Configuring an Altivar® 71 Variable Speed Drive on an Ethernet/IP Network

Retain for future use.

Overview

An Altivar® 71 (ATV71) variable speed drive can be integrated into an Allen-Bradley Ethernet/IP network using a Woodhead GATEway. This gateway allows for multi-Ethernet connections of various types as well as a single serial connection. The ATV71 drive can connect to the gateway using the on-board Modbus® port or through the Ethernet TCP/IP communication card. This instruction bulletin outlines the software configurations for both the Modbus® port and the Modbus® TCP/IP connections to the ATV71 drive. However, it does not provide instructions for using PowerLogic® PowerSuite™ programming software or Allen-Bradley products.

Presumption

This bulletin is written for individuals familiar with PowerSuite™ software and networked ATV71 drives. If you are not familiar with this software or network operation, please consult your system administrator before attempting to connect or configure an ATV71 drive to the Ethernet.

Requirements

The following hardware and software is required:

Hardware

- An ATV71 drive appropriately sized for the particular application.
- Ethernet communication card, Schneider Electric part number: VW3A3310.
- Woodhead GATEway product for multi-Ethernet networks and a mono-serial network, part number: APP-ESP-GTW. Obtain the module from an authorized Daniel Woodhead distributor).
- An Allen-Bradley ControlLogix ENBT/A EtherNet/IP module. Obtain the module from an authorized Allen-Bradley distributor.

Software

- PowerSuite version 2.3.0 or higher.
- applicom GATEway software, version 1.3.
- RSLogix 5000 programming software and accessories purchased from an authorized Allen-Bradley distributor.
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Safety Information

Notice

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards, or to call attention to information that clarifies or simplifies a procedure.

A lightning bolt or ANSI man symbol in a “Danger” or “Warning” safety label on the equipment indicates an electrical hazard which, as indicated below, can or will result in personal injury if the instructions are not followed.

The exclamation point symbol in a safety message in a bulletin indicates potential personal injury hazards. Obey all safety messages introduced by this symbol to avoid possible injury or death.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚡</td>
<td>Lightning Bolt</td>
</tr>
<tr>
<td>⬇️</td>
<td>ANSI Man</td>
</tr>
<tr>
<td>⚠️</td>
<td>Exclamation Point</td>
</tr>
</tbody>
</table>

⚠️ DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠️ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, can result in death or serious injury.

⚠️ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, can result in minor or moderate injury.

CAUTION, used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, can result in property damage.
Qualified Personnel

For the protection of personnel and equipment, a qualified person must perform the procedures detailed in this bulletin.

A qualified person is one who has skills and knowledge related to the construction and operation of this electrical equipment and the installation, and has received safety training to recognize and avoid the hazards involved. Refer to the most current release of NFPA 70E®, “Standard for Electrical Safety in the Workplace®,” for safety training requirements.

In addition, the person must be:

- Able to read, interpret, and follow the instructions and precautions in this data bulletin and the other documentation referenced.
- Able to use the required tools listed in this data bulletin in a safe and correct manner.

Before You Begin

Do not use this product on machinery lacking effective point-of-operation guarding. Lack of effective point-of-operation guards on a machine can result in serious injury to the operator of that machine.

! WARNING

UNGUARDED MACHINERY CAN CAUSE SERIOUS INJURY

- Do not use this software and related automation equipment on equipment which does not have point-of-operation protection.
- Do not reach into machinery during operation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

This automation equipment and related software is used to control a variety of industrial processes. The type or model of automation equipment suitable for each application will vary depending on factors such as the control function required, degree of protection required, production methods, unusual conditions, and government regulations. In some applications, more than one processor may be required, as when backup redundancy is needed.

Only the user can be aware of all the conditions and factors present during set up, operation, and maintenance of the machine; therefore, only the user can determine the automation equipment and the related safeties and interlocks which can be properly used. When selecting automation and control equipment and related software for a particular application, the user should refer to the applicable local and national standards and regulations. The National Safety Council’s Accident Prevention Manual (nationally recognized in the United States of America) also provides much useful information.

In some applications, such as packaging machinery, additional operator protection such as point-of-operation guarding must be provided. This is necessary if the operator's hands and other parts of the body are free to enter the pinch points or other hazardous areas and serious injury can occur. Software products alone cannot protect an operator from injury. For this reason, the software cannot be substituted for or take the place of point-of-operation protection.
Ensure that the appropriate safeties and mechanical/electrical interlocks related to point-of-operation protection have been installed and are operational before placing the equipment into service. All interlocks and safeties related to point-of-operation protection must be coordinated with the related automation equipment and software programming.

NOTE: Coordination of safeties and mechanical/electrical interlocks for point-of-operation protection is outside the scope of the Function Block Library, System User Guide, or other implementation referenced in this documentation.

Start-up and Test

Before using electrical control and automation equipment for regular operation after installation, the system should be given a start-up test by qualified personnel to verify correct operation of the equipment. It is important that arrangements for such a check be made and that enough time is allowed to perform complete and satisfactory testing.

Follow all start-up tests recommended in the equipment documentation. Store all equipment documentation for future references.

Software testing must be done in both simulated and real environments.

Verify that the completed system is free from all short circuits and grounds, except those grounds installed according to local regulations (according to the National Electrical Code® in the USA, for instance). If high-potential voltage testing is necessary, follow recommendations in the equipment documentation to prevent accidental equipment damage.

Before energizing equipment:
- Remove tools, meters, and debris from equipment.
- Close the equipment enclosure door.
- Remove ground from incoming power lines.
- Perform all start-up tests recommended by the manufacturer.
Operation and Adjustments

The following precautions are from the NEMA Standards Publication ICS 7.1-1995 (English version prevails):

- “Regardless of the care exercised in the design and manufacture of equipment or in the selection and rating of components, there are hazards that can be encountered if such equipment is improperly operated.”
- “It is sometimes possible to misadjust the equipment and thus produce unsatisfactory or unsafe operation. Always use the manufacturer’s instructions as a guide for functional adjustments. Personnel who have access to these adjustments should be familiar with the equipment manufacturer’s instructions and the machinery used with the electrical equipment.”
- “Only those operational adjustments actually required by the operator should be accessible to the operator. Access to other controls should be restricted to prevent unauthorized changes in operating characteristics.”

Related Documents

<table>
<thead>
<tr>
<th>Title of Documentation</th>
<th>Reference Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATV71 Programming Manual</td>
<td>1755855</td>
</tr>
<tr>
<td>ATV71 Communication Parameters Manual</td>
<td>atv71_parameters_en_v6</td>
</tr>
<tr>
<td>ATV71 Modbus TCP/IP Ethernet Card VW3A3310</td>
<td>30072-451-30</td>
</tr>
</tbody>
</table>

You can download these technical publications and other technical information from our website at www.us.schneider-electric.com.

Product Related Information

⚠️ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This equipment must be installed and serviced only by qualified electrical personnel.
- Turn off all power supplying this equipment before working on or inside equipment. Disconnect the power at the processor and at the power source.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors and covers before turning on power to this equipment.
- Confirm that a proper ground connection exists before applying power to the unit.
- Use only the specified voltage when operating this equipment and any associated products.

Failure to follow these instructions will result in death or serious injury.
### WARNING

**LOSS OF CONTROL**

- The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop and overtravel stop.
- Separate or redundant control paths must be provided for critical control functions.
- System control paths may include communication links. Consideration must be given to the implications of unanticipated transmission delays or failures of the link.¹
- Each implementation of an Altivar 71 drive must be individually and thoroughly tested for proper operation before being placed into service.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**


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**User Comments**

We welcome your comments about this bulletin. You can reach us by e-mail at oem.solutions@us.schneider-electric.com.
ATV71 Drive on a Modbus® Network

ATV71 Drive Set-up

To set up the ATV71 drive:

1. Start PowerSuite™ and configure a new device. See Figure 1.

Figure 1: Configure a New Device

2. Configure the ATV71 drive communication parameters for Modbus. See Figure 2.

Figure 2: Configure ATV71 Drive communication parameters
3. Select Communication from the menu list pane located on the left side of the window. Review the Communication parameters that appear in the pane located on the right side of the window and make any necessary changes. See Figure 3.

Figure 3: Communication Parameters
4. Select Command from the menu list pane located on the left side of the window. Review the Command parameters that appear in the pane located on the right side of the window and change the Ref. 1 channel to Reference via Modbus. See Figure 4.

Figure 4: Command Parameters
RSLogix 5000 Tag Set-up

To set up the RSLogix tag and mapping:

1. Configure the Data Type to an array of integers to communicate with all ATV drives on the Modbus network. The array should be, at a minimum four times the number of actual drives on the network. See Figure 5.

For this example an array of 6 integers was created and the tag name is ATV71. Only four integers were actually used to communicate with the drive: two input integers (status word and applied frequency) and two output integers (command word and target frequency).

Figure 5: Tag Properties
2. From the Logic drop down menu, select Map PLC/SLC Messages…, and map the tag See Figure 6.

Figure 6: Logic Menu

3. Select the File Number and the Tag Name that was created to communicate with the ATV71 drives. For this example, the Tag Name is ATV71. See Figure 7.

Figure 7: PLC/SLC Mapping
GATEway Configuration

To configure the GATEway, set the IP address on the GATEway using the applicom software package.

1. Enter the Serial Number from the GATEway. In the IP parameters section of the Gateway Tool dialog box, enter the IP address and Subnet mask. Click Set IP @. See Figure 8.

Figure 8: Setting the IP Address

2. In the Administrator Login/Password dialog box, enter the Login and Password to complete the set-up. See Figure 9. The Login is userhigh and the password is high.

NOTE: Refer to the Woodhead Implementation Manual for more information on setting the IP address of the GATEway.

Figure 9: Login/Password

3. Start the applicom console software program to configure the database for the GATEway. See Figure 10.

Figure 10: applicom Console
4. In the Local Configuration section of the Configuration Manager window, select the radial button next to Create Empty Configuration, then click Open. See Figure 11.
   The New configuration window appears. See Figure 12.

**Figure 11:** Configuration Manager

![Configuration Manager](image)

5. Enter the Configuration and Description. In the Gateway Identification section, enter the desired IP address. Choose the Gateway type from the drop down menu.
   This example uses the GATEway Ethernet-Serial gateway. See Figure 12.

**Figure 12:** New configuration

![New configuration](image)
6. Select Channel 0 from the menu list pane located on the left side of the GATEway console window. See Figure 13.

Figure 13: Configuration area

The Select the messaging dialog box appears. See Figure 14 on page 16.
7. Select Ethernet/IP (Allen-Bradley) from the Setting section of the Select the messagings window and click OK. See Figure 14.

Figure 14: Select the messagings

8. On the GATEway Console dialog box, click Yes to confirm your choice. See Figure 15.

Figure 15: GATEway Console Window.
9. Select Logix5000–PCCC Messaging from the menu list pane located on the lower left side of the window, and drag and drop Logix5000–PCCC Messaging on to the Server Equipments icon located in the center pane of the GATEway console window. See Figure 16.

**Figure 16: Logix5000–PCCC Messaging**

The Logix5000–PCC Messaging window appears. See Figure 17 on page 18.
10. In the General Configuration tab, enter a Topic Name and remove the Link parameters by clicking on the check box. See Figure 17.

Figure 17: Logix5000–PCC Messaging Window

11. From the Network Parameters tab, enter the IP address and the slot for the processor, then click OK. See Figure 18. In this example, the processor is in slot 0.

Figure 18: Networks Parameters Tab
12. Add a Cyclic Function by clicking on the green/yellow circle. See Figure 19.

**Figure 19: Add a Cyclic Function**
13. Set up a read cyclic function and a write cyclic function and click OK. The read and write functions are created from the perspective of the applicom database communicating to the AB processor. The database reads the Command Word and the Target Frequency, then the values are written to the database. See Figure 20.

**Figure 20: Cyclic Function Properties**

![Figure 20: Cyclic Function Properties](image)

**NOTE:**

— The Data Parameters section includes words and this example reads and writes to two integers.

— The Address in Equipment section needs to be set up in accordance with the Allen-Bradley PLC5/SLC format. The file number is the same file number that was used in the mapping in RSLogix 5000. This example uses file number 5. Notice the Datum Address in each screen: N5:0 and N5:2.

— The Address in DATA BASE section indicates the address where the words will be read from and written to within the database. The locations need to be unique or information will be overwritten.
14. Select Channel 0 from the menu list pane located on the left side of the GATEway console window to set up the Modbus side of the database and confirm the server. See Figure 13 on page 15.

15. Select RTU for the Node. This represents the Modbus ASCII/RTU Master. See Figure 21.

**Figure 21: Modbus ASCII/RTU Master**

16. On the GATEway Console dialog box, click Yes to confirm your choice. See Figure 22.

**Figure 22: GATEway Console**
17. Select Channel 1 from the menu list pane located on the left side of the GATEway console window. See Figure 23.

18. Select Modbus Generic from the menu list pane located on the lower left side of the window, and drag and drop Modbus Generic on to the Modbus ASCII/RTU Master COM1 icon located in the center pane of the GATEway console window. See Figure 23.

**Figure 23: Modbus Generic**
The Logix5000–PCC Messaging window appears. See Figure 24.

19. In the Equipment Designation area of the General Configuration tab, enter a Topic Name for the Modbus slave and remove the Link parameters by clicking on the check box. See Figure 24. Update the Slave address by double clicking on the current Slave number value.

**Figure 24: Modbus Generic Station Window**
20. Add a Cyclic Function by clicking on the green/yellow circle. See Figure 25.

**Figure 25:** Add a Cyclic Function
21. Set up a read cyclic function and a write cyclic function and click OK. The read and write functions are created from the perspective of the applicom database communicating to the AB processor. The database reads the Command Word and the Target Frequency, then the values of the Status Word and the Applied Frequency are written to the database. See Figure 26.

Figure 26: Cyclic Function Properties

NOTE:

— The Data Parameters section includes words and this example reads and writes to two integers.

— The Address in Equipment section needs to be set up in accordance with the Generic Modbus format. The Generic Modbus address is the address to write to and read from. This example uses addresses 8601 – 8604 to control the ATV71 drive.

— The Address in DATA BASE section indicates the address where the words will be read from and written to within the database. The locations need to be unique or information will be overwritten but they need to be the same addresses that the Allen-Bradley ControlLogix uses so that the processor controls the drive.
22. The setup should be complete. However, the configuration needs to be saved (1), initialized (2), and then checked for syntax errors (3). See Figure 27 to reference the callout numbers.

**Figure 27: Saving, Initializing, and Checking for Syntax Errors**

![Figure 27](image)

23. Click the Initialization icon. See Figure 27. This sends the configuration to the gateway.

24. When the Lan Tcp-ip Link dialog box displays, click Yes. See Figure 28.

**Figure 28: Lan Tcp-ip Link**

![Figure 28](image)

The Gateway initialization window indicates the initialization progress. See Figure 29.

**Figure 29: Gateway initialization**

![Figure 29](image)
25. From the GATEway initialization window, click on the syntax icon. See Figure 27 on page 26, callout 3. Run the cyclic functions to check for any syntax errors.

26. Click the Start button on the Refresh section of the VISUCYC window to start one cycle. See Figure 30.

**Figure 30: VISUCYC**

![VISUCYC](image1)

27. The **Fnct Status** located on the lower portion of the window indicates the status of the cycle. If the function status (Fnct Status) comes back with a value of 0, the gateway is communicating with that particular cyclic function. See Figure 31. Please refer to the **Woodhead Protocol Manual – Modbus RTU/ASCII Master/Slave** for a description of the status values if the status value is not equal to 0.

**Figure 31: VISUCYC Function Status**

![VISUCYC Function Status](image2)

28. Test the control functionality from the Allen-Bradley ControlLogix platform with the ATV71 drive.
ATV71 Drive on an Ethernet Modbus® TCP/IP Network

ATV71 Drive Set-up

1. Start PowerSuite™ and configure a new device.
2. From the Device Tab, select the Ethernet option for Slot 1. See Figure 32.

Figure 32: Configure a New Device

3. From the Communication tab, configure the ATV71 drive communication parameters. See Figure 33.

Figure 33: Configure ATV71 Drive Communication Parameters
4. From the Ethernet tab, configure the Ethernet parameters. See Figure 34.

Figure 34: Configure Ethernet parameters
5. Select Communication from the menu list located on the left side of the window. Review the Communication parameters that appear in the pane located on the right side of the window and make any necessary changes. See Figure 35.

Figure 35: Communication parameters
6. Select Command from the menu list pane located on the left side of the window. Review the Command parameters that appear in the pane located on the right side of the window and change the Reference Channel to **Reference via Com Card**. See Figure 36.

**Figure 36: Command parameters**
RSLogix 5000 Tag Set-up

To set up the RSLogix tab and mapping

1. Configure the Data Type to an array of integers to communicate with all ATV71 drives on the Modbus network.
   The array should be, at a minimum four times the number of actual drives on the network. See Figure 37.

For this example an array of six integers was created and the tag name is ATV71. Only four integers were used to communicate with the drive: two input integers (status word and applied frequency) and two output integers (command word and target frequency).

Figure 37: Tag Properties
2. From the Logic drop down menu, select Map PLC/SLC Messages…, and map the tag. See Figure 38.

Figure 38: Logic Menu

3. Select the File Number and the Tag Name that was created to communicate with the ATV71 drives. For this example, the Tag Name is ATV71. See Figure 39.

Figure 39: PLC/SLC Mapping
GATEway Configuration

To configure the GATEway, set the IP address on the GATEway using the applicom software package.

1. Enter the Serial Number from the GATEway. In the IP parameters section of the Gateway Tool dialog box, enter the IP address and Subnet mask. Click the Set IP @. See Figure 40.

Figure 40: Setting the IP Address

2. In the Administrator Login/Password dialog box, enter the Login and password to complete the set up. See Figure 41. The Login is *userhigh* and the password is *high*.

NOTE: Refer to the Woodhead Implementation Manual for more information on setting the IP address of the GATEway.

Figure 41: Administrator Login/Password

3. Start the applicom Console software program to configure the database for the GATEway. See Figure 42.

Figure 42: applicom Console
4. In the Local Configuration section of the Configuration Manager window, select the radial button next to Create Empty Configuration, then click Open. See Figure 43.

The New configuration window appears. See Figure 44.

**Figure 43: Configuration Manager**

![Configuration Manager](image1)

5. Enter the Configuration and Description. In the Gateway Identification section, enter the desired IP address. Choose the Gateway type from the drop down menu.

This example uses the GATEway Ethernet-Serial gateway. See Figure 44.

**Figure 44: New configuration**

![New configuration](image2)
6. Select Channel 0 from the menu list pane located on the left side of the GATEway console window. See Figure 45.

Figure 45: Configuration area
7. Select Ethernet/IP (Allen-Bradley) and Modbus TCP/IP (Schneider Electric) from the Setting section of the Select the messaging window and click OK. See Figure 46.

**Figure 46: Select the messagings**

![Select the messagings](image)

8. On the GATEway Console window, click Yes to confirm your choice. See Figure 47.

**Figure 47: GATEway Console Dialog Box**

![GATEway Console Dialog Box](image)
9. Select Logix5000–PCCC Messaging from the menu list pane located on the lower left side of the window, then drag and drop Logix5000–PCCC Messaging on to the Server Equipments icon located in the center pane of the GATEway console window. See Figure 48.

Figure 48: Logix–PCCC Messaging

The Logix5000–PCC Messaging window appears. See Figure 49 on page 39.
10. From the Equipment Designation section of the General Configuration tab, enter a Topic Name and remove the Link parameters by clicking on the check box. See Figure 49.

Figure 49: Logix5000–PCC Messaging Window

![Logix5000–PCC Messaging Window](image)

11. From the Network Parameters tab, enter the IP address and the slot for the processor, then click OK. See Figure 50. In this example, the processor is in slot 0.

Figure 50: Network Parameters Tab

![Network Parameters Tab](image)
12. Add a Cyclic Function by clicking on the green/yellow circle. See Figure 51.

**Figure 51: Add a Cyclic Function**
13. Set up a read cyclic function and a write cyclic function and click OK. The read and write functions are created from the perspective of the applicom database communicating to the AB processor. The database reads the Command Word and the Target Frequency, then the values are written to the database. See Figure 52.

**Figure 52: Cyclic Function Properties**

**NOTE:**

- The **Data Parameters** section includes words and this example reads and writes to two integers.
- The **Address** in Equipment section needs to be set up in accordance with the Allen-Bradley PLC5/SLC format. The file number is the same file number that was used in the mapping in RSLogix 5000. This example used file number 5. Notice the Datum Address in each screen: N5:0 and N5:2.
- The **Address in DATA BASE** section indicates the address where the words will be read from and written to within the database. The locations need to be unique or information will be overwritten.
14. Select Channel 1 from the menu list pane located on the left side of the GATEway console window. See Figure 23.

15. Select Modbus Generic from the menu list pane located on the lower left side of the window, and drag and drop Modbus Generic onto the Server Equipments icon located in the center pane of the GATEway console window. See Figure 53.

Figure 53: Modbus Generic
The Logix5000–PCC Messaging window appears. See Figure 54.

16. In the Equipment Designation area of the General Configuration tab, enter a Topic Name and remove the Link parameters by clicking on the check box. See Figure 54. Update the Slave address by double clicking on the current Slave number value.

**Figure 54: Modbus Generic Station Window**

![Modbus Generic Station Window](image)

17. Enter a Topic name for the Modbus Master and remove Link parameters by clicking on the check as shown in Figure 55. Enter the IP address for the ATV71 drive by double clicking on the current IP address.

**Figure 55: Modbus Generic Window, General Configuration Tab**

![Modbus Generic Window, General Configuration Tab](image)
18. Select the Messaging Parameter tab, change Maximum Number of simultaneous Request to 2, and change the Unit Identifier to 0. Click OK. See Figure 56.

Figure 56: Messaging Parameter Tab

The Unit ID (destination identifiers) is used to access four drive Modbus TCP servers. The identifier descriptions are shown in Table 1.

Table 1: Drive Modbus Servers

<table>
<thead>
<tr>
<th>Unit ID</th>
<th>Modbus TCP server</th>
<th>Accessible parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Variable speed drive</td>
<td>See the Altivar 71 Parameters Manual.</td>
</tr>
<tr>
<td>251</td>
<td>Ethernet card</td>
<td>See the “Ethernet card parameters” section.</td>
</tr>
<tr>
<td>252</td>
<td>Controller Inside card</td>
<td>2048 words (logical addresses %MW0 to %MW2047).</td>
</tr>
<tr>
<td>255</td>
<td>IO Scanner</td>
<td>See the “IO Scanner” section.</td>
</tr>
</tbody>
</table>

19. Add a Cyclic Function by clicking on the green/yellow circle. See Figure 57 on page 45.
Figure 57: Add a Cyclic Function
20. Set up a read cyclic function and a write cyclic function and click OK. The read and write functions are created from the perspective of the applicom database communicating to the ATV71 drive. The Database writes the Command Word and the Target Frequency, then the Status Word and the Applied Frequency are read from the ATV71 drive. See Figure 58.

**Figure 58: Cyclic Function Properties**

**NOTE:**

— The **Data Parameters** section includes words and this example reads and writes to two integers.

— The **Address in Equipment** section needs to be set up in accordance with the Generic Modbus format. The Generic Modbus address is the address to write to and read from. This example uses addresses 8601 – 8604 to control the ATV71 drive.

— The **Address in DATA BASE** section indicates the address where the words will be read from and written to within the database. The locations need to be unique or information will be overwritten but they need to be the same addresses that the Allen-Bradley ControlLogix uses so that the processor controls the drive.
21. The setup should be complete. However, the configuration needs to be saved (1), initialized (2), and then checked for syntax errors (3). See Figure 59 when referencing the callout numbers.

Figure 59: GATEway Console Window

22. Initializing the configuration sends the configuration to the gateway. The Lan Tcp-Ip Link dialog box and the Gateway initialization window show the initialization progress. See Figures 60 and 61.

Figure 60:

Figure 61:
23. From the GATEway initialization window, click on the syntax icon. See Figure 59 on page 47, callout 3. Run the cyclic functions to check for any set up errors.

24. Click Start from the Refresh section of the VISUCYC window to start one cycle. See Figure 62.

**Figure 62: VISUCYC Window**

25. The Fnct Status located on the lower portion of the window indicates the status of the cycle. If the function status (Fnct Status) comes back with a value of 0, the gateway is communicating with that particular cyclic function. See Figure 63.

**NOTE:** Refer to the Woodhead Protocol Manual – Modbus on Ethernet TCP/IP for a description of the status values if the status value is not equal to 0.

**Figure 63: VISUCYC Function Status**

26. Test the control functionality from the Allen-Bradley ControlLogix platform with the ATV71 drive.