convert these values externally.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Analog_input Objects (read-only)						
kWh Energy: Total	Accumulated Real Energy	AI1	kWh	0	259/260	
kW: Total	Total Instantaneous Real Power	AI2	kW	1	261/262	
kVAR: Total	Total Instantaneous Reactive Power	AI3	kVAR	1	263/264	
KVA: Total	Total Instantaneous Apparent Power	AI4	kVA	1	265/266	
PF: Total	Total Instantaneous Power Factor	AI5	PF	0.01	267/268	
Volts: L-L Avg	Voltage L-L average of active phases	AI6	Volts	5	269/270	
Volts: L-N Avg	Voltage L-N average of active phases	AI7	Volts	5	271/272	
Amps: Avg	Current Avg of active phases	AI8	Amps	5	273/274	
kW: Ph A	Instantaneous Real Power Phase A	AI9	kW	1	275/276	
kW: Ph B	Instantaneous Real Power Phase B	AI10	kW	1	277/278	
kW: Ph C	Instantaneous Real Power Phase C	AI11	kW	1	279/280	
PF: Ph A	Instantaneous Power Factor Phase A	AI12	PF	0.01	281/282	
PF: Ph B	Instantaneous Power Factor Phase B	AI13	PF	0.01	283/284	
PF: Ph C	Instantaneous Power Factor Phase C	AI14	PF	0.01	285/286	
Volts: Ph A-B	Instantaneous Voltage Phase A to Phase B	AI15	Volts	5	287/288	
Volts: Ph B-C	Instantaneous Voltage Phase B to Phase C	AI16	Volts	5	289/290	
Volts: Ph A-C	Instantaneous Voltage Phase A to Phase C	AI17	Volts	5	291/292	
Volts: Ph A-N	Instantaneous Voltage Phase A to Neutral	AI18	Volts	5	293/294	
Volts: Ph B-N	Instantaneous Voltage Phase B to Neutral	AI19	Volts	5	295/296	
Volts: Ph C-N	Instantaneous Voltage Phase C to Neutral	AI20	Volts	5	297/298	
Amps: Ph A	Instantaneous Current Phase A	AI21	Amps	5	299/300	
Amps: Ph B	Instantaneous Current Phase B	AI22	Amps	5	301/302	
Amps: Ph C	Instantaneous Current Phase C	AI23	Amps	5	303/304	
Present Real Energy Sub-Interval	SubInterval value currently accumulating	AI24	kW	1	305/306	Present Demand Sub-Interval. This is the currently accumulating Sub-Interval demand, which is constantly changing.

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H8163 Series Energy Meter with H8163-CB Modbus Communication Board, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Present Real Energy Demand (kW)	Most recent kW Demand Sub-Interval	AI25	kW	1	307/308	Present Demand (kW). This is the present demand, updated at the end of every Sub-Interval. This value is the average of the previous N subintervals, where N is the number of sub intervals (register 37).
Peak Real Energy Demand	Largest value recorded	AI26	kW	1	309/310	The peak demand is the highest demand value (register 26) that has occurred. This value is also displayed on LCD for MAX kW when the comms board is present.
Present Reactive Energy Sub-Interval	SubInterval value currently accumulating	AI27	KVAR	1	311/312	Present kVAR Sub-Interval. This is the currently accumulating Sub-Interval KVAR, which is constantly changing.
Present Reactive Energy Demand	Most recent Demand Sub-Interval	AI28	KVAR	1	313/314	Present kVAR. This is the present kVar, which is updated at the end of every sub-interval. This value is the average of the previous N sub-intervals, where N is the number of sub-intervals (register 37).
Peak Reactive Energy Demand	Largest value recorded	AI29	KVAR	1	315/316	Peak kVar. The peak kVar is the highest kVar value (register 28) that has occurred.
Count of KWh resets	Number of times kWh accumulator was reset	AI30	n/a	1	31	Count of KWh resets. The number of times the peak demand (register 27) has been reset. This value rolls over from 65535 to zero.
Count of Peak Demand Resets	Number of times Peak kW Demand was reset	AI31	n/a	1	32	Count of Peak Demand Resets. The number of times the peak demand (register 27) has been reset. This value rolls over from 65535 to zero.
Count of Peak kVAR Resets	Number of times Peak kVAR Demand was reset	AI32	n/a	1	33	Count of Peak kVar Resets. The number of times the peak kVar (register 30) has been reset. This value rolls over from 65535 to zero.
Count of Elapsed Sub Intervals	Sub-intervals filled in current Block	AI33	n/a	1	34	Count of Elapsed Sub Intervals. This counts the number of subintervals that have elapsed. Because the demand (register 28) is updated every sub-interval, this register may be read to determine if an identical value in register 28 is actually the same demand
# of Readings in Present sub-interval	updated every 200 mS	AI34	n/a	5000	35	Number readings in present sub-interval. This value indicates the number of readings that are represented by the present subinterval (register 25). This register acts as an unsigned integer. Values larger than 32767 should not be "trusted". See below for explanation of sub-interval reading count overflow. This register will increment every 200 ms (5 times per Second).
System ID	15024=Basic, 15025=Enhanced	AI35	n/a	0	38	System ID. This register reads as 15024 for the Basic Meter and 15025 for the Enhanced Model to help identify the meter.
CT Size	Primary Rating, in Amps	AI36	n/a	0	39	CT Size. This register reads as the CT size: 100, 300, etc.
CT Number	Qty of CTs configured	AI37	n/a	0	40	CT Number. The number of CTs that are connected, 1,2, or 3.
Count of Phase Losses	Number of times phase loss has occurred	AI38	n/a	1	43	Count of Phase Losses. The number of times a phase loss has occurred on any phase. This value rolls over from 65535 to zero.

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H8163 Series Energy Meter with H8163-CB Modbus Communication Board, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Phase Loss Timestamp, Month/ Day	Hex Month 1-12 (LSB); Day 1-31 (MSB)	AI39	n/a	65535	47	The Date/Time information in A139-AI47 is encoded as two 8-bit hexadecimal values. To use these values, first convert the float values read to an integer, then convert to a 16-bit hexadecimal number, then convert each of the two bytes of the hexadecimal number to individual integer values. The first value (Months, Years or Minutes) is in the least significant byte of the hexadecimal number, and the second value (Days, Hours or Seconds) is in the most significant byte the hexadecimal number. For example: Last Restart Timestamp: AI42 Present Value = 6920 AI43 Present Value = 4876 AI44 Present Value = 15145 AI42 – 6920 -> 1B08 (hex) Day = 1B (hex) -> 27 Month = 08 (hex) -> 8 AI43 – 4876 -> 130C (hex) Hour = 13 (hex) -> 19 -> 7 PM Year = 0C (hex) -> 12 AI44 – 15145 -> 3B29 (hex) Second = 3B (hex) -> 59 Minute = 29 (hex) -> 41 Last Restart Timestamp – August 27th 2012 7:41:59 PM
Phase Loss Timestamp, Year/ Hour	Hex Year 0-199 (LSB), Hour 0-23 (MSB)	AI40	n/a	65535	48	
Phase Loss Timestamp, Minute/ Second	Hex Minute 0-59 (LSB), Second 0-59 (MSB)	AI41	n/a	65535	49	
Last Restart Time., Month/Day	Hex Month 1-12 (LSB); Day 1-31 (MSB)	AI42	n/a	65535	50	
Last Restart Time., Year/Hour	Hex Year 0-199 (LSB), Hour 0-23 (MSB)	AI43	n/a	65535	51	
Last Restart Time., Minute/ Second	Hex Minute 0-59 (LSB), Second 0-59 (MSB)	AI44	n/a	65535	52	
Last kWh Reset Time., Month/ Day	Hex Month 1-12 (LSB); Day 1-31 (MSB)	AI45	n/a	65535	53	
Last kWh Reset Time., Year/Hour	Hex Year 0-199 (LSB), Hour 0-23 (MSB)	AI46	n/a	65535	54	
Last kWh Reset Time., Minute/ Second	Hex Minute 0-59 (LSB), Second 0-59 (MSB)	AI47	n/a	65535	55	
Analog_value Objects (can be written as well as read)						
Sub-Interval Length	Number of Seconds * 5 (4500 = 15 min)	AV1	n/a	0	36	Sub-Interval Length. Sets the length of a sub-interval. Value is the number of seconds * 5, for example, 4500 is 15 minutes. For sync-to-comms, or sync-to-demand-reset-input (hardware signal), set this to zero.
# of Sub-Intervals per Demand Interval	1-6 (1= Block Demand)	AV2	n/a	0	37	Number of Sub-Intervals per Demand Interval. Sets the number of sub-intervals that make a single demand interval. Legal values are 1 to 6. For block demand, set this to 1.
Command: write values to reset:	1=Dmd; 2=kW Accum; 4=Pk KW; 8=Pk kVAR	AV3	n/a	0	41	Command (bit mapped): bit 0 (mask 1) = begin new demand sub-interval bit 1 (mask 2) = clear kWh accumulator bit 2 (mask 4) = reset peak demand bit 3 (mask 8) = reset peak kVAR bits 4-15 = write as zeros to avoid activating any additional commands that may be added in future revisions.
Phase Loss; Latching Register (bitmap):	bit0=ph-A; bit1=ph-B; bit2=ph-C; 3-15 nu	AV4	n/a	0	42	Phase Loss, Latching Register (bit mapped): bit 0 = phase A (unpredictable results, phase A) bit 1 = phase B bit 2 = phase C bits 3 to 15 = write as zeros. User clears this latching register.
Present Date/Time Month/Day	Hex Month 1-12 (LSB); Day 1-31 (MSB)	AV5	n/a	65535	44	Date/Time Month 1-12(LSB) Day 1-31 (MSB) Hexadecimal values.
Present Date/Time Year/Hour	Hex Year 0-199 (LSB); Hour 0-23 (MSB)	AV6	n/a	65535	45	Date/Time Year 0-99(LSB) Hour 0-23 (MSB) Hexadecimal values.
Present Date/Time Minute/ Second	Hex Minute 0-59 (LSB); Second 0-59 (MSB)	AV7	n/a	65535	46	Date/Time Minutes 0-59 (LSB) Second 0-59 (MSB) Hexadecimal values.

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters

The E3x family consists of models with different CT styles (solid-core or split-core), different functionality levels (A, B, C or E) and have shipped with different firmware versions over time that affect which data points are supported. When the E8951 discovers any of these products, it reads the firmware version and functionality level supported and loads the appropriate set of BACnet objects for that specific unit. This table shows the BACnet objects for E3xA/E models. The BACnet objects for E3xB/C models. are described in the next section.

The E3xAxxxx and E3xExxx meters have 737-1793 data objects per Modbus address (1793 for FW V1.023 and above, 783 for V1.016 - V1.022, and 737 for versions below 1.016) and operate at 9600, 19200 or 38400 baud. These meters monitor current, power, demand and energy on 42 branch circuits and four main circuits (up to three phases, plus Neutral) for each Modbus address. The E30A/E models with 42 channels or fewer have one Modbus address and support only 42 branch channels (plus main channels). The three columns under E3xA/E below indicate which points apply to each firmware version.

The E30A/E models with more than 42 channels and all E31A/E models have two Modbus addresses and support up to 84 branch channels and two sets of four main channels.

AV4-AV45 are NOT WRITABLE on E30A/E solid-core models because CT size is fixed (at 100A). Other values written will revert to 100A the next time the meter is scanned. They are writable on E31A/E split-core models.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW>=V1.203	1.016-1.022	FW<V1.016				
Analog_Input Objects									
Frequency: (derived from Phase A)	Frequency (derived from Phase A)	AI1	x	x	x	Hertz	0.01	600/601	
VOLTS L-N: 3ph Ave	Voltage L-L - average of active phases	AI2	x	x	x	Volts	5	602/603	
VOLTS L-L: 3ph Ave	Voltage L-N - average of active phases	AI3	x	x	x	Volts	5	604/605	
VOLTS A-N	Instantaneous Voltage Ph-A to Neutral	AI4	x	x	x	Volts	5	606/607	
VOLTS B-N	Instantaneous Voltage Ph-B to Neutral	AI5	x	x	x	Volts	5	608/609	
VOLTS C-N	Instantaneous Voltage Ph-C to Neutral	AI6	x	x	x	Volts	5	610/611	
VOLTS A-B	Instantaneous Voltage Phase A to B	AI7	x	x	x	Volts	5	612/613	
VOLTS B-C	Instantaneous Voltage Phase B to C	AI8	x	x	x	Volts	5	614/615	
VOLTS A-C	Instantaneous Voltage Phase A to C	AI9	x	x	x	Volts	5	616/617	
kWh Energy: 3ph Total	Real Energy - total of active phases	AI10	x	x	x	kWh	0	618/619	
kW: 3ph Total	Inst Real Power- total of active phases	AI11	x	x	x	kW	1	620/621	
Power Factor: 3ph Total	Inst Power Factor - average of phases	AI12	x	x	x	PF	0.01	622/623	
Amps: 3ph Average (phases 1,2,3)	Inst Current- average of active phases	AI13	x	x	x	Amperes	5	624/625	
kW: Phase 1	Instantaneous Real Power - Phase 1	AI14	x	x	x	kW	1	626/627	
kW: Phase 2	Instantaneous Real Power - Phase 2	AI15	x	x	x	kW	1	628/629	
kW: Phase 3	Instantaneous Real Power - Phase 3	AI16	x	x	x	kW	1	630/631	
Power Factor: Phase 1	Instantaneous Power Factor - Phase A	AI17	x	x	x	PF	0.01	632/633	
Power Factor: Phase 2	Instantaneous Power Factor - Phase B	AI18	x	x	x	PF	0.01	634/635	
Power Factor: Phase 3	Instantaneous Power Factor - Phase C	AI19	x	x	x	PF	0.01	636/637	
Amps: Phase 1	Instantaneous Current - Phase 1	AI20	x	x	x	Amperes	5	638/639	
Amps: Phase 2	Instantaneous Current - Phase 2	AI21	x	x	x	Amperes	5	640/641	
Amps: Phase 3	Instantaneous Current - Phase 3	AI22	x	x	x	Amperes	5	642/643	
Amps: Phase 4 (Neutral)	Instantaneous Neutral Current	AI23	x	x	x	Amperes	5	644/645	
Amps Present Demand: Phase 1	Present Current Demand- Phase 1	AI24	x	x	x	Amperes	5	646/647	
Amps Present Demand: Phase 2	Present Current Demand - Phase 2	AI25	x	x	x	Amperes	5	648/649	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW>= V1.203	1.016-1.022	FW <V1.016				
Amps Present Demand: Phase 3	Present Current Demand - Phase 3	AI26	x	x	x	Amperes	5	650/651	
Amps Present Demand: (Neutral)	Present Current Demand - Neutral	AI27	x	x	x	Amperes	5	652/653	
Amps Max Demand: Phase 1	Max Current Demand - Phase 1	AI28	x	x	x	Amperes	5	654/655	
Amps Max Demand: Phase 2	Max Current Demand - Phase 2	AI29	x	x	x	Amperes	5	656/657	
Amps Max Demand: Phase 3	Max Current Demand - Phase 3	AI30	x	x	x	Amperes	5	658/659	
Amps Max Demand: (Neutral)	Max Current Demand - Neutral	AI31	x	x	x	Amperes	5	660/661	
kW Present Demand: 3ph Total	Real Power Present Demand - 3ph Total	AI32	x	x	x	kW	1	662/663	
kW Max Demand: 3ph Total	Real Power Max Demand - 3ph Total	AI33	x	x	x	kW	1	664/665	
Max Amps: Phase 1	Max Instantaneous Current - Phase 1	AI34	x	x	x	Amperes	5	666/667	
Max Amps: Phase 2	Max Instantaneous Current - Phase 2	AI35	x	x	x	Amperes	5	668/669	
Max Amps: Phase 3	Max Instantaneous Current - Phase 3	AI36	x	x	x	Amperes	5	670/671	
Max Amps: (Neutral)	Max Instantaneous Neutral Current	AI37	x	x	x	Amperes	5	672/673	
kW: 3ph Max	Max Instantaneous Real Power- 3ph Total	AI38	x	x	x	kW	1	674/675	
Device Health	Bit Map of Device Health Indicators	AI39	x	x	x	No-Units	1	532	"Bit 0: Reserved Bit 1: Frequency Out of Range or insufficient voltage on Phase A to determine frequency range. *Frequency Range is 40-70 Hz. Bit 2: Phase A Voltage Clipping Bit 3: Phase B Voltage Clipping Bit 4: Phase C Voltage Clipping Bit 5: Current Clipping on at least 1 channel (AUX & Circuit) Bit 6-7: Reserved Bit 8: Strip Connection Error Bit 9-12: Reserved Bit 13: Current Model, Model C Bit 14: Power Model, Model B Bit 15: Branch Power, Model A"
Reserved for future use	Reserved for future use	AI40	x	x	x	No-Units	1	533	
Reserved for future use	Reserved for future use	AI41	x	x	x	No-Units	1	534	
Reserved for future use	Reserved for future use	AI42	x	x	x	No-Units	1	535	
Reserved for future use	Reserved for future use	AI43	x	x	x	No-Units	1	536	
Reserved for future use	Reserved for future use	AI44	x	x	x	No-Units	1	537	
Reserved for future use	Reserved for future use	AI45	x	x	x	No-Units	1	538	
Product ID	bit Map of Model configuration	AI46	x	x	x	No-Units	1	539	"Bit 0: Default Solid-Core Bit 1: Default Split-Core Bit 3-9: Reserved Bit 10: Reserved Bit 11: Reserved Bit 12: Custom V-Phase Capable Bit 13: Reserved (Model C) Bit 14: Reserved (Model B) Bit 15: Reserved (Model A)"
kVA: 3ph Total	Instantaneous Apparent Power- 3ph Total	AI47	x	x	x	kVA	1	676/677	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW>=V1.203	1.016-1.022	FW<V1.016				
kVA: Phase 1	Instantaneous Apparent Power - Phase 1	AI48	x	x	x	kVA	1	678/679	
kVA: Phase 2	Instantaneous Apparent Power - Phase 2	AI49	x	x	x	kVA	1	680/681	
kVA: Phase 3	Instantaneous Apparent Power - Phase 3	AI50	x	x	x	kVA	1	682/683	
Serial Number MSW	Serial Number MSW	AI51	x	x	x	No-Units	1	1	Upper 16-bits of a 32-bit Hex Value
Serial Number LSW	Serial Number LSW	AI52	x	x	x	No-Units	1	2	Lower 16-bits of a 32-bit Hex Value
Firmware Revision RS	Firmware Revision RS	AI53	x	x	x	No-Units	1	3	
Firmware Revision OS	Firmware Revision OS	AI54	x	x	x	No-Units	1	4	
Device ID:	15170=C, 15171=B, 15172=A	AI55	x	x	x	No-Units	1	5	"15170 = Model C, current only on all channels, no voltage 15171 = Model B, current only on branch channels, power on AUX channels plus voltage 15172 = Model A, current and power on all channels plus voltage"
Global Latching Alarm Status	(HHL,HL,LL,LLL,ON,Rsv,Rsv,Rsv,HVL,LVL)	AI56	x	x	x	No-Units	1	224	"Bit 0: High High Latching Alarm Bit 1: High Latching Alarm Bit 2: Low Latching Alarm Bit 3: Low Low Latching Alarm Bit 4: Latching Alarm OFF state declared (1=OFF; ON state must have been achieved prior) Bit 5-7: Reserved for future use (reads 0) Bit 8: High Voltage Latching Alarm Bit 9: Low Voltage Latching Alarm Bit 10-15: Reserved for future use (reads 0) "
Global Non-Latching Alarm Status	(HL,LL,Rsv,Rsv,Rsv,Rsv,Rsv,Rsv,HVL,LVL)	AI57	x	x	x	No-Units	1	225	"Bit 0: High Non-Latching Alarm Bit 1: Low Non-Latching Alarm Bit 2-7: Reserved for future use (reads 0) Bit 8: High Voltage Non-Latching Alarm Bit 9: Low Voltage Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)"
Global Most-Recent Latching Alarm Ch	# of Most-Recent Channel (0=none)	AI58	x	x	x	No-Units	1	226	0-46, 0=none
Global Most-Recent Non-Latch Alarm Ch	# of Most-Recent Channel (0=none)	AI59	x	x	x	No-Units	1	227	0-46, 0=none
Total number of Latch ch in alarm	# alarm chan (non-latching alarms)	AI60	x	x	x	No-Units	1	228	
Total number of non-Latch ch in alarm	# alarm chan (based on latching alarms)	AI61	x	x	x	No-Units	1	229	
Error Bitmap1 (placeholder - TBD)	Error Bitmap1 (placeholder - bits TBD)	AI62	x	x	x	No-Units	1	230	
Error Bitmap2 (placeholder - TBD)	Error Bitmap2 (placeholder - bits TBD)	AI63	x	x	x	No-Units	1	231	
Error Bitmap3 (placeholder - TBD)	Error Bitmap3 (placeholder - bits TBD)	AI64	x	x	x	No-Units	1	232	
Error Bitmap4 (placeholder - TBD)	Error Bitmap4 (placeholder - bits TBD)	AI65	x	x	x	No-Units	1	233	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Error Bitmap5 (placeholder - TBD)	Error Bitmap5 (placeholder - bits TBD)	AI66	x	x	x	No-Units	1	234	
Error Bitmap6 (placeholder - TBD)	Error Bitmap6 (placeholder - bits TBD)	AI67	x	x	x	No-Units	1	235	
kWh: Channel 1	Real Energy - Channel 1	AI68	x	x	x	kWh	0	2000/2001	
kWh: Channel 2	Real Energy - Channel 2	AI69	x	x	x	kWh	0	2002/2003	
kWh: Channel 3	Real Energy - Channel 3	AI70	x	x	x	kWh	0	2004/2005	
kWh: Channel 4	Real Energy - Channel 4	AI71	x	x	x	kWh	0	2006/2007	
kWh: Channel 5	Real Energy - Channel 5	AI72	x	x	x	kWh	0	2008/2009	
kWh: Channel 6	Real Energy - Channel 6	AI73	x	x	x	kWh	0	2010/2011	
kWh: Channel 7	Real Energy - Channel 7	AI74	x	x	x	kWh	0	2012/2013	
kWh: Channel 8	Real Energy - Channel 8	AI75	x	x	x	kWh	0	2014/2015	
kWh: Channel 9	Real Energy - Channel 9	AI76	x	x	x	kWh	0	2016/2017	
kWh: Channel 10	Real Energy - Channel 10	AI77	x	x	x	kWh	0	2018/2019	
kWh: Channel 11	Real Energy - Channel 11	AI78	x	x	x	kWh	0	2020/2021	
kWh: Channel 12	Real Energy - Channel 12	AI79	x	x	x	kWh	0	2022/2023	
kWh: Channel 13	Real Energy - Channel 13	AI80	x	x	x	kWh	0	2024/2025	
kWh: Channel 14	Real Energy - Channel 14	AI81	x	x	x	kWh	0	2026/2027	
kWh: Channel 15	Real Energy - Channel 15	AI82	x	x	x	kWh	0	2028/2029	
kWh: Channel 16	Real Energy - Channel 16	AI83	x	x	x	kWh	0	2030/2031	
kWh: Channel 17	Real Energy - Channel 17	AI84	x	x	x	kWh	0	2032/2033	
kWh: Channel 18	Real Energy - Channel 18	AI85	x	x	x	kWh	0	2034/2035	
kWh: Channel 19	Real Energy - Channel 19	AI86	x	x	x	kWh	0	2036/2037	
kWh: Channel 20	Real Energy - Channel 20	AI87	x	x	x	kWh	0	2038/2039	
kWh: Channel 21	Real Energy - Channel 21	AI88	x	x	x	kWh	0	2040/2041	
kWh: Channel 22	Real Energy - Channel 22	AI89	x	x	x	kWh	0	2042/2043	
kWh: Channel 23	Real Energy - Channel 23	AI90	x	x	x	kWh	0	2044/2045	
kWh: Channel 24	Real Energy - Channel 24	AI91	x	x	x	kWh	0	2046/2047	
kWh: Channel 25	Real Energy - Channel 25	AI92	x	x	x	kWh	0	2048/2049	
kWh: Channel 26	Real Energy - Channel 26	AI93	x	x	x	kWh	0	2050/2051	
kWh: Channel 27	Real Energy - Channel 27	AI94	x	x	x	kWh	0	2052/2053	
kWh: Channel 28	Real Energy - Channel 28	AI95	x	x	x	kWh	0	2054/2055	
kWh: Channel 29	Real Energy - Channel 29	AI96	x	x	x	kWh	0	2056/2057	
kWh: Channel 30	Real Energy - Channel 30	AI97	x	x	x	kWh	0	2058/2059	
kWh: Channel 31	Real Energy - Channel 31	AI98	x	x	x	kWh	0	2060/2061	
kWh: Channel 32	Real Energy - Channel 32	AI99	x	x	x	kWh	0	2062/2063	
kWh: Channel 33	Real Energy - Channel 33	AI100	x	x	x	kWh	0	2064/2065	
kWh: Channel 34	Real Energy - Channel 34	AI101	x	x	x	kWh	0	2066/2067	
kWh: Channel 35	Real Energy - Channel 35	AI102	x	x	x	kWh	0	2068/2069	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
kWh: Channel 36	Real Energy - Channel 36	AI103	x	x	x	kWh	0	2070/2071	
kWh: Channel 37	Real Energy - Channel 37	AI104	x	x	x	kWh	0	2072/2073	
kWh: Channel 38	Real Energy - Channel 38	AI105	x	x	x	kWh	0	2074/2075	
kWh: Channel 39	Real Energy - Channel 39	AI106	x	x	x	kWh	0	2076/2077	
kWh: Channel 40	Real Energy - Channel 40	AI107	x	x	x	kWh	0	2078/2079	
kWh: Channel 41	Real Energy - Channel 41	AI108	x	x	x	kWh	0	2080/2081	
kWh: Channel 42	Real Energy - Channel 42	AI109	x	x	x	kWh	0	2082/2083	
kW: Channel 1	Instantaneous Real Power - Channel 1	AI110	x	x	x	kW	1	2084/2085	
kW: Channel 2	Instantaneous Real Power - Channel 2	AI111	x	x	x	kW	1	2086/2087	
kW: Channel 3	Instantaneous Real Power - Channel 3	AI112	x	x	x	kW	1	2088/2089	
kW: Channel 4	Instantaneous Real Power - Channel 4	AI113	x	x	x	kW	1	2090/2091	
kW: Channel 5	Instantaneous Real Power - Channel 5	AI114	x	x	x	kW	1	2092/2093	
kW: Channel 6	Instantaneous Real Power - Channel 6	AI115	x	x	x	kW	1	2094/2095	
kW: Channel 7	Instantaneous Real Power - Channel 7	AI116	x	x	x	kW	1	2096/2097	
kW: Channel 8	Instantaneous Real Power - Channel 8	AI117	x	x	x	kW	1	2098/2099	
kW: Channel 9	Instantaneous Real Power - Channel 9	AI118	x	x	x	kW	1	2100/2101	
kW: Channel 10	Instantaneous Real Power - Channel 10	AI119	x	x	x	kW	1	2102/2103	
kW: Channel 11	Instantaneous Real Power - Channel 11	AI120	x	x	x	kW	1	2104/2105	
kW: Channel 12	Instantaneous Real Power - Channel 12	AI121	x	x	x	kW	1	2106/2107	
kW: Channel 13	Instantaneous Real Power - Channel 13	AI122	x	x	x	kW	1	2108/2109	
kW: Channel 14	Instantaneous Real Power - Channel 14	AI123	x	x	x	kW	1	2110/2111	
kW: Channel 15	Instantaneous Real Power - Channel 15	AI124	x	x	x	kW	1	2112/2113	
kW: Channel 16	Instantaneous Real Power - Channel 16	AI125	x	x	x	kW	1	2114/2115	
kW: Channel 17	Instantaneous Real Power - Channel 17	AI126	x	x	x	kW	1	2116/2117	
kW: Channel 18	Instantaneous Real Power - Channel 18	AI127	x	x	x	kW	1	2118/2119	
kW: Channel 19	Instantaneous Real Power - Channel 19	AI128	x	x	x	kW	1	2120/2121	
kW: Channel 20	Instantaneous Real Power - Channel 20	AI129	x	x	x	kW	1	2122/2123	
kW: Channel 21	Instantaneous Real Power - Channel 21	AI130	x	x	x	kW	1	2124/2125	
kW: Channel 22	Instantaneous Real Power - Channel 22	AI131	x	x	x	kW	1	2126/2127	
kW: Channel 23	Instantaneous Real Power - Channel 23	AI132	x	x	x	kW	1	2128/2129	
kW: Channel 24	Instantaneous Real Power - Channel 24	AI133	x	x	x	kW	1	2130/2131	
kW: Channel 25	Instantaneous Real Power - Channel 25	AI134	x	x	x	kW	1	2132/2133	
kW: Channel 26	Instantaneous Real Power - Channel 26	AI135	x	x	x	kW	1	2134/2135	
kW: Channel 27	Instantaneous Real Power - Channel 27	AI136	x	x	x	kW	1	2136/2137	
kW: Channel 28	Instantaneous Real Power - Channel 28	AI137	x	x	x	kW	1	2138/2139	
kW: Channel 29	Instantaneous Real Power - Channel 29	AI138	x	x	x	kW	1	2140/2141	
kW: Channel 30	Instantaneous Real Power - Channel 30	AI139	x	x	x	kW	1	2142/2143	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW >= V1.203	1.016-1.022	FW < V1.016				
kW: Channel 31	Instantaneous Real Power - Channel 31	AI140	x	x	x	kW	1	2144/2145	
kW: Channel 32	Instantaneous Real Power - Channel 32	AI141	x	x	x	kW	1	2146/2147	
kW: Channel 33	Instantaneous Real Power - Channel 33	AI142	x	x	x	kW	1	2148/2149	
kW: Channel 34	Instantaneous Real Power - Channel 34	AI143	x	x	x	kW	1	2150/2151	
kW: Channel 35	Instantaneous Real Power - Channel 35	AI144	x	x	x	kW	1	2152/2153	
kW: Channel 36	Instantaneous Real Power - Channel 36	AI145	x	x	x	kW	1	2154/2155	
kW: Channel 37	Instantaneous Real Power - Channel 37	AI146	x	x	x	kW	1	2156/2157	
kW: Channel 38	Instantaneous Real Power - Channel 38	AI147	x	x	x	kW	1	2158/2159	
kW: Channel 39	Instantaneous Real Power - Channel 39	AI148	x	x	x	kW	1	2160/2161	
kW: Channel 40	Instantaneous Real Power - Channel 40	AI149	x	x	x	kW	1	2162/2163	
kW: Channel 41	Instantaneous Real Power - Channel 41	AI150	x	x	x	kW	1	2164/2165	
kW: Channel 42	Instantaneous Real Power - Channel 42	AI151	x	x	x	kW	1	2166/2167	
Power Factor: Channel 1	Instantaneous Power Factor - Channel 1	AI152	x	x	x	PF	0.01	2168/2169	
Power Factor: Channel 2	Instantaneous Power Factor - Channel 2	AI153	x	x	x	PF	0.01	2170/2171	
Power Factor: Channel 3	Instantaneous Power Factor - Channel 3	AI154	x	x	x	PF	0.01	2172/2173	
Power Factor: Channel 4	Instantaneous Power Factor - Channel 4	AI155	x	x	x	PF	0.01	2174/2175	
Power Factor: Channel 5	Instantaneous Power Factor - Channel 5	AI156	x	x	x	PF	0.01	2176/2177	
Power Factor: Channel 6	Instantaneous Power Factor - Channel 6	AI157	x	x	x	PF	0.01	2178/2179	
Power Factor: Channel 7	Instantaneous Power Factor - Channel 7	AI158	x	x	x	PF	0.01	2180/2181	
Power Factor: Channel 8	Instantaneous Power Factor - Channel 8	AI159	x	x	x	PF	0.01	2182/2183	
Power Factor: Channel 9	Instantaneous Power Factor - Channel 9	AI160	x	x	x	PF	0.01	2184/2185	
Power Factor: Channel 10	Instantaneous Power Factor - Channel 10	AI161	x	x	x	PF	0.01	2186/2187	
Power Factor: Channel 11	Instantaneous Power Factor - Channel 11	AI162	x	x	x	PF	0.01	2188/2189	
Power Factor: Channel 12	Instantaneous Power Factor - Channel 12	AI163	x	x	x	PF	0.01	2190/2191	
Power Factor: Channel 13	Instantaneous Power Factor - Channel 13	AI164	x	x	x	PF	0.01	2192/2193	
Power Factor: Channel 14	Instantaneous Power Factor - Channel 14	AI165	x	x	x	PF	0.01	2194/2195	
Power Factor: Channel 15	Instantaneous Power Factor - Channel 15	AI166	x	x	x	PF	0.01	2196/2197	
Power Factor: Channel 16	Instantaneous Power Factor - Channel 16	AI167	x	x	x	PF	0.01	2198/2199	
Power Factor: Channel 17	Instantaneous Power Factor - Channel 17	AI168	x	x	x	PF	0.01	2200/2201	
Power Factor: Channel 18	Instantaneous Power Factor - Channel 18	AI169	x	x	x	PF	0.01	2202/2203	
Power Factor: Channel 19	Instantaneous Power Factor - Channel 19	AI170	x	x	x	PF	0.01	2204/2205	
Power Factor: Channel 20	Instantaneous Power Factor - Channel 20	AI171	x	x	x	PF	0.01	2206/2207	
Power Factor: Channel 21	Instantaneous Power Factor - Channel 21	AI172	x	x	x	PF	0.01	2208/2209	
Power Factor: Channel 22	Instantaneous Power Factor - Channel 22	AI173	x	x	x	PF	0.01	2210/2211	
Power Factor: Channel 23	Instantaneous Power Factor - Channel 23	AI174	x	x	x	PF	0.01	2212/2213	
Power Factor: Channel 24	Instantaneous Power Factor - Channel 24	AI175	x	x	x	PF	0.01	2214/2215	
Power Factor: Channel 25	Instantaneous Power Factor - Channel 25	AI176	x	x	x	PF	0.01	2216/2217	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Power Factor: Channel 26	Instantaneous Power Factor - Channel 26	AI177	x	x	x	PF	0.01	2218/2219	
Power Factor: Channel 27	Instantaneous Power Factor - Channel 27	AI178	x	x	x	PF	0.01	2220/2221	
Power Factor: Channel 28	Instantaneous Power Factor - Channel 28	AI179	x	x	x	PF	0.01	2222/2223	
Power Factor: Channel 29	Instantaneous Power Factor - Channel 29	AI180	x	x	x	PF	0.01	2224/2225	
Power Factor: Channel 30	Instantaneous Power Factor - Channel 30	AI181	x	x	x	PF	0.01	2226/2227	
Power Factor: Channel 31	Instantaneous Power Factor - Channel 31	AI182	x	x	x	PF	0.01	2228/2229	
Power Factor: Channel 32	Instantaneous Power Factor - Channel 32	AI183	x	x	x	PF	0.01	2230/2231	
Power Factor: Channel 33	Instantaneous Power Factor - Channel 33	AI184	x	x	x	PF	0.01	2232/2233	
Power Factor: Channel 34	Instantaneous Power Factor - Channel 34	AI185	x	x	x	PF	0.01	2234/2235	
Power Factor: Channel 35	Instantaneous Power Factor - Channel 35	AI186	x	x	x	PF	0.01	2236/2237	
Power Factor: Channel 36	Instantaneous Power Factor - Channel 36	AI187	x	x	x	PF	0.01	2238/2239	
Power Factor: Channel 37	Instantaneous Power Factor - Channel 37	AI188	x	x	x	PF	0.01	2240/2241	
Power Factor: Channel 38	Instantaneous Power Factor - Channel 38	AI189	x	x	x	PF	0.01	2242/2243	
Power Factor: Channel 39	Instantaneous Power Factor - Channel 39	AI190	x	x	x	PF	0.01	2244/2245	
Power Factor: Channel 40	Instantaneous Power Factor - Channel 40	AI191	x	x	x	PF	0.01	2246/2247	
Power Factor: Channel 41	Instantaneous Power Factor - Channel 41	AI192	x	x	x	PF	0.01	2248/2249	
Power Factor: Channel 42	Instantaneous Power Factor - Channel 42	AI193	x	x	x	PF	0.01	2250/2251	
Amps: Channel 1	Instantaneous Current - Channel 1	AI194	x	x	x	Amperes	5	2252/2253	
Amps: Channel 2	Instantaneous Current - Channel 2	AI195	x	x	x	Amperes	5	2254/2255	
Amps: Channel 3	Instantaneous Current - Channel 3	AI196	x	x	x	Amperes	5	2256/2257	
Amps: Channel 4	Instantaneous Current - Channel 4	AI197	x	x	x	Amperes	5	2258/2259	
Amps: Channel 5	Instantaneous Current - Channel 5	AI198	x	x	x	Amperes	5	2260/2261	
Amps: Channel 6	Instantaneous Current - Channel 6	AI199	x	x	x	Amperes	5	2262/2263	
Amps: Channel 7	Instantaneous Current - Channel 7	AI200	x	x	x	Amperes	5	2264/2265	
Amps: Channel 8	Instantaneous Current - Channel 8	AI201	x	x	x	Amperes	5	2266/2267	
Amps: Channel 9	Instantaneous Current - Channel 9	AI202	x	x	x	Amperes	5	2268/2269	
Amps: Channel 10	Instantaneous Current - Channel 10	AI203	x	x	x	Amperes	5	2270/2271	
Amps: Channel 11	Instantaneous Current - Channel 11	AI204	x	x	x	Amperes	5	2272/2273	
Amps: Channel 12	Instantaneous Current - Channel 12	AI205	x	x	x	Amperes	5	2274/2275	
Amps: Channel 13	Instantaneous Current - Channel 13	AI206	x	x	x	Amperes	5	2276/2277	
Amps: Channel 14	Instantaneous Current - Channel 14	AI207	x	x	x	Amperes	5	2278/2279	
Amps: Channel 15	Instantaneous Current - Channel 15	AI208	x	x	x	Amperes	5	2280/2281	
Amps: Channel 16	Instantaneous Current - Channel 16	AI209	x	x	x	Amperes	5	2282/2283	
Amps: Channel 17	Instantaneous Current - Channel 17	AI210	x	x	x	Amperes	5	2284/2285	
Amps: Channel 18	Instantaneous Current - Channel 18	AI211	x	x	x	Amperes	5	2286/2287	
Amps: Channel 19	Instantaneous Current - Channel 19	AI212	x	x	x	Amperes	5	2288/2289	
Amps: Channel 20	Instantaneous Current - Channel 20	AI213	x	x	x	Amperes	5	2290/2291	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW >= V1.203	1.016-1.022	FW < V1.016				
Amps: Channel 21	Instantaneous Current - Channel 21	AI214	x	x	x	Amperes	5	2292/2293	
Amps: Channel 22	Instantaneous Current - Channel 22	AI215	x	x	x	Amperes	5	2294/2295	
Amps: Channel 23	Instantaneous Current - Channel 23	AI216	x	x	x	Amperes	5	2296/2297	
Amps: Channel 24	Instantaneous Current - Channel 24	AI217	x	x	x	Amperes	5	2298/2299	
Amps: Channel 25	Instantaneous Current - Channel 25	AI218	x	x	x	Amperes	5	2300/2301	
Amps: Channel 26	Instantaneous Current - Channel 26	AI219	x	x	x	Amperes	5	2302/2303	
Amps: Channel 27	Instantaneous Current - Channel 27	AI220	x	x	x	Amperes	5	2304/2305	
Amps: Channel 28	Instantaneous Current - Channel 28	AI221	x	x	x	Amperes	5	2306/2307	
Amps: Channel 29	Instantaneous Current - Channel 29	AI222	x	x	x	Amperes	5	2308/2309	
Amps: Channel 30	Instantaneous Current - Channel 30	AI223	x	x	x	Amperes	5	2310/2311	
Amps: Channel 31	Instantaneous Current - Channel 31	AI224	x	x	x	Amperes	5	2312/2313	
Amps: Channel 32	Instantaneous Current - Channel 32	AI225	x	x	x	Amperes	5	2314/2315	
Amps: Channel 33	Instantaneous Current - Channel 33	AI226	x	x	x	Amperes	5	2316/2317	
Amps: Channel 34	Instantaneous Current - Channel 34	AI227	x	x	x	Amperes	5	2318/2319	
Amps: Channel 35	Instantaneous Current - Channel 35	AI228	x	x	x	Amperes	5	2320/2321	
Amps: Channel 36	Instantaneous Current - Channel 36	AI229	x	x	x	Amperes	5	2322/2323	
Amps: Channel 37	Instantaneous Current - Channel 37	AI230	x	x	x	Amperes	5	2324/2325	
Amps: Channel 38	Instantaneous Current - Channel 38	AI231	x	x	x	Amperes	5	2326/2327	
Amps: Channel 39	Instantaneous Current - Channel 39	AI232	x	x	x	Amperes	5	2328/2329	
Amps: Channel 40	Instantaneous Current - Channel 40	AI233	x	x	x	Amperes	5	2330/2331	
Amps: Channel 41	Instantaneous Current - Channel 41	AI234	x	x	x	Amperes	5	2332/2333	
Amps: Channel 42	Instantaneous Current - Channel 42	AI235	x	x	x	Amperes	5	2334/2335	
kW Present Demand: Channel 1	Present Real Power Demand - Channel 1	AI236	x	x	x	kW	1	2336/2337	
kW Present Demand: Channel 2	Present Real Power Demand - Channel 2	AI237	x	x	x	kW	1	2338/2339	
kW Present Demand: Channel 3	Present Real Power Demand - Channel 3	AI238	x	x	x	kW	1	2340/2341	
kW Present Demand: Channel 4	Present Real Power Demand - Channel 4	AI239	x	x	x	kW	1	2342/2343	
kW Present Demand: Channel 5	Present Real Power Demand - Channel 5	AI240	x	x	x	kW	1	2344/2345	
kW Present Demand: Channel 6	Present Real Power Demand - Channel 6	AI241	x	x	x	kW	1	2346/2347	
kW Present Demand: Channel 7	Present Real Power Demand - Channel 7	AI242	x	x	x	kW	1	2348/2349	
kW Present Demand: Channel 8	Present Real Power Demand - Channel 8	AI243	x	x	x	kW	1	2350/2351	
kW Present Demand: Channel 9	Present Real Power Demand - Channel 9	AI244	x	x	x	kW	1	2352/2353	
kW Present Demand: Channel 10	Present Real Power Demand - Channel 10	AI245	x	x	x	kW	1	2354/2355	
kW Present Demand: Channel 11	Present Real Power Demand - Channel 11	AI246	x	x	x	kW	1	2356/2357	
kW Present Demand: Channel 12	Present Real Power Demand - Channel 12	AI247	x	x	x	kW	1	2358/2359	
kW Present Demand: Channel 13	Present Real Power Demand - Channel 13	AI248	x	x	x	kW	1	2360/2361	
kW Present Demand: Channel 14	Present Real Power Demand - Channel 14	AI249	x	x	x	kW	1	2362/2363	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
kW Present Demand: Channel 15	Present Real Power Demand - Channel 15	AI250	x	x	x	kW	1	2364/2365	
kW Present Demand: Channel 16	Present Real Power Demand - Channel 16	AI251	x	x	x	kW	1	2366/2367	
kW Present Demand: Channel 17	Present Real Power Demand - Channel 17	AI252	x	x	x	kW	1	2368/2369	
kW Present Demand: Channel 18	Present Real Power Demand - Channel 18	AI253	x	x	x	kW	1	2370/2371	
kW Present Demand: Channel 19	Present Real Power Demand - Channel 19	AI254	x	x	x	kW	1	2372/2373	
kW Present Demand: Channel 20	Present Real Power Demand - Channel 20	AI255	x	x	x	kW	1	2374/2375	
kW Present Demand: Channel 21	Present Real Power Demand - Channel 21	AI256	x	x	x	kW	1	2376/2377	
kW Present Demand: Channel 22	Present Real Power Demand - Channel 22	AI257	x	x	x	kW	1	2378/2379	
kW Present Demand: Channel 23	Present Real Power Demand - Channel 23	AI258	x	x	x	kW	1	2380/2381	
kW Present Demand: Channel 24	Present Real Power Demand - Channel 24	AI259	x	x	x	kW	1	2382/2383	
kW Present Demand: Channel 25	Present Real Power Demand - Channel 25	AI260	x	x	x	kW	1	2384/2385	
kW Present Demand: Channel 26	Present Real Power Demand - Channel 26	AI261	x	x	x	kW	1	2386/2387	
kW Present Demand: Channel 27	Present Real Power Demand - Channel 27	AI262	x	x	x	kW	1	2388/2389	
kW Present Demand: Channel 28	Present Real Power Demand - Channel 28	AI263	x	x	x	kW	1	2390/2391	
kW Present Demand: Channel 29	Present Real Power Demand - Channel 29	AI264	x	x	x	kW	1	2392/2393	
kW Present Demand: Channel 30	Present Real Power Demand - Channel 30	AI265	x	x	x	kW	1	2394/2395	
kW Present Demand: Channel 31	Present Real Power Demand - Channel 31	AI266	x	x	x	kW	1	2396/2397	
kW Present Demand: Channel 32	Present Real Power Demand - Channel 32	AI267	x	x	x	kW	1	2398/2399	
kW Present Demand: Channel 33	Present Real Power Demand - Channel 33	AI268	x	x	x	kW	1	2400/2401	
kW Present Demand: Channel 34	Present Real Power Demand - Channel 34	AI269	x	x	x	kW	1	2402/2403	
kW Present Demand: Channel 35	Present Real Power Demand - Channel 35	AI270	x	x	x	kW	1	2404/2405	
kW Present Demand: Channel 36	Present Real Power Demand - Channel 36	AI271	x	x	x	kW	1	2406/2407	
kW Present Demand: Channel 37	Present Real Power Demand - Channel 37	AI272	x	x	x	kW	1	2408/2409	
kW Present Demand: Channel 38	Present Real Power Demand - Channel 38	AI273	x	x	x	kW	1	2410/2411	
kW Present Demand: Channel 39	Present Real Power Demand - Channel 39	AI274	x	x	x	kW	1	2412/2413	
kW Present Demand: Channel 40	Present Real Power Demand - Channel 40	AI275	x	x	x	kW	1	2414/2415	
kW Present Demand: Channel 41	Present Real Power Demand - Channel 41	AI276	x	x	x	kW	1	2416/2417	
kW Present Demand: Channel 42	Present Real Power Demand - Channel 42	AI277	x	x	x	kW	1	2418/2419	
kW Max Demand: Channel 1	Max Real Power Demand - Channel 1	AI278	x	x	x	kW	1	2420/2421	
kW Max Demand: Channel 2	Max Real Power Demand - Channel 2	AI279	x	x	x	kW	1	2422/2423	
kW Max Demand: Channel 3	Max Real Power Demand - Channel 3	AI280	x	x	x	kW	1	2424/2425	
kW Max Demand: Channel 4	Max Real Power Demand - Channel 4	AI281	x	x	x	kW	1	2426/2427	
kW Max Demand: Channel 5	Max Real Power Demand - Channel 5	AI282	x	x	x	kW	1	2428/2429	
kW Max Demand: Channel 6	Max Real Power Demand - Channel 6	AI283	x	x	x	kW	1	2430/2431	
kW Max Demand: Channel 7	Max Real Power Demand - Channel 7	AI284	x	x	x	kW	1	2432/2433	
kW Max Demand: Channel 8	Max Real Power Demand - Channel 8	AI285	x	x	x	kW	1	2434/2435	
kW Max Demand: Channel 9	Max Real Power Demand - Channel 9	AI286	x	x	x	kW	1	2436/2437	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW>=V1.203	1.016-1.022	FW<V1.016				
kW Max Demand: Channel 10	Max Real Power Demand - Channel 10	AI287	x	x	x	kW	1	2438/2439	
kW Max Demand: Channel 11	Max Real Power Demand - Channel 11	AI288	x	x	x	kW	1	2440/2441	
kW Max Demand: Channel 12	Max Real Power Demand - Channel 12	AI289	x	x	x	kW	1	2442/2443	
kW Max Demand: Channel 13	Max Real Power Demand - Channel 13	AI290	x	x	x	kW	1	2444/2445	
kW Max Demand: Channel 14	Max Real Power Demand - Channel 14	AI291	x	x	x	kW	1	2446/2447	
kW Max Demand: Channel 15	Max Real Power Demand - Channel 15	AI292	x	x	x	kW	1	2448/2449	
kW Max Demand: Channel 16	Max Real Power Demand - Channel 16	AI293	x	x	x	kW	1	2450/2451	
kW Max Demand: Channel 17	Max Real Power Demand - Channel 17	AI294	x	x	x	kW	1	2452/2453	
kW Max Demand: Channel 18	Max Real Power Demand - Channel 18	AI295	x	x	x	kW	1	2454/2455	
kW Max Demand: Channel 19	Max Real Power Demand - Channel 19	AI296	x	x	x	kW	1	2456/2457	
kW Max Demand: Channel 20	Max Real Power Demand - Channel 20	AI297	x	x	x	kW	1	2458/2459	
kW Max Demand: Channel 21	Max Real Power Demand - Channel 21	AI298	x	x	x	kW	1	2460/2461	
kW Max Demand: Channel 22	Max Real Power Demand - Channel 22	AI299	x	x	x	kW	1	2462/2463	
kW Max Demand: Channel 23	Max Real Power Demand - Channel 23	AI300	x	x	x	kW	1	2464/2465	
kW Max Demand: Channel 24	Max Real Power Demand - Channel 24	AI301	x	x	x	kW	1	2466/2467	
kW Max Demand: Channel 25	Max Real Power Demand - Channel 25	AI302	x	x	x	kW	1	2468/2469	
kW Max Demand: Channel 26	Max Real Power Demand - Channel 26	AI303	x	x	x	kW	1	2470/2471	
kW Max Demand: Channel 27	Max Real Power Demand - Channel 27	AI304	x	x	x	kW	1	2472/2473	
kW Max Demand: Channel 28	Max Real Power Demand - Channel 28	AI305	x	x	x	kW	1	2474/2475	
kW Max Demand: Channel 29	Max Real Power Demand - Channel 29	AI306	x	x	x	kW	1	2476/2477	
kW Max Demand: Channel 30	Max Real Power Demand - Channel 30	AI307	x	x	x	kW	1	2478/2479	
kW Max Demand: Channel 31	Max Real Power Demand - Channel 31	AI308	x	x	x	kW	1	2480/2481	
kW Max Demand: Channel 32	Max Real Power Demand - Channel 32	AI309	x	x	x	kW	1	2482/2483	
kW Max Demand: Channel 33	Max Real Power Demand - Channel 33	AI310	x	x	x	kW	1	2484/2485	
kW Max Demand: Channel 34	Max Real Power Demand - Channel 34	AI311	x	x	x	kW	1	2486/2487	
kW Max Demand: Channel 35	Max Real Power Demand - Channel 35	AI312	x	x	x	kW	1	2488/2489	
kW Max Demand: Channel 36	Max Real Power Demand - Channel 36	AI313	x	x	x	kW	1	2490/2491	
kW Max Demand: Channel 37	Max Real Power Demand - Channel 37	AI314	x	x	x	kW	1	2492/2493	
kW Max Demand: Channel 38	Max Real Power Demand - Channel 38	AI315	x	x	x	kW	1	2494/2495	
kW Max Demand: Channel 39	Max Real Power Demand - Channel 39	AI316	x	x	x	kW	1	2496/2497	
kW Max Demand: Channel 40	Max Real Power Demand - Channel 40	AI317	x	x	x	kW	1	2498/2499	
kW Max Demand: Channel 41	Max Real Power Demand - Channel 41	AI318	x	x	x	kW	1	2500/2501	
kW Max Demand: Channel 42	Max Real Power Demand - Channel 42	AI319	x	x	x	kW	1	2502/2503	
Amps Present Demand: Channel 1	Present Current Demand - Channel 1	AI320	x	x	x	Amperes	5	2504/2505	
Amps Present Demand: Channel 2	Present Current Demand - Channel 2	AI321	x	x	x	Amperes	5	2506/2507	
Amps Present Demand: Channel 3	Present Current Demand - Channel 3	AI322	x	x	x	Amperes	5	2508/2509	
Amps Present Demand: Channel 4	Present Current Demand - Channel 4	AI323	x	x	x	Amperes	5	2510/2511	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Amps Present Demand: Channel 5	Present Current Demand - Channel 5	AI324	x	x	x	Amperes	5	2512/2513	
Amps Present Demand: Channel 6	Present Current Demand - Channel 6	AI325	x	x	x	Amperes	5	2514/2515	
Amps Present Demand: Channel 7	Present Current Demand - Channel 7	AI326	x	x	x	Amperes	5	2516/2517	
Amps Present Demand: Channel 8	Present Current Demand - Channel 8	AI327	x	x	x	Amperes	5	2518/2519	
Amps Present Demand: Channel 9	Present Current Demand - Channel 9	AI328	x	x	x	Amperes	5	2520/2521	
Amps Present Demand: Channel 10	Present Current Demand - Channel 10	AI329	x	x	x	Amperes	5	2522/2523	
Amps Present Demand: Channel 11	Present Current Demand - Channel 11	AI330	x	x	x	Amperes	5	2524/2525	
Amps Present Demand: Channel 12	Present Current Demand - Channel 12	AI331	x	x	x	Amperes	5	2526/2527	
Amps Present Demand: Channel 13	Present Current Demand - Channel 13	AI332	x	x	x	Amperes	5	2528/2529	
Amps Present Demand: Channel 14	Present Current Demand - Channel 14	AI333	x	x	x	Amperes	5	2530/2531	
Amps Present Demand: Channel 15	Present Current Demand - Channel 15	AI334	x	x	x	Amperes	5	2532/2533	
Amps Present Demand: Channel 16	Present Current Demand - Channel 16	AI335	x	x	x	Amperes	5	2534/2535	
Amps Present Demand: Channel 17	Present Current Demand - Channel 17	AI336	x	x	x	Amperes	5	2536/2537	
Amps Present Demand: Channel 18	Present Current Demand - Channel 18	AI337	x	x	x	Amperes	5	2538/2539	
Amps Present Demand: Channel 19	Present Current Demand - Channel 19	AI338	x	x	x	Amperes	5	2540/2541	
Amps Present Demand: Channel 20	Present Current Demand - Channel 20	AI339	x	x	x	Amperes	5	2542/2543	
Amps Present Demand: Channel 21	Present Current Demand - Channel 21	AI340	x	x	x	Amperes	5	2544/2545	
Amps Present Demand: Channel 22	Present Current Demand - Channel 22	AI341	x	x	x	Amperes	5	2546/2547	
Amps Present Demand: Channel 23	Present Current Demand - Channel 23	AI342	x	x	x	Amperes	5	2548/2549	
Amps Present Demand: Channel 24	Present Current Demand - Channel 24	AI343	x	x	x	Amperes	5	2550/2551	
Amps Present Demand: Channel 25	Present Current Demand - Channel 25	AI344	x	x	x	Amperes	5	2552/2553	
Amps Present Demand: Channel 26	Present Current Demand - Channel 26	AI345	x	x	x	Amperes	5	2554/2555	
Amps Present Demand: Channel 27	Present Current Demand - Channel 27	AI346	x	x	x	Amperes	5	2556/2557	
Amps Present Demand: Channel 28	Present Current Demand - Channel 28	AI347	x	x	x	Amperes	5	2558/2559	
Amps Present Demand: Channel 29	Present Current Demand - Channel 29	AI348	x	x	x	Amperes	5	2560/2561	
Amps Present Demand: Channel 30	Present Current Demand - Channel 30	AI349	x	x	x	Amperes	5	2562/2563	
Amps Present Demand: Channel 31	Present Current Demand - Channel 31	AI350	x	x	x	Amperes	5	2564/2565	
Amps Present Demand: Channel 32	Present Current Demand - Channel 32	AI351	x	x	x	Amperes	5	2566/2567	
Amps Present Demand: Channel 33	Present Current Demand - Channel 33	AI352	x	x	x	Amperes	5	2568/2569	
Amps Present Demand: Channel 34	Present Current Demand - Channel 34	AI353	x	x	x	Amperes	5	2570/2571	
Amps Present Demand: Channel 35	Present Current Demand - Channel 35	AI354	x	x	x	Amperes	5	2572/2573	
Amps Present Demand: Channel 36	Present Current Demand - Channel 36	AI355	x	x	x	Amperes	5	2574/2575	
Amps Present Demand: Channel 37	Present Current Demand - Channel 37	AI356	x	x	x	Amperes	5	2576/2577	
Amps Present Demand: Channel 38	Present Current Demand - Channel 38	AI357	x	x	x	Amperes	5	2578/2579	
Amps Present Demand: Channel 39	Present Current Demand - Channel 39	AI358	x	x	x	Amperes	5	2580/2581	
Amps Present Demand: Channel 40	Present Current Demand - Channel 40	AI359	x	x	x	Amperes	5	2582/2583	
Amps Present Demand: Channel 41	Present Current Demand - Channel 41	AI360	x	x	x	Amperes	5	2584/2585	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Amps Present Demand: Channel 42	Present Current Demand - Channel 42	AI361	x	x	x	Amperes	5	2586/2587	
Amps Max Demand: Channel 1	Max Current Demand - Channel 1	AI362	x	x	x	Amperes	5	2588/2589	
Amps Max Demand: Channel 2	Max Current Demand - Channel 2	AI363	x	x	x	Amperes	5	2590/2591	
Amps Max Demand: Channel 3	Max Current Demand - Channel 3	AI364	x	x	x	Amperes	5	2592/2593	
Amps Max Demand: Channel 4	Max Current Demand - Channel 4	AI365	x	x	x	Amperes	5	2594/2595	
Amps Max Demand: Channel 5	Max Current Demand - Channel 5	AI366	x	x	x	Amperes	5	2596/2597	
Amps Max Demand: Channel 6	Max Current Demand - Channel 6	AI367	x	x	x	Amperes	5	2598/2599	
Amps Max Demand: Channel 7	Max Current Demand - Channel 7	AI368	x	x	x	Amperes	5	2600/2601	
Amps Max Demand: Channel 8	Max Current Demand - Channel 8	AI369	x	x	x	Amperes	5	2602/2603	
Amps Max Demand: Channel 9	Max Current Demand - Channel 9	AI370	x	x	x	Amperes	5	2604/2605	
Amps Max Demand: Channel 10	Max Current Demand - Channel 10	AI371	x	x	x	Amperes	5	2606/2607	
Amps Max Demand: Channel 11	Max Current Demand - Channel 11	AI372	x	x	x	Amperes	5	2608/2609	
Amps Max Demand: Channel 12	Max Current Demand - Channel 12	AI373	x	x	x	Amperes	5	2610/2611	
Amps Max Demand: Channel 13	Max Current Demand - Channel 13	AI374	x	x	x	Amperes	5	2612/2613	
Amps Max Demand: Channel 14	Max Current Demand - Channel 14	AI375	x	x	x	Amperes	5	2614/2615	
Amps Max Demand: Channel 15	Max Current Demand - Channel 15	AI376	x	x	x	Amperes	5	2616/2617	
Amps Max Demand: Channel 16	Max Current Demand - Channel 16	AI377	x	x	x	Amperes	5	2618/2619	
Amps Max Demand: Channel 17	Max Current Demand - Channel 17	AI378	x	x	x	Amperes	5	2620/2621	
Amps Max Demand: Channel 18	Max Current Demand - Channel 18	AI379	x	x	x	Amperes	5	2622/2623	
Amps Max Demand: Channel 19	Max Current Demand - Channel 19	AI380	x	x	x	Amperes	5	2624/2625	
Amps Max Demand: Channel 20	Max Current Demand - Channel 20	AI381	x	x	x	Amperes	5	2626/2627	
Amps Max Demand: Channel 21	Max Current Demand - Channel 21	AI382	x	x	x	Amperes	5	2628/2629	
Amps Max Demand: Channel 22	Max Current Demand - Channel 22	AI383	x	x	x	Amperes	5	2630/2631	
Amps Max Demand: Channel 23	Max Current Demand - Channel 23	AI384	x	x	x	Amperes	5	2632/2633	
Amps Max Demand: Channel 24	Max Current Demand - Channel 24	AI385	x	x	x	Amperes	5	2634/2635	
Amps Max Demand: Channel 25	Max Current Demand - Channel 25	AI386	x	x	x	Amperes	5	2636/2637	
Amps Max Demand: Channel 26	Max Current Demand - Channel 26	AI387	x	x	x	Amperes	5	2638/2639	
Amps Max Demand: Channel 27	Max Current Demand - Channel 27	AI388	x	x	x	Amperes	5	2640/2641	
Amps Max Demand: Channel 28	Max Current Demand - Channel 28	AI389	x	x	x	Amperes	5	2642/2643	
Amps Max Demand: Channel 29	Max Current Demand - Channel 29	AI390	x	x	x	Amperes	5	2644/2645	
Amps Max Demand: Channel 30	Max Current Demand - Channel 30	AI391	x	x	x	Amperes	5	2646/2647	
Amps Max Demand: Channel 31	Max Current Demand - Channel 31	AI392	x	x	x	Amperes	5	2648/2649	
Amps Max Demand: Channel 32	Max Current Demand - Channel 32	AI393	x	x	x	Amperes	5	2650/2651	
Amps Max Demand: Channel 33	Max Current Demand - Channel 33	AI394	x	x	x	Amperes	5	2652/2653	
Amps Max Demand: Channel 34	Max Current Demand - Channel 34	AI395	x	x	x	Amperes	5	2654/2655	
Amps Max Demand: Channel 35	Max Current Demand - Channel 35	AI396	x	x	x	Amperes	5	2656/2657	
Amps Max Demand: Channel 36	Max Current Demand - Channel 36	AI397	x	x	x	Amperes	5	2658/2659	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW >= V1.203	1.016-1.022	FW < V1.016				
Amps Max Demand: Channel 37	Max Current Demand - Channel 37	AI398	x	x	x	Amperes	5	2660/2661	
Amps Max Demand: Channel 38	Max Current Demand - Channel 38	AI399	x	x	x	Amperes	5	2662/2663	
Amps Max Demand: Channel 39	Max Current Demand - Channel 39	AI400	x	x	x	Amperes	5	2664/2665	
Amps Max Demand: Channel 40	Max Current Demand - Channel 40	AI401	x	x	x	Amperes	5	2666/2667	
Amps Max Demand: Channel 41	Max Current Demand - Channel 41	AI402	x	x	x	Amperes	5	2668/2669	
Amps Max Demand: Channel 42	Max Current Demand - Channel 42	AI403	x	x	x	Amperes	5	2670/2671	
kW Max Total: Channel 1	Max Instantaneous Real Power - Chan 1	AI404	x	x	x	kW	1	2672/2673	
kW Max Total: Channel 2	Max Instantaneous Real Power - Chan 2	AI405	x	x	x	kW	1	2674/2675	
kW Max Total: Channel 3	Max Instantaneous Real Power - Chan 3	AI406	x	x	x	kW	1	2676/2677	
kW Max Total: Channel 4	Max Instantaneous Real Power - Chan 4	AI407	x	x	x	kW	1	2678/2679	
kW Max Total: Channel 5	Max Instantaneous Real Power - Chan 5	AI408	x	x	x	kW	1	2680/2681	
kW Max Total: Channel 6	Max Instantaneous Real Power - Chan 6	AI409	x	x	x	kW	1	2682/2683	
kW Max Total: Channel 7	Max Instantaneous Real Power - Chan 7	AI410	x	x	x	kW	1	2684/2685	
kW Max Total: Channel 8	Max Instantaneous Real Power - Chan 8	AI411	x	x	x	kW	1	2686/2687	
kW Max Total: Channel 9	Max Instantaneous Real Power - Chan 9	AI412	x	x	x	kW	1	2688/2689	
kW Max Total: Channel 10	Max Instantaneous Real Power - Chan 10	AI413	x	x	x	kW	1	2690/2691	
kW Max Total: Channel 11	Max Instantaneous Real Power - Chan 11	AI414	x	x	x	kW	1	2692/2693	
kW Max Total: Channel 12	Max Instantaneous Real Power - Chan 12	AI415	x	x	x	kW	1	2694/2695	
kW Max Total: Channel 13	Max Instantaneous Real Power - Chan 13	AI416	x	x	x	kW	1	2696/2697	
kW Max Total: Channel 14	Max Instantaneous Real Power - Chan 14	AI417	x	x	x	kW	1	2698/2699	
kW Max Total: Channel 15	Max Instantaneous Real Power - Chan 15	AI418	x	x	x	kW	1	2700/2701	
kW Max Total: Channel 16	Max Instantaneous Real Power - Chan 16	AI419	x	x	x	kW	1	2702/2703	
kW Max Total: Channel 17	Max Instantaneous Real Power - Chan 17	AI420	x	x	x	kW	1	2704/2705	
kW Max Total: Channel 18	Max Instantaneous Real Power - Chan 18	AI421	x	x	x	kW	1	2706/2707	
kW Max Total: Channel 19	Max Instantaneous Real Power - Chan 19	AI422	x	x	x	kW	1	2708/2709	
kW Max Total: Channel 20	Max Instantaneous Real Power - Chan 20	AI423	x	x	x	kW	1	2710/2711	
kW Max Total: Channel 21	Max Instantaneous Real Power - Chan 21	AI424	x	x	x	kW	1	2712/2713	
kW Max Total: Channel 22	Max Instantaneous Real Power - Chan 22	AI425	x	x	x	kW	1	2714/2715	
kW Max Total: Channel 23	Max Instantaneous Real Power - Chan 23	AI426	x	x	x	kW	1	2716/2717	
kW Max Total: Channel 24	Max Instantaneous Real Power - Chan 24	AI427	x	x	x	kW	1	2718/2719	
kW Max Total: Channel 25	Max Instantaneous Real Power - Chan 25	AI428	x	x	x	kW	1	2720/2721	
kW Max Total: Channel 26	Max Instantaneous Real Power - Chan 26	AI429	x	x	x	kW	1	2722/2723	
kW Max Total: Channel 27	Max Instantaneous Real Power - Chan 27	AI430	x	x	x	kW	1	2724/2725	
kW Max Total: Channel 28	Max Instantaneous Real Power - Chan 28	AI431	x	x	x	kW	1	2726/2727	
kW Max Total: Channel 29	Max Instantaneous Real Power - Chan 29	AI432	x	x	x	kW	1	2728/2729	
kW Max Total: Channel 30	Max Instantaneous Real Power - Chan 30	AI433	x	x	x	kW	1	2730/2731	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
kW Max Total: Channel 31	Max Instantaneous Real Power - Chan 31	AI434	x	x	x	kW	1	2732/2733	
kW Max Total: Channel 32	Max Instantaneous Real Power - Chan 32	AI435	x	x	x	kW	1	2734/2735	
kW Max Total: Channel 33	Max Instantaneous Real Power - Chan 33	AI436	x	x	x	kW	1	2736/2737	
kW Max Total: Channel 34	Max Instantaneous Real Power - Chan 34	AI437	x	x	x	kW	1	2738/2739	
kW Max Total: Channel 35	Max Instantaneous Real Power - Chan 35	AI438	x	x	x	kW	1	2740/2741	
kW Max Total: Channel 36	Max Instantaneous Real Power - Chan 36	AI439	x	x	x	kW	1	2742/2743	
kW Max Total: Channel 37	Max Instantaneous Real Power - Chan 37	AI440	x	x	x	kW	1	2744/2745	
kW Max Total: Channel 38	Max Instantaneous Real Power - Chan 38	AI441	x	x	x	kW	1	2746/2747	
kW Max Total: Channel 39	Max Instantaneous Real Power - Chan 39	AI442	x	x	x	kW	1	2748/2749	
kW Max Total: Channel 40	Max Instantaneous Real Power - Chan 40	AI443	x	x	x	kW	1	2750/2751	
kW Max Total: Channel 41	Max Instantaneous Real Power - Chan 41	AI444	x	x	x	kW	1	2752/2753	
kW Max Total: Channel 42	Max Instantaneous Real Power - Chan 42	AI445	x	x	x	kW	1	2754/2755	
Max Amps: Channel 1	Max Instantaneous Current - Channel 1	AI446	x	x	x	Amperes	5	2756/2757	
Max Amps: Channel 2	Max Instantaneous Current - Channel 2	AI447	x	x	x	Amperes	5	2758/2759	
Max Amps: Channel 3	Max Instantaneous Current - Channel 3	AI448	x	x	x	Amperes	5	2760/2761	
Max Amps: Channel 4	Max Instantaneous Current - Channel 4	AI449	x	x	x	Amperes	5	2762/2763	
Max Amps: Channel 5	Max Instantaneous Current - Channel 5	AI450	x	x	x	Amperes	5	2764/2765	
Max Amps: Channel 6	Max Instantaneous Current - Channel 6	AI451	x	x	x	Amperes	5	2766/2767	
Max Amps: Channel 7	Max Instantaneous Current - Channel 7	AI452	x	x	x	Amperes	5	2768/2769	
Max Amps: Channel 8	Max Instantaneous Current - Channel 8	AI453	x	x	x	Amperes	5	2770/2771	
Max Amps: Channel 9	Max Instantaneous Current - Channel 9	AI454	x	x	x	Amperes	5	2772/2773	
Max Amps: Channel 10	Max Instantaneous Current - Channel 10	AI455	x	x	x	Amperes	5	2774/2775	
Max Amps: Channel 11	Max Instantaneous Current - Channel 11	AI456	x	x	x	Amperes	5	2776/2777	
Max Amps: Channel 12	Max Instantaneous Current - Channel 12	AI457	x	x	x	Amperes	5	2778/2779	
Max Amps: Channel 13	Max Instantaneous Current - Channel 13	AI458	x	x	x	Amperes	5	2780/2781	
Max Amps: Channel 14	Max Instantaneous Current - Channel 14	AI459	x	x	x	Amperes	5	2782/2783	
Max Amps: Channel 15	Max Instantaneous Current - Channel 15	AI460	x	x	x	Amperes	5	2784/2785	
Max Amps: Channel 16	Max Instantaneous Current - Channel 16	AI461	x	x	x	Amperes	5	2786/2787	
Max Amps: Channel 17	Max Instantaneous Current - Channel 17	AI462	x	x	x	Amperes	5	2788/2789	
Max Amps: Channel 18	Max Instantaneous Current - Channel 18	AI463	x	x	x	Amperes	5	2790/2791	
Max Amps: Channel 19	Max Instantaneous Current - Channel 19	AI464	x	x	x	Amperes	5	2792/2793	
Max Amps: Channel 20	Max Instantaneous Current - Channel 20	AI465	x	x	x	Amperes	5	2794/2795	
Max Amps: Channel 21	Max Instantaneous Current - Channel 21	AI466	x	x	x	Amperes	5	2796/2797	
Max Amps: Channel 22	Max Instantaneous Current - Channel 22	AI467	x	x	x	Amperes	5	2798/2799	
Max Amps: Channel 23	Max Instantaneous Current - Channel 23	AI468	x	x	x	Amperes	5	2800/2801	
Max Amps: Channel 24	Max Instantaneous Current - Channel 24	AI469	x	x	x	Amperes	5	2802/2803	
Max Amps: Channel 25	Max Instantaneous Current - Channel 25	AI470	x	x	x	Amperes	5	2804/2805	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW > = V1.203	1.016-1.022	FW < V1.016				
Max Amps: Channel 26	Max Instantaneous Current - Channel 26	AI471	x	x	x	Amperes	5	2806/2807	
Max Amps: Channel 27	Max Instantaneous Current - Channel 27	AI472	x	x	x	Amperes	5	2808/2809	
Max Amps: Channel 28	Max Instantaneous Current - Channel 28	AI473	x	x	x	Amperes	5	2810/2811	
Max Amps: Channel 29	Max Instantaneous Current - Channel 29	AI474	x	x	x	Amperes	5	2812/2813	
Max Amps: Channel 30	Max Instantaneous Current - Channel 30	AI475	x	x	x	Amperes	5	2814/2815	
Max Amps: Channel 31	Max Instantaneous Current - Channel 31	AI476	x	x	x	Amperes	5	2816/2817	
Max Amps: Channel 32	Max Instantaneous Current - Channel 32	AI477	x	x	x	Amperes	5	2818/2819	
Max Amps: Channel 33	Max Instantaneous Current - Channel 33	AI478	x	x	x	Amperes	5	2820/2821	
Max Amps: Channel 34	Max Instantaneous Current - Channel 34	AI479	x	x	x	Amperes	5	2822/2823	
Max Amps: Channel 35	Max Instantaneous Current - Channel 35	AI480	x	x	x	Amperes	5	2824/2825	
Max Amps: Channel 36	Max Instantaneous Current - Channel 36	AI481	x	x	x	Amperes	5	2826/2827	
Max Amps: Channel 37	Max Instantaneous Current - Channel 37	AI482	x	x	x	Amperes	5	2828/2829	
Max Amps: Channel 38	Max Instantaneous Current - Channel 38	AI483	x	x	x	Amperes	5	2830/2831	
Max Amps: Channel 39	Max Instantaneous Current - Channel 39	AI484	x	x	x	Amperes	5	2832/2833	
Max Amps: Channel 40	Max Instantaneous Current - Channel 40	AI485	x	x	x	Amperes	5	2834/2835	
Max Amps: Channel 41	Max Instantaneous Current - Channel 41	AI486	x	x	x	Amperes	5	2836/2837	
Max Amps: Channel 42	Max Instantaneous Current - Channel 42	AI487	x	x	x	Amperes	5	2838/2839	
kVA: Channel 1	Instantaneous Apparent Power - Chan 1	AI488	x	x	x	kVA	1	2840/2841	
kVA: Channel 2	Instantaneous Apparent Power - Chan 2	AI489	x	x	x	kVA	1	2842/2843	
kVA: Channel 3	Instantaneous Apparent Power - Chan 3	AI490	x	x	x	kVA	1	2844/2845	
kVA: Channel 4	Instantaneous Apparent Power - Chan 4	AI491	x	x	x	kVA	1	2846/2847	
kVA: Channel 5	Instantaneous Apparent Power - Chan 5	AI492	x	x	x	kVA	1	2848/2849	
kVA: Channel 6	Instantaneous Apparent Power - Chan 6	AI493	x	x	x	kVA	1	2850/2851	
kVA: Channel 7	Instantaneous Apparent Power - Chan 7	AI494	x	x	x	kVA	1	2852/2853	
kVA: Channel 8	Instantaneous Apparent Power - Chan 8	AI495	x	x	x	kVA	1	2854/2855	
kVA: Channel 9	Instantaneous Apparent Power - Chan 9	AI496	x	x	x	kVA	1	2856/2857	
kVA: Channel 10	Instantaneous Apparent Power - Chan 10	AI497	x	x	x	kVA	1	2858/2859	
kVA: Channel 11	Instantaneous Apparent Power - Chan 11	AI498	x	x	x	kVA	1	2860/2861	
kVA: Channel 12	Instantaneous Apparent Power - Chan 12	AI499	x	x	x	kVA	1	2862/2863	
kVA: Channel 13	Instantaneous Apparent Power - Chan 13	AI500	x	x	x	kVA	1	2864/2865	
kVA: Channel 14	Instantaneous Apparent Power - Chan 14	AI501	x	x	x	kVA	1	2866/2867	
kVA: Channel 15	Instantaneous Apparent Power - Chan 15	AI502	x	x	x	kVA	1	2868/2869	
kVA: Channel 16	Instantaneous Apparent Power - Chan 16	AI503	x	x	x	kVA	1	2870/2871	
kVA: Channel 17	Instantaneous Apparent Power - Chan 17	AI504	x	x	x	kVA	1	2872/2873	
kVA: Channel 18	Instantaneous Apparent Power - Chan 18	AI505	x	x	x	kVA	1	2874/2875	
kVA: Channel 19	Instantaneous Apparent Power - Chan 19	AI506	x	x	x	kVA	1	2876/2877	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
kVA: Channel 20	Instantaneous Apparent Power - Chan 20	AI507	x	x	x	kVA	1	2878/2879	
kVA: Channel 21	Instantaneous Apparent Power - Chan 21	AI508	x	x	x	kVA	1	2880/2881	
kVA: Channel 22	Instantaneous Apparent Power - Chan 22	AI509	x	x	x	kVA	1	2882/2883	
kVA: Channel 23	Instantaneous Apparent Power - Chan 23	AI510	x	x	x	kVA	1	2884/2885	
kVA: Channel 24	Instantaneous Apparent Power - Chan 24	AI511	x	x	x	kVA	1	2886/2887	
kVA: Channel 25	Instantaneous Apparent Power - Chan 25	AI512	x	x	x	kVA	1	2888/2889	
kVA: Channel 26	Instantaneous Apparent Power - Chan 26	AI513	x	x	x	kVA	1	2890/2891	
kVA: Channel 27	Instantaneous Apparent Power - Chan 27	AI514	x	x	x	kVA	1	2892/2893	
kVA: Channel 28	Instantaneous Apparent Power - Chan 28	AI515	x	x	x	kVA	1	2894/2895	
kVA: Channel 29	Instantaneous Apparent Power - Chan 29	AI516	x	x	x	kVA	1	2896/2897	
kVA: Channel 30	Instantaneous Apparent Power - Chan 30	AI517	x	x	x	kVA	1	2898/2899	
kVA: Channel 31	Instantaneous Apparent Power - Chan 31	AI518	x	x	x	kVA	1	2900/2901	
kVA: Channel 32	Instantaneous Apparent Power - Chan 32	AI519	x	x	x	kVA	1	2902/2903	
kVA: Channel 33	Instantaneous Apparent Power - Chan 33	AI520	x	x	x	kVA	1	2904/2905	
kVA: Channel 34	Instantaneous Apparent Power - Chan 34	AI521	x	x	x	kVA	1	2906/2907	
kVA: Channel 35	Instantaneous Apparent Power - Chan 35	AI522	x	x	x	kVA	1	2908/2909	
kVA: Channel 36	Instantaneous Apparent Power - Chan 36	AI523	x	x	x	kVA	1	2910/2911	
kVA: Channel 37	Instantaneous Apparent Power - Chan 37	AI524	x	x	x	kVA	1	2912/2913	
kVA: Channel 38	Instantaneous Apparent Power - Chan 38	AI525	x	x	x	kVA	1	2914/2915	
kVA: Channel 39	Instantaneous Apparent Power - Chan 39	AI526	x	x	x	kVA	1	2916/2917	
kVA: Channel 40	Instantaneous Apparent Power - Chan 40	AI527	x	x	x	kVA	1	2918/2919	
kVA: Channel 41	Instantaneous Apparent Power - Chan 41	AI528	x	x	x	kVA	1	2920/2921	
kVA: Channel 42	Instantaneous Apparent Power - Chan 42	AI529	x	x	x	kVA	1	2922/2923	
Amp Phase Angle: Aux Phase 1 (Ch 43)	Amperage Phase Angle - Aux ph1 (Ch 43)	AI530	x			degrees-phase	10	686/687	
Amp Phase Angle: Aux Phase 2 (Ch 44)	Amperage Phase Angle - Aux ph2 (Ch 44)	AI531	x			degrees-phase	10	688/689	
Amp Phase Angle: Aux Phase 3 (Ch 45)	Amperage Phase Angle - Aux ph3 (Ch 45)	AI532	x			degrees-phase	10	690/691	
Volt Phase Angle: Aux Phase 1 (Ch 43)	Voltage Phase Angle - Aux ph1 (Ch 43)	AI533	x			degrees-phase	10	694/695	
Volt Phase Angle: Aux Phase 2 (Ch 44)	Voltage Phase Angle - Aux ph2 (Ch 44)	AI534	x			degrees-phase	10	696/697	
Volt Phase Angle: Aux Phase 3 (Ch 45)	Voltage Phase Angle - Aux ph3 (Ch 45)	AI535	x			degrees-phase	10	698/699	
Non-Latching Alarm Logical Circuit 1	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI536	x			No-Units	0	10061	
Non-Latching Alarm Logical Circuit 2	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI537	x			No-Units	0	11061	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Non-Latching Alarm Logical Circuit 3	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI538	x			No-Units	0	12061	
Non-Latching Alarm Logical Circuit 4	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI539	x			No-Units	0	13061	
Non-Latching Alarm Logical Circuit 5	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI540	x			No-Units	0	14061	
Non-Latching Alarm Logical Circuit 6	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI541	x			No-Units	0	15061	
Non-Latching Alarm Logical Circuit 7	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI542	x			No-Units	0	16061	
Non-Latching Alarm Logical Circuit 8	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI543	x			No-Units	0	17061	
Non-Latching Alarm Logical Circuit 9	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI544	x			No-Units	0	18061	
Non-Latching Alarm Logical Circuit 10	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI545	x			No-Units	0	19061	
Non-Latching Alarm Logical Circuit 11	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI546	x			No-Units	0	20061	
Non-Latching Alarm Logical Circuit 12	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI547	x			No-Units	0	21061	
Non-Latching Alarm Logical Circuit 13	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI548	x			No-Units	0	22061	
Non-Latching Alarm Logical Circuit 14	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI549	x			No-Units	0	23061	
Non-Latching Alarm Logical Circuit 15	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI550	x			No-Units	0	24061	
Non-Latching Alarm Logical Circuit 16	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI551	x			No-Units	0	25061	
Non-Latching Alarm Logical Circuit 17	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI552	x			No-Units	0	26061	
Non-Latching Alarm Logical Circuit 18	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI553	x			No-Units	0	27061	
Non-Latching Alarm Logical Circuit 19	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI554	x			No-Units	0	28061	
Non-Latching Alarm Logical Circuit 20	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI555	x			No-Units	0	29061	
Non-Latching Alarm Logical Circuit 21	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI556	x			No-Units	0	30061	
Non-Latching Alarm Logical Circuit 22	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI557	x			No-Units	0	31061	
Non-Latching Alarm Logical Circuit 23	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI558	x			No-Units	0	32061	
Non-Latching Alarm Logical Circuit 24	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI559	x			No-Units	0	33061	
Non-Latching Alarm Logical Circuit 25	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI560	x			No-Units	0	34061	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW <V1.016				
Non-Latching Alarm Logical Circuit 26	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI561	x			No-Units	0	35061	
Non-Latching Alarm Logical Circuit 27	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI562	x			No-Units	0	36061	
Non-Latching Alarm Logical Circuit 28	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI563	x			No-Units	0	37061	
Non-Latching Alarm Logical Circuit 29	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI564	x			No-Units	0	38061	
Non-Latching Alarm Logical Circuit 30	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI565	x			No-Units	0	39061	
Non-Latching Alarm Logical Circuit 31	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI566	x			No-Units	0	40061	
Non-Latching Alarm Logical Circuit 32	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI567	x			No-Units	0	41061	
Non-Latching Alarm Logical Circuit 33	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI568	x			No-Units	0	42061	
Non-Latching Alarm Logical Circuit 34	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI569	x			No-Units	0	43061	
Non-Latching Alarm Logical Circuit 35	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI570	x			No-Units	0	44061	
Non-Latching Alarm Logical Circuit 36	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI571	x			No-Units	0	45061	
Non-Latching Alarm Logical Circuit 37	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI572	x			No-Units	0	46061	
Non-Latching Alarm Logical Circuit 38	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI573	x			No-Units	0	47061	
Non-Latching Alarm Logical Circuit 39	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI574	x			No-Units	0	48061	
Non-Latching Alarm Logical Circuit 30	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI575	x			No-Units	0	49061	
Non-Latching Alarm Logical Circuit 41	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI576	x			No-Units	0	50061	
Non-Latching Alarm Logical Circuit 42	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI577	x			No-Units	0	51061	
Non-Latching Alarm Logical Circuit 43	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI578	x			No-Units	0	52061	
Non-Latching Alarm Logical Circuit 44	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI579	x			No-Units	0	53061	
Non-Latching Alarm Logical Circuit 45	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI580	x			No-Units	0	54061	
Non-Latching Alarm Logical Circuit 46	bitmap: (0=HH;1=H;2=L;3=LL;4-15=rsv)	AI581	x			No-Units	0	55061	
Number of Channels Logical Circuit 1	Number of Channels Assigned to Logical Circuit 1	AI582	x			No-Units	0	10001	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Number of Channels Logical Circuit 2	Number of Channels Assigned to Logical Circuit 2	AI583	x			No-Units	0	11001	
Number of Channels Logical Circuit 3	Number of Channels Assigned to Logical Circuit 3	AI584	x			No-Units	0	12001	
Number of Channels Logical Circuit 4	Number of Channels Assigned to Logical Circuit 4	AI585	x			No-Units	0	13001	
Number of Channels Logical Circuit 5	Number of Channels Assigned to Logical Circuit 5	AI586	x			No-Units	0	14001	
Number of Channels Logical Circuit 6	Number of Channels Assigned to Logical Circuit 6	AI587	x			No-Units	0	15001	
Number of Channels Logical Circuit 7	Number of Channels Assigned to Logical Circuit 7	AI588	x			No-Units	0	16001	
Number of Channels Logical Circuit 8	Number of Channels Assigned to Logical Circuit 8	AI589	x			No-Units	0	17001	
Number of Channels Logical Circuit 9	Number of Channels Assigned to Logical Circuit 9	AI590	x			No-Units	0	18001	
Number of Channels Logical Circuit 10	Number of Channels Assigned to Logical Circuit 10	AI591	x			No-Units	0	19001	
Number of Channels Logical Circuit 11	Number of Channels Assigned to Logical Circuit 11	AI592	x			No-Units	0	20001	
Number of Channels Logical Circuit 12	Number of Channels Assigned to Logical Circuit 12	AI593	x			No-Units	0	21001	
Number of Channels Logical Circuit 13	Number of Channels Assigned to Logical Circuit 13	AI594	x			No-Units	0	22001	
Number of Channels Logical Circuit 14	Number of Channels Assigned to Logical Circuit 14	AI595	x			No-Units	0	23001	
Number of Channels Logical Circuit 15	Number of Channels Assigned to Logical Circuit 15	AI596	x			No-Units	0	24001	
Number of Channels Logical Circuit 16	Number of Channels Assigned to Logical Circuit 16	AI597	x			No-Units	0	25001	
Number of Channels Logical Circuit 17	Number of Channels Assigned to Logical Circuit 17	AI598	x			No-Units	0	26001	
Number of Channels Logical Circuit 18	Number of Channels Assigned to Logical Circuit 18	AI599	x			No-Units	0	27001	
Number of Channels Logical Circuit 19	Number of Channels Assigned to Logical Circuit 19	AI600	x			No-Units	0	28001	
Number of Channels Logical Circuit 20	Number of Channels Assigned to Logical Circuit 20	AI601	x			No-Units	0	29001	
Number of Channels Logical Circuit 21	Number of Channels Assigned to Logical Circuit 21	AI602	x			No-Units	0	30001	
Number of Channels Logical Circuit 22	Number of Channels Assigned to Logical Circuit 22	AI603	x			No-Units	0	31001	
Number of Channels Logical Circuit 23	Number of Channels Assigned to Logical Circuit 23	AI604	x			No-Units	0	32001	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW >= V1.203	1.016-1.022	FW < V1.016				
Number of Channels Logical Circuit 24	Number of Channels Assigned to Logical Circuit 24	AI605	x			No-Units	0	33001	
Number of Channels Logical Circuit 25	Number of Channels Assigned to Logical Circuit 25	AI606	x			No-Units	0	34001	
Number of Channels Logical Circuit 26	Number of Channels Assigned to Logical Circuit 26	AI607	x			No-Units	0	35001	
Number of Channels Logical Circuit 27	Number of Channels Assigned to Logical Circuit 27	AI608	x			No-Units	0	36001	
Number of Channels Logical Circuit 28	Number of Channels Assigned to Logical Circuit 28	AI609	x			No-Units	0	37001	
Number of Channels Logical Circuit 29	Number of Channels Assigned to Logical Circuit 29	AI610	x			No-Units	0	38001	
Number of Channels Logical Circuit 30	Number of Channels Assigned to Logical Circuit 30	AI611	x			No-Units	0	39001	
Number of Channels Logical Circuit 31	Number of Channels Assigned to Logical Circuit 31	AI612	x			No-Units	0	40001	
Number of Channels Logical Circuit 32	Number of Channels Assigned to Logical Circuit 32	AI613	x			No-Units	0	41001	
Number of Channels Logical Circuit 33	Number of Channels Assigned to Logical Circuit 33	AI614	x			No-Units	0	42001	
Number of Channels Logical Circuit 34	Number of Channels Assigned to Logical Circuit 34	AI615	x			No-Units	0	43001	
Number of Channels Logical Circuit 35	Number of Channels Assigned to Logical Circuit 35	AI616	x			No-Units	0	44001	
Number of Channels Logical Circuit 36	Number of Channels Assigned to Logical Circuit 36	AI617	x			No-Units	0	45001	
Number of Channels Logical Circuit 37	Number of Channels Assigned to Logical Circuit 37	AI618	x			No-Units	0	46001	
Number of Channels Logical Circuit 38	Number of Channels Assigned to Logical Circuit 38	AI619	x			No-Units	0	47001	
Number of Channels Logical Circuit 39	Number of Channels Assigned to Logical Circuit 39	AI620	x			No-Units	0	48001	
Number of Channels Logical Circuit 30	Number of Channels Assigned to Logical Circuit 40	AI621	x			No-Units	0	49001	
Number of Channels Logical Circuit 41	Number of Channels Assigned to Logical Circuit 41	AI622	x			No-Units	0	50001	
Number of Channels Logical Circuit 42	Number of Channels Assigned to Logical Circuit 42	AI623	x			No-Units	0	51001	
Number of Channels Logical Circuit 43	Number of Channels Assigned to Logical Circuit 43	AI624	x			No-Units	0	52001	
Number of Channels Logical Circuit 44	Number of Channels Assigned to Logical Circuit 44	AI625	x			No-Units	0	53001	
Number of Channels Logical Circuit 45	Number of Channels Assigned to Logical Circuit 45	AI626	x			No-Units	0	54001	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW > = V1.203	1.016-1.022	FW < V1.016				
Number of Channels Logical Circuit 46	Number of Channels Assigned to Logical Circuit 46	AI627	x			No-Units	0	55001	
Logical Ckt 1: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI628	x			No-Units	0	10002	
Logical Ckt 2: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI629	x			No-Units	0	11002	
Logical Ckt 3: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI630	x			No-Units	0	12002	
Logical Ckt 4: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI631	x			No-Units	0	13002	
Logical Ckt 5: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI632	x			No-Units	0	14002	
Logical Ckt 6: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI633	x			No-Units	0	15002	
Logical Ckt 7: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI634	x			No-Units	0	16002	
Logical Ckt 8: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI635	x			No-Units	0	17002	
Logical Ckt 9: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI636	x			No-Units	0	18002	
Logical Ckt 10: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI637	x			No-Units	0	19002	
Logical Ckt 11: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI638	x			No-Units	0	20002	
Logical Ckt 12: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI639	x			No-Units	0	21002	
Logical Ckt 13: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI640	x			No-Units	0	22002	
Logical Ckt 14: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI641	x			No-Units	0	23002	
Logical Ckt 15: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI642	x			No-Units	0	24002	
Logical Ckt 16: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI643	x			No-Units	0	25002	
Logical Ckt 17: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI644	x			No-Units	0	26002	
Logical Ckt 18: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI645	x			No-Units	0	27002	
Logical Ckt 19: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI646	x			No-Units	0	28002	
Logical Ckt 20: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI647	x			No-Units	0	29002	
Logical Ckt 21: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI648	x			No-Units	0	30002	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Logical Ckt 22: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI649	x			No-Units	0	31002	
Logical Ckt 23: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI650	x			No-Units	0	32002	
Logical Ckt 24: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI651	x			No-Units	0	33002	
Logical Ckt 25: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI652	x			No-Units	0	34002	
Logical Ckt 26: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI653	x			No-Units	0	35002	
Logical Ckt 27: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI654	x			No-Units	0	36002	
Logical Ckt 28: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI655	x			No-Units	0	37002	
Logical Ckt 29: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI656	x			No-Units	0	38002	
Logical Ckt 30: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI657	x			No-Units	0	39002	
Logical Ckt 31: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI658	x			No-Units	0	40002	
Logical Ckt 32: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI659	x			No-Units	0	41002	
Logical Ckt 33: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI660	x			No-Units	0	42002	
Logical Ckt 34: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI661	x			No-Units	0	43002	
Logical Ckt 35: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI662	x			No-Units	0	44002	
Logical Ckt 36: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI663	x			No-Units	0	45002	
Logical Ckt 37: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI664	x			No-Units	0	46002	
Logical Ckt 38: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI665	x			No-Units	0	47002	
Logical Ckt 39: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI666	x			No-Units	0	48002	
Logical Ckt 30: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI667	x			No-Units	0	49002	
Logical Ckt 41: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI668	x			No-Units	0	50002	
Logical Ckt 42: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI669	x			No-Units	0	51002	
Logical Ckt 43: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI670	x			No-Units	0	52002	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW <V1.016				
Logical Ckt 44: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI671	x			No-Units	0	53002	
Logical Ckt 45: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI672	x			No-Units	0	54002	
Logical Ckt 46: Phase 1 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI673	x			No-Units	0	55002	
Logical Ckt 1: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI674	x			No-Units	0	10003	
Logical Ckt 2: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI675	x			No-Units	0	11003	
Logical Ckt 3: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI676	x			No-Units	0	12003	
Logical Ckt 4: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI677	x			No-Units	0	13003	
Logical Ckt 5: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI678	x			No-Units	0	14003	
Logical Ckt 6: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI679	x			No-Units	0	15003	
Logical Ckt 7: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI680	x			No-Units	0	16003	
Logical Ckt 8: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI681	x			No-Units	0	17003	
Logical Ckt 9: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI682	x			No-Units	0	18003	
Logical Ckt 10: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI683	x			No-Units	0	19003	
Logical Ckt 11: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI684	x			No-Units	0	20003	
Logical Ckt 12: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI685	x			No-Units	0	21003	
Logical Ckt 13: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI686	x			No-Units	0	22003	
Logical Ckt 14: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI687	x			No-Units	0	23003	
Logical Ckt 15: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI688	x			No-Units	0	24003	
Logical Ckt 16: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI689	x			No-Units	0	25003	
Logical Ckt 17: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI690	x			No-Units	0	26003	
Logical Ckt 18: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI691	x			No-Units	0	27003	
Logical Ckt 19: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI692	x			No-Units	0	28003	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Logical Ckt 20: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI693	x			No-Units	0	29003	
Logical Ckt 21: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI694	x			No-Units	0	30003	
Logical Ckt 22: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI695	x			No-Units	0	31003	
Logical Ckt 23: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI696	x			No-Units	0	32003	
Logical Ckt 24: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI697	x			No-Units	0	33003	
Logical Ckt 25: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI698	x			No-Units	0	34003	
Logical Ckt 26: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI699	x			No-Units	0	35003	
Logical Ckt 27: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI700	x			No-Units	0	36003	
Logical Ckt 28: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI701	x			No-Units	0	37003	
Logical Ckt 29: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI702	x			No-Units	0	38003	
Logical Ckt 30: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI703	x			No-Units	0	39003	
Logical Ckt 31: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI704	x			No-Units	0	40003	
Logical Ckt 32: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI705	x			No-Units	0	41003	
Logical Ckt 33: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI706	x			No-Units	0	42003	
Logical Ckt 34: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI707	x			No-Units	0	43003	
Logical Ckt 35: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI708	x			No-Units	0	44003	
Logical Ckt 36: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI709	x			No-Units	0	45003	
Logical Ckt 37: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI710	x			No-Units	0	46003	
Logical Ckt 38: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI711	x			No-Units	0	47003	
Logical Ckt 39: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI712	x			No-Units	0	48003	
Logical Ckt 30: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI713	x			No-Units	0	49003	
Logical Ckt 41: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI714	x			No-Units	0	50003	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Logical Ckt 42: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI715	x			No-Units	0	51003	
Logical Ckt 43: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI716	x			No-Units	0	52003	
Logical Ckt 44: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI717	x			No-Units	0	53003	
Logical Ckt 45: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI718	x			No-Units	0	54003	
Logical Ckt 46: Phase 2 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI719	x			No-Units	0	55003	
Logical Ckt 1: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI720	x			No-Units	0	10004	
Logical Ckt 2: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI721	x			No-Units	0	11004	
Logical Ckt 3: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI722	x			No-Units	0	12004	
Logical Ckt 4: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI723	x			No-Units	0	13004	
Logical Ckt 5: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI724	x			No-Units	0	14004	
Logical Ckt 6: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI725	x			No-Units	0	15004	
Logical Ckt 7: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI726	x			No-Units	0	16004	
Logical Ckt 8: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI727	x			No-Units	0	17004	
Logical Ckt 9: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI728	x			No-Units	0	18004	
Logical Ckt 10: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI729	x			No-Units	0	19004	
Logical Ckt 11: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI730	x			No-Units	0	20004	
Logical Ckt 12: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI731	x			No-Units	0	21004	
Logical Ckt 13: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI732	x			No-Units	0	22004	
Logical Ckt 14: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI733	x			No-Units	0	23004	
Logical Ckt 15: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI734	x			No-Units	0	24004	
Logical Ckt 16: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI735	x			No-Units	0	25004	
Logical Ckt 17: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI736	x			No-Units	0	26004	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Logical Ckt 18: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI737	x			No-Units	0	27004	
Logical Ckt 19: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI738	x			No-Units	0	28004	
Logical Ckt 20: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI739	x			No-Units	0	29004	
Logical Ckt 21: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI740	x			No-Units	0	30004	
Logical Ckt 22: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI741	x			No-Units	0	31004	
Logical Ckt 23: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI742	x			No-Units	0	32004	
Logical Ckt 24: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI743	x			No-Units	0	33004	
Logical Ckt 25: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI744	x			No-Units	0	34004	
Logical Ckt 26: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI745	x			No-Units	0	35004	
Logical Ckt 27: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI746	x			No-Units	0	36004	
Logical Ckt 28: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI747	x			No-Units	0	37004	
Logical Ckt 29: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI748	x			No-Units	0	38004	
Logical Ckt 30: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI749	x			No-Units	0	39004	
Logical Ckt 31: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI750	x			No-Units	0	40004	
Logical Ckt 32: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI751	x			No-Units	0	41004	
Logical Ckt 33: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI752	x			No-Units	0	42004	
Logical Ckt 34: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI753	x			No-Units	0	43004	
Logical Ckt 35: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI754	x			No-Units	0	44004	
Logical Ckt 36: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI755	x			No-Units	0	45004	
Logical Ckt 37: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI756	x			No-Units	0	46004	
Logical Ckt 38: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI757	x			No-Units	0	47004	
Logical Ckt 39: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI758	x			No-Units	0	48004	
Logical Ckt 30: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI759	x			No-Units	0	49004	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW >= V1.203	1.016-1.022	FW < V1.016				
Logical Ckt 41: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI760	x			No-Units	0	50004	
Logical Ckt 42: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI761	x			No-Units	0	51004	
Logical Ckt 43: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI762	x			No-Units	0	52004	
Logical Ckt 44: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI763	x			No-Units	0	53004	
Logical Ckt 45: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI764	x			No-Units	0	54004	
Logical Ckt 46: Phase 3 - Panel & Chan	257-302=pnl1(1-46); 512-558=pnl2; 0=n/u	AI765	x			No-Units	0	55004	
kWh Logical Circuit 1	Real Energy - Circuit 1	AI766	x			kWh	1	10101/10102	
kWh Logical Circuit 2	Real Energy - Circuit 2	AI767	x			kWh	1	11101/11102	
kWh Logical Circuit 3	Real Energy - Circuit 3	AI768	x			kWh	1	12101/12102	
kWh Logical Circuit 4	Real Energy - Circuit 4	AI769	x			kWh	1	13101/13102	
kWh Logical Circuit 5	Real Energy - Circuit 5	AI770	x			kWh	1	14101/14102	
kWh Logical Circuit 6	Real Energy - Circuit 6	AI771	x			kWh	1	15101/15102	
kWh Logical Circuit 7	Real Energy - Circuit 7	AI772	x			kWh	1	16101/16102	
kWh Logical Circuit 8	Real Energy - Circuit 8	AI773	x			kWh	1	17101/17102	
kWh Logical Circuit 9	Real Energy - Circuit 9	AI774	x			kWh	1	18101/18102	
kWh Logical Circuit 10	Real Energy - Circuit 10	AI775	x			kWh	1	19101/19102	
kWh Logical Circuit 11	Real Energy - Circuit 11	AI776	x			kWh	1	20101/20102	
kWh Logical Circuit 12	Real Energy - Circuit 12	AI777	x			kWh	1	21101/21102	
kWh Logical Circuit 13	Real Energy - Circuit 13	AI778	x			kWh	1	22101/22102	
kWh Logical Circuit 14	Real Energy - Circuit 14	AI779	x			kWh	1	23101/23102	
kWh Logical Circuit 15	Real Energy - Circuit 15	AI780	x			kWh	1	24101/24102	
kWh Logical Circuit 16	Real Energy - Circuit 16	AI781	x			kWh	1	25101/25102	
kWh Logical Circuit 17	Real Energy - Circuit 17	AI782	x			kWh	1	26101/26102	
kWh Logical Circuit 18	Real Energy - Circuit 18	AI783	x			kWh	1	27101/27102	
kWh Logical Circuit 19	Real Energy - Circuit 19	AI784	x			kWh	1	28101/28102	
kWh Logical Circuit 20	Real Energy - Circuit 20	AI785	x			kWh	1	29101/29102	
kWh Logical Circuit 21	Real Energy - Circuit 21	AI786	x			kWh	1	30101/30102	
kWh Logical Circuit 22	Real Energy - Circuit 22	AI787	x			kWh	1	31101/31102	
kWh Logical Circuit 23	Real Energy - Circuit 23	AI788	x			kWh	1	32101/32102	
kWh Logical Circuit 24	Real Energy - Circuit 24	AI789	x			kWh	1	33101/33102	
kWh Logical Circuit 25	Real Energy - Circuit 25	AI790	x			kWh	1	34101/34102	
kWh Logical Circuit 26	Real Energy - Circuit 26	AI791	x			kWh	1	35101/35102	
kWh Logical Circuit 27	Real Energy - Circuit 27	AI792	x			kWh	1	36101/36102	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
kWh Logical Circuit 28	Real Energy - Circuit 28	AI793	x			kWh	1	37101/37102	
kWh Logical Circuit 29	Real Energy - Circuit 29	AI794	x			kWh	1	38101/38102	
kWh Logical Circuit 30	Real Energy - Circuit 30	AI795	x			kWh	1	39101/39102	
kWh Logical Circuit 31	Real Energy - Circuit 31	AI796	x			kWh	1	40101/40102	
kWh Logical Circuit 32	Real Energy - Circuit 32	AI797	x			kWh	1	41101/41102	
kWh Logical Circuit 33	Real Energy - Circuit 33	AI798	x			kWh	1	42101/42102	
kWh Logical Circuit 34	Real Energy - Circuit 34	AI799	x			kWh	1	43101/43102	
kWh Logical Circuit 35	Real Energy - Circuit 35	AI800	x			kWh	1	44101/44102	
kWh Logical Circuit 36	Real Energy - Circuit 36	AI801	x			kWh	1	45101/45102	
kWh Logical Circuit 37	Real Energy - Circuit 37	AI802	x			kWh	1	46101/46102	
kWh Logical Circuit 38	Real Energy - Circuit 38	AI803	x			kWh	1	47101/47102	
kWh Logical Circuit 39	Real Energy - Circuit 39	AI804	x			kWh	1	48101/48102	
kWh Logical Circuit 40	Real Energy - Circuit 40	AI805	x			kWh	1	49101/49102	
kWh Logical Circuit 41	Real Energy - Circuit 41	AI806	x			kWh	1	50101/50102	
kWh Logical Circuit 42	Real Energy - Circuit 42	AI807	x			kWh	1	51101/51102	
kWh Logical Circuit 43	Real Energy - Circuit 43	AI808	x			kWh	1	52101/52102	
kWh Logical Circuit 44	Real Energy - Circuit 44	AI809	x			kWh	1	53101/53102	
kWh Logical Circuit 45	Real Energy - Circuit 45	AI810	x			kWh	1	54101/54102	
kWh Logical Circuit 46	Real Energy - Circuit 46	AI811	x			kWh	1	55101/55102	
kW Logical Circuit 1	Instantaneous Real Power - Circuit 1	AI812	x			kW	1	10109/10110	
kW Logical Circuit 2	Instantaneous Real Power - Circuit 2	AI813	x			kW	1	11109/11110	
kW Logical Circuit 3	Instantaneous Real Power - Circuit 3	AI814	x			kW	1	12109/12110	
kW Logical Circuit 4	Instantaneous Real Power - Circuit 4	AI815	x			kW	1	13109/13110	
kW Logical Circuit 5	Instantaneous Real Power - Circuit 5	AI816	x			kW	1	14109/14110	
kW Logical Circuit 6	Instantaneous Real Power - Circuit 6	AI817	x			kW	1	15109/15110	
kW Logical Circuit 7	Instantaneous Real Power - Circuit 7	AI818	x			kW	1	16109/16110	
kW Logical Circuit 8	Instantaneous Real Power - Circuit 8	AI819	x			kW	1	17109/17110	
kW Logical Circuit 9	Instantaneous Real Power - Circuit 9	AI820	x			kW	1	18109/18110	
kW Logical Circuit 10	Instantaneous Real Power - Circuit 10	AI821	x			kW	1	19109/19110	
kW Logical Circuit 11	Instantaneous Real Power - Circuit 11	AI822	x			kW	1	20109/20110	
kW Logical Circuit 12	Instantaneous Real Power - Circuit 12	AI823	x			kW	1	21109/21110	
kW Logical Circuit 13	Instantaneous Real Power - Circuit 13	AI824	x			kW	1	22109/22110	
kW Logical Circuit 14	Instantaneous Real Power - Circuit 14	AI825	x			kW	1	23109/23110	
kW Logical Circuit 15	Instantaneous Real Power - Circuit 15	AI826	x			kW	1	24109/24110	
kW Logical Circuit 16	Instantaneous Real Power - Circuit 16	AI827	x			kW	1	25109/25110	
kW Logical Circuit 17	Instantaneous Real Power - Circuit 17	AI828	x			kW	1	26109/26110	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
kW Logical Circuit 18	Instantaneous Real Power - Circuit 18	AI829	x			kW	1	27109/27110	
kW Logical Circuit 19	Instantaneous Real Power - Circuit 19	AI830	x			kW	1	28109/28110	
kW Logical Circuit 20	Instantaneous Real Power - Circuit 20	AI831	x			kW	1	29109/29110	
kW Logical Circuit 21	Instantaneous Real Power - Circuit 21	AI832	x			kW	1	30109/30110	
kW Logical Circuit 22	Instantaneous Real Power - Circuit 22	AI833	x			kW	1	31109/31110	
kW Logical Circuit 23	Instantaneous Real Power - Circuit 23	AI834	x			kW	1	32109/32110	
kW Logical Circuit 24	Instantaneous Real Power - Circuit 24	AI835	x			kW	1	33109/33110	
kW Logical Circuit 25	Instantaneous Real Power - Circuit 25	AI836	x			kW	1	34109/34110	
kW Logical Circuit 26	Instantaneous Real Power - Circuit 26	AI837	x			kW	1	35109/35110	
kW Logical Circuit 27	Instantaneous Real Power - Circuit 27	AI838	x			kW	1	36109/36110	
kW Logical Circuit 28	Instantaneous Real Power - Circuit 28	AI839	x			kW	1	37109/37110	
kW Logical Circuit 29	Instantaneous Real Power - Circuit 29	AI840	x			kW	1	38109/38110	
kW Logical Circuit 30	Instantaneous Real Power - Circuit 30	AI841	x			kW	1	39109/39110	
kW Logical Circuit 31	Instantaneous Real Power - Circuit 31	AI842	x			kW	1	40109/40110	
kW Logical Circuit 32	Instantaneous Real Power - Circuit 32	AI843	x			kW	1	41109/41110	
kW Logical Circuit 33	Instantaneous Real Power - Circuit 33	AI844	x			kW	1	42109/42110	
kW Logical Circuit 34	Instantaneous Real Power - Circuit 34	AI845	x			kW	1	43109/43110	
kW Logical Circuit 35	Instantaneous Real Power - Circuit 35	AI846	x			kW	1	44109/44110	
kW Logical Circuit 36	Instantaneous Real Power - Circuit 36	AI847	x			kW	1	45109/45110	
kW Logical Circuit 37	Instantaneous Real Power - Circuit 37	AI848	x			kW	1	46109/46110	
kW Logical Circuit 38	Instantaneous Real Power - Circuit 38	AI849	x			kW	1	47109/47110	
kW Logical Circuit 39	Instantaneous Real Power - Circuit 39	AI850	x			kW	1	48109/48110	
kW Logical Circuit 40	Instantaneous Real Power - Circuit 40	AI851	x			kW	1	49109/49110	
kW Logical Circuit 41	Instantaneous Real Power - Circuit 41	AI852	x			kW	1	50109/50110	
kW Logical Circuit 42	Instantaneous Real Power - Circuit 42	AI853	x			kW	1	51109/51110	
kW Logical Circuit 43	Instantaneous Real Power - Circuit 43	AI854	x			kW	1	52109/52110	
kW Logical Circuit 44	Instantaneous Real Power - Circuit 44	AI855	x			kW	1	53109/53110	
kW Logical Circuit 45	Instantaneous Real Power - Circuit 45	AI856	x			kW	1	54109/54110	
kW Logical Circuit 46	Instantaneous Real Power - Circuit 46	AI857	x			kW	1	55109/55110	
kVA Logical Circuit 1	Instantaneous Apparent Power - Ckt 1	AI858	x			kVA	1	10113/10114	
kVA Logical Circuit 2	Instantaneous Apparent Power - Ckt 2	AI859	x			kVA	1	11113/11114	
kVA Logical Circuit 3	Instantaneous Apparent Power - Ckt 3	AI860	x			kVA	1	12113/12114	
kVA Logical Circuit 4	Instantaneous Apparent Power - Ckt 4	AI861	x			kVA	1	13113/13114	
kVA Logical Circuit 5	Instantaneous Apparent Power - Ckt 5	AI862	x			kVA	1	14113/14114	
kVA Logical Circuit 6	Instantaneous Apparent Power - Ckt 6	AI863	x			kVA	1	15113/15114	
kVA Logical Circuit 7	Instantaneous Apparent Power - Ckt 7	AI864	x			kVA	1	16113/16114	
kVA Logical Circuit 8	Instantaneous Apparent Power - Ckt 8	AI865	x			kVA	1	17113/17114	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
kVA Logical Circuit 9	Instantaneous Apparent Power - Ckt 9	AI866	x			kVA	1	18113/18114	
kVA Logical Circuit 10	Instantaneous Apparent Power - Ckt 10	AI867	x			kVA	1	19113/19114	
kVA Logical Circuit 11	Instantaneous Apparent Power - Ckt 11	AI868	x			kVA	1	20113/20114	
kVA Logical Circuit 12	Instantaneous Apparent Power - Ckt 12	AI869	x			kVA	1	21113/21114	
kVA Logical Circuit 13	Instantaneous Apparent Power - Ckt 13	AI870	x			kVA	1	22113/22114	
kVA Logical Circuit 14	Instantaneous Apparent Power - Ckt 14	AI871	x			kVA	1	23113/23114	
kVA Logical Circuit 15	Instantaneous Apparent Power - Ckt 15	AI872	x			kVA	1	24113/24114	
kVA Logical Circuit 16	Instantaneous Apparent Power - Ckt 16	AI873	x			kVA	1	25113/25114	
kVA Logical Circuit 17	Instantaneous Apparent Power - Ckt 17	AI874	x			kVA	1	26113/26114	
kVA Logical Circuit 18	Instantaneous Apparent Power - Ckt 18	AI875	x			kVA	1	27113/27114	
kVA Logical Circuit 19	Instantaneous Apparent Power - Ckt 19	AI876	x			kVA	1	28113/28114	
kVA Logical Circuit 20	Instantaneous Apparent Power - Ckt 20	AI877	x			kVA	1	29113/29114	
kVA Logical Circuit 21	Instantaneous Apparent Power - Ckt 21	AI878	x			kVA	1	30113/30114	
kVA Logical Circuit 22	Instantaneous Apparent Power - Ckt 22	AI879	x			kVA	1	31113/31114	
kVA Logical Circuit 23	Instantaneous Apparent Power - Ckt 23	AI880	x			kVA	1	32113/32114	
kVA Logical Circuit 24	Instantaneous Apparent Power - Ckt 24	AI881	x			kVA	1	33113/33114	
kVA Logical Circuit 25	Instantaneous Apparent Power - Ckt 25	AI882	x			kVA	1	34113/34114	
kVA Logical Circuit 26	Instantaneous Apparent Power - Ckt 26	AI883	x			kVA	1	35113/35114	
kVA Logical Circuit 27	Instantaneous Apparent Power - Ckt 27	AI884	x			kVA	1	36113/36114	
kVA Logical Circuit 28	Instantaneous Apparent Power - Ckt 28	AI885	x			kVA	1	37113/37114	
kVA Logical Circuit 29	Instantaneous Apparent Power - Ckt 29	AI886	x			kVA	1	38113/38114	
kVA Logical Circuit 30	Instantaneous Apparent Power - Ckt 30	AI887	x			kVA	1	39113/39114	
kVA Logical Circuit 31	Instantaneous Apparent Power - Ckt 31	AI888	x			kVA	1	40113/40114	
kVA Logical Circuit 32	Instantaneous Apparent Power - Ckt 32	AI889	x			kVA	1	41113/41114	
kVA Logical Circuit 33	Instantaneous Apparent Power - Ckt 33	AI890	x			kVA	1	42113/42114	
kVA Logical Circuit 34	Instantaneous Apparent Power - Ckt 34	AI891	x			kVA	1	43113/43114	
kVA Logical Circuit 35	Instantaneous Apparent Power - Ckt 35	AI892	x			kVA	1	44113/44114	
kVA Logical Circuit 36	Instantaneous Apparent Power - Ckt 36	AI893	x			kVA	1	45113/45114	
kVA Logical Circuit 37	Instantaneous Apparent Power - Ckt 37	AI894	x			kVA	1	46113/46114	
kVA Logical Circuit 38	Instantaneous Apparent Power - Ckt 38	AI895	x			kVA	1	47113/47114	
kVA Logical Circuit 39	Instantaneous Apparent Power - Ckt 39	AI896	x			kVA	1	48113/48114	
kVA Logical Circuit 40	Instantaneous Apparent Power - Ckt 40	AI897	x			kVA	1	49113/49114	
kVA Logical Circuit 41	Instantaneous Apparent Power - Ckt 41	AI898	x			kVA	1	50113/50114	
kVA Logical Circuit 42	Instantaneous Apparent Power - Ckt 42	AI899	x			kVA	1	51113/51114	
kVA Logical Circuit 43	Instantaneous Apparent Power - Ckt 43	AI900	x			kVA	1	52113/52114	
kVA Logical Circuit 44	Instantaneous Apparent Power - Ckt 44	AI901	x			kVA	1	53113/53114	
kVA Logical Circuit 45	Instantaneous Apparent Power - Ckt 45	AI902	x			kVA	1	54113/54114	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW >= V1.203	1.016-1.022	FW < V1.016				
kVA Logical Circuit 46	Instantaneous Apparent Power - Ckt 46	AI903	x			kVA	1	55113/55114	
Power Factor Logical Circuit 1	Instantaneous Power Factor - Ckt 1	AI904	x			No-Units	5	10115/10116	
Power Factor Logical Circuit 2	Instantaneous Power Factor - Ckt 2	AI905	x			No-Units	5	11115/11116	
Power Factor Logical Circuit 3	Instantaneous Power Factor - Ckt 3	AI906	x			No-Units	5	12115/12116	
Power Factor Logical Circuit 4	Instantaneous Power Factor - Ckt 4	AI907	x			No-Units	5	13115/13116	
Power Factor Logical Circuit 5	Instantaneous Power Factor - Ckt 5	AI908	x			No-Units	5	14115/14116	
Power Factor Logical Circuit 6	Instantaneous Power Factor - Ckt 6	AI909	x			No-Units	5	15115/15116	
Power Factor Logical Circuit 7	Instantaneous Power Factor - Ckt 7	AI910	x			No-Units	5	16115/16116	
Power Factor Logical Circuit 8	Instantaneous Power Factor - Ckt 8	AI911	x			No-Units	5	17115/17116	
Power Factor Logical Circuit 9	Instantaneous Power Factor - Ckt 9	AI912	x			No-Units	5	18115/18116	
Power Factor Logical Circuit 10	Instantaneous Power Factor - Ckt 10	AI913	x			No-Units	5	19115/19116	
Power Factor Logical Circuit 11	Instantaneous Power Factor - Ckt 11	AI914	x			No-Units	5	20115/20116	
Power Factor Logical Circuit 12	Instantaneous Power Factor - Ckt 12	AI915	x			No-Units	5	21115/21116	
Power Factor Logical Circuit 13	Instantaneous Power Factor - Ckt 13	AI916	x			No-Units	5	22115/22116	
Power Factor Logical Circuit 14	Instantaneous Power Factor - Ckt 14	AI917	x			No-Units	5	23115/23116	
Power Factor Logical Circuit 15	Instantaneous Power Factor - Ckt 15	AI918	x			No-Units	5	24115/24116	
Power Factor Logical Circuit 16	Instantaneous Power Factor - Ckt 16	AI919	x			No-Units	5	25115/25116	
Power Factor Logical Circuit 17	Instantaneous Power Factor - Ckt 17	AI920	x			No-Units	5	26115/26116	
Power Factor Logical Circuit 18	Instantaneous Power Factor - Ckt 18	AI921	x			No-Units	5	27115/27116	
Power Factor Logical Circuit 19	Instantaneous Power Factor - Ckt 19	AI922	x			No-Units	5	28115/28116	
Power Factor Logical Circuit 20	Instantaneous Power Factor - Ckt 20	AI923	x			No-Units	5	29115/29116	
Power Factor Logical Circuit 21	Instantaneous Power Factor - Ckt 21	AI924	x			No-Units	5	30115/30116	
Power Factor Logical Circuit 22	Instantaneous Power Factor - Ckt 22	AI925	x			No-Units	5	31115/31116	
Power Factor Logical Circuit 23	Instantaneous Power Factor - Ckt 23	AI926	x			No-Units	5	32115/32116	
Power Factor Logical Circuit 24	Instantaneous Power Factor - Ckt 24	AI927	x			No-Units	5	33115/33116	
Power Factor Logical Circuit 25	Instantaneous Power Factor - Ckt 25	AI928	x			No-Units	5	34115/34116	
Power Factor Logical Circuit 26	Instantaneous Power Factor - Ckt 26	AI929	x			No-Units	5	35115/35116	
Power Factor Logical Circuit 27	Instantaneous Power Factor - Ckt 27	AI930	x			No-Units	5	36115/36116	
Power Factor Logical Circuit 28	Instantaneous Power Factor - Ckt 28	AI931	x			No-Units	5	37115/37116	
Power Factor Logical Circuit 29	Instantaneous Power Factor - Ckt 29	AI932	x			No-Units	5	38115/38116	
Power Factor Logical Circuit 30	Instantaneous Power Factor - Ckt 30	AI933	x			No-Units	5	39115/39116	
Power Factor Logical Circuit 31	Instantaneous Power Factor - Ckt 31	AI934	x			No-Units	5	40115/40116	
Power Factor Logical Circuit 32	Instantaneous Power Factor - Ckt 32	AI935	x			No-Units	5	41115/41116	
Power Factor Logical Circuit 33	Instantaneous Power Factor - Ckt 33	AI936	x			No-Units	5	42115/42116	
Power Factor Logical Circuit 34	Instantaneous Power Factor - Ckt 34	AI937	x			No-Units	5	43115/43116	
Power Factor Logical Circuit 35	Instantaneous Power Factor - Ckt 35	AI938	x			No-Units	5	44115/44116	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Power Factor Logical Circuit 36	Instantaneous Power Factor - Ckt 36	AI939	x			No-Units	5	45115/45116	
Power Factor Logical Circuit 37	Instantaneous Power Factor - Ckt 37	AI940	x			No-Units	5	46115/46116	
Power Factor Logical Circuit 38	Instantaneous Power Factor - Ckt 38	AI941	x			No-Units	5	47115/47116	
Power Factor Logical Circuit 39	Instantaneous Power Factor - Ckt 39	AI942	x			No-Units	5	48115/48116	
Power Factor Logical Circuit 40	Instantaneous Power Factor - Ckt 40	AI943	x			No-Units	5	49115/49116	
Power Factor Logical Circuit 41	Instantaneous Power Factor - Ckt 41	AI944	x			No-Units	5	50115/50116	
Power Factor Logical Circuit 42	Instantaneous Power Factor - Ckt 42	AI945	x			No-Units	5	51115/51116	
Power Factor Logical Circuit 43	Instantaneous Power Factor - Ckt 43	AI946	x			No-Units	5	52115/52116	
Power Factor Logical Circuit 44	Instantaneous Power Factor - Ckt 44	AI947	x			No-Units	5	53115/53116	
Power Factor Logical Circuit 45	Instantaneous Power Factor - Ckt 45	AI948	x			No-Units	5	54115/54116	
Power Factor Logical Circuit 46	Instantaneous Power Factor - Ckt 46	AI949	x			No-Units	5	55115/55116	
Amps (Average) Logical Circuit 1	Instantaneous Current - Circuit 1	AI950	x			Amperes	5	10119/10120	
Amps (Average) Logical Circuit 2	Instantaneous Current - Circuit 2	AI951	x			Amperes	5	11119/11120	
Amps (Average) Logical Circuit 3	Instantaneous Current - Circuit 3	AI952	x			Amperes	5	12119/12120	
Amps (Average) Logical Circuit 4	Instantaneous Current - Circuit 4	AI953	x			Amperes	5	13119/13120	
Amps (Average) Logical Circuit 5	Instantaneous Current - Circuit 5	AI954	x			Amperes	5	14119/14120	
Amps (Average) Logical Circuit 6	Instantaneous Current - Circuit 6	AI955	x			Amperes	5	15119/15120	
Amps (Average) Logical Circuit 7	Instantaneous Current - Circuit 7	AI956	x			Amperes	5	16119/16120	
Amps (Average) Logical Circuit 8	Instantaneous Current - Circuit 8	AI957	x			Amperes	5	17119/17120	
Amps (Average) Logical Circuit 9	Instantaneous Current - Circuit 9	AI958	x			Amperes	5	18119/18120	
Amps (Average) Logical Circuit 10	Instantaneous Current - Circuit 10	AI959	x			Amperes	5	19119/19120	
Amps (Average) Logical Circuit 11	Instantaneous Current - Circuit 11	AI960	x			Amperes	5	20119/20120	
Amps (Average) Logical Circuit 12	Instantaneous Current - Circuit 12	AI961	x			Amperes	5	21119/21120	
Amps (Average) Logical Circuit 13	Instantaneous Current - Circuit 13	AI962	x			Amperes	5	22119/22120	
Amps (Average) Logical Circuit 14	Instantaneous Current - Circuit 14	AI963	x			Amperes	5	23119/23120	
Amps (Average) Logical Circuit 15	Instantaneous Current - Circuit 15	AI964	x			Amperes	5	24119/24120	
Amps (Average) Logical Circuit 16	Instantaneous Current - Circuit 16	AI965	x			Amperes	5	25119/25120	
Amps (Average) Logical Circuit 17	Instantaneous Current - Circuit 17	AI966	x			Amperes	5	26119/26120	
Amps (Average) Logical Circuit 18	Instantaneous Current - Circuit 18	AI967	x			Amperes	5	27119/27120	
Amps (Average) Logical Circuit 19	Instantaneous Current - Circuit 19	AI968	x			Amperes	5	28119/28120	
Amps (Average) Logical Circuit 20	Instantaneous Current - Circuit 20	AI969	x			Amperes	5	29119/29120	
Amps (Average) Logical Circuit 21	Instantaneous Current - Circuit 21	AI970	x			Amperes	5	30119/30120	
Amps (Average) Logical Circuit 22	Instantaneous Current - Circuit 22	AI971	x			Amperes	5	31119/31120	
Amps (Average) Logical Circuit 23	Instantaneous Current - Circuit 23	AI972	x			Amperes	5	32119/32120	
Amps (Average) Logical Circuit 24	Instantaneous Current - Circuit 24	AI973	x			Amperes	5	33119/33120	
Amps (Average) Logical Circuit 25	Instantaneous Current - Circuit 25	AI974	x			Amperes	5	34119/34120	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW>= V1.203	1.016-1.022	FW <V1.016				
Amps (Average) Logical Circuit 26	Instantaneous Current - Circuit 26	AI975	x			Amperes	5	35119/35120	
Amps (Average) Logical Circuit 27	Instantaneous Current - Circuit 27	AI976	x			Amperes	5	36119/36120	
Amps (Average) Logical Circuit 28	Instantaneous Current - Circuit 28	AI977	x			Amperes	5	37119/37120	
Amps (Average) Logical Circuit 29	Instantaneous Current - Circuit 29	AI978	x			Amperes	5	38119/38120	
Amps (Average) Logical Circuit 30	Instantaneous Current - Circuit 30	AI979	x			Amperes	5	39119/39120	
Amps (Average) Logical Circuit 31	Instantaneous Current - Circuit 31	AI980	x			Amperes	5	40119/40120	
Amps (Average) Logical Circuit 32	Instantaneous Current - Circuit 32	AI981	x			Amperes	5	41119/41120	
Amps (Average) Logical Circuit 33	Instantaneous Current - Circuit 33	AI982	x			Amperes	5	42119/42120	
Amps (Average) Logical Circuit 34	Instantaneous Current - Circuit 34	AI983	x			Amperes	5	43119/43120	
Amps (Average) Logical Circuit 35	Instantaneous Current - Circuit 35	AI984	x			Amperes	5	44119/44120	
Amps (Average) Logical Circuit 36	Instantaneous Current - Circuit 36	AI985	x			Amperes	5	45119/45120	
Amps (Average) Logical Circuit 37	Instantaneous Current - Circuit 37	AI986	x			Amperes	5	46119/46120	
Amps (Average) Logical Circuit 38	Instantaneous Current - Circuit 38	AI987	x			Amperes	5	47119/47120	
Amps (Average) Logical Circuit 39	Instantaneous Current - Circuit 39	AI988	x			Amperes	5	48119/48120	
Amps (Average) Logical Circuit 40	Instantaneous Current - Circuit 40	AI989	x			Amperes	5	49119/49120	
Amps (Average) Logical Circuit 41	Instantaneous Current - Circuit 41	AI990	x			Amperes	5	50119/50120	
Amps (Average) Logical Circuit 42	Instantaneous Current - Circuit 42	AI991	x			Amperes	5	51119/51120	
Amps (Average) Logical Circuit 43	Instantaneous Current - Circuit 43	AI992	x			Amperes	5	52119/52120	
Amps (Average) Logical Circuit 44	Instantaneous Current - Circuit 44	AI993	x			Amperes	5	53119/53120	
Amps (Average) Logical Circuit 45	Instantaneous Current - Circuit 45	AI994	x			Amperes	5	54119/54120	
Amps (Average) Logical Circuit 46	Instantaneous Current - Circuit 46	AI995	x			Amperes	5	55119/55120	
kW Present Demand Logical Circuit 1	Present Real Power Demand - Ckt 1	AI996	x			kW	1	10121/10122	
kW Present Demand Logical Circuit 2	Present Real Power Demand - Ckt 2	AI997	x			kW	1	11121/11122	
kW Present Demand Logical Circuit 3	Present Real Power Demand - Ckt 3	AI998	x			kW	1	12121/12122	
kW Present Demand Logical Circuit 4	Present Real Power Demand - Ckt 4	AI999	x			kW	1	13121/13122	
kW Present Demand Logical Circuit 5	Present Real Power Demand - Ckt 5	AI1000	x			kW	1	14121/14122	
kW Present Demand Logical Circuit 6	Present Real Power Demand - Ckt 6	AI1001	x			kW	1	15121/15122	
kW Present Demand Logical Circuit 7	Present Real Power Demand - Ckt 7	AI1002	x			kW	1	16121/16122	
kW Present Demand Logical Circuit 8	Present Real Power Demand - Ckt 8	AI1003	x			kW	1	17121/17122	
kW Present Demand Logical Circuit 9	Present Real Power Demand - Ckt 9	AI1004	x			kW	1	18121/18122	
kW Present Demand Logical Circuit 10	Present Real Power Demand - Ckt 10	AI1005	x			kW	1	19121/19122	
kW Present Demand Logical Circuit 11	Present Real Power Demand - Ckt 11	AI1006	x			kW	1	20121/20122	
kW Present Demand Logical Circuit 12	Present Real Power Demand - Ckt 12	AI1007	x			kW	1	21121/21122	
kW Present Demand Logical Circuit 13	Present Real Power Demand - Ckt 13	AI1008	x			kW	1	22121/22122	
kW Present Demand Logical Circuit 14	Present Real Power Demand - Ckt 14	AI1009	x			kW	1	23121/23122	
kW Present Demand Logical Circuit 15	Present Real Power Demand - Ckt 15	AI1010	x			kW	1	24121/24122	
kW Present Demand Logical Circuit 16	Present Real Power Demand - Ckt 16	AI1011	x			kW	1	25121/25122	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
kW Present Demand Logical Circuit 17	Present Real Power Demand - Ckt 17	AI1012	x			kW	1	26121/26122	
kW Present Demand Logical Circuit 18	Present Real Power Demand - Ckt 18	AI1013	x			kW	1	27121/27122	
kW Present Demand Logical Circuit 19	Present Real Power Demand - Ckt 19	AI1014	x			kW	1	28121/28122	
kW Present Demand Logical Circuit 20	Present Real Power Demand - Ckt 20	AI1015	x			kW	1	29121/29122	
kW Present Demand Logical Circuit 21	Present Real Power Demand - Ckt 21	AI1016	x			kW	1	30121/30122	
kW Present Demand Logical Circuit 22	Present Real Power Demand - Ckt 22	AI1017	x			kW	1	31121/31122	
kW Present Demand Logical Circuit 23	Present Real Power Demand - Ckt 23	AI1018	x			kW	1	32121/32122	
kW Present Demand Logical Circuit 24	Present Real Power Demand - Ckt 24	AI1019	x			kW	1	33121/33122	
kW Present Demand Logical Circuit 25	Present Real Power Demand - Ckt 25	AI1020	x			kW	1	34121/34122	
kW Present Demand Logical Circuit 26	Present Real Power Demand - Ckt 26	AI1021	x			kW	1	35121/35122	
kW Present Demand Logical Circuit 27	Present Real Power Demand - Ckt 27	AI1022	x			kW	1	36121/36122	
kW Present Demand Logical Circuit 28	Present Real Power Demand - Ckt 28	AI1023	x			kW	1	37121/37122	
kW Present Demand Logical Circuit 29	Present Real Power Demand - Ckt 29	AI1024	x			kW	1	38121/38122	
kW Present Demand Logical Circuit 30	Present Real Power Demand - Ckt 30	AI1025	x			kW	1	39121/39122	
kW Present Demand Logical Circuit 31	Present Real Power Demand - Ckt 31	AI1026	x			kW	1	40121/40122	
kW Present Demand Logical Circuit 32	Present Real Power Demand - Ckt 32	AI1027	x			kW	1	41121/41122	
kW Present Demand Logical Circuit 33	Present Real Power Demand - Ckt 33	AI1028	x			kW	1	42121/42122	
kW Present Demand Logical Circuit 34	Present Real Power Demand - Ckt 34	AI1029	x			kW	1	43121/43122	
kW Present Demand Logical Circuit 35	Present Real Power Demand - Ckt 35	AI1030	x			kW	1	44121/44122	
kW Present Demand Logical Circuit 36	Present Real Power Demand - Ckt 36	AI1031	x			kW	1	45121/45122	
kW Present Demand Logical Circuit 37	Present Real Power Demand - Ckt 37	AI1032	x			kW	1	46121/46122	
kW Present Demand Logical Circuit 38	Present Real Power Demand - Ckt 38	AI1033	x			kW	1	47121/47122	
kW Present Demand Logical Circuit 39	Present Real Power Demand - Ckt 39	AI1034	x			kW	1	48121/48122	
kW Present Demand Logical Circuit 40	Present Real Power Demand - Ckt 40	AI1035	x			kW	1	49121/49122	
kW Present Demand Logical Circuit 41	Present Real Power Demand - Ckt 41	AI1036	x			kW	1	50121/50122	
kW Present Demand Logical Circuit 42	Present Real Power Demand - Ckt 42	AI1037	x			kW	1	51121/51122	
kW Present Demand Logical Circuit 43	Present Real Power Demand - Ckt 43	AI1038	x			kW	1	52121/52122	
kW Present Demand Logical Circuit 44	Present Real Power Demand - Ckt 44	AI1039	x			kW	1	53121/53122	
kW Present Demand Logical Circuit 45	Present Real Power Demand - Ckt 45	AI1040	x			kW	1	54121/54122	
kW Present Demand Logical Circuit 46	Present Real Power Demand - Ckt 46	AI1041	x			kW	1	55121/55122	
kW Max Demand Logical Circuit 1	Max Real Power Demand - Circuit 1	AI1042	x			kW	1	10129/10130	
kW Max Demand Logical Circuit 2	Max Real Power Demand - Circuit 2	AI1043	x			kW	1	11129/11130	
kW Max Demand Logical Circuit 3	Max Real Power Demand - Circuit 3	AI1044	x			kW	1	12129/12130	
kW Max Demand Logical Circuit 4	Max Real Power Demand - Circuit 4	AI1045	x			kW	1	13129/13130	
kW Max Demand Logical Circuit 5	Max Real Power Demand - Circuit 5	AI1046	x			kW	1	14129/14130	
kW Max Demand Logical Circuit 6	Max Real Power Demand - Circuit 6	AI1047	x			kW	1	15129/15130	
kW Max Demand Logical Circuit 7	Max Real Power Demand - Circuit 7	AI1048	x			kW	1	16129/16130	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW > = V1.203	1.016-1.022	FW < V1.016				
kW Max Demand Logical Circuit 8	Max Real Power Demand - Circuit 8	AI1049	x			kW	1	17129/17130	
kW Max Demand Logical Circuit 9	Max Real Power Demand - Circuit 9	AI1050	x			kW	1	18129/18130	
kW Max Demand Logical Circuit 10	Max Real Power Demand - Circuit 10	AI1051	x			kW	1	19129/19130	
kW Max Demand Logical Circuit 11	Max Real Power Demand - Circuit 11	AI1052	x			kW	1	20129/20130	
kW Max Demand Logical Circuit 12	Max Real Power Demand - Circuit 12	AI1053	x			kW	1	21129/21130	
kW Max Demand Logical Circuit 13	Max Real Power Demand - Circuit 13	AI1054	x			kW	1	22129/22130	
kW Max Demand Logical Circuit 14	Max Real Power Demand - Circuit 14	AI1055	x			kW	1	23129/23130	
kW Max Demand Logical Circuit 15	Max Real Power Demand - Circuit 15	AI1056	x			kW	1	24129/24130	
kW Max Demand Logical Circuit 16	Max Real Power Demand - Circuit 16	AI1057	x			kW	1	25129/25130	
kW Max Demand Logical Circuit 17	Max Real Power Demand - Circuit 17	AI1058	x			kW	1	26129/26130	
kW Max Demand Logical Circuit 18	Max Real Power Demand - Circuit 18	AI1059	x			kW	1	27129/27130	
kW Max Demand Logical Circuit 19	Max Real Power Demand - Circuit 19	AI1060	x			kW	1	28129/28130	
kW Max Demand Logical Circuit 20	Max Real Power Demand - Circuit 20	AI1061	x			kW	1	29129/29130	
kW Max Demand Logical Circuit 21	Max Real Power Demand - Circuit 21	AI1062	x			kW	1	30129/30130	
kW Max Demand Logical Circuit 22	Max Real Power Demand - Circuit 22	AI1063	x			kW	1	31129/31130	
kW Max Demand Logical Circuit 23	Max Real Power Demand - Circuit 23	AI1064	x			kW	1	32129/32130	
kW Max Demand Logical Circuit 24	Max Real Power Demand - Circuit 24	AI1065	x			kW	1	33129/33130	
kW Max Demand Logical Circuit 25	Max Real Power Demand - Circuit 25	AI1066	x			kW	1	34129/34130	
kW Max Demand Logical Circuit 26	Max Real Power Demand - Circuit 26	AI1067	x			kW	1	35129/35130	
kW Max Demand Logical Circuit 27	Max Real Power Demand - Circuit 27	AI1068	x			kW	1	36129/36130	
kW Max Demand Logical Circuit 28	Max Real Power Demand - Circuit 28	AI1069	x			kW	1	37129/37130	
kW Max Demand Logical Circuit 29	Max Real Power Demand - Circuit 29	AI1070	x			kW	1	38129/38130	
kW Max Demand Logical Circuit 30	Max Real Power Demand - Circuit 30	AI1071	x			kW	1	39129/39130	
kW Max Demand Logical Circuit 31	Max Real Power Demand - Circuit 31	AI1072	x			kW	1	40129/40130	
kW Max Demand Logical Circuit 32	Max Real Power Demand - Circuit 32	AI1073	x			kW	1	41129/41130	
kW Max Demand Logical Circuit 33	Max Real Power Demand - Circuit 33	AI1074	x			kW	1	42129/42130	
kW Max Demand Logical Circuit 34	Max Real Power Demand - Circuit 34	AI1075	x			kW	1	43129/43130	
kW Max Demand Logical Circuit 35	Max Real Power Demand - Circuit 35	AI1076	x			kW	1	44129/44130	
kW Max Demand Logical Circuit 36	Max Real Power Demand - Circuit 36	AI1077	x			kW	1	45129/45130	
kW Max Demand Logical Circuit 37	Max Real Power Demand - Circuit 37	AI1078	x			kW	1	46129/46130	
kW Max Demand Logical Circuit 38	Max Real Power Demand - Circuit 38	AI1079	x			kW	1	47129/47130	
kW Max Demand Logical Circuit 39	Max Real Power Demand - Circuit 39	AI1080	x			kW	1	48129/48130	
kW Max Demand Logical Circuit 40	Max Real Power Demand - Circuit 40	AI1081	x			kW	1	49129/49130	
kW Max Demand Logical Circuit 41	Max Real Power Demand - Circuit 41	AI1082	x			kW	1	50129/50130	
kW Max Demand Logical Circuit 42	Max Real Power Demand - Circuit 42	AI1083	x			kW	1	51129/51130	
kW Max Demand Logical Circuit 43	Max Real Power Demand - Circuit 43	AI1084	x			kW	1	52129/52130	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
kW Max Demand Logical Circuit 44	Max Real Power Demand - Circuit 44	AI1085	x			kW	1	53129/53130	
kW Max Demand Logical Circuit 45	Max Real Power Demand - Circuit 45	AI1086	x			kW	1	54129/54130	
kW Max Demand Logical Circuit 46	Max Real Power Demand - Circuit 46	AI1087	x			kW	1	55129/55130	
kW Max Logical Circuit 1	Max Instantaneous Real Power - Ckt 1	AI1088	x			kW	1	10137/10138	
kW Max Logical Circuit 2	Max Instantaneous Real Power - Ckt 2	AI1089	x			kW	1	11137/11138	
kW Max Logical Circuit 3	Max Instantaneous Real Power - Ckt 3	AI1090	x			kW	1	12137/12138	
kW Max Logical Circuit 4	Max Instantaneous Real Power - Ckt 4	AI1091	x			kW	1	13137/13138	
kW Max Logical Circuit 5	Max Instantaneous Real Power - Ckt 5	AI1092	x			kW	1	14137/14138	
kW Max Logical Circuit 6	Max Instantaneous Real Power - Ckt 6	AI1093	x			kW	1	15137/15138	
kW Max Logical Circuit 7	Max Instantaneous Real Power - Ckt 7	AI1094	x			kW	1	16137/16138	
kW Max Logical Circuit 8	Max Instantaneous Real Power - Ckt 8	AI1095	x			kW	1	17137/17138	
kW Max Logical Circuit 9	Max Instantaneous Real Power - Ckt 9	AI1096	x			kW	1	18137/18138	
kW Max Logical Circuit 10	Max Instantaneous Real Power - Ckt 10	AI1097	x			kW	1	19137/19138	
kW Max Logical Circuit 11	Max Instantaneous Real Power - Ckt 11	AI1098	x			kW	1	20137/20138	
kW Max Logical Circuit 12	Max Instantaneous Real Power - Ckt 12	AI1099	x			kW	1	21137/21138	
kW Max Logical Circuit 13	Max Instantaneous Real Power - Ckt 13	AI1100	x			kW	1	22137/22138	
kW Max Logical Circuit 14	Max Instantaneous Real Power - Ckt 14	AI1101	x			kW	1	23137/23138	
kW Max Logical Circuit 15	Max Instantaneous Real Power - Ckt 15	AI1102	x			kW	1	24137/24138	
kW Max Logical Circuit 16	Max Instantaneous Real Power - Ckt 16	AI1103	x			kW	1	25137/25138	
kW Max Logical Circuit 17	Max Instantaneous Real Power - Ckt 17	AI1104	x			kW	1	26137/26138	
kW Max Logical Circuit 18	Max Instantaneous Real Power - Ckt 18	AI1105	x			kW	1	27137/27138	
kW Max Logical Circuit 19	Max Instantaneous Real Power - Ckt 19	AI1106	x			kW	1	28137/28138	
kW Max Logical Circuit 20	Max Instantaneous Real Power - Ckt 20	AI1107	x			kW	1	29137/29138	
kW Max Logical Circuit 21	Max Instantaneous Real Power - Ckt 21	AI1108	x			kW	1	30137/30138	
kW Max Logical Circuit 22	Max Instantaneous Real Power - Ckt 22	AI1109	x			kW	1	31137/31138	
kW Max Logical Circuit 23	Max Instantaneous Real Power - Ckt 23	AI1110	x			kW	1	32137/32138	
kW Max Logical Circuit 24	Max Instantaneous Real Power - Ckt 24	AI1111	x			kW	1	33137/33138	
kW Max Logical Circuit 25	Max Instantaneous Real Power - Ckt 25	AI1112	x			kW	1	34137/34138	
kW Max Logical Circuit 26	Max Instantaneous Real Power - Ckt 26	AI1113	x			kW	1	35137/35138	
kW Max Logical Circuit 27	Max Instantaneous Real Power - Ckt 27	AI1114	x			kW	1	36137/36138	
kW Max Logical Circuit 28	Max Instantaneous Real Power - Ckt 28	AI1115	x			kW	1	37137/37138	
kW Max Logical Circuit 29	Max Instantaneous Real Power - Ckt 29	AI1116	x			kW	1	38137/38138	
kW Max Logical Circuit 30	Max Instantaneous Real Power - Ckt 30	AI1117	x			kW	1	39137/39138	
kW Max Logical Circuit 31	Max Instantaneous Real Power - Ckt 31	AI1118	x			kW	1	40137/40138	
kW Max Logical Circuit 32	Max Instantaneous Real Power - Ckt 32	AI1119	x			kW	1	41137/41138	
kW Max Logical Circuit 33	Max Instantaneous Real Power - Ckt 33	AI1120	x			kW	1	42137/42138	
kW Max Logical Circuit 34	Max Instantaneous Real Power - Ckt 34	AI1121	x			kW	1	43137/43138	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
kW Max Logical Circuit 35	Max Instantaneous Real Power - Ckt 35	AI1122	x			kW	1	44137/44138	
kW Max Logical Circuit 36	Max Instantaneous Real Power - Ckt 36	AI1123	x			kW	1	45137/45138	
kW Max Logical Circuit 37	Max Instantaneous Real Power - Ckt 37	AI1124	x			kW	1	46137/46138	
kW Max Logical Circuit 38	Max Instantaneous Real Power - Ckt 38	AI1125	x			kW	1	47137/47138	
kW Max Logical Circuit 39	Max Instantaneous Real Power - Ckt 39	AI1126	x			kW	1	48137/48138	
kW Max Logical Circuit 40	Max Instantaneous Real Power - Ckt 40	AI1127	x			kW	1	49137/49138	
kW Max Logical Circuit 41	Max Instantaneous Real Power - Ckt 41	AI1128	x			kW	1	50137/50138	
kW Max Logical Circuit 42	Max Instantaneous Real Power - Ckt 42	AI1129	x			kW	1	51137/51138	
kW Max Logical Circuit 43	Max Instantaneous Real Power - Ckt 43	AI1130	x			kW	1	52137/52138	
kW Max Logical Circuit 44	Max Instantaneous Real Power - Ckt 44	AI1131	x			kW	1	53137/53138	
kW Max Logical Circuit 45	Max Instantaneous Real Power - Ckt 45	AI1132	x			kW	1	54137/54138	
kW Max Logical Circuit 46	Max Instantaneous Real Power - Ckt 46	AI1133	x			kW	1	55137/55138	
kWh Snapshot Logical Circuit 1	Energy Snapshot - Circuit 1	AI1134	x			kWh	0	10157/10158	
kWh Snapshot Logical Circuit 2	Energy Snapshot - Circuit 2	AI1135	x			kWh	0	11157/11158	
kWh Snapshot Logical Circuit 3	Energy Snapshot - Circuit 3	AI1136	x			kWh	0	12157/12158	
kWh Snapshot Logical Circuit 4	Energy Snapshot - Circuit 4	AI1137	x			kWh	0	13157/13158	
kWh Snapshot Logical Circuit 5	Energy Snapshot - Circuit 5	AI1138	x			kWh	0	14157/14158	
kWh Snapshot Logical Circuit 6	Energy Snapshot - Circuit 6	AI1139	x			kWh	0	15157/15158	
kWh Snapshot Logical Circuit 7	Energy Snapshot - Circuit 7	AI1140	x			kWh	0	16157/16158	
kWh Snapshot Logical Circuit 8	Energy Snapshot - Circuit 8	AI1141	x			kWh	0	17157/17158	
kWh Snapshot Logical Circuit 9	Energy Snapshot - Circuit 9	AI1142	x			kWh	0	18157/18158	
kWh Snapshot Logical Circuit 10	Energy Snapshot - Circuit 10	AI1143	x			kWh	0	19157/19158	
kWh Snapshot Logical Circuit 11	Energy Snapshot - Circuit 11	AI1144	x			kWh	0	20157/20158	
kWh Snapshot Logical Circuit 12	Energy Snapshot - Circuit 12	AI1145	x			kWh	0	21157/21158	
kWh Snapshot Logical Circuit 13	Energy Snapshot - Circuit 13	AI1146	x			kWh	0	22157/22158	
kWh Snapshot Logical Circuit 14	Energy Snapshot - Circuit 14	AI1147	x			kWh	0	23157/23158	
kWh Snapshot Logical Circuit 15	Energy Snapshot - Circuit 15	AI1148	x			kWh	0	24157/24158	
kWh Snapshot Logical Circuit 16	Energy Snapshot - Circuit 16	AI1149	x			kWh	0	25157/25158	
kWh Snapshot Logical Circuit 17	Energy Snapshot - Circuit 17	AI1150	x			kWh	0	26157/26158	
kWh Snapshot Logical Circuit 18	Energy Snapshot - Circuit 18	AI1151	x			kWh	0	27157/27158	
kWh Snapshot Logical Circuit 19	Energy Snapshot - Circuit 19	AI1152	x			kWh	0	28157/28158	
kWh Snapshot Logical Circuit 20	Energy Snapshot - Circuit 20	AI1153	x			kWh	0	29157/29158	
kWh Snapshot Logical Circuit 21	Energy Snapshot - Circuit 21	AI1154	x			kWh	0	30157/30158	
kWh Snapshot Logical Circuit 22	Energy Snapshot - Circuit 22	AI1155	x			kWh	0	31157/31158	
kWh Snapshot Logical Circuit 23	Energy Snapshot - Circuit 23	AI1156	x			kWh	0	32157/32158	
kWh Snapshot Logical Circuit 24	Energy Snapshot - Circuit 24	AI1157	x			kWh	0	33157/33158	
kWh Snapshot Logical Circuit 25	Energy Snapshot - Circuit 25	AI1158	x			kWh	0	34157/34158	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW <V1.016				
kWh Snapshot Logical Circuit 26	Energy Snapshot - Circuit 26	AI1159	x			kWh	0	35157/35158	
kWh Snapshot Logical Circuit 27	Energy Snapshot - Circuit 27	AI1160	x			kWh	0	36157/36158	
kWh Snapshot Logical Circuit 28	Energy Snapshot - Circuit 28	AI1161	x			kWh	0	37157/37158	
kWh Snapshot Logical Circuit 29	Energy Snapshot - Circuit 29	AI1162	x			kWh	0	38157/38158	
kWh Snapshot Logical Circuit 30	Energy Snapshot - Circuit 30	AI1163	x			kWh	0	39157/39158	
kWh Snapshot Logical Circuit 31	Energy Snapshot - Circuit 31	AI1164	x			kWh	0	40157/40158	
kWh Snapshot Logical Circuit 32	Energy Snapshot - Circuit 32	AI1165	x			kWh	0	41157/41158	
kWh Snapshot Logical Circuit 33	Energy Snapshot - Circuit 33	AI1166	x			kWh	0	42157/42158	
kWh Snapshot Logical Circuit 34	Energy Snapshot - Circuit 34	AI1167	x			kWh	0	43157/43158	
kWh Snapshot Logical Circuit 35	Energy Snapshot - Circuit 35	AI1168	x			kWh	0	44157/44158	
kWh Snapshot Logical Circuit 36	Energy Snapshot - Circuit 36	AI1169	x			kWh	0	45157/45158	
kWh Snapshot Logical Circuit 37	Energy Snapshot - Circuit 37	AI1170	x			kWh	0	46157/46158	
kWh Snapshot Logical Circuit 38	Energy Snapshot - Circuit 38	AI1171	x			kWh	0	47157/47158	
kWh Snapshot Logical Circuit 39	Energy Snapshot - Circuit 39	AI1172	x			kWh	0	48157/48158	
kWh Snapshot Logical Circuit 40	Energy Snapshot - Circuit 40	AI1173	x			kWh	0	49157/49158	
kWh Snapshot Logical Circuit 41	Energy Snapshot - Circuit 41	AI1174	x			kWh	0	50157/50158	
kWh Snapshot Logical Circuit 42	Energy Snapshot - Circuit 42	AI1175	x			kWh	0	51157/51158	
kWh Snapshot Logical Circuit 43	Energy Snapshot - Circuit 43	AI1176	x			kWh	0	52157/52158	
kWh Snapshot Logical Circuit 44	Energy Snapshot - Circuit 44	AI1177	x			kWh	0	53157/53158	
kWh Snapshot Logical Circuit 45	Energy Snapshot - Circuit 45	AI1178	x			kWh	0	54157/54158	
kWh Snapshot Logical Circuit 46	Energy Snapshot - Circuit 46	AI1179	x			kWh	0	55157/55158	
Amps Demand Logical Circuit 1	Present Current Demand - Circuit 1	AI1180	x			Amperes	5	10127/10128	
Amps Demand Logical Circuit 2	Present Current Demand - Circuit 2	AI1181	x			Amperes	5	11127/11128	
Amps Demand Logical Circuit 3	Present Current Demand - Circuit 3	AI1182	x			Amperes	5	12127/12128	
Amps Demand Logical Circuit 4	Present Current Demand - Circuit 4	AI1183	x			Amperes	5	13127/13128	
Amps Demand Logical Circuit 5	Present Current Demand - Circuit 5	AI1184	x			Amperes	5	14127/14128	
Amps Demand Logical Circuit 6	Present Current Demand - Circuit 6	AI1185	x			Amperes	5	15127/15128	
Amps Demand Logical Circuit 7	Present Current Demand - Circuit 7	AI1186	x			Amperes	5	16127/16128	
Amps Demand Logical Circuit 8	Present Current Demand - Circuit 8	AI1187	x			Amperes	5	17127/17128	
Amps Demand Logical Circuit 9	Present Current Demand - Circuit 9	AI1188	x			Amperes	5	18127/18128	
Amps Demand Logical Circuit 10	Present Current Demand - Circuit 10	AI1189	x			Amperes	5	19127/19128	
Amps Demand Logical Circuit 11	Present Current Demand - Circuit 11	AI1190	x			Amperes	5	20127/20128	
Amps Demand Logical Circuit 12	Present Current Demand - Circuit 12	AI1191	x			Amperes	5	21127/21128	
Amps Demand Logical Circuit 13	Present Current Demand - Circuit 13	AI1192	x			Amperes	5	22127/22128	
Amps Demand Logical Circuit 14	Present Current Demand - Circuit 14	AI1193	x			Amperes	5	23127/23128	
Amps Demand Logical Circuit 15	Present Current Demand - Circuit 15	AI1194	x			Amperes	5	24127/24128	
Amps Demand Logical Circuit 16	Present Current Demand - Circuit 16	AI1195	x			Amperes	5	25127/25128	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Amps Demand Logical Circuit 17	Present Current Demand - Circuit 17	AI1196	x			Amperes	5	26127/26128	
Amps Demand Logical Circuit 18	Present Current Demand - Circuit 18	AI1197	x			Amperes	5	27127/27128	
Amps Demand Logical Circuit 19	Present Current Demand - Circuit 19	AI1198	x			Amperes	5	28127/28128	
Amps Demand Logical Circuit 20	Present Current Demand - Circuit 20	AI1199	x			Amperes	5	29127/29128	
Amps Demand Logical Circuit 21	Present Current Demand - Circuit 21	AI1200	x			Amperes	5	30127/30128	
Amps Demand Logical Circuit 22	Present Current Demand - Circuit 22	AI1201	x			Amperes	5	31127/31128	
Amps Demand Logical Circuit 23	Present Current Demand - Circuit 23	AI1202	x			Amperes	5	32127/32128	
Amps Demand Logical Circuit 24	Present Current Demand - Circuit 24	AI1203	x			Amperes	5	33127/33128	
Amps Demand Logical Circuit 25	Present Current Demand - Circuit 25	AI1204	x			Amperes	5	34127/34128	
Amps Demand Logical Circuit 26	Present Current Demand - Circuit 26	AI1205	x			Amperes	5	35127/35128	
Amps Demand Logical Circuit 27	Present Current Demand - Circuit 27	AI1206	x			Amperes	5	36127/36128	
Amps Demand Logical Circuit 28	Present Current Demand - Circuit 28	AI1207	x			Amperes	5	37127/37128	
Amps Demand Logical Circuit 29	Present Current Demand - Circuit 29	AI1208	x			Amperes	5	38127/38128	
Amps Demand Logical Circuit 30	Present Current Demand - Circuit 30	AI1209	x			Amperes	5	39127/39128	
Amps Demand Logical Circuit 31	Present Current Demand - Circuit 31	AI1210	x			Amperes	5	40127/40128	
Amps Demand Logical Circuit 32	Present Current Demand - Circuit 32	AI1211	x			Amperes	5	41127/41128	
Amps Demand Logical Circuit 33	Present Current Demand - Circuit 33	AI1212	x			Amperes	5	42127/42128	
Amps Demand Logical Circuit 34	Present Current Demand - Circuit 34	AI1213	x			Amperes	5	43127/43128	
Amps Demand Logical Circuit 35	Present Current Demand - Circuit 35	AI1214	x			Amperes	5	44127/44128	
Amps Demand Logical Circuit 36	Present Current Demand - Circuit 36	AI1215	x			Amperes	5	45127/45128	
Amps Demand Logical Circuit 37	Present Current Demand - Circuit 37	AI1216	x			Amperes	5	46127/46128	
Amps Demand Logical Circuit 38	Present Current Demand - Circuit 38	AI1217	x			Amperes	5	47127/47128	
Amps Demand Logical Circuit 39	Present Current Demand - Circuit 39	AI1218	x			Amperes	5	48127/48128	
Amps Demand Logical Circuit 40	Present Current Demand - Circuit 40	AI1219	x			Amperes	5	49127/49128	
Amps Demand Logical Circuit 41	Present Current Demand - Circuit 41	AI1220	x			Amperes	5	50127/50128	
Amps Demand Logical Circuit 42	Present Current Demand - Circuit 42	AI1221	x			Amperes	5	51127/51128	
Amps Demand Logical Circuit 43	Present Current Demand - Circuit 43	AI1222	x			Amperes	5	52127/52128	
Amps Demand Logical Circuit 44	Present Current Demand - Circuit 44	AI1223	x			Amperes	5	53127/53128	
Amps Demand Logical Circuit 45	Present Current Demand - Circuit 45	AI1224	x			Amperes	5	54127/54128	
Amps Demand Logical Circuit 46	Present Current Demand - Circuit 46	AI1225	x			Amperes	5	55127/55128	
Amps Max Demand Logical Circuit 1	Maximum Current Demand - Circuit 1	AI1226	x			Amperes	5	10135/10136	
Amps Max Demand Logical Circuit 2	Maximum Current Demand - Circuit 2	AI1227	x			Amperes	5	11135/11136	
Amps Max Demand Logical Circuit 3	Maximum Current Demand - Circuit 3	AI1228	x			Amperes	5	12135/12136	
Amps Max Demand Logical Circuit 4	Maximum Current Demand - Circuit 4	AI1229	x			Amperes	5	13135/13136	
Amps Max Demand Logical Circuit 5	Maximum Current Demand - Circuit 5	AI1230	x			Amperes	5	14135/14136	
Amps Max Demand Logical Circuit 6	Maximum Current Demand - Circuit 6	AI1231	x			Amperes	5	15135/15136	
Amps Max Demand Logical Circuit 7	Maximum Current Demand - Circuit 7	AI1232	x			Amperes	5	16135/16136	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Amps Max Demand Logical Circuit 8	Maximum Current Demand - Circuit 8	AI1233	x			Amperes	5	17135/17136	
Amps Max Demand Logical Circuit 9	Maximum Current Demand - Circuit 9	AI1234	x			Amperes	5	18135/18136	
Amps Max Demand Logical Circuit 10	Maximum Current Demand - Circuit 10	AI1235	x			Amperes	5	19135/19136	
Amps Max Demand Logical Circuit 11	Maximum Current Demand - Circuit 11	AI1236	x			Amperes	5	20135/20136	
Amps Max Demand Logical Circuit 12	Maximum Current Demand - Circuit 12	AI1237	x			Amperes	5	21135/21136	
Amps Max Demand Logical Circuit 13	Maximum Current Demand - Circuit 13	AI1238	x			Amperes	5	22135/22136	
Amps Max Demand Logical Circuit 14	Maximum Current Demand - Circuit 14	AI1239	x			Amperes	5	23135/23136	
Amps Max Demand Logical Circuit 15	Maximum Current Demand - Circuit 15	AI1240	x			Amperes	5	24135/24136	
Amps Max Demand Logical Circuit 16	Maximum Current Demand - Circuit 16	AI1241	x			Amperes	5	25135/25136	
Amps Max Demand Logical Circuit 17	Maximum Current Demand - Circuit 17	AI1242	x			Amperes	5	26135/26136	
Amps Max Demand Logical Circuit 18	Maximum Current Demand - Circuit 18	AI1243	x			Amperes	5	27135/27136	
Amps Max Demand Logical Circuit 19	Maximum Current Demand - Circuit 19	AI1244	x			Amperes	5	28135/28136	
Amps Max Demand Logical Circuit 20	Maximum Current Demand - Circuit 20	AI1245	x			Amperes	5	29135/29136	
Amps Max Demand Logical Circuit 21	Maximum Current Demand - Circuit 21	AI1246	x			Amperes	5	30135/30136	
Amps Max Demand Logical Circuit 22	Maximum Current Demand - Circuit 22	AI1247	x			Amperes	5	31135/31136	
Amps Max Demand Logical Circuit 23	Maximum Current Demand - Circuit 23	AI1248	x			Amperes	5	32135/32136	
Amps Max Demand Logical Circuit 24	Maximum Current Demand - Circuit 24	AI1249	x			Amperes	5	33135/33136	
Amps Max Demand Logical Circuit 25	Maximum Current Demand - Circuit 25	AI1250	x			Amperes	5	34135/34136	
Amps Max Demand Logical Circuit 26	Maximum Current Demand - Circuit 26	AI1251	x			Amperes	5	35135/35136	
Amps Max Demand Logical Circuit 27	Maximum Current Demand - Circuit 27	AI1252	x			Amperes	5	36135/36136	
Amps Max Demand Logical Circuit 28	Maximum Current Demand - Circuit 28	AI1253	x			Amperes	5	37135/37136	
Amps Max Demand Logical Circuit 29	Maximum Current Demand - Circuit 29	AI1254	x			Amperes	5	38135/38136	
Amps Max Demand Logical Circuit 30	Maximum Current Demand - Circuit 30	AI1255	x			Amperes	5	39135/39136	
Amps Max Demand Logical Circuit 31	Maximum Current Demand - Circuit 31	AI1256	x			Amperes	5	40135/40136	
Amps Max Demand Logical Circuit 32	Maximum Current Demand - Circuit 32	AI1257	x			Amperes	5	41135/41136	
Amps Max Demand Logical Circuit 33	Maximum Current Demand - Circuit 33	AI1258	x			Amperes	5	42135/42136	
Amps Max Demand Logical Circuit 34	Maximum Current Demand - Circuit 34	AI1259	x			Amperes	5	43135/43136	
Amps Max Demand Logical Circuit 35	Maximum Current Demand - Circuit 35	AI1260	x			Amperes	5	44135/44136	
Amps Max Demand Logical Circuit 36	Maximum Current Demand - Circuit 36	AI1261	x			Amperes	5	45135/45136	
Amps Max Demand Logical Circuit 37	Maximum Current Demand - Circuit 37	AI1262	x			Amperes	5	46135/46136	
Amps Max Demand Logical Circuit 38	Maximum Current Demand - Circuit 38	AI1263	x			Amperes	5	47135/47136	
Amps Max Demand Logical Circuit 39	Maximum Current Demand - Circuit 39	AI1264	x			Amperes	5	48135/48136	
Amps Max Demand Logical Circuit 40	Maximum Current Demand - Circuit 40	AI1265	x			Amperes	5	49135/49136	
Amps Max Demand Logical Circuit 41	Maximum Current Demand - Circuit 41	AI1266	x			Amperes	5	50135/50136	
Amps Max Demand Logical Circuit 42	Maximum Current Demand - Circuit 42	AI1267	x			Amperes	5	51135/51136	
Amps Max Demand Logical Circuit 43	Maximum Current Demand - Circuit 43	AI1268	x			Amperes	5	52135/52136	
Amps Max Demand Logical Circuit 44	Maximum Current Demand - Circuit 44	AI1269	x			Amperes	5	53135/53136	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Amps Max Demand Logical Circuit 45	Maximum Current Demand - Circuit 45	AI1270	x			Amperes	5	54135/54136	
Amps Max Demand Logical Circuit 46	Maximum Current Demand - Circuit 46	AI1271	x			Amperes	5	55135/55136	
Amps (Maximum) Logical Circuit 1	Maximum Instantaneous Current - Ckt 1	AI1272	x			Amperes	5	10143/10144	
Amps (Maximum) Logical Circuit 2	Maximum Instantaneous Current - Ckt 2	AI1273	x			Amperes	5	11143/11144	
Amps (Maximum) Logical Circuit 3	Maximum Instantaneous Current - Ckt 3	AI1274	x			Amperes	5	12143/12144	
Amps (Maximum) Logical Circuit 4	Maximum Instantaneous Current - Ckt 4	AI1275	x			Amperes	5	13143/13144	
Amps (Maximum) Logical Circuit 5	Maximum Instantaneous Current - Ckt 5	AI1276	x			Amperes	5	14143/14144	
Amps (Maximum) Logical Circuit 6	Maximum Instantaneous Current - Ckt 6	AI1277	x			Amperes	5	15143/15144	
Amps (Maximum) Logical Circuit 7	Maximum Instantaneous Current - Ckt 7	AI1278	x			Amperes	5	16143/16144	
Amps (Maximum) Logical Circuit 8	Maximum Instantaneous Current - Ckt 8	AI1279	x			Amperes	5	17143/17144	
Amps (Maximum) Logical Circuit 9	Maximum Instantaneous Current - Ckt 9	AI1280	x			Amperes	5	18143/18144	
Amps (Maximum) Logical Circuit 10	Maximum Instantaneous Current - Ckt 10	AI1281	x			Amperes	5	19143/19144	
Amps (Maximum) Logical Circuit 11	Maximum Instantaneous Current - Ckt 11	AI1282	x			Amperes	5	20143/20144	
Amps (Maximum) Logical Circuit 12	Maximum Instantaneous Current - Ckt 12	AI1283	x			Amperes	5	21143/21144	
Amps (Maximum) Logical Circuit 13	Maximum Instantaneous Current - Ckt 13	AI1284	x			Amperes	5	22143/22144	
Amps (Maximum) Logical Circuit 14	Maximum Instantaneous Current - Ckt 14	AI1285	x			Amperes	5	23143/23144	
Amps (Maximum) Logical Circuit 15	Maximum Instantaneous Current - Ckt 15	AI1286	x			Amperes	5	24143/24144	
Amps (Maximum) Logical Circuit 16	Maximum Instantaneous Current - Ckt 16	AI1287	x			Amperes	5	25143/25144	
Amps (Maximum) Logical Circuit 17	Maximum Instantaneous Current - Ckt 17	AI1288	x			Amperes	5	26143/26144	
Amps (Maximum) Logical Circuit 18	Maximum Instantaneous Current - Ckt 18	AI1289	x			Amperes	5	27143/27144	
Amps (Maximum) Logical Circuit 19	Maximum Instantaneous Current - Ckt 19	AI1290	x			Amperes	5	28143/28144	
Amps (Maximum) Logical Circuit 20	Maximum Instantaneous Current - Ckt 20	AI1291	x			Amperes	5	29143/29144	
Amps (Maximum) Logical Circuit 21	Maximum Instantaneous Current - Ckt 21	AI1292	x			Amperes	5	30143/30144	
Amps (Maximum) Logical Circuit 22	Maximum Instantaneous Current - Ckt 22	AI1293	x			Amperes	5	31143/31144	
Amps (Maximum) Logical Circuit 23	Maximum Instantaneous Current - Ckt 23	AI1294	x			Amperes	5	32143/32144	
Amps (Maximum) Logical Circuit 24	Maximum Instantaneous Current - Ckt 24	AI1295	x			Amperes	5	33143/33144	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Amps (Maximum) Logical Circuit 25	Maximum Instantaneous Current - Ckt 25	AI1296	x			Amperes	5	34143/34144	
Amps (Maximum) Logical Circuit 26	Maximum Instantaneous Current - Ckt 26	AI1297	x			Amperes	5	35143/35144	
Amps (Maximum) Logical Circuit 27	Maximum Instantaneous Current - Ckt 27	AI1298	x			Amperes	5	36143/36144	
Amps (Maximum) Logical Circuit 28	Maximum Instantaneous Current - Ckt 28	AI1299	x			Amperes	5	37143/37144	
Amps (Maximum) Logical Circuit 29	Maximum Instantaneous Current - Ckt 29	AI1300	x			Amperes	5	38143/38144	
Amps (Maximum) Logical Circuit 30	Maximum Instantaneous Current - Ckt 30	AI1301	x			Amperes	5	39143/39144	
Amps (Maximum) Logical Circuit 31	Maximum Instantaneous Current - Ckt 31	AI1302	x			Amperes	5	40143/40144	
Amps (Maximum) Logical Circuit 32	Maximum Instantaneous Current - Ckt 32	AI1303	x			Amperes	5	41143/41144	
Amps (Maximum) Logical Circuit 33	Maximum Instantaneous Current - Ckt 33	AI1304	x			Amperes	5	42143/42144	
Amps (Maximum) Logical Circuit 34	Maximum Instantaneous Current - Ckt 34	AI1305	x			Amperes	5	43143/43144	
Amps (Maximum) Logical Circuit 35	Maximum Instantaneous Current - Ckt 35	AI1306	x			Amperes	5	44143/44144	
Amps (Maximum) Logical Circuit 36	Maximum Instantaneous Current - Ckt 36	AI1307	x			Amperes	5	45143/45144	
Amps (Maximum) Logical Circuit 37	Maximum Instantaneous Current - Ckt 37	AI1308	x			Amperes	5	46143/46144	
Amps (Maximum) Logical Circuit 38	Maximum Instantaneous Current - Ckt 38	AI1309	x			Amperes	5	47143/47144	
Amps (Maximum) Logical Circuit 39	Maximum Instantaneous Current - Ckt 39	AI1310	x			Amperes	5	48143/48144	
Amps (Maximum) Logical Circuit 40	Maximum Instantaneous Current - Ckt 40	AI1311	x			Amperes	5	49143/49144	
Amps (Maximum) Logical Circuit 41	Maximum Instantaneous Current - Ckt 41	AI1312	x			Amperes	5	50143/50144	
Amps (Maximum) Logical Circuit 42	Maximum Instantaneous Current - Ckt 42	AI1313	x			Amperes	5	51143/51144	
Amps (Maximum) Logical Circuit 43	Maximum Instantaneous Current - Ckt 43	AI1314	x			Amperes	5	52143/52144	
Amps (Maximum) Logical Circuit 44	Maximum Instantaneous Current - Ckt 44	AI1315	x			Amperes	5	53143/53144	
Amps (Maximum) Logical Circuit 45	Maximum Instantaneous Current - Ckt 45	AI1316	x			Amperes	5	54143/54144	
Amps (Maximum) Logical Circuit 46	Maximum Instantaneous Current - Ckt 46	AI1317	x			Amperes	5	55143/55144	
Phase Angle Channel 1	Current Phase Angle - Channel 1	AI1318	x			degrees-angular	5	2924/2925	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Phase Angle Channel 2	Current Phase Angle - Channel 2	AI1319	x			degrees-angular	5	2926/2927	
Phase Angle Channel 3	Current Phase Angle - Channel 3	AI1320	x			degrees-angular	5	2928/2929	
Phase Angle Channel 4	Current Phase Angle - Channel 4	AI1321	x			degrees-angular	5	2930/2931	
Phase Angle Channel 5	Current Phase Angle - Channel 5	AI1322	x			degrees-angular	5	2932/2933	
Phase Angle Channel 6	Current Phase Angle - Channel 6	AI1323	x			degrees-angular	5	2934/2935	
Phase Angle Channel 7	Current Phase Angle - Channel 7	AI1324	x			degrees-angular	5	2936/2937	
Phase Angle Channel 8	Current Phase Angle - Channel 8	AI1325	x			degrees-angular	5	2938/2939	
Phase Angle Channel 9	Current Phase Angle - Channel 9	AI1326	x			degrees-angular	5	2940/2941	
Phase Angle Channel 10	Current Phase Angle - Channel 10	AI1327	x			degrees-angular	5	2942/2943	
Phase Angle Channel 11	Current Phase Angle - Channel 11	AI1328	x			degrees-angular	5	2944/2945	
Phase Angle Channel 12	Current Phase Angle - Channel 12	AI1329	x			degrees-angular	5	2946/2947	
Phase Angle Channel 13	Current Phase Angle - Channel 13	AI1330	x			degrees-angular	5	2948/2949	
Phase Angle Channel 14	Current Phase Angle - Channel 14	AI1331	x			degrees-angular	5	2950/2951	
Phase Angle Channel 15	Current Phase Angle - Channel 15	AI1332	x			degrees-angular	5	2952/2953	
Phase Angle Channel 16	Current Phase Angle - Channel 16	AI1333	x			degrees-angular	5	2954/2955	
Phase Angle Channel 17	Current Phase Angle - Channel 17	AI1334	x			degrees-angular	5	2956/2957	
Phase Angle Channel 18	Current Phase Angle - Channel 18	AI1335	x			degrees-angular	5	2958/2959	
Phase Angle Channel 19	Current Phase Angle - Channel 19	AI1336	x			degrees-angular	5	2960/2961	
Phase Angle Channel 20	Current Phase Angle - Channel 20	AI1337	x			degrees-angular	5	2962/2963	
Phase Angle Channel 21	Current Phase Angle - Channel 21	AI1338	x			degrees-angular	5	2964/2965	
Phase Angle Channel 22	Current Phase Angle - Channel 22	AI1339	x			degrees-angular	5	2966/2967	
Phase Angle Channel 23	Current Phase Angle - Channel 23	AI1340	x			degrees-angular	5	2968/2969	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW <V1.016				
Phase Angle Channel 24	Current Phase Angle - Channel 24	AI1341	x			degrees-angular	5	2970/2971	
Phase Angle Channel 25	Current Phase Angle - Channel 25	AI1342	x			degrees-angular	5	2972/2973	
Phase Angle Channel 26	Current Phase Angle - Channel 26	AI1343	x			degrees-angular	5	2974/2975	
Phase Angle Channel 27	Current Phase Angle - Channel 27	AI1344	x			degrees-angular	5	2976/2977	
Phase Angle Channel 28	Current Phase Angle - Channel 28	AI1345	x			degrees-angular	5	2978/2979	
Phase Angle Channel 29	Current Phase Angle - Channel 29	AI1346	x			degrees-angular	5	2980/2981	
Phase Angle Channel 30	Current Phase Angle - Channel 30	AI1347	x			degrees-angular	5	2982/2983	
Phase Angle Channel 31	Current Phase Angle - Channel 31	AI1348	x			degrees-angular	5	2984/2985	
Phase Angle Channel 32	Current Phase Angle - Channel 32	AI1349	x			degrees-angular	5	2986/2987	
Phase Angle Channel 33	Current Phase Angle - Channel 33	AI1350	x			degrees-angular	5	2988/2989	
Phase Angle Channel 34	Current Phase Angle - Channel 34	AI1351	x			degrees-angular	5	2990/2991	
Phase Angle Channel 35	Current Phase Angle - Channel 35	AI1352	x			degrees-angular	5	2992/2993	
Phase Angle Channel 36	Current Phase Angle - Channel 36	AI1353	x			degrees-angular	5	2994/2995	
Phase Angle Channel 37	Current Phase Angle - Channel 37	AI1354	x			degrees-angular	5	2996/2997	
Phase Angle Channel 38	Current Phase Angle - Channel 38	AI1355	x			degrees-angular	5	2998/2999	
Phase Angle Channel 39	Current Phase Angle - Channel 39	AI1356	x			degrees-angular	5	3000/3001	
Phase Angle Channel 40	Current Phase Angle - Channel 40	AI1357	x			degrees-angular	5	3002/3003	
Phase Angle Channel 41	Current Phase Angle - Channel 41	AI1358	x			degrees-angular	5	3004/3005	
Phase Angle Channel 42	Current Phase Angle - Channel 42	AI1359	x			degrees-angular	5	3006/3007	
kWh Snapshot Channel 1	Energy Snapshot - Channel 1	AI1360	x			kWh	0	3008/3009	
kWh Snapshot Channel 2	Energy Snapshot - Channel 2	AI1361	x			kWh	0	4008/4009	
kWh Snapshot Channel 3	Energy Snapshot - Channel 3	AI1362	x			kWh	0	5008/5009	
kWh Snapshot Channel 4	Energy Snapshot - Channel 4	AI1363	x			kWh	0	6008/6009	
kWh Snapshot Channel 5	Energy Snapshot - Channel 5	AI1364	x			kWh	0	7008/7009	
kWh Snapshot Channel 6	Energy Snapshot - Channel 6	AI1365	x			kWh	0	8008/8009	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
kWh Snapshot Channel 7	Energy Snapshot - Channel 7	AI1366	x			kWh	0	9008/9009	
kWh Snapshot Channel 8	Energy Snapshot - Channel 8	AI1367	x			kWh	0	10008/10009	
kWh Snapshot Channel 9	Energy Snapshot - Channel 9	AI1368	x			kWh	0	11008/11009	
kWh Snapshot Channel 10	Energy Snapshot - Channel 10	AI1369	x			kWh	0	12008/12009	
kWh Snapshot Channel 11	Energy Snapshot - Channel 11	AI1370	x			kWh	0	13008/13009	
kWh Snapshot Channel 12	Energy Snapshot - Channel 12	AI1371	x			kWh	0	14008/14009	
kWh Snapshot Channel 13	Energy Snapshot - Channel 13	AI1372	x			kWh	0	15008/15009	
kWh Snapshot Channel 14	Energy Snapshot - Channel 14	AI1373	x			kWh	0	16008/16009	
kWh Snapshot Channel 15	Energy Snapshot - Channel 15	AI1374	x			kWh	0	17008/17009	
kWh Snapshot Channel 16	Energy Snapshot - Channel 16	AI1375	x			kWh	0	18008/18009	
kWh Snapshot Channel 17	Energy Snapshot - Channel 17	AI1376	x			kWh	0	19008/19009	
kWh Snapshot Channel 18	Energy Snapshot - Channel 18	AI1377	x			kWh	0	20008/20009	
kWh Snapshot Channel 19	Energy Snapshot - Channel 19	AI1378	x			kWh	0	21008/21009	
kWh Snapshot Channel 20	Energy Snapshot - Channel 20	AI1379	x			kWh	0	22008/22009	
kWh Snapshot Channel 21	Energy Snapshot - Channel 21	AI1380	x			kWh	0	23008/23009	
kWh Snapshot Channel 22	Energy Snapshot - Channel 22	AI1381	x			kWh	0	24008/24009	
kWh Snapshot Channel 23	Energy Snapshot - Channel 23	AI1382	x			kWh	0	25008/25009	
kWh Snapshot Channel 24	Energy Snapshot - Channel 24	AI1383	x			kWh	0	26008/26009	
kWh Snapshot Channel 25	Energy Snapshot - Channel 25	AI1384	x			kWh	0	27008/27009	
kWh Snapshot Channel 26	Energy Snapshot - Channel 26	AI1385	x			kWh	0	28008/28009	
kWh Snapshot Channel 27	Energy Snapshot - Channel 27	AI1386	x			kWh	0	29008/29009	
kWh Snapshot Channel 28	Energy Snapshot - Channel 28	AI1387	x			kWh	0	30008/30009	
kWh Snapshot Channel 29	Energy Snapshot - Channel 29	AI1388	x			kWh	0	31008/31009	
kWh Snapshot Channel 30	Energy Snapshot - Channel 30	AI1389	x			kWh	0	32008/32009	
kWh Snapshot Channel 31	Energy Snapshot - Channel 31	AI1390	x			kWh	0	33008/33009	
kWh Snapshot Channel 32	Energy Snapshot - Channel 32	AI1391	x			kWh	0	34008/34009	
kWh Snapshot Channel 33	Energy Snapshot - Channel 33	AI1392	x			kWh	0	35008/35009	
kWh Snapshot Channel 34	Energy Snapshot - Channel 34	AI1393	x			kWh	0	36008/36009	
kWh Snapshot Channel 35	Energy Snapshot - Channel 35	AI1394	x			kWh	0	37008/37009	
kWh Snapshot Channel 36	Energy Snapshot - Channel 36	AI1395	x			kWh	0	38008/38009	
kWh Snapshot Channel 37	Energy Snapshot - Channel 37	AI1396	x			kWh	0	39008/39009	
kWh Snapshot Channel 38	Energy Snapshot - Channel 38	AI1397	x			kWh	0	40008/40009	
kWh Snapshot Channel 39	Energy Snapshot - Channel 39	AI1398	x			kWh	0	41008/41009	
kWh Snapshot Channel 40	Energy Snapshot - Channel 40	AI1399	x			kWh	0	42008/42009	
kWh Snapshot Channel 41	Energy Snapshot - Channel 41	AI1400	x			kWh	0	43008/43009	
kWh Snapshot Channel 42	Energy Snapshot - Channel 42	AI1401	x			kWh	0	44008/44009	
kWh Snapshot - Aux Total	Energy Snapshot - Total of Aux inputs	AI1402	x			kWh	0	45008/45009	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Analog_Value Objects									
Configuration (bit 0 is LSB):	Configuration (bit 0 is LSB):	AV1	x	x	x	No-Units	1	6	"bit 0: 0 = odd-even, 1 = sequential bit 1: 0 = odd-even, 1 = sequential bits 2-15: future use Examples: Value 0 = Odd/Even Value 1 = Reserved for Solid-Core Value 2 = Sequential Value 3 = Reserved for Solid-Core see product installation guide for diagrams"
# of Sub-Intervals per Demand Int.	Number of Sub-Intervals per Interval	AV2	x	x	x	No-Units	1	71	Number of Sub-Intervals per Demand Interval Sets the number of sub-intervals that make a single demand interval. For block demand, set this to 1.
Sub-Interval Length in seconds.	Sub-Interval Length in seconds.	AV3	x	x	x	No-Units	1	72	Sub-Interval Length in seconds. For sync-to-comms, set this to 0.
Branch 1 CT Size	Branch 1 CT Size	AV4	x	x	x	Amperes	5	73	"These are NOT WRITABLE on E30Axxx solid-core Models because CT size is fixed (at 100A). Other values written will revert to 100A the next time the meter is scanned. They are writable on E31Axxx split-core models."
Branch 2 CT Size	Branch 2 CT Size	AV5	x	x	x	Amperes	5	74	
Branch 3 CT Size	Branch 3 CT Size	AV6	x	x	x	Amperes	5	75	
Branch 4 CT Size	Branch 4 CT Size	AV7	x	x	x	Amperes	5	76	
Branch 5 CT Size	Branch 5 CT Size	AV8	x	x	x	Amperes	5	77	
Branch 6 CT Size	Branch 6 CT Size	AV9	x	x	x	Amperes	5	78	
Branch 7 CT Size	Branch 7 CT Size	AV10	x	x	x	Amperes	5	79	
Branch 8 CT Size	Branch 8 CT Size	AV11	x	x	x	Amperes	5	80	
Branch 9 CT Size	Branch 9 CT Size	AV12	x	x	x	Amperes	5	81	
Branch 10 CT Size	Branch 10 CT Size	AV13	x	x	x	Amperes	5	82	
Branch 11 CT Size	Branch 11 CT Size	AV14	x	x	x	Amperes	5	83	
Branch 12 CT Size	Branch 12 CT Size	AV15	x	x	x	Amperes	5	84	
Branch 13 CT Size	Branch 13 CT Size	AV16	x	x	x	Amperes	5	85	
Branch 14 CT Size	Branch 14 CT Size	AV17	x	x	x	Amperes	5	86	
Branch 15 CT Size	Branch 15 CT Size	AV18	x	x	x	Amperes	5	87	
Branch 16 CT Size	Branch 16 CT Size	AV19	x	x	x	Amperes	5	88	
Branch 17 CT Size	Branch 17 CT Size	AV20	x	x	x	Amperes	5	89	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Branch 18 CT Size	Branch 18 CT Size	AV21	x	x	x	Amperes	5	90	
Branch 19 CT Size	Branch 19 CT Size	AV22	x	x	x	Amperes	5	91	
Branch 20 CT Size	Branch 20 CT Size	AV23	x	x	x	Amperes	5	92	
Branch 21 CT Size	Branch 21 CT Size	AV24	x	x	x	Amperes	5	93	
Branch 22 CT Size	Branch 22 CT Size	AV25	x	x	x	Amperes	5	94	
Branch 23 CT Size	Branch 23 CT Size	AV26	x	x	x	Amperes	5	95	
Branch 24 CT Size	Branch 24 CT Size	AV27	x	x	x	Amperes	5	96	
Branch 25 CT Size	Branch 25 CT Size	AV28	x	x	x	Amperes	5	97	
Branch 26 CT Size	Branch 26 CT Size	AV29	x	x	x	Amperes	5	98	
Branch 27 CT Size	Branch 27 CT Size	AV30	x	x	x	Amperes	5	99	
Branch 28 CT Size	Branch 28 CT Size	AV31	x	x	x	Amperes	5	100	
Branch 29 CT Size	Branch 29 CT Size	AV32	x	x	x	Amperes	5	101	
Branch 30 CT Size	Branch 30 CT Size	AV33	x	x	x	Amperes	5	102	
Branch 31 CT Size	Branch 31 CT Size	AV34	x	x	x	Amperes	5	103	
Branch 32 CT Size	Branch 32 CT Size	AV35	x	x	x	Amperes	5	104	
Branch 33 CT Size	Branch 33 CT Size	AV36	x	x	x	Amperes	5	105	
Branch 34 CT Size	Branch 34 CT Size	AV37	x	x	x	Amperes	5	106	
Branch 35 CT Size	Branch 35 CT Size	AV38	x	x	x	Amperes	5	107	
Branch 36 CT Size	Branch 36 CT Size	AV39	x	x	x	Amperes	5	108	
Branch 37 CT Size	Branch 37 CT Size	AV40	x	x	x	Amperes	5	109	
Branch 38 CT Size	Branch 38 CT Size	AV41	x	x	x	Amperes	5	110	
Branch 39 CT Size	Branch 39 CT Size	AV42	x	x	x	Amperes	5	111	
Branch 40 CT Size	Branch 40 CT Size	AV43	x	x	x	Amperes	5	112	
Branch 41 CT Size	Branch 41 CT Size	AV44	x	x	x	Amperes	5	113	
Branch 42 CT Size	Branch 42 CT Size	AV45	x	x	x	Amperes	5	114	
AUX Channel (phase 1) CT Size	AUX Channel (phase 1) CT Size	AV46	x	x	x	Amperes	5	115	
AUX Channel (phase 2) CT Size	AUX Channel (phase 2) CT Size	AV47	x	x	x	Amperes	5	116	
AUX Channel (phase 3) CT Size	AUX Channel (phase 3) CT Size	AV48	x	x	x	Amperes	5	117	
AUX Channel (Neutral) CT Size	AUX Channel (Neutral) CT Size	AV49	x	x	x	Amperes	5	118	
Branch 1 Breaker Size	Branch 1 Breaker Size	AV50	x	x	x	Amperes	5	119	
Branch 2 Breaker Size	Branch 2 Breaker Size	AV51	x	x	x	Amperes	5	120	
Branch 3 Breaker Size	Branch 3 Breaker Size	AV52	x	x	x	Amperes	5	121	
Branch 4 Breaker Size	Branch 4 Breaker Size	AV53	x	x	x	Amperes	5	122	
Branch 5 Breaker Size	Branch 5 Breaker Size	AV54	x	x	x	Amperes	5	123	
Branch 6 Breaker Size	Branch 6 Breaker Size	AV55	x	x	x	Amperes	5	124	
Branch 7 Breaker Size	Branch 7 Breaker Size	AV56	x	x	x	Amperes	5	125	
Branch 8 Breaker Size	Branch 8 Breaker Size	AV57	x	x	x	Amperes	5	126	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Branch 9 Breaker Size	Branch 9 Breaker Size	AV58	x	x	x	Amperes	5	127	
Branch 10 Breaker Size	Branch 10 Breaker Size	AV59	x	x	x	Amperes	5	128	
Branch 11 Breaker Size	Branch 11 Breaker Size	AV60	x	x	x	Amperes	5	129	
Branch 12 Breaker Size	Branch 12 Breaker Size	AV61	x	x	x	Amperes	5	130	
Branch 13 Breaker Size	Branch 13 Breaker Size	AV62	x	x	x	Amperes	5	131	
Branch 14 Breaker Size	Branch 14 Breaker Size	AV63	x	x	x	Amperes	5	132	
Branch 15 Breaker Size	Branch 15 Breaker Size	AV64	x	x	x	Amperes	5	133	
Branch 16 Breaker Size	Branch 16 Breaker Size	AV65	x	x	x	Amperes	5	134	
Branch 17 Breaker Size	Branch 17 Breaker Size	AV66	x	x	x	Amperes	5	135	
Branch 18 Breaker Size	Branch 18 Breaker Size	AV67	x	x	x	Amperes	5	136	
Branch 19 Breaker Size	Branch 19 Breaker Size	AV68	x	x	x	Amperes	5	137	
Branch 20 Breaker Size	Branch 20 Breaker Size	AV69	x	x	x	Amperes	5	138	
Branch 21 Breaker Size	Branch 21 Breaker Size	AV70	x	x	x	Amperes	5	139	
Branch 22 Breaker Size	Branch 22 Breaker Size	AV71	x	x	x	Amperes	5	140	
Branch 23 Breaker Size	Branch 23 Breaker Size	AV72	x	x	x	Amperes	5	141	
Branch 24 Breaker Size	Branch 24 Breaker Size	AV73	x	x	x	Amperes	5	142	
Branch 25 Breaker Size	Branch 25 Breaker Size	AV74	x	x	x	Amperes	5	143	
Branch 26 Breaker Size	Branch 26 Breaker Size	AV75	x	x	x	Amperes	5	144	
Branch 27 Breaker Size	Branch 27 Breaker Size	AV76	x	x	x	Amperes	5	145	
Branch 28 Breaker Size	Branch 28 Breaker Size	AV77	x	x	x	Amperes	5	146	
Branch 29 Breaker Size	Branch 29 Breaker Size	AV78	x	x	x	Amperes	5	147	
Branch 30 Breaker Size	Branch 30 Breaker Size	AV79	x	x	x	Amperes	5	148	
Branch 31 Breaker Size	Branch 31 Breaker Size	AV80	x	x	x	Amperes	5	149	
Branch 32 Breaker Size	Branch 32 Breaker Size	AV81	x	x	x	Amperes	5	150	
Branch 33 Breaker Size	Branch 33 Breaker Size	AV82	x	x	x	Amperes	5	151	
Branch 34 Breaker Size	Branch 34 Breaker Size	AV83	x	x	x	Amperes	5	152	
Branch 35 Breaker Size	Branch 35 Breaker Size	AV84	x	x	x	Amperes	5	153	
Branch 36 Breaker Size	Branch 36 Breaker Size	AV85	x	x	x	Amperes	5	154	
Branch 37 Breaker Size	Branch 37 Breaker Size	AV86	x	x	x	Amperes	5	155	
Branch 38 Breaker Size	Branch 38 Breaker Size	AV87	x	x	x	Amperes	5	156	
Branch 39 Breaker Size	Branch 39 Breaker Size	AV88	x	x	x	Amperes	5	157	
Branch 40 Breaker Size	Branch 40 Breaker Size	AV89	x	x	x	Amperes	5	158	
Branch 41 Breaker Size	Branch 41 Breaker Size	AV90	x	x	x	Amperes	5	159	
Branch 42 Breaker Size	Branch 42 Breaker Size	AV91	x	x	x	Amperes	5	160	
AUX Channel (phase 1) Breaker Size	AUX Channel (phase 1) Breaker Size	AV92	x	x	x	Amperes	5	161	
AUX Channel (phase 2) Breaker Size	AUX Channel (phase 2) Breaker Size	AV93	x	x	x	Amperes	5	162	
AUX Channel (phase 3) Breaker Size	AUX Channel (phase 3) Breaker Size	AV94	x	x	x	Amperes	5	163	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW>= V1.203	1.016-1.022	FW <V1.016				
AUX Channel (Neutral) Breaker Size	AUX Channel (Neutral) Breaker Size	AV95	x	x	x	Amperes	5	164	
High-High Latching Alarm Time Delay	Alarm event duration threshold	AV96	x	x	x	Seconds	1	165	These timers control entry into a latching alarm state. A return to a non-alarm state is instantaneous. All channels use the same global timers. Latching Alarm On Time applies to all Latching Alarms. The parameter measurement rate is expected to be around 2.5 secs, which will limit the effective resolution of these timers.
High Latching Alarm Time Delay	Alarm event duration threshold	AV97	x	x	x	Seconds	1	166	These timers control entry into a latching alarm state. A return to a non-alarm state is instantaneous. All channels use the same global timers. Latching Alarm On Time applies to all Latching Alarms. The parameter measurement rate is expected to be around 2.5 secs, which will limit the effective resolution of these timers.
Low Latching Alarm Time Delay	Alarm event duration threshold	AV98	x	x	x	Seconds	1	167	These timers control entry into a latching alarm state. A return to a non-alarm state is instantaneous. All channels use the same global timers. Latching Alarm On Time applies to all Latching Alarms. The parameter measurement rate is expected to be around 2.5 secs, which will limit the effective resolution of these timers.
Low-Low Latching Alarm Time Delay	Alarm event duration threshold	AV99	x	x	x	Seconds	1	168	These timers control entry into a latching alarm state. A return to a non-alarm state is instantaneous. All channels use the same global timers. Latching Alarm On Time applies to all Latching Alarms. The parameter measurement rate is expected to be around 2.5 secs, which will limit the effective resolution of these timers.
Latching Alarm ON Time	From initial current to alarms enabled	AV100	x	x	x	Seconds	1	169	Latching Alarm ON Time (when current is above Low-Low alarm & ON Time elapses then ON state is declared for all latching alarms, ON State enables Alarm Time Delays)
Latching Alarms time until OFF state	time until OFF state declared	AV101	x	x	x	Seconds	1	170	Latching Alarms time until OFF state is declared for all latching alarms (when current is below Low-Low alarm and a ON state was declared)
High-High Latching Alarm Threshold	% of breaker size	AV102	x	x	x	Percent	1	171	
High Alarm Latching Alarm Threshold	% of breaker size	AV103	x	x	x	Percent	1	172	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW > = V1.203	1.016-1.022	FW < V1.016				
Low Alarm Latching Alarm Threshold	% of breaker size	AV104	x	x	x	Percent	1	173	
Low Low Latching Alarm Threshold	% of breaker size	AV105	x	x	x	Percent	1	174	
Non-Latching High Threshold	% of breaker size	AV106	x	x	x	Percent	1	175	
Non-Latching Low Threshold	% of breaker size	AV107	x	x	x	Percent	1	176	
Non-Latching Hysteresis (0-100%)	Non-Latching Hysteresis (% of setpoint)	AV108	x	x	x	Percent	1	177	
Branch 1 Alarm Status	Write 0 to alarm bits to clear alarms	AV109	x	x	x	No-Units	1	178	"Latching Alarms are cleared by writing a 0 to it's alarm bit. A write to a Non-Latching alarm is ignored Bit 0: High High Latching Alarm Bit 1: High Latching Alarm Bit 2: Low Latching Alarm Bit 3: Low Low Latching Alarm Bit 4: Latching Alarm OFF state declared (1=OFF; ON state must have been achieved prior) Bit 5-7: Reserved for future use (reads 0) Bit 8: High Non-Latching Alarm Bit 9: Low Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)"
Branch 2 Alarm Status	Write 0 to alarm bits to clear alarms	AV110	x	x	x	No-Units	1	179	
Branch 3 Alarm Status	Write 0 to alarm bits to clear alarms	AV111	x	x	x	No-Units	1	180	
Branch 4 Alarm Status	Write 0 to alarm bits to clear alarms	AV112	x	x	x	No-Units	1	181	
Branch 5 Alarm Status	Write 0 to alarm bits to clear alarms	AV113	x	x	x	No-Units	1	182	
Branch 6 Alarm Status	Write 0 to alarm bits to clear alarms	AV114	x	x	x	No-Units	1	183	
Branch 7 Alarm Status	Write 0 to alarm bits to clear alarms	AV115	x	x	x	No-Units	1	184	
Branch 8 Alarm Status	Write 0 to alarm bits to clear alarms	AV116	x	x	x	No-Units	1	185	
Branch 9 Alarm Status	Write 0 to alarm bits to clear alarms	AV117	x	x	x	No-Units	1	186	
Branch 10 Alarm Status	Write 0 to alarm bits to clear alarms	AV118	x	x	x	No-Units	1	187	
Branch 11 Alarm Status	Write 0 to alarm bits to clear alarms	AV119	x	x	x	No-Units	1	188	
Branch 12 Alarm Status	Write 0 to alarm bits to clear alarms	AV120	x	x	x	No-Units	1	189	
Branch 13 Alarm Status	Write 0 to alarm bits to clear alarms	AV121	x	x	x	No-Units	1	190	
Branch 14 Alarm Status	Write 0 to alarm bits to clear alarms	AV122	x	x	x	No-Units	1	191	
Branch 15 Alarm Status	Write 0 to alarm bits to clear alarms	AV123	x	x	x	No-Units	1	192	
Branch 16 Alarm Status	Write 0 to alarm bits to clear alarms	AV124	x	x	x	No-Units	1	193	
Branch 17 Alarm Status	Write 0 to alarm bits to clear alarms	AV125	x	x	x	No-Units	1	194	
Branch 18 Alarm Status	Write 0 to alarm bits to clear alarms	AV126	x	x	x	No-Units	1	195	
Branch 19 Alarm Status	Write 0 to alarm bits to clear alarms	AV127	x	x	x	No-Units	1	196	
Branch 20 Alarm Status	Write 0 to alarm bits to clear alarms	AV128	x	x	x	No-Units	1	197	
Branch 21 Alarm Status	Write 0 to alarm bits to clear alarms	AV129	x	x	x	No-Units	1	198	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Branch 22 Alarm Status	Write 0 to alarm bits to clear alarms	AV130	x	x	x	No-Units	1	199	
Branch 23 Alarm Status	Write 0 to alarm bits to clear alarms	AV131	x	x	x	No-Units	1	200	
Branch 24 Alarm Status	Write 0 to alarm bits to clear alarms	AV132	x	x	x	No-Units	1	201	
Branch 25 Alarm Status	Write 0 to alarm bits to clear alarms	AV133	x	x	x	No-Units	1	202	
Branch 26 Alarm Status	Write 0 to alarm bits to clear alarms	AV134	x	x	x	No-Units	1	203	
Branch 27 Alarm Status	Write 0 to alarm bits to clear alarms	AV135	x	x	x	No-Units	1	204	
Branch 28 Alarm Status	Write 0 to alarm bits to clear alarms	AV136	x	x	x	No-Units	1	205	
Branch 29 Alarm Status	Write 0 to alarm bits to clear alarms	AV137	x	x	x	No-Units	1	206	
Branch 30 Alarm Status	Write 0 to alarm bits to clear alarms	AV138	x	x	x	No-Units	1	207	
Branch 31 Alarm Status	Write 0 to alarm bits to clear alarms	AV139	x	x	x	No-Units	1	208	
Branch 32 Alarm Status	Write 0 to alarm bits to clear alarms	AV140	x	x	x	No-Units	1	209	
Branch 33 Alarm Status	Write 0 to alarm bits to clear alarms	AV141	x	x	x	No-Units	1	210	
Branch 34 Alarm Status	Write 0 to alarm bits to clear alarms	AV142	x	x	x	No-Units	1	211	
Branch 35 Alarm Status	Write 0 to alarm bits to clear alarms	AV143	x	x	x	No-Units	1	212	
Branch 36 Alarm Status	Write 0 to alarm bits to clear alarms	AV144	x	x	x	No-Units	1	213	
Branch 37 Alarm Status	Write 0 to alarm bits to clear alarms	AV145	x	x	x	No-Units	1	214	
Branch 38 Alarm Status	Write 0 to alarm bits to clear alarms	AV146	x	x	x	No-Units	1	215	
Branch 39 Alarm Status	Write 0 to alarm bits to clear alarms	AV147	x	x	x	No-Units	1	216	
Branch 40 Alarm Status	Write 0 to alarm bits to clear alarms	AV148	x	x	x	No-Units	1	217	
Branch 41 Alarm Status	Write 0 to alarm bits to clear alarms	AV149	x	x	x	No-Units	1	218	
Branch 42 Alarm Status	Write 0 to alarm bits to clear alarms	AV150	x	x	x	No-Units	1	219	
AUX Channel (phase 1) Alarm Status	Write 0 to alarm bits to clear alarms	AV151	x	x	x	No-Units	1	220	
AUX Channel (phase 2) Alarm Status	Write 0 to alarm bits to clear alarms	AV152	x	x	x	No-Units	1	221	
AUX Channel (phase 3) Alarm Status	Write 0 to alarm bits to clear alarms	AV153	x	x	x	No-Units	1	222	
AUX Channel (Neutral) Alarm Status	Write 0 to alarm bits to clear alarms	AV154	x	x	x	No-Units	1	223	
Overvoltage Alarm Timer	Alarm event duration threshold	AV155	x	x	x	Seconds	1	236	Controls entry into Overvoltage alarm state. A return to a non-alarm state is instantaneous. All channels use these same global timers. Note that the parameter measurement update rate is 1.6 secs, which will limit the effective resolution of these timers.
Undervoltage Alarm Timer	Alarm event duration threshold	AV156	x	x	x	Seconds	1	237	Controls entry into Undervoltage alarm state. A return to a non-alarm state is instantaneous. All channels use these same global timers. Note that the parameter measurement update rate is 1.6 secs, which will limit the effective resolution of these timers.
Overvoltage Alarm Threshold	Overvoltage level threshold (0=OFF)	AV157	x	x	x	Volts	5	238	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW > = V1.203	1.016-1.022	FW < V1.016				
Undervoltage Alarm Threshold	Undervoltage level threshold (0=OFF)	AV158	x	x	x	Volts	5	239	
Voltage Alarm Hysteresis	Voltage Alarm Hysteresis (% of setpoint)	AV159	x	x	x	Percent	1	240	Percentage of setpoint
Voltage 1 Alarm Status	Write 0 to alarm bits to clear alarms	AV160	x	x	x	No-Units	1	241	"Latching Alarms are cleared by writing a 0 to it's alarm bit. A write to a Non-Latching alarm is ignored Bit 0: High Latching Alarm Bit 1: Low Latching Alarm Bit 2-7: Reserved for future use (reads 0) Bit 8: High Non-Latching Alarm Bit 9: Low Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)"
Voltage 2 Alarm Status	Write 0 to alarm bits to clear alarms	AV161	x	x	x	No-Units	1	242	"Latching Alarms are cleared by writing a 0 to it's alarm bit. A write to a Non-Latching alarm is ignored Bit 0: High Latching Alarm Bit 1: Low Latching Alarm Bit 2-7: Reserved for future use (reads 0) Bit 8: High Non-Latching Alarm Bit 9: Low Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)"
Voltage 3 Alarm Status	Write 0 to alarm bits to clear alarms	AV162	x	x	x	No-Units	1	243	"Latching Alarms are cleared by writing a 0 to it's alarm bit. A write to a Non-Latching alarm is ignored Bit 0: High Latching Alarm Bit 1: Low Latching Alarm Bit 2-7: Reserved for future use (reads 0) Bit 8: High Non-Latching Alarm Bit 9: Low Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)"
Power Up Counter	Power Up Counter	AV163	x	x	x	No-Units	1	531	Number of Power-up cycles (write 0 to reset)
User Defined Status Register	1 in bit 0 enables CT phase assignment	AV164	x	x		No-Units	1	62017	"User Defined Status Register: Bit 0: Enable User CT Phase Assignment Bit 1-15: Reserved"
Voltage Phase for Branch Channel 1	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV165	x	x		No-Units	1	62116	"Write the listed value to assign this channel to the corresponding voltage phase: 0 = phase-1 (A) 1 = phase-2 (B) 2 = phase-3 (C)"
Voltage Phase for Branch Channel 2	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV166	x	x		No-Units	1	62117	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Voltage Phase for Branch Channel 3	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV167	x	x		No-Units	1	62118	
Voltage Phase for Branch Channel 4	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV168	x	x		No-Units	1	62119	
Voltage Phase for Branch Channel 5	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV169	x	x		No-Units	1	62120	
Voltage Phase for Branch Channel 6	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV170	x	x		No-Units	1	62121	
Voltage Phase for Branch Channel 7	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV171	x	x		No-Units	1	62122	
Voltage Phase for Branch Channel 8	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV172	x	x		No-Units	1	62123	
Voltage Phase for Branch Channel 9	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV173	x	x		No-Units	1	62124	
Voltage Phase for Branch Channel 10	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV174	x	x		No-Units	1	62125	
Voltage Phase for Branch Channel 11	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV175	x	x		No-Units	1	62126	
Voltage Phase for Branch Channel 12	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV176	x	x		No-Units	1	62127	
Voltage Phase for Branch Channel 13	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV177	x	x		No-Units	1	62128	
Voltage Phase for Branch Channel 14	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV178	x	x		No-Units	1	62129	
Voltage Phase for Branch Channel 15	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV179	x	x		No-Units	1	62130	
Voltage Phase for Branch Channel 16	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV180	x	x		No-Units	1	62131	
Voltage Phase for Branch Channel 17	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV181	x	x		No-Units	1	62132	
Voltage Phase for Branch Channel 18	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV182	x	x		No-Units	1	62133	
Voltage Phase for Branch Channel 19	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV183	x	x		No-Units	1	62134	
Voltage Phase for Branch Channel 20	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV184	x	x		No-Units	1	62135	
Voltage Phase for Branch Channel 21	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV185	x	x		No-Units	1	62136	
Voltage Phase for Branch Channel 22	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV186	x	x		No-Units	1	62137	
Voltage Phase for Branch Channel 23	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV187	x	x		No-Units	1	62138	
Voltage Phase for Branch Channel 24	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV188	x	x		No-Units	1	62139	
Voltage Phase for Branch Channel 25	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV189	x	x		No-Units	1	62140	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Voltage Phase for Branch Channel 26	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV190	x	x		No-Units	1	62141	
Voltage Phase for Branch Channel 27	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV191	x	x		No-Units	1	62142	
Voltage Phase for Branch Channel 28	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV192	x	x		No-Units	1	62143	
Voltage Phase for Branch Channel 29	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV193	x	x		No-Units	1	62144	
Voltage Phase for Branch Channel 30	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV194	x	x		No-Units	1	62145	
Voltage Phase for Branch Channel 31	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV195	x	x		No-Units	1	62146	
Voltage Phase for Branch Channel 32	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV196	x	x		No-Units	1	62147	
Voltage Phase for Branch Channel 33	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV197	x	x		No-Units	1	62148	
Voltage Phase for Branch Channel 34	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV198	x	x		No-Units	1	62149	
Voltage Phase for Branch Channel 35	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV199	x	x		No-Units	1	62150	
Voltage Phase for Branch Channel 36	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV200	x	x		No-Units	1	62151	
Voltage Phase for Branch Channel 37	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV201	x	x		No-Units	1	62152	
Voltage Phase for Branch Channel 38	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV202	x	x		No-Units	1	62153	
Voltage Phase for Branch Channel 39	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV203	x	x		No-Units	1	62154	
Voltage Phase for Branch Channel 40	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV204	x	x		No-Units	1	62155	
Voltage Phase for Branch Channel 41	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV205	x	x		No-Units	1	62156	
Voltage Phase for Branch Channel 42	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV206	x	x		No-Units	1	62157	
Voltage Phase for Aux Channel 1	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV207	x	x		No-Units	1	62158	
Voltage Phase for Aux Channel 2	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV208	x	x		No-Units	1	62159	
Voltage Phase for Aux Channel 3	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV209	x	x		No-Units	1	62160	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW > = V1.203	1.016-1.022	FW < V1.016				
Logical Circuit for Branch Channel 1	Logical Circuit Number for Branch Channel 1	AV210	x			No-Units	1	62068	"Write a value (from 1-46) to assign this channel to the corresponding Logical Meter: Write a zero to remove this channel from a Logical Meter assingment invalid values will not be written (a Logical Meter can only contain up to 3 channels, multiple channels in a Logical Meter must must be adjacent branches on the same CT strip or adapter board.)"
Logical Circuit for Branch Channel 2	Logical Circuit Number for Branch Channel 2	AV211	x			No-Units	1	62069	
Logical Circuit for Branch Channel 3	Logical Circuit Number for Branch Channel 3	AV212	x			No-Units	1	62070	
Logical Circuit for Branch Channel 4	Logical Circuit Number for Branch Channel 4	AV213	x			No-Units	1	62071	
Logical Circuit for Branch Channel 5	Logical Circuit Number for Branch Channel 5	AV214	x			No-Units	1	62072	
Logical Circuit for Branch Channel 6	Logical Circuit Number for Branch Channel 6	AV215	x			No-Units	1	62073	
Logical Circuit for Branch Channel 7	Logical Circuit Number for Branch Channel 7	AV216	x			No-Units	1	62074	
Logical Circuit for Branch Channel 8	Logical Circuit Number for Branch Channel 8	AV217	x			No-Units	1	62075	
Logical Circuit for Branch Channel 9	Logical Circuit Number for Branch Channel 9	AV218	x			No-Units	1	62076	
Logical Circuit for Branch Channel 10	Logical Circuit Number for Branch Channel 10	AV219	x			No-Units	1	62077	
Logical Circuit for Branch Channel 11	Logical Circuit Number for Branch Channel 11	AV220	x			No-Units	1	62078	
Logical Circuit for Branch Channel 12	Logical Circuit Number for Branch Channel 12	AV221	x			No-Units	1	62079	
Logical Circuit for Branch Channel 13	Logical Circuit Number for Branch Channel 13	AV222	x			No-Units	1	62080	
Logical Circuit for Branch Channel 14	Logical Circuit Number for Branch Channel 14	AV223	x			No-Units	1	62081	
Logical Circuit for Branch Channel 15	Logical Circuit Number for Branch Channel 15	AV224	x			No-Units	1	62082	
Logical Circuit for Branch Channel 16	Logical Circuit Number for Branch Channel 16	AV225	x			No-Units	1	62083	
Logical Circuit for Branch Channel 17	Logical Circuit Number for Branch Channel 17	AV226	x			No-Units	1	62084	
Logical Circuit for Branch Channel 18	Logical Circuit Number for Branch Channel 18	AV227	x			No-Units	1	62085	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Logical Circuit for Branch Channel 19	Logical Circuit Number for Branch Channel 19	AV228	x			No-Units	1	62086	
Logical Circuit for Branch Channel 20	Logical Circuit Number for Branch Channel 20	AV229	x			No-Units	1	62087	
Logical Circuit for Branch Channel 21	Logical Circuit Number for Branch Channel 21	AV230	x			No-Units	1	62088	
Logical Circuit for Branch Channel 22	Logical Circuit Number for Branch Channel 22	AV231	x			No-Units	1	62089	
Logical Circuit for Branch Channel 23	Logical Circuit Number for Branch Channel 23	AV232	x			No-Units	1	62090	
Logical Circuit for Branch Channel 24	Logical Circuit Number for Branch Channel 24	AV233	x			No-Units	1	62091	
Logical Circuit for Branch Channel 25	Logical Circuit Number for Branch Channel 25	AV234	x			No-Units	1	62092	
Logical Circuit for Branch Channel 26	Logical Circuit Number for Branch Channel 26	AV235	x			No-Units	1	62093	
Logical Circuit for Branch Channel 27	Logical Circuit Number for Branch Channel 27	AV236	x			No-Units	1	62094	
Logical Circuit for Branch Channel 28	Logical Circuit Number for Branch Channel 28	AV237	x			No-Units	1	62095	
Logical Circuit for Branch Channel 29	Logical Circuit Number for Branch Channel 29	AV238	x			No-Units	1	62096	
Logical Circuit for Branch Channel 30	Logical Circuit Number for Branch Channel 30	AV239	x			No-Units	1	62097	
Logical Circuit for Branch Channel 31	Logical Circuit Number for Branch Channel 31	AV240	x			No-Units	1	62098	
Logical Circuit for Branch Channel 32	Logical Circuit Number for Branch Channel 32	AV241	x			No-Units	1	62099	
Logical Circuit for Branch Channel 33	Logical Circuit Number for Branch Channel 33	AV242	x			No-Units	1	62100	
Logical Circuit for Branch Channel 34	Logical Circuit Number for Branch Channel 34	AV243	x			No-Units	1	62101	
Logical Circuit for Branch Channel 35	Logical Circuit Number for Branch Channel 35	AV244	x			No-Units	1	62102	
Logical Circuit for Branch Channel 36	Logical Circuit Number for Branch Channel 36	AV245	x			No-Units	1	62103	
Logical Circuit for Branch Channel 37	Logical Circuit Number for Branch Channel 37	AV246	x			No-Units	1	62104	
Logical Circuit for Branch Channel 38	Logical Circuit Number for Branch Channel 38	AV247	x			No-Units	1	62105	
Logical Circuit for Branch Channel 39	Logical Circuit Number for Branch Channel 39	AV248	x			No-Units	1	62106	
Logical Circuit for Branch Channel 40	Logical Circuit Number for Branch Channel 40	AV249	x			No-Units	1	62107	
Logical Circuit for Branch Channel 41	Logical Circuit Number for Branch Channel 41	AV250	x			No-Units	1	62108	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Logical Circuit for Branch Channel 42	Logical Circuit Number for Branch Channel 42	AV251	x			No-Units	1	62109	
Logical Circuit for Aux Channel 1	Logical Circuit Number for Aux Channel 1	AV252	x			No-Units	1	62110	
Logical Circuit for Aux Channel 2	Logical Circuit Number for Aux Channel 2	AV253	x			No-Units	1	62111	
Logical Circuit for Aux Channel 3	Logical Circuit Number for Aux Channel 3	AV254	x			No-Units	1	62112	
Latching Alarm Status: Logical Ckt 1	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV255	x			No-Units	0	10060	"Latching Alarms are cleared by writing a 0 to it's alarm bit. Clearing the Latching Alarm of a Logical Meter also clears the corresponding Latching Alarms of the branches assigned to it: Bit 0: High-High Latching Alarm Bit 1: High Latching Alarm Bit 2: Low Latching Alarm Bit 3: Low-Low Non-Latching Alarm Bit 4: Latching Alarm State (1 = OFF) Bit 5-15: Reserved for future use (these read 0)"
Latching Alarm Status: Logical Ckt 2	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV256	x			No-Units	0	11060	
Latching Alarm Status: Logical Ckt 3	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV257	x			No-Units	0	12060	
Latching Alarm Status: Logical Ckt 4	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV258	x			No-Units	0	13060	
Latching Alarm Status: Logical Ckt 5	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV259	x			No-Units	0	14060	
Latching Alarm Status: Logical Ckt 6	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV260	x			No-Units	0	15060	
Latching Alarm Status: Logical Ckt 7	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV261	x			No-Units	0	16060	
Latching Alarm Status: Logical Ckt 8	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV262	x			No-Units	0	17060	
Latching Alarm Status: Logical Ckt 9	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV263	x			No-Units	0	18060	
Latching Alarm Status: Logical Ckt 10	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV264	x			No-Units	0	19060	
Latching Alarm Status: Logical Ckt 11	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV265	x			No-Units	0	20060	
Latching Alarm Status: Logical Ckt 12	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV266	x			No-Units	0	21060	
Latching Alarm Status: Logical Ckt 13	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV267	x			No-Units	0	22060	
Latching Alarm Status: Logical Ckt 14	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV268	x			No-Units	0	23060	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW > = V1.203	1.016-1.022	FW < V1.016				
Latching Alarm Status: Logical Ckt 15	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV269	x			No-Units	0	24060	
Latching Alarm Status: Logical Ckt 16	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV270	x			No-Units	0	25060	
Latching Alarm Status: Logical Ckt 17	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV271	x			No-Units	0	26060	
Latching Alarm Status: Logical Ckt 18	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV272	x			No-Units	0	27060	
Latching Alarm Status: Logical Ckt 19	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV273	x			No-Units	0	28060	
Latching Alarm Status: Logical Ckt 20	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV274	x			No-Units	0	29060	
Latching Alarm Status: Logical Ckt 21	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV275	x			No-Units	0	30060	
Latching Alarm Status: Logical Ckt 22	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV276	x			No-Units	0	31060	
Latching Alarm Status: Logical Ckt 23	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV277	x			No-Units	0	32060	
Latching Alarm Status: Logical Ckt 24	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV278	x			No-Units	0	33060	
Latching Alarm Status: Logical Ckt 25	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV279	x			No-Units	0	34060	
Latching Alarm Status: Logical Ckt 26	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV280	x			No-Units	0	35060	
Latching Alarm Status: Logical Ckt 27	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV281	x			No-Units	0	36060	
Latching Alarm Status: Logical Ckt 28	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV282	x			No-Units	0	37060	
Latching Alarm Status: Logical Ckt 29	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV283	x			No-Units	0	38060	
Latching Alarm Status: Logical Ckt 30	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV284	x			No-Units	0	39060	
Latching Alarm Status: Logical Ckt 31	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV285	x			No-Units	0	40060	
Latching Alarm Status: Logical Ckt 32	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV286	x			No-Units	0	41060	
Latching Alarm Status: Logical Ckt 33	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV287	x			No-Units	0	42060	
Latching Alarm Status: Logical Ckt 34	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV288	x			No-Units	0	43060	
Latching Alarm Status: Logical Ckt 35	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV289	x			No-Units	0	44060	
Latching Alarm Status: Logical Ckt 36	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV290	x			No-Units	0	45060	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Latching Alarm Status: Logical Ckt 37	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV291	x			No-Units	0	46060	
Latching Alarm Status: Logical Ckt 38	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV292	x			No-Units	0	47060	
Latching Alarm Status: Logical Ckt 39	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV293	x			No-Units	0	48060	
Latching Alarm Status: Logical Ckt 30	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV294	x			No-Units	0	49060	
Latching Alarm Status: Logical Ckt 41	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV295	x			No-Units	0	50060	
Latching Alarm Status: Logical Ckt 42	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV296	x			No-Units	0	51060	
Latching Alarm Status: Logical Ckt 43	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV297	x			No-Units	0	52060	
Latching Alarm Status: Logical Ckt 44	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV298	x			No-Units	0	53060	
Latching Alarm Status: Logical Ckt 45	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV299	x			No-Units	0	54060	
Latching Alarm Status: Logical Ckt 46	bitmap: (0=HH;1=H;2=L;3=LL;4=State [1=OFF*];5-15=Rsv)	AV300	x			No-Units	0	55060	
Analog_Output Objects									
AUX Resets: Write value to reset	10203=kWh, 29877=Max Current & Max kW	AO1				No-Units	1	294	"Write the listed value to perform the corresponding reset: 10203 = Clear KWH value to zero 29877 = Clear Max Current and Max KW values to zero"
Global Resets: Write value to reset	10203=kWh, others…	AO2				No-Units	1	295	"Write the listed value to perform the corresponding reset: 26012 = Begin new Demand Sub-interval 26013 = Reset Demand 31010 = Reset all Latching Alarms 10203 = Clear all KWH values to zero 29877 = Clear all Max Current and Max KW values to zero 20097 = Clear all Max Demand values to zero"
Channel 1 Reset	10203=kWh, 29877=Max Current & Max kW	AO3	x	x	x	No-Units	1	1126	"Write the listed value to perform the corresponding reset: 10203 = Clear KWH value to zero 29877 = Clear Max Current and Max KW values to zero"
Channel 2 Reset	10203=kWh, 29877=Max Current & Max kW	AO4	x	x	x	No-Units	1	1127	
Channel 3 Reset	10203=kWh, 29877=Max Current & Max kW	AO5	x	x	x	No-Units	1	1128	
Channel 4 Reset	10203=kWh, 29877=Max Current & Max kW	AO6	x	x	x	No-Units	1	1129	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW>=V1.203	1.016-1.022	FW<V1.016				
Channel 5 Reset	10203=kWh, 29877=Max Current & Max kW	AO7	x	x	x	No-Units	1	1130	
Channel 6 Reset	10203=kWh, 29877=Max Current & Max kW	AO8	x	x	x	No-Units	1	1131	
Channel 7 Reset	10203=kWh, 29877=Max Current & Max kW	AO9	x	x	x	No-Units	1	1132	
Channel 8 Reset	10203=kWh, 29877=Max Current & Max kW	AO10	x	x	x	No-Units	1	1133	
Channel 9 Reset	10203=kWh, 29877=Max Current & Max kW	AO11	x	x	x	No-Units	1	1134	
Channel 10 Reset	10203=kWh, 29877=Max Current & Max kW	AO12	x	x	x	No-Units	1	1135	
Channel 11 Reset	10203=kWh, 29877=Max Current & Max kW	AO13	x	x	x	No-Units	1	1136	
Channel 12 Reset	10203=kWh, 29877=Max Current & Max kW	AO14	x	x	x	No-Units	1	1137	
Channel 13 Reset	10203=kWh, 29877=Max Current & Max kW	AO15	x	x	x	No-Units	1	1138	
Channel 14 Reset	10203=kWh, 29877=Max Current & Max kW	AO16	x	x	x	No-Units	1	1139	
Channel 15 Reset	10203=kWh, 29877=Max Current & Max kW	AO17	x	x	x	No-Units	1	1140	
Channel 16 Reset	10203=kWh, 29877=Max Current & Max kW	AO18	x	x	x	No-Units	1	1141	
Channel 17 Reset	10203=kWh, 29877=Max Current & Max kW	AO19	x	x	x	No-Units	1	1142	
Channel 18 Reset	10203=kWh, 29877=Max Current & Max kW	AO20	x	x	x	No-Units	1	1143	
Channel 19 Reset	10203=kWh, 29877=Max Current & Max kW	AO21	x	x	x	No-Units	1	1144	
Channel 20 Reset	10203=kWh, 29877=Max Current & Max kW	AO22	x	x	x	No-Units	1	1145	
Channel 21 Reset	10203=kWh, 29877=Max Current & Max kW	AO23	x	x	x	No-Units	1	1146	
Channel 22 Reset	10203=kWh, 29877=Max Current & Max kW	AO24	x	x	x	No-Units	1	1147	
Channel 23 Reset	10203=kWh, 29877=Max Current & Max kW	AO25	x	x	x	No-Units	1	1148	
Channel 24 Reset	10203=kWh, 29877=Max Current & Max kW	AO26	x	x	x	No-Units	1	1149	
Channel 25 Reset	10203=kWh, 29877=Max Current & Max kW	AO27	x	x	x	No-Units	1	1150	
Channel 26 Reset	10203=kWh, 29877=Max Current & Max kW	AO28	x	x	x	No-Units	1	1151	
Channel 27 Reset	10203=kWh, 29877=Max Current & Max kW	AO29	x	x	x	No-Units	1	1152	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Channel 28 Reset	10203=kWh, 29877=Max Current & Max kW	AO30	x	x	x	No-Units	1	1153	
Channel 29 Reset	10203=kWh, 29877=Max Current & Max kW	AO31	x	x	x	No-Units	1	1154	
Channel 30 Reset	10203=kWh, 29877=Max Current & Max kW	AO32	x	x	x	No-Units	1	1155	
Channel 31 Reset	10203=kWh, 29877=Max Current & Max kW	AO33	x	x	x	No-Units	1	1156	
Channel 32 Reset	10203=kWh, 29877=Max Current & Max kW	AO34	x	x	x	No-Units	1	1157	
Channel 33 Reset	10203=kWh, 29877=Max Current & Max kW	AO35	x	x	x	No-Units	1	1158	
Channel 34 Reset	10203=kWh, 29877=Max Current & Max kW	AO36	x	x	x	No-Units	1	1159	
Channel 35 Reset	10203=kWh, 29877=Max Current & Max kW	AO37	x	x	x	No-Units	1	1160	
Channel 36 Reset	10203=kWh, 29877=Max Current & Max kW	AO38	x	x	x	No-Units	1	1161	
Channel 37 Reset	10203=kWh, 29877=Max Current & Max kW	AO39	x	x	x	No-Units	1	1162	
Channel 38 Reset	10203=kWh, 29877=Max Current & Max kW	AO40	x	x	x	No-Units	1	1163	
Channel 39 Reset	10203=kWh, 29877=Max Current & Max kW	AO41	x	x	x	No-Units	1	1164	
Channel 40 Reset	10203=kWh, 29877=Max Current & Max kW	AO42	x	x	x	No-Units	1	1165	
Channel 41 Reset	10203=kWh, 29877=Max Current & Max kW	AO43	x	x	x	No-Units	1	1166	
Channel 42 Reset	10203=kWh, 29877=Max Current & Max kW	AO44	x	x	x	No-Units	1	1167	
Logical Ckt 1: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO45	x			No-Units	0	10057	"Write the listed value to perform the corresponding reset: 10203 = Clear KWH value to zero 29877 = Clear Max Current and Max KW values to zero 20097 = Clear Max Demand; 31010 = Clear Latching Alarms"
Logical Ckt 2: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO46	x			No-Units	0	11057	
Logical Ckt 3: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO47	x			No-Units	0	12057	
Logical Ckt 4: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO48	x			No-Units	0	13057	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW >= V1.203	1.016-1.022	FW < V1.016				
Logical Ckt 5: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO49	x			No-Units	0	14057	
Logical Ckt 6: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO50	x			No-Units	0	15057	
Logical Ckt 7: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO51	x			No-Units	0	16057	
Logical Ckt 8: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO52	x			No-Units	0	17057	
Logical Ckt 9: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO53	x			No-Units	0	18057	
Logical Ckt 10: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO54	x			No-Units	0	19057	
Logical Ckt 11: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO55	x			No-Units	0	20057	
Logical Ckt 12: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO56	x			No-Units	0	21057	
Logical Ckt 13: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO57	x			No-Units	0	22057	
Logical Ckt 14: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO58	x			No-Units	0	23057	
Logical Ckt 15: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO59	x			No-Units	0	24057	
Logical Ckt 16: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO60	x			No-Units	0	25057	
Logical Ckt 17: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO61	x			No-Units	0	26057	
Logical Ckt 18: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO62	x			No-Units	0	27057	
Logical Ckt 19: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO63	x			No-Units	0	28057	
Logical Ckt 20: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO64	x			No-Units	0	29057	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW > = V1.203	1.016-1.022	FW < V1.016				
Logical Ckt 21: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO65	x			No-Units	0	30057	
Logical Ckt 22: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO66	x			No-Units	0	31057	
Logical Ckt 23: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO67	x			No-Units	0	32057	
Logical Ckt 24: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO68	x			No-Units	0	33057	
Logical Ckt 25: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO69	x			No-Units	0	34057	
Logical Ckt 26: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO70	x			No-Units	0	35057	
Logical Ckt 27: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO71	x			No-Units	0	36057	
Logical Ckt 28: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO72	x			No-Units	0	37057	
Logical Ckt 29: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO73	x			No-Units	0	38057	
Logical Ckt 30: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO74	x			No-Units	0	39057	
Logical Ckt 31: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO75	x			No-Units	0	40057	
Logical Ckt 32: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO76	x			No-Units	0	41057	
Logical Ckt 33: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO77	x			No-Units	0	42057	
Logical Ckt 34: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO78	x			No-Units	0	43057	
Logical Ckt 35: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO79	x			No-Units	0	44057	
Logical Ckt 36: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO80	x			No-Units	0	45057	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xAxxxx and E3xExxx Branch Circuit Power Meters, cont.

Data Variable	Description	BACnet Object	E3xA/E			Units	COV Increment	Modbus Address	Comments
			FW> = V1.203	1.016-1.022	FW < V1.016				
Logical Ckt 37: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO81	x			No-Units	0	46057	
Logical Ckt 38: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO82	x			No-Units	0	47057	
Logical Ckt 39: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO83	x			No-Units	0	48057	
Logical Ckt 30: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO84	x			No-Units	0	49057	
Logical Ckt 41: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO85	x			No-Units	0	50057	
Logical Ckt 42: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO86	x			No-Units	0	51057	
Logical Ckt 43: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO87	x			No-Units	0	52057	
Logical Ckt 44: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO88	x			No-Units	0	53057	
Logical Ckt 45: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO89	x			No-Units	0	54057	
Logical Ckt 46: Reset (1 of 6 values)	10203=kWh; 29877=Max Amps&KW; 20097=Max Dmnd; 31010=Latching Alarms	AO90	x			No-Units	0	55057	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters

The E3xBxxx meters have 446 data objects per Modbus address and operate at 9600, 19200 or 38400 baud. These meters monitor current on 42 branch circuits and 4 main circuits (up to 3 phases, plus neutral), power, demand, and energy on the main channels (not the branches) for each Modbus address. The E30Bx42 models have one Modbus address and support only 42 branch channels (plus main channels). The E30Bx84 models and all E31Bxxx models have two Modbus addresses and support up to 84 branch channels and two sets of main channels.

AV4-AV45 are not writable on E30Bxxx solid-core models because the CT size is fixed (at 100 A). Other values written revert to 100 A the next time the meter is scanned. AV4-AV45 are writable on E31Bxxx split-core models.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Analog_Input Objects						
Frequency: (derived from Phase A)	Frequency (derived from Phase A)	AI1	Hz	0.01	600/601	
VOLTS L-N: 3ph Ave	Voltage L-L - average of active phases	AI2	Volts	5	602/603	
VOLTS L-L: 3ph Ave	Voltage L-N - average of active phases	AI3	Volts	5	604/605	
VOLTS A-N	Instantaneous Voltage Ph-A to Neutral	AI4	Volts	5	606/607	
VOLTS B-N	Instantaneous Voltage Ph-B to Neutral	AI5	Volts	5	608/609	
VOLTS C-N	Instantaneous Voltage Ph-C to Neutral	AI6	Volts	5	610/611	
VOLTS A-B	Instantaneous Voltage Phase A to B	AI7	Volts	5	612/613	
VOLTS B-C	Instantaneous Voltage Phase B to C	AI8	Volts	5	614/615	
VOLTS A-C	Instantaneous Voltage Phase A to C	AI9	Volts	5	616/617	
kWh Energy: 3ph Total	Real Energy - total of active phases	AI10	kWh	0	618/619	
kW: 3ph Total	Inst Real Power- total of active phases	AI11	kW	1	620/621	
Power Factor: 3ph Total	Inst Power Factor - average of phases	AI12	PF	0.01	622/623	
Amps: 3ph Average (phases 1,2,3)	Inst Current- average of active phases	AI13	Amps	5	624/625	
kW: Phase 1	Instantaneous Real Power - Phase 1	AI14	kW	1	626/627	
kW: Phase 2	Instantaneous Real Power - Phase 2	AI15	kW	1	628/629	
kW: Phase 3	Instantaneous Real Power - Phase 3	AI16	kW	1	630/631	
Power Factor: Phase 1	Instantaneous Power Factor - Phase A	AI17	PF	0.01	632/633	
Power Factor: Phase 2	Instantaneous Power Factor - Phase B	AI18	PF	0.01	634/635	
Power Factor: Phase 3	Instantaneous Power Factor - Phase C	AI19	PF	0.01	636/637	
Amps: Phase 1	Instantaneous Current - Phase 1	AI20	Amps	5	638/639	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Amps: Phase 2	Instantaneous Current - Phase 2	AI21	Amps	5	640/641	
Amps: Phase 3	Instantaneous Current - Phase 3	AI22	Amps	5	642/643	
Amps: Phase 4 (Neutral)	Instantaneous Neutral Current	AI23	Amps	5	644/645	
Amps Present Demand: Phase 1	Present Current Demand- Phase 1	AI24	Amps	5	646/647	
Amps Present Demand: Phase 2	Present Current Demand - Phase 2	AI25	Amps	5	648/649	
Amps Present Demand: Phase 3	Present Current Demand - Phase 3	AI26	Amps	5	650/651	
Amps Present Demand: Phase 4 (Neutral)	Present Current Demand - Neutral	AI27	Amps	5	652/653	
Amps Max Demand: Phase 1	Max Current Demand - Phase 1	AI28	Amps	5	654/655	
Amps Max Demand: Phase 2	Max Current Demand - Phase 2	AI29	Amps	5	656/657	
Amps Max Demand: Phase 3	Max Current Demand - Phase 3	AI30	Amps	5	658/659	
Amps Max Demand: Phase 4 (Neutral)	Max Current Demand - Neutral	AI31	Amps	5	660/661	
kW Present Demand: 3ph Total	Real Power Present Demand - 3ph Total	AI32	kW	1	662/663	
kW Max Demand: 3ph Total	Real Power Max Demand - 3ph Total	AI33	kW	1	664/665	
Max Amps: Phase 1	Max Instantaneous Current - Phase 1	AI34	Amps	5	666/667	
Max Amps: Phase 2	Max Instantaneous Current - Phase 2	AI35	Amps	5	668/669	
Max Amps: Phase 3	Max Instantaneous Current - Phase 3	AI36	Amps	5	670/671	
Max Amps: Phase 4 (Neutal)	Max Instantaneous Neutral Current	AI37	Amps	5	672/673	
kW: 3ph Max	Max Instantaneous Real Power- 3ph Total	AI38	kW	1	674/675	
Device Health	Bit Map of Device Health Indicators	AI39	n/a	1	532	Bit 0: Reserved Bit 1: Frequency Out of Range or insufficient voltage on Phase A to determine frequency range. Frequency range is 40-70 Hz. Bit 2: Phase A Voltage Clipping Bit 3: Phase B Voltage Clipping Bit 4: Phase C Voltage Clipping Bit 5: Current Clipping on at least 1 channel (AUX & Circuit) Bit 6-7: Reserved Bit 8: Strip Connection Error Bit 9-12: Reserved Bit 13: Current Model, Model C Bit 14: Power Model, Model B Bit 15: Branch Power, Model A

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Reserved for future use	Reserved for future use	AI40	n/a	1	533	
Reserved for future use	Reserved for future use	AI41	n/a	1	534	
Reserved for future use	Reserved for future use	AI42	n/a	1	535	
Reserved for future use	Reserved for future use	AI43	n/a	1	536	
Reserved for future use	Reserved for future use	AI44	n/a	1	537	
Reserved for future use	Reserved for future use	AI45	n/a	1	538	
Product ID	bit Map of Model configuration	AI46	n/a	1	539	Bit 0: Default Solid-Core Bit 1: Default Split-Core Bit 3-9: Reserved Bit 10: Reserved Bit 11: Reserved Bit 12: Custom V-Phase Capable Bit 13: Reserved (Model C) Bit 14: Reserved (Model B) Bit 15: Reserved (Model A)
kVA: 3ph Total	Instantaneous Apparent Power- 3ph Total	AI47	kVA	1	676/677	
kVA: Phase 1	Instantaneous Apparent Power - Phase 1	AI48	kVA	1	678/679	
kVA: Phase 2	Instantaneous Apparent Power - Phase 2	AI49	kVA	1	680/681	
kVA: Phase 3	Instantaneous Apparent Power - Phase 3	AI50	kVA	1	682/683	
Serial Number MSW	Serial Number MSW	AI51	n/a	1	1	Upper 16-bits of a 32-bit Hex Value
Serial Number LSW	Serial Number LSW	AI52	n/a	1	2	Lower 16-bits of a 32-bit Hex Value
Firmware Revision RS	Firmware Revision RS	AI53	n/a	1	3	
Firmware Revision OS	Firmware Revision OS	AI54	n/a	1	4	
Device ID:	15170=C, 15171=B, 15172=A	AI55	n/a	1	5	15170 = Model C, current only on all channels, no voltage 15171 = Model B, current only on branch channels, power on AUX channels plus voltage 15172 = Model A, current and power on all channels plus voltage
Global Latching Alarm Status	(HHL,HL,LL,LLL,ON,Rsv,Rsv,Rsv,HVL,LVL)	AI56	n/a	1	224	Bit 0: High High Latching Alarm Bit 1: High Latching Alarm Bit 2: Low Latching Alarm Bit 3: Low Low Latching Alarm Bit 4: Latching Alarm OFF state declared (1=OFF; ON state must have been achieved prior) Bit 5-7: Reserved for future use (reads 0) Bit 8: High Voltage Latching Alarm Bit 9: Low Voltage Latching Alarm Bit 10-15: Reserved for future use (reads 0)
Global Non-Latching Alarm Status	(HL,LL,Rsv,Rsv,Rsv,Rsv,Rsv,Rsv,HVL,LVL)	AI57	n/a	1	225	Bit 0: High Non-Latching Alarm Bit 1: Low Non-Latching Alarm Bit 2-7: Reserved for future use (reads 0) Bit 8: High Voltage Non-Latching Alarm Bit 9: Low Voltage Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Global Most-Recent Latching Alarm Chan	# of Most-Recent Channel (0=none)	AI58	n/a	1	226	0-46, 0=none
Global Most-Recent Non-Latching Alrm Ch	# of Most-Recent Channel (0=none)	AI59	n/a	1	227	0-46, 0=none
Total number of Latch channels in alarm	# alarm chan (non-latching alarms)	AI60	n/a	1	228	
Total number of non-Latch chan in alarm	# alarm chan (based on latching alarms)	AI61	n/a	1	229	
Error Bitmap1 (placeholder - bits TBD)	Error Bitmap1 (placeholder - bits TBD)	AI62	n/a	1	230	
Error Bitmap2 (placeholder - bits TBD)	Error Bitmap2 (placeholder - bits TBD)	AI63	n/a	1	231	
Error Bitmap3 (placeholder - bits TBD)	Error Bitmap3 (placeholder - bits TBD)	AI64	n/a	1	232	
Error Bitmap4 (placeholder - bits TBD)	Error Bitmap4 (placeholder - bits TBD)	AI65	n/a	1	233	
Error Bitmap5 (placeholder - bits TBD)	Error Bitmap5 (placeholder - bits TBD)	AI66	n/a	1	234	
Error Bitmap6 (placeholder - bits TBD)	Error Bitmap6 (placeholder - bits TBD)	AI67	n/a	1	235	
Amps: Channel 1	Instantaneous Current - Channel 1	AI68	Amps	5	2252/2253	
Amps: Channel 2	Instantaneous Current - Channel 2	AI69	Amps	5	2254/2255	
Amps: Channel 3	Instantaneous Current - Channel 3	AI70	Amps	5	2256/2257	
Amps: Channel 4	Instantaneous Current - Channel 4	AI71	Amps	5	2258/2259	
Amps: Channel 5	Instantaneous Current - Channel 5	AI72	Amps	5	2260/2261	
Amps: Channel 6	Instantaneous Current - Channel 6	AI73	Amps	5	2262/2263	
Amps: Channel 7	Instantaneous Current - Channel 7	AI74	Amps	5	2264/2265	
Amps: Channel 8	Instantaneous Current - Channel 8	AI75	Amps	5	2266/2267	
Amps: Channel 9	Instantaneous Current - Channel 9	AI76	Amps	5	2268/2269	
Amps: Channel 10	Instantaneous Current - Channel 10	AI77	Amps	5	2270/2271	
Amps: Channel 11	Instantaneous Current - Channel 11	AI78	Amps	5	2272/2273	
Amps: Channel 12	Instantaneous Current - Channel 12	AI79	Amps	5	2274/2275	
Amps: Channel 13	Instantaneous Current - Channel 13	AI80	Amps	5	2276/2277	
Amps: Channel 14	Instantaneous Current - Channel 14	AI81	Amps	5	2278/2279	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Amps: Channel 15	Instantaneous Current - Channel 15	AI82	Amps	5	2280/2281	
Amps: Channel 16	Instantaneous Current - Channel 16	AI83	Amps	5	2282/2283	
Amps: Channel 17	Instantaneous Current - Channel 17	AI84	Amps	5	2284/2285	
Amps: Channel 18	Instantaneous Current - Channel 18	AI85	Amps	5	2286/2287	
Amps: Channel 19	Instantaneous Current - Channel 19	AI86	Amps	5	2288/2289	
Amps: Channel 20	Instantaneous Current - Channel 20	AI87	Amps	5	2290/2291	
Amps: Channel 21	Instantaneous Current - Channel 21	AI88	Amps	5	2292/2293	
Amps: Channel 22	Instantaneous Current - Channel 22	AI89	Amps	5	2294/2295	
Amps: Channel 23	Instantaneous Current - Channel 23	AI90	Amps	5	2296/2297	
Amps: Channel 24	Instantaneous Current - Channel 24	AI91	Amps	5	2298/2299	
Amps: Channel 25	Instantaneous Current - Channel 25	AI92	Amps	5	2300/2301	
Amps: Channel 26	Instantaneous Current - Channel 26	AI93	Amps	5	2302/2303	
Amps: Channel 27	Instantaneous Current - Channel 27	AI94	Amps	5	2304/2305	
Amps: Channel 28	Instantaneous Current - Channel 28	AI95	Amps	5	2306/2307	
Amps: Channel 29	Instantaneous Current - Channel 29	AI96	Amps	5	2308/2309	
Amps: Channel 30	Instantaneous Current - Channel 30	AI97	Amps	5	2310/2311	
Amps: Channel 31	Instantaneous Current - Channel 31	AI98	Amps	5	2312/2313	
Amps: Channel 32	Instantaneous Current - Channel 32	AI99	Amps	5	2314/2315	
Amps: Channel 33	Instantaneous Current - Channel 33	AI100	Amps	5	2316/2317	
Amps: Channel 34	Instantaneous Current - Channel 34	AI101	Amps	5	2318/2319	
Amps: Channel 35	Instantaneous Current - Channel 35	AI102	Amps	5	2320/2321	
Amps: Channel 36	Instantaneous Current - Channel 36	AI103	Amps	5	2322/2323	
Amps: Channel 37	Instantaneous Current - Channel 37	AI104	Amps	5	2324/2325	
Amps: Channel 38	Instantaneous Current - Channel 38	AI105	Amps	5	2326/2327	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Amps: Channel 39	Instantaneous Current - Channel 39	AI106	Amps	5	2328/2329	
Amps: Channel 40	Instantaneous Current - Channel 40	AI107	Amps	5	2330/2331	
Amps: Channel 41	Instantaneous Current - Channel 41	AI108	Amps	5	2332/2333	
Amps: Channel 42	Instantaneous Current - Channel 42	AI109	Amps	5	2334/2335	
Amps Present Demand: Channel 1	Present Current Demand - Channel 1	AI110	Amps	5	2504/2505	
Amps Present Demand: Channel 2	Present Current Demand - Channel 2	AI111	Amps	5	2506/2507	
Amps Present Demand: Channel 3	Present Current Demand - Channel 3	AI112	Amps	5	2508/2509	
Amps Present Demand: Channel 4	Present Current Demand - Channel 4	AI113	Amps	5	2510/2511	
Amps Present Demand: Channel 5	Present Current Demand - Channel 5	AI114	Amps	5	2512/2513	
Amps Present Demand: Channel 6	Present Current Demand - Channel 6	AI115	Amps	5	2514/2515	
Amps Present Demand: Channel 7	Present Current Demand - Channel 7	AI116	Amps	5	2516/2517	
Amps Present Demand: Channel 8	Present Current Demand - Channel 8	AI117	Amps	5	2518/2519	
Amps Present Demand: Channel 9	Present Current Demand - Channel 9	AI118	Amps	5	2520/2521	
Amps Present Demand: Channel 10	Present Current Demand - Channel 10	AI119	Amps	5	2522/2523	
Amps Present Demand: Channel 11	Present Current Demand - Channel 11	AI120	Amps	5	2524/2525	
Amps Present Demand: Channel 12	Present Current Demand - Channel 12	AI121	Amps	5	2526/2527	
Amps Present Demand: Channel 13	Present Current Demand - Channel 13	AI122	Amps	5	2528/2529	
Amps Present Demand: Channel 14	Present Current Demand - Channel 14	AI123	Amps	5	2530/2531	
Amps Present Demand: Channel 15	Present Current Demand - Channel 15	AI124	Amps	5	2532/2533	
Amps Present Demand: Channel 16	Present Current Demand - Channel 16	AI125	Amps	5	2534/2535	
Amps Present Demand: Channel 17	Present Current Demand - Channel 17	AI126	Amps	5	2536/2537	
Amps Present Demand: Channel 18	Present Current Demand - Channel 18	AI127	Amps	5	2538/2539	
Amps Present Demand: Channel 19	Present Current Demand - Channel 19	AI128	Amps	5	2540/2541	
Amps Present Demand: Channel 20	Present Current Demand - Channel 20	AI129	Amps	5	2542/2543	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Amps Present Demand: Channel 21	Present Current Demand - Channel 21	AI130	Amps	5	2544/2545	
Amps Present Demand: Channel 22	Present Current Demand - Channel 22	AI131	Amps	5	2546/2547	
Amps Present Demand: Channel 23	Present Current Demand - Channel 23	AI132	Amps	5	2548/2549	
Amps Present Demand: Channel 24	Present Current Demand - Channel 24	AI133	Amps	5	2550/2551	
Amps Present Demand: Channel 25	Present Current Demand - Channel 25	AI134	Amps	5	2552/2553	
Amps Present Demand: Channel 26	Present Current Demand - Channel 26	AI135	Amps	5	2554/2555	
Amps Present Demand: Channel 27	Present Current Demand - Channel 27	AI136	Amps	5	2556/2557	
Amps Present Demand: Channel 28	Present Current Demand - Channel 28	AI137	Amps	5	2558/2559	
Amps Present Demand: Channel 29	Present Current Demand - Channel 29	AI138	Amps	5	2560/2561	
Amps Present Demand: Channel 30	Present Current Demand - Channel 30	AI139	Amps	5	2562/2563	
Amps Present Demand: Channel 31	Present Current Demand - Channel 31	AI140	Amps	5	2564/2565	
Amps Present Demand: Channel 32	Present Current Demand - Channel 32	AI141	Amps	5	2566/2567	
Amps Present Demand: Channel 33	Present Current Demand - Channel 33	AI142	Amps	5	2568/2569	
Amps Present Demand: Channel 34	Present Current Demand - Channel 34	AI143	Amps	5	2570/2571	
Amps Present Demand: Channel 35	Present Current Demand - Channel 35	AI144	Amps	5	2572/2573	
Amps Present Demand: Channel 36	Present Current Demand - Channel 36	AI145	Amps	5	2574/2575	
Amps Present Demand: Channel 37	Present Current Demand - Channel 37	AI146	Amps	5	2576/2577	
Amps Present Demand: Channel 38	Present Current Demand - Channel 38	AI147	Amps	5	2578/2579	
Amps Present Demand: Channel 39	Present Current Demand - Channel 39	AI148	Amps	5	2580/2581	
Amps Present Demand: Channel 40	Present Current Demand - Channel 40	AI149	Amps	5	2582/2583	
Amps Present Demand: Channel 41	Present Current Demand - Channel 41	AI150	Amps	5	2584/2585	
Amps Present Demand: Channel 42	Present Current Demand - Channel 42	AI151	Amps	5	2586/2587	
Amps Max Demand: Channel 1	Max Current Demand - Channel 1	AI152	Amps	5	2588/2589	
Amps Max Demand: Channel 2	Max Current Demand - Channel 2	AI153	Amps	5	2590/2591	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Amps Max Demand: Channel 3	Max Current Demand - Channel 3	AI154	Amps	5	2592/2593	
Amps Max Demand: Channel 4	Max Current Demand - Channel 4	AI155	Amps	5	2594/2595	
Amps Max Demand: Channel 5	Max Current Demand - Channel 5	AI156	Amps	5	2596/2597	
Amps Max Demand: Channel 6	Max Current Demand - Channel 6	AI157	Amps	5	2598/2599	
Amps Max Demand: Channel 7	Max Current Demand - Channel 7	AI158	Amps	5	2600/2601	
Amps Max Demand: Channel 8	Max Current Demand - Channel 8	AI159	Amps	5	2602/2603	
Amps Max Demand: Channel 9	Max Current Demand - Channel 9	AI160	Amps	5	2604/2605	
Amps Max Demand: Channel 10	Max Current Demand - Channel 10	AI161	Amps	5	2606/2607	
Amps Max Demand: Channel 11	Max Current Demand - Channel 11	AI162	Amps	5	2608/2609	
Amps Max Demand: Channel 12	Max Current Demand - Channel 12	AI163	Amps	5	2610/2611	
Amps Max Demand: Channel 13	Max Current Demand - Channel 13	AI164	Amps	5	2612/2613	
Amps Max Demand: Channel 14	Max Current Demand - Channel 14	AI165	Amps	5	2614/2615	
Amps Max Demand: Channel 15	Max Current Demand - Channel 15	AI166	Amps	5	2616/2617	
Amps Max Demand: Channel 16	Max Current Demand - Channel 16	AI167	Amps	5	2618/2619	
Amps Max Demand: Channel 17	Max Current Demand - Channel 17	AI168	Amps	5	2620/2621	
Amps Max Demand: Channel 18	Max Current Demand - Channel 18	AI169	Amps	5	2622/2623	
Amps Max Demand: Channel 19	Max Current Demand - Channel 19	AI170	Amps	5	2624/2625	
Amps Max Demand: Channel 20	Max Current Demand - Channel 20	AI171	Amps	5	2626/2627	
Amps Max Demand: Channel 21	Max Current Demand - Channel 21	AI172	Amps	5	2628/2629	
Amps Max Demand: Channel 22	Max Current Demand - Channel 22	AI173	Amps	5	2630/2631	
Amps Max Demand: Channel 23	Max Current Demand - Channel 23	AI174	Amps	5	2632/2633	
Amps Max Demand: Channel 24	Max Current Demand - Channel 24	AI175	Amps	5	2634/2635	
Amps Max Demand: Channel 25	Max Current Demand - Channel 25	AI176	Amps	5	2636/2637	
Amps Max Demand: Channel 26	Max Current Demand - Channel 26	AI177	Amps	5	2638/2639	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Amps Max Demand: Channel 27	Max Current Demand - Channel 27	AI178	Amps	5	2640/2641	
Amps Max Demand: Channel 28	Max Current Demand - Channel 28	AI179	Amps	5	2642/2643	
Amps Max Demand: Channel 29	Max Current Demand - Channel 29	AI180	Amps	5	2644/2645	
Amps Max Demand: Channel 30	Max Current Demand - Channel 30	AI181	Amps	5	2646/2647	
Amps Max Demand: Channel 31	Max Current Demand - Channel 31	AI182	Amps	5	2648/2649	
Amps Max Demand: Channel 32	Max Current Demand - Channel 32	AI183	Amps	5	2650/2651	
Amps Max Demand: Channel 33	Max Current Demand - Channel 33	AI184	Amps	5	2652/2653	
Amps Max Demand: Channel 34	Max Current Demand - Channel 34	AI185	Amps	5	2654/2655	
Amps Max Demand: Channel 35	Max Current Demand - Channel 35	AI186	Amps	5	2656/2657	
Amps Max Demand: Channel 36	Max Current Demand - Channel 36	AI187	Amps	5	2658/2659	
Amps Max Demand: Channel 37	Max Current Demand - Channel 37	AI188	Amps	5	2660/2661	
Amps Max Demand: Channel 38	Max Current Demand - Channel 38	AI189	Amps	5	2662/2663	
Amps Max Demand: Channel 39	Max Current Demand - Channel 39	AI190	Amps	5	2664/2665	
Amps Max Demand: Channel 40	Max Current Demand - Channel 40	AI191	Amps	5	2666/2667	
Amps Max Demand: Channel 41	Max Current Demand - Channel 41	AI192	Amps	5	2668/2669	
Amps Max Demand: Channel 42	Max Current Demand - Channel 42	AI193	Amps	5	2670/2671	
Max Amps: Channel 1	Max Instantaneous Current - Channel 1	AI194	Amps	5	2756/2757	
Max Amps: Channel 2	Max Instantaneous Current - Channel 2	AI195	Amps	5	2758/2759	
Max Amps: Channel 3	Max Instantaneous Current - Channel 3	AI196	Amps	5	2760/2761	
Max Amps: Channel 4	Max Instantaneous Current - Channel 4	AI197	Amps	5	2762/2763	
Max Amps: Channel 5	Max Instantaneous Current - Channel 5	AI198	Amps	5	2764/2765	
Max Amps: Channel 6	Max Instantaneous Current - Channel 6	AI199	Amps	5	2766/2767	
Max Amps: Channel 7	Max Instantaneous Current - Channel 7	AI200	Amps	5	2768/2769	
Max Amps: Channel 8	Max Instantaneous Current - Channel 8	AI201	Amps	5	2770/2771	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Max Amps: Channel 9	Max Instantaneous Current - Channel 9	AI202	Amps	5	2772/2773	
Max Amps: Channel 10	Max Instantaneous Current - Channel 10	AI203	Amps	5	2774/2775	
Max Amps: Channel 11	Max Instantaneous Current - Channel 11	AI204	Amps	5	2776/2777	
Max Amps: Channel 12	Max Instantaneous Current - Channel 12	AI205	Amps	5	2778/2779	
Max Amps: Channel 13	Max Instantaneous Current - Channel 13	AI206	Amps	5	2780/2781	
Max Amps: Channel 14	Max Instantaneous Current - Channel 14	AI207	Amps	5	2782/2783	
Max Amps: Channel 15	Max Instantaneous Current - Channel 15	AI208	Amps	5	2784/2785	
Max Amps: Channel 16	Max Instantaneous Current - Channel 16	AI209	Amps	5	2786/2787	
Max Amps: Channel 17	Max Instantaneous Current - Channel 17	AI210	Amps	5	2788/2789	
Max Amps: Channel 18	Max Instantaneous Current - Channel 18	AI211	Amps	5	2790/2791	
Max Amps: Channel 19	Max Instantaneous Current - Channel 19	AI212	Amps	5	2792/2793	
Max Amps: Channel 20	Max Instantaneous Current - Channel 20	AI213	Amps	5	2794/2795	
Max Amps: Channel 21	Max Instantaneous Current - Channel 21	AI214	Amps	5	2796/2797	
Max Amps: Channel 22	Max Instantaneous Current - Channel 22	AI215	Amps	5	2798/2799	
Max Amps: Channel 23	Max Instantaneous Current - Channel 23	AI216	Amps	5	2800/2801	
Max Amps: Channel 24	Max Instantaneous Current - Channel 24	AI217	Amps	5	2802/2803	
Max Amps: Channel 25	Max Instantaneous Current - Channel 25	AI218	Amps	5	2804/2805	
Max Amps: Channel 26	Max Instantaneous Current - Channel 26	AI219	Amps	5	2806/2807	
Max Amps: Channel 27	Max Instantaneous Current - Channel 27	AI220	Amps	5	2808/2809	
Max Amps: Channel 28	Max Instantaneous Current - Channel 28	AI221	Amps	5	2810/2811	
Max Amps: Channel 29	Max Instantaneous Current - Channel 29	AI222	Amps	5	2812/2813	
Max Amps: Channel 30	Max Instantaneous Current - Channel 30	AI223	Amps	5	2814/2815	
Max Amps: Channel 31	Max Instantaneous Current - Channel 31	AI224	Amps	5	2816/2817	
Max Amps: Channel 32	Max Instantaneous Current - Channel 32	AI225	Amps	5	2818/2819	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Max Amps: Channel 33	Max Instantaneous Current - Channel 33	AI226	Amps	5	2820/2821	
Max Amps: Channel 34	Max Instantaneous Current - Channel 34	AI227	Amps	5	2822/2823	
Max Amps: Channel 35	Max Instantaneous Current - Channel 35	AI228	Amps	5	2824/2825	
Max Amps: Channel 36	Max Instantaneous Current - Channel 36	AI229	Amps	5	2826/2827	
Max Amps: Channel 37	Max Instantaneous Current - Channel 37	AI230	Amps	5	2828/2829	
Max Amps: Channel 38	Max Instantaneous Current - Channel 38	AI231	Amps	5	2830/2831	
Max Amps: Channel 39	Max Instantaneous Current - Channel 39	AI232	Amps	5	2832/2833	
Max Amps: Channel 40	Max Instantaneous Current - Channel 40	AI233	Amps	5	2834/2835	
Max Amps: Channel 41	Max Instantaneous Current - Channel 41	AI234	Amps	5	2836/2837	
Max Amps: Channel 42	Max Instantaneous Current - Channel 42	AI235	Amps	5	2838/2839	
Analog_Value objects						
Configuration (bit 0 is LSB):	Configuration (bit 0 is LSB):	AV1	n/a	1	6	Bit 0: 0 = odd-even, 1 = sequential Bit 1: 0 = odd-even, 1 = sequential Bits 2-15: future use Examples: Value 0 = Odd/Even Value 1 = Reserved for Solid-Core Value 2 = Sequential Value 3 = Reserved for Solid-Core
# of Sub-Intervals per Demand Int.	Number of Sub-Interval per Dem Interval	AV2	n/a	1	71	Sets the number of sub-intervals that make a single demand interval. For block demand, set this to 1.
Sub-Interval Length in seconds.	Sub-Interval Length in seconds.	AV3	n/a	1	72	Sub-Interval Length in seconds. For sync-to-comms, set this to 0.
Branch 1 CT Size	Branch 1 CT Size	AV4	Amps	5	73	These are writable ONLY on E31Bxxx/E31Cxxx split-core models. These are NOT WRITABLE on E30Bxxx/E30Cxxx solid-core models because the CT size is fixed (at 100 A). Other values written revert to 100 A the next time the meter is scanned.
Branch 2 CT Size	Branch 2 CT Size	AV5	Amps	5	74	
Branch 3 CT Size	Branch 3 CT Size	AV6	Amps	5	75	
Branch 4 CT Size	Branch 4 CT Size	AV7	Amps	5	76	
Branch 5 CT Size	Branch 5 CT Size	AV8	Amps	5	77	
Branch 6 CT Size	Branch 6 CT Size	AV9	Amps	5	78	
Branch 7 CT Size	Branch 7 CT Size	AV10	Amps	5	79	
Branch 8 CT Size	Branch 8 CT Size	AV11	Amps	5	80	
Branch 9 CT Size	Branch 9 CT Size	AV12	Amps	5	81	
Branch 10 CT Size	Branch 10 CT Size	AV13	Amps	5	82	
Branch 11 CT Size	Branch 11 CT Size	AV14	Amps	5	83	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Branch 12 CT Size	Branch 12 CT Size	AV15	Amps	5	84	
Branch 13 CT Size	Branch 13 CT Size	AV16	Amps	5	85	
Branch 14 CT Size	Branch 14 CT Size	AV17	Amps	5	86	
Branch 15 CT Size	Branch 15 CT Size	AV18	Amps	5	87	
Branch 16 CT Size	Branch 16 CT Size	AV19	Amps	5	88	
Branch 17 CT Size	Branch 17 CT Size	AV20	Amps	5	89	
Branch 18 CT Size	Branch 18 CT Size	AV21	Amps	5	90	
Branch 19 CT Size	Branch 19 CT Size	AV22	Amps	5	91	
Branch 20 CT Size	Branch 20 CT Size	AV23	Amps	5	92	
Branch 21 CT Size	Branch 21 CT Size	AV24	Amps	5	93	
Branch 22 CT Size	Branch 22 CT Size	AV25	Amps	5	94	
Branch 23 CT Size	Branch 23 CT Size	AV26	Amps	5	95	
Branch 24 CT Size	Branch 24 CT Size	AV27	Amps	5	96	
Branch 25 CT Size	Branch 25 CT Size	AV28	Amps	5	97	
Branch 26 CT Size	Branch 26 CT Size	AV29	Amps	5	98	
Branch 27 CT Size	Branch 27 CT Size	AV30	Amps	5	99	
Branch 28 CT Size	Branch 28 CT Size	AV31	Amps	5	100	
Branch 29 CT Size	Branch 29 CT Size	AV32	Amps	5	101	
Branch 30 CT Size	Branch 30 CT Size	AV33	Amps	5	102	
Branch 31 CT Size	Branch 31 CT Size	AV34	Amps	5	103	
Branch 32 CT Size	Branch 32 CT Size	AV35	Amps	5	104	
Branch 33 CT Size	Branch 33 CT Size	AV36	Amps	5	105	
Branch 34 CT Size	Branch 34 CT Size	AV37	Amps	5	106	
Branch 35 CT Size	Branch 35 CT Size	AV38	Amps	5	107	
Branch 36 CT Size	Branch 36 CT Size	AV39	Amps	5	108	
Branch 37 CT Size	Branch 37 CT Size	AV40	Amps	5	109	
Branch 38 CT Size	Branch 38 CT Size	AV41	Amps	5	110	
Branch 39 CT Size	Branch 39 CT Size	AV42	Amps	5	111	
Branch 40 CT Size	Branch 40 CT Size	AV43	Amps	5	112	
Branch 41 CT Size	Branch 41 CT Size	AV44	Amps	5	113	
Branch 42 CT Size	Branch 42 CT Size	AV45	Amps	5	114	
AUX Channel (phase 1) CT Size	AUX Channel (phase 1) CT Size	AV46	Amps	5	115	
AUX Channel (phase 2) CT Size	AUX Channel (phase 2) CT Size	AV47	Amps	5	116	
AUX Channel (phase 3) CT Size	AUX Channel (phase 3) CT Size	AV48	Amps	5	117	
AUX Channel (Neutral) CT Size	AUX Channel (Neutral) CT Size	AV49	Amps	5	118	
Branch 1 Breaker Size	Branch 1 Breaker Size	AV50	Amps	5	119	
Branch 2 Breaker Size	Branch 2 Breaker Size	AV51	Amps	5	120	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Branch 3 Breaker Size	Branch 3 Breaker Size	AV52	Amps	5	121	
Branch 4 Breaker Size	Branch 4 Breaker Size	AV53	Amps	5	122	
Branch 5 Breaker Size	Branch 5 Breaker Size	AV54	Amps	5	123	
Branch 6 Breaker Size	Branch 6 Breaker Size	AV55	Amps	5	124	
Branch 7 Breaker Size	Branch 7 Breaker Size	AV56	Amps	5	125	
Branch 8 Breaker Size	Branch 8 Breaker Size	AV57	Amps	5	126	
Branch 9 Breaker Size	Branch 9 Breaker Size	AV58	Amps	5	127	
Branch 10 Breaker Size	Branch 10 Breaker Size	AV59	Amps	5	128	
Branch 11 Breaker Size	Branch 11 Breaker Size	AV60	Amps	5	129	
Branch 12 Breaker Size	Branch 12 Breaker Size	AV61	Amps	5	130	
Branch 13 Breaker Size	Branch 13 Breaker Size	AV62	Amps	5	131	
Branch 14 Breaker Size	Branch 14 Breaker Size	AV63	Amps	5	132	
Branch 15 Breaker Size	Branch 15 Breaker Size	AV64	Amps	5	133	
Branch 16 Breaker Size	Branch 16 Breaker Size	AV65	Amps	5	134	
Branch 17 Breaker Size	Branch 17 Breaker Size	AV66	Amps	5	135	
Branch 18 Breaker Size	Branch 18 Breaker Size	AV67	Amps	5	136	
Branch 19 Breaker Size	Branch 19 Breaker Size	AV68	Amps	5	137	
Branch 20 Breaker Size	Branch 20 Breaker Size	AV69	Amps	5	138	
Branch 21 Breaker Size	Branch 21 Breaker Size	AV70	Amps	5	139	
Branch 22 Breaker Size	Branch 22 Breaker Size	AV71	Amps	5	140	
Branch 23 Breaker Size	Branch 23 Breaker Size	AV72	Amps	5	141	
Branch 24 Breaker Size	Branch 24 Breaker Size	AV73	Amps	5	142	
Branch 25 Breaker Size	Branch 25 Breaker Size	AV74	Amps	5	143	
Branch 26 Breaker Size	Branch 26 Breaker Size	AV75	Amps	5	144	
Branch 27 Breaker Size	Branch 27 Breaker Size	AV76	Amps	5	145	
Branch 28 Breaker Size	Branch 28 Breaker Size	AV77	Amps	5	146	
Branch 29 Breaker Size	Branch 29 Breaker Size	AV78	Amps	5	147	
Branch 30 Breaker Size	Branch 30 Breaker Size	AV79	Amps	5	148	
Branch 31 Breaker Size	Branch 31 Breaker Size	AV80	Amps	5	149	
Branch 32 Breaker Size	Branch 32 Breaker Size	AV81	Amps	5	150	
Branch 33 Breaker Size	Branch 33 Breaker Size	AV82	Amps	5	151	
Branch 34 Breaker Size	Branch 34 Breaker Size	AV83	Amps	5	152	
Branch 35 Breaker Size	Branch 35 Breaker Size	AV84	Amps	5	153	
Branch 36 Breaker Size	Branch 36 Breaker Size	AV85	Amps	5	154	
Branch 37 Breaker Size	Branch 37 Breaker Size	AV86	Amps	5	155	
Branch 38 Breaker Size	Branch 38 Breaker Size	AV87	Amps	5	156	
Branch 39 Breaker Size	Branch 39 Breaker Size	AV88	Amps	5	157	
Branch 40 Breaker Size	Branch 40 Breaker Size	AV89	Amps	5	158	
Branch 41 Breaker Size	Branch 41 Breaker Size	AV90	Amps	5	159	
Branch 42 Breaker Size	Branch 42 Breaker Size	AV91	Amps	5	160	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
AUX Channel (phase 1) Breaker Size	AUX Channel (phase 1) Breaker Size	AV92	Amps	5	161	
AUX Channel (phase 2) Breaker Size	AUX Channel (phase 2) Breaker Size	AV93	Amps	5	162	
AUX Channel (phase 3) Breaker Size	AUX Channel (phase 3) Breaker Size	AV94	Amps	5	163	
AUX Channel (Neutral) Breaker Size	AUX Channel (Neutral) Breaker Size	AV95	Amps	5	164	
High-High Latching Alarm Time Delay	Alarm event duration threshold	AV96	Seconds	1	165	These timers control entry into a latching alarm state. A return to a non-alarm state is instantaneous. All channels use the same global timers. Latching Alarm On Time applies to all Latching Alarms. The parameter measurement rate is expected to be approximately 2.5 sec, which limits the effective resolution of these timers.
High Latching Alarm Time Delay	Alarm event duration threshold	AV97	Seconds	1	166	
Low Latching Alarm Time Delay	Alarm event duration threshold	AV98	Seconds	1	167	
Low-Low Latching Alarm Time Delay	Alarm event duration threshold	AV99	Seconds	1	168	
Latching Alarm ON Time	From initial current to alarms enabled	AV100	Seconds	1	169	Latching Alarm ON Time (when current is above Low-Low alarm and ON Time elapses then ON state is declared for all latching alarms, ON State enables Alarm Time Delays)
Latching Alarms time until OFF state	time until OFF state declared	AV101	Seconds	1	170	Latching Alarms time until OFF state is declared for all latching alarms (when current is below Low-Low alarm and ON state was declared)
High-High Latching Alarm Threshold	% of breaker size	AV102	Percent	1	171	
High Alarm Latching Alarm Threshold	% of breaker size	AV103	Percent	1	172	
Low Alarm Latching Alarm Threshold	% of breaker size	AV104	Percent	1	173	
Low Low Latching Alarm Threshold	% of breaker size	AV105	Percent	1	174	
Non-Latching High Threshold	% of breaker size	AV106	Percent	1	175	
Non-Latching Low Threshold	% of breaker size	AV107	Percent	1	176	
Non-Latching Hysteresis (0-100%)	Non-Latching Hysteresis (% of setpoint)	AV108	Percent	1	177	
Branch 1 Alarm Status	Write 0 to alarm bits to clear alarms	AV109	n/a	1	178	Latching Alarms are cleared by writing a 0 to its alarm bit. Writing to a Non-Latching alarm is ignored. Bit 0: High High Latching Alarm Bit 1: High Latching Alarm Bit 2: Low Latching Alarm Bit 3: Low Low Latching Alarm Bit 4: Latching Alarm OFF state declared (1=OFF; ON state must have been achieved prior) Bit 5-7: Reserved for future use (reads 0) Bit 8: High Non-Latching Alarm Bit 9: Low Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)
Branch 2 Alarm Status	Write 0 to alarm bits to clear alarms	AV110	n/a	1	179	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Branch 3 Alarm Status	Write 0 to alarm bits to clear alarms	AV111	n/a	1	180	
Branch 4 Alarm Status	Write 0 to alarm bits to clear alarms	AV112	n/a	1	181	
Branch 5 Alarm Status	Write 0 to alarm bits to clear alarms	AV113	n/a	1	182	
Branch 6 Alarm Status	Write 0 to alarm bits to clear alarms	AV114	n/a	1	183	
Branch 7 Alarm Status	Write 0 to alarm bits to clear alarms	AV115	n/a	1	184	
Branch 8 Alarm Status	Write 0 to alarm bits to clear alarms	AV116	n/a	1	185	
Branch 9 Alarm Status	Write 0 to alarm bits to clear alarms	AV117	n/a	1	186	
Branch 10 Alarm Status	Write 0 to alarm bits to clear alarms	AV118	n/a	1	187	
Branch 11 Alarm Status	Write 0 to alarm bits to clear alarms	AV119	n/a	1	188	
Branch 12 Alarm Status	Write 0 to alarm bits to clear alarms	AV120	n/a	1	189	
Branch 13 Alarm Status	Write 0 to alarm bits to clear alarms	AV121	n/a	1	190	
Branch 14 Alarm Status	Write 0 to alarm bits to clear alarms	AV122	n/a	1	191	
Branch 15 Alarm Status	Write 0 to alarm bits to clear alarms	AV123	n/a	1	192	
Branch 16 Alarm Status	Write 0 to alarm bits to clear alarms	AV124	n/a	1	193	
Branch 17 Alarm Status	Write 0 to alarm bits to clear alarms	AV125	n/a	1	194	
Branch 18 Alarm Status	Write 0 to alarm bits to clear alarms	AV126	n/a	1	195	
Branch 19 Alarm Status	Write 0 to alarm bits to clear alarms	AV127	n/a	1	196	
Branch 20 Alarm Status	Write 0 to alarm bits to clear alarms	AV128	n/a	1	197	
Branch 21 Alarm Status	Write 0 to alarm bits to clear alarms	AV129	n/a	1	198	
Branch 22 Alarm Status	Write 0 to alarm bits to clear alarms	AV130	n/a	1	199	
Branch 23 Alarm Status	Write 0 to alarm bits to clear alarms	AV131	n/a	1	200	
Branch 24 Alarm Status	Write 0 to alarm bits to clear alarms	AV132	n/a	1	201	
Branch 25 Alarm Status	Write 0 to alarm bits to clear alarms	AV133	n/a	1	202	
Branch 26 Alarm Status	Write 0 to alarm bits to clear alarms	AV134	n/a	1	203	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Branch 27 Alarm Status	Write 0 to alarm bits to clear alarms	AV135	n/a	1	204	
Branch 28 Alarm Status	Write 0 to alarm bits to clear alarms	AV136	n/a	1	205	
Branch 29 Alarm Status	Write 0 to alarm bits to clear alarms	AV137	n/a	1	206	
Branch 30 Alarm Status	Write 0 to alarm bits to clear alarms	AV138	n/a	1	207	
Branch 31 Alarm Status	Write 0 to alarm bits to clear alarms	AV139	n/a	1	208	
Branch 32 Alarm Status	Write 0 to alarm bits to clear alarms	AV140	n/a	1	209	
Branch 33 Alarm Status	Write 0 to alarm bits to clear alarms	AV141	n/a	1	210	
Branch 34 Alarm Status	Write 0 to alarm bits to clear alarms	AV142	n/a	1	211	
Branch 35 Alarm Status	Write 0 to alarm bits to clear alarms	AV143	n/a	1	212	
Branch 36 Alarm Status	Write 0 to alarm bits to clear alarms	AV144	n/a	1	213	
Branch 37 Alarm Status	Write 0 to alarm bits to clear alarms	AV145	n/a	1	214	
Branch 38 Alarm Status	Write 0 to alarm bits to clear alarms	AV146	n/a	1	215	
Branch 39 Alarm Status	Write 0 to alarm bits to clear alarms	AV147	n/a	1	216	
Branch 40 Alarm Status	Write 0 to alarm bits to clear alarms	AV148	n/a	1	217	
Branch 41 Alarm Status	Write 0 to alarm bits to clear alarms	AV149	n/a	1	218	
Branch 42 Alarm Status	Write 0 to alarm bits to clear alarms	AV150	n/a	1	219	
AUX Channel (phase 1) Alarm Status	Write 0 to alarm bits to clear alarms	AV151	n/a	1	220	
AUX Channel (phase 2) Alarm Status	Write 0 to alarm bits to clear alarms	AV152	n/a	1	221	
AUX Channel (phase 3) Alarm Status	Write 0 to alarm bits to clear alarms	AV153	n/a	1	222	
AUX Channel (Neutral) Alarm Status	Write 0 to alarm bits to clear alarms	AV154	n/a	1	223	
Overvoltage Alarm Timer	Alarm event duration threshold	AV155	Seconds	1	236	Controls entry into Overvoltage alarm state. A return to a non-alarm state is instantaneous. All channels use these same global timers. Note that the parameter measurement update rate is 1.6 sec, which limits the effective resolution of these timers.
Undervoltage Alarm Timer	Alarm event duration threshold	AV156	Seconds	1	237	Controls entry into Undervoltage alarm state. A return to a non-alarm state is instantaneous. All channels use these same global timers. Note that the parameter measurement update rate is 1.6 sec, which limits the effective resolution of these timers.
Overvoltage Alarm Threshold	Overvoltage level threshold (0=OFF)	AV157	Volts	5	238	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Undervoltage Alarm Threshold	Undervoltage level threshold (0=OFF)	AV158	Volts	5	239	
Voltage Alarm Hysteresis	Voltage Alarm Hysteresis (% of setpoint)	AV159	Percent	1	240	Percentage of setpoint.
Voltage 1 Alarm Status	Write 0 to alarm bits to clear alarms	AV160	n/a	1	241	Latching Alarms are cleared by writing a 0 to its alarm bit. Writing to Non-Latching alarm is ignored. Bit 0: High Latching Alarm Bit 1: Low Latching Alarm Bit 2-7: Reserved for future use (reads 0) Bit 8: High Non-Latching Alarm Bit 9: Low Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)
Voltage 2 Alarm Status	Write 0 to alarm bits to clear alarms	AV161	n/a	1	242	Latching Alarms are cleared by writing a 0 to its alarm bit. Writing to Non-Latching alarm is ignored. Bit 0: High Latching Alarm Bit 1: Low Latching Alarm Bit 2-7: Reserved for future use (reads 0) Bit 8: High Non-Latching Alarm Bit 9: Low Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)
Voltage 3 Alarm Status	Write 0 to alarm bits to clear alarms	AV162	n/a	1	243	Latching Alarms are cleared by writing a 0 to its alarm bit. Writing to Non-Latching alarm is ignored. Bit 0: High Latching Alarm Bit 1: Low Latching Alarm Bit 2-7: Reserved for future use (reads 0) Bit 8: High Non-Latching Alarm Bit 9: Low Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)
Power Up Counter	Power Up Counter	AV163	n/a	1	531	Number of power-up cycles (write 0 to reset)
User Defined Status Register	1 in bit 0 enables CT phase assignment	AV164	n/a	1	62017	User Defined Status Register: Bit 0: Enable User CT Phase Assignment Bit 1-15: Reserved
Voltage Phase for Aux Channel 1	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV165	n/a	1	62158	
Voltage Phase for Aux Channel 2	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV166	n/a	1	62159	
Voltage Phase for Aux Channel 3	0=phase-1/A, 1=phase-2/B, 2=phase-3/C	AV167	n/a	1	62160	
Analog_Output objects						
AUX Resets: Write value to reset	10203=kWh, 29877=Max Current & Max kW	AO1	n/a	1	294	Write the listed value to perform the corresponding reset: 10203 = Clear kWh value to zero 29877 = Clear Max Current and Max kW values to zero
Global Resets: Write value to reset	10203=kWh, others…	AO2	n/a	1	295	Write the listed value to perform the corresponding reset: 26012 = Begin new Demand Sub-interval 26013 = Reset Demand 31010 = Reset all Latching Alarms 10203 = Clear all kWh values to zero 29877 = Clear all Max Current and Max kW values to zero 20097 = Clear all Max Demand values to zero

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Channel 1 Reset	10203=kWh, 29877=Max Current & Max kW	AO3	n/a	1	1126	Write the listed value to perform the corresponding reset: 10203 = Clear kWh value to zero 29877 = Clear Max Current and Max kW values to zero
Channel 2 Reset	10203=kWh, 29877=Max Current & Max kW	AO4	n/a	1	1127	
Channel 3 Reset	10203=kWh, 29877=Max Current & Max kW	AO5	n/a	1	1128	
Channel 4 Reset	10203=kWh, 29877=Max Current & Max kW	AO6	n/a	1	1129	
Channel 5 Reset	10203=kWh, 29877=Max Current & Max kW	AO7	n/a	1	1130	
Channel 6 Reset	10203=kWh, 29877=Max Current & Max kW	AO8	n/a	1	1131	
Channel 7 Reset	10203=kWh, 29877=Max Current & Max kW	AO9	n/a	1	1132	
Channel 8 Reset	10203=kWh, 29877=Max Current & Max kW	AO10	n/a	1	1133	
Channel 9 Reset	10203=kWh, 29877=Max Current & Max kW	AO11	n/a	1	1134	
Channel 10 Reset	10203=kWh, 29877=Max Current & Max kW	AO12	n/a	1	1135	
Channel 11 Reset	10203=kWh, 29877=Max Current & Max kW	AO13	n/a	1	1136	
Channel 12 Reset	10203=kWh, 29877=Max Current & Max kW	AO14	n/a	1	1137	
Channel 13 Reset	10203=kWh, 29877=Max Current & Max kW	AO15	n/a	1	1138	
Channel 14 Reset	10203=kWh, 29877=Max Current & Max kW	AO16	n/a	1	1139	
Channel 15 Reset	10203=kWh, 29877=Max Current & Max kW	AO17	n/a	1	1140	
Channel 16 Reset	10203=kWh, 29877=Max Current & Max kW	AO18	n/a	1	1141	
Channel 17 Reset	10203=kWh, 29877=Max Current & Max kW	AO19	n/a	1	1142	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Channel 18 Reset	10203=kWh, 29877=Max Current & Max kW	AO20	n/a	1	1143	
Channel 19 Reset	10203=kWh, 29877=Max Current & Max kW	AO21	n/a	1	1144	
Channel 20 Reset	10203=kWh, 29877=Max Current & Max kW	AO22	n/a	1	1145	
Channel 21 Reset	10203=kWh, 29877=Max Current & Max kW	AO23	n/a	1	1146	
Channel 22 Reset	10203=kWh, 29877=Max Current & Max kW	AO24	n/a	1	1147	
Channel 23 Reset	10203=kWh, 29877=Max Current & Max kW	AO25	n/a	1	1148	
Channel 24 Reset	10203=kWh, 29877=Max Current & Max kW	AO26	n/a	1	1149	
Channel 25 Reset	10203=kWh, 29877=Max Current & Max kW	AO27	n/a	1	1150	
Channel 26 Reset	10203=kWh, 29877=Max Current & Max kW	AO28	n/a	1	1151	
Channel 27 Reset	10203=kWh, 29877=Max Current & Max kW	AO29	n/a	1	1152	
Channel 28 Reset	10203=kWh, 29877=Max Current & Max kW	AO30	n/a	1	1153	
Channel 29 Reset	10203=kWh, 29877=Max Current & Max kW	AO31	n/a	1	1154	
Channel 30 Reset	10203=kWh, 29877=Max Current & Max kW	AO32	n/a	1	1155	
Channel 31 Reset	10203=kWh, 29877=Max Current & Max kW	AO33	n/a	1	1156	
Channel 32 Reset	10203=kWh, 29877=Max Current & Max kW	AO34	n/a	1	1157	
Channel 33 Reset	10203=kWh, 29877=Max Current & Max kW	AO35	n/a	1	1158	
Channel 34 Reset	10203=kWh, 29877=Max Current & Max kW	AO36	n/a	1	1159	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xBxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Channel 35 Reset	10203=kWh, 29877=Max Current & Max kW	AO37	n/a	1	1160	
Channel 36 Reset	10203=kWh, 29877=Max Current & Max kW	AO38	n/a	1	1161	
Channel 37 Reset	10203=kWh, 29877=Max Current & Max kW	AO39	n/a	1	1162	
Channel 38 Reset	10203=kWh, 29877=Max Current & Max kW	AO40	n/a	1	1163	
Channel 39 Reset	10203=kWh, 29877=Max Current & Max kW	AO41	n/a	1	1164	
Channel 40 Reset	10203=kWh, 29877=Max Current & Max kW	AO42	n/a	1	1165	
Channel 41 Reset	10203=kWh, 29877=Max Current & Max kW	AO43	n/a	1	1166	
Channel 42 Reset	10203=kWh, 29877=Max Current & Max kW	AO44	n/a	1	1167	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters

The E3xCxxx meters have 446 data objects per Modbus address and operate at 9600, 19200 or 38400 baud. These meters monitor current on 42 branch circuits and 4 main circuits (up to 3 phases, plus neutral) for each Modbus address. The E30Cx42 models have one Modbus address and support only 42 branch channels (plus main channels). The E30Cx84 models and all E31Cxxx models have two Modbus addresses and support up to 84 branch channels and two sets of main channels.

AV4-AV45 are not writable on E30Cxxx solid-core models because the CT size is fixed (at 100 A). Other values written revert to 100 A the next time the meter is scanned. AV4-AV45 are writable on E31Cxxx split-core models.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Analog_Input objects						
Amps: 3ph Average (phases 1,2,3)	Inst Current- average of active phases	AI1	Amps	5	624/625	
Amps: Phase 1	Instantaneous Current - Phase 1	AI2	Amps	5	638/639	
Amps: Phase 2	Instantaneous Current - Phase 2	AI3	Amps	5	640/641	
Amps: Phase 3	Instantaneous Current - Phase 3	AI4	Amps	5	642/643	
Amps: Phase 4 (Neutral)	Instantaneous Neutral Current	AI5	Amps	5	644/645	
Amps Present Demand: Phase 1	Present Current Demand- Phase 1	AI6	Amps	5	646/647	
Amps Present Demand: Phase 2	Present Current Demand - Phase 2	AI7	Amps	5	648/649	
Amps Present Demand: Phase 3	Present Current Demand - Phase 3	AI8	Amps	5	650/651	
Amps Present Demand: Phase 4 (Neutral)	Present Current Demand - Neutral	AI9	Amps	5	652/653	
Amps Max Demand: Phase 1	Max Current Demand - Phase 1	AI10	Amps	5	654/655	
Amps Max Demand: Phase 2	Max Current Demand - Phase 2	AI11	Amps	5	656/657	
Amps Max Demand: Phase 3	Max Current Demand - Phase 3	AI12	Amps	5	658/659	
Amps Max Demand: Phase 4 (Neutral)	Max Current Demand - Neutral	AI13	Amps	5	660/661	
Max Amps: Phase 1	Max Instantaneous Current - Phase 1	AI14	Amps	5	666/667	
Max Amps: Phase 2	Max Instantaneous Current - Phase 2	AI15	Amps	5	668/669	
Max Amps: Phase 3	Max Instantaneous Current - Phase 3	AI16	Amps	5	670/671	
Max Amps: Phase 4 (Neutal)	Max Instantaneous Neutral Current	AI17	Amps	5	672/673	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Device Health	Bit Map of Device Health Indicators	AI18	n/a	1	532	Bit 0: Reserved Bit 1: Frequency Out of Range or insufficient voltage on Phase A to determine frequency range. Frequency range is 40-70 Hz. Bit 2: Phase A Voltage Clipping Bit 3: Phase B Voltage Clipping Bit 4: Phase C Voltage Clipping Bit 5: Current Clipping on at least 1 channel (AUX & Circuit) Bit 6-7: Reserved Bit 8: Strip Connection Error Bit 9-12: Reserved Bit 13: Current Model, Model C Bit 14: Power Model, Model B Bit 15: Branch Power, Model A
Reserved for future use	Reserved for future use	AI19	n/a	1	533	
Reserved for future use	Reserved for future use	AI20	n/a	1	534	
Reserved for future use	Reserved for future use	AI21	n/a	1	535	
Reserved for future use	Reserved for future use	AI22	n/a	1	536	
Reserved for future use	Reserved for future use	AI23	n/a	1	537	
Reserved for future use	Reserved for future use	AI24	n/a	1	538	
Product ID	bit Map of Model configuration	AI25	n/a	1	539	Bit 0: Default Solid-Core Bit 1: Default Split-Core Bit 3-9: Reserved Bit 10: Reserved Bit 11: Reserved Bit 12: Custom V-Phase Capable Bit 13: Reserved (Model C) Bit 14: Reserved (Model B) Bit 15: Reserved (Model A)
Serial Number MSW	Serial Number MSW	AI26	n/a	1	1	Upper 16-bits of a 32-bit Hex Value
Serial Number LSW	Serial Number LSW	AI27	n/a	1	2	Lower 16-bits of a 32-bit Hex Value
Firmware Revision RS	Firmware Revision RS	AI28	n/a	1	3	
Firmware Revision OS	Firmware Revision OS	AI29	n/a	1	4	
Device ID:	15170=C, 15171=B, 15172=A	AI30	n/a	1	5	15170 = Model C, current only on all channels, no voltage 15171 = Model B, current only on branch channels, power on AUX channels plus voltage 15172 = Model A, current and power on all channels plus voltage
Global Latching Alarm Status	(HHL,HL,LL,LLL,ON,Rsv,Rsv,Rsv,HVL,LVL)	AI31	n/a	1	224	Bit 0: High High Latching Alarm Bit 1: High Latching Alarm Bit 2: Low Latching Alarm Bit 3: Low Low Latching Alarm Bit 4: Latching Alarm OFF state declared (1=OFF; ON state must have been achieved prior) Bit 5-7: Reserved for future use (reads 0) Bit 8: High Voltage Latching Alarm Bit 9: Low Voltage Latching Alarm Bit 10-15: Reserved for future use (reads 0)

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Global Non-Latching Alarm Status	(HL,LL,Rsv,Rsv,Rsv,Rsv,Rsv,Rsv,HVL,LVL)	AI32	n/a	1	225	Bit 0: High Non-Latching Alarm Bit 1: Low Non-Latching Alarm Bit 2-7: Reserved for future use (reads 0) Bit 8: High Voltage Non-Latching Alarm Bit 9: Low Voltage Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)
Global Most-Recent Latching Alarm Chan	# of Most-Recent Channel (0=none)	AI33	n/a	1	226	0-46, 0=none
Global Most-Recent Non-Latching Alrm Ch	# of Most-Recent Channel (0=none)	AI34	n/a	1	227	0-46, 0=none
Total number of Latch channels in alarm	# alarm chan (non-latching alarms)	AI35	n/a	1	228	
Total number of non-Latch chan in alarm	# alarm chan (based on latching alarms)	AI36	n/a	1	229	
Error Bitmap1 (placeholder - bits TBD)	Error Bitmap1 (placeholder - bits TBD)	AI37	n/a	1	230	
Error Bitmap2 (placeholder - bits TBD)	Error Bitmap2 (placeholder - bits TBD)	AI38	n/a	1	231	
Error Bitmap3 (placeholder - bits TBD)	Error Bitmap3 (placeholder - bits TBD)	AI39	n/a	1	232	
Error Bitmap4 (placeholder - bits TBD)	Error Bitmap4 (placeholder - bits TBD)	AI40	n/a	1	233	
Error Bitmap5 (placeholder - bits TBD)	Error Bitmap5 (placeholder - bits TBD)	AI41	n/a	1	234	
Error Bitmap6 (placeholder - bits TBD)	Error Bitmap6 (placeholder - bits TBD)	AI42	n/a	1	235	
Amps: Channel 1	Instantaneous Current - Channel 1	AI43	Amps	5	2252/2253	
Amps: Channel 2	Instantaneous Current - Channel 2	AI44	Amps	5	2254/2255	
Amps: Channel 3	Instantaneous Current - Channel 3	AI45	Amps	5	2256/2257	
Amps: Channel 4	Instantaneous Current - Channel 4	AI46	Amps	5	2258/2259	
Amps: Channel 5	Instantaneous Current - Channel 5	AI47	Amps	5	2260/2261	
Amps: Channel 6	Instantaneous Current - Channel 6	AI48	Amps	5	2262/2263	
Amps: Channel 7	Instantaneous Current - Channel 7	AI49	Amps	5	2264/2265	
Amps: Channel 8	Instantaneous Current - Channel 8	AI50	Amps	5	2266/2267	
Amps: Channel 9	Instantaneous Current - Channel 9	AI51	Amps	5	2268/2269	
Amps: Channel 10	Instantaneous Current - Channel 10	AI52	Amps	5	2270/2271	
Amps: Channel 11	Instantaneous Current - Channel 11	AI53	Amps	5	2272/2273	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Amps: Channel 12	Instantaneous Current - Channel 12	AI54	Amps	5	2274/2275	
Amps: Channel 13	Instantaneous Current - Channel 13	AI55	Amps	5	2276/2277	
Amps: Channel 14	Instantaneous Current - Channel 14	AI56	Amps	5	2278/2279	
Amps: Channel 15	Instantaneous Current - Channel 15	AI57	Amps	5	2280/2281	
Amps: Channel 16	Instantaneous Current - Channel 16	AI58	Amps	5	2282/2283	
Amps: Channel 17	Instantaneous Current - Channel 17	AI59	Amps	5	2284/2285	
Amps: Channel 18	Instantaneous Current - Channel 18	AI60	Amps	5	2286/2287	
Amps: Channel 19	Instantaneous Current - Channel 19	AI61	Amps	5	2288/2289	
Amps: Channel 20	Instantaneous Current - Channel 20	AI62	Amps	5	2290/2291	
Amps: Channel 21	Instantaneous Current - Channel 21	AI63	Amps	5	2292/2293	
Amps: Channel 22	Instantaneous Current - Channel 22	AI64	Amps	5	2294/2295	
Amps: Channel 23	Instantaneous Current - Channel 23	AI65	Amps	5	2296/2297	
Amps: Channel 24	Instantaneous Current - Channel 24	AI66	Amps	5	2298/2299	
Amps: Channel 25	Instantaneous Current - Channel 25	AI67	Amps	5	2300/2301	
Amps: Channel 26	Instantaneous Current - Channel 26	AI68	Amps	5	2302/2303	
Amps: Channel 27	Instantaneous Current - Channel 27	AI69	Amps	5	2304/2305	
Amps: Channel 28	Instantaneous Current - Channel 28	AI70	Amps	5	2306/2307	
Amps: Channel 29	Instantaneous Current - Channel 29	AI71	Amps	5	2308/2309	
Amps: Channel 30	Instantaneous Current - Channel 30	AI72	Amps	5	2310/2311	
Amps: Channel 31	Instantaneous Current - Channel 31	AI73	Amps	5	2312/2313	
Amps: Channel 32	Instantaneous Current - Channel 32	AI74	Amps	5	2314/2315	
Amps: Channel 33	Instantaneous Current - Channel 33	AI75	Amps	5	2316/2317	
Amps: Channel 34	Instantaneous Current - Channel 34	AI76	Amps	5	2318/2319	
Amps: Channel 35	Instantaneous Current - Channel 35	AI77	Amps	5	2320/2321	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Amps: Channel 36	Instantaneous Current - Channel 36	AI78	Amps	5	2322/2323	
Amps: Channel 37	Instantaneous Current - Channel 37	AI79	Amps	5	2324/2325	
Amps: Channel 38	Instantaneous Current - Channel 38	AI80	Amps	5	2326/2327	
Amps: Channel 39	Instantaneous Current - Channel 39	AI81	Amps	5	2328/2329	
Amps: Channel 40	Instantaneous Current - Channel 40	AI82	Amps	5	2330/2331	
Amps: Channel 41	Instantaneous Current - Channel 41	AI83	Amps	5	2332/2333	
Amps: Channel 42	Instantaneous Current - Channel 42	AI84	Amps	5	2334/2335	
Amps Present Demand: Channel 1	Present Current Demand - Channel 1	AI85	Amps	5	2504/2505	
Amps Present Demand: Channel 2	Present Current Demand - Channel 2	AI86	Amps	5	2506/2507	
Amps Present Demand: Channel 3	Present Current Demand - Channel 3	AI87	Amps	5	2508/2509	
Amps Present Demand: Channel 4	Present Current Demand - Channel 4	AI88	Amps	5	2510/2511	
Amps Present Demand: Channel 5	Present Current Demand - Channel 5	AI89	Amps	5	2512/2513	
Amps Present Demand: Channel 6	Present Current Demand - Channel 6	AI90	Amps	5	2514/2515	
Amps Present Demand: Channel 7	Present Current Demand - Channel 7	AI91	Amps	5	2516/2517	
Amps Present Demand: Channel 8	Present Current Demand - Channel 8	AI92	Amps	5	2518/2519	
Amps Present Demand: Channel 9	Present Current Demand - Channel 9	AI93	Amps	5	2520/2521	
Amps Present Demand: Channel 10	Present Current Demand - Channel 10	AI94	Amps	5	2522/2523	
Amps Present Demand: Channel 11	Present Current Demand - Channel 11	AI95	Amps	5	2524/2525	
Amps Present Demand: Channel 12	Present Current Demand - Channel 12	AI96	Amps	5	2526/2527	
Amps Present Demand: Channel 13	Present Current Demand - Channel 13	AI97	Amps	5	2528/2529	
Amps Present Demand: Channel 14	Present Current Demand - Channel 14	AI98	Amps	5	2530/2531	
Amps Present Demand: Channel 15	Present Current Demand - Channel 15	AI99	Amps	5	2532/2533	
Amps Present Demand: Channel 16	Present Current Demand - Channel 16	AI100	Amps	5	2534/2535	
Amps Present Demand: Channel 17	Present Current Demand - Channel 17	AI101	Amps	5	2536/2537	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Amps Present Demand: Channel 18	Present Current Demand - Channel 18	AI102	Amps	5	2538/2539	
Amps Present Demand: Channel 19	Present Current Demand - Channel 19	AI103	Amps	5	2540/2541	
Amps Present Demand: Channel 20	Present Current Demand - Channel 20	AI104	Amps	5	2542/2543	
Amps Present Demand: Channel 21	Present Current Demand - Channel 21	AI105	Amps	5	2544/2545	
Amps Present Demand: Channel 22	Present Current Demand - Channel 22	AI106	Amps	5	2546/2547	
Amps Present Demand: Channel 23	Present Current Demand - Channel 23	AI107	Amps	5	2548/2549	
Amps Present Demand: Channel 24	Present Current Demand - Channel 24	AI108	Amps	5	2550/2551	
Amps Present Demand: Channel 25	Present Current Demand - Channel 25	AI109	Amps	5	2552/2553	
Amps Present Demand: Channel 26	Present Current Demand - Channel 26	AI110	Amps	5	2554/2555	
Amps Present Demand: Channel 27	Present Current Demand - Channel 27	AI111	Amps	5	2556/2557	
Amps Present Demand: Channel 28	Present Current Demand - Channel 28	AI112	Amps	5	2558/2559	
Amps Present Demand: Channel 29	Present Current Demand - Channel 29	AI113	Amps	5	2560/2561	
Amps Present Demand: Channel 30	Present Current Demand - Channel 30	AI114	Amps	5	2562/2563	
Amps Present Demand: Channel 31	Present Current Demand - Channel 31	AI115	Amps	5	2564/2565	
Amps Present Demand: Channel 32	Present Current Demand - Channel 32	AI116	Amps	5	2566/2567	
Amps Present Demand: Channel 33	Present Current Demand - Channel 33	AI117	Amps	5	2568/2569	
Amps Present Demand: Channel 34	Present Current Demand - Channel 34	AI118	Amps	5	2570/2571	
Amps Present Demand: Channel 35	Present Current Demand - Channel 35	AI119	Amps	5	2572/2573	
Amps Present Demand: Channel 36	Present Current Demand - Channel 36	AI120	Amps	5	2574/2575	
Amps Present Demand: Channel 37	Present Current Demand - Channel 37	AI121	Amps	5	2576/2577	
Amps Present Demand: Channel 38	Present Current Demand - Channel 38	AI122	Amps	5	2578/2579	
Amps Present Demand: Channel 39	Present Current Demand - Channel 39	AI123	Amps	5	2580/2581	
Amps Present Demand: Channel 40	Present Current Demand - Channel 40	AI124	Amps	5	2582/2583	
Amps Present Demand: Channel 41	Present Current Demand - Channel 41	AI125	Amps	5	2584/2585	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Amps Present Demand: Channel 42	Present Current Demand - Channel 42	AI126	Amps	5	2586/2587	
Amps Max Demand: Channel 1	Max Current Demand - Channel 1	AI127	Amps	5	2588/2589	
Amps Max Demand: Channel 2	Max Current Demand - Channel 2	AI128	Amps	5	2590/2591	
Amps Max Demand: Channel 3	Max Current Demand - Channel 3	AI129	Amps	5	2592/2593	
Amps Max Demand: Channel 4	Max Current Demand - Channel 4	AI130	Amps	5	2594/2595	
Amps Max Demand: Channel 5	Max Current Demand - Channel 5	AI131	Amps	5	2596/2597	
Amps Max Demand: Channel 6	Max Current Demand - Channel 6	AI132	Amps	5	2598/2599	
Amps Max Demand: Channel 7	Max Current Demand - Channel 7	AI133	Amps	5	2600/2601	
Amps Max Demand: Channel 8	Max Current Demand - Channel 8	AI134	Amps	5	2602/2603	
Amps Max Demand: Channel 9	Max Current Demand - Channel 9	AI135	Amps	5	2604/2605	
Amps Max Demand: Channel 10	Max Current Demand - Channel 10	AI136	Amps	5	2606/2607	
Amps Max Demand: Channel 11	Max Current Demand - Channel 11	AI137	Amps	5	2608/2609	
Amps Max Demand: Channel 12	Max Current Demand - Channel 12	AI138	Amps	5	2610/2611	
Amps Max Demand: Channel 13	Max Current Demand - Channel 13	AI139	Amps	5	2612/2613	
Amps Max Demand: Channel 14	Max Current Demand - Channel 14	AI140	Amps	5	2614/2615	
Amps Max Demand: Channel 15	Max Current Demand - Channel 15	AI141	Amps	5	2616/2617	
Amps Max Demand: Channel 16	Max Current Demand - Channel 16	AI142	Amps	5	2618/2619	
Amps Max Demand: Channel 17	Max Current Demand - Channel 17	AI143	Amps	5	2620/2621	
Amps Max Demand: Channel 18	Max Current Demand - Channel 18	AI144	Amps	5	2622/2623	
Amps Max Demand: Channel 19	Max Current Demand - Channel 19	AI145	Amps	5	2624/2625	
Amps Max Demand: Channel 20	Max Current Demand - Channel 20	AI146	Amps	5	2626/2627	
Amps Max Demand: Channel 21	Max Current Demand - Channel 21	AI147	Amps	5	2628/2629	
Amps Max Demand: Channel 22	Max Current Demand - Channel 22	AI148	Amps	5	2630/2631	
Amps Max Demand: Channel 23	Max Current Demand - Channel 23	AI149	Amps	5	2632/2633	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Amps Max Demand: Channel 24	Max Current Demand - Channel 24	AI150	Amps	5	2634/2635	
Amps Max Demand: Channel 25	Max Current Demand - Channel 25	AI151	Amps	5	2636/2637	
Amps Max Demand: Channel 26	Max Current Demand - Channel 26	AI152	Amps	5	2638/2639	
Amps Max Demand: Channel 27	Max Current Demand - Channel 27	AI153	Amps	5	2640/2641	
Amps Max Demand: Channel 28	Max Current Demand - Channel 28	AI154	Amps	5	2642/2643	
Amps Max Demand: Channel 29	Max Current Demand - Channel 29	AI155	Amps	5	2644/2645	
Amps Max Demand: Channel 30	Max Current Demand - Channel 30	AI156	Amps	5	2646/2647	
Amps Max Demand: Channel 31	Max Current Demand - Channel 31	AI157	Amps	5	2648/2649	
Amps Max Demand: Channel 32	Max Current Demand - Channel 32	AI158	Amps	5	2650/2651	
Amps Max Demand: Channel 33	Max Current Demand - Channel 33	AI159	Amps	5	2652/2653	
Amps Max Demand: Channel 34	Max Current Demand - Channel 34	AI160	Amps	5	2654/2655	
Amps Max Demand: Channel 35	Max Current Demand - Channel 35	AI161	Amps	5	2656/2657	
Amps Max Demand: Channel 36	Max Current Demand - Channel 36	AI162	Amps	5	2658/2659	
Amps Max Demand: Channel 37	Max Current Demand - Channel 37	AI163	Amps	5	2660/2661	
Amps Max Demand: Channel 38	Max Current Demand - Channel 38	AI164	Amps	5	2662/2663	
Amps Max Demand: Channel 39	Max Current Demand - Channel 39	AI165	Amps	5	2664/2665	
Amps Max Demand: Channel 40	Max Current Demand - Channel 40	AI166	Amps	5	2666/2667	
Amps Max Demand: Channel 41	Max Current Demand - Channel 41	AI167	Amps	5	2668/2669	
Amps Max Demand: Channel 42	Max Current Demand - Channel 42	AI168	Amps	5	2670/2671	
Max Amps: Channel 1	Max Instantaneous Current - Channel 1	AI169	Amps	5	2756/2757	
Max Amps: Channel 2	Max Instantaneous Current - Channel 2	AI170	Amps	5	2758/2759	
Max Amps: Channel 3	Max Instantaneous Current - Channel 3	AI171	Amps	5	2760/2761	
Max Amps: Channel 4	Max Instantaneous Current - Channel 4	AI172	Amps	5	2762/2763	
Max Amps: Channel 5	Max Instantaneous Current - Channel 5	AI173	Amps	5	2764/2765	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Max Amps: Channel 6	Max Instantaneous Current - Channel 6	AI174	Amps	5	2766/2767	
Max Amps: Channel 7	Max Instantaneous Current - Channel 7	AI175	Amps	5	2768/2769	
Max Amps: Channel 8	Max Instantaneous Current - Channel 8	AI176	Amps	5	2770/2771	
Max Amps: Channel 9	Max Instantaneous Current - Channel 9	AI177	Amps	5	2772/2773	
Max Amps: Channel 10	Max Instantaneous Current - Channel 10	AI178	Amps	5	2774/2775	
Max Amps: Channel 11	Max Instantaneous Current - Channel 11	AI179	Amps	5	2776/2777	
Max Amps: Channel 12	Max Instantaneous Current - Channel 12	AI180	Amps	5	2778/2779	
Max Amps: Channel 13	Max Instantaneous Current - Channel 13	AI181	Amps	5	2780/2781	
Max Amps: Channel 14	Max Instantaneous Current - Channel 14	AI182	Amps	5	2782/2783	
Max Amps: Channel 15	Max Instantaneous Current - Channel 15	AI183	Amps	5	2784/2785	
Max Amps: Channel 16	Max Instantaneous Current - Channel 16	AI184	Amps	5	2786/2787	
Max Amps: Channel 17	Max Instantaneous Current - Channel 17	AI185	Amps	5	2788/2789	
Max Amps: Channel 18	Max Instantaneous Current - Channel 18	AI186	Amps	5	2790/2791	
Max Amps: Channel 19	Max Instantaneous Current - Channel 19	AI187	Amps	5	2792/2793	
Max Amps: Channel 20	Max Instantaneous Current - Channel 20	AI188	Amps	5	2794/2795	
Max Amps: Channel 21	Max Instantaneous Current - Channel 21	AI189	Amps	5	2796/2797	
Max Amps: Channel 22	Max Instantaneous Current - Channel 22	AI190	Amps	5	2798/2799	
Max Amps: Channel 23	Max Instantaneous Current - Channel 23	AI191	Amps	5	2800/2801	
Max Amps: Channel 24	Max Instantaneous Current - Channel 24	AI192	Amps	5	2802/2803	
Max Amps: Channel 25	Max Instantaneous Current - Channel 25	AI193	Amps	5	2804/2805	
Max Amps: Channel 26	Max Instantaneous Current - Channel 26	AI194	Amps	5	2806/2807	
Max Amps: Channel 27	Max Instantaneous Current - Channel 27	AI195	Amps	5	2808/2809	
Max Amps: Channel 28	Max Instantaneous Current - Channel 28	AI196	Amps	5	2810/2811	
Max Amps: Channel 29	Max Instantaneous Current - Channel 29	AI197	Amps	5	2812/2813	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Max Amps: Channel 30	Max Instantaneous Current - Channel 30	AI198	Amps	5	2814/2815	
Max Amps: Channel 31	Max Instantaneous Current - Channel 31	AI199	Amps	5	2816/2817	
Max Amps: Channel 32	Max Instantaneous Current - Channel 32	AI200	Amps	5	2818/2819	
Max Amps: Channel 33	Max Instantaneous Current - Channel 33	AI201	Amps	5	2820/2821	
Max Amps: Channel 34	Max Instantaneous Current - Channel 34	AI202	Amps	5	2822/2823	
Max Amps: Channel 35	Max Instantaneous Current - Channel 35	AI203	Amps	5	2824/2825	
Max Amps: Channel 36	Max Instantaneous Current - Channel 36	AI204	Amps	5	2826/2827	
Max Amps: Channel 37	Max Instantaneous Current - Channel 37	AI205	Amps	5	2828/2829	
Max Amps: Channel 38	Max Instantaneous Current - Channel 38	AI206	Amps	5	2830/2831	
Max Amps: Channel 39	Max Instantaneous Current - Channel 39	AI207	Amps	5	2832/2833	
Max Amps: Channel 40	Max Instantaneous Current - Channel 40	AI208	Amps	5	2834/2835	
Max Amps: Channel 41	Max Instantaneous Current - Channel 41	AI209	Amps	5	2836/2837	
Max Amps: Channel 42	Max Instantaneous Current - Channel 42	AI210	Amps	5	2838/2839	
Analog_Value Objects						
Configuration (bit 0 is LSB):	Configuration (bit 0 is LSB):	AV1	n/a	1	6	Bit 0: 0 = odd-even, 1 = sequential Bit 1: 0 = odd-even, 1 = sequential Bits 2-15: future use Examples: Value 0 = Odd/Even Value 1 = Reserved for Solid-Core Value 2 = Sequential Value 3 = Reserved for Solid-Core
# of Sub-Intervals per Demand Int.	Number of Sub-Interval per Dem Interval	AV2	n/a	1	71	Sets the number of sub-intervals that make a single demand interval. For block demand, set this to 1.
Sub-Interval Length in seconds.	Sub-Interval Length in seconds.	AV3	n/a	1	72	Sub-Interval Length in seconds. For sync-to-comms, set this to 0.
Branch 1 CT Size	Branch 1 CT Size	AV4	Amps	5	73	These are writable ONLY on E31Bxxx/E31Cxxx split-core models. These are NOT WRITABLE on E30Bxxx/E30Cxxx solid-core models because the CT size is fixed (at 100 A). Other values written revert to 100 A the next time the meter is scanned.
Branch 2 CT Size	Branch 2 CT Size	AV5	Amps	5	74	
Branch 3 CT Size	Branch 3 CT Size	AV6	Amps	5	75	
Branch 4 CT Size	Branch 4 CT Size	AV7	Amps	5	76	
Branch 5 CT Size	Branch 5 CT Size	AV8	Amps	5	77	
Branch 6 CT Size	Branch 6 CT Size	AV9	Amps	5	78	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Branch 7 CT Size	Branch 7 CT Size	AV10	Amps	5	79	
Branch 8 CT Size	Branch 8 CT Size	AV11	Amps	5	80	
Branch 9 CT Size	Branch 9 CT Size	AV12	Amps	5	81	
Branch 10 CT Size	Branch 10 CT Size	AV13	Amps	5	82	
Branch 11 CT Size	Branch 11 CT Size	AV14	Amps	5	83	
Branch 12 CT Size	Branch 12 CT Size	AV15	Amps	5	84	
Branch 13 CT Size	Branch 13 CT Size	AV16	Amps	5	85	
Branch 14 CT Size	Branch 14 CT Size	AV17	Amps	5	86	
Branch 15 CT Size	Branch 15 CT Size	AV18	Amps	5	87	
Branch 16 CT Size	Branch 16 CT Size	AV19	Amps	5	88	
Branch 17 CT Size	Branch 17 CT Size	AV20	Amps	5	89	
Branch 18 CT Size	Branch 18 CT Size	AV21	Amps	5	90	
Branch 19 CT Size	Branch 19 CT Size	AV22	Amps	5	91	
Branch 20 CT Size	Branch 20 CT Size	AV23	Amps	5	92	
Branch 21 CT Size	Branch 21 CT Size	AV24	Amps	5	93	
Branch 22 CT Size	Branch 22 CT Size	AV25	Amps	5	94	
Branch 23 CT Size	Branch 23 CT Size	AV26	Amps	5	95	
Branch 24 CT Size	Branch 24 CT Size	AV27	Amps	5	96	
Branch 25 CT Size	Branch 25 CT Size	AV28	Amps	5	97	
Branch 26 CT Size	Branch 26 CT Size	AV29	Amps	5	98	
Branch 27 CT Size	Branch 27 CT Size	AV30	Amps	5	99	
Branch 28 CT Size	Branch 28 CT Size	AV31	Amps	5	100	
Branch 29 CT Size	Branch 29 CT Size	AV32	Amps	5	101	
Branch 30 CT Size	Branch 30 CT Size	AV33	Amps	5	102	
Branch 31 CT Size	Branch 31 CT Size	AV34	Amps	5	103	
Branch 32 CT Size	Branch 32 CT Size	AV35	Amps	5	104	
Branch 33 CT Size	Branch 33 CT Size	AV36	Amps	5	105	
Branch 34 CT Size	Branch 34 CT Size	AV37	Amps	5	106	
Branch 35 CT Size	Branch 35 CT Size	AV38	Amps	5	107	
Branch 36 CT Size	Branch 36 CT Size	AV39	Amps	5	108	
Branch 37 CT Size	Branch 37 CT Size	AV40	Amps	5	109	
Branch 38 CT Size	Branch 38 CT Size	AV41	Amps	5	110	
Branch 39 CT Size	Branch 39 CT Size	AV42	Amps	5	111	
Branch 40 CT Size	Branch 40 CT Size	AV43	Amps	5	112	
Branch 41 CT Size	Branch 41 CT Size	AV44	Amps	5	113	
Branch 42 CT Size	Branch 42 CT Size	AV45	Amps	5	114	
AUX Channel (phase 1) CT Size	AUX Channel (phase 1) CT Size	AV46	Amps	5	115	
AUX Channel (phase 2) CT Size	AUX Channel (phase 2) CT Size	AV47	Amps	5	116	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
AUX Channel (phase 3) CT Size	AUX Channel (phase 3) CT Size	AV48	Amps	5	117	
AUX Channel (Neutral) CT Size	AUX Channel (Neutral) CT Size	AV49	Amps	5	118	
Branch 1 Breaker Size	Branch 1 Breaker Size	AV50	Amps	5	119	
Branch 2 Breaker Size	Branch 2 Breaker Size	AV51	Amps	5	120	
Branch 3 Breaker Size	Branch 3 Breaker Size	AV52	Amps	5	121	
Branch 4 Breaker Size	Branch 4 Breaker Size	AV53	Amps	5	122	
Branch 5 Breaker Size	Branch 5 Breaker Size	AV54	Amps	5	123	
Branch 6 Breaker Size	Branch 6 Breaker Size	AV55	Amps	5	124	
Branch 7 Breaker Size	Branch 7 Breaker Size	AV56	Amps	5	125	
Branch 8 Breaker Size	Branch 8 Breaker Size	AV57	Amps	5	126	
Branch 9 Breaker Size	Branch 9 Breaker Size	AV58	Amps	5	127	
Branch 10 Breaker Size	Branch 10 Breaker Size	AV59	Amps	5	128	
Branch 11 Breaker Size	Branch 11 Breaker Size	AV60	Amps	5	129	
Branch 12 Breaker Size	Branch 12 Breaker Size	AV61	Amps	5	130	
Branch 13 Breaker Size	Branch 13 Breaker Size	AV62	Amps	5	131	
Branch 14 Breaker Size	Branch 14 Breaker Size	AV63	Amps	5	132	
Branch 15 Breaker Size	Branch 15 Breaker Size	AV64	Amps	5	133	
Branch 16 Breaker Size	Branch 16 Breaker Size	AV65	Amps	5	134	
Branch 17 Breaker Size	Branch 17 Breaker Size	AV66	Amps	5	135	
Branch 18 Breaker Size	Branch 18 Breaker Size	AV67	Amps	5	136	
Branch 19 Breaker Size	Branch 19 Breaker Size	AV68	Amps	5	137	
Branch 20 Breaker Size	Branch 20 Breaker Size	AV69	Amps	5	138	
Branch 21 Breaker Size	Branch 21 Breaker Size	AV70	Amps	5	139	
Branch 22 Breaker Size	Branch 22 Breaker Size	AV71	Amps	5	140	
Branch 23 Breaker Size	Branch 23 Breaker Size	AV72	Amps	5	141	
Branch 24 Breaker Size	Branch 24 Breaker Size	AV73	Amps	5	142	
Branch 25 Breaker Size	Branch 25 Breaker Size	AV74	Amps	5	143	
Branch 26 Breaker Size	Branch 26 Breaker Size	AV75	Amps	5	144	
Branch 27 Breaker Size	Branch 27 Breaker Size	AV76	Amps	5	145	
Branch 28 Breaker Size	Branch 28 Breaker Size	AV77	Amps	5	146	
Branch 29 Breaker Size	Branch 29 Breaker Size	AV78	Amps	5	147	
Branch 30 Breaker Size	Branch 30 Breaker Size	AV79	Amps	5	148	
Branch 31 Breaker Size	Branch 31 Breaker Size	AV80	Amps	5	149	
Branch 32 Breaker Size	Branch 32 Breaker Size	AV81	Amps	5	150	
Branch 33 Breaker Size	Branch 33 Breaker Size	AV82	Amps	5	151	
Branch 34 Breaker Size	Branch 34 Breaker Size	AV83	Amps	5	152	
Branch 35 Breaker Size	Branch 35 Breaker Size	AV84	Amps	5	153	
Branch 36 Breaker Size	Branch 36 Breaker Size	AV85	Amps	5	154	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Branch 37 Breaker Size	Branch 37 Breaker Size	AV86	Amps	5	155	
Branch 38 Breaker Size	Branch 38 Breaker Size	AV87	Amps	5	156	
Branch 39 Breaker Size	Branch 39 Breaker Size	AV88	Amps	5	157	
Branch 40 Breaker Size	Branch 40 Breaker Size	AV89	Amps	5	158	
Branch 41 Breaker Size	Branch 41 Breaker Size	AV90	Amps	5	159	
Branch 42 Breaker Size	Branch 42 Breaker Size	AV91	Amps	5	160	
AUX Channel (phase 1) Breaker Size	AUX Channel (phase 1) Breaker Size	AV92	Amps	5	161	
AUX Channel (phase 2) Breaker Size	AUX Channel (phase 2) Breaker Size	AV93	Amps	5	162	
AUX Channel (phase 3) Breaker Size	AUX Channel (phase 3) Breaker Size	AV94	Amps	5	163	
AUX Channel (Neutral) Breaker Size	AUX Channel (Neutral) Breaker Size	AV95	Amps	5	164	
High-High Latching Alarm Time Delay	Alarm event duration threshold	AV96	Seconds	1	165	These timers control entry into a latching alarm state. A return to a non-alarm state is instantaneous. All channels use the same global timers. Latching Alarm On Time applies to all Latching Alarms. The parameter measurement rate is expected to be approximately 2.5 sec, which limits the effective resolution of these timers.
High Latching Alarm Time Delay	Alarm event duration threshold	AV97	Seconds	1	166	
Low Latching Alarm Time Delay	Alarm event duration threshold	AV98	Seconds	1	167	
Low-Low Latching Alarm Time Delay	Alarm event duration threshold	AV99	Seconds	1	168	
Latching Alarm ON Time	From initial current to alarms enabled	AV100	Seconds	1	169	Latching Alarm ON Time (when current is above Low-Low alarm and ON Time elapses then ON state is declared for all latching alarms, ON State enables Alarm Time Delays)
Latching Alarms time until OFF state	time until OFF state declared	AV101	Seconds	1	170	Latching Alarms time until OFF state is declared for all latching alarms (when current is below Low-Low alarm and ON state was declared)
High-High Latching Alarm Threshold	% of breaker size	AV102	Percent	1	171	
High Alarm Latching Alarm Threshold	% of breaker size	AV103	Percent	1	172	
Low Alarm Latching Alarm Threshold	% of breaker size	AV104	Percent	1	173	
Low Low Latching Alarm Threshold	% of breaker size	AV105	Percent	1	174	
Non-Latching High Threshold	% of breaker size	AV106	Percent	1	175	
Non-Latching Low Threshold	% of breaker size	AV107	Percent	1	176	
Non-Latching Hysteresis (0-100%)	Non-Latching Hysteresis (% of setpoint)	AV108	Percent	1	177	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Branch 1 Alarm Status	Write 0 to alarm bits to clear alarms	AV109	n/a	1	178	Latching Alarms are cleared by writing a 0 to its alarm bit. Writing to a Non-Latching alarm is ignored. Bit 0: High High Latching Alarm Bit 1: High Latching Alarm Bit 2: Low Latching Alarm Bit 3: Low Low Latching Alarm Bit 4: Latching Alarm OFF state declared (1=OFF; ON state must have been achieved prior) Bit 5-7: Reserved for future use (reads 0) Bit 8: High Non-Latching Alarm Bit 9: Low Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)
Branch 2 Alarm Status	Write 0 to alarm bits to clear alarms	AV110	n/a	1	179	
Branch 3 Alarm Status	Write 0 to alarm bits to clear alarms	AV111	n/a	1	180	
Branch 4 Alarm Status	Write 0 to alarm bits to clear alarms	AV112	n/a	1	181	
Branch 5 Alarm Status	Write 0 to alarm bits to clear alarms	AV113	n/a	1	182	
Branch 6 Alarm Status	Write 0 to alarm bits to clear alarms	AV114	n/a	1	183	
Branch 7 Alarm Status	Write 0 to alarm bits to clear alarms	AV115	n/a	1	184	
Branch 8 Alarm Status	Write 0 to alarm bits to clear alarms	AV116	n/a	1	185	
Branch 9 Alarm Status	Write 0 to alarm bits to clear alarms	AV117	n/a	1	186	
Branch 10 Alarm Status	Write 0 to alarm bits to clear alarms	AV118	n/a	1	187	
Branch 11 Alarm Status	Write 0 to alarm bits to clear alarms	AV119	n/a	1	188	
Branch 12 Alarm Status	Write 0 to alarm bits to clear alarms	AV120	n/a	1	189	
Branch 13 Alarm Status	Write 0 to alarm bits to clear alarms	AV121	n/a	1	190	
Branch 14 Alarm Status	Write 0 to alarm bits to clear alarms	AV122	n/a	1	191	
Branch 15 Alarm Status	Write 0 to alarm bits to clear alarms	AV123	n/a	1	192	
Branch 16 Alarm Status	Write 0 to alarm bits to clear alarms	AV124	n/a	1	193	
Branch 17 Alarm Status	Write 0 to alarm bits to clear alarms	AV125	n/a	1	194	
Branch 18 Alarm Status	Write 0 to alarm bits to clear alarms	AV126	n/a	1	195	
Branch 19 Alarm Status	Write 0 to alarm bits to clear alarms	AV127	n/a	1	196	
Branch 20 Alarm Status	Write 0 to alarm bits to clear alarms	AV128	n/a	1	197	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Branch 21 Alarm Status	Write 0 to alarm bits to clear alarms	AV129	n/a	1	198	
Branch 22 Alarm Status	Write 0 to alarm bits to clear alarms	AV130	n/a	1	199	
Branch 23 Alarm Status	Write 0 to alarm bits to clear alarms	AV131	n/a	1	200	
Branch 24 Alarm Status	Write 0 to alarm bits to clear alarms	AV132	n/a	1	201	
Branch 25 Alarm Status	Write 0 to alarm bits to clear alarms	AV133	n/a	1	202	
Branch 26 Alarm Status	Write 0 to alarm bits to clear alarms	AV134	n/a	1	203	
Branch 27 Alarm Status	Write 0 to alarm bits to clear alarms	AV135	n/a	1	204	
Branch 28 Alarm Status	Write 0 to alarm bits to clear alarms	AV136	n/a	1	205	
Branch 29 Alarm Status	Write 0 to alarm bits to clear alarms	AV137	n/a	1	206	
Branch 30 Alarm Status	Write 0 to alarm bits to clear alarms	AV138	n/a	1	207	
Branch 31 Alarm Status	Write 0 to alarm bits to clear alarms	AV139	n/a	1	208	
Branch 32 Alarm Status	Write 0 to alarm bits to clear alarms	AV140	n/a	1	209	
Branch 33 Alarm Status	Write 0 to alarm bits to clear alarms	AV141	n/a	1	210	
Branch 34 Alarm Status	Write 0 to alarm bits to clear alarms	AV142	n/a	1	211	
Branch 35 Alarm Status	Write 0 to alarm bits to clear alarms	AV143	n/a	1	212	
Branch 36 Alarm Status	Write 0 to alarm bits to clear alarms	AV144	n/a	1	213	
Branch 37 Alarm Status	Write 0 to alarm bits to clear alarms	AV145	n/a	1	214	
Branch 38 Alarm Status	Write 0 to alarm bits to clear alarms	AV146	n/a	1	215	
Branch 39 Alarm Status	Write 0 to alarm bits to clear alarms	AV147	n/a	1	216	
Branch 40 Alarm Status	Write 0 to alarm bits to clear alarms	AV148	n/a	1	217	
Branch 41 Alarm Status	Write 0 to alarm bits to clear alarms	AV149	n/a	1	218	
Branch 42 Alarm Status	Write 0 to alarm bits to clear alarms	AV150	n/a	1	219	
AUX Channel (phase 1) Alarm Status	Write 0 to alarm bits to clear alarms	AV151	n/a	1	220	
AUX Channel (phase 2) Alarm Status	Write 0 to alarm bits to clear alarms	AV152	n/a	1	221	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
AUX Channel (phase 3) Alarm Status	Write 0 to alarm bits to clear alarms	AV153	n/a	1	222	
AUX Channel (Neutral) Alarm Status	Write 0 to alarm bits to clear alarms	AV154	n/a	1	223	
Overvoltage Alarm Timer	Alarm event duration threshold	AV155	Seconds	1	236	Not used on E3xCxxx models; reports QNAN Controls entry into Overvoltage alarm state. A return to a non-alarm state is instantaneous. All channels use these same global timers. Note that the parameter measurement update rate is 1.6 sec, which limits the effective resolution of these timers.
Undervoltage Alarm Timer	Alarm event duration threshold	AV156	Seconds	1	237	Not used on E3xCxxx models; reports QNAN Controls entry into Undervoltage alarm state. A return to a non-alarm state is instantaneous. All channels use these same global timers. Note that the parameter measurement update rate is 1.6 sec, which limits the effective resolution of these timers.
Overvoltage Alarm Threshold	Overvoltage level threshold (0=OFF)	AV157	Volts	5	238	Not used on E3xCxxx models; reports QNAN
Undervoltage Alarm Threshold	Undervoltage level threshold (0=OFF)	AV158	Volts	5	239	Not used on E3xCxxx models; reports QNAN
Voltage Alarm Hysteresis	Voltage Alarm Hysteresis (% of setpoint)	AV159	Percent	1	240	Not used on E3xCxxx models; reports QNAN Percentage of setpoint
Voltage 1 Alarm Status	Write 0 to alarm bits to clear alarms	AV160	n/a	1	241	Not used on E3xCxxx models; reports QNAN Latching Alarms are cleared by writing a 0 to its alarm bit. Writing to Non-Latching alarm is ignored. Bit 0: High Latching Alarm Bit 1: Low Latching Alarm Bit 2-7: Reserved for future use (reads 0) Bit 8: High Non-Latching Alarm Bit 9: Low Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)
Voltage 2 Alarm Status	Write 0 to alarm bits to clear alarms	AV161	n/a	1	242	Not used on E3xCxxx models; reports QNAN Latching Alarms are cleared by writing a 0 to its alarm bit. Writing to Non-Latching alarm is ignored. Bit 0: High Latching Alarm Bit 1: Low Latching Alarm Bit 2-7: Reserved for future use (reads 0) Bit 8: High Non-Latching Alarm Bit 9: Low Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)
Voltage 3 Alarm Status	Write 0 to alarm bits to clear alarms	AV162	n/a	1	243	Not used on E3xCxxx models; reports QNAN Latching Alarms are cleared by writing a 0 to its alarm bit. Writing to Non-Latching alarm is ignored. Bit 0: High Latching Alarm Bit 1: Low Latching Alarm Bit 2-7: Reserved for future use (reads 0) Bit 8: High Non-Latching Alarm Bit 9: Low Non-Latching Alarm Bit 10-15: Reserved for future use (reads 0)
Power Up Counter	Power Up Counter	AV163	n/a	1	531	Number of power-up cycles (write 0 to reset)
User Defined Status Register	1 in bit 0 enables CT phase assignment	AV164	n/a	1	62017	User Defined Status Register: Bit 0: Enable User CT Phase Assignment Bit 1-15: Reserved

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Analog_Output objects						
AUX Resets: Write value to reset	10203=kWh, 29877=Max Current & Max kW	AO1	n/a	1	294	Write the listed value to perform the corresponding reset: 10203 = Clear kWh value to zero 29877 = Clear Max Current and Max kW values to zero
Global Resets: Write value to reset	10203=kWh, others…	AO2	n/a	1	295	Write the listed value to perform the corresponding reset: 26012 = Begin new Demand Sub-interval 26013 = Reset Demand 31010 = Reset all Latching Alarms 10203 = Clear all kWh values to zero 29877 = Clear all Max Current and Max kW values to zero 20097 = Clear all Max Demand values to zero
Channel 1 Reset	10203=kWh, 29877=Max Current & Max kW	AO3	n/a	1	1126	Write the listed value to perform the corresponding reset: 10203 = Clear kWh value to zero 29877 = Clear Max Current and Max kW values to zero
Channel 2 Reset	10203=kWh, 29877=Max Current & Max kW	AO4	n/a	1	1127	
Channel 3 Reset	10203=kWh, 29877=Max Current & Max kW	AO5	n/a	1	1128	
Channel 4 Reset	10203=kWh, 29877=Max Current & Max kW	AO6	n/a	1	1129	
Channel 5 Reset	10203=kWh, 29877=Max Current & Max kW	AO7	n/a	1	1130	
Channel 6 Reset	10203=kWh, 29877=Max Current & Max kW	AO8	n/a	1	1131	
Channel 7 Reset	10203=kWh, 29877=Max Current & Max kW	AO9	n/a	1	1132	
Channel 8 Reset	10203=kWh, 29877=Max Current & Max kW	AO10	n/a	1	1133	
Channel 9 Reset	10203=kWh, 29877=Max Current & Max kW	AO11	n/a	1	1134	
Channel 10 Reset	10203=kWh, 29877=Max Current & Max kW	AO12	n/a	1	1135	
Channel 11 Reset	10203=kWh, 29877=Max Current & Max kW	AO13	n/a	1	1136	
Channel 12 Reset	10203=kWh, 29877=Max Current & Max kW	AO14	n/a	1	1137	
Channel 13 Reset	10203=kWh, 29877=Max Current & Max kW	AO15	n/a	1	1138	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Channel 14 Reset	10203=kWh, 29877=Max Current & Max kW	AO16	n/a	1	1139	
Channel 15 Reset	10203=kWh, 29877=Max Current & Max kW	AO17	n/a	1	1140	
Channel 16 Reset	10203=kWh, 29877=Max Current & Max kW	AO18	n/a	1	1141	
Channel 17 Reset	10203=kWh, 29877=Max Current & Max kW	AO19	n/a	1	1142	
Channel 18 Reset	10203=kWh, 29877=Max Current & Max kW	AO20	n/a	1	1143	
Channel 19 Reset	10203=kWh, 29877=Max Current & Max kW	AO21	n/a	1	1144	
Channel 20 Reset	10203=kWh, 29877=Max Current & Max kW	AO22	n/a	1	1145	
Channel 21 Reset	10203=kWh, 29877=Max Current & Max kW	AO23	n/a	1	1146	
Channel 22 Reset	10203=kWh, 29877=Max Current & Max kW	AO24	n/a	1	1147	
Channel 23 Reset	10203=kWh, 29877=Max Current & Max kW	AO25	n/a	1	1148	
Channel 24 Reset	10203=kWh, 29877=Max Current & Max kW	AO26	n/a	1	1149	
Channel 25 Reset	10203=kWh, 29877=Max Current & Max kW	AO27	n/a	1	1150	
Channel 26 Reset	10203=kWh, 29877=Max Current & Max kW	AO28	n/a	1	1151	
Channel 27 Reset	10203=kWh, 29877=Max Current & Max kW	AO29	n/a	1	1152	
Channel 28 Reset	10203=kWh, 29877=Max Current & Max kW	AO30	n/a	1	1153	
Channel 29 Reset	10203=kWh, 29877=Max Current & Max kW	AO31	n/a	1	1154	
Channel 30 Reset	10203=kWh, 29877=Max Current & Max kW	AO32	n/a	1	1155	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

E3xCxxx Branch Circuit Meters, cont.

Data Variable	Description	BACnet Object	Units	COV_ Increment	Modbus Address	Comments
Channel 31 Reset	10203=kWh, 29877=Max Current & Max kW	AO33	n/a	1	1156	
Channel 32 Reset	10203=kWh, 29877=Max Current & Max kW	AO34	n/a	1	1157	
Channel 33 Reset	10203=kWh, 29877=Max Current & Max kW	AO35	n/a	1	1158	
Channel 34 Reset	10203=kWh, 29877=Max Current & Max kW	AO36	n/a	1	1159	
Channel 35 Reset	10203=kWh, 29877=Max Current & Max kW	AO37	n/a	1	1160	
Channel 36 Reset	10203=kWh, 29877=Max Current & Max kW	AO38	n/a	1	1161	
Channel 37 Reset	10203=kWh, 29877=Max Current & Max kW	AO39	n/a	1	1162	
Channel 38 Reset	10203=kWh, 29877=Max Current & Max kW	AO40	n/a	1	1163	
Channel 39 Reset	10203=kWh, 29877=Max Current & Max kW	AO41	n/a	1	1164	
Channel 40 Reset	10203=kWh, 29877=Max Current & Max kW	AO42	n/a	1	1165	
Channel 41 Reset	10203=kWh, 29877=Max Current & Max kW	AO43	n/a	1	1166	
Channel 42 Reset	10203=kWh, 29877=Max Current & Max kW	AO44	n/a	1	1167	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H704/H663 Branch Current Monitors

The H704 solid-core and the H663 split core families monitor Branch current up to 50A or 100A (H models).

The H704 and H663 meters have 356 data objects. They use a single Modbus Address and operate at 2400, 4800, 9600 or 19200 baud.

Data Variable	Description	"BACnet Object"	Units	" COV Increment"	"Modbus Address"	Comments
Analog_Input Objects						
Amps: Channel 1	Instantaneous Current Channel 1	AI1	Amperes	5	1	
Amps: Channel 2	Instantaneous Current Channel 2	AI2	Amperes	5	2	
Amps: Channel 3	Instantaneous Current Channel 3	AI3	Amperes	5	3	
Amps: Channel 4	Instantaneous Current Channel 4	AI4	Amperes	5	4	
Amps: Channel 5	Instantaneous Current Channel 5	AI5	Amperes	5	5	
Amps: Channel 6	Instantaneous Current Channel 6	AI6	Amperes	5	6	
Amps: Channel 7	Instantaneous Current Channel 7	AI7	Amperes	5	7	
Amps: Channel 8	Instantaneous Current Channel 8	AI8	Amperes	5	8	
Amps: Channel 9	Instantaneous Current Channel 9	AI9	Amperes	5	9	
Amps: Channel 10	Instantaneous Current Channel 10	AI10	Amperes	5	10	
Amps: Channel 11	Instantaneous Current Channel 11	AI11	Amperes	5	11	
Amps: Channel 12	Instantaneous Current Channel 12	AI12	Amperes	5	12	
Amps: Channel 13	Instantaneous Current Channel 13	AI13	Amperes	5	13	
Amps: Channel 14	Instantaneous Current Channel 14	AI14	Amperes	5	14	
Amps: Channel 15	Instantaneous Current Channel 15	AI15	Amperes	5	15	
Amps: Channel 16	Instantaneous Current Channel 16	AI16	Amperes	5	16	
Amps: Channel 17	Instantaneous Current Channel 17	AI17	Amperes	5	17	
Amps: Channel 18	Instantaneous Current Channel 18	AI18	Amperes	5	18	
Amps: Channel 19	Instantaneous Current Channel 19	AI19	Amperes	5	19	
Amps: Channel 20	Instantaneous Current Channel 20	AI20	Amperes	5	20	
Amps: Channel 21	Instantaneous Current Channel 21	AI21	Amperes	5	21	
Amps: Channel 22	Instantaneous Current Channel 22	AI22	Amperes	5	22	
Amps: Channel 23	Instantaneous Current Channel 23	AI23	Amperes	5	23	
Amps: Channel 24	Instantaneous Current Channel 24	AI24	Amperes	5	24	
Amps: Channel 25	Instantaneous Current Channel 25	AI25	Amperes	5	25	
Amps: Channel 26	Instantaneous Current Channel 26	AI26	Amperes	5	26	
Amps: Channel 27	Instantaneous Current Channel 27	AI27	Amperes	5	27	
Amps: Channel 28	Instantaneous Current Channel 28	AI28	Amperes	5	28	
Amps: Channel 29	Instantaneous Current Channel 29	AI29	Amperes	5	29	
Amps: Channel 30	Instantaneous Current Channel 30	AI30	Amperes	5	30	
Amps: Channel 31	Instantaneous Current Channel 31	AI31	Amperes	5	31	
Amps: Channel 32	Instantaneous Current Channel 32	AI32	Amperes	5	32	
Amps: Channel 33	Instantaneous Current Channel 33	AI33	Amperes	5	33	
Amps: Channel 34	Instantaneous Current Channel 34	AI34	Amperes	5	34	
Amps: Channel 35	Instantaneous Current Channel 35	AI35	Amperes	5	35	
Amps: Channel 36	Instantaneous Current Channel 36	AI36	Amperes	5	36	
Amps: Channel 37	Instantaneous Current Channel 37	AI37	Amperes	5	37	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H704/H663 Branch Current Monitors, cont.

Data Variable	Description	"BACnet Object"	Units	" COV Increment"	"Modbus Address"	Comments
Amps: Channel 38	Instantaneous Current Channel 38	AI38	Amperes	5	38	
Amps: Channel 39	Instantaneous Current Channel 39	AI39	Amperes	5	39	
Amps: Channel 40	Instantaneous Current Channel 40	AI40	Amperes	5	40	
Amps: Channel 41	Instantaneous Current Channel 41	AI41	Amperes	5	41	
Amps: Channel 42	Instantaneous Current Channel 42	AI42	Amperes	5	42	
Global Alarm Register	bitmap of active registers (0=Normal)	AI43	No-Units	1	43	
Firmware Revision RS	Firmware Revision RS	AI44	No-Units	1	50	
Firmware Revision OS	Firmware Revision OS	AI45	No-Units	1	51	
Serial Number MSW	Serial Number MSW	AI46	No-Units	1	262	
Serial Number LSW	Serial Number LSW	AI47	No-Units	1	263	
Device ID:	15026=BCM	AI48	No-Units	1	273	
Analog_Value Objects						
Board Name MSW	1st two ASCII Characters (ie - BR)	AV1	No-Units	1	274	
Board Name LSW	2nd two ASCII Characters (ie - D1)	AV2	No-Units	1	275	
Latched Warning Alarm Register A	Ch 1-16 (0=OK); summary of BV1-BV16	AV3	No-Units	1	44	
Latched Warning Alarm Register B	Ch 17-32 (0=OK); summary of BV17-BV32	AV4	No-Units	1	45	
Latched Warning Alarm Register C	Ch 33-42 (0=OK); summary of BV33-BV42	AV5	No-Units	1	46	
Latched Critical Alarm Register A	Ch 1-16 (0=OK); summary of BV43-BV58	AV6	No-Units	1	47	
Latched Critical Alarm Register B	Ch 17-32 (0=OK); summary of BV59-BV74	AV7	No-Units	1	48	
Latched Critical Alarm Register C	Ch 33-42 (0=OK); summary of BV75-BV84	AV8	No-Units	1	49	
Breaker Size: Channel 1	Current Rating Channel 1	AV9	Amperes	1	52	
Breaker Size: Channel 2	Current Rating Channel 2	AV10	Amperes	1	53	
Breaker Size: Channel 3	Current Rating Channel 3	AV11	Amperes	1	54	
Breaker Size: Channel 4	Current Rating Channel 4	AV12	Amperes	1	55	
Breaker Size: Channel 5	Current Rating Channel 5	AV13	Amperes	1	56	
Breaker Size: Channel 6	Current Rating Channel 6	AV14	Amperes	1	57	
Breaker Size: Channel 7	Current Rating Channel 7	AV15	Amperes	1	58	
Breaker Size: Channel 8	Current Rating Channel 8	AV16	Amperes	1	59	
Breaker Size: Channel 9	Current Rating Channel 9	AV17	Amperes	1	60	
Breaker Size: Channel 10	Current Rating Channel 10	AV18	Amperes	1	61	
Breaker Size: Channel 11	Current Rating Channel 11	AV19	Amperes	1	62	
Breaker Size: Channel 12	Current Rating Channel 12	AV20	Amperes	1	63	
Breaker Size: Channel 13	Current Rating Channel 13	AV21	Amperes	1	64	
Breaker Size: Channel 14	Current Rating Channel 14	AV22	Amperes	1	65	
Breaker Size: Channel 15	Current Rating Channel 15	AV23	Amperes	1	66	
Breaker Size: Channel 16	Current Rating Channel 16	AV24	Amperes	1	67	
Breaker Size: Channel 17	Current Rating Channel 17	AV25	Amperes	1	68	
Breaker Size: Channel 18	Current Rating Channel 18	AV26	Amperes	1	69	
Breaker Size: Channel 19	Current Rating Channel 19	AV27	Amperes	1	70	
Breaker Size: Channel 20	Current Rating Channel 20	AV28	Amperes	1	71	
Breaker Size: Channel 21	Current Rating Channel 21	AV29	Amperes	1	72	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H704/H663 Branch Current Monitors, cont.

Data Variable	Description	"BACnet Object"	Units	" COV Increment"	"Modbus Address"	Comments
Breaker Size: Channel 22	Current Rating Channel 22	AV30	Amperes	1	73	
Breaker Size: Channel 23	Current Rating Channel 23	AV31	Amperes	1	74	
Breaker Size: Channel 24	Current Rating Channel 24	AV32	Amperes	1	75	
Breaker Size: Channel 25	Current Rating Channel 25	AV33	Amperes	1	76	
Breaker Size: Channel 26	Current Rating Channel 26	AV34	Amperes	1	77	
Breaker Size: Channel 27	Current Rating Channel 27	AV35	Amperes	1	78	
Breaker Size: Channel 28	Current Rating Channel 28	AV36	Amperes	1	79	
Breaker Size: Channel 29	Current Rating Channel 29	AV37	Amperes	1	80	
Breaker Size: Channel 30	Current Rating Channel 30	AV38	Amperes	1	81	
Breaker Size: Channel 31	Current Rating Channel 31	AV39	Amperes	1	82	
Breaker Size: Channel 32	Current Rating Channel 32	AV40	Amperes	1	83	
Breaker Size: Channel 33	Current Rating Channel 33	AV41	Amperes	1	84	
Breaker Size: Channel 34	Current Rating Channel 34	AV42	Amperes	1	85	
Breaker Size: Channel 35	Current Rating Channel 35	AV43	Amperes	1	86	
Breaker Size: Channel 36	Current Rating Channel 36	AV44	Amperes	1	87	
Breaker Size: Channel 37	Current Rating Channel 37	AV45	Amperes	1	88	
Breaker Size: Channel 38	Current Rating Channel 38	AV46	Amperes	1	89	
Breaker Size: Channel 39	Current Rating Channel 39	AV47	Amperes	1	90	
Breaker Size: Channel 40	Current Rating Channel 40	AV48	Amperes	1	91	
Breaker Size: Channel 41	Current Rating Channel 41	AV49	Amperes	1	92	
Breaker Size: Channel 42	Current Rating Channel 42	AV50	Amperes	1	93	
Warning Threshold: Channel 1	% (0-100) of Breaker Size - Ch 1	AV51	Percent	1	94	
Warning Threshold: Channel 2	% (0-100) of Breaker Size - Ch 2	AV52	Percent	1	95	
Warning Threshold: Channel 3	% (0-100) of Breaker Size - Ch 3	AV53	Percent	1	96	
Warning Threshold: Channel 4	% (0-100) of Breaker Size - Ch 4	AV54	Percent	1	97	
Warning Threshold: Channel 5	% (0-100) of Breaker Size - Ch 5	AV55	Percent	1	98	
Warning Threshold: Channel 6	% (0-100) of Breaker Size - Ch 6	AV56	Percent	1	99	
Warning Threshold: Channel 7	% (0-100) of Breaker Size - Ch 7	AV57	Percent	1	100	
Warning Threshold: Channel 8	% (0-100) of Breaker Size - Ch 8	AV58	Percent	1	101	
Warning Threshold: Channel 9	% (0-100) of Breaker Size - Ch 9	AV59	Percent	1	102	
Warning Threshold: Channel 10	% (0-100) of Breaker Size - Ch 10	AV60	Percent	1	103	
Warning Threshold: Channel 11	% (0-100) of Breaker Size - Ch 11	AV61	Percent	1	104	
Warning Threshold: Channel 12	% (0-100) of Breaker Size - Ch 12	AV62	Percent	1	105	
Warning Threshold: Channel 13	% (0-100) of Breaker Size - Ch 13	AV63	Percent	1	106	
Warning Threshold: Channel 14	% (0-100) of Breaker Size - Ch 14	AV64	Percent	1	107	
Warning Threshold: Channel 15	% (0-100) of Breaker Size - Ch 15	AV65	Percent	1	108	
Warning Threshold: Channel 16	% (0-100) of Breaker Size - Ch 16	AV66	Percent	1	109	
Warning Threshold: Channel 17	% (0-100) of Breaker Size - Ch 17	AV67	Percent	1	110	
Warning Threshold: Channel 18	% (0-100) of Breaker Size - Ch 18	AV68	Percent	1	111	
Warning Threshold: Channel 19	% (0-100) of Breaker Size - Ch 19	AV69	Percent	1	112	
Warning Threshold: Channel 20	% (0-100) of Breaker Size - Ch 20	AV70	Percent	1	113	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H704/H663 Branch Current Monitors, cont.

Data Variable	Description	"BACnet Object"	Units	" COV Increment"	"Modbus Address"	Comments
Warning Threshold: Channel 21	% (0-100) of Breaker Size - Ch 21	AV71	Percent	1	114	
Warning Threshold: Channel 22	% (0-100) of Breaker Size - Ch 22	AV72	Percent	1	115	
Warning Threshold: Channel 23	% (0-100) of Breaker Size - Ch 23	AV73	Percent	1	116	
Warning Threshold: Channel 24	% (0-100) of Breaker Size - Ch 24	AV74	Percent	1	117	
Warning Threshold: Channel 25	% (0-100) of Breaker Size - Ch 25	AV75	Percent	1	118	
Warning Threshold: Channel 26	% (0-100) of Breaker Size - Ch 26	AV76	Percent	1	119	
Warning Threshold: Channel 27	% (0-100) of Breaker Size - Ch 27	AV77	Percent	1	120	
Warning Threshold: Channel 28	% (0-100) of Breaker Size - Ch 28	AV78	Percent	1	121	
Warning Threshold: Channel 29	% (0-100) of Breaker Size - Ch 29	AV79	Percent	1	122	
Warning Threshold: Channel 30	% (0-100) of Breaker Size - Ch 30	AV80	Percent	1	123	
Warning Threshold: Channel 31	% (0-100) of Breaker Size - Ch 31	AV81	Percent	1	124	
Warning Threshold: Channel 32	% (0-100) of Breaker Size - Ch 32	AV82	Percent	1	125	
Warning Threshold: Channel 33	% (0-100) of Breaker Size - Ch 33	AV83	Percent	1	126	
Warning Threshold: Channel 34	% (0-100) of Breaker Size - Ch 34	AV84	Percent	1	127	
Warning Threshold: Channel 35	% (0-100) of Breaker Size - Ch 35	AV85	Percent	1	128	
Warning Threshold: Channel 36	% (0-100) of Breaker Size - Ch 36	AV86	Percent	1	129	
Warning Threshold: Channel 37	% (0-100) of Breaker Size - Ch 37	AV87	Percent	1	130	
Warning Threshold: Channel 38	% (0-100) of Breaker Size - Ch 38	AV88	Percent	1	131	
Warning Threshold: Channel 39	% (0-100) of Breaker Size - Ch 39	AV89	Percent	1	132	
Warning Threshold: Channel 40	% (0-100) of Breaker Size - Ch 40	AV90	Percent	1	133	
Warning Threshold: Channel 41	% (0-100) of Breaker Size - Ch 41	AV91	Percent	1	134	
Warning Threshold: Channel 42	% (0-100) of Breaker Size - Ch 42	AV92	Percent	1	135	
Critical Alarm Threshold: Channel 1	% (0-100) of Breaker Size - Ch 1	AV93	Percent	1	136	
Critical Alarm Threshold: Channel 2	% (0-100) of Breaker Size - Ch 2	AV94	Percent	1	137	
Critical Alarm Threshold: Channel 3	% (0-100) of Breaker Size - Ch 3	AV95	Percent	1	138	
Critical Alarm Threshold: Channel 4	% (0-100) of Breaker Size - Ch 4	AV96	Percent	1	139	
Critical Alarm Threshold: Channel 5	% (0-100) of Breaker Size - Ch 5	AV97	Percent	1	140	
Critical Alarm Threshold: Channel 6	% (0-100) of Breaker Size - Ch 6	AV98	Percent	1	141	
Critical Alarm Threshold: Channel 7	% (0-100) of Breaker Size - Ch 7	AV99	Percent	1	142	
Critical Alarm Threshold: Channel 8	% (0-100) of Breaker Size - Ch 8	AV100	Percent	1	143	
Critical Alarm Threshold: Channel 9	% (0-100) of Breaker Size - Ch 9	AV101	Percent	1	144	
Critical Alarm Threshold: Channel 10	% (0-100) of Breaker Size - Ch 10	AV102	Percent	1	145	
Critical Alarm Threshold: Channel 11	% (0-100) of Breaker Size - Ch 11	AV103	Percent	1	146	
Critical Alarm Threshold: Channel 12	% (0-100) of Breaker Size - Ch 12	AV104	Percent	1	147	
Critical Alarm Threshold: Channel 13	% (0-100) of Breaker Size - Ch 13	AV105	Percent	1	148	
Critical Alarm Threshold: Channel 14	% (0-100) of Breaker Size - Ch 14	AV106	Percent	1	149	
Critical Alarm Threshold: Channel 15	% (0-100) of Breaker Size - Ch 15	AV107	Percent	1	150	
Critical Alarm Threshold: Channel 16	% (0-100) of Breaker Size - Ch 16	AV108	Percent	1	151	
Critical Alarm Threshold: Channel 17	% (0-100) of Breaker Size - Ch 17	AV109	Percent	1	152	
Critical Alarm Threshold: Channel 18	% (0-100) of Breaker Size - Ch 18	AV110	Percent	1	153	
Critical Alarm Threshold: Channel 19	% (0-100) of Breaker Size - Ch 19	AV111	Percent	1	154	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H704/H663 Branch Current Monitors, cont.

Data Variable	Description	"BACnet Object"	Units	" COV Increment"	"Modbus Address"	Comments
Critical Alarm Threshold: Channel 20	% (0-100) of Breaker Size - Ch 20	AV112	Percent	1	155	
Critical Alarm Threshold: Channel 21	% (0-100) of Breaker Size - Ch 21	AV113	Percent	1	156	
Critical Alarm Threshold: Channel 22	% (0-100) of Breaker Size - Ch 22	AV114	Percent	1	157	
Critical Alarm Threshold: Channel 23	% (0-100) of Breaker Size - Ch 23	AV115	Percent	1	158	
Critical Alarm Threshold: Channel 24	% (0-100) of Breaker Size - Ch 24	AV116	Percent	1	159	
Critical Alarm Threshold: Channel 25	% (0-100) of Breaker Size - Ch 25	AV117	Percent	1	160	
Critical Alarm Threshold: Channel 26	% (0-100) of Breaker Size - Ch 26	AV118	Percent	1	161	
Critical Alarm Threshold: Channel 27	% (0-100) of Breaker Size - Ch 27	AV119	Percent	1	162	
Critical Alarm Threshold: Channel 28	% (0-100) of Breaker Size - Ch 28	AV120	Percent	1	163	
Critical Alarm Threshold: Channel 29	% (0-100) of Breaker Size - Ch 29	AV121	Percent	1	164	
Critical Alarm Threshold: Channel 30	% (0-100) of Breaker Size - Ch 30	AV122	Percent	1	165	
Critical Alarm Threshold: Channel 31	% (0-100) of Breaker Size - Ch 31	AV123	Percent	1	166	
Critical Alarm Threshold: Channel 32	% (0-100) of Breaker Size - Ch 32	AV124	Percent	1	167	
Critical Alarm Threshold: Channel 33	% (0-100) of Breaker Size - Ch 33	AV125	Percent	1	168	
Critical Alarm Threshold: Channel 34	% (0-100) of Breaker Size - Ch 34	AV126	Percent	1	169	
Critical Alarm Threshold: Channel 35	% (0-100) of Breaker Size - Ch 35	AV127	Percent	1	170	
Critical Alarm Threshold: Channel 36	% (0-100) of Breaker Size - Ch 36	AV128	Percent	1	171	
Critical Alarm Threshold: Channel 37	% (0-100) of Breaker Size - Ch 37	AV129	Percent	1	172	
Critical Alarm Threshold: Channel 38	% (0-100) of Breaker Size - Ch 38	AV130	Percent	1	173	
Critical Alarm Threshold: Channel 39	% (0-100) of Breaker Size - Ch 39	AV131	Percent	1	174	
Critical Alarm Threshold: Channel 40	% (0-100) of Breaker Size - Ch 40	AV132	Percent	1	175	
Critical Alarm Threshold: Channel 41	% (0-100) of Breaker Size - Ch 41	AV133	Percent	1	176	
Critical Alarm Threshold: Channel 42	% (0-100) of Breaker Size - Ch 42	AV134	Percent	1	177	
Warning Delay: Channel 1	Duration required to activate - Ch 1	AV135	Seconds	1	178	
Warning Delay: Channel 2	Duration required to activate - Ch 2	AV136	Seconds	1	179	
Warning Delay: Channel 3	Duration required to activate - Ch 3	AV137	Seconds	1	180	
Warning Delay: Channel 4	Duration required to activate - Ch 4	AV138	Seconds	1	181	
Warning Delay: Channel 5	Duration required to activate - Ch 5	AV139	Seconds	1	182	
Warning Delay: Channel 6	Duration required to activate - Ch 6	AV140	Seconds	1	183	
Warning Delay: Channel 7	Duration required to activate - Ch 7	AV141	Seconds	1	184	
Warning Delay: Channel 8	Duration required to activate - Ch 8	AV142	Seconds	1	185	
Warning Delay: Channel 9	Duration required to activate - Ch 9	AV143	Seconds	1	186	
Warning Delay: Channel 10	Duration required to activate - Ch 10	AV144	Seconds	1	187	
Warning Delay: Channel 11	Duration required to activate - Ch 11	AV145	Seconds	1	188	
Warning Delay: Channel 12	Duration required to activate - Ch 12	AV146	Seconds	1	189	
Warning Delay: Channel 13	Duration required to activate - Ch 13	AV147	Seconds	1	190	
Warning Delay: Channel 14	Duration required to activate - Ch 14	AV148	Seconds	1	191	
Warning Delay: Channel 15	Duration required to activate - Ch 15	AV149	Seconds	1	192	
Warning Delay: Channel 16	Duration required to activate - Ch 16	AV150	Seconds	1	193	
Warning Delay: Channel 17	Duration required to activate - Ch 17	AV151	Seconds	1	194	
Warning Delay: Channel 18	Duration required to activate - Ch 18	AV152	Seconds	1	195	
Warning Delay: Channel 19	Duration required to activate - Ch 19	AV153	Seconds	1	196	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H704/H663 Branch Current Monitors, cont.

Data Variable	Description	"BACnet Object"	Units	" COV Increment"	"Modbus Address"	Comments
Warning Delay: Channel 20	Duration required to activate - Ch 20	AV154	Seconds	1	197	
Warning Delay: Channel 21	Duration required to activate - Ch 21	AV155	Seconds	1	198	
Warning Delay: Channel 22	Duration required to activate - Ch 22	AV156	Seconds	1	199	
Warning Delay: Channel 23	Duration required to activate - Ch 23	AV157	Seconds	1	200	
Warning Delay: Channel 24	Duration required to activate - Ch 24	AV158	Seconds	1	201	
Warning Delay: Channel 25	Duration required to activate - Ch 25	AV159	Seconds	1	202	
Warning Delay: Channel 26	Duration required to activate - Ch 26	AV160	Seconds	1	203	
Warning Delay: Channel 27	Duration required to activate - Ch 27	AV161	Seconds	1	204	
Warning Delay: Channel 28	Duration required to activate - Ch 28	AV162	Seconds	1	205	
Warning Delay: Channel 29	Duration required to activate - Ch 29	AV163	Seconds	1	206	
Warning Delay: Channel 30	Duration required to activate - Ch 30	AV164	Seconds	1	207	
Warning Delay: Channel 31	Duration required to activate - Ch 31	AV165	Seconds	1	208	
Warning Delay: Channel 32	Duration required to activate - Ch 32	AV166	Seconds	1	209	
Warning Delay: Channel 33	Duration required to activate - Ch 33	AV167	Seconds	1	210	
Warning Delay: Channel 34	Duration required to activate - Ch 34	AV168	Seconds	1	211	
Warning Delay: Channel 35	Duration required to activate - Ch 35	AV169	Seconds	1	212	
Warning Delay: Channel 36	Duration required to activate - Ch 36	AV170	Seconds	1	213	
Warning Delay: Channel 37	Duration required to activate - Ch 37	AV171	Seconds	1	214	
Warning Delay: Channel 38	Duration required to activate - Ch 38	AV172	Seconds	1	215	
Warning Delay: Channel 39	Duration required to activate - Ch 39	AV173	Seconds	1	216	
Warning Delay: Channel 40	Duration required to activate - Ch 40	AV174	Seconds	1	217	
Warning Delay: Channel 41	Duration required to activate - Ch 41	AV175	Seconds	1	218	
Warning Delay: Channel 42	Duration required to activate - Ch 42	AV176	Seconds	1	219	
Critical Alarm Delay: Channel 1	Duration required to activate - Ch 1	AV177	Seconds	1	220	
Critical Alarm Delay: Channel 2	Duration required to activate - Ch 2	AV178	Seconds	1	221	
Critical Alarm Delay: Channel 3	Duration required to activate - Ch 3	AV179	Seconds	1	222	
Critical Alarm Delay: Channel 4	Duration required to activate - Ch 4	AV180	Seconds	1	223	
Critical Alarm Delay: Channel 5	Duration required to activate - Ch 5	AV181	Seconds	1	224	
Critical Alarm Delay: Channel 6	Duration required to activate - Ch 6	AV182	Seconds	1	225	
Critical Alarm Delay: Channel 7	Duration required to activate - Ch 7	AV183	Seconds	1	226	
Critical Alarm Delay: Channel 8	Duration required to activate - Ch 8	AV184	Seconds	1	227	
Critical Alarm Delay: Channel 9	Duration required to activate - Ch 9	AV185	Seconds	1	228	
Critical Alarm Delay: Channel 10	Duration required to activate - Ch 10	AV186	Seconds	1	229	
Critical Alarm Delay: Channel 11	Duration required to activate - Ch 11	AV187	Seconds	1	230	
Critical Alarm Delay: Channel 12	Duration required to activate - Ch 12	AV188	Seconds	1	231	
Critical Alarm Delay: Channel 13	Duration required to activate - Ch 13	AV189	Seconds	1	232	
Critical Alarm Delay: Channel 14	Duration required to activate - Ch 14	AV190	Seconds	1	233	
Critical Alarm Delay: Channel 15	Duration required to activate - Ch 15	AV191	Seconds	1	234	
Critical Alarm Delay: Channel 16	Duration required to activate - Ch 16	AV192	Seconds	1	235	
Critical Alarm Delay: Channel 17	Duration required to activate - Ch 17	AV193	Seconds	1	236	
Critical Alarm Delay: Channel 18	Duration required to activate - Ch 18	AV194	Seconds	1	237	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H704/H663 Branch Current Monitors, cont.

Data Variable	Description	"BACnet Object"	Units	" COV Increment"	"Modbus Address"	Comments
Critical Alarm Delay: Channel 19	Duration required to activate - Ch 19	AV195	Seconds	1	238	
Critical Alarm Delay: Channel 20	Duration required to activate - Ch 20	AV196	Seconds	1	239	
Critical Alarm Delay: Channel 21	Duration required to activate - Ch 21	AV197	Seconds	1	240	
Critical Alarm Delay: Channel 22	Duration required to activate - Ch 22	AV198	Seconds	1	241	
Critical Alarm Delay: Channel 23	Duration required to activate - Ch 23	AV199	Seconds	1	242	
Critical Alarm Delay: Channel 24	Duration required to activate - Ch 24	AV200	Seconds	1	243	
Critical Alarm Delay: Channel 25	Duration required to activate - Ch 25	AV201	Seconds	1	244	
Critical Alarm Delay: Channel 26	Duration required to activate - Ch 26	AV202	Seconds	1	245	
Critical Alarm Delay: Channel 27	Duration required to activate - Ch 27	AV203	Seconds	1	246	
Critical Alarm Delay: Channel 28	Duration required to activate - Ch 28	AV204	Seconds	1	247	
Critical Alarm Delay: Channel 29	Duration required to activate - Ch 29	AV205	Seconds	1	248	
Critical Alarm Delay: Channel 30	Duration required to activate - Ch 30	AV206	Seconds	1	249	
Critical Alarm Delay: Channel 31	Duration required to activate - Ch 31	AV207	Seconds	1	250	
Critical Alarm Delay: Channel 32	Duration required to activate - Ch 32	AV208	Seconds	1	251	
Critical Alarm Delay: Channel 33	Duration required to activate - Ch 33	AV209	Seconds	1	252	
Critical Alarm Delay: Channel 34	Duration required to activate - Ch 34	AV210	Seconds	1	253	
Critical Alarm Delay: Channel 35	Duration required to activate - Ch 35	AV211	Seconds	1	254	
Critical Alarm Delay: Channel 36	Duration required to activate - Ch 36	AV212	Seconds	1	255	
Critical Alarm Delay: Channel 37	Duration required to activate - Ch 37	AV213	Seconds	1	256	
Critical Alarm Delay: Channel 38	Duration required to activate - Ch 38	AV214	Seconds	1	257	
Critical Alarm Delay: Channel 39	Duration required to activate - Ch 39	AV215	Seconds	1	258	
Critical Alarm Delay: Channel 40	Duration required to activate - Ch 40	AV216	Seconds	1	259	
Critical Alarm Delay: Channel 41	Duration required to activate - Ch 41	AV217	Seconds	1	260	
Critical Alarm Delay: Channel 42	Duration required to activate - Ch 42	AV218	Seconds	1	261	
Analog_Output Objects						
Global Breaker Size (set ALL)	Sets ALL breaker sizes to same value	AO1	Amperes		268	
Global Warning Threshold (set ALL)	% (0-100) of Breaker Size	AO2	Percent		269	
Global Crit Alarm Threshold (set ALL)	% (0-100) of Breaker Size	AO3	Percent		270	
Global Warning Delay (set ALL)	Duration required to activate	AO4	Seconds		271	
Global Critical Alarm Delay (set ALL)	Duration required to activate	AO5	Seconds		272	
Binary_Output Objects						
Latched Warning Alarm - Channel 1	1=Active; 0=Inactive; write 0 to clear	BV1			44:0	
Latched Warning Alarm - Channel 2	1=Active; 0=Inactive; write 0 to clear	BV2			44:1	
Latched Warning Alarm - Channel 3	1=Active; 0=Inactive; write 0 to clear	BV3			44:2	
Latched Warning Alarm - Channel 4	1=Active; 0=Inactive; write 0 to clear	BV4			44:3	
Latched Warning Alarm - Channel 5	1=Active; 0=Inactive; write 0 to clear	BV5			44:4	
Latched Warning Alarm - Channel 6	1=Active; 0=Inactive; write 0 to clear	BV6			44:5	
Latched Warning Alarm - Channel 7	1=Active; 0=Inactive; write 0 to clear	BV7			44:6	
Latched Warning Alarm - Channel 8	1=Active; 0=Inactive; write 0 to clear	BV8			44:7	
Latched Warning Alarm - Channel 9	1=Active; 0=Inactive; write 0 to clear	BV9			44:8	
Latched Warning Alarm - Channel 10	1=Active; 0=Inactive; write 0 to clear	BV10			44:9	
Latched Warning Alarm - Channel 11	1=Active; 0=Inactive; write 0 to clear	BV11			44:10	

Appendix 1: Data Objects for Supported Metering Devices (cont.)

H704/H663 Branch Current Monitors, cont.

Data Variable	Description	"BACnet Object"	Units	" COV Increment"	"Modbus Address"	Comments
Latched Warning Alarm - Channel 12	1=Active; 0=Inactive; write 0 to clear	BV12			44:11	
Latched Warning Alarm - Channel 13	1=Active; 0=Inactive; write 0 to clear	BV13			44:12	
Latched Warning Alarm - Channel 14	1=Active; 0=Inactive; write 0 to clear	BV14			44:13	
Latched Warning Alarm - Channel 15	1=Active; 0=Inactive; write 0 to clear	BV15			44:14	
Latched Warning Alarm - Channel 16	1=Active; 0=Inactive; write 0 to clear	BV16			44:15	
Latched Warning Alarm - Channel 17	1=Active; 0=Inactive; write 0 to clear	BV17			45:0	
Latched Warning Alarm - Channel 18	1=Active; 0=Inactive; write 0 to clear	BV18			45:1	
Latched Warning Alarm - Channel 19	1=Active; 0=Inactive; write 0 to clear	BV19			45:2	
Latched Warning Alarm - Channel 20	1=Active; 0=Inactive; write 0 to clear	BV20			45:3	
Latched Warning Alarm - Channel 21	1=Active; 0=Inactive; write 0 to clear	BV21			45:4	
Latched Warning Alarm - Channel 22	1=Active; 0=Inactive; write 0 to clear	BV22			45:5	
Latched Warning Alarm - Channel 23	1=Active; 0=Inactive; write 0 to clear	BV23			45:6	
Latched Warning Alarm - Channel 24	1=Active; 0=Inactive; write 0 to clear	BV24			45:7	
Latched Warning Alarm - Channel 25	1=Active; 0=Inactive; write 0 to clear	BV25			45:8	
Latched Warning Alarm - Channel 26	1=Active; 0=Inactive; write 0 to clear	BV26			45:9	
Latched Warning Alarm - Channel 27	1=Active; 0=Inactive; write 0 to clear	BV27			45:10	
Latched Warning Alarm - Channel 28	1=Active; 0=Inactive; write 0 to clear	BV28			45:11	
Latched Warning Alarm - Channel 29	1=Active; 0=Inactive; write 0 to clear	BV29			45:12	
Latched Warning Alarm - Channel 30	1=Active; 0=Inactive; write 0 to clear	BV30			45:13	
Latched Warning Alarm - Channel 31	1=Active; 0=Inactive; write 0 to clear	BV31			45:14	
Latched Warning Alarm - Channel 32	1=Active; 0=Inactive; write 0 to clear	BV32			45:15	
Latched Warning Alarm - Channel 33	1=Active; 0=Inactive; write 0 to clear	BV33			46:0	
Latched Warning Alarm - Channel 34	1=Active; 0=Inactive; write 0 to clear	BV34			46:1	
Latched Warning Alarm - Channel 35	1=Active; 0=Inactive; write 0 to clear	BV35			46:2	
Latched Warning Alarm - Channel 36	1=Active; 0=Inactive; write 0 to clear	BV36			46:3	
Latched Warning Alarm - Channel 37	1=Active; 0=Inactive; write 0 to clear	BV37			46:4	
Latched Warning Alarm - Channel 38	1=Active; 0=Inactive; write 0 to clear	BV38			46:5	
Latched Warning Alarm - Channel 39	1=Active; 0=Inactive; write 0 to clear	BV39			46:6	
Latched Warning Alarm - Channel 40	1=Active; 0=Inactive; write 0 to clear	BV40			46:7	
Latched Warning Alarm - Channel 41	1=Active; 0=Inactive; write 0 to clear	BV41			46:8	
Latched Warning Alarm - Channel 42	1=Active; 0=Inactive; write 0 to clear	BV42			46:9	
Latched Critical Alarm - Channel 1	1=Active; 0=Inactive; write 0 to clear	BV43			47:0	
Latched Critical Alarm - Channel 2	1=Active; 0=Inactive; write 0 to clear	BV44			47:1	
Latched Critical Alarm - Channel 3	1=Active; 0=Inactive; write 0 to clear	BV45			47:2	
Latched Critical Alarm - Channel 4	1=Active; 0=Inactive; write 0 to clear	BV46			47:3	
Latched Critical Alarm - Channel 5	1=Active; 0=Inactive; write 0 to clear	BV47			47:4	
Latched Critical Alarm - Channel 6	1=Active; 0=Inactive; write 0 to clear	BV48			47:5	
Latched Critical Alarm - Channel 7	1=Active; 0=Inactive; write 0 to clear	BV49			47:6	
Latched Critical Alarm - Channel 8	1=Active; 0=Inactive; write 0 to clear	BV50			47:7	
Latched Critical Alarm - Channel 9	1=Active; 0=Inactive; write 0 to clear	BV51			47:8	
Latched Critical Alarm - Channel 10	1=Active; 0=Inactive; write 0 to clear	BV52			47:9	

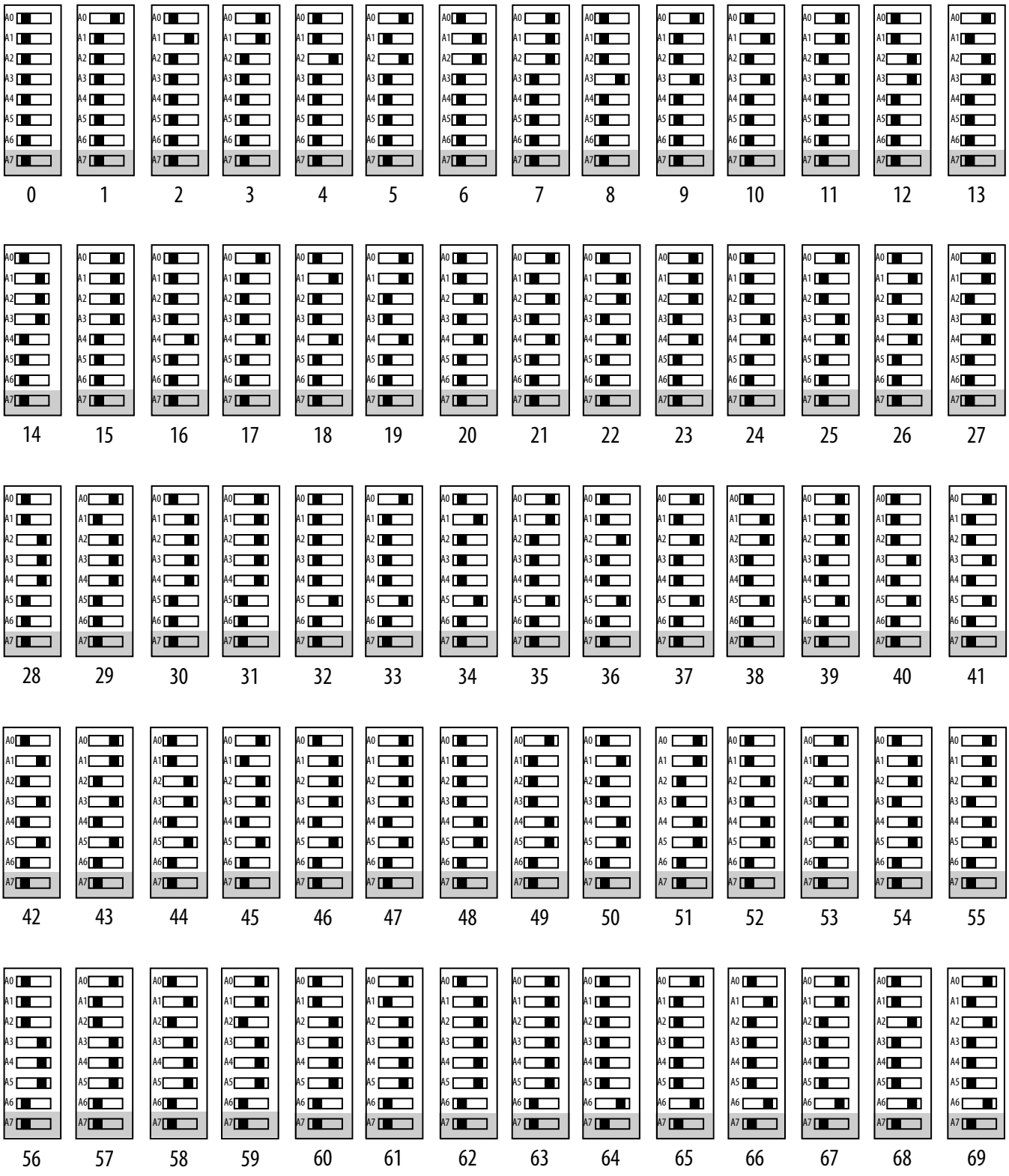
Appendix 1: Data Objects for Supported Metering Devices (cont.)

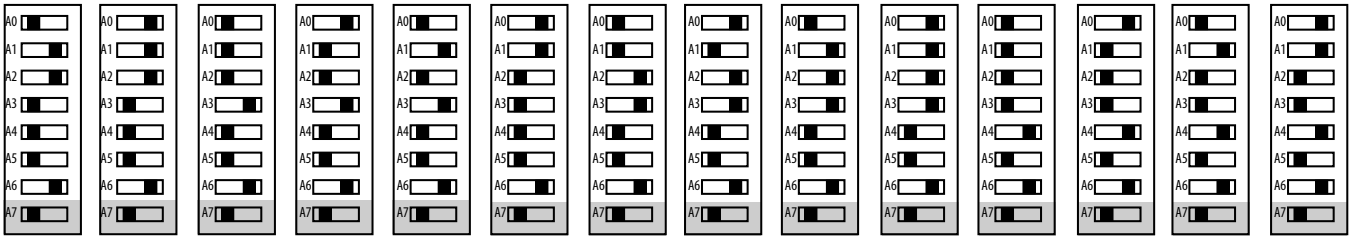
H704/H663 Branch Current Monitors, cont.

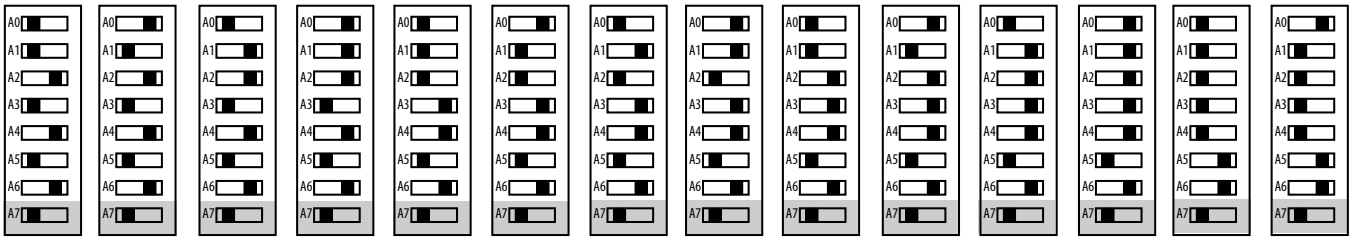
Data Variable	Description	"BACnet Object"	Units	" COV Increment"	"Modbus Address"	Comments
Latched Critical Alarm - Channel 11	1=Active; 0=Inactive; write 0 to clear	BV53			47:10	
Latched Critical Alarm - Channel 12	1=Active; 0=Inactive; write 0 to clear	BV54			47:11	
Latched Critical Alarm - Channel 13	1=Active; 0=Inactive; write 0 to clear	BV55			47:12	
Latched Critical Alarm - Channel 14	1=Active; 0=Inactive; write 0 to clear	BV56			47:13	
Latched Critical Alarm - Channel 15	1=Active; 0=Inactive; write 0 to clear	BV57			47:14	
Latched Critical Alarm - Channel 16	1=Active; 0=Inactive; write 0 to clear	BV58			47:15	
Latched Critical Alarm - Channel 17	1=Active; 0=Inactive; write 0 to clear	BV59			48:0	
Latched Critical Alarm - Channel 18	1=Active; 0=Inactive; write 0 to clear	BV60			48:1	
Latched Critical Alarm - Channel 19	1=Active; 0=Inactive; write 0 to clear	BV61			48:2	
Latched Critical Alarm - Channel 20	1=Active; 0=Inactive; write 0 to clear	BV62			48:3	
Latched Critical Alarm - Channel 21	1=Active; 0=Inactive; write 0 to clear	BV63			48:4	
Latched Critical Alarm - Channel 22	1=Active; 0=Inactive; write 0 to clear	BV64			48:5	
Latched Critical Alarm - Channel 23	1=Active; 0=Inactive; write 0 to clear	BV65			48:6	
Latched Critical Alarm - Channel 24	1=Active; 0=Inactive; write 0 to clear	BV66			48:7	
Latched Critical Alarm - Channel 25	1=Active; 0=Inactive; write 0 to clear	BV67			48:8	
Latched Critical Alarm - Channel 26	1=Active; 0=Inactive; write 0 to clear	BV68			48:9	
Latched Critical Alarm - Channel 27	1=Active; 0=Inactive; write 0 to clear	BV69			48:10	
Latched Critical Alarm - Channel 28	1=Active; 0=Inactive; write 0 to clear	BV70			48:11	
Latched Critical Alarm - Channel 29	1=Active; 0=Inactive; write 0 to clear	BV71			48:12	
Latched Critical Alarm - Channel 30	1=Active; 0=Inactive; write 0 to clear	BV72			48:13	
Latched Critical Alarm - Channel 31	1=Active; 0=Inactive; write 0 to clear	BV73			48:14	
Latched Critical Alarm - Channel 32	1=Active; 0=Inactive; write 0 to clear	BV74			48:15	
Latched Critical Alarm - Channel 33	1=Active; 0=Inactive; write 0 to clear	BV75			49:0	
Latched Critical Alarm - Channel 34	1=Active; 0=Inactive; write 0 to clear	BV76			49:1	
Latched Critical Alarm - Channel 35	1=Active; 0=Inactive; write 0 to clear	BV77			49:2	
Latched Critical Alarm - Channel 36	1=Active; 0=Inactive; write 0 to clear	BV78			49:3	
Latched Critical Alarm - Channel 37	1=Active; 0=Inactive; write 0 to clear	BV79			49:4	
Latched Critical Alarm - Channel 38	1=Active; 0=Inactive; write 0 to clear	BV80			49:5	
Latched Critical Alarm - Channel 39	1=Active; 0=Inactive; write 0 to clear	BV81			49:6	
Latched Critical Alarm - Channel 40	1=Active; 0=Inactive; write 0 to clear	BV82			49:7	
Latched Critical Alarm - Channel 41	1=Active; 0=Inactive; write 0 to clear	BV83			49:8	
Latched Critical Alarm - Channel 42	1=Active; 0=Inactive; write 0 to clear	BV84			49:9	

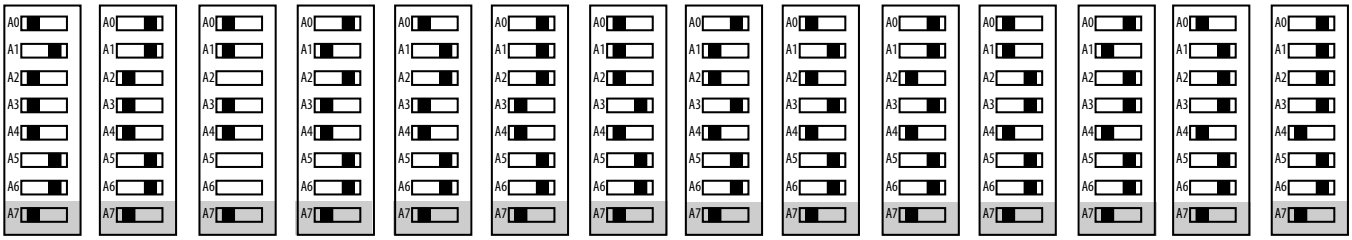
Appendix 2: DIP Switch Address Settings

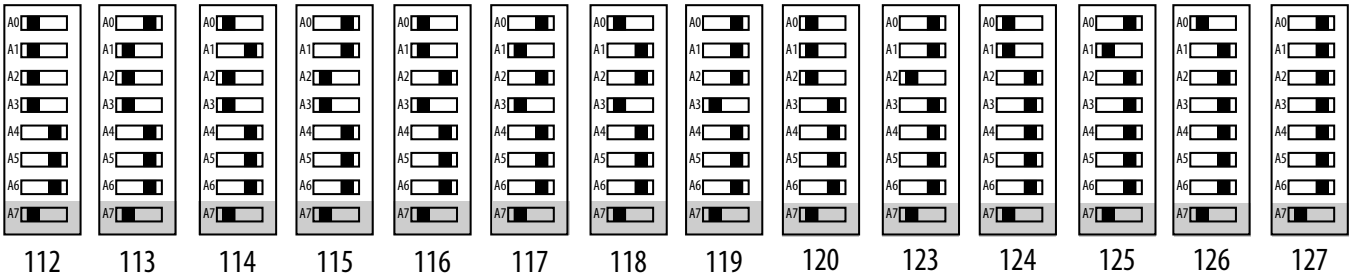
Switch A7 is used to select the BACnet physical interface. It appears shaded here to indicate it is not part of the MAC address.











Appendix 3: Quick Guide to Calculate the Number of Meters Supported

The E8951 can support up to 32 meters (maximum) and up to 10,000 total BACnet points.

The installer can mix meter types, but only from the list of supported meters.

Set all meters to a common baud rate. The combined number of points (see table below) must not exceed 10,000.

Meter Type	Modbus Addresses per Meter	BACnet Points per Address	Total Number of Points per Meter	Maximum Number of Meters Supported
E3xA ≤ 42 channels (Firmware ≥ V1.023)	1	1792	1792	6
E3xA ≤ 42 channels (Firmware = V1.016 to V1.023)	1	782	782	14
E3xA ≤ 42 channels (Firmware ≤ V1.016)	1	736	736	14
E3xB ≤ 42 channels	1	442	442	24
E3xC ≤ 42 channels	1	446	446	24
E3xA 43-84 channels (Firmware ≥ V1.023)	2	1792	3584	3*
E3xA 43-84 channels (Firmware = V1.016 to V1.023)	2	782	1564	7*
E3xA 43-84 channels (Firmware ≤ V1.016)	2	736	1472	7*
E3xB 43-84 channels	2	442	884	12*
E3xC 43-84 channels	2	446	892	12*
E50C2	1	63	63	32**
E50C3	1	63	63	32**
E51C2	1	94	94	32**
E51C3	1	94	94	32**
H8035	1	3	3	32**
H8036	1	28	28	32**
H8163-CB	1	54	54	32**
H8238	8	91	728	15
H8436	1	34	34	32**
H8437	1	66	66	32**
H704/H663	1	356	356	30
A8911-23	1	42	42	32**
A8332-8F2D	1	65	65	32**

** The E31A42 can be configured with help from Veris Customer Support.*

*** 32 meters maximum.*

