an EnerSys® company

EnVision™ Elite Controller SNMP Integrator Guide

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Read this document carefully.
Learn how to protect your equipment from damage and fully understand its functions.

NOTICE

The material contained in this document is for information only and is subject to change without notice.

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1. Safety

Save these instructions: This document contains important safety instructions that must be followed during the installation, servicing, and maintenance of the product. Keep it in a safe place. If there are any questions regarding the safe installation or operation of this product, contact Alpha Technologies Ltd. or the nearest Alpha® power system representative.

Safety wording and symbols

To reduce the risk of injury or death, and to ensure the continued safe operation of this product, the following symbols have been placed throughout this document. Where these symbols appear, use extra care and attention.

Attention: *The use of attention indicates specific regulatory or code requirements that may affect the placement of equipment or installation procedures. Follow the prescribed procedures to avoid equipment damage or service interruption.*

Notice: *A notice provides additional information to help complete a specific task or procedure or general information about the product.*

CAUTION: *Cautions indicate the potential for injury to personnel or damage to equipment..*

Warning: *Risk of serious injury or death. Equipment in operation poses a potential electrical hazard which could result in serious injury or death to personnel. This hazard may continue even when power is disconnected.*

CAUTION: *Risk of burns. A device in operation can reach temperature levels which could cause burns.*

General warnings and cautions

Warning: *You must read and understand the following warnings before installing the system and its components. Failure to do so could result in personal injury or death.*

Warning: *This system is designed to be installed in a restricted access location that is inaccessible to the general public.*

Ce système est conçu pour être installé dans un endroit à accès restreint inaccessible au grand public.

Warning: *This equipment is not suitable for use in locations where children are likely to be present.*

Cet équipement ne convient pas pour une utilisation dans des lieux ou des enfants sont susceptibles d'être présents.

- Read and follow all instructions included in this document.
- Only trained personnel are qualified to install or replace this equipment and its components.
- Use proper lifting techniques whenever handling equipment, parts, or batteries.

Electrical safety

Warning: *Hazardous voltages are present at the input of power systems. The DC output from some UPS devices and batteries can have high voltage and high short-circuit current capacity that may cause severe burns and electrical arcing.*

Warning: *Lethal voltages are present within the system. Always assume that an electrical connection or conductor is energized. Check the circuit with a voltmeter with respect to the grounded portion of the enclosure (both AC and DC) before performing any installation or removal procedure.*

Before working with any live battery or power system, follow these precautions:

- Remove all metallic jewelry, such as watches, rings, metal rimmed glasses, or necklaces.
- Wear safety glasses with side shields at all times during the installation.
- Use approved insulated hand tools. Do not rest tools on top of batteries.
- Do not work alone under hazardous conditions.
- A licensed electrician is required to install permanently wired equipment. Input voltages can range up to 240 VAC. Ensure that the utility power is disconnected and locked out before performing any installation or removal procedure.
- Ensure that no liquids or wet clothes come into contact with internal components.
- Hazardous electrically live parts inside this unit are energized from the batteries even when the AC input power is disconnected.
- Always assume electrical connections or conductors are live. Turn off all circuit breakers and double-check with a voltmeter before performing installation or maintenance.

- Place a warning label on the utility panel to warn emergency personnel that a reserve battery source is present which will power the loads in a power outage condition or if the AC disconnect breaker is turned off.
- At high ambient temperature conditions, the internal temperature can be hot so use caution when touching the equipment.

Battery safety

Warning: *Follow battery manufacturer's safety recommendations when working around battery systems. Do not smoke or introduce an open flame when batteries (especially vented batteries) are charging. When charging, batteries vent hydrogen gas, which can explode.*

Notice: *Read the safety data sheet (SDS) for any batteries used in the system before installation. The SDS provides important information including hazard identification, first aid measures, handling and storage, and personal protective equipment (PPE).*

- Never transport an enclosure with batteries installed. Batteries must only be installed after the enclosure has been securely set in place at its permanent installation location. Transporting the unit with batteries installed may cause a short circuit, fire, explosion, or damage to the battery pack, enclosure and installed equipment.
- Servicing and connection of batteries must be performed by, or under the direct supervision of, personnel knowledgeable of batteries and the required safety precautions.
- Batteries contain or emit chemicals known to cause cancer and birth defects or other reproductive harm. Battery post terminals and related accessories contain lead and lead compounds. Wash your hands after handling batteries.
- Batteries are hazardous to the environment and should be disposed at a recycling facility. Consult the battery manufacturer for recommended local authorized recyclers.

2. Introduction

The purpose of this document is to provide simple and complete information on how to use EnVision™ Elite controller and software, along with Simple Network Management Protocol (SNMP). This guide contains information on setup, configuration, and operation of SNMP using the controller.

2.1. Purpose and audience

The audience for this document are engineers, technicians, IT professionals, and network operation personnel who are tasked with remote monitoring of the power system using SNMP. Users should be well versed in SNMP as well as the network management, fleet management, remote monitoring, or network operations center software and tools that will be used to monitor the controller.

2.2. Knowledge and permissions

Users should have a good working knowledge of, and access to, the following:

- SNMP monitoring software and tools.
- Network and port monitoring tools such as Wireshark.
- Ethernet cables and TCP/IP settings needed to connect your computer to the controller.
- Current version of Google Chrome, Mozilla Firefox, Microsoft Edge, or Apple Safari.
- Power system or 3GPP interface that the controller currently controls.
- Controller administrator credentials and the appropriate level of permissions.

3. Using SNMP with the controller

3.1. Setting up the SNMP agent

SNMP consists of three key components:

- Managed devices
- Agents
- Network management system (NMS)

A managed device is a node that has an SNMP agent. An agent is a software component that provides device information using the SNMP protocol. An NMS collects data from SNMP agents, and then uses that data to monitor and manage the associated devices.

To set up the SNMP agent on the controller, you need to know how the NMS accessing the controller is set up.

There are three main things you need to know:

- What version of SNMP does the NMS use: SNMPv1, SNMPv2 or SNMPv3?
- Does the NMS use notifications or informs?
- What security settings the NMS is using?

3.2. Configuring the SNMP agent

To configure the SNMP agent:

1. From the main dashboard go to **Controller > Communication > SNMP**.
2. From the **Configuration** table, ensure the **SNMP Agent** is **Enabled**.

   The device must be reset to complete the enable and disable **SNMP Agent** configuration.

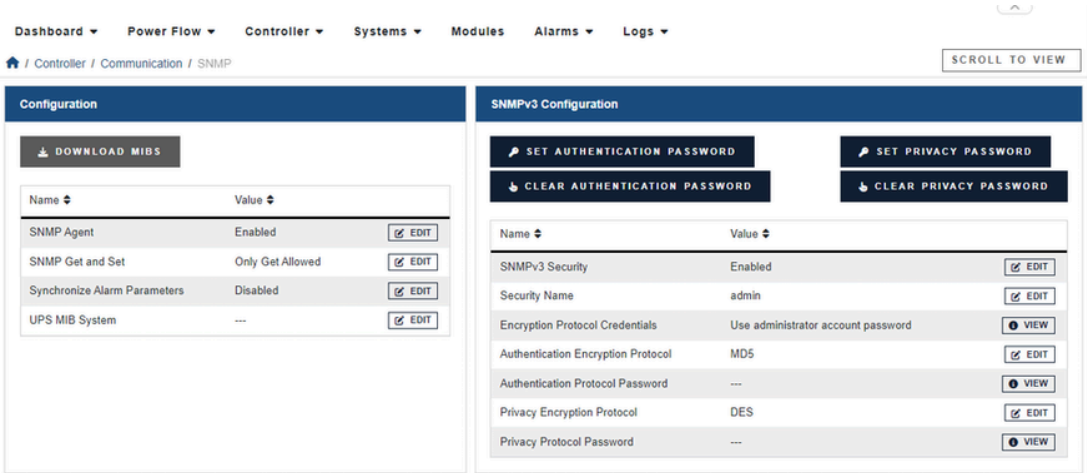
   If **SNMP Agent** is **Discovery Only**, the controller will be available to be discovered, but nothing else. Object identifiers (OIDs) under controllerInfo (OID 1.3.6.1.4.1.7309.5.1) and MIB-2 system (OID 1.3.6.1.4.1.7309.5.1) can be queried, as these are commonly used to discover and identify devices.
3. If the SNMP client is allowed to set the configuration objects in the **Configuration** table (OID 1.3.6.1.4.1.7309.5.2.5.2), set **SNMP Get and Set** to **Get And Set Allowed.**
4. Enter the Read or Write Communities SNMP clients will be querying with in the **Read Communities** and **Write Communities** tables. Read and Write Communities are used when using SNMPv2.

   If a query is made with a read community that does not match any of the configured **Read Communities**, that query will not get a response.

5. From the **SNMPv3 Configuration** table,
    - For SNMPv1, set **SNMPv3 Security** to **Disabled**
    - For SNMPv2, set **SNMPv3 Security** to **Disabled**
    - For SNMPv3, set **SNMPv3 Security** to **Enabled**.
6. Optional: If **SNMPv3 Security** is **Enabled**, and the **Security Name** is set to **admin**, the password of the administrator account is the encryption key to secure the data transfer. In order to use a different password from the administrator account, a new **Security Name** must be used. To customize the encryption passwords, set the **Security Name** and select the buttons to **Set Authentication Password** and **Set Privacy Password**. Also ensure the encryption protocols match what the NMS is using. **SNMPv3** supports message-digest 5 (MD5) or secure hash algorithm (SHA) for authentication encryption protocol and data encryption standard (DES) or advanced encryption standard 128 (AES-128) for privacy encryption protocol.

The webpage should look similar to the following figure.

Figure 3-1 SNMP agent configured for an SNMPv3 NMS



3.3. Configuring an SNMP destination

To configure an SNMP destination:

1. From the main dashboard go to **Controller > Communication > SNMP > SNMP Destinations** table.
2. On the **Notification Destination** line, select the **Go To** button.
3. From the **Notification Destination** table, ensure the following:
    - The **Destination** is **Enabled**
    - The **IP Address** is set to an appropriate machine name, IPv4 or IPv6 address.

- The **Community** string is set to the value used by the NMS for SNMPv2.
- The **Port** is set to the port used by the NMS to receive notifications.

4. Ensure that the **Notification Timeout** is set to:
   - For Traps and Notifications, set the **Notification Timeout** to 0 seconds.
   - For SNMPv2 and SNMPv3 Informs, set the **Notification Timeout** to 5 or more seconds.

     Notice: *With SNMP Acknowledged Notifications, the SNMP agent waits for an acknowledgment (ACK) from the NMS for every notification it sends. If the agent does not get an acknowledgment within the timeout period, the SNMP agent will retransmit the notification.*

5. Ensure that the **Notification Retries** is set to a reasonable number (for example, between three to five). Retries only apply to inform notifications that have a **Notification Timeout** value. The number of retries should be small as they are only meant to make the delivery of notifications more reliable.
6. Configure the **Notification Resend Period** if desired. This configuration forces traps to be resent periodically until the alarm clears. This is non-standard TRAP behavior so use with caution - some monitoring programs may not be compatible. **Notification Timeout** should be set to 0 in order for the periodical resending of traps to work.

Once complete the **Notification Destination** table should look similar to the following figure.

Figure 3-2 Notification destination table

SNMP Destination/3

Name	Value	
Name	---	EDIT
Description	---	EDIT
Destination	Enabled	EDIT
IP Address	---	EDIT
Community	public	EDIT
Port	162	EDIT
Notification Timeout	0 s	EDIT
Notification Retries	3	EDIT
Notification Type	Unacknowledged	VIEW
Notification Resend Period	0m	EDIT

3.4. Configure an SNMP component reference

Each component in the controller has a specific component reference number (SNMP ID) assigned the first time it is created. Each controller may have a complex structure including, multiple inventory of the same type or have multiple inventory of different types such as inverter systems, converter systems, or DC systems.

For more complex controllers containing multiple inventories of the same type, it may be helpful to change the component reference number so that other controllers with the same cloned configuration will have the same SNMP component list structure. This helps especially when advanced scripting is used on the NMS.

It is possible to change SNMP IDs for systems, ADIO modules, and custom data. It is important to ensure any modified IDs do not conflict with each other. To configure these, go to **Controller > Communication > SNMP**. The component reference numbers for each component are listed in the respective **SNMP Component Reference** table. Before changing any of these IDs, ensure that the SNMP agent is enabled. After changing an ID, it may take several minutes for the change to take effect as the controller rebuilds the internal SNMP database.

3.4.1. Renumber component references by name

The **Renumber Component References by Name** button (in each **SNMP Component Reference** table) can be used as a quick solution to ensure controllers with the same cloned configuration have matching reference numbers for a given component. For each component of the same type in the table, SNMP IDs will be assigned consecutively according to the component name.

For example, consider a situation with two AC source systems (component type 56) named My first source and My second source, and one DC system (component type 2) named My DC system. In this case, after pressing the **Renumber Component References by Name** button in the **System SNMP Component Reference** table, the AC source systems will have IDs 1 and 2 consecutively assigned because they are the same component type, while the DC system will have ID 1 assigned, as there are no other DC systems.

Table 3-1 SNMP IDs after selecting the Renumber Component References by Name button

Component name	Component type	Assigned SNMP ID
My DC system	2, DC system	1
My first source	56, AC source system	1
My second source	56, AC source system	2

3.5. Viewing the state of SNMP

The state of operation of SNMP on the controller can be viewed at **Controller > Communication > SNMP** in the **Configuration** table. The information presented in the table can be used to determine appropriate polling rates when reading data from the controller over SNMP. **Last Response Number of Values** can help determine if too small of requests are being made. The controller can only respond to a certain number of requests due to performance reasons, therefore making less frequent, larger requests (via GET-BULK) can result in less throttling.

3.6. Discovery

SNMP discovery occurs by scanning IP address ranges for SNMP enabled devices, and then searching the product identification fields for specific values. It is recommended that you use the SNMPv2-MIB sysDescr field, to identify the controller. This field's purpose is described in RFC 1213.

The sysDescr field identifies a controller as a *Power Controller*. The following data is an example value for the sysDescr field:

```
Controller, SW: v9.0 Dev 209, OS: v9.0, HW: S1.I1.P1, SN: 5799854652
```

Figure 3-3 Example of discovery using the MG-SOFT V10 SNMP tool

Notice: *If you can ping the controller, but are having trouble with SNMP discovery, check to ensure that the controller's SNMP agent is enabled.*

Notice: *If sysDescr starts with* ***Discovery Only****, this indicates that the controller is only available for discovery, and not all information is able to be queried. For full functionality, ensure that the controller's SNMP agent is enabled.*

Notice: *If SNMPv3 security is enabled, then the discovery tool must use the corresponding authentication, encryption protocols, and settings.*

3.7. Notifications

The controller supports two notification types:

- Active alarm notification
- Cleared alarm notification.

Both notifications share the same format, as defined in RFC 3877 - ALARM-MIB.

Figure 3-4 Sample data for a controller SNMP notification

```
alphaAlarmActiveState
    Message reception date: 2026-07-27
    Message reception time: 8:47:31.215 AM
    Time stamp: 4 days 17h:42m:55s.07th (40937507)
    Message type: Notification (Trap)
    Protocol version: SNMPv2c
    Transport: IP/UDP
    Agent
        Address: 10.121.122.90
        Port: 161
    Manager
        Address: 127.0.0.1
        Port: 162
    Community: public
    Bindings (13)
        Binding #1: sysUpTime.0 *** (TimeTicks) 4 days 17h:42m:55s.07th (40937507)
        Binding #2: snmpTrapOID.0 *** (OBJECT IDENTIFIER) alphaAlarmActiveState
        Binding #3: alarmActiveModelPointer *** (RowPointer) alarmModelEntry.20010.3
        Binding #4: alarmActiveResourceId *** (ResourceId) componentListStaticName.1
        Binding #5: alarmModelState.20010.3 *** (Unsigned32) 2
        Binding #6: alarmModelDescription.20010.3 *** (SnmpAdminString) DC System 24V : Rectifier Fail : Minor
        Binding #7: componentListStaticName.2.1 *** (OCTET STRING) DC System 24V/237
        Binding #8: componentListReference.2.1 *** (Unsigned32) 1
        Binding #9: alarmSeverity *** (Integer32) 2
        Binding #10: controllerInfoName *** (OCTET STRING) ---
        Binding #11: alarmCustomDescription *** (OCTET STRING) DC System 24V : Rectifier Fail
        Binding #12: alarmAdditionalInformation *** (OCTET STRING) ::
        Binding #13: controllerInfoSerialNumber *** (OCTET STRING) 272000252
```

The VarBind list includes the following:

- **sysUpTime:** Time ticks in tenth of a second since startup.
- **snmpTrapOID:** Object identifier of the notification.
- **alarmActiveModelPointer:** Reference to the conceptual row in the **AlarmModel** table defining the alarm.
- **alarmActiveResourceId:** Reference to the conceptual row indicating the source of the alarm.
- **alarmModelState:** A numeric value representing the state of the alarm. The following values are possible:
    - **0:** Alarm Clear
    - **1:** Alarm Active (Warning)
    - **2:** Alarm Active (Minor)
    - **3:** Alarm Active (Major)
    - **4:** Alarm Active (Critical)
- **alarmModelDescription:** Verbose description of the alarm.
- **componentListStaticName:** Text name of the source of the alarm.
- **componentListReference:** Numeric ID assigned to the source of the alarm.

- **alarmSeverity:** Numeric ID that is user defined to support custom filtering and sorting.

  ***Notice: alarmSeverity** is mapped to **Parameter 1** in the controller alarm definitions. This type of generic name is used for alarm data that is needed for remote communication, but not used for local alarm processing.*

- **controllerInfoName:** Text name of the controller.
- **alarmCustomDescription:** User configurable text name of the alarm.

  ***Notice: alarmCustomDescription** is mapped to **Parameter 2** in the controller alarm definitions. This type of generic name is used for alarm data that is needed for remote communication, but not used for local alarm processing.*

- **alarmAdditionalInformation:** Generated content that provides additional information about some alarms. The information is provided as a text value, with each piece of information separated by two colons (::). The following information is provided:
  - The physical location of a module, in the format bay-shelf-slot-channel. This is currently only provided for line power modules.
  - Details about what caused the alarm. This is currently only provided for line power modules.
- A **Test Notification** button is available to test connectivity to the configured destinations. The test notification has a reduced set of data points (VarBinds) populated with a unique set of information to avoid confusion with a real notification. This item is not defined in any MIB as it is not intended to be interpreted by a monitoring system.

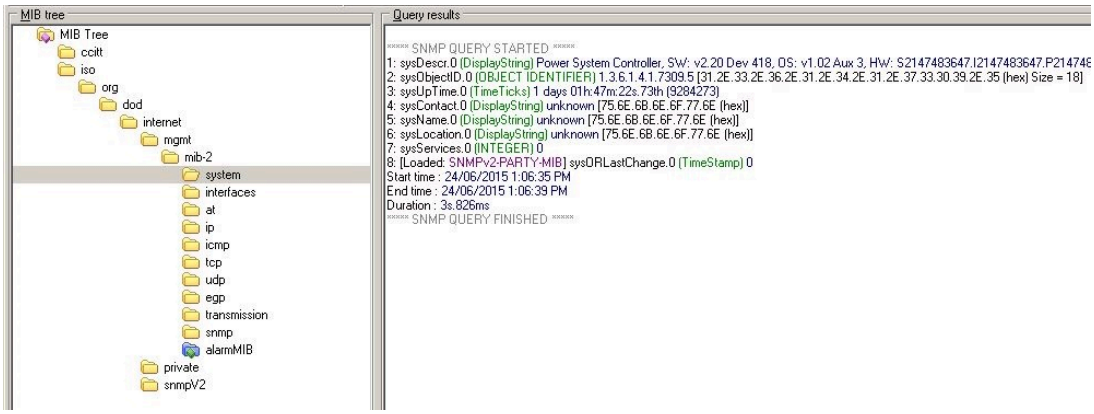
3.8. Performing a MIB WALK

To see information that is available once the Management Information Base (MIB) files are compiled into the NMS, you can perform a MIB WALK. A MIB WALK through the ALPHA-RESOURCE-MIB (ARM) provides a large amount of data, that may not be very meaningful.

A more effective way to get useful data would be to use the simplified MIBs such as the ALPHA-RECTIFIER-MIB and ALPHA-CONVERTER-MIB because the information is laid out in an accessible, linear form.

Also, modern SNMP software can WALK a subset of data, based on the starting point required. If a MIB WALK is executed on a subtree, the MIB WALK stops once the end of that tree is reached.

Figure 3-5 Example of a subtree MIB WALK on the MIB-2 system node

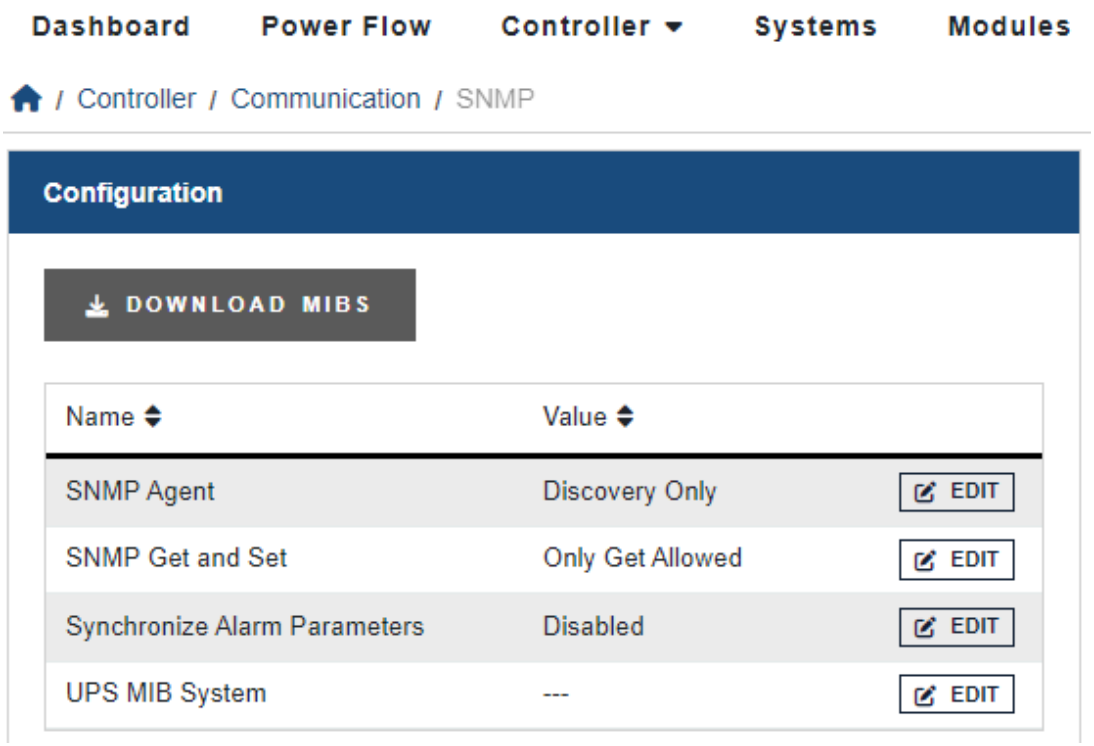


Notice: *If using SNMPv1: a difference you may see in an SNMPv1 NMS is in the way it performs a MIB WALK. SNMPv2 or SNMPv3 NMS perform a GETBULK command to WALK an MIB. An SNMPv1 NMS performs a sequence of GETNEXT commands to WALK an MIB. The SNMPv1 WALK will expose the fact that the controller MIBs are sparsely populated in some areas. The SNMPv1 WALK makes it look like the controller MIBs have more data values than expected, and most of those values are empty. When doing a SNMPv1 WALK, it is necessary to filter out those empty values.*

3.9. Downloading controller MIB files

The controller can provide access to all MIBs needed to support SNMP functionality. Visiting the SNMP page will show a button which initiates a download of all MIB files.

Figure 3-6 SNMP configuration page



As an alternative, visit the EnerSys® website to download the latest version of the MIB files for the controller are available (http://www.alpha.ca/web2/software-firmware-downloads). Some registration information is required to access the page.

There are eight MIB files in the package to support various SNMP functionality to access data from the controller.

- **ALARM-MIB** file defines a list of outstanding alarms and log of alarms that have occurred and have been cleared.
- **ALPHA-CONVERTER-SYS-MIB** file defines the data objects of a converter system.
- **ALPHA-NOTIFICATION-MIB** file defines the notification objects available in the controller.
- **ALPHA-RECTIFIER-SYS-MIB** file defines the data objects of a DC system.
- **ALPHA-RESOURCE_MIB** file defines all read and control objects available in the controller.
- **SNMP-TARGET-MIB** file defines MIB objects which provide mechanisms to remotely configure the parameters used by an entity for the generation of SNMP messages.

- **SNMPv2-MIB** file defines managed objects that describes the properties and behavior of a SNMPv2 entity.
- **UPS-MIB** file defines the objects for an uninterruptible power supply (UPS) such as the Alpha® FXM HP UPS module.

3.10. Feature-specific SNMP configuration

Most controller features can be configured through standard SNMP configuration fields. In these cases, the configuration process is straightforward and follows the normal methods described in this guide. For these features, no additional documentation is typically required.

Some features require additional configuration steps when managed through SNMP. These features may involve one or more of the following:

- Updating multiple configuration fields in a specific sequence.
- Coordinating configuration across multiple controller components.
- Using command fields in addition to configuration fields.
- Uploading certificates, configuration files, or other structured data.
- Encoding data into a specific format before sending it to the controller.
- Performing validation or activation steps after the configuration is written.
- Monitoring status fields to confirm that the operation completed successfully.

The following sections describe features that require these additional steps. Each section provides the required configuration fields, any dependencies or prerequisites, the recommended configuration sequence, and methods to verify successful operation.

Note: *Changes made through SNMP are processed in the same manner as changes made through the web interface. Depending on the feature being configured, some changes may take several seconds to apply, may trigger validation checks, or may require additional actions before becoming active.*

Note: *When configuring features through SNMP that require multiple steps, it is recommended to verify each configuration step before proceeding to the next. This helps identify configuration errors early and simplifies troubleshooting.*

3.10.1. Configure multi-factor authentication (MFA) using SNMP

Multi-factor authentication (MFA) can be configured remotely using SNMP. If MFA is not already enabled on the controller, enable the **Require Multi-factor Authentication** field before configuring MFA for individual users.

Configuring MFA for a user requires the controller to be configured to use SNMPv3. The OIDs used for MFA configuration vary by user account. The examples in this topic use the default administrator account.

1. Enable the Require Multi-factor Authentication field if MFA is not already enabled.

   Write the value **Enabled** to:

   1.3.6.1.4.1.7309.5.2.5.2.1.3.1.84.1
2. Verify that the SNMP client is using SNMPv3 credentials with write access.
3. Configure the MFA shared secret for the user account.

   For the default administrator account, write the shared secret to:

   1.3.6.1.4.1.7309.5.2.5.2.1.3.79.3.1

   Writing the shared secret immediately enables MFA for that user. No separate user-level enable field is required.
4. Optional: Configure the MFA shared secret setup key instead of the shared secret.

   The setup key is a Base32-encoded representation of the shared secret.

   For the default administrator account, write the setup key to:

   1.3.6.1.4.1.7309.5.2.5.2.1.3.79.4.1
5. Verify that the user can sign in using an MFA-compatible authenticator application.

After completing step 5, MFA will be required on the controller, and the selected user account is configured for MFA authentication.

Note: *The user-specific MFA OIDs in this example apply to the default administrator account. Use the corresponding OIDs for any other user account.*

Note: *Configure either the shared secret or the shared secret setup key. Both values represent the same MFA secret.*

3.10.2. Configure single sign-on (SSO) using SNMP

Single sign-on (SSO) can be configured remotely using SNMP. The controller supports Security Assertion Markup Language (SAML) and OpenID Connect (OIDC) authentication providers.

Configure the parameters for the desired authentication method, and then set **Single Sign-On** to activate the configuration.

1. Configure SAML authentication if using a SAML identity provider.

   Configure the following fields using the values supplied by the identity provider:

- **Service Provider Entity Id** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.207.1`) to match the service provider identifier configured on the identity provider.
- Base64 encode the SAML metadata file and write the encoded contents to:

  `1.3.6.1.4.1.7309.5.2.5.2.1.3.1.208.1`

Configure **Attribute Name** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.201.1`) to the name of the attribute or claim that contains group membership information in the SAML response.

Configure the group mapping values for the controller user roles:

- **Group Attribute Value for Admin User Role** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.202.1`)
- **Group Attribute Value for Accounts User Role** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.203.1`)
- **Group Attribute Value for Operator User Role** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.204.1`)
- **Group Attribute Value for Restricted Operator User Role** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.205.1`)
- **Group Attribute Value for Guest User Role** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.206.1`)

Configure each field with the value returned by the identity provider for the corresponding group.

2. Configure OIDC authentication if using an OIDC identity provider.

   Configure the following fields using the values supplied by the identity provider:

   - **OIDC Auth Url** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.250.1`)
   - **OIDC Token Url** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.251.1`)
   - **OIDC Client ID** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.252.1`)
   - **OIDC Issuer Url** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.253.1`)

   Base64 encode the JSON Web Key Set (JWKS) file and write the encoded contents to:

   `1.3.6.1.4.1.7309.5.2.5.2.1.3.1.254.1`

   Configure **Attribute Name** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.201.1`) to the name of the attribute or claim that contains group membership information in the OIDC token.

   Configure the group mapping values for the controller user roles:

   - **Group Attribute Value for Admin User Role** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.202.1`)
   - **Group Attribute Value for Accounts User Role** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.203.1`)
   - **Group Attribute Value for Operator User Role** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.204.1`)
   - **Group Attribute Value for Restricted Operator User Role** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.205.1`)
   - **Group Attribute Value for Guest User Role** (`1.3.6.1.4.1.7309.5.2.5.2.1.3.1.206.1`)

   Configure each field with the value returned by the identity provider for the corresponding group.

3. Enable the desired SSO authentication method.

Configure **Single Sign-On** (`1.3.6.1.4.1.7309.5.2.5.2.1.2.1.200.1`) to one of the following values:

- **SAML**
- **OIDC**

The controller is configured to use the selected SSO authentication provider.

Note: *Metadata files and JSON Web Key Set files must be Base64 encoded before being written through SNMP.*

3.10.3. Configure Certificate Management Protocol version 2 (CMPv2) using SNMP

Certificate Management Protocol version 2 (CMPv2) can be configured remotely using SNMPv3.

This procedure describes the SNMP configuration workflow. For information about CMPv2 concepts, certificate enrollment, initialization methods, certificate authority requirements, and deployment recommendations, refer to the *EnVision™ Elite Controller Software Manual*.

1. Configure the CMP server information.

   Configure **CMP Public Key Infrastructure (PKI) URL**.

   OID: `1.3.6.1.4.1.7309.5.2.5.2.1.3.1.164.1`

   Configure **CMP Certificate Authority Name**.

   OID: `1.3.6.1.4.1.7309.5.2.5.2.1.3.1.165.1`
2. Configure the certificate request parameters.

   Configure **CMP Common Name**.

   OID: `1.3.6.1.4.1.7309.5.2.5.2.1.3.1.163.1`

   Configure **CMP Automatic Key Renewal Threshold** to the desired renewal period in days.

   OID: `1.3.6.1.4.1.7309.5.2.5.2.1.2.1.166.1`

   Configure **CMP Certificate DNS Name**.

   OID: `1.3.6.1.4.1.7309.5.2.5.2.1.3.1.168.1`

   Configure **CMP Include IP Addresses** to **Yes** or **No**.

   OID: `1.3.6.1.4.1.7309.5.2.5.2.1.3.1.169.1`
3. Configure the CMP initialization protection method.

   Configure **CMP Initialization Protection Method** to one of the following values:

- **InitializationMethodExternalIdentityCertificate**
- **InitializationMethodSharedSecret**

OID: `1.3.6.1.4.1.7309.5.2.5.2.1.3.1.161.1`

4. Optional: Configure a shared secret when using shared-secret initialization.

   Configure **CMP Shared Secret**.

   OID: `1.3.6.1.4.1.7309.5.2.5.2.1.3.1.162.1`

   Note: *Configuring **CMP Shared Secret** requires SNMPv3.*

5. Enable CMPv2.

   Configure **CMP Enable** to **Enabled**.

   OID: `1.3.6.1.4.1.7309.5.2.5.2.1.3.1.160.1`

6. Verify that CMPv2 initialization completed successfully.

   Review **CMP Transaction Status**.

   OID: `1.3.6.1.4.1.7309.5.2.3.2.1.3.1.161.1`

   Review **CMP Error Status**.

   OID: `1.3.6.1.4.1.7309.5.2.3.2.1.3.1.162.1`

7. Configure the web server to use HTTPS.

   Configure **Web Connection Protocol** to one of the following values:

   - **ListenOnBothPorts**
   - **HTTPSOnly**

   OID: `1.3.6.1.4.1.7309.5.2.3.2.1.3.1.34.1`

The controller is configured to obtain and renew certificates using CMPv2.

Note: *If CMPv2 initialization does not complete successfully, review **CMP Transaction Status** and **CMP Error Status** before modifying the configuration.*

3.10.4. Configure HTTPS using SNMP

HTTPS can be configured remotely using SNMPv3 by uploading a private key and certificate to the controller.

This procedure describes the SNMP configuration workflow. For information about supported certificate formats, certificate chains, private key requirements, and HTTPS deployment recommendations, refer to the *EnVision™ Elite Controller Software Manual*.

1. Upload the private key.

   Base64 encode the private key file and write the encoded contents to:

   `1.3.6.1.4.1.7309.5.2.5.2.1.3.1.180.1`

2. Upload the certificate.

   Base64 encode the certificate file or certificate chain file and write the encoded contents to:

   `1.3.6.1.4.1.7309.5.2.5.2.1.3.1.181.1`

3. Verify that the certificate was loaded successfully.

   Review **Certificate Status**.

   OID: `1.3.6.1.4.1.7309.5.2.3.2.1.3.1.35.1`

   Review **Certificate Issued To**.

   OID: `1.3.6.1.4.1.7309.5.2.3.2.1.3.1.36.1`

   Review **Certificate Issued By**.

   OID: `1.3.6.1.4.1.7309.5.2.3.2.1.3.1.37.1`

   Review **Certificate Effective Date**.

   OID: `1.3.6.1.4.1.7309.5.2.3.2.1.3.1.38.1`

   Review **Certificate Expiry Date**.

   OID: `1.3.6.1.4.1.7309.5.2.3.2.1.3.1.39.1`

4. Configure the web server connection protocol.

   Configure **Web Connection Protocol** to one of the following values:

   - **ListenOnBothPorts**
   - **HTTPSOnly**

   OID: `1.3.6.1.4.1.7309.5.2.3.2.1.3.1.34.1`

The controller is configured to use the uploaded certificate and private key for HTTPS connections, and the certificate information is available through the certificate status fields.

Note: *The private key and certificate files must be Base64 encoded before being written through SNMPv3.*

3.10.5. Change IPv4 static address over SNMP

Change a controller's IPv4 address and verify that the new static IPv4 address is reachable after the address is changed over SNMPv3. This task can only be performed over **SNMPv3.**

Use this task when a static IPv4 address has been changed over SNMPv3 and the controller requires confirmation that the new address is reachable.

Before you begin, confirm that the Ethernet port is configured for Static address mode. IPv4 address verification is required only for static IPv4 address changes.

1. Change the Ethernet port static IPv4 address over SNMPv3.
2. Apply or write the updated IP configuration so the controller begins using the new address.
3. Connect to the controller using the newly configured IPv4 address.
4. Using SNMPv3, under commands, set `SNMPIPv4AddressChangeVerification` to a non-zero value.

   The controller processes the command and confirms the IPv4 address change.

After verification is complete, the controller accepts the new static IPv4 address and clears the pending verification condition. The previous valid IPv4 address is no longer held for rollback.

If verification is not completed within the allowed time, the controller will roll back to the previous valid IPv4 address and log an event.

4. SNMP reference for the controller

4.1. Alarms reference

Although there are a number of VarBinds available for simple alarm mapping and matching, the Alarm Model Pointer and the Alarm Resource ID provide access to a rich set of data. The Alarm Model Pointer provides a pointer into the **Alarm** table where more details about the alarm are available. The Alarm Resource ID provides a pointer to the resource or inventory item that the notification is about.

For example, if you had a **Battery Disconnect** and a **Load Disconnect** open at the same time, both notifications would share the same Alarm Model Pointer of Disconnect Open, but one Alarm Resource ID would point to the **Battery Disconnect** and the other Alarm Resource ID would point to the **Load Disconnect**.

The following is a list of all possible alarms that exist in the controller. Due to the dynamic nature and variable setup of a power system, the alarm list is potentially different when monitoring different setups.

For example, if you have two controllers, one controlling a rectifier system and another controlling a converter system, the alarm lists for each one will not be identical. But even with the variable sets of alarms available, a consolidated list of all alarms can provide a reference point to get information of any and all possible notifications coming out of the controller. This is because all alarms are defined with unique identifying features that will not change or be duplicated.

Alarm severity is indicated by the last number in the assigned OID. The following table does not list all possible alarm states. Reviewing the Alarm Model table using a SNMP tool will provide all instances of possible alarms and their states.

- 1: Clear
- 2: Message
- 3: Minor
- 4: Major
- 5: Critical

As per the defined standards, all OID references to alarm models not only point to the entry of the model in the table, but also to the corresponding state of that alarm.

Table 4-1 Alarm reference table

Component list type	Alarm name	OID
1	Controller: Clock Error	10001
1	Controller: CAN Devices in Bootloader	10002
1	Controller: ADIO Comms. Lost	10003
1	Controller: Unassigned Modules	10004

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
1	Controller: Temporary License Expired	10005
1	Controller: Required Feature License Missing	10006
1	Controller:Temporary License in Use	10007
1	Controller: Duplicate SNMP ID	10008
1	Controller: Restart Required	10009
1	Controller: Unassigned Bluetooth Modules	10010
1	Controller: Disk Almost Full	10011
1	Controller: CAN Module Communication Lost Count High	10013
1	Controller: CAN Module Communication Lost Count Very High	10014
1	Controller: Remote Configuration Lockout Overridden	10015
1	Controller: System OS Upgrade in Progress	10016
1	Controller: Reserve Controller Failed	10017
1	Controller: Main Controller Failed	10018
1	Controller: Main Controller Ethernet Failure	10019
1	Controller: Controller Redundancy CAN Failure	10020
1	Controller: ADIO Redundancy Lost	10021
1	Controller: Maintenance Mode Active	10022
1	Controller: Bluetooth Connection Error	10023
1	Controller: Event Log Count High	10105
1	Controller: Device Log Count High	10106
1	Controller: Incompatible Rectifiers Alarm	10107
2	DC System: AC Mains Voltage High	20001
2	DC System: AC Mains Voltage Low	20002
2	DC System: Urgent AC Mains Fail	20003
2	DC System: Output Voltage High	20004
2	DC System: Output Voltage Very High	20005
2	DC System: Output Voltage Low	20006
2	DC System: Output Voltage Very Low	20007

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
2	DC System: Invalid System Voltage Reading	20008
2	DC System: Battery on Discharge (Deprecated. Always return Inactive (0). Use Battery System: Battery on Discharge alarm).	20009
2	DC System: Rectifier Fail	20010
2	DC System: Rectifier Fail Count Very High	20011
2	DC System: Rectifier Fail Count High	20012
2	DC System: Rectifier Minor	20013
2	DC System: Rectifier Comms. Lost	20014
2	DC System: AC Mains Fail	20015
2	DC System: Fan Fail	20016
2	DC System: Battery Test (Deprecated. Always return Inactive (0). Use Battery System: Battery Test alarm).	20017
2	DC System: Temp. Comp. Measurement Fail (Deprecated. Always return Inactive (0). Use Battery System: Temp. Comp. Measurement Fail alarm).	20018
2	DC System: Temp. Comp. Voltage Warning (Deprecated. Always return Inactive (0). Use Battery System: Temp. Comp. Voltage Warning alarm).	20019
2	DC System: Battery Runtime Low	20020
2	DC System: Battery Health Low (Deprecated. Always return Inactive (0). Use Battery System: Battery Health Low alarm).	20021
2	DC System: Rectifier Configuration Error	20022
2	DC System: Insufficient Capacity Remaining (Current)	20023
2	DC System: Insufficient Capacity Remaining (Power)	20024
2	DC System: Missing Rectifier	20025

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
2	DC System: Rectifier AC Fail Count High	20026
2	DC System: Rectifier AC Fail Count Very High	20027
2	DC System: Total Load Current High Alarm	20028
2	DC System: Total Load Current Very High Alarm	20029
2	DC System: Regulation Suspended Alarm	20030
3	ADIO: Ground Fault Resistance Low	30001
3	ADIO: Ground Fault Current High	30002
3	Fan Tray: Fan Fail Alarm	30003
3	ADIO: Ground Fault Earth Current High	30004
3	ADIO: Temperature Sensor #1 Failure	30101
3	ADIO: Temperature Sensor #2 Failure	30102
3	ADIO: Temperature Sensor #3 Failure	30103
3	ADIO: Temperature Sensor #4 Failure	30104
3	ADIO: Temperature Sensor #5 Failure	30105
10	Battery System: Battery Charge Current High	100001
10	Battery System: Battery Temperature High	100002
10	Battery System: Battery Temperature Low	100003
10	Battery System: Battery Breaker/Fuse Open	100004
10	Battery System: Midpoint #1 Unbalanced (Deprecated. Always returns Inactive (0). Use Battery String: Midpoint Unbalanced alarm).	100005
10	Battery System: Midpoint #2 Unbalanced (Deprecated. Always returns Inactive (0). Use Battery String: Midpoint Unbalanced alarm).	100006
10	Battery System: Battery Temperature Anomaly	100007
10	Battery System: Battery Test	100008
10	Battery System: Battery on Discharge	100009
10	Battery System: Temp. Comp. Measurement Fail	100010

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
10	Battery System: Temp. Comp. Voltage Warning	100011
10	Battery System: Battery Runtime Low	100012
10	Battery System: Battery Health Low	100013
11	Disconnect: Disconnect Inhibit	110001
11	Disconnect: Disconnect Pending	110002
11	Disconnect: Disconnect Active	110003
11	Disconnect: Disconnect Open	110004
11	Disconnect: Manually Closed	110005
11	Disconnect: Manually Opened	110006
12	Load: Load Voltage High	120001
12	Load: Load Current High	120002
12	Load: Load Breaker/Fuse Open	120003
12	Load: Load Voltage Low	120004
12	Load: Load Current Very High	120005
15	CAN Bus: Bus State Alarm	150001
15	CAN Bus: Max. CAN Devices Exceeded	150002
16	Converter System: Output Voltage Low	160001
16	Converter System: Output Voltage High	160002
16	Converter System: Converter Fail	160003
16	Converter System: Converter Major Fail Count	160004
16	Converter System: Converter Minor Fail Count	160005
16	Converter System: Converter Minor	160006
16	Converter System: Converter Comms. Lost	160007
16	Converter System: Input Voltage Fail	160008
16	Converter System: Converter Configuration Error	160009
16	Converter System: Converter Fan Fail	160010
16	Converter System: Output Voltage Very Low	160011
16	Converter System: Output Voltage Very High	160012

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
16	Converter System: Missing Converter	160013
16	Converter System: Total Load Current High	160014
16	Converter System: Total Load Current Very High	160015
17	Digital User Alarm: User-Defined	170001
18	Threshold User Alarm: User-Defined	180001
19	Inverter System: T2S Comms. Lost	190001
19	Inverter System: Inverter Comms. Lost	190002
19	Inverter System: Inverter Fan Failure	190003
19	Inverter System: Inverter Internal Error	190004
19	Inverter System: Inverter Restarts	190005
19	Inverter System: Inverter Overload	190006
19	Inverter System: Inverter Configuration Error	190007
19	Inverter System: Inverter Output Voltage Change in Progress	190009
19	Inverter System: Inverter Not Ready	190010
19	Inverter System: Inverter Temperature Derating	190011
19	Inverter System: Inverter Low Input Voltage Brownout	190012
19	Inverter System: Inverter Fan Life Elapsed	190013
19	Inverter System: Inverter Off	190014
19	Inverter System: Inverter AC Input Voltage Low	190015
19	Inverter System: Inverter AC Input Voltage High	190016
19	Inverter System: Inverter AC Input Error	190017
19	Inverter System: Inverter Frequency Out of Range	190018
19	Inverter System: Inverter DC Input Voltage Low	190019
19	Inverter System: Inverter DC Input Voltage High	190020
19	Inverter System: T2S Digital Input 1	190021
19	Inverter System: T2S Digital Input 2	190022
19	Inverter System: Redundancy Lost	190023
19	Inverter System: All Redundancy Lost	190024

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
19	Inverter System: System Overload	190025
19	Inverter System: Main Source Lost	190026
19	Inverter System: Secondary Source Lost	190027
19	Inverter System: T2S Fail	190028
19	Inverter System: T2S Log Nearly Full	190029
19	Inverter System: System Error	190030
19	Inverter System: Inverter Imminent Shutdown	190031
19	Inverter System: TUS Synchronization Error	190032
19	Inverter System: TUS Internal Error	190034
19	Inverter System: TUS Configuration Error	190035
19	Inverter System: T2S Refusing Commands	190037
19	Inverter System: Missing T2S	190038
19	Inverter System: Phase Output Real Power Overload	190039
19	Inverter System: Phase Output Apparent Power Overload	190040
20	Bypass Switch: Bypass Active	200001
27	Breaker or Fuse: Breaker/Fuse Open	270001
31	Line Power System: Input Voltage High Shutdown	310001
31	Line Power System: High Temperature Shutdown	310003
31	Line Power System: Temperature Warning	310004
31	Line Power System: Module Connection Error	310005
31	Line Power System: Channel Overvoltage Shutdown	310006
31	Line Power System: Channel Ground Fault Shutdown	310007
31	Line Power System: Channel Output Voltage Low Shutdown	310008
31	Line Power System: Channel Overcurrent Shutdown	310009
31	Line Power System: Channel Disabled	310010
31	Line Power System: Channel Current Sensor Shutdown	310011
31	Line Power System: Input Voltage Low Shutdown	310015
31	Line Power System: LP Module Comms. Lost	310016

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
31	Line Power System: Output Current Low	310017
31	Line Power System: Output Current High	310018
31	Line Power System: Output Power Low	310019
31	Line Power System: Output Power High	310020
31	Line Power System: Input Current (Est.) Low	310021
31	Line Power System: Input Current (Est.) High	310022
31	Line Power System: Input Power (Est.) Low	310023
31	Line Power System: Input Power (Est.) High	310024
31	Line Power System: Channel Fuse Shutdown	310025
31	Line Power System: Average Input Voltage Low	310026
31	Line Power System: Duplicate Shelf ID Detected	310027
31	Line Power System: Invalid Shelf ID Detected	310028
31	Line Power System: LP Module Configuration Error	310029
31	Line Power System: Missing LPS Module	310030
32	LP Module: Channel 1 Shutdown	320001
32	LP Module: Channel 2 Shutdown	320002
32	LP Module: Channel 3 Shutdown	320003
32	LP Module: Channel 4 Shutdown	320004
32	LP Module: Module Failure	320100
33	LP Load: Load Current Low	330001
33	LP Load: Load Current High	330002
33	LP Load: Load Power Low	330003
33	LP Load: Load Power High	330004
33	LP Load: Channel in Alert	330005
35	Panel: Breaker Trip	350001
35	Panel: Loss of Feed	350010
35	Panel: Overcurrent	350011
37	Referenced Load: Load Breaker/Fuse Open	370003

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
41	FXM HP System: Missing FXM HP	410001
41	FXM HP System: Low Battery 1	410002
41	FXM HP System: Low Battery 2	410003
41	FXM HP System: Low Battery + No Line 1	410004
41	FXM HP System: On Battery	410005
41	FXM HP System: Fan Failure	410006
41	FXM HP System: AC Input Frequency Low	410007
41	FXM HP System: AC Input Frequency High	410008
41	FXM HP System: Battery Breaker Open	410009
41	FXM HP System: AC Input Breaker Open	410010
41	FXM HP System: AC Output Overloaded	410011
41	FXM HP System: AC Output Short Circuit	410012
41	FXM HP System: Power Outage	410013
41	FXM HP System: Battery Temperature Probe Unplugged	410014
41	FXM HP System: Internal Temperature Fault	410015
41	FXM HP System: AC Output Voltage High	410016
41	FXM HP System: AC Output Voltage Low	410017
41	FXM HP System: Battery Overvoltage	410020
41	FXM HP System: Battery Undervoltage	410021
41	FXM HP System: Battery Fail Fault	410022
41	FXM HP System: AC Input Backfeed Failure	410023
41	FXM HP System: Frequency Unknown	410024
41	FXM HP System: Inverter Cutoff Imminent	410025
41	FXM HP System: Bypass Mode On	410027
41	FXM HP System: Keep Alive Failure	410028
41	FXM HP System: Low Battery + No Line 2	410029
41	FXM HP System: Aux. Shutdown Imminent	410030
42	Disconnect With Exclusion: Disconnect Pending	420001

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
42	Disconnect With Exclusion: Disconnect Active	420003
48	General Purpose Transducer: XDCR Fail Input High	480001
48	General Purpose Transducer: XDCR Fail Input Low	480002
49	Change Field To Variable: Value Out of Range	490001
50	Battery System Battery String: Battery Temperature High	500001
50	Battery System Battery String: Battery Temperature Low	500002
50	Battery System Battery String: Battery Breaker/Fuse Open	500003
50	Battery System Battery String: Midpoint Unbalanced	500004
50	Battery System Battery String: Battery Temperature Anomaly	500005
50	Battery System Battery String: Battery Lifespan Exceeded	500006
50	Battery System Battery String: Battery Lifespan Close to Exceeded	500007
53	DC Source: Generator Status Mismatch	530001
53	DC Source: Generator Running Too Long	530002
54	Data Subscriptions: Communication Error	540001
55	Generic Disconnect: Disconnect Inhibit	550001
55	Generic Disconnect: Disconnect Pending	550002
55	Generic Disconnect: Disconnect Active	550003
55	Generic Disconnect: Disconnect Open	550004
55	Generic Disconnect: Disconnect Manually Closed	550005
55	Generic Disconnect: Disconnect Manually Open	550006
57	AC Source: AC Fail	570001
57	AC Source: Urgent AC Fail	570002
57	AC Source: Generator Status Mismatch	570003
57	AC Source: Generator Running Too Long	570004
57	AC Generator: AC Fail	570001
57	AC Generator: Urgent AC Fail	570002
57	AC Generator: Generator Status Mismatch	570003
57	AC Generator: Generator Running Too Long	570004

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
62	XMBS Bypass Switch: Bypass Active	620001
62	XMBS Bypass Switch: Utility-Inverter Sync. Request Fault	620002
62	XMBS Bypass Switch: Bypass Hardware Fault	620003
67	Thermal System: Thermal Controller Comms. Lost	670001
67	Thermal System: Internal Temperature High	670002
67	Thermal System: Internal Temperature Low	670003
67	Thermal System: Cabinet Door Left Open	670004
67	Thermal System: Filter Replacement Required	670005
67	Thermal System: Fan Fail	670006
68	Battery Disconnect with Latching Contactor: Disconnect Inhibit	680001
68	Battery Disconnect with Latching Contactor: Disconnect Pending	680002
68	Battery Disconnect with Latching Contactor: Disconnect Active	680003
68	Battery Disconnect with Latching Contactor: Disconnect Open	680004
68	Battery Disconnect with Latching Contactor: Contactor State Error	680007
70	Hyperboost System: Battery Bus Voltage Low	700001
70	Hyperboost System: Battery Bus Voltage High	700002
70	Hyperboost System: Battery Bus Voltage Very Low	700003
70	Hyperboost System: Battery Bus Voltage Very High	700004
70	Hyperboost System: Load Bus Voltage Low	700005
70	Hyperboost System: Load Bus Voltage High	700006
70	Hyperboost System: Load Bus Voltage Very Low	700007
70	Hyperboost System: Load Bus Voltage Very High	700008
70	Hyperboost System: Missing Converter	700009
70	Hyperboost System: Battery Bus Input Voltage Fail	700010
70	Hyperboost System: Load Bus Input Voltage Fail	700011
70	Hyperboost System: Converter Comms. Lost	700012
70	Hyperboost System: Converter Fan Fail	700013
70	Hyperboost System: Converter Minor	700014

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
70	Hyperboost System: Converter Fail	700015
70	Hyperboost System: Converter Fail Count Very High	700016
70	Hyperboost System: Converter Fail Count High	700017
74	AC Generator: AC Fail	740001
74	AC Generator: Urgent AC Fail	740002
74	AC Generator: Generator Running Too Long	740003
74	AC Generator: Generator Startup Frequency High	740004
74	AC Generator: Generator Status Mismatch	740005
75	DC Generator: Generator Running Too Long	750003
75	DC Generator: Generator Startup Frequency High	750004
75	DC Generator: Generator Status Mismatch	750005
97	Matrix: Bus A Breaker on but not in Inventory	970001
97	Matrix: Bus A Breaker Overloaded	970002
97	Matrix: Bus A Breaker Trip	970003
97	Matrix: Bus A Overloaded	970004
97	Matrix: Bus A Overvoltage	970005
97	Matrix: Bus A Undervoltage	970006
97	Matrix: Bus B Breaker on but not in Inventory	970007
97	Matrix: Bus B Breaker Overloaded	970008
97	Matrix: Bus B Breaker Trip	970009
97	Matrix: Bus B Overloaded	970010
97	Matrix: Bus B Overvoltage	970011
97	Matrix: Bus B Undervoltage	970012
99	Environment Manager System: 24V Overvoltage	990001
99	Environment Manager System: 24V Undervoltage	990002
99	Environment Manager System: Shelter Door Open	990003
99	Environment Manager System: Cooling System Smoke Shutdown	990004
99	Environment Manager System: Economy Cooling Fail	990005

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
99	Environment Manager System: High Temperature	990006
99	Environment Manager System: Main Fail	990007
99	Environment Manager System: Test Mode	990008
100	Generic Fan: Fan Fault	1000001
101	Generic Air Conditioner: Air Conditioner Fail	1010001
102	Module Lockout	1020001
102	Charge Blocked	1020002
102	Discharge Blocked	1020003
103	Battery Temperature High	1030001
103	Battery Temperature Low	1030002
103	Missing Li-ion Battery Module	1030003
103	Battery on Discharge	1030004
103	Battery Health Low	1030009
103	Battery State of Charge Low	1030010
103	Battery Communication Lost	1030011
103	Battery Recharge Delay	1030013
103	Battery Lockout Count High	1030018
103	Battery Charge Blocked Count High	1030019
103	Battery Discharged Blocked Count High	1030020
103	Invalid Battery Current	1030021
105	Energy Router: Shelf Overtemperature Alert	1050007
105	Energy Router: Shelf Hardware Fault Alert	1050008
105	Energy Router: SSM Tripped Alert	1050009
105	Energy Router: SSM Hardware Fault Alert	1050010
105	Energy Router: SSM1 Tripped Alarm	1050131
105	Energy Router: SSM1 Hardware Fault Alarm	1050132
105	Energy Router: SSM1 Short Circuit Alarm	1050133
105	Energy Router: SSM1 Overtemperature Alarm	1050134

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
105	Energy Router: SSM1 High Current Alarm	1050135
105	Energy Router: SSM1 Turned Off Alarm	1050136
105	Energy Router: SSM1 Locked Out Alarm	1050137
105	Energy Router: SSM1 Invalid Config. Alarm	1050138
This pattern repeats for EnVision™ Smart Switch Modules (SSM) 2 to 12 by adding 10 to these IDs for each smart switch module.		
106	Energy Router Distribution Subsystem: Shelf Overtemperature	1060001
106	Energy Router Distribution Subsystem: Shelf Hardware Fault	1060002
106	Energy Router Distribution Subsystem: Average Input Voltage High	1060003
106	Energy Router Distribution Subsystem: Average Input Voltage Low	1060004
106	Energy Router Distribution Subsystem: Feeder Current Threshold Alarm	1060005
108	Third-party Li-ion Battery Module: Fully Charged	1080001
108	Third-party Li-ion Battery Module: Charged Blocked	1080002
108	Third-party Li-ion Battery Module: Failed	1080003
109	Third-party Li-ion Battery System: Battery Breaker/Fuse Open	1090001
109	Third-party Li-ion Battery System: Battery on Discharge	1090002
109	Third-party Li-ion Battery System: Battery State of Charge Low	1090003
109	Third-party Li-ion Battery System: Battery Recharge Delay	1090004
109	Third-party Li-ion Battery System: Charged Blocked	1090006
109	Third-party Li-ion Battery System: Failed	1090007
109	Third-party Li-ion Battery System: Battery Temperature High	1090007
109	Third-party Li-ion Battery System: Battery Temperature Low	1090007
109	Third-party Li-ion Battery System: Missing Battery Module	1090007
109	Third-party Li-ion Battery System: Battery Communication Lost	1090007
109	Third-party Li-ion Battery System: Battery Health Low	1090007
109	Third-party Li-ion Battery System: Invalid Battery Current	1090007
110	ACE BattByte BLE: Voltage Imbalance	1100001
110	ACE BattByte BLE: Communication Lost	1100002
110	ACE BattByte BLE: Temperature High	1100003

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
110	ACE BattByte BLE: Temperature Low	1100004
110	ACE BattByte BLE: Estimated Life Span Exceeded	1100005
110	ACE BattByte BLE: Estimated Life Span Close to Exceeded	1100006
115	SFX DC System: AC Input Voltage High	1150001
115	SiteFlex DC System: AC Input Voltage Low	1150002
115	SiteFlex DC System: Long Term AC Input Fail	1150003
115	SiteFlex DC System: Output Voltage High	1150004
115	SiteFlex DC System: Output Voltage Low	1150005
115	SiteFlex DC System: Invalid System Voltage Reading	1150006
115	SiteFlex DC System: Total Load Current High	1150007
115	SiteFlex DC System: Missing Rectifier	1150008
115	SiteFlex DC System: AC Input Fail	1150009
115	SiteFlex DC System: Insufficient Capacity Remaining (A)	1150010
115	SiteFlex DC System: Insufficient Capacity Remaining (W)	1150011
115	SiteFlex DC System: Rectifier Communication Lost	1150012
115	SiteFlex DC System: AC Input Fail	1150013
115	SiteFlex DC System: Fan Fail	1150014
115	SiteFlex DC System: Thermal Shutdown	1150015
115	SiteFlex DC System: DC Over voltage Shutdown	1150016
115	SiteFlex DC System: DC Short Circuit Shutdown	1150017
115	SiteFlex DC System: Module Fail Shutdown	1150018
115	SiteFlex DC System: AC Line Voltage Warning	1150019
115	SiteFlex DC System: Battery Runtime Low	1150020
115	SiteFlex DC System: HW Address Alarm	1150021
115	SiteFlex DC System: Thermal Warning	1150022
115	SiteFlex DC System: Voltage Regulation Suspended	1150030
119	PowerSafe iON SB1048P05J Battery System: Battery Breaker/Fuse Open	1190001
119	PowerSafe iON SB1048P05J Battery System: Battery on Discharge	1190002

Table 4-1 Alarm reference table (continued)

Component list type	Alarm name	OID
119	PowerSafe iON SB1048P05J Battery System: Battery State of Charge Low	1190003
119	PowerSafe iON SB1048P05J Battery System: Battery Recharge Delay	1190004
119	PowerSafe iON SB1048P05J Battery System: Charged Blocked	1190006
119	PowerSafe iON SB1048P05J Battery System: Failed	1190007
119	PowerSafe iON SB1048P05J Battery System: Battery Temperature High	1190007
119	PowerSafe iON SB1048P05J Battery System: Battery Temperature Low	1190007
119	PowerSafe iON SB1048P05J Battery System: Missing Battery Module	1190007
119	PowerSafe iON SB1048P05J Battery System: Battery Communication Lost	1190007
119	PowerSafe iON SB1048P05J Battery System: Battery Health Low	1190007
119	PowerSafe iON SB1048P05J Battery System: Invalid Battery Current	1190007

4.2. Alarm mapping example

Here are two examples of a notification on the same alarm: one active and one clear. These show how matching can be done.

Binding #2: Shows the type of notification: active or clear.

Binding #3: Is a row pointer to the alarm model of the alarm being reported. This pointer will always point to the original alarm and its priority. It is recommended that this value is used for active and clear notification matching.

All other bindings are added to provide the details needed to identify and process the alarm being reported.

Figure 4-1 Notification: Alarm active

- alphaAlarmActiveState
  - Message reception date: 2023-12-01
  - Message reception time: 5:08:42.257 PM
  - Time stamp: 0 days 01h:01m:18s.79th (367879)
  - Message type: Notification (Trap)
  - Protocol version: SNMPv2c
  - Transport: IP/UDP
  - Agent
    - Address: 10.0.0.197
    - Port: 161
  - Manager
    - Address: 127.0.0.1
    - Port: 162
  - Community: public
  - Bindings (12)
    - Binding #1: sysUpTime.0 *** (TimeTicks) 0 days 01h:01m:18s.79th (367879)
    - Binding #2: snmpTrapOID.0 *** (OBJECT IDENTIFIER) alphaAlarmActiveState
    - Binding #3: alarmActiveModelPointer *** (RowPointer) alarmModelEntry.20004.3
    - Binding #4: alarmActiveResourceId *** (ResourceId) componentListStaticName.1
    - Binding #5: alarmModelState.20004.3 *** (Unsigned32) 2
    - Binding #6: alarmModelDescription.20004.3 *** (SnmpAdminString) DC System 48V : Output Voltage High : Minor
    - Binding #7: componentListStaticName.2.1 *** (OCTET STRING) DC System 48V/679
    - Binding #8: componentListReference.2.1 *** (Unsigned32) 1
    - Binding #9: alarmSeverity *** (Integer32) 0
    - Binding #10: controllerInfoName *** (OCTET STRING) Test Site 3
    - Binding #11: alarmCustomDescription *** (OCTET STRING) ---
    - Binding #12: alarmAdditionalInformation *** (OCTET STRING) ::

Figure 4-2 Notification: Alarm clear

```
alphaAlarmClearState
    Message reception date: 11/29/2018
    Message reception time: 4:45:46.697 PM
  Time stamp: 2 days 01h:43m:50s.97th (17903097)
  Message type: Notification (Trap)
    Protocol version: SNMPv2c
    Transport: IP/UDP
  Agent
      Address: 10.1.8.34
      Port: 161
  Manager
      Address: 10.1.24.120
      Port: 162
  Community: public
  Bindings (12)
    Binding #1: sysUpTime.0 *** (TimeTicks) 2 days 01h:43m:50s.97th (17903097)
    Binding #2: snmpTrapOID.0 *** (OBJECT IDENTIFIER) alphaAlarmClearState
    Binding #3: alarmActiveModelPointer *** (RowPointer) 1.3.6.1.2.1.118.1.1.2.1.150001
    Binding #4: alarmActiveResourceId *** (ResourceId) 1.3.6.1.4.1.7309.5.2.1.2.1.15.1
    Binding #5: alarmModelState.150001.1 *** (Unsigned32) 1
    Binding #6: alarmModelDescription.150001.1 *** (SnmpAdminString) CAN Bus : Bus State Alarm : Message [43.41.
    Binding #7: componentListStaticName.15.1 *** (OCTET STRING) CAN1
    Binding #8: componentListReference.15.1 *** (Unsigned32) 1
    Binding #9: alarmSeverity *** (Integer32) 1
    Binding #10: controllerInfoName *** (OCTET STRING) Test Site 3
    Binding #11: alarmCustomDescription *** (OCTET STRING) 42.75.73.20.52.43.20.3A.20.41.6C.61.72.6D.65.20.64.27.E
    Binding #12: alarmAdditionalInformation *** (OCTET STRING) ::
```

4.3. Alarm history and alarm auditing

Two tables defined by the ALARM-MIB are active alarms and cleared alarms. The active alarm table lists the currently active alarms and allows an NMS to audit the alarms list to ensure that the NMS and the controller have the same list of active alarms. The cleared alarm table lists the occurrence of an alarm being cleared, including the time of the event. This cleared alarm list provides a historical log of events. If an alarm toggles between active and cleared, each cleared event is logged.

Alarm transitions are recognized as a change of state between active and clear. However, alarms on the controller can also go into an unknown state. This is particularly relevant at configuration time when alarms are being added, removed, enabled, and disabled (for example, when a **User Alarm** is deleted). When an active alarm is disabled or removed, the SNMP agent will treat the alarm as if it has cleared. The SNMP agent will remove the alarm from the active table, and then add an entry to the cleared alarm table.

When the controller is reset, the active and cleared alarm tables will be empty.

4.4. Alarms configuration

The Alpha® resource MIB provides access to the writable configuration fields for all controller and components alarms. Using these configuration fields, the alarms properties such as alarm enable and

priority can be changed remotely. Each alarm comes with a set of configuration fields that is accessible through SNMP. To determine the base SNMP ID of an alarm, multiply the alarm OID by 100. For example:

The OID for controller: Clock Error Alarm is 10001; therefore, the base SNMP ID for Clock Error Alarm configuration fields is 1000100.

There are two types of alarms: **Digital** and **Threshold** alarms.

Digital alarms

Table 4-2 Digital alarm configuration fields

Name	SNMP ID	Description
Alarm Processing	Base SNMP ID	Enable or disable alarm monitoring.
Alarm Priority	Base SNMP ID + 1	Priority at which alarm should be reported. The value can be **Warning**, **Minor**, **Major**, or **Critical**.
Parameter 1	Base SNMP ID + 2	A customizable user value to be used for filtering or other monitoring activities for alarm notifications. This correlates to the SNMP Severity VarBind in the Alpha Notification VarBind list.
Custom Name (Parameter 2)	Base SNMP ID + 3	A user definable alarm name that replaces the default alarm name on the user interface. It also appears in the SNMP Custom Description VarBind in the Alpha Notification VarBind list.

Figure 4-3 Table view of configuration list table for digital alarm

Instance	configurationListReference(IDX)	configurationListName	configurationListType	configurationListUnit
1.100	1.100	Controller : Configuration Restore Points	5	(zero-length)
1.1000100	1.1000100	Controller : Clock Error Alarm Processing	5	(zero-length)
1.1000101	1.1000101	Controller : Clock Error Priority	5	(zero-length)
1.1000102	1.1000102	Controller : Clock Error Parameter 1	1	(zero-length)
1.1000103	1.1000103	Controller : Clock Error Custom Name (Parameter 2)	4	(zero-length)
1.1000200	1.1000200	Controller : CAN Devices In Bootloader Alarm Processing	5	(zero-length)
1.1000201	1.1000201	Controller : CAN Devices In Bootloader Priority	5	(zero-length)

Threshold alarms

Table 4-3 Threshold alarm configuration fields

Name	SNMP ID	Description
Alarm Processing	Base SNMP ID	Enable or disable alarm monitoring.
Alarm Priority	Base SNMP ID + 1	Priority at which alarm should be reported. The value can be **Warning**, **Minor**, **Major**, or **Critical**.
Parameter 1	Base SNMP ID + 2	A customizable user value to be used for filtering or other monitoring activities for alarm notifications. This

Table 4-3 Threshold alarm configuration fields (continued)

Name	SNMP ID	Description
		correlates to the SNMP Severity VarBind in the Alpha Notification VarBind list.
Custom Name (Parameter 2)	Base SNMP ID + 3	A user definable alarm name that replaces the default alarm name on the user interface. It also appears in the SNMP Custom Description VarBind in the Alpha® Notification VarBind list.
Limit	Base SNMP ID + 4	The alarm will be active when the input is either above or below this limit depending on if it is a high or low threshold alarm.
Hysteresis	Base SNMP ID + 5	Size of dead zone between activation and deactivation.

Figure 4-4 Table view of configuration list table for threshold alarm

Instance	configurationListReference(IDX)	configurationListName	configurationListType	configurationListUnit
2.2000100	2.2000100	DC System 48V : AC Input Voltage High Alarm Processing	5	(zero-length)
2.2000101	2.2000101	DC System 48V : AC Input Voltage High Priority	5	(zero-length)
2.2000102	2.2000102	DC System 48V : AC Input Voltage High Parameter 1	1	(zero-length)
2.2000103	2.2000103	DC System 48V : AC Input Voltage High Custom Name (Parameter 2)	4	(zero-length)
2.2000104	2.2000104	DC System 48V : AC Input Voltage High Limit	1	V
2.2000105	2.2000105	DC System 48V : AC Input Voltage High Hysteresis	1	V
2.2000200	2.2000200	DC System 48V : AC Input Voltage Low Alarm Processing	5	(zero-length)
2.2000201	2.2000201	DC System 48V : AC Input Voltage Low Priority	5	(zero-length)
2.2000202	2.2000202	DC System 48V : AC Input Voltage Low Parameter 1	1	(zero-length)
2.2000203	2.2000203	DC System 48V : AC Input Voltage Low Custom Name (Parameter 2)	4	(zero-length)

For additional information on how to set the values of configuration fields, refer to *Configuration Field Type List*.

4.5. Controller MIB files

The MIB files used to monitor the controller are a combination of standard MIB files and vendor specific MIB files. The vendor specific MIB files are tagged with the ALPHA- prefix.

- **SNMPv2-MIB** extracted from RFC 3418
- **ALARM-MIB** extracted from RFC 3877
- **SNMP-TARGET-MIB** extracted from RFC 3413
- **ALPHA-NOTIFICATION-MIB**
- **ALPHA-RESOURCE-MIB**
- **ALPHA-RECTIFIER-SYS-MIB**
- **ALPHA-CONVERTER-SYS-MIB**
- **UPS-MIB** extracted from RFC 1628

SNMPv2-MIB

This MIB provides controller information allowing it to be easily identified as a network device. The SNMP discovery feature in most NMS systems uses the data published through the SNMPv2-MIB for discovering network devices. Refer to RFC 3418, or the MIB file, for a more detailed explanation.

ALARM-MIB

The controller takes advantage of the ALARM-MIB to define the structure and basic behavior of an Alarm Notification. The following tables from the ALARM-MIB are used:

- Alarm model
- Alarm active
- Alarm clear.

This MIB defines the alarm modeling and auditing. The model table provides a list of alarms available on the controller. The list follows the dynamic nature of the monitored systems and devices, and will add or remove conceptual rows as alarms come in or out of availability. Refer to RFC 3877, or the MIB file, for a more detailed explanation on alarm modeling.

Auditing for alarms can be done by looking at the **Active Alarms** and **Cleared Alarms** tables. Refer to RFC 3877, or the MIB file, for a more detailed explanation on these tables.

Notice: *The generic notification definition provided in the ALARM-MIB is not used by the controller. The ALPHA-NOTIFICATION-MIB provides a more detailed VarBind list applicable to power system monitoring.*

Notice: *For controllers using UPS-MIB such as Alpha® FXM HP UPS module, any changes to the alarm status would send two notifications to the NMS. One notification is defined by ALPHA-NOTIFICATION-MIB, and the second notification is defined by UPS-MIB. For a more detailed description on the UPS-MIB notification, refer to RFC 1628.*

SNMP-TARGET-MIB

The controller provides 10 SNMP destinations for the NMS to configure notifications reporting, or notification subscriptions. Providing IP addresses of the NMS sets the controller to send alarm notifications to these destinations. Refer to RFC 3413, or the MIB file, for a more detailed explanation.

The current implementation takes advantage of the following set of data for each destination:

- IP address
- Time out (for acknowledged notifications)
- Retry count (for acknowledged notifications).

Configuring an IP address will activate notifications for that target. Entering a timeout period greater then zero will send notifications that require acknowledgment from the NMS to the controller (INFORM).

ALPHA-NOTIFICATION-MIB

This MIB provides two custom-defined notifications for alarm reporting:

- Active alarm
- Cleared alarm

The payload of the notification (VarBind list) provides all the details of the alarm and can be used for filtering or monitoring specific alarms.

Notice: *Both definitions of the notification objects (active and cleared) carry the same VarBind list. The two notifications were defined to allow easier filtering and matching of active and clear notifications on the NMS.*

ALPHA-RESOURCE-MIB

The Alpha® resource MIB is designed with forward compatibility in mind. Using database type table design and data referencing, the MIB structure will allow dynamic additions of new components and data to the controller without any changes to the MIB. See the section on SNMP reference for an SNMP table indexing overview.

This MIB provides access to the information base of the controller. The major structures defined in the MIB are:

- **ControllerInfo:** Controller level information.
- **Components:** Objects that contain informational fields for data access. Objects such as systems and devices as well as information groupings. For example, in the case where you have a DC system with 10 rectifier modules, the table would include a row for the DC system and a row for each individual rectifier module.
- **DataFieldType: Data field types** available from a specific component source. Data fields describe a set of read-only data access. For example, with a DC system and 10 rectifier modules, the table would present a list of available field types of a DC system and a rectifier module.
- **DataFields: Data fields** available from all component sources. Combine the unique index of the **DataFieldType** row, along with the assigned ID of the component, to access this information.
- **ConfigurationList: Configuration fields** available from a specific component source. Configuration fields describe a set of read-write data access. For example, with a DC system and 10 rectifier modules, the table would present a list of available configuration types of a DC system and a rectifier module.
- **ConfigurationFields: Configuration fields** available from all component sources. Combine the unique index of the **ConfigurationFieldType**: Row, along with the assigned ID of the component, to access this information.

- **CommandFieldType:** *(Currently not supported. Reserved for future development.)* **command field types** available from a specific component source. Command fields describe a set of write-only data access. For example, with a DC system and 10 rectifier modules, the table would present a list of available command types of a DC system and a rectifier module.
- **CommandFields:** *(Currently not supported. Reserved for future development.)* **command fields** available from all component sources. Combine the unique index of the **CommandFieldType** row, along with the assigned ID of the component to access this information.
- **ConfigurationChoiceList: Configuration choices** provide lists of string values for the **State** data type configuration fields.

ALPHA-RECTIFIER-SYS-MIB

For small systems with a single DC system monitored by the controller, the ALPHA-RECTIFIER-SYS-MIB provides a flat list of the most common data points used. Refer to the MIB for details of data points available.

Notice: *This MIB does not provide any information in the case there are multiple DC systems monitored by the controller. The ALPHA-RESOURCE-MIB is the source of data for multiple systems monitoring.*

ALPHA-CONVERTER-SYS-MIB

For small systems with a single converter system monitored by the controller, the ALPHA-CONVERTER-SYS-MIB provides a flat list of the most common data points used. Refer to the MIB for details of data points available.

Notice: *This MIB does not provide any information in the case there are multiple converter systems monitored by the controller. The ALPHA-RESOURCE-MIB is the source of data for multiple systems monitoring.*

UPS-MIB

The controller takes advantage of the UPS-MIB to define the structure and basic behavior of a UPS system. The following tables from the UPS-MIB are supported:

- Device Identification
- Battery
- Input
- Output
- Alarm
- Well Known Alarm
- Traps Notification.

The tables provide a list of UPS specific objects available on the controller. Refer to RFC 1628, or the UPS-MIB file, for a more detailed explanation and specification of the supported objects.

Notice: *For controllers using UPS-MIB such as Alpha® FXM HP UPS, any changes to the alarm status would send two notifications to the NMS. One notification is defined by ALPHA-NOTIFICATION-MIB, and the second notification is defined by UPS-MIB. For a more detailed description on the UPS-MIB notification, refer to RFC 1628.*

4.6. SNMP MIB reference

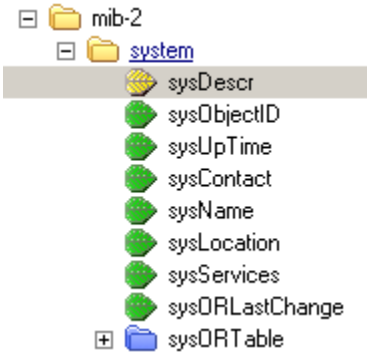
Along with basic presentation of data in flat tables, the controller takes advantage of some of the more sophisticated features of the SNMP protocol. For example, augmented tables and table indexing methods. There is extensive use of augmented tables and external table indexes in both the predefined standard MIBs and the Alpha® MIBs. This section provides details of these features to help you use SNMP.

Flat tables

Flat tables are the simplest and most commonly used technique of presenting a set of related data. The word table is not the most accurate way to describe this structure. It is closer to a folder containing a set of non-iterative data fields.

Data retrieval is a simple GET of the OID of interest. The following image shows a list of fields presented in the system folder as described by the SNMPv2-MIB. The highlighted field is accessed by using OID: 1.3.6.1.2.1.1.1

Figure 4-5 Field list for SNMPv2-MIB



Tables

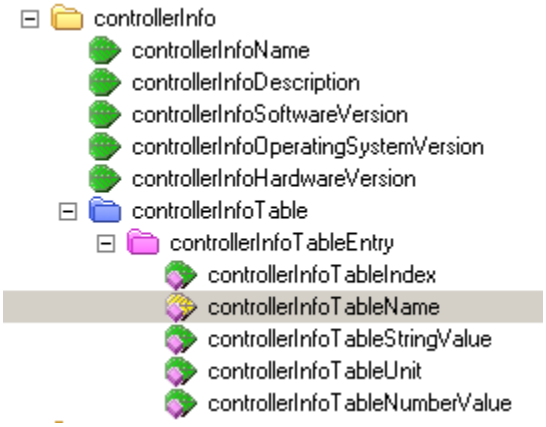
In the following figure, the highlighted folder at the bottom of the image is a representation of a standard table with a set of columns and dynamic range of conceptual rows. Just like a flat table, each column has an OID to get access to the represented data. The additional variable are the possibility of multiple instances of rows that the table can have.

The highlighted folder, called the TableEntry, represents a conceptual row or instance of the row with the fields within the folder as columns of the table.

Data access of the column within a particular row will need to contain the combination of the Entry OID, column index and row index. For example, to access the name of the data held in the third row of the table, the OID combination is:

(Entry OID) 1.3.6.1.4.1.7309.5.1.100.1 + (Column Index) 2 + (Row Index) 3

Figure 4-6 Table from Alpha® Resource MIB



Augmented tables

Augmented tables describe the relationship between two or more tables whose conceptual rows have a one to one relationship with each other. A row in one table directly extends a row in another table and uses the same row index.

Tables with external indexes

Data access from tables that have multiple indexes or multiple external indexes, use the same index manipulation as described above. The MIB file would define the table with details of indexes used to access the data. The only difference in accessing this type of table is the additional process of putting the required indexes together.

Notice: *The order of the indexes must match the order described in the defining MIB. The use of multiple external, or internal indexes, follows the general pattern of database tables using private and foreign keys.*

The following figure shows three tables from the Alpha® resource MIB that have index dependencies. The **dataTable** has dependencies from the **componentListTable** and from the **dataListTable** as described in its properties, which is shown in the following figure.

Figure 4-7 Tables from Alpha® resource MIB

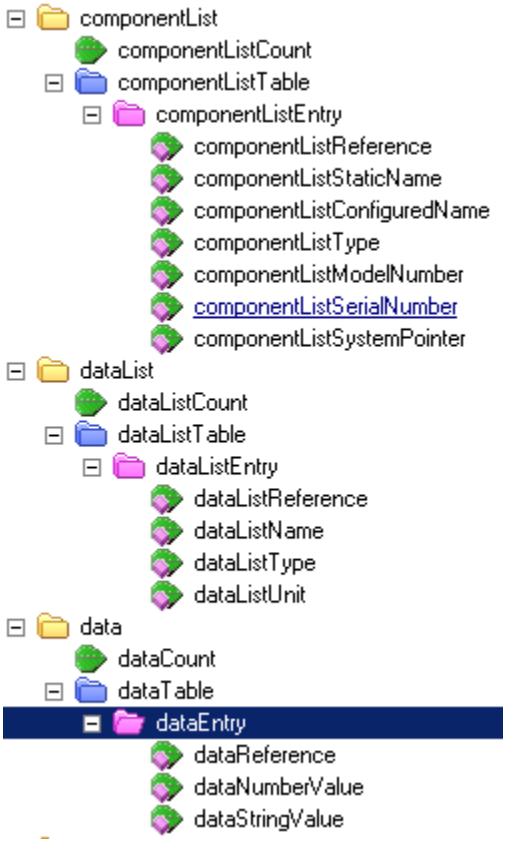
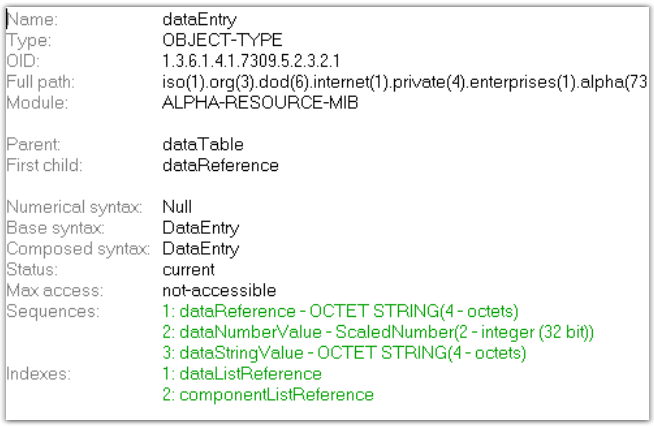


Figure 4-8 Tables from Alpha® resource MIB



Name:	dataEntry
Type:	OBJECT-TYPE
OID:	1.3.6.1.4.1.7309.5.2.3.2.1
Full path:	iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).alpha(73
Module:	ALPHA-RESOURCE-MIB
Parent:	dataTable
First child:	dataReference
Numerical syntax:	Null
Base syntax:	DataEntry
Composed syntax:	DataEntry
Status:	current
Max access:	not-accessible
Sequences:	1: dataReference - OCTET STRING(4 - octets)
	2: dataNumberValue - ScaledNumber(2 - integer (32 bit))
	3: dataStringValue - OCTET STRING(4 - octets)
Indexes:	1: dataListReference
	2: componentListReference

Access of information available in the **dataTable** would use the following index calculation:

(dataEntry OID) 1.3.6.1.4.1.7309.5.2.3.2.1 + (dataListReference) + (componentListReference)

4.6.1. Controller information

The **Controller Information** table provides access to basic controller information, along with providing future development support without the requirement of a new MIB. The table base designed allows for additional data points to be added to the list without the need for additions to the MIB file.

The following table presents the list of common data available from the **controllerInfo** “flat” table.

Table 4-4 Controller information flat table

OID	Name	Description
1.3.6.1.4.1.7309.5.1.1.0	controllerInfoName	User configurable text name of the controller.
1.3.6.1.4.1.7309.5.1.2.0	controllerInfoDescription	User configurable description of the controller.
1.3.6.1.4.1.7309.5.1.3.0	controllerInfoSoftwareVersion	Software version of the controller application.
1.3.6.1.4.1.7309.5.1.4.0	controllerInfoOperatingSystemVersion	Operating system version number.
1.3.6.1.4.1.7309.5.1.5.0	controllerInfoHardwareVersion	Hardware version number.
1.3.6.1.4.1.7309.5.1.100.1	controllerExtInfoTable	Table for additional controller information.

Controller information table

Table Base OID is: 1.3.6.1.4.1.7309.5.1.100.1

The **controllerExtInfoTable** full table provides additional controller information that are not part of the flat table. The following list shows the base line OID for the row of the table along with description of the data presented in that row.

Table columns:

- 1. controllerInfoTableIndex
- 2. controllerInfoTableName
- 3. controllerInfoTableStringValue
- 4. controllerInfoTableUnit
- 5. controllerInfoTableNumberValue

Table 4-5 Controller information full table

Row ID	Name	Description
1	Controller Name	User configurable name of the controller.
2	Controller Description	User configurable description of the controller.
3	Software Version	Software version currently installed on the controller.
4	Site Number	User configurable number of the site.

Table 4-5 Controller information full table (continued)

Row ID	Name	Description
5	Technical Support Contact Number	Phone number to call for technical support.
6	Contact Name	User configurable data.
7	Contact Number	User configurable data.
8	Configuration File Identifier	User configurable data.
9	Street	User configurable data.
10	City	User configurable data.
11	Zip Code/Postal Code	User configurable data.
12	Region/State/Province	User configurable data.
13	Country	User configurable data.
14	Latitude	User configurable data.
15	Longitude	User configurable data.
16	Altitude	User configurable data.
17	Serial Number	Serial number of the controller.
18	Part Number	Part number of the controller.
19	Remote Configuration Lockout Status	Current state of the remote configuration lockout.
20	Lockout Override Time Remaining	Time remaining in remote configuration lockout override.
21	Controller Redundancy: Reserve Controller Status	The status of the reserve controller.
22	Controller Redundancy: Reserve Controller Communication Status	The communication status of the reserve controller.
23	Controller Redundancy: Main Controller Status	The status of the main controller.
24	Controller Redundancy: Main Controller Communication Status	The communication status of the main controller.
25	Controller Redundancy: Time of Last Configuration Sync.	Last time the configuration synchronized between the main and reserve controllers.
26	Current Time and Date	Current time and date on the controller.
27	Operating System Version	The operating system version the controller is running.
28	Hardware Version	Version of internal hardware modules.

Table 4-5 Controller information full table (continued)

Row ID	Name	Description
30	Web Server: Web Server Port	The controller web server port.
31	Web Server: Secure Web Port	The controller secure web server port.
34	Web Server: Web Connection Protocol	The controller web connection protocol.
35	Web Server: Certificate Status	Status of SSL certificate.
36	Web Server: Certificate Issued To	Name of the entity that the uploaded SSL certificate is issued to.
37	Web Server: Certificate Issued By	Name of the entity that the uploaded SSL certificate is issued by.
38	Web Server: Certificate Effective Date	The effective date of the uploaded SSL certificate.
39	Web Server: Certificate Expiry Date	The expiry date of the uploaded SSL certificate.
40	Remote Authentication Type	The currently active remote authentication protocol.
41	RADIUS Authentication Server Address	Address of the RADIUS authentication server.
42	RADIUS Authentication Server Port	Port of the RADIUS server.
43	RADIUS Timeout	Timeout setting for the RADIUS server.
44	RADIUS Encryption Protocol	Encryption method used to communicate with the RADIUS server.
45	RADIUS: Group Attribute ID	The RADIUS server attribute ID for specifying user groups.
46	RADIUS: Group Attribute Value for Admin User Role	The RADIUS group attribute value for the admin user role.
47	RADIUS: Group Attribute Value for Accounts User Role	The RADIUS group attribute value for the accounts user role.
48	RADIUS: Group Attribute Value for Operator User Role	The RADIUS group attribute value for the operator user role.
49	RADIUS: Group Attribute Value for Restricted Operator User Role	The RADIUS group attribute value for the restricted operator role.
50	RADIUS: Group Attribute Value for Guest User Role	The RADIUS group attribute value for the guest user role.
51	TACACS+ Authentication Server Address	Address of the TACACS+ authentication server.
52	TACACS+ Authentication Server Port	Port of the TACACS+ server.
53	TACACS+ Timeout	Timeout setting for the TACACS+ server.

Table 4-5 Controller information full table (continued)

Row ID	Name	Description
54	TACACS+ Encryption Protocol	Encryption protocol used to communicate with the TACACS+ server.
55	TACACS+: Attribute Name	The TACACS+ server attribute ID for specifying user groups.
56	TACACS+: Group Attribute Value for Admin User Role	The TACACS+ group attribute value for the admin user role.
57	TACACS+: Group Attribute Value for Accounts User Role	The TACACS+ group attribute value for the accounts user role.
58	TACACS+: Group Attribute Value for Operator User Role	The TACACS+ group attribute value for the operator user role.
59	TACACS+: Group Attribute Value for Restricted Operator User Role	The TACACS+ group attribute value for the restricted operator user role.
60	TACACS+: Group Attribute Value for Guest User Role	The TACACS+ group attribute value for the guest user role.
70	SNMP Agent	The SNMP agent enable setting.
71	SNMP Get and Set	The SNMP get and set setting.
73	UPS MIB System	The UPS MIB capable system setting.
74	SNMPv3 Security	The SNMPv3 security enable setting.
75	SNMPv3: Security Name	The SNMPv3 sign in security name.
78	Read Community 1	The community number name that is used to validate read requests.
79	Write Community 1	The community number name that is used to validate write requests.
80	Read Community 2	The community number name that is used to validate read requests.
81	Write Community 2	The community number name that is used to validate write requests.
82	Read Community 3	The community number name that is used to validate read requests.
83	Write Community 3	The community number name that is used to validate write requests.
84	Read Community 4	The community number name that is used to validate read requests.

Table 4-5 Controller information full table (continued)

Row ID	Name	Description
85	Write Community 4	The community number name that is used to validate write requests.
86	Read Community 5	The community number name that is used to validate read requests.
87	Write Community 5	The community number name that is used to validate write requests.
88	Read Community 6	The community number name that is used to validate read requests.
89	Write Community 6	The community number name that is used to validate write requests.
90	Read Community 7	The community number name that is used to validate read requests.
91	Write Community 7	The community number name that is used to validate write requests.
92	Read Community 8	The community number name that is used to validate read requests.
93	Write Community 8	The community number name that is used to validate write requests.
94	Read Community 9	The community number name that is used to validate read requests.
95	Write Community 9	The community number name that is used to validate write requests.
96	Read Community 10	The community number name that is used to validate read requests.
97	Write Community 10	The community number name that is used to validate write requests.
10101	User Sessions: Username 1	The username of the person who is signed in for this session number.
10102	User Sessions: User Role 1	The user role of the person who is signed in for this session number.
10103	User Sessions: User Client 1	The client type used by the person who is signed in for this session number.
10104	User Sessions: User Address 1	The IP address of the person who is signed in for this session number.

Table 4-5 Controller information full table (continued)

Row ID	Name	Description
10201	User Sessions: Username 2	The username of the person who is signed in for this session number.
10202	User Sessions: User Role 2	The user role of the person who is signed in for this session number.
10203	User Sessions: User Client 2	The client type used by the person who is signed in for this session number.
10204	User Sessions: User Address 2	The IP address of the person who is signed in for this session number.
10301	User Sessions: Username 3	The username of the person who is signed in for this session number.
10302	User Sessions: User Role 3	The user role of the person who is signed in for this session number.
10303	User Sessions: User Client 3	The client type used by the person who is signed in for this session number.
10304	User Sessions: User Address 3	The IP address of the person who is signed in for this session number.
10401	User Sessions: Username 4	The username of the person who is signed in for this session number.
10402	User Sessions: User Role 4	The user role of the person who is signed in for this session number.
10403	User Sessions: User Client 4	The client type used by the person who is signed in for this session number.
10404	User Sessions: User Address 4	The IP address of the person who is signed in for this session number.
10501	User Sessions: Username 5	The username of the person who is signed in for this session number.
10502	User Sessions: User Role 5	The user role of the person who is signed in for this session number.
10503	User Sessions: User Client 5	The client type used by the person who is signed in for this session number.
10504	User Sessions: User Address 5	The IP address of the person who is signed in for this session number.
10601	User Sessions: Username 6	The username of the person who is signed in for this session number.

Table 4-5 Controller information full table (continued)

Row ID	Name	Description
10602	User Sessions: User Role 6	The user role of the person who is signed in for this session number.
10603	User Sessions: User Client 6	The client type used by the person who is signed in for this session number.
10604	User Sessions: User Address 6	The IP address of the person who is signed in for this session number.
10701	User Sessions: Username 7	The username of the person who is signed in for this session number.
10702	User Sessions: User Role 7	The user role of the person who is signed in for this session number.
10703	User Sessions: User Client 7	The client type used by the person who is signed in for this session number.
10704	User Sessions: User Address 7	The IP address of the person who is signed in for this session number.
10801	User Sessions: Username 8	The username of the person who is signed in for this session number.
10802	User Sessions: User Role 8	The user role of the person who is signed in for this session number.
10803	User Sessions: User Client 8	The client type used by the person who is signed in for this session number.
10804	User Sessions: User Address 8	The IP address of the person who is signed in for this session number.
10901	User Sessions: Username 9	The username of the person who is signed in for this session number.
10902	User Sessions: User Role 9	The user role of the person who is signed in for this session number.
10903	User Sessions: User Client 9	The client type used by the person who is signed in for this session number.
10904	User Sessions: User Address 9	The IP address of the person who is signed in for this session number.

To access the desired data, add the column ID and the row index to the end of the base OID of the table:

Base OID (1.3.6.1.4.1.7309.5.1.100.1) + Column ID (2) + Row ID (4)

1.3.6.1.4.1.7309.5.1.100.1.2.4 = "Controller: Site Number"

4.6.2. Using the Alpha® resource MIB

The Alpha® resource MIB is designed to provide access to all available data from the controller. It has been designed to support future development without needing a new MIB. This MIB is intended for extensive integration with custom monitoring systems, and the data available is equal to what can be seen on the web interface. Because of the dynamic nature of the systems monitored by the controller, the Alpha® resource MIB tables provide details about accessible data.

The tables with read-only data access are:

- Component List Table
- Data List Table
- Data Table
- Configuration List Table
- Alarm List Table
- Alarm Table
- Alert Table
- Configuration Choice List Table

The table with read-write data access is Configuration Table.

The tables only update during idle periods. After the last component change, an idle period of one minute must occur before an update starts. Adding or removing any component resets the one minute idle timer.

The most effective way to view the data is in table format. The use of table format is dependent on the software being used.

Component list table

The Component List table displays objects that contain informational fields for data access. It describes objects such as systems, devices, and information groupings. For example, for a DC system with 10 rectifier modules, the table includes a row for the DC system, and a row for each individual rectifier module.

One use of the Component List table would be an inventory listing of available components. Table format is the most effective way to view the information.

The items of the Component List table are numbers for the componentListSnmpId, and the componentListType. These two numbers are also used in other tables as part of the unique index that identifies a specific table entry.

componentListType: Used as part of the DataFieldType table.

componentListSnmpId: Used as part of the DataList table.

The column numbers for the Component List table are:

Table 4-6 Component list

Column number	Name	Description
1	componentListReference	ID value assigned to the component at startup. Configurable for systems only.
2	componentListStaticName	Static name of the component represented by the entry. This text value is not translated for localization.
3	componentListConfiguredName	User configurable name of the component.
4	componentListType	The ComponentListType number is used as part of the data table reference index. Type of component:
		1. Controller
		2. DC system
		3. ADIO module
		4. Rectifier module
		5. Converter module
		6. Inverter module
		7. Reserved
		8. Alpha® T2S inverter controller module
		9. Reserved
		10. Battery system
		11. Disconnect
		12. Load
		13. Shunt
		14. SNMP destination
		15. CAN bus
		16. Converter system
		17. User digital alarm
		18. User threshold alarm
		19. Inverter system
		20. Bypass switch
		21. Delay timer
		22. Interval timer

Table 4-6 Component list (continued)

Column number	Name	Description
		23. Up counter
		24. Down counter
		25. Custom data
		26. Current transducer module
		27. Breaker/fuse
		28. Reserved
		29. Email destination
		30. Auxiliary system
		31. Line power system
		32. Line power module
		33. Line power load
		34. Distribution system
		35. Distribution panel
		36. Distribution subsystem
		37. Referenced load
		38. Reserved
		39. Reserved
		40. Scheduled action
		41. Alpha® FXM HP UPS
		42. Disconnect with exclusion
		43. Change relay
		44. Change field
		45. Reserved
		46. Reserved
		47. Reserved
		48. General purpose transducer module
		49. Change field to variable
		50. Battery string

Table 4-6 Component list (continued)

Column number	Name	Description
		51. Timing relay
		52. DC source system
		53. DC source
		54. Data subscriptions
		55. Generic disconnect
		56. AC source system
		57. AC source
		58. Reserved
		59. Reserved
		60. Reserved
		61. Scheduled time span
		62. Alpha® external maintenance bypass switch (XMBS)
		63. Alpha® FXM HP UPS ADIO module
		64. Reserved
		65. Reserved
		66. Reserved
		67. Thermal system
		68. Battery disconnect with latching contactor
		69. Cordex® HP 3kW hyperboost converter module
		70. Cordex® CXPS-HSS hyperboost system
		71. Reserved
		72. Reserved
		73. Reserved
		74. AC generator system
		75. DC generator system
		76. Generator system start equation
		77. Generator system stop equation
		78. Generator system start/stop condition

Table 4-6 Component list (continued)

Column number	Name	Description
		79. User
		81. Hyperboost system
		97. Matrix™ distribution breaker panel
		98. Syslog destination
		99. Environment manager system
		100. Fan
		101. Air conditioner
		102. Reserved
		103. Reserved
		104. Website proxy
		105. EnVision™ energy router distribution panel
		106. EnVision™ energy router distribution subsystem
		107. Cordex® HP protocol bridge peripheral
		108. Generic lithium-ion battery module
		109. Generic lithium-ion battery subsystem
		110. Bluetooth® device
		113. EnVision™ eBridge protocol conversion peripheral
		114. SiteFlex® rectifier
		115. SiteFlex® DC system
		116. Utility cost type
		117. Utiility cost price tier
		118. Utility cost days distribution
		119. PowerSafe® iON SB1048P05J battery module subsystem
		120. Ethernet
5	componentListModelNumber	The model number of the component if available.
6	componentListSerialNumber	The serial number of the component if available.
7	componentListSystemPointer	A reference OID within the component table to the encapsulating component to this one. For example, a

Table 4-6 Component list (continued)

Column number	Name	Description
		rectifier module component would have a reference OID to the system that it belongs to if it has already been assigned. Using this reference OID with a **GetNext** operation will return the static name value of the component.

Data field type list

The Data Field Type list displays the data field types available from their specific component source. Following the previous example of a DC system with 10 rectifier modules, the table would present a list of available data field types of a DC system and of a rectifier module.

This table can provide a list of data field types accessible through SNMP. That information allows for the creation of table indexes to use with the Data Field Type list to get existing live data. Table format is the most effective way to view the information.

The column numbers for the Data Field Type list are:

Table 4-7 Data field type

Column number	Name	Description
1	dataListReference (IDX)	Static ID value assigned to the field type and is unique within the component that the field belongs to. Indexing of this table is a combination of componentListType joined by the internal indexing of the field. Example: Index number 2.1 constitute the type ID (2) followed by the internal index (1). Type ID 2 is the ID for a DC system component. The index then refer to a DC system field that has an internal ID of 1.
2	dataListName	Static name of the data field represented by the entry. This text value is not translated for localization
3	dataListType	Data type of the field represented in the entry: • 0. Unknown • 1. Numeric • 2. Boolean • 3. Time

Table 4-7 Data field type (continued)

Column number	Name	Description
		• 4. String: Human readable text data. • 5. State: Represents a string value describing the condition the reference object is in. For example, a relay may have the value: *StateNotEnergizedNormal*.
4	dataListUnit	Unit of the value presented by this field.

Data list

The Data List table displays all available live data that the controller can report. The data points and referencing are presented in logical groupings.

For example, to get the live data of the **Total Output Current** of a DC system. Use the dataFieldType index and the componentList index to specifically call for an entry in the dataList table.

In the dataFieldType table:

- The **Output Current** of a DC system is indexed as 2.1.
- The instance number of that DC system is 1.

Combine the dataFieldType index (2.1), and the DC system instance number (1), and you can get the index of 2.1.1 which is the reference for the **Output Current** from DC system 1.

The unique key of the data is column 1:

1.3.6.1.4.1.7309.5.2.3.2.1.(1).2.1.1 - the index of the row displaying 2.1.1 for convenient referencing.

The number value is column 2:

1.3.6.1.4.1.7309.5.2.3.2.1.(2).2.1.1 - the number value of the Output Current from DC system 1.

In the table the string value is column 3:

1.3.6.1.4.1.7309.5.2.3.2.1.(3).2.1.1 - would result with a zero-length string since the row entry is representing a number.

The column numbers for the Data List table are:

Table 4-8 Data list

Column number	Name	Description
1	dataReference	Index combination from the dataTypeList and Component tables to form the unique identifier of the data row.
2	dataNumberValue	Number values will be presented here. Zero-length value will be default in the event no number value is available.
3	dataStringValue	String values will be presented here. Zero-length value will be default in the event no string value is available. *"unknown"* will be default value until an appropriate data is available.

Example: Getting the system voltage

The following example, a simple GET REQUEST for **System Voltage**, and shows the use of the base OID as well as external indexes. The second row of the Component table will show a list of components for the **Rectifier System**.

Figure 4-9 Table view for the ComponentTable

componentListReference...	componentListStaticName	componentListConfiguredName	compo...	componentLi...	componentL...	componentListSystemPointer
1	DC System 48V	unknown	2	(zero-length)	(zero-length)	0.0
1	CXRC 48V 650W	unknown	4	12345	9578	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
2	CXRC 48V 650W	unknown	4	12345	5627	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
3	CXRC 48V 650W	unknown	4	12345	1314	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
4	CXRC 48V 650W	unknown	4	12345	6014	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	CXDF 48V-24V	unknown	5	12349	2080	1.3.6.1.4.1.7309.5.2.1.2.1.16.1
2	CXDF 48V-24V	unknown	5	12349	3774	1.3.6.1.4.1.7309.5.2.1.2.1.16.1
3	CXDF 48V-24V	unknown	5	12349	3744	1.3.6.1.4.1.7309.5.2.1.2.1.16.1
4	CXDF 48V-24V	unknown	5	12349	5573	1.3.6.1.4.1.7309.5.2.1.2.1.16.1
1	Battery String	unknown	10	(zero-length)	(zero-length)	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	Disconnect	unknown	11	(zero-length)	(zero-length)	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	Load	unknown	12	(zero-length)	(zero-length)	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	Shunt	unknown	13	(zero-length)	(zero-length)	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	CAN Bus	unknown	15	(zero-length)	(zero-length)	0.0
2	CAN Bus	unknown	15	(zero-length)	(zero-length)	0.0
1	Converter System 48V-2...	unknown	16	(zero-length)	(zero-length)	0.0

The following figure shows the list of data field types available from the controller and indicates the **System Voltage** as row 2.10.

Figure 4-10 Table view for the DataListTable

dataListReference(IDX)	dataListName	dataListType	dataListUnit
2.1	DC System 48V/7090: Total Output Current	1	A
2.2	DC System 48V/7090: Total Output Power	1	W
2.3	DC System 48V/7090: Total Capacity Installed - Current	1	A
2.4	DC System 48V/7090: Total Capacity Installed - Power	1	W
2.5	DC System 48V/7090: Average Rectifier Output Voltage	1	V
2.6	DC System 48V/7090: Average Rectifier AC Input Voltage	1	V
2.7	DC System 48V/7090: Average AC Phase 1 Voltage	1	V
2.8	DC System 48V/7090: Average AC Phase 2 Voltage	1	V
2.9	DC System 48V/7090: Average AC Phase 3 Voltage	1	V
2.10	DC System 48V/7090: System Voltage	1	V
2.11	DC System 48V/7090: Total Load Current	1	A
2.12	DC System 48V/7090: Battery Voltage	1	V
2.13	DC System 48V/7090: Battery Current	1	A
2.14	DC System 48V/7090: Battery Temperature	1	B0.43 (hex)
2.15	DC System 48V/7090: System Number	1	(zero-length)
4.1	9578: Bay ID	1	(zero-length)
4.2	9578: Shelf ID	1	(zero-length)
4.3	9578: Slot ID	1	(zero-length)
4.4	9578: AC Input Voltage	1	V
4.5	9578: Output Current	1	A
4.6	9578: Ambient Temperature	1	B0.43 (hex)
4.7	9578: Operating Time	1	h
5.1	2080: Output Current	1	A
5.2	2080: Input Current	1	A
5.3	2080: IntakeTemperature	1	B0.43 (hex)
5.4	2080: Operating Hours	1	h
15.1	CAN1: Number of Devices	1	(zero-length)
15.2	CAN1: Node IDs In Use	1	(zero-length)
16.1	Converter System 48V-24V/3075: Total Output Current	1	A
16.2	Converter System 48V-24V/3075: Total Output Power	1	W
16.3	Converter System 48V-24V/3075: Total Capacity Installed - Cu...	1	A
16.4	Converter System 48V-24V/3075: Total Capacity Installed - Po...	1	W
16.5	Converter System 48V-24V/3075: Average Converter Output ...	1	V
16.6	Converter System 48V-24V/3075: Average Converter Input Vo...	1	V
16.7	Converter System 48V-24V/3075: System Voltage	1	V
16.8	Converter System 48V-24V/3075: Total Load Current	1	A
16.9	Converter System 48V-24V/3075: System Number	1	(zero-length)

Access to the actual **System Voltage** combines the base OID of the DataEntry (row) of the DataTable, the column index of the table, and the instance index value. The instance index is a combination of the dataListReference value (2.10) and the componentListReference (1).

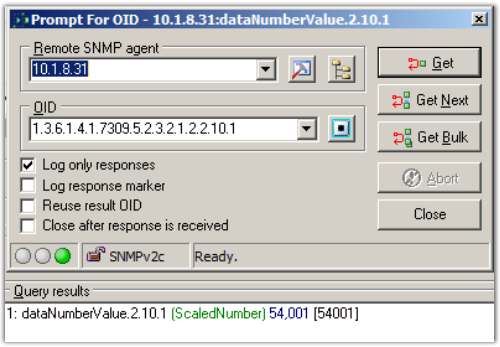
1.3.6.1.4.1.7309.5.2.3.2.1 (dataEntry OID) + 2 (dataNumberValue) + 2.10 (dataListReference) + 1 (componentListReference)

Figure 4-11 Table view for the DataTable

dataReference	dataNumberValue	dataStringValue
2.1.1	37,920	(zero-length)
2.2.1	2046,000	(zero-length)
2.3.1	125,009	(zero-length)
2.4.1	6000,000	(zero-length)
2.5.1	53,956	(zero-length)
2.6.1	202,456	(zero-length)
2.7.1	0,000	(zero-length)
2.8.1	0,000	(zero-length)
2.9.1	0,000	(zero-length)
2.10.1	54,010	(zero-length)
2.11.1	37,189	(zero-length)
2.12.1	54,010	(zero-length)
2.13.1	0,730	(zero-length)
2.14.1	29,294	(zero-length)
2.15.1	0,000	(zero-length)
3.10101.3	53,912	(zero-length)
3.10201.3	54,011	(zero-length)
3.20101.3	0,190	(zero-length)

The DataTable output shows a list of live data available on the controller. The row with reference 2.10.1, as high lighted in the following figure, shows the **System Voltage** value.

Figure 4-12 Sample query of system voltage



This figure shows a simple query of the full OID value, specific to the **System Voltage** of a rectifier system.

If reading specific live data is desired, all OID values for every live data value is available in the inventory export file. To download this file on the web interface, go to **Systems > Add or Remove Systems** and select the **Export Inventory to CSV** button in the **Add or Remove Systems** table.

Configuration field type list

The Configuration Field Type list displays the writable data field types available from their specific component source. Following the previous example of a DC system with 10 rectifiers, the table would present a list of available data field types of a DC system and of a rectifier module.

This table can provide a list of data field types accessible through SNMP. That information allows for the creation of table indexes to use with the Configuration Field Type list to get existing live data and set new data value. Table format is the most effective way to view the information.

The column numbers for the Configuration Field Type list are:

Table 4-9 Configuration field type

Column number	Name	Description
1	configurationListReference (IDX)	Static ID value assigned to the field type and is unique within the component that the field belongs to. Indexing of this table is a combination of componentListType joined by the internal indexing of the field. Example: Index number 2.1 constitute the type ID (2) followed by the internal index (1).

Table 4-9 Configuration field type (continued)

Column number	Name	Description
		Type ID 2 is the ID for a DC system component. The index then refer to a DC system field that has an internal ID of 1.
2	configurationListName	Static name of the configuration field represented by the entry. This text value is not translated for localization.
3	configurationListType	Data type of the field represented in the entry: • 0. Unknown • 1. Numeric • 2. Boolean • 3. Time • 4. String: Human readable text data. • 5. State: State represents a string value describing the condition the reference object is in. For example, a DC system's Voltage Regulation field may have the value: Disabled. A list of state values for each configuration field of data type 5 is available in the **Configuration Choice List Table**.
4	configurationListUnit	Unit of the value presented by this field if applicable.

Example: Setting the float voltage

The following example, a simple Set REQUEST for **Float Voltage**, and shows the use of the base OID as well as external indexes. The second row of the component table will show a list of components for the **Rectifier System**.

Figure 4-13 Table view for the ComponentTable

componentListReference...	componentListStaticName	componentListConfiguredName	compo...	componentLi...	componentL...	componentListSystemPointer
1	DC System 48V	unknown	2	(zero-length)	(zero-length)	0.0
1	CXRC 48V 650W	unknown	4	12345	9578	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
2	CXRC 48V 650W	unknown	4	12345	5627	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
3	CXRC 48V 650W	unknown	4	12345	1314	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
4	CXRC 48V 650W	unknown	4	12345	6014	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	CXDF 48V-24V	unknown	5	12349	2080	1.3.6.1.4.1.7309.5.2.1.2.1.16.1
2	CXDF 48V-24V	unknown	5	12349	3774	1.3.6.1.4.1.7309.5.2.1.2.1.16.1
3	CXDF 48V-24V	unknown	5	12349	3744	1.3.6.1.4.1.7309.5.2.1.2.1.16.1
4	CXDF 48V-24V	unknown	5	12349	5573	1.3.6.1.4.1.7309.5.2.1.2.1.16.1
1	Battery String	unknown	10	(zero-length)	(zero-length)	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	Disconnect	unknown	11	(zero-length)	(zero-length)	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	Load	unknown	12	(zero-length)	(zero-length)	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	Shunt	unknown	13	(zero-length)	(zero-length)	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	CAN Bus	unknown	15	(zero-length)	(zero-length)	0.0
2	CAN Bus	unknown	15	(zero-length)	(zero-length)	0.0
1	Converter System 48V-2...	unknown	16	(zero-length)	(zero-length)	0.0

The following table shows the list of configuration field types available from the controller and indicates the **Float Voltage** as row 2.12.

Figure 4-14 Table view for the ConfigurationListTable

configurationListReference(IDX)	configurationListName	configurationListType	configurationListUnit
2.2	DC System 48V : Description	4	(zero-length)
2.3	DC System 48V : System Number	1	(zero-length)
2.4	DC System 48V : System Serial Number	4	(zero-length)
2.5	DC System 48V : Device ID	1	(zero-length)
2.10	DC System 48V : Rectifier Assignment Rule	5	(zero-length)
2.11	DC System 48V : Nominal Input Voltage	5	(zero-length)
2.12	DC System 48V : Float Voltage	1	V
2.13	DC System 48V : Extended Ranges (Advanced)	5	(zero-length)
2.14	DC System 48V : Minimum Test Voltage	1	V
2.15	DC System 48V : Safe Mode Voltage	1	V
2.16	DC System 48V : Over-Voltage Protection Threshold	1	V
2.17	DC System 48V : System Start Delay	1	s
2.18	DC System 48V : Module Start Delay	1	s
2.19	DC System 48V : Current Limit	1	%
2.20	DC System 48V : Power Limit	1	%
2.21	DC System 48V : CL/PL Alert	5	(zero-length)
2.22	DC System 48V : Ramp Test	5	(zero-length)
2.23	DC System 48V : Voltage Regulation	5	(zero-length)
2.24	DC System 48V : Loadsharing	5	(zero-length)
2.25	DC System 48V : Power Save	5	(zero-length)
2.26	DC System 48V : Module Power for Maximum Efficiency	1	%
2.27	DC System 48V : Rotate One Module Every	1	d
2.28	DC System 48V : Fast Soft-Start	5	(zero-length)

Access to the actual **Float Voltage** combines the base OID of the DataEntry (row) of the ConfigurationTable, the column index of the table, and the instance index value. The instance index is a combination of the configurationListReference value (2.12) and the componentListReference (1).

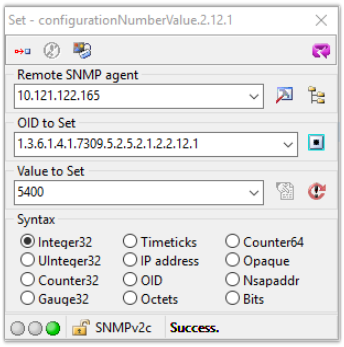
1.3.6.1.4.1.7309.5.2.5.2.1 (configurationEntry OID) + 2 (configurationNumberValue) + 2.12 (configurationListReference) + 1 (componentListReference). The complete OID for **Float Voltage** is 1.3.6.1.4.1.7309.5.2.5.2.1.2.2.12.1

Figure 4-15 Table view for the configuration table

Instance	configurationReference	configurationNumberValue	configurationStringValue
2.1.1	2.1.1	(zero-length)	unknown
2.2.1	2.2.1	(zero-length)	unknown
2.3.1	2.3.1	0.000	(zero-length)
2.4.1	2.4.1	(zero-length)	unknown
2.5.1	2.5.1	1.000	(zero-length)
2.10.1	2.10.1	(zero-length)	RectifierAssignmentAut...
2.11.1	2.11.1	(zero-length)	InputVoltage208V
2.12.1	2.12.1	54.000	(zero-length)
2.13.1	2.13.1	(zero-length)	ExtendedVoltagesNormal
2.14.1	2.14.1	44.000	(zero-length)
2.15.1	2.15.1	51.400	(zero-length)
2.16.1	2.16.1	58.000	(zero-length)
2.17.1	2.17.1	0.000	(zero-length)
2.18.1	2.18.1	1.000	(zero-length)
2.19.1	2.19.1	100.000	(zero-length)
2.20.1	2.20.1	100.000	(zero-length)

The ConfigurationTable output shows a list of data available for set request on the controller. The row with reference 2.12.1, as highlighted in this figure shows the **Float Voltage** value.

Figure 4-16 Sample set of float voltage



This figure shows a simple set query of the full OID value, specific to the **Float Voltage** of a rectifier system. The value to set is scaled by a 100. 5400 represents 54.00 volts.

Example: Setting rectifier assignment rule

The following example, a simple Set REQUEST for **Rectifier Assignment Rule** of a DC system, and shows the use of the base OID as well as external indexes. The second row of the ComponentListTable shows a list of components. The DC system 48V has a componentListType value of 2.

Figure 4-17 Table view for the ComponentListTable

componentListReference...	componentListStaticName	componentListConfiguredName	compo...	componentLi...	componentL...	componentListSystemPointer
1	DC System 48V	unknown	2	(zero-length)	(zero-length)	0.0
1	CXRC 48V 650W	unknown	4	12345	9578	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
2	CXRC 48V 650W	unknown	4	12345	5627	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
3	CXRC 48V 650W	unknown	4	12345	1314	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
4	CXRC 48V 650W	unknown	4	12345	6014	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	CXDF 48V-24V	unknown	5	12349	2080	1.3.6.1.4.1.7309.5.2.1.2.1.16.1
2	CXDF 48V-24V	unknown	5	12349	3774	1.3.6.1.4.1.7309.5.2.1.2.1.16.1
3	CXDF 48V-24V	unknown	5	12349	3744	1.3.6.1.4.1.7309.5.2.1.2.1.16.1
4	CXDF 48V-24V	unknown	5	12349	5573	1.3.6.1.4.1.7309.5.2.1.2.1.16.1
1	Battery String	unknown	10	(zero-length)	(zero-length)	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	Disconnect	unknown	11	(zero-length)	(zero-length)	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	Load	unknown	12	(zero-length)	(zero-length)	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	Shunt	unknown	13	(zero-length)	(zero-length)	1.3.6.1.4.1.7309.5.2.1.2.1.2.1
1	CAN Bus	unknown	15	(zero-length)	(zero-length)	0.0
2	CAN Bus	unknown	15	(zero-length)	(zero-length)	0.0
1	Converter System 48V-2...	unknown	16	(zero-length)	(zero-length)	0.0

The following table shows the list of Configuration field types available from the controller for a DC system. Note that the configurationListReference for all configuration fields of a DC system has a prefix of 2. The **Rectifier Assignment Rule** is row 2.10.

Figure 4-18 Table view for the ConfigurationListTable

configurationListReference(IDX)	configurationListName	configurationListType	configurationListUnit
2.2	DC System 48V : Description	4	(zero-length)
2.3	DC System 48V : System Number	1	(zero-length)
2.4	DC System 48V : System Serial Number	4	(zero-length)
2.5	DC System 48V : Device ID	1	(zero-length)
2.10	DC System 48V : Rectifier Assignment Rule	5	(zero-length)
2.11	DC System 48V : Nominal Input Voltage	5	(zero-length)
2.12	DC System 48V : Float Voltage	1	V
2.13	DC System 48V : Extended Ranges (Advanced)	5	(zero-length)
2.14	DC System 48V : Minimum Test Voltage	1	V
2.15	DC System 48V : Safe Mode Voltage	1	V
2.16	DC System 48V : Over-Voltage Protection Threshold	1	V
2.17	DC System 48V : System Start Delay	1	s
2.18	DC System 48V : Module Start Delay	1	s
2.19	DC System 48V : Current Limit	1	%
2.20	DC System 48V : Power Limit	1	%
2.21	DC System 48V : CL/PL Alert	5	(zero-length)
2.22	DC System 48V : Ramp Test	5	(zero-length)
2.23	DC System 48V : Voltage Regulation	5	(zero-length)
2.24	DC System 48V : Loadsharing	5	(zero-length)
2.25	DC System 48V : Power Save	5	(zero-length)
2.26	DC System 48V : Module Power for Maximum Efficiency	1	%
2.27	DC System 48V : Rotate One Module Every	1	d
2.28	DC System 48V : Fast Soft-Start	5	(zero-length)

Access to the actual **Rectifier Assignment Rule** field combines the base OID of the ConfigurationEntry (row) of the ConfigurationTable, the column index of the table, and the instance index value. The instance

index is a combination of the configurationListReference value (2.12) and the componentListReference (1).

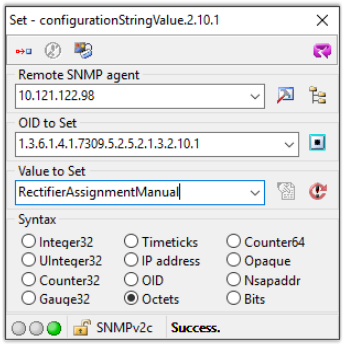
1.3.6.1.4.1.7309.5.2.5.2.1 (configurationEntry OID) + 2 (configurationNumberValue) + 2.10 (configurationListReference) + 1 (componentListReference). The complete OID for **Rectifier Assignment Rule** is 1.3.6.1.4.1.7309.5.2.5.2.1.2.2.10.1

Figure 4-19 Table view for the configuration table

Instance	configurationReference	configurationNumberValue	configurationStringValue
2.1.1	2.1.1	(zero-length)	48V DC System
2.2.1	2.2.1	(zero-length)	48V DC System for Test Site 10
2.3.1	2.3.1	5.000	(zero-length)
2.4.1	2.4.1	(zero-length)	unknown
2.5.1	2.5.1	1.000	(zero-length)
2.10.1	2.10.1	(zero-length)	RectifierAssignmentAutomatic
2.11.1	2.11.1	(zero-length)	InputVoltage208V
2.12.1	2.12.1	54.000	(zero-length)
2.13.1	2.13.1	(zero-length)	ExtendedVoltagesNormal
2.14.1	2.14.1	44.000	(zero-length)
2.15.1	2.15.1	51.400	(zero-length)
2.16.1	2.16.1	58.000	(zero-length)
2.17.1	2.17.1	0.000	(zero-length)
2.18.1	2.18.1	1.000	(zero-length)

The Configuration Table output shows a list of data available for set request on the controller. The row with reference 2.10.1, as highlighted in the above figure shows the **Rectifier Assignment Rule** value.

Figure 4-20 Sample set of rectifier module assignment rule



The previous figure shows a simple set query of the full OID value, specific to the **Rectifier Assignment Rule** of a DC system. The Value to Set is changed to RectifierAssignmentManual.

The valid values of *Value to Set* for **Rectifier Assignment Rule** of a DC system are *RectifierAssignmentManual* and *RectifierAssignmentAutomatic*. These two values are defined in the configurationChoiceListTable.

Figure 4-21 Table view for the ConfigurationChoiceList table

Instance	configurationChoiceListReference(IDX)	configurationChoiceListIndex	configurationChoiceListName
1.1002101.1	1.1002101	1	PriorityWarning
1.1002101.2	1.1002101	2	PriorityMinor
1.1002101.3	1.1002101	3	PriorityMajor
1.1002101.4	1.1002101	4	PriorityCritical
2.10.0	2.10	0	RectifierAssignmentManual
2.10.1	2.10	1	RectifierAssignmentAutomatic
2.11.0	2.11	0	InputVoltage120V
2.11.1	2.11	1	InputVoltage208V
2.11.2	2.11	2	InputVoltage480V
2.13.0	2.13	0	ExtendedVoltagesNormal
2.13.1	2.13	1	ExtendedVoltagesExtended
2.21.0	2.21	0	Disabled

The column numbers for the Configuration Choice List table are:

Table 4-10 Configuration choice list

Column number	Name	Description
1	configurationChoiceListReference (IDX)	Static ID value corresponds to the configurationListReference of configuration field.
2	configurationChoiceListIndex	Static number of the configuration choice. For setting Configuration fields with configurationListType = 5, configurationChoiceListName must be used.
3	configurationChoiceListName	Static name for the choice to be used for setting configuration fields with configurationListType = 5. This text value is not translated for localization.

If reading/setting specific configuration is desired, all OID values for every configuration value is available in the inventory export file. To download this file on the web interface, go to **Systems > Add or Remove Systems** and select the **Export Inventory to CSV** button in the **Add or Remove Systems** table.

Alarm type list table

The Alarm tables in the Alpha® resource MIB can be used to poll, to find, and to troubleshoot active alarms.

The Alarm Type List table provides the list of available alarms based on the configuration of the monitored systems. Information provided allows for the creation of table indexes to use with the Alarm table to get existing live alarm information. Table format is the most effective way to view the information.

The column numbers for the **Alarm Type List** table are:

Table 4-11 Alarm type list

Column number	Name	Description
1	alarmTypeReference	A static and uniquely assigned ID for the alarm type.
2	alarmTypeName	Name of the alarm formatted together with the source of the alarm.

Figure 4-22 Example: Available alarm type list

alarmTypeReference(IDX)	alarmTypeName
10001	Controller : Clock Error
10003	Controller : ADIO Comms Lost
10004	Controller : Unassigned Modules
20001	DC System 48V : AC Mains Voltage High
20002	DC System 48V : AC Mains Voltage Low
20003	DC System 48V : Urgent AC Mains Fail
20004	DC System 48V : Output Voltage High
20005	DC System 48V : Output Voltage Very High
20006	DC System 48V : Output Voltage Low
20007	DC System 48V : Output Voltage Very Low
20008	DC System 48V : Invalid System Voltage Reading
20009	DC System 48V : Battery On Discharge
20010	DC System 48V : Rectifier Fail
20011	DC System 48V : Rectifier Major Fail Count
20012	DC System 48V : Rectifier Minor Fail Count
20013	DC System 48V : Rectifier Minor
20014	DC System 48V : Rectifier Comms Lost
20015	DC System 48V : AC Mains Fail
20016	DC System 48V : Fan Fail
20017	DC System 48V : Battery Test
20018	DC System 48V : Temp Comp Measurement Fail
20019	DC System 48V : Temp Comp Voltage Warning
20020	DC System 48V : Battery Runtime Low
20021	DC System 48V : Battery Health Low
20022	DC System 48V : Rectifier Configuration Error
35101	L-ADIO : Temperature Sensor #1 Failure
35201	L-ADIO : Temperature Sensor #2 Failure

Alarm list table

The Alarm table, working together with the Alarm Type List table, and the Component table, allow for active polling of all available alarms in the controller. The value returned provides the state of the alarm, as well as the priority of the alarm.

Figure 4-23 Example: Available alarm list

Instance	alarmState
1.10001.1	0
1.10003.1	4000
1.10004.1	0
2.20001.1	0
2.20002.1	0
2.20003.1	0
2.20004.1	0
2.20005.1	0
2.20006.1	0
2.20007.1	0
2.20008.1	0
2.20009.1	0
2.20010.1	0
2.20011.1	0
2.20012.1	0
2.20013.1	0
2.20014.1	0
2.20015.1	0
2.20016.1	0

The example provided shows a table that is simplified in data presentation to allow for efficient polling of alarms. Using the base entry OID of the alarmState, together with the instance index, you can actively poll an individual alarm. In this example, an active alarm is polled and then interpreted in the following manner:

1.3.6.1.4.1.7309.5.2.9.2.1.1 (alarm table entry OID) + 1.10003 (alarm type) + 1 (instance Index) = 1.3.6.1.4.1.7309.5.2.9.2.1.1.1.10003.1 (OID for ADIO: Comms Lost alarm).

The value returned from a GET REQUEST is an integer value reflective of the priority level as shown in the following list:

- **0** = Normal/Inactive
- **1000** = Warning
- **2000** = Minor
- **3000** = Major
- **4000** = Critical

In most cases, the instance index will be a value of 1 unless there are multiple instances of that alarm. The instance is a reference to the instance of the component alarm source.

Module alert list table

The Module Alert table shows all active module alerts. The alertTypeName shows the serial number of the module and the name of the active alert. The Instance identifies the component ID, alert ID, and component list reference in the format: componentID.alertID.componentListReference. If the table is empty, it means that there are no active module alerts, or the internal SNMP database is not yet finished building.

Figure 4-24 Example: Active alert list

Instance	alertTypeName
4.40033.1	T000341/1113: DC Output Ramp Test Fail / No Output Power
4.40033.2	T000340/1113: DC Output Ramp Test Fail / No Output Power
4.40033.3	T000338/1113: DC Output Ramp Test Fail / No Output Power
4.40033.4	T000242/0913: DC Output Ramp Test Fail / No Output Power

Configuration choice list table

The Configuration Choice table shows valid state choices for the configuration data fields in Configuration List table with configurationListType set to 5 (State). These choice names can be used to set the field value in the Configuration List table.

This table provides a list of data choice values for the field in Configuration List table. That information allows for the creation of table indexes to use with the Configuration Choice List table to get a list of valid choices (states) to set new data value. Table format is the most effective way to view the information.

The column numbers for the Configuration Choice List table are as follows:

Table 4-12 Configuration choice list

Column number	Name	Description
1	configurationChoiceListReference (IDX)	Static ID value assigned to the field type and is unique within the component that the field belongs to. Indexing of this table is a combination of componentListType joined by the internal indexing of the field. Example: Index number 2.10 constitute the type ID (2) followed by the internal index (10). Type ID 2 is the ID for a DC system component. The index then refer to a DC system configuration field that has an internal ID of 10. Index number 2.10 represents DC system's Assignment Rule configuration field.
2	configurationChoiceListIndex	Static numeric values of the configuration choice represented by the configurationChoiceListReference. There an entry of each possible choices.
3	configurationChoiceListName	Static string values of the configuration choice represented by the configurationChoiceListReference. There an entry of each possible choices. This string value is to be used to set.

4.6.3. Published SNMP fields

The fields listed here provide read-only access. See the **Published SNMP Get/Set fields** chapter for available read and write fields.

The tables provided here define the **Component** items, and the **Data Field Type** indexing values, when using the **ALPHA-RESOURCE-MIB**. Refer to the section, **Using The Resource MIB** for detailed explanation of the index dependencies of tables within the MIB. Refer to the **SNMP Reference** section for a short explanation of the **Index Calculation** technique.

Specific OIDs are not available for the defined data fields. The dynamic nature of the controller modules do not allow for a static definition of a component reference number. The component reference number is currently not configurable.

The **Data Field** reference IDs are statically assigned and are unique to the **Component**. These numbers, combined with the other dependencies of the Alpha® Resource MIB tables, provide currently published data and future data without the need to change MIB files.

Notice: *Some of the field names may repeat due to field items that are in repeated groups. Their indexes would remain unique to identify the individual fields. For example, AC input phase fields would have repeating items.*

Table 4-13 EnVision™ Elite controller SNMP IDs (component type 1)

Field	SNMP ID
Name	1
Description	2
Software Version	3
Site Number	4
Technical Support Contact Number	5
Contact Name	6
Contact Number	7
Configuration File Identifier	8
Street	9
City	10
Zip Code/Postal Code	11
Region/State/Province	12
Country	13
Latitude	14
Longitude	15
Altitude	16
Serial Number	17
Part Number	18
Remote Configuration Lockout Status	19
Lockout Override Time Remaining	20
Reserved Controller Status	21
Reserved Controller Communication Status	22
Main Controller Status	23

Table 4-13 EnVision™ Elite controller SNMP IDs (component type 1) (continued)

Field	SNMP ID
Main Controller Communication Status	24
Time of Last Communication Sync.	25
Current Time and Date	26
Operating System Version	27
Hardware Version	28
Web Server Port	30
Secure Web Port	31
Web Connection Protocol	34
Certificate Status	35
Certificate Issued To	36
Certificate Issued By	37
Certificate Effective Date	38
Certificate Expiry Date	39
Remote Authentication Type	40
RADIUS Server Address	41
RADIUS Server Port	42
RADIUS Server Timeout	43
RADIUS Encryption Protocol	44
RADIUS Group Attribute ID	45
RADIUS Attribute Value for Admin. Role	46
RADIUS Attribute Value for Accounts Role	47
RADIUS Attribute Value for Operator Role	48
RADIUS Attribute Value for Restricted Operator Role	49
RADIUS Attribute Value for Admin. Guest Role	50
TACACS+ Server Address	51
TACACS+ Server Port	52
TACACS+ Server Timeout	53
TACACS+ Encryption Protocol	54
TACACS+ Attribute Name	55

Table 4-13 EnVision™ Elite controller SNMP IDs (component type 1) (continued)

Field	SNMP ID
TACACS+ Attribute Value for Admin. Role	56
TACACS+ Attribute Value for Accounts Role	57
TACACS+ Attribute Value for Operator Role	58
TACACS+ Attribute Value for Restricted Operator Role	59
TACACS+ Attribute Value for Admin. Guest Role	60
RADIUS Additional Authentication Attribute Name	61
RADIUS Additional Authentication Attribute Value	62
SNMP Agent	70
SNMP Get and Set	71
UPS MIB System	73
SNMPv3 Security	74
SNMPv3 Account Name	75
SNMP Build State	76
Read Community Name 1	78
Write Community Name 1	79
Read Community Name 2	80
Write Community Name 2	81
Read Community Name 3	82
Write Community Name 3	83
Read Community Name 4	84
Write Community Name 4	85
Read Community Name 5	86
Write Community Name 5	87
Read Community Name 6	88
Write Community Name 6	89
Read Community Name 7	90
Write Community Name 7	91
Read Community Name 8	92
Write Community Name 8	93

Table 4-13 EnVision™ Elite controller SNMP IDs (component type 1) (continued)

Field	SNMP ID
Read Community Name 9	94
Write Community Name 9	95
Read Community Name 10	96
Write Community Name 10	97
System Serial Number	100
Additional System Serial Number	105
Manufacturer	106
System Model	107
Number of Unassigned Modules with Alerts	108
Number of Unassigned Modules in Comms. Lost	109
Bluetooth Status	120
# Acquired Bluetooth Devices	121
# Communicating Bluetooth Devices	122
# Non-Communicating Bluetooth Devices	123
# Undiscovered Bluetooth Devices	124
# Authentication Required Bluetooth Devices	125
# Authentication Failed Bluetooth Devices	126
LDAP Server Address	128
LDAP Org. DN	129
LDAP Server Port	130
LDAP Server Timeout	131
LDAP Authentication Type	132
LDAP Attribute Value for Admin. Role	134
LDAP Attribute Value for Accounts Role	135
LDAP Attribute Value for Operator Role	136
LDAP Attribute Value for Restricted Operator Role	137
LDAP Attribute Value for Admin. Guest Role	138
Wi-Fi Status	150
CMP Certificate Status	160

Table 4-13 EnVision™ Elite controller SNMP IDs (component type 1) (continued)

Field	SNMP ID
CMP Transaction Status	161
CMP Error Status	162
CMP Certificate Serial Number	163
CMP Last Update	164
CMP Last Logged Error	165
Billing Period Energy Consumption	170
Single Sign-On Configuration Status	200
Identity Provider Entity ID	201
Identity Provider URL	202
Redirect URL 1	203
Redirect URL 2	204
Redirect URL 3	205
Redirect URL 4	206
Redirect URL 5	207
Redirect URL 6	208
Redirect URL 7	209
Redirect URL 8	210
Redirect URL 9	211
Redirect URL 10	212
Redirect URL 11	213
Redirect URL 12	214
Active Session 1 Username	10101
Active Session 1 User Role	10102
Active Session 1 Client	10103
Active Session 1 IP Address	10104
Active Session 2 Username	10201
Active Session 2 User Role	10202
Active Session 2 Client	10203
Active Session 2 IP Address	10204

Table 4-13 EnVision™ Elite controller SNMP IDs (component type 1) (continued)

Field	SNMP ID
Active Session 3 Username	10301
Active Session 3 User Role	10302
Active Session 3 Client	10303
Active Session 3 IP Address	10304
Active Session 4 Username	10401
Active Session 4 User Role	10402
Active Session 4 Client	10403
Active Session 4 IP Address	10404
Active Session 5 Username	10501
Active Session 5 User Role	10502
Active Session 5 Client	10503
Active Session 5 IP Address	10504
Active Session 6 Username	10601
Active Session 6 User Role	10602
Active Session 6 Client	10603
Active Session 6 IP Address	10604
Active Session 7 Username	10701
Active Session 7 User Role	10702
Active Session 7 Client	10703
Active Session 7 IP Address	10704
Active Session 8 Username	10801
Active Session 8 User Role	10802
Active Session 8 Client	10803
Active Session 8 IP Address	10804
Active Session 9 Username	10901
Active Session 9 User Role	10902
Active Session 9 Client	10903
Active Session 9 IP Address	10904
Wi-Fi MAC Address 1	20101

Table 4-13 EnVision™ Elite controller SNMP IDs (component type 1) (continued)

Field	SNMP ID
Wi-Fi IP Address 1	20102
Wi-Fi Username 1	20103
Wi-Fi User Role 1	20104
This pattern repeats for Wi-Fi users 2 to 9 by adding 100 to these IDs for each user.	

Table 4-14 DC system peripheral SNMP IDs (component type 2)

Field	SNMP ID
Total Output Current	1
Total Output Power	2
Total Capacity Installed - Current	3
Total Capacity Installed - Power	4
Average DC Bus Output Voltage	5
Average Rectifier AC Input Voltage	6
Estimated AC Phase 1 Voltage	7
Estimated AC Phase 2 Voltage	8
Estimated AC Phase 3 Voltage	9
System Voltage	10
Total Load Current	11
Battery Voltage	12
Battery Current	13
Battery Temperature	14
System Number	15
Estimated Required Capacity in Watts	16
Estimated Required Capacity in Amps	17
Estimated Available Capacity in Watts	18
Estimated Available Capacity in Amps	19
Estimated Redundant Capacity in Watts	20
Estimated Redundant Capacity in Amps	21
Estimated Standby Capacity in Watts	22

Table 4-14 DC system peripheral SNMP IDs (component type 2) (continued)

Field	SNMP ID
Estimated Standby Capacity in Amps	23
Average Power	24
Modules Supplying Power	25
Modules in Standby	26
Estimated Capacity Remaining in Amps	28
Estimated Capacity Remaining in Watts	29
Estimated State of Charge Percent	30
Estimated Battery Runtime	31
Estimated Battery Health Percent	32
Number of Acquired Rectifiers	33
Number of Sourcing Rectifiers	34
Number of Failed Rectifiers	35
Number of Rectifiers with Minor Alerts	36
Number of Rectifiers in Comms. Lost	37
Number of Rectifiers in Comms. Normal	38
Number of AC Failed Rectifiers	39
Number of Rectifiers with Configuration Error	40
Number of Rectifiers in Power Limit	41
Number of Rectifiers in Current Limit	42
Number of Rectifiers with Fan Fail	43
Number of Rectifiers in Bootloader	44
Maximum Rectifier Ambient Temperature	45
Most Numerous Rectifier Model	46
Most Numerous Rectifier Model Count	47
Second Most Numerous Rectifier Model	48
Second Most Numerous Rectifier Model Count	49
Third Most Numerous Rectifier Model	50
Third Most Numerous Rectifier Model Count	51
Most Numerous Rectifier Nominal Power	52

Table 4-14 DC system peripheral SNMP IDs (component type 2) (continued)

Field	SNMP ID
Second Most Numerous Rectifier Nominal Power	53
Third Most Numerous Rectifier Nominal Power	54
System ID	55
Power Save	56
Module Rotates In	57
Estimated AC Power Usage	58
Estimated Time to Rotate all Modules	69
Output Voltage Type	80

Table 4-15 Cordex® 8R/8D ADIO peripheral SNMP IDs (component type 3)

Field	SNMP ID
Firmware Version	9
D1	40101
D2	40201
D3	40301
D4	40401
D5	40501
D6	40601
D7	40701
D8	40801
K1	50101
K2	50201
K3	50301
K4	50401
K5	50501
K6	50601
K7	50701
K8	50801

Table 4-16 Cordex® HP L-ADIO peripheral SNMP IDs (component type 3)

Field	SNMP ID
Firmware Version	9
V1	10101
V2	10201
V3	10301
V4	10401
I1	20101
I2	20201
I3	20301
I4	20401
T1	30101
T2	30201
T3	30301
T4	30401
D1	40101
D2	40201
D3	40301
D4	40401
D5	40501
D6	40601
D7	40701
D8	40801
K1	50101
K2	50201
K3	50301
K4	50401
K5	50501
K6	50601
K7	50701
K8	50801

Table 4-16 Cordex® HP L-ADIO peripheral SNMP IDs (component type 3) (continued)

Field	SNMP ID
K9	50901
K10	51001
K11	51101
K12	51201

Table 4-17 Cordex® CXCi HP/M1 ADIO peripheral SNMP IDs (component type 3)

Field	SNMP ID
Firmware Version	9
V1	10101
V2	10201
I1	20101
T1	30101
T2	30201
D1	40101
D2	40201
K1	50101
K2	50201
K3	50301
K4	50401

Table 4-18 Cordex® M1+ ADIO peripheral SNMP IDs (component type 3)

Field	SNMP ID
Firmware Version	9
V1	10101
V2	10201
I1	20101
T1	30101
T2	30201
D1	40101

Table 4-18 Cordex® M1+ ADIO peripheral SNMP IDs (component type 3) (continued)

Field	SNMP ID
D2	40201
D3	40301
D4	40401
D5	40501
D6	40601
K1	50101
K2	50201
K3	50301
K4	50401
K5	50501
K6	50601
K7	50701

Table 4-19 Cordex® PSU module SNMP IDs (component type 3)

Field	SNMP ID
Firmware Version	9
V1	10101
V2	10201
I1	20101
T1	30101
T2	30201
D1	40101
D2	40201
K1	50101
K2	50201
K3	50301
K4	50401
K5	50501

Table 4-20 Cordex® HP HV-ADIO peripheral SNMP IDs (component type 3)

Field	SNMP ID
Absolute Ground Fault Current	1
Firmware Version	9
V1	10101
V2	10201
I1	20101
T1	30101
T2	30201
D1	40101
D2	40201
D3	40301
D4	40401
K1	50101
K2	50201
K3	50301
K4	50401
K5	50501
K6	50601
DCCT1	60101
DCCT2	60201

Table 4-21 Alpha® smart BDFB distribution system SNMP IDs (component type 3)

Field	SNMP ID
Firmware Version	9
V1	10101
V2	10201
V3	10301
V4	10401
V5	10501
V6	10601

Table 4-21 Alpha® smart BDFB distribution system SNMP IDs (component type 3) (continued)

Field	SNMP ID
V7	10701
V8	10801
I1	20101
I2	20201
I3	20301
I4	20401
I5	20501
I6	20601
I7	20701
I8	20801
T1	30101
T2	30201
D1	40101
D2	40201
D3	40301
D4	40401
D5	40501
D6	40601
D7	40701
D8	40801
I1 in Amps	60101
I2 in Amps	60201
I3 in Amps	60301
I4 in Amps	60401
I5 in Amps	60501
I6 in Amps	60601
I7 in Amps	60701
I8 in Amps	60801

Table 4-22 Alpha® smart E2 distribution panel SNMP IDs (component type 3)

Field	SNMP ID
Firmware Version	9
V1	10101
V2	10201
I1	20101
I2	20201
T1	30101
T2	30201
D1	40101
D2	40201
D3	40301
D4	40401
D5	40501
D6	40601
D7	40701
D8	40801
D9	40901
D10	41001
D11	41101
D12	41201
D13	41301
D14	41401
D15	41501
D16	41601
D17	41701
D18	41801
D19	41901
D20	42001
D21	42101
D22	42201

Table 4-22 Alpha® smart E2 distribution panel SNMP IDs (component type 3) (continued)

Field	SNMP ID
I1 in Amps	60101
I2 in Amps	60201

Table 4-23 Fan tray SNMP IDs (component type 3)

Field	SNMP ID
Firmware Version	9
D1	40101

Table 4-24 Cordex® shunt multiplexer module SNMP IDs (component type 3)

Field	SNMP ID
Firmware Version	9
I1	20101
I2	20201
I3	20301
I4	20401
I5	20501
I6	20601
I7	20701
I8	20801
I9	20901
I10	21001
I11	21101
I12	21201
I13	21301
I14	21401
I15	21501
I16	21601

Table 4-25 Cordex® HP 6i-ADIO peripheral SNMP IDs (component type 3)

Field	SNMP ID
Firmware Version	9
I1	20101
I2	20201
I3	20301
I4	20401
I5	20501
I6	20601

Table 4-26 FlexAir® thermal controller module SNMP IDs (component type 3)

Field	SNMP ID
Firmware Version	9
Cooling State	51
Heating State	52
V1	10101
T1	30101
T2	30201
T3	30301
T4	30401
T5	30501
Relay 1	50101
Relay 2	50201
Fan 1 RPM	100101
Fan 2 RPM	100201
Fan 3 RPM	100301
Fan 4 RPM	100401
Fan 5 RPM	100501
Fan 6 RPM	100601
Fan 7 RPM	100701
Fan 8 RPM	100801

Table 4-27 Smart bypass SNMP IDs (component type 3)

Field	SNMP ID
Firmware Version	9
Ampacity	11
Bypass State	12
Inverter Feed Breaker	13
Utility-Inverter Sync. Requested	14
Utility Phase L1 Voltage	110200
Utility Phase L2 Voltage	110201
Utility Phase L3 Voltage	110202
Inverter Phase L1 Voltage	110300
Inverter Phase L2 Voltage	110301
Inverter Phase L3 Voltage	110302
AC Load Phase L1 Voltage	110400
AC Load Phase L2 Voltage	110401
AC Load Phase L3 Voltage	110402
Utility Phase L1 Current	120200
Utility Phase L2 Current	120201
Utility Phase L3 Current	120202
Inverter Phase L1 Current	120300
Inverter Phase L2 Current	120301
Inverter Phase L3 Current	120302
AC Load Phase L1 Current	120400
AC Load Phase L2 Current	120401
AC Load Phase L3 Current	120402

Table 4-28 Rectifier module SNMP IDs (component type 4)

Field	SNMP ID
Bay ID	1
Shelf ID	2
Slot ID	3

Table 4-28 Rectifier module SNMP IDs (component type 4) (continued)

Field	SNMP ID
AC Input Voltage	4
Output Current	5
Ambient Temperature	6
Operating Time	7
Mode	8
Firmware Version	9

Table 4-29 Converter module SNMP IDs (component type 5)

Field	SNMP ID
Output Current	1
Input Current	2
Intake Temperature	3
Operating Hours	4
Firmware Version	9

Table 4-30 Battery system SNMP IDs (component type 10)
The componentListStaticName appears as ((BatteryString.XX).YY)

Field	SNMP ID
Voltage	1
Current	2
Power	3
Active Temperature	4
Minimum Temperature	5
Average Temperature	6
Maximum Temperature	7
Battery Mode • 0 = Unknown • 1 = No battery	8

Table 4-30 Battery system SNMP IDs (component type 10)
The componentListStaticName appears as ((BatteryString.XX).YY)
(continued)

Field	SNMP ID
• 2 = Battery disconnected • 3 = Discharging • 5 = Charging • 6 = Test discharging • 10 = Float • 11 = Equalize • 12 = Boost	
Charging	9
Time Remaining in EQ	10
Time Remaining in Boost	11
Time Remaining in BT	12
Battery Temperature	13
Battery Capacity Rating	14
Peukert Exponent	15
Elevated Absorption State	16
Time Remaining in Elevated Absorption	17
Estimated State of Charge	18
Estimated Battery Runtime	19
Estimated Battery Health	20
Conditioning Mode	21
Battery Test Elapsed Time	22
Derated Maximum Charging Current	23
Nominal Charging Current Limit	24
Battery Test State	25
Last Date of Battery Test	26
Battery Error Condition	27
Estimated Maximum Battery Runtime	28
Last Battery Test Start Date	29

Table 4-31 Shunt SNMP IDs (component type 13)

Field	SNMP ID
Current	1

Table 4-32 SNMP destination SNMP IDs (component type 14)

Field	SNMP ID
Destination Enable	1
Destination IP Address	2
Destination Community	3
Destination Port	4
Notification Timeout	5
Notification Retries	6
Notification Type	7
Notification Resend Period	8

Table 4-33 CAN bus SNMP IDs (component type 15)

Field	SNMP ID
Number of Devices	1
Node IDs in Use	2

Table 4-34 Converter system SNMP IDs (component type 16)

Field	SNMP ID
Total Output Current	1
Total Output Power	2
Total Capacity Installed - Current	3
Total Capacity Installed - Power	4
Average Converter Output Voltage	5
Average Converter Input Voltage	6
System Voltage	7
Total Load Current	8
System Number	9

Table 4-34 Converter system SNMP IDs (component type 16) (continued)

Field	SNMP ID
Output Voltage Type	80

Table 4-35 Inverter system SNMP IDs (component type 19)

Field	SNMP ID
Total Output Power	1
Average Output Loading	2
DC Input	3
System Mode	4
Phase 1 Output Power	5
Phase 2 Output Power	6
Phase 3 Output Power	7
Average Output Voltage (Deprecated)	8
DC Input Current	11
DC Input Voltage	12
DC Input Power	13
System on Bypass	14
AC Input Power	15
# Communicating Inverters	30
# Failed Inverters	31
# Replace Fan Inverters	35
# Comms. Lost Inverters	36
# Comms. Lost T2S	37
# T2S Not Accepting Commands	38
# T2S	39
Number of Phases	50
Number of DC Input Groups (Feeds)	51
Supported by All T2S	56
Supported by All Inverters	57
Expected DC Input Current in AC Failure	60

Table 4-35 Inverter system SNMP IDs (component type 19) (continued)

Field	SNMP ID
Highest Phase Loading (VA)	61
AC Output Power (W)	62
Phase 1 Output Power (W)	63
Phase 2 Output Power (W)	64
Phase 3 Output Power (W)	65
Module Size	66
Total Acquired Inverters	67
Number of Redundant Modules	68
Maximum Rated Nominal Output Power (kW)	69
Maximum Rated Nominal Output Power (kVA)	70
Nominal Input Voltage	71
Output Voltage Type	80
Phase 1	
AC Output Power (VA)	1101
Output Voltage	1102
Output Current	1103
Output Frequency	1104
Loading of Installed Power (VA)	1105
Number of Inverters On	1106
Loading of Installed Power (W)	1107
Measured DC Input To Output Power Ratio	1108
AC Input Power (W)	1109
AC Input Power (VA)	1110
AC Output Power (W)	1111
DC Input Power	1112
Current Number of Redundant Inverters	1113
Number of Inverters Detected	1114
Number of Inverters Off	1115
Number of Inverters Failed	1116

Table 4-35 Inverter system SNMP IDs (component type 19) (continued)

Field	SNMP ID
Phase 2	
AC Output Power (VA)	1201
Output Voltage	1202
Output Current	1203
Output Frequency	1204
Loading of Installed Power (VA)	1205
Number of Inverters On	1206
Loading of Installed Power (W)	1207
Measured DC Input to Output Power Ratio	1208
AC Input Power (W)	1209
AC Input Power (VA)	1210
AC Output Power (W)	1211
DC Input Power	1212
Current Number of Redundant Inverters	1213
Number of Inverters Detected	1214
Number of Inverters Off	1215
Number of Inverters Failed	1216
Phase 3	
AC Output Power (VA)	1301
Output Voltage	1302
Output Current	1303
Output Frequency	1304
Loading of Installed Power (VA)	1305
Number of Inverters On	1306
Loading of Installed Power (W)	1307
Measured DC Input to Output Power Ratio	1308
AC Input Power (W)	1309
AC Input Power (VA)	1310
AC Output Power (W)	1311

Table 4-35 Inverter system SNMP IDs (component type 19) (continued)

Field	SNMP ID
DC Input Power	1312
Current Number of Redundant Inverters	1313
Number of Inverters Detected	1314
Number of Inverters Off	1315
Number of Inverters Failed	1316
AC input group 1	
Input Voltage	2101
Input Current	2102
Input Frequency	2103
AC Input Power (VA)	2104
Number of Inverters On	2105
AC Input Power (W)	2106
Number of Inverters Detected	2107
Number of Inverters Off	2108
Number of Inverters Failed	2109
AC input group 2	
Input Voltage	2201
Input Current	2202
Input Frequency	2203
AC Input Power (VA)	2204
Number of Inverters On	2205
AC Input Power (W)	2206
Number of Inverters Detected	2207
Number of Inverters Off	2208
Number of Inverters Failed	2209
AC input group 3	
Input Voltage	2301
Input Current	2302
Input Frequency	2303

Table 4-35 Inverter system SNMP IDs (component type 19) (continued)

Field	SNMP ID
AC Input Power (VA)	2304
Number of Inverters On	2305
AC Input Power (W)	2306
Number of Inverters Detected	2307
Number of Inverters Off	2308
Number of Inverters Failed	2309
DC input group 1	
Input Voltage	3101
Input Current	3102
DC Input Power	3103
Number of Inverters On	3104
Number of Inverters Off	3105
Number of Inverters Failed	3106
Number of Inverters Detected	3107
DC input group 2	
Input Voltage	3201
Input Current	3202
DC Input Power	3203
Number of Inverters On	3204
Number of Inverters Off	3205
Number of Inverters Failed	3206
Number of Inverters Detected	3207
DC input group 3	
Input Voltage	3301
Input Current	3302
DC Input Power	3303
Number of Inverters On	3304
Number of Inverters Off	3305
Number of Inverters Failed	3306

Table 4-35 Inverter system SNMP IDs (component type 19) (continued)

Field	SNMP ID
Number of Inverters Detected	3307
DC input group 4	
Input Voltage	3401
Input Current	3402
DC Input Power	3403
Number of Inverters On	3404
Number of Inverters Off	3405
Number of Inverters Failed	3406
Number of Inverters Detected	3407

Table 4-36 Bypass switch SNMP IDs (component type 20)

Field	SNMP ID
Status	1

Table 4-37 Delay timer SNMP IDs (component type 21)

Field	SNMP ID
Output	1
Delay Time Remaining	2
Trigger	3
Reset	5

Table 4-38 Interval timer SNMP IDs (component type 22)

Field	SNMP ID
Output	1
Start Event	2
Stop Event	4

Table 4-39 Up counter SNMP IDs (component type 23)

Field	SNMP ID
Input	1
Output	2
Reset Input	3
Terminal Reached	4

Table 4-40 Down counter SNMP IDs (component type 24)

Field	SNMP ID
Input	1
Output	2
Initialize Input	3
Counter at Zero	4

Table 4-41 Custom data SNMP IDs (component type 25)

Field	SNMP ID
Equation	1
Custom Data Status	2
Error Position	3
Error Token	4
Expected Token	5
Result as Numeric	6
Result as Boolean	7
Result as Text	8
Text 1 Priority	100
Text 2 Priority	110
Text 3 Priority	120
Text 4 Priority	130
Text 5 Priority	140
Text 6 Priority	150

Table 4-42 Current transducer module SNMP IDs (component type 26)

Field	SNMP ID
Current	1

Table 4-43 Breaker or fuse SNMP IDs (component type 27)

Field	SNMP ID
State	1

Table 4-44 Line power system SNMP IDs (component type 31)

Field	SNMP ID
Total Output Power	1
Modules	2
Average Input Voltage	3
Total Input Current (Est.)	4
Total Input Power (Est.)	5
Maximum Temperature	6
Loads	7
Channels	8
System Number	9
Total Output Current	10
Output Voltage Type	80

Table 4-45 Line power system module SNMP IDs (component type 32)

Field	SNMP ID
Temperature	1
Input Voltage	2
Bay ID	3
Shelf ID	4
Slot ID	5
Firmware Version	9
C1 Output Voltage	80101

Table 4-45 Line power system module SNMP IDs (component type 32) (continued)

Field	SNMP ID
C1 Output Current	80102
C2 Output Voltage	80201
C2 Output Current	80202
C3 Output Voltage	80301
C3 Output Current	80302
C4 Output Voltage	80401
C4 Output Current	80402

Table 4-46 Line power load SNMP IDs (component type 33)

Field	SNMP ID
Channels	1
Channels Enabled	2
Total Channels in Alert	3
Total Output Current	4
Total Output Power	5
Current Capacity	6
Power Capacity	7

Table 4-47 Distribution system SNMP IDs (component type 34)

Field	SNMP ID
Voltage	1
Current	2
Breaker Trips	3
Maximum Temperature	4
Active Alarms	5
Average Input Voltage	6
Total Input Current	7
Output Voltage Type	80

Table 4-48 Distribution panel SNMP IDs (component type 35)

Field	SNMP ID
Voltage	1
Current	2
Active Alarms	3
Overall Breaker Trips	4

Table 4-49 Distribution subsystem SNMP IDs (component type 36)

Field	SNMP ID
Voltage	1
Current	2
Breaker Trips	3
Maximum Temperature	4
Active Alarms	5

Table 4-50 Scheduled action SNMP IDs (component type 40)

Field	SNMP ID
Recurrence	1
End	2
Schedule Status	3
Last Run	4
Next Scheduled Run	5
Total Executed Runs	6
Action	7

Table 4-51 Alpha® FXM HP UPS module SNMP IDs (component type 41)

Field	SNMP ID
Operating Frequency	1
Nominal AC Voltage	2
Rated Output Power	3
Rated Battery Voltage	4

Table 4-51 Alpha® FXM HP UPS module SNMP IDs (component type 41) (continued)

Field	SNMP ID
AC Output Voltage	5
AC Output Frequency	6
AC Output Current	7
AC Output Apparent Power	8
Battery Voltage	9
Battery Current	10
Battery Temperature	11
Elapsed Time on Battery	12
System Mode	13
Inverter Minutes Since Cleared	14
Inverter Count Since Cleared	15
Boost Minutes Since Cleared	16
Boost Count Since Cleared	17
Buck Minutes Since Cleared	18
Buck Count Since Cleared	19
Energy Delivered	20
Output Voltage Type	80

Table 4-52 Change relay SNMP IDs (component type 43)

Field	SNMP ID
Condition Value	1
Relay Status	2
Relay Status When Condition is True	3
Relay Status When Condition is False or Unknown	4

Table 4-53 Change field SNMP IDs (component type 44)

Field	SNMP ID
Condition Value	1
Field Value	2

Table 4-54 General purpose transducer module SNMP IDs (component type 48)

Field	SNMP ID
Calculated Value	1

Table 4-55 Change field to variable SNMP IDs (component type 49)

Field	SNMP ID
Last Error Condition	1
Field Value	2
Field Range	3
Custom Data Value	4
Time to Next Possible Change	5

Table 4-56 Battery string SNMP IDs (component type 50)
The componentListStaticName appears as ((GenericBatteryString.XX).YY)

Field	SNMP ID
Voltage	1
Current	2
Power	3
Minimum Temperature	4
Average Temperature	5
Maximum Temperature	6
Active Temperature	7
Midpoint Voltage	8
Breaker/Fuse	9
Battery Age Estimation: Present Age Rate	10
Battery Age Estimation: Estimated Age	11
Battery Age Estimation: Estimated Time Remaining	12
Battery Age Estimation: Temperature Range 1	13
Battery Age Estimation: Temperature Range 2	14
Battery Age Estimation: Temperature Range 3	15
Battery Age Estimation: Temperature Range 4	16

Table 4-56 Battery string SNMP IDs (component type 50)
The componentListStaticName appears as ((GenericBatteryString.XX).YY)
(continued)

Field	SNMP ID
Battery Age Estimation: Initial Age	17
Battery Age Estimation: Remaining Percent	18

Table 4-57 DC source system SNMP IDs (component type 52)

Field	SNMP ID
Average Voltage	1
Total Current	2
Output Voltage Type	80

Table 4-58 Basic DC source SNMP IDs (component type 53)

Field	SNMP ID
Voltage	1
Current	2
Breaker/Fuse Status	3

Table 4-59 Legacy DC generator system SNMP IDs (component type 53)

Field	SNMP ID
Voltage	1
Current	2
Breaker/Fuse Status	3

Table 4-60 AC source system SNMP IDs (component type 56)

Field	SNMP ID
Average Phase 1 Voltage	1
Average Phase 2 Voltage	2
Average Phase 3 Voltage	3
Output Voltage Type	80

Table 4-61 AC source SNMP IDs (component type 57)

Field	SNMP ID
Number of Phases	1
Phase 1 Voltage	2
Phase 2 Voltage	3
Phase 3 Voltage	4

Table 4-62 Legacy AC generator system SNMP IDs (component type 57)

Field	SNMP ID
Number of Phases	1
Phase 1 Voltage	2
Phase 2 Voltage	3
Phase 3 Voltage	4

Table 4-63 Alpha® external maintenance bypass switch (XMBS) SNMP IDs (component type 62)

Field	SNMP ID
Status	1

Table 4-64 Alpha® FXM HP UPS ADIO peripheral SNMP IDs (component type 63)

Field	SNMP ID
Firmware Version	9
Input 1	20
Input 2	21
Input 3	22
Relay C1	30
Relay C2	31
Relay C3	32
Relay C4	33
Relay C5	34
Relay C6	35

Table 4-64 Alpha® FXM HP UPS ADIO peripheral SNMP IDs (component type 63) (continued)

Field	SNMP ID
Temperature	40

Table 4-65 Thermal system SNMP IDs (component type 67)

Field	SNMP ID
Internal Temperature	1
External Temperature	2
System Temperature 1	3
System Temperature 2	4
System Temperature 3	5

Table 4-66 Cordex® HP 3kW hyperboost converter module SNMP IDs (component type 69)

Field	SNMP ID
Bay ID	1
Shelf ID	2
Slot ID	3
Battery/Aux. Voltage	4
Battery/Aux. Current	5
Battery/Aux. Power	6
Battery/Aux. Bus Energy Delivered	7
Load Bus Voltage	8
Firmware Version	9
Load Bus Current	10
Load Bus Power	11
Load Bus Current Loading	12
Load Bus Power Loading	13
Load Bus Power Energy Delivered	14
Ambient Temperature	15
Operating Time	16

Table 4-67 Cordex® CXPS-HSS hyperboost system SNMP IDs (component type 70)

Field	SNMP ID
System Number	1
Battery Bus Voltage	2
Load Bus Voltage	3
Total Battery Bus Current	4
Total Battery Bus Power	5
Total Load Bus Current	6
Total Load Bus Power	7
Average Converter Battery Bus Voltage	8
Average Converter Load Bus Voltage	9
Average Ambient Temperature	10
Total Capacity Installed - Battery Current	11
Total Capacity Installed - Load Current	12
Total Capacity Installed - Power	13
# Acquired Converters	14
# Charging Converters	15
# Discharging Converters	16
# Failed Converters	17
# Minor Alerts Converters	18
# Comms. Lost Converters	19
# Controllable Converters	20
# Converters in Bootloader	21
# Fan Fail Converters	22
# Thermal Shutdown Converters	23
# Temp. Sensor Fail Converters	24
# Module Insertion Fail Converters	25
# Battery Overvoltage Protection Converters	26
# Battery Bus LVD Active Converters	27
# Load Bus Overvoltage Protection Converters	28
# Load Bus LVD Active Converters	29

Table 4-67 Cordex® CXPS-HSS hyperboost system SNMP IDs (component type 70) (continued)

Field	SNMP ID
# Calibration Data Corrupted Converters	30
# Configuration Error Converters	31
# Converters with Internal Fault	32
# Battery Fail Converters	33
# Battery Output Current Limit Converters	34
# Load Bus Power Limit Converters	35
# Load Bus Current Limit Converters	36
# Temperature Derating Converters	37
# Ramp Test Failed Converters	38
Battery Voltage	39
Battery Current	40
Battery Temperature	41
Estimated State of Charge Percent	42
Estimated Battery Runtime	43
Estimated Battery Health Percent	44
Average Distribution Voltage	45
Total Distribution Current	46
Total Distribution Power	47
Total Distribution Feeder Fuse Rating	48
Total Distribution Utilization	49
# Unused Breakers	50
# Tripped Breakers	51
# On - Not in Inventory Breakers	52
# Normal Breakers	53
# Overloaded Breakers	54
Active Voltage Regulation State	55
DC System AC Off Status	56
External DC System AC Off Status	57
Output Voltage Type	80

Table 4-68 AC generator system SNMP IDs (component type 74)

Field	SNMP ID
Number of Phases	1
Phase 1 Voltage	2
Phase 2 Voltage	3
Phase 3 Voltage	4
External Status Signal	10
Startups in Time Period	20
Total Startups	21
Total Runtime	22
Generator State	40
Generator Runtime	41
Last Generator Command	42

Table 4-69 DC generator system SNMP IDs (component type 75)

Field	SNMP ID
Voltage	1
Current	2
Breaker/Fuse Status	3
External Status Signal	10
Startups in Time Period	20
Total Startups	21
Total Runtime	22
Generator State	40
Generator Runtime	41
Last Generator Command	42

Table 4-70 Generator system start equation SNMP IDs (component type 76)

Field	SNMP ID
Equation	1
Custom Data Status	2

Table 4-70 Generator system start equation SNMP IDs (component type 76) (continued)

Field	SNMP ID
Error Position	3
Error Token	4
Expected Token	5
Result as Numeric	6
Result as Boolean	7
Start Equation	20
Call to Start	21
Result as Boolean, Stabilized	22

Table 4-71 Generator system stop equation SNMP IDs (component type 77)

Field	SNMP ID
Equation	1
Custom Data Status	2
Error Position	3
Error Token	4
Expected Token	5
Result as Numeric	6
Result as Boolean	7
Stop Equation	20
Call to Stop	21
Result as Boolean, Stabilized	22

Table 4-72 Generator system start condition; Generator system stop condition SNMP IDs (component type 78)

Field	SNMP ID
Value to Test	1
Test Time Remaining	2
Value	3

Table 4-73 User SNMP IDs (component type 79)

Field	SNMP ID
Name	1
Description	2
Alias	3
User Role	4

Table 4-74 Matrix™ distribution breaker panel SNMP IDs (component type 97)

Field	SNMP ID
Overcurrent Warning Threshold	1
Overcurrent Alert threshold	2
Firmware Version	9
Bus A Voltage	100
Bus A Current	101
Bus A Feeder Fuse Rating	102
Bus B Voltage	200
Bus B Current	201
Bus B Feeder Fuse Rating	202
Breaker A1 State	10101
Breaker A1 Current	10102
Breaker A1 Rating	10103
Breaker A2 State	10201
Breaker A2 Current	10202
Breaker A2 Rating	10203
Breaker A3 State	10301
Breaker A3 Current	10302
Breaker A3 Rating	10303
Breaker A4 State	10401
Breaker A4 Current	10402
Breaker A4 Rating	10403
Breaker A5 State	10501

Table 4-74 Matrix™ distribution breaker panel SNMP IDs (component type 97) (continued)

Field	SNMP ID
Breaker A5 Current	10502
Breaker A5 Rating	10503
Breaker A6 State	10601
Breaker A6 Current	10602
Breaker A6 Rating	10603
Breaker A7 State	10701
Breaker A7 Current	10702
Breaker A7 Rating	10703
Breaker A8 State	10801
Breaker A8 Current	10802
Breaker A8 Rating	10803
Breaker B1 State	20101
Breaker B1 Current	20102
Breaker B1 Rating	20103
Breaker B2 State	20201
Breaker B2 Current	20202
Breaker B2 Rating	20203
Breaker B3 State	20301
Breaker B3 Current	20302
Breaker B3 Rating	20303
Breaker B4 State	20401
Breaker B4 Current	20402
Breaker B4 Rating	20403
Breaker B5 State	20501
Breaker B5 Current	20502
Breaker B5 Rating	20503
Breaker B6 State	20601
Breaker B6 Current	20602
Breaker B6 Rating	20603

Table 4-74 Matrix™ distribution breaker panel SNMP IDs (component type 97) (continued)

Field	SNMP ID
Breaker B7 State	20701
Breaker B7 Current	20702
Breaker B7 Rating	20703
Breaker B8 State	20801
Breaker B8 Current	20802
Breaker B8 Rating	20803

Table 4-75 Environment manager system SNMP IDs (component type 99)

Field	SNMP ID
Cooling Mode	1
Internal Temperature	2
External Temperature	3
Reference External Temperature	4
Fan Count	5
Air Conditioner Count	6
Staff Comfort Mode Time Remaining	7
Purge Mode Status	8

Table 4-76 Generic fan SNMP IDs (component type 100)

Field	SNMP ID
Fan Number	1
Fan State	2
Digital Feedback Signal	3
Fan Speed	4
Energy Consumption Voltage	5
Pulse Count	6
Energy Consumption	7
Runtime Last 15 Minutes	8
Daily Usage Percent	9

Table 4-76 Generic fan SNMP IDs (component type 100) (continued)

Field	SNMP ID
Total Runtime Minutes	10
Total Usage Percent	11
Total Activation Count	12

Table 4-77 Generic air conditioner unit SNMP IDs (component type 101)

Field	SNMP ID
Fan Number	1
Fan State	2
Digital Feedback Signal	3
Fan Speed	4
Energy Consumption Voltage	5
Pulse Count	6
Energy Consumption	7
Runtime Last 15 Minutes	8
Daily Usage Percent	9
Total Runtime Minutes	10
Total Usage Percent	11
Turn on Temp. in Air Conditioning	12
Turn off Temp. in Air Conditioning	13

Table 4-78 Lithium-ion battery modules SNMP IDs (component type 102)

Field	SNMP ID
Operating State	1
State of Charge	2
State of Health	3
DC Output Current	4
Battery Pack Voltage	5
Maximum Cell Voltage	6
Minimum Cell Voltage	7

Table 4-78 Lithium-ion battery modules SNMP IDs (component type 102) (continued)

Field	SNMP ID
Maximum Module Temp.	8
Minimum Module Temp.	10
Maximum Charging Current	11
Nominal DC Output Voltage	12
Nominal DC Output Power	13
Derated DC Output Current Limit at Present	14
Derated DC Output Power Limit at Present	15
DC Energy Delivered	16
Full Charged Capacity	18
80% SoC Charge Voltage	19
100% SoC Charge Voltage	20
Disconnect Voltage	21
Number of Minor Alerts	22
Number of Charge Blocking Alerts	23
Number of Discharge Blocking Alerts	24
Number of Lockout Alerts	25
Assigned Bay ID	26
Assigned Shelf ID	27
Assigned Slot ID	28
Estimated Battery Runtime	29

Table 4-79 Lithium-ion battery system SNMP IDs (component type 103)

Field	SNMP ID
Voltage	1
Current	2
Power	3
Battery Mode	4
Battery Capacity Rating	5
Active Temperature	6

Table 4-79 Lithium-ion battery system SNMP IDs (component type 103) (continued)

Field	SNMP ID
Minimum Temperature	7
Maximum Temperature	8
Charging Stage	9
Average State of Charge	10
Average State of Health	11
System Battery Temperature	13
Number of Acquired Battery Modules	14
Number of Charging Battery Modules	15
Number of Discharging Battery Modules	16
Number of Failed Battery Modules	17
Number of Battery Modules With Alerts	22
Number of Non-Communicating Battery Modules	23
Number of Controllable Battery Modules	24
Number of Battery Modules in Bootloader	25
Battery Discharge Time Remaining	26
Number of Lockout Battery Modules	27
Number of Charge Blocked Battery Modules	28
Number of Discharge Blocked Battery Modules	29
Number of Battery Modules with Minor Alerts	30
Minimum Cell Voltage	31
Maximum Cell Voltage	32
Load Shifting Status	33
AC Power (Est.)	34
Load Shifted (24 Hours)	35
Load Shifted (Monthly)	36
Total Load Shifted (Aggregate)	37
Peak Shaving Status	38
Peak Shaving DC Power	39
Peak Shaving AC Power (Est.)	40

Table 4-79 Lithium-ion battery system SNMP IDs (component type 103) (continued)

Field	SNMP ID
Peak AC Power (Daily)	41
Estimated Battery Runtime	42
Charge Current Limit	43
Load Shifting Projected Reserved Time	45
Peak Shaving Projected Reserved Time	46

Table 4-80 EnVision™ energy router SNMP IDs (component type 105)

Field	SNMP ID
Bay ID	1
Shelf ID	2
Slot ID	3
Number of Slots	4
System Bus Voltage	5
System Bus Current	6
System Current Max. Rating	7
Firmware Version	9
Ambient Temperature	11
S1 Status	101
S1 Serial Number	103
S1 Device ID	104
S1 Firmware Version	105
S1 Model	106
S1 CAN Parent	107
S1 Comm. Status	108
S1 Load Voltage	110
S1 Load Current	111
S1 Load Power	112
S1 Current Rating	113
S1 Utilization	116

Table 4-80 EnVision™ energy router SNMP IDs (component type 105) (continued)

Field	SNMP ID
S1 Slots Occupied	117
S1 Time to Turn On	121
S1 Time to Turn Off	122
S1 Minimum Power Usage Yesterday	123
S1 Hours Off Yesterday	124
S1 Estimated Energy Saving Yesterday	125
S1 Estimated Energy Saving Last Week	126
S1 Estimated Energy Saving Last month	127
S1 Time Span to Turn Off	128
This pattern repeats for EnVision™ smart switch modules (SSM) S2 to S12 by adding 30 to these IDs for each smart switch module.	

Table 4-81 EnVision™ energy router distribution subsystem SNMP IDs (component type 106)

Field	SNMP ID
Average Bus Voltage	1
Sum of Bus Currents	2
System Voltage Bus A	3
System Current Bus A	4
System Voltage Bus B (only applicable in dual-bus system)	5
System Current Bus B (only applicable in dual-bus system)	6
Ambient Temperature	7
Average SSM Voltage	8
Sum of SSM Currents	9
Shelf Current Rating	10
Bus A Current Rating	11
Bus B Current Rating (only applicable in dual-bus system)	12
Max. Installed Capacity	13
Max. Functional Capacity	14
Average Utilization	15

Table 4-81 EnVision™ energy router distribution subsystem SNMP IDs (component type 106) (continued)

Field	SNMP ID
Number of Installed SSMs	16
Number of Functional SSMs	17
Number of Empty Slots	18
Number of Tripped SSMs	19
Active Alarms	20
Number of Schedules Enabled	21
Total Energy Saved	22
Total Energy Saved 7 Days	23
Total Energy Saved 30 Days	24

Table 4-82 Cordex® HP protocol bridge peripheral SNMP IDs (component type 107)

Field	SNMP ID
Battery List Change	2
Number of Battery Modules	3
Number of Charge Blocked Battery Modules	4
Number of Fully Charged Battery Modules	5
Number of Failed Battery Modules	6
Maximum State of Charge	7
Average State of Charge	8
Firmware Version	9
Minimum State of Charge	10
Maximum State of Health	11
Average State of Health	12
Minimum State of Health	13
Total Battery Current	14
Maximum Battery Current	15
Average Battery Current	16
Minimum Battery Current	17

Table 4-82 Cordex® HP protocol bridge peripheral SNMP IDs (component type 107) (continued)

Field	SNMP ID
Maximum Temperature	18
Average Temperature	19
Minimum Temperature	20
Maximum Cycle Count	21
Average Cycle Count	22
Minimum Cycle Count	23
Maximum Battery Pack Voltage	24
Average Battery Pack Voltage	25
Minimum Battery Pack Voltage	26

Table 4-83 Third-party lithium-ion battery module SNMP IDs (component type 108)

Field	SNMP ID
Battery Current	1
Battery Communication Status	2
State of Charge	3
State of Health	4
Cycle Count	5
Device Address	6
Active Temperature	7
Breaker/Fuse	8
Fully Charged Status	9
Battery Voltage	10

Table 4-84 Third-party lithium-ion battery system SNMP IDs (component type 109)

Field	SNMP ID
Voltage	1
Current	2
Power	3
Battery Mode	4

Table 4-84 Third-party lithium-ion battery system SNMP IDs (component type 109) (continued)

Field	SNMP ID
• 0 = Unknown • 1 = No battery • 2 = Disconnected • 3 = UPS Discharging • 5 = Charging • 10 = Float • 13 = Battery Discharging • 14 = Recharge Delay • 16 = Peak Shaving • 17 = Load Shifting • 18 = Wait to Recharge	
Battery Capacity Rating	5
Active Temperature	6
Minimum Temperature	7
Maximum Temperature	8
Breaker/Fuse	9
Average State of Charge	10
Battery Discharge Time Remaining	11
Battery Discharge Last Error • 0 = No Error • 8 = AC Off • 9 = Rectifier Comm Lost • 10 = Float Requested • 12 = No Battery • 14 = Discharge No Load	12
Battery Discharge State	13
Battery Recharge Delay State	14
Battery Recharge Delay Remaining	15
Number of Batteries Acquired	16

Table 4-84 Third-party lithium-ion battery system SNMP IDs (component type 109) (continued)

Field	SNMP ID
Number of Batteries Failed	17
Number of Batteries in Comm Lost	21
Number of Batteries To Control	22
Average Estimated Battery Runtime	23
Charge Current Limit	24
System Battery Temperature	25
Average State of Health	26
Charging Stage	27
Load Shifting Status • 0 = Disabled • 1 = Active • 2 = Inactive • 3 = Error • 4 = Waiting to Recharge • 6 = Recharge	33
Load Shifting Estimated AC Power Usage	34
Peak Shaving DC Power Lower Limit	37
Peak Shaving Status • 0 = Disabled • 1 = Active • 2 = Inactive • 3 = Error • 4 = Waiting To Recharge	38
DC Power Usage	39
Peak Shaving Estimated AC Power Usage	40
Peak Shaving Peak AC Daily Usage	41
Load Shifting Projected Reserved Time	45
Peak Shaving Project Reserved Time	46

Table 4-85 Bluetooth® device SNMP IDs (component type 110)

Field	SNMP ID
MAC Address	1
Signal Strength	2
Firmware Version	3
Comm. Status	4
Battery Block Voltage	5
Battery Block Temperature	6
Battery Block SoC (State of Charge)	15

Table 4-86 EnVision™ eBridge protocol converter peripheral SNMP IDs (component type 113)

Field	SNMP ID
Rectifier List Change	2
Number of Rectifiers	3
Number of Rectifiers with Valid HW Address	4
Average AC Voltage	5
Average AC Frequency	6
Average DC Voltage	7
Total DC Current	8
Firmware Version	9
Total DC Rated Current	10
Total DC Current Limit at Present	11
Active Ambient Temperature	12

Table 4-87 SiteFlex® rectifier module SNMP IDs (component type 114)

Field	SNMP ID
Bay ID	1
Shelf ID	2
Slot ID	3
AC Input Voltage	4

Table 4-87 SiteFlex® rectifier module SNMP IDs (component type 114) (continued)

Field	SNMP ID
Output Current	5
Ambient Temperature	6
Operating Hours	7
Mode	8
Firmware Version	9

Table 4-88 SiteFlex® DC system peripheral SNMP IDs (component type 115)

Field	SNMP ID
Total Rectifier O/P Current	1
Total Output Power	2
Total Capacity Installed - Current	3
Total Capacity Installed - Power	4
Average DC Bus Output Voltage	5
Average Rectifier AC Input Voltage	6
Estimated AC Phase 1 Voltage	7
Estimated AC Phase 2 Voltage	8
Estimated AC Phase 3 Voltage	9
System Voltage	10
Total Load Current	11
Battery Voltage	12
Battery Current	13
Battery Temperature	14
System Number	15
Estimated Required Capacity in Watts	16
Estimated Required Capacity in Amps	17
Estimated Available Capacity in Watts	18
Estimated Available Capacity in Amps	19
Estimated Redundant Capacity in Watts	20
Estimated Redundant Capacity in Amps	21

Table 4-88 SiteFlex® DC system peripheral SNMP IDs (component type 115) (continued)

Field	SNMP ID
Estimated Standby Capacity in Watts	22
Estimated Standby Capacity in Amps	23
Average Power	24
Modules Supplying Power	25
Modules in Standby	26
Estimated Capacity Remaining in Amps	28
Estimated Capacity Remaining in Watts	29
Estimated State of Charge Percent	30
Estimated Battery Runtime	31
Estimated Battery Health Percent	32
Number of Acquired Rectifiers	33
Number of Sourcing Rectifiers	34
Number of Failed Rectifiers	35
Number of Rectifiers with Minor Alerts	36
Number of Rectifiers in Comms. Lost	37
Number of Rectifiers in Comms. Normal	38
Number of AC Failed Rectifiers	39
Number of Rectifiers in Current Limit	42
Number of Rectifiers with Fan Fail	43
Maximum Rectifier Ambient Temperature	45
Power Save	56
Module Rotates In	57
Estimated AC Power Usage	58
Estimated Time to Rotate all Modules	69
Output Voltage Type	80

Table 4-89 Utility cost type SNMP IDs (component type 116)

Field	SNMP ID
Utility Cost Type	1

Table 4-89 Utility cost type SNMP IDs (component type 116) (continued)

Field	SNMP ID
Max Range Unit	2

Table 4-90 PowerSafe® iON SB1048P05J battery module subsystem SNMP IDs (component type 119)

Field	SNMP ID
Voltage	1
Current	2
Power	3
Battery Mode • 0 = Unknown • 1 = No battery • 2 = Disconnected • 3 = UPS Discharging • 5 = Charging • 10 = Float • 13 = Battery Discharging • 14 = Recharge Delay • 16 = Peak Shaving • 17 = Load Shifting • 18 = Wait to Recharge	4
Battery Capacity Rating	5
Active Temperature	6
Minimum Temperature	7
Maximum Temperature	8
Breaker/Fuse	9
Average State of Charge	10
Battery Discharge Time Remaining	11
Battery Discharge Last Error • 0 = No Error • 8 = AC Off	12

Table 4-90 PowerSafe® iON SB1048P05J battery module subsystem SNMP IDs (component type 119) (continued)

Field	SNMP ID
• 9 = Rectifier Comm Lost • 10 = Float Requested • 12 = No Battery • 14 = Discharge No Load	
Battery Discharge State	13
Battery Recharge Delay State	14
Battery Recharge Delay Remaining	15
Number of Batteries Acquired	16
Number of Batteries Failed	17
Number of Batteries in Comm Lost	21
Number of Batteries to Control	22
Average Estimated Battery Runtime	23
Charge Current Limit	24
System Battery Temperature	25
Average State of Health	26
Charging Stage	27
Load Shifting Status • 0 = Disabled • 1 = Active • 2 = Inactive • 3 = Error • 4 = Waiting to Recharge • 6 = Recharge	33
Load Shifting Estimated AC Power Usage	34
Peak Shaving DC Power Lower Limit	37
Peak Shaving Status • 0 = Disabled • 1 = Active	38

Table 4-90 PowerSafe® iON SB1048P05J battery module subsystem SNMP IDs (component type 119) (continued)

Field	SNMP ID
• 2 = Inactive • 3 = Error • 4 = Waiting to Recharge	
DC Power Usage	39
Peak Shaving Estimated AC Power Usage	40
Peak Shaving Peak AC Daily Usage	41
Load Shifting Projected Reserved Time	45
Peak Shaving Project Reserved Time	46

4.6.4. Published SNMP Get/Set fields

The fields listed here provide read and write access. See the **Published SNMP fields** chapter for available read-only fields.

The tables provided here define the **Component** items, and the **Data Field Type** indexing values, when using the **ALPHA-RESOURCE-MIB**. Refer to the section, *Using the Alpha® resource MIB* for detailed explanation of the index dependencies of tables within the MIB. Refer to the **SNMP Reference** section for a short explanation of the **Index Calculation** technique.

Specific OIDs are not available for the defined data fields. The dynamic nature of controllers do not allow for a static definition of a component reference number. The component reference number is currently not configurable.

The **Data Field** reference IDs are statically assigned and are unique to the **Component**. These numbers, combined with the other dependencies of the Alpha® resource MIB tables, provide currently published data and future data without the need to change MIB files.

Notice: *Some of the field names may repeat due to field items that are in repeated groups. Their indexes would remain unique to identify the individual fields. For example, AC input phase fields would have repeating items.*

Table 4-91 EnVision™ Elite controller SNMP IDs (component type 1)

Field	SNMP ID
Name	1
Description	2

Table 4-91 EnVision™ Elite controller SNMP IDs (component type 1) (continued)

Field	SNMP ID
Site Number	10
Technical Support Number	11
Contact Name	12
Contact Number	13
Street	14
City	15
ZIP Code/Postal Code	16
Region/State/Province	17
Country	18
Latitude	19
Longitude	20
Altitude	21
Time Zone	22
Daylight Saving Method	23
Remote Configuration Lockout Enable	24
Lockout Override Time	25
On Alarm Cutoff Button Press	26
Alarm Cutoff Period	27
Alarm Activation Delay at Startup	28
Speaker Enable	29
Time Server IP Address	30
Default Login Language	31
Shelf Layout Order	32
Name Customization	33
Power Flow Configuration Suggestions	34
Visibility of User Strings	35
LCD Dashboard Option	36
LCD Timeout	37
Require Login for Sensitive Information	38

Table 4-91 EnVision™ Elite controller SNMP IDs (component type 1) (continued)

Field	SNMP ID
Screen Rotation Angle	39
USB Maintenance Actions	40
Append a Date String to Filenames	41
Add the Controller Name to Filenames	42
System Summary Option	43
LCD Dashboard Text Size	50
LCD Dashboard Text Alignment	51
Configuration File Identifier	52
Web Server Custom Port	53
Secure Web Server Custom Port	54
Web Connection Protocol	55
USB Port	56
Syslog Agent	57
Facility Value	58
Inhibit Alarm Summary Relays During Maintenance	60
Include Uppercase Letter	61
Include Lowercase Letter	62
Include Number	63
Include Special Character	64
Reject Common Passwords	65
Bluetooth Enable	66
Bluetooth Polling	67
Bluetooth Polling Interval	68
Password Expiry Time • 0 = Never • 1 = 30 Days • 2 = 90 Days • 3 = 180 Days	69
SNMP Synchronize Alarm Parameters	70

Table 4-91 EnVision™ Elite controller SNMP IDs (component type 1) (continued)

Field	SNMP ID
SNMPv3 Authentication Protocol	71
SNMPv3 Privacy Protocol	72
SNMPv3 Security Name	73
SNMPv3 Security	74
Suspicious Login Threshold	75
Suspicious Login Time Interval	76
Enable User Lockout	77
User Lockout Time • 0 = 5 Minutes • 1 = 15 Minutes • 2 = 30 Minutes • 3 = 60 Minutes	78
Password Help Contact	79
Modbus Agent	80
Modbus Byte Order	81
Modbus Limited Data Set Device ID	82
Modbus Internet Protocol	83
Require Multi-factor Authentication	84
Email Client Enable	90
SMTP Server Address	91
SMTP Server Port	92
SNMP Client Domain Name	93
SMTP Server User Name	94
Configuration Restore Points Enable	100
System Model	105
System Part Number	106
Additional System Model	110
Additional Part Number	111
System User Notification Enable	112

Table 4-91 EnVision™ Elite controller SNMP IDs (component type 1) (continued)

Field	SNMP ID
Notification Title	113
Notification Content 1	114
Notification Content 2	115
Notification Content 3	116
Notification Content 4	117
Notification Content 5	118
Notification Content 6	119
Notification Content 7	120
Notification Content 8	121
Notification Content 9	122
Notification Content 10	123
Web Session Inactivity Timeout	125
Billing Company Label	130
Billing Period Day Of Month	131
Billing Period Cycle	132
Wi-Fi Allowed	150
Wi-Fi IP Address	151
Wi-Fi Idle Timeout	152
CMP Enable	160
CMP Initialization Protection Method	161
CMP Shared Secret	162
CMP Public Key Infrastructure (PKI) URL	163
CMP Common Name	164
CMP Certificate Authority Name	165
CMP Automatic Key Renewal Threshold	166
CMP Key Algorithm	167
CMP Certificate DNS Name	168
CMP Include IP Addresses	169
Remote HTTPS Private Key Upload	180

Table 4-91 EnVision™ Elite controller SNMP IDs (component type 1) (continued)

Field	SNMP ID
Remote HTTPS Certificate Upload	181
Single Sign-On	200
Attribute Name	201
Group Attribute Value for Admin User Role	202
Group Attribute Value for Accounts User Role	203
Group Attribute Value for Operator User Role	204
Group Attribute Value for Restricted Operator User Role	205
Group Attribute Value for Guest User Role	206
SAML Service Provider Entity Id	207
SAML Metadata File Upload	208
OIDC Auth URL	250
OIDC Token URL	251
OIDC Client ID	252
OIDC Issuer URL	253
OIDC JSON Web Key Set (JWKS) Upload	254

Table 4-92 DC system SNMP IDs (component type 2)

Field	SNMP ID
Name	1
Description	2
System Number	3
System Serial Number	4
System Modbus Device ID	5
Rectifier Assignment Rule	10
Nominal Input Voltage	11
System Float Voltage	12
Extended Ranges (advanced)	13
Rectifier Minimum Test Voltage	14
Rectifier Safe Mode Voltage	15

Table 4-92 DC system SNMP IDs (component type 2) (continued)

Field	SNMP ID
Rectifier Overvoltage Protection Threshold	16
Rectifier System Start Delay	17
Rectifier Module Start Delay	18
Rectifier Current Limit	19
Rectifier Power Limit	20
Rectifier Overload Alert	21
Rectifier Ramp Test	22
Voltage Regulation Enable	23
Load Sharing Enable	24
Power Save Enable	25
Module Power for Maximum Efficiency	26
Rotate One Module Period	27
Rectifier Fast Soft-Start	28
Rectifier High Voltage Alert Threshold (deprecated)	29
Alert Masking Policy	30
Power Conversion Efficiency	32

Table 4-93 ADIO module SNMP peripheral IDs (component type 3)

Field	SNMP ID
Name	1
Description	2
V1 Name	101
V2 Name	102
V3 Name	103
V4 Name	104
V5 Name	105
V6 Name	106
V7 Name	107
V8 Name	108

Table 4-93 ADIO module SNMP peripheral IDs (component type 3) (continued)

Field	SNMP ID
I1 Name	201
I2 Name	202
I3 Name	203
I4 Name	204
I5 Name	205
I6 Name	206
I7 Name	207
I8 Name	208
T1 Name	301
T2 Name	302
T3 Name	303
T4 Name	304
T5 Name	305
D1 Name	401
D2 Name	402
D3 Name	403
D4 Name	404
D5 Name	405
D6 Name	406
D7 Name	407
D8 Name	408
D9 Name	409
D10 Name	410
D11 Name	411
D12 Name	412
D13 Name	413
D14 Name	414
D15 Name	415
D16 Name	416

Table 4-93 ADIO module SNMP peripheral IDs (component type 3) (continued)

Field	SNMP ID
D17 Name	417
D18 Name	418
D19 Name	419
D20 Name	420
D21 Name	421
D22 Name	422
T1 (Celsius) Name	501
T2 (Celsius) Name	502
K1 Name	601
K2 Name	602
K3 Name	603
K4 Name	604
K5 Name	605
K6 Name	606
K7 Name	607
K8 Name	608
K9 Name	609
K10 Name	610
K11 Name	611
K12 Name	612
Temperature Sensor #1 Failure Processing	3010100
Temperature Sensor #1 Failure Priority	3010101
Temperature Sensor #1 Failure Parameter 1	3010102
Temperature Sensor #1 Failure Custom Name Parameter 2	3010103
Temperature Sensor #2 Failure Processing	3010200
Temperature Sensor #2 Failure Priority	3010201
Temperature Sensor #2 Failure Parameter 1	3010202
Temperature Sensor #2 Failure Custom Name Parameter 2	3010203
Temperature Sensor #3 Failure Processing	3010300

Table 4-93 ADIO module SNMP peripheral IDs (component type 3) (continued)

Field	SNMP ID
Temperature Sensor #3 Failure Priority	3010301
Temperature Sensor #3 Failure Parameter 1	3010302
Temperature Sensor #3 Failure Custom Name Parameter 2	3010303
Temperature Sensor #4 Failure Processing	3010400
Temperature Sensor #4 Failure Priority	3010401
Temperature Sensor #4 Failure Parameter 1	3010402
Temperature Sensor #4 Failure Custom Name Parameter 2	3010403

Notice: *The number of inputs might be different for each type of ADIO module.*

Table 4-94 FlexAir® thermal controller SNMP IDs (component type 3)

Field	SNMP ID
Name	1
Description	2
Fan 1 Replacement Date	10
Fan 2 Replacement Date	11
Fan 3 Replacement Date	12
Fan 4 Replacement Date	13
Fan 5 Replacement Date	14
Fan 6 Replacement Date	15
Fan 7 Replacement Date	16
Fan 8 Replacement Date	17

Table 4-95 Rectifier module SNMP IDs (component type 4)

Field	SNMP ID
Rectifier Phase	10

Table 4-96 Alpha® T2S inverter controller module SNMP IDs (component type 8)

Field	SNMP ID
Name	1
Description	2

Table 4-97 Battery system SNMP IDs (component type 10)

Field	SNMP ID
Name	1
Description	2
Modbus Device ID	3
Number of Cells per String	10
Charging Threshold Override	11
Discharging Threshold Override	12
Hysteresis Override	13
Equalize Duration	14
Equalize Voltage	15
Boost Duration	16
Boost Voltage	17
Battery Test Termination Voltage	18
Battery Test Timeout	19
Battery Test Termination on State of Charge Enable	20
Battery Test Termination State of Charge	21
Auto Battery Test Interval Between Tests	22
Auto Battery Test Start Hour	23
Auto Battery Test Days to Retry Failed Test	24
Remote Battery Test Enable	25
Temperature Compensation in Float Enable	26
Temperature Compensation in Equalize Enable	27
Temperature Compensation in Absorption Enable	28
Temperature Compensation Slope	29
Minimum Voltage Breakpoint	30

Table 4-97 Battery system SNMP IDs (component type 10) (continued)

Field	SNMP ID
Maximum Voltage Breakpoint	31
Charge Current Control Enable	32
Charge Current Limit (C/X)	33
Battery Estimation Enable	34
Load Model	35
Elevated Absorption Charging Enable	36
Elevated Absorption Arming Threshold	37
Elevated Absorption Voltage	38
Elevated Absorption Termination Threshold	39
Elevated Absorption Timeout	40
Battery Block Voltage Imbalance Group Enable	41
Battery Block Voltage Imbalance Group Priority	42
Battery Block Voltage Imbalance Group Threshold	43
Battery Block Voltage Imbalance Group Hysteresis	44
Battery Block Voltage Imbalance Group Parameter1	45
Battery Block Voltage Imbalance Group Parameter2	46
Battery Block Comms Lost Group Enable	47
Battery Block Comms Lost Group Priority	48
Battery Block Comms Lost Group Parameter1	49
Battery Block Comms Lost Group Parameter2	50
Battery Block Temperature High Group Enable	51
Battery Block Temperature High Group Priority	52
Battery Block Temperature High Group Threshold	53
Battery Block Temperature High Group Hysteresis	54
Battery Block Temperature High Group Parameter1	55
Battery Block Temperature High Group Parameter1	56
Battery Block Temperature Low Group Enable	57
Battery Block Temperature Low Group Priority	58
Battery Block Temperature Low Group Threshold	59

Table 4-97 Battery system SNMP IDs (component type 10) (continued)

Field	SNMP ID
Battery Block Temperature Low Group Hysteresis	60
Battery Block Temperature Low Group Parameter1	61
Battery Block Temperature Low Group Parameter1	62
Temperature Compensation Enable	63

Table 4-98 Disconnect SNMP IDs (component type 11)

Field	SNMP ID
Name	1
Description	2
Disconnect Enable	10
Disconnect Threshold	11
Connect Threshold	12
Disconnect On Time after AC Fail	13
Time after AC Fail Disconnect Threshold	14
Disconnect on Battery State of Charge	15
State of Charge Disconnect Threshold	16

Table 4-99 Load SNMP IDs (component type 12)

Field	SNMP ID
Name	1
Description	2

Table 4-100 Shunt SNMP IDs (component type 13)

Field	SNMP ID
Name	1
Description	2
Range in Amps	10
Range in Millivolts	11
Offset	12

Table 4-101 SNMP destination SNMP IDs (component type 14)

Field	SNMP ID
Name	1
Description	2
Destination Enable	10
IP Address	11
Community	12
Port	13
Notification Timeout	14
Notification Retries	15
Notification Resend Period	16

Table 4-102 CAN bus SNMP IDs (component type 15)

Field	SNMP ID
Name	1
Description	2
Bus Enable	10

Table 4-103 Converter system SNMP IDs (component type 16)

Field	SNMP ID
Name	1
Description	2
System Number	3
System Serial Number	4
Assignment Rule	10
Converter Output Voltage	11
Converter Input Voltage Shutdown	12
Converter Input Voltage Restart	13
Converter Overvoltage Protection	14
Converter System Start Delay	15
Converter Current Limit Alert	16

Table 4-104 Digital user alarm SNMP IDs (component type 17)

Field	SNMP ID
Name	1
Description	2

Table 4-105 Threshold user alarm SNMP IDs (component type 18)

Field	SNMP ID
Name	1
Description	2
Alarm When Value	10

Table 4-106 Inverter system SNMP IDs (component type 19)

Field	SNMP ID
Name	1
Description	2
System Number	3
System Serial Number	4
System Modbus Device ID	5
Assignment Rule	10
Commissioning Method	11
Number of Shelves per Phase	12
Manual DC Mode Enable	13
Desired DC Input	14
AC Input Power Limit Enable	15
AC Input Power Limit	16
DC Input Voltage Low Limit	17
DC Input Voltage Restart Limit	18
Number of Slots per Shelf	19

Table 4-107 Bypass switch SNMP IDs (component type 20)

Field	SNMP ID
Name	1
Description	2

Table 4-108 Delay timer SNMP IDs (component type 21)

Field	SNMP ID
Name	1
Description	2
Delay	10
Auto Reset	11
Output True When	12
Retriggerable	13

Table 4-109 Interval timer SNMP IDs (component type 22)

Field	SNMP ID
Name	1
Description	2

Table 4-110 Up counter SNMP IDs (component type 23)

Field	SNMP ID
Name	1
Description	2
Terminal Value	3
Persist Counter Value Through Restart	4

Table 4-111 Down counter SNMP IDs (component type 24)

Field	SNMP ID
Name	1
Description	2
Initial Value	3

Table 4-111 Down counter SNMP IDs (component type 24) (continued)

Field	SNMP ID
Persist Counter Value Through Restart	4

Table 4-112 Custom data SNMP IDs (component type 25)

Field	SNMP ID
Name	1
Description	2
Equation	10
Text 1 Name	100
Text 1 Logic	101
Text 1 Limit	102
Text 2 Name	110
Text 2 Logic	111
Text 2 Limit	112
Text 3 Name	120
Text 3 Logic	121
Text 3 Limit	122
Text 4 Name	130
Text 4 Logic	131
Text 4 Limit	132
Text 5 Name	140
Text 5 Logic	141
Text 5 Limit	142
Text 6 Name	150
Text 6 Logic	151
Text 6 Limit	152

Table 4-113 Current transducer module SNMP IDs (component type 26)

Field	SNMP ID
Name	1

Table 4-113 Current transducer module SNMP IDs (component type 26) (continued)

Field	SNMP ID
Description	2
Range in Amps	10
Range in Volts	11
Offset	12

Table 4-114 Breaker or fuse SNMP IDs (component type 27)

Field	SNMP ID
Name	1
Description	2
Usage	10
Size	11
Wire Gauge	12
Destination	13

Table 4-115 Email destination SNMP IDs (component type 29)

Field	SNMP ID
Name	1
Description	2
From Address	10
To Address	11
Send Interval	12

Table 4-116 Auxiliary system SNMP IDs (component type 30)

Field	SNMP ID
Name	1
Description	2

Table 4-117 Line power system SNMP IDs (component type 31)

Field	SNMP ID
Name	1
Description	2
System Number	3
System Serial Number	4
Assignment Rule	10
Input Voltage Low Shutdown	11
Input Voltage Low Restart	12
Primary Output Display	13
Channel Shutdown Alarm Group Enable	14
Channel Shutdown Alarm Group Priority	15
Channel Shutdown Alarm Group Parameter 1	16
Channel Shutdown Alarm Group Parameter 2	17
Module Failure Alarm Group Enable	18
Module Failure Alarm Group Priority	19
Module Failure Alarm Group Parameter 1	20
Module Failure Alarm Group Parameter 2	21

Table 4-118 Line power load SNMP IDs (component type 33)

Field	SNMP ID
Name	1
Description	2
Downstream Loads	11

Table 4-119 Distribution system SNMP IDs (component type 34)

Field	SNMP ID
Name	1
Description	2
System Number	3
System Serial Number	4

Table 4-120 Distribution panel SNMP IDs (component type 35)

Field	SNMP ID
Name	1
Description	2
Fuse Number	10
Fuse Size	11
Fuse Max. Amperage	12

Table 4-121 Distribution subsystem SNMP IDs (component type 36)

Field	SNMP ID
Name	1
Description	2
Serial Number	4

Table 4-122 Reference load SNMP IDs (component type 37)

Field	SNMP ID
Name	1
Description	2

Table 4-123 Scheduled action SNMP IDs (component type 40)

Field	SNMP ID
Name	1
Description	2

Table 4-124 Alpha® FXM HP UPS module SNMP IDs (component type 41)

Field	SNMP ID
Name	1
Description	2
System Number	3
System Serial Number	4
Low Battery Threshold	10

Table 4-124 Alpha® FXM HP UPS module SNMP IDs (component type 41) (continued)

Field	SNMP ID
Power Outage Alarm Delay	11
AC Input Qualification (Re-transfer) Time	12
AC Input Sense	13
Automatic Voltage Regulation	14
AVR Disabled AC Input High Limit	15
AVR Disabled AC Input Low Limit	16
System Float Voltage	17
Green (OK) LED	18
AC Output Shutdown Operation	19
AC Output Shutdown Auto On Delay	20
External Fan On Temperature	21
External Fan Off Hysteresis	22
AC Output Upper Disconnect Voltage	23
AC Output Lower Disconnect Voltage	24
Maximum Time On Inverter Enable	25
Maximum Time On Inverter	26
Inverter Shutdown Voltage	27
Inverter Manual Start Up Voltage	28
Keep Alive Enable	29
Keep Alive Startup Delay	30
Keep Alive Destination IP Address	31
Keep Alive Protocol Timeout	32
Keep Alive Protocol Interval	33
Keep Alive Maximum Protocol Retries	34
Keep Alive Action Duration	35
Keep Alive Maximum Action Retries	36
Keep Alive Failure Restart Delay	37
Keep Alive Protocol	38
Keep Alive Protocol TCP Port	39

Table 4-124 Alpha® FXM HP UPS module SNMP IDs (component type 41) (continued)

Field	SNMP ID
Keep Alive Fail Action	40
Start Up Option after Triggered Shutdown	41
Auto Start Up Delay after Triggered Shutdown	42

Table 4-125 Disconnect with time of day SNMP IDs (component type 42)

Field	SNMP ID
Name	1
Description	2
Disconnect Enable	10
Delay	11

Table 4-126 Change relay SNMP IDs (component type 43)

Field	SNMP ID
Name	1
Description	2

Table 4-127 Change field SNMP IDs (component type 44)

Field	SNMP ID
Name	1
Description	2
Field Value When Condition True	10
Field Value When Condition False	11

Table 4-128 General purpose transducer module SNMP IDs (component type 48)

Field	SNMP ID
Name	1
Description	2
Minimum Input Voltage	10
Maximum Input Voltage	11

Table 4-128 General purpose transducer module SNMP IDs (component type 48) (continued)

Field	SNMP ID
Minimum Output Voltage	12
Maximum Output Voltage	13
Output Offset	14

Table 4-129 Change field to variable SNMP IDs (component type 49)

Field	SNMP ID
Name	1
Description	2
Field Value Change Interval	10

Table 4-130 Battery string SNMP IDs (component type 50)

Field	SNMP ID
Name	1
Description	2
Capacity Rating	10
Open Circuit Voltage	11
Peukert Exponent	12

Table 4-131 Timing relay SNMP IDs (component type 51)

Field	SNMP ID
Name	1
Description	2
Relay Enable	10
Relay Activation Delay	11

Table 4-132 DC source system SNMP IDs (component type 52)

Field	SNMP ID
Name	1
Description	2

Table 4-133 Basic DC source SNMP IDs (component type 53)

Field	SNMP ID
Name	1
Description	2

Table 4-134 Legacy DC generator system SNMP IDs (component type 53)

Field	SNMP ID
Name	1
Description	2
Generator Control Enable	10
Start Voltage Threshold	11
Stop Voltage Threshold	12
Minimum Runtime	13
Maximum Runtime	14
Start Condition 1 Name	20
Start Condition 1 Enable	21
Start Condition 1 Logic	22
Start Condition 1 Limit	23
Stop Condition 1 Name	30
Stop Condition 1 Enable	31
Stop Condition 1 Logic	32
Stop Condition 1 Limit	33
Start Condition 2 Name	40
Start Condition 2 Enable	41
Start Condition 2 Logic	42
Start Condition 2 Limit	43
Stop Condition 2 Name	50
Stop Condition 2 Enable	51
Stop Condition 2 Logic	52
Stop Condition 2 Limit	53
Start Condition 3 Name	60

Table 4-134 Legacy DC generator system SNMP IDs (component type 53) (continued)

Field	SNMP ID
Start Condition 3 Enable	61
Start Condition 3 Logic	62
Start Condition 3 Limit	63
Stop Condition 3 Name	70
Stop Condition 3 Enable	71
Stop Condition 3 Logic	72
Stop Condition 3 Limit	73

Table 4-135 Data subscription SNMP IDs (component type 54)

Field	SNMP ID
Name	1
Description	2
IP Address	10

Table 4-136 Generic disconnect SNMP IDs (component type 55)

Field	SNMP ID
Name	1
Description	2
Disconnect Enable	10
Voltage Disconnect Threshold	11
Voltage Connect Threshold	12
Allow Disconnect During Battery Test	13
Require AC Input for Reconnect	14
Required Time to Stay Disconnected	15
Disconnect Condition 1 Name	20
Disconnect Condition 1 Enable	21
Disconnect Condition 1 Logic	22
Disconnect Condition 1 Limit	23
Reconnect Condition 1 Name	30

Table 4-136 Generic disconnect SNMP IDs (component type 55) (continued)

Field	SNMP ID
Reconnect Condition 1 Enable	31
Reconnect Condition 1 Logic	32
Reconnect Condition 1 Limit	33
Disconnect Condition 2 Name	40
Disconnect Condition 2 Enable	41
Disconnect Condition 2 Logic	42
Disconnect Condition 2 Limit	43
Reconnect Condition 2 Name	50
Reconnect Condition 2 Enable	51
Reconnect Condition 2 Logic	52
Reconnect Condition 2 Limit	53
Disconnect Condition 3 Name	60
Disconnect Condition 3 Enable	61
Disconnect Condition 3 Logic	62
Disconnect Condition 3 Limit	63
Reconnect Condition 3 Name	70
Reconnect Condition 3 Enable	71
Reconnect Condition 3 Logic	72
Reconnect Condition 3 Limit	73

Table 4-137 AC source system SNMP IDs (component type 56)

Field	SNMP ID
Name	1
Description	2

Table 4-138 AC source SNMP IDs (component type 57)

Field	SNMP ID
Name	1
Description	2

Table 4-139 Legacy AC generator system SNMP IDs (component type 57)

Field	SNMP ID
Name	1
Description	2
Generator Control Enable	10
Start Voltage Threshold	11
Stop Voltage Threshold	12
Minimum Runtime	13
Maximum Runtime	14
Start Condition 1 Name	20
Start Condition 1 Enable	21
Start Condition 1 Logic	22
Start Condition 1 Limit	23
Stop Condition 1 Name	30
Stop Condition 1 Enable	31
Stop Condition 1 Logic	32
Stop Condition 1 Limit	33
Start Condition 2 Name	40
Start Condition 2 Enable	41
Start Condition 2 Logic	42
Start Condition 2 Limit	43
Stop Condition 2 Name	50
Stop Condition 2 Enable	51
Stop Condition 2 Logic	52
Stop Condition 2 Limit	53
Start Condition 3 Name	60
Start Condition 3 Enable	61
Start Condition 3 Logic	62
Start Condition 3 Limit	63
Stop Condition 3 Name	70
Stop Condition 3 Enable	71

Table 4-139 Legacy AC generator system SNMP IDs (component type 57) (continued)

Field	SNMP ID
Stop Condition 3 Logic	72
Stop Condition 3 Limit	73

Table 4-140 Scheduled time span SNMP IDs (component type 61)

Field	SNMP ID
Name	1
Description	2
Days to Run	10
Start Time	11
End Time	12
Sunday Select	13
Monday Select	14
Tuesday Select	15
Wednesday Select	16
Thursday Select	17
Friday Select	18
Saturday Select	19

Table 4-141 Alpha® external maintenance bypass switch (XMBS) SNMP IDs (component type 62)

Field	SNMP ID
Name	1
Description	2

Table 4-142 Thermal system SNMP IDs (component type 67)

Field	SNMP ID
Name	1
Description	2
Thermal Controller Assignment Rule	10

Table 4-142 Thermal system SNMP IDs (component type 67) (continued)

Field	SNMP ID
Filter Replacement Date	11
Internal Temperature Name	100
External Temperature Name	101
System Temperature 1 Name	102
System Temperature 2 Name	103
System Temperature 3 Name	104

Table 4-143 Battery disconnect with latching contactor SNMP IDs (component type 68)

Field	SNMP ID
Name	1
Description	2
Disconnect Enable	10
Voltage Disconnect Threshold	11
Voltage Connect Threshold	12

Table 4-144 Cordex® CXPS-HSS hyperboost system SNMP IDs (component type 70)

Field	SNMP ID
Name	1
Description	2
System Number	3
System Serial Number	4
Converter Assignment Rule	10
Primary Output Display	11
Battery Overvoltage Protection Limit	12
Battery Safe Voltage	13
Battery Low Disconnect Voltage	14
Battery Fail Voltage	15
Battery Safe Charging Current	16
Load Bus Overvoltage Protection Limit	17

Table 4-144 Cordex® CXPS-HSS hyperboost system SNMP IDs (component type 70) (continued)

Field	SNMP ID
Load Bus Output Voltage	18
Load Bus Safety Startup Voltage	19
Load Bus Ramp Test	20
Battery Bus Float Voltage	21
Battery Bus Maximum Output Current	22
Battery Bus Reconnect Voltage	23
Load Bus Input Reconnect Voltage	24
Active Voltage Regulation Enable	25
Active Voltage Regulation Setpoint	26

Table 4-145 AC generator system SNMP IDs (component type 74)

Field	SNMP ID
Name	1
Description	2
Generator Control Enable	10
Minimum Runtime	11
Equation Stability Delay	20
Statistics Time Period	30

Table 4-146 DC generator system SNMP IDs (component type 75)

Field	SNMP ID
Name	1
Description	2
Generator Control	10
Minimum Runtime	11
Equation Stability Delay	20
Statistics Time Period	30

Table 4-147 Generator system start equation SNMP IDs (component type 76)

Field	SNMP ID
Name	1
Description	2
Equation	10
Start Logic	20

Table 4-148 Generator system stop equation SNMP IDs (component type 77)

Field	SNMP ID
Name	1
Description	2
Equation	10
Stop Logic	20

Table 4-149 Generator system start/stop condition SNMP IDs (component type 78)

Field	SNMP ID
Name	1
Description	2
Enable	10
True If	11
Limit	12

Table 4-150 User SNMP IDs (component type 79)

Field	SNMP ID
Name	1
Description	2
MFA Shared Secret	3
MFA Shared Secret Key	4
Alias	6
User Role	7
Password	8

Table 4-151 Matrix™ distribution breaker panel SNMP IDs (component type 97)

Field	SNMP ID
Name	1
Description	2
Breaker A1 Name	3
Breaker A2 Name	4
Breaker A3 Name	5
Breaker A4 Name	6
Breaker A5 Name	7
Breaker A6 Name	8
Breaker A7 Name	9
Breaker A8 Name	10
Breaker B1 Name	11
Breaker B2 Name	12
Breaker B3 Name	13
Breaker B4 Name	14
Breaker B5 Name	15
Breaker B6 Name	16
Breaker B7 Name	17
Breaker B8 Name	18

Table 4-152 Syslog destination SNMP IDs (component type 98)

Field	SNMP ID
Name	1
Description	2
Destination Enable	10
Server IP Address	11
Server Port	12
Server Transport Protocol	13
Server RFC Version	14

Table 4-153 Environment manager system SNMP IDs (component type 99)

Field	SNMP ID
Name	1
Description	2
Modbus Device ID	5
Cooling Device Start Delay	10
Cooling Device Stability Delay	11
Fan Startup Min. Duration	12
Fan Startup Max. Duration	13
Air Conditioner Startup Min. Duration	14
Air Conditioner Startup Max. Duration	15
Air Conditioner Decompression Duration	16
Economy Temperature Threshold	17
Air Conditioner Temperature Threshold	18
Emergency Temperature Threshold	19
Emergency Temperature Min. Threshold	20
Staff Comfort Mode Duration	21
Staff Comfort Temperature Off Threshold	22
Staff Comfort Temperature On Threshold	23
Temperature Deviation Value	24
Purge Mode Voltage Trigger Threshold	25
Economy Cooling Fail Temperature Deviation	26
Main Fail Shutdown Duration	27

Table 4-154 Generic fan SNMP IDs (component type 100)

Field	SNMP ID
Name	1
Description	2
Turn on Temperature in Economy Cooling	10
Turn off Temperature in Economy Cooling	11
RPM Calculation Slope	12

Table 4-154 Generic fan SNMP IDs (component type 100) (continued)

Field	SNMP ID
RPM Calculation Offset	13
Fan Min. Running Speed	14
Fan Max. Display Speed	15
Energy per Pulse	16
Energy Consumption Voltage Threshold	17
Fan Minimum Display Speed	18

Table 4-155 Generic air conditioner unit SNMP IDs (component type 101)

Field	SNMP ID
Name	1
Description	2
Energy per Pulse	16
Voltage Threshold	17

Table 4-156 PowerSafe® iON lithium-ion battery SNMP IDs (component type 102)

Field	SNMP ID
Name	1
Description	2

Table 4-157 PowerSafe® iON lithium-ion battery system SNMP IDs (component type 103)

Field	SNMP ID
Name	1
Description	2
System Modbus Device ID	5
Charging Threshold Override	11
Discharging Threshold Override	12
Hysteresis Override	13
Battery Discharge Timeout	14
Battery Discharge Termination Voltage	15

Table 4-157 PowerSafe® iON lithium-ion battery system SNMP IDs (component type 103) (continued)

Field	SNMP ID
Battery Discharge Termination on State of Charge Enable	16
Battery Discharge Termination State of Charge	17
Battery Recharge Delay Timeout	18
Maximum Charging Current	20
Module Lockout Alarm Enable	21
Module Lockout Alarm Priority	22
Module Lockout Alarm Parameter 1	23
Module Lockout Alarm Parameter 2	24
Charge Blocked Alarm Enable	25
Charge Blocked Alarm Priority	26
Charge Blocked Alarm Parameter 1	27
Charge Blocked Alarm Parameter 2	28
Discharge Blocked Alarm Enable	29
Discharge Blocked Alarm Priority	30
Discharge Blocked Alarm Parameter 1	31
Discharge Blocked Alarm Parameter 2	32
Activate Load Shifting	33
Start State Of Charge	34
Minimum Backup State of Charge	35
Activate Peak Shaving	36
DC Power Upper Limit	37
DC Power Hysteresis	38
Start State Of Charge	39
Minimum Backup State of Charge	40
Billed Peak Duration	41

Table 4-158 Website proxy SNMP IDs (component type 104)

Field	SNMP ID
Name	1

Table 4-158 Website proxy SNMP IDs (component type 104) (continued)

Field	SNMP ID
Description	2
Address	3
Username	4

Table 4-159 EnVision™ energy router SNMP IDs (component type 105)

Field	SNMP ID
Name	1
Description	2
S1 Name	100
S1 Description	114
S1 Trip Current	115
S1 Wire Gauge	118
S1 Load Priority	119
S1 Scheduling Enabled	120
This pattern repeats for EnVision™ smart switch modules (SSM) S2 to S12 by adding 30 to these IDs for each smart switch module.	

Table 4-160 EnVision™ energy router distribution subsystem SNMP IDs (component type 106)

Field	SNMP ID
Name	1
Description	2
Serial Number	3
Input Feeder Fuse Rating	4
Smart Switch Module Tripped Alarm Processing	10
Smart Switch Module Tripped Priority	11
Smart Switch Module Tripped Parameter 1	12
Smart Switch Module Tripped Custom Name Parameter 2	13
Smart Switch Module Hardware Fault Alarm Processing Enable	14
Smart Switch Module Hardware Fault Alarm Processing Priority	15

Table 4-160 EnVision™ energy router distribution subsystem SNMP IDs (component type 106) (continued)

Field	SNMP ID
Smart Switch Module Hardware Fault Alarm Processing Parameter 1	16
Smart Switch Module Hardware Fault Alarm Processing Parameter 2	17
Smart Switch Module Short Circuit Alarm Processing Enable	18
Smart Switch Module Short Circuit Alarm Processing Priority	19
Smart Switch Module Short Circuit Alarm Processing Parameter 1	20
Smart Switch Module Short Circuit Alarm Processing Parameter 2	21
Smart Switch Module Overtemperature Alarm Processing Enable	22
Smart Switch Module Over Temperature Alarm Processing Priority	23
Smart Switch Module Overtemperature Alarm Processing Parameter 1	24
Smart Switch Module Overtemperature Alarm Processing Parameter 2	25
Smart Switch Module High Utilization Alarm Processing Enable	26
Smart Switch Module High Utilization Alarm Processing Priority	27
Smart Switch Module High Utilization Alarm Processing Parameter 1	28
Smart Switch Module High Utilization Alarm Processing Parameter 2	29
Smart Switch Module Turned off Alarm Processing Enable	30
Smart Switch Module Turned off Alarm Processing Priority	31
Smart Switch Module Turned off Alarm Processing Parameter 1	32
Smart Switch Module Turned off Alarm Processing Parameter 2	33
Smart Switch Module Locked out Alarm Processing Enable	34
Smart Switch Module Locked out Alarm Processing Priority	35
Smart Switch Module Locked out Alarm Processing Parameter 1	36
Smart Switch Module Locked out Alarm Processing Parameter 2	37
Smart Switch Module Invalid Config. Alarm Processing Enable	38
Smart Switch Module Invalid Config. Alarm Processing Priority	39
Smart Switch Module Invalid Config. Alarm Processing Parameter 1	40
Smart Switch Module Invalid Config. Group Parameter 2	41

Table 4-161 Cordex® HP protocol bridge peripheral SNMP IDs (component type 107)

Field	SNMP ID
Name	1
Description	2
Modbus Function Code	3
Duplex Mode Selection	4
Baud Rate	5
Stop Bits	6
Parity	7
Battery Address Range 1 Low	8
Battery Address Range 1 High	9
Battery Address Range 2 Low	10
Battery Address Range 2 High	11
State of Charge Register Address	12
State of Charge Value Type	13
State of Charge Byte Swap	14
State of Charge Offset	15
State of Charge Scale Factor	16
State of Health Register Address	17
State of Health Value Type	18
State of Health Byte Swap	19
State of Health Offset	20
State of Health Scale Factor	21
Battery Current Register Address	22
Battery Current Value Type	23
Battery Current Byte Swap	24
Battery Current Offset	25
Battery Current Scale Factor	26
Temperature Register Address	27
Temperature Value Type	28
Temperature Byte Swap	29

Table 4-161 Cordex® HP protocol bridge peripheral SNMP IDs (component type 107) (continued)

Field	SNMP ID
Temperature Offset	30
Temperature Scale Factor	31
Cycle Count Register Address	32
Cycle Count Value Type	33
Cycle Count Byte Swap	34
Fully Charged Alerts Register 1 Address	35
Fully Charged Alerts Register 1 Mask	36
Charged Blocked Alerts Register 1 Address	37
Charged Blocked Alerts Register 1 Mask	38
Charged Blocked Alerts Register 2 Address	39
Charged Blocked Alerts Register 2 Mask	40
Failure Alerts Register 1 Address	41
Failure Alerts Register 1 Mask	42
Failure Alerts Register 2 Address	43
Failure Alerts Register 2 Mask	44
Battery Pack Voltage Register Address	45
Battery Pack Voltage Value Type	46
Battery Pack Voltage Byte Swap	47
Battery Pack Voltage Offset	48
Battery Pack Voltage Scale Factor	49

Table 4-162 Third-party lithium-ion battery module SNMP IDs (component type 108)

Field	SNMP ID
Name	1
Description	2
Bay ID	3
Shelf ID	4
Slot ID	5

Table 4-163 Third-party lithium-ion battery system SNMP IDs (component type 109)

Field	SNMP ID
Name	1
Description	2
Modbus Device ID	5
Charging Threshold Override	11
Discharging Threshold Override	12
Hysteresis Override	13
Battery Discharge Timeout	14
Battery Discharge Termination Voltage	15
Battery Discharge Termination on SoC	16
Battery Discharge Termination SoC	17
Battery Recharge Delay Timeout	18
Total Battery Capacity	19
Total Max. Charge Current Setpoint	20
Activate Load Shifting	33
Start State Of Charge	34
Minimum Backup State of Charge	35
Activate Peak Shaving	36
DC Power Upper Limit	37
DC Power Hysteresis	38
Start State Of Charge	39
Minimum Backup State of Charge	40
Billed Peak Duration	41

Table 4-164 Bluetooth® device SNMP IDs (component type 110)

Field	SNMP ID
Battery Serial Number	1
Bay ID	2
Shelf ID	3
Slot ID	4

Table 4-165 EnVision™ eBridge protocol converter peripheral SNMP IDs (component type 113)

Field	SNMP ID
Name	1
Description	2

Table 4-166 SiteFlex® rectifier module SNMP IDs (component type 114)

Field	SNMP ID
Name	1
Description	2
AC Input Phase	10

Table 4-167 SiteFlex® DC system SNMP IDs (component type 115)

Field	SNMP ID
Name	1
Description	2
System Number	3
System Serial Number	4
System Modbus Device ID	5
Rectifier Assignment Rule	10
Nominal Input Voltage	11
System Float Voltage	12
Rectifier Safe Mode Voltage	15
Rectifier Overvoltage Protection Threshold	16
Rectifier Module Start Delay	18
Rectifier Current Limit	19
Rectifier Power Limit	20
Voltage Regulation Enable	23
Power Save Enable	25
Module Power for Maximum Efficiency	26
Rotate One Module Period	27

Table 4-167 SiteFlex® DC system SNMP IDs (component type 115) (continued)

Field	SNMP ID
Alert Masking Policy	30
Safe Mode Current Limit	33

Table 4-168 Utility cost type SNMP IDs (component type 116)

Field	SNMP ID
Name	1
Description	2
Currency	3

Table 4-169 Utility cost price tier SNMP IDs (component type 117)

Field	SNMP ID
Period	1
Tier	2
MaxRange	3
Price	4

Table 4-170 Utility cost days distribution SNMP IDs (component type 118)

Field	SNMP ID
Days	1
January Time Slot Periods	2
February Time Slot Periods	3
March Time Slot Periods	4
April Time Slot Periods	5
May Time Slot Periods	6
June Time Slot Periods	7
July Time Slot Periods	8
August Time Slot Periods	9
September Time Slot Periods	10
October Time Slot Periods	11

Table 4-170 Utility cost days distribution SNMP IDs (component type 118) (continued)

Field	SNMP ID
November Time Slot Periods	12
December Time Slot Periods	13

Table 4-171 PowerSafe® iON SB1048P05J battery module subsystem SNMP IDs (component type 119)

Field	SNMP ID
Name	1
Description	2
Modbus Device ID	5
Charging Threshold Override	11
Discharging Threshold Override	12
Hysteresis Override	13
Battery Discharge Timeout	14
Battery Discharge Termination Voltage	15
Battery Discharge Termination on SoC	16
Battery Discharge Termination SoC	17
Battery Recharge Delay Timeout	18
Total Battery Capacity	19
Total Max Charge Current Setpoint	20
Activate Load Shifting	33
Start State of Charge	34
Minimum Backup State of Charge	35
Activate Peak Shaving	36
DC Power Upper Limit	37
DC Power Hysteresis	38
Start State of Charge	39
Minimum Backup State of Charge	40
Billed Peak Duration	41

Table 4-172 Ethernet port SNMP IDs (component type 120)

Field	SNMP ID
Name	1
Description	2
IPv4 Static Address	10

4.6.5. Published SNMP Command fields

The fields listed here are write only and invoke an associated command when written a non zero value.

The following tables define the available commands per component.

Table 4-173 Battery system commands SNMP IDs (component type 10)

Field	SNMP ID
Battery Test Start	1
Battery Test Stop	2

Table 4-174 EnVision™ energy router commands SNMP IDs (component type 105)

Field	SNMP ID
SSM 1 On	0
SSM 1 Off	1
SSM 2 On	2
SSM 2 Off	3
This pattern repeats for EnVision™ smart switch modules (SSM) SSM 3 to SSM 12.	

Table 4-175 Ethernet port commands SNMP IDs (component type 120)

Field	SNMP ID
SNMP IPV4 Address Change Verification	1

4.7. Differences between SNMP versions

SNMPv1

SNMPv1 was the first development of the SNMP protocol supporting five core protocol data units (PDUs): GET request, SET request, GETNEXT request, RESPONSE, and TRAP. With limited security, SNMPv1 provides the basic form of communication over SNMP.

SNMPv1 use TRAPs as its form of notification to report activities occurring in the SNMP agent to any defined NMS. The SNMPv1 TRAPs are unsecured and limited in use, usually restricted to TRAPs like device start up, device shutdown, linkup, and linkdown.

A description can be found in Request for Comments 1157 (RFC 1157) document.

SNMPv2

In addition to the protocol data units (PDUs) supported by SNMPv1, SNMPv2 supports two additional PDUs: GETBULK request and INFORM request.

A description can be found in RFC 1901.

Four variations of SNMPv2 were defined to handle different security:

- Original SNMPv2 (SNMPv2p)
- Community-based SNMPv2 (SNMPv2c)
- User-based SNMPv2 (SNMPv2u)
- SNMPv2 star (SNMPv2*)

The controller supports the community-based variation (SNMPv2c).

The word TRAP refers to SNMPv1 TRAPs, an unsolicited reporting protocol to report events occurring in the agent.

SMPV2 does not define the same set of TRAPs, like start up, and uses a new data format for reporting events. This new format is referred to as a NOTIFICATION.

INFORM type NOTIFICATIONs are supported in SNMPv2. INFORMS are acknowledged form of TRAPs providing a higher level of integrity to the reporting of an event.

The controller supports SNMPv2c NOTIFICATIONs and GET requests, which are compatible SNMPv1 GET requests as well as limited compatibility with SNMPv1 TRAPs.

RFC 1908 covers compatibility between SNMPv1 and SNMPv2.

The following table summarizes the difference between an SNMPv1 TRAP and an SNMPv2 NOTIFICATION.

Table 4-176 SNMPv1 traps versus SNMPv2 notification

SNMPv1 trap	SNMPv2 notification
Contains the agent address.	Does not contain the agent address.
Has information about the specific TRAP and generic TRAP information.	Has the TRAP OID in the second VarBind.

Table 4-176 SNMPv1 traps versus SNMPv2 notification (continued)

SNMPv1 trap	SNMPv2 notification
Does not have an error index and status.	Has an error index and status.
Does not support acknowledged TRAPs.	Supports acknowledged NOTIFICATIONs.

Another difference in an SNMPv1 NMS, is the way it performs a MIB WALK. When doing a WALK with an SNMPv1 NMS tool, it is necessary to filter out empty values that show up in a sparsely populated area of a MIB.

SNMPv3

SNMPv3 was developed to significantly improve security. SNMPv3 includes a requirement to sign in or authenticate. The password of the user account admin or a security name is used as authentication key or encryption key to secure the SNMPv3 connection. In addition, authentication encryption protocol (MD5, SHA-1 or SHA-256) and privacy encryption protocol (DES, AES-128 or AES-256) are used to secure the authentication and data transfer. A description can be found in:

- RFC 3410 Introduction and Applicability Statements for Internet Standard Management Framework
- RFC 3411 An Architecture for Describing SNMP Management Frameworks
- RFC 3412 Message Processing and Dispatching
- RFC 3413 SNMP Applications
- RFC 3414 User-based Security Model
- RFC 3415 View-based Access Control Model
- RFC 3416 Version 2 of SNMP Protocol Operations
- RFC 3417 Transport Mappings.

Note: *Access to certain security-related fields requires SNMPv3 security to be enabled. These fields cannot be read or modified when the controller is configured for SNMPv1 or SNMPv2. Sensitive values such as passwords, authentication keys, and other credentials are masked and are not exposed through SNMP regardless of the SNMP version in use.*

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