

Logix5000 Control Systems: Connect PowerFlex 70 Drives over a DeviceNet Network

Catalog Numbers Logix5000 Controllers, PowerFlex 70 Drives



Important User Information

Solid-state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls (publication [SGI-1.1](#) available from your local Rockwell Automation sales office or online at <http://www.rockwellautomation.com/literature/>) describes some important differences between solid-state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid-state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

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The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.



WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.



ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.



SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.



BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.

IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

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About This Publication

This quick start provides examples and procedures for including PowerFlex[®] 70 drives in a Logix5000[™] controllers control system over a DeviceNet network. The programming examples are not complex, and offer easy solutions to verify that devices are functioning and communicating properly.

IMPORTANT This publication describes **example tasks** you complete when using PowerFlex 70 drives on a DeviceNet network. The tasks described are **not** the only tasks you can complete with the PowerFlex 70 Drives on a DeviceNet network. You will likely need to complete additional tasks when using PowerFlex 70 drives in specific Logix5000 control systems. For more information on how to use the all of the PowerFlex 70 drives' functionality in specific Logix5000 control system, see [Additional Resources on page 11](#).

Before Using This Publication

You can only complete the tasks described in this publication after first completing some prerequisite tasks with a Logix5000 controller. For example, before you can add a PowerFlex 70 drives to an RSLogix[™] 5000 project, as described in [Chapter 3](#), you must first create the project.

IMPORTANT Consider the following before using this publication:

- Multiple Logix5000 controllers support the use of a DeviceNet network. The specific hardware used and software configuration parameter settings vary by Logix5000 controller. This quick starts describes how to use PowerFlex 70 drives over a DeviceNet network in a CompactLogix[™] 5370 L3 control system. The example graphics shown in [Table 1 - Required Tasks to Complete before Using This Quick Start on page 6](#) are for CompactLogix 5370 L3 controllers. Depending on the Logix5000 controller you are using, the specific steps to complete the tasks described in the table might vary.
- The tasks described in this publication are written with the assumption that you have already installed the CompactLogix 5370 L3 control system and it is powered.

For more information on how to complete these tasks with specific Logix5000 controllers, see the Integrated Architecture[™] : Logix5000 Control Systems Quick Starts Quick Reference, publication [IASIMP-QR024](#).

This table describes the tasks you must complete before using this publication.

Table 1 - Required Tasks to Complete before Using This Quick Start

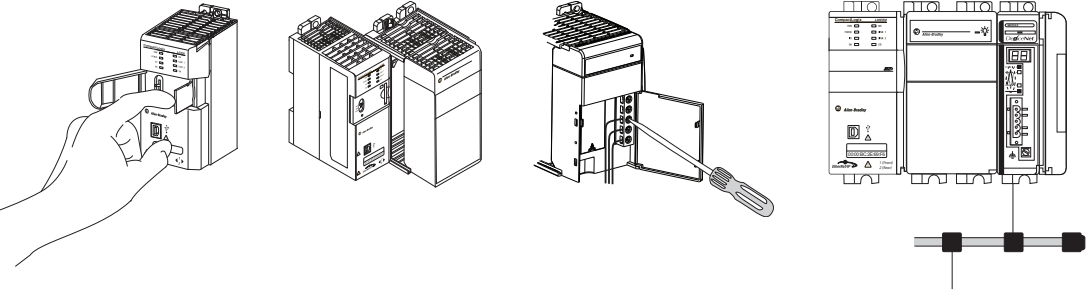
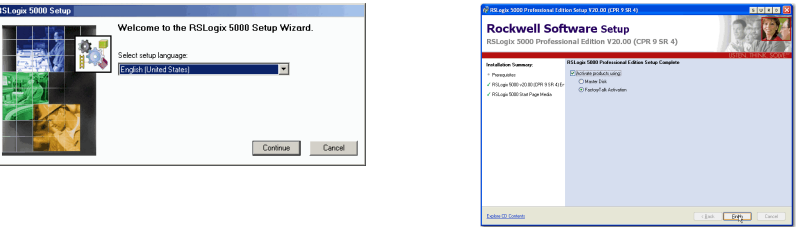
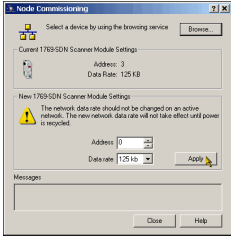
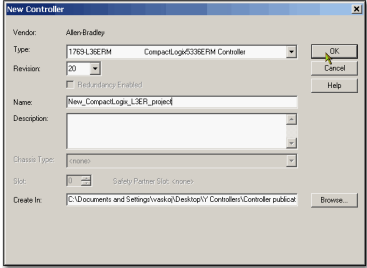
Task	Description
<p>Prepare the Logix5000 control system hardware</p>	<p>Assembling the control system and connecting to the DeviceNet network. At minimum, your system must include a controller, DeviceNet scanner module to access the DeviceNet network and the components required to install a DeviceNet network. For example, you need an external power source to power a DeviceNet network.</p>  <p>For example purposes, this quick start describes how to use a CompactLogix 5370 L3 controller with a 1769-SDN scanner module. Your computer accesses the controller via an EtherNet/IP network. The tasks described in Chapter 2 and Chapter 3 are done so with CompactLogix 5370 L3 controller and 1769-SDN scanner module.</p> <p>We recommend that you use those components to complete the steps described. If you use a different Logix5000 controller and DeviceNet scanner module, you can complete the tasks in these chapters but you must account for any hardware differences.</p> <p>For more information on installing a DeviceNet network, see the DeviceNet Media Design and Installation Guide, publication DNET-UM072.</p> <p>This task does not include installation of remote hardware components, for example, PowerFlex 70 drives, used over the network included in your application.</p>
<p>Prepare the computer</p>	<p>Installing required software, for example RSLogix 5000 software, on your complete</p> 

Table 1 - Required Tasks to Complete before Using This Quick Start

Task	Description
<p>Configure the network</p>	<p>Completing tasks associated with configuring the DeviceNet network with RSNetWorx™ for DeviceNet software, such as setting the node address for the DeviceNet scanner module your controller uses to access the DeviceNet network.</p>  <p>This quick start uses a CompactLogix 5370 L3 controller with a 1769-SDN scanner module, and the tasks described in Chapter 2 and Chapter 3 are done so with that controller and scanner module. We recommend that you use those components and corresponding software files with this quick start.</p> <p>If you use a different Logix5000 controller and DeviceNet scanner module and corresponding DeviceNet network software files, you can complete the tasks in Chapter 2 and Chapter 3 but you must account for any software differences.</p>
<p>Create an RSLogix 5000 project</p>	<p>Creating a project used with your Logix5000 controller that includes all required control system components. Your project must include the DeviceNet scanner module used by your controller to access the DeviceNet network.</p> <p>This quick start uses a CompactLogix 5370 L3 controller with a 1769-SDN scanner module, and the tasks described in Chapter 2 and Chapter 3 are done so for that controller and scanner module. We recommend that you use those components with this quick start.</p> <p>If you use a different Logix5000 controller and DeviceNet scanner module and corresponding RSLogix 5000 software files, you can complete the tasks in Chapter 2 and Chapter 3 but you must account for any software differences.</p>  <p>IMPORTANT: For more information on how to create an RSLogix 5000 project that can be associated with your DeviceNet configuration file, see Associate the DeviceNet Configuration File with an RSLogix 5000 Project.</p>

Other Logix5000 Control System Quick Starts

This quick start describes how to use a single component-type over a single network in a Logix5000 control system. Typically, though, a Logix5000 control system includes more than the controller, communication module, and a single component over a single network.

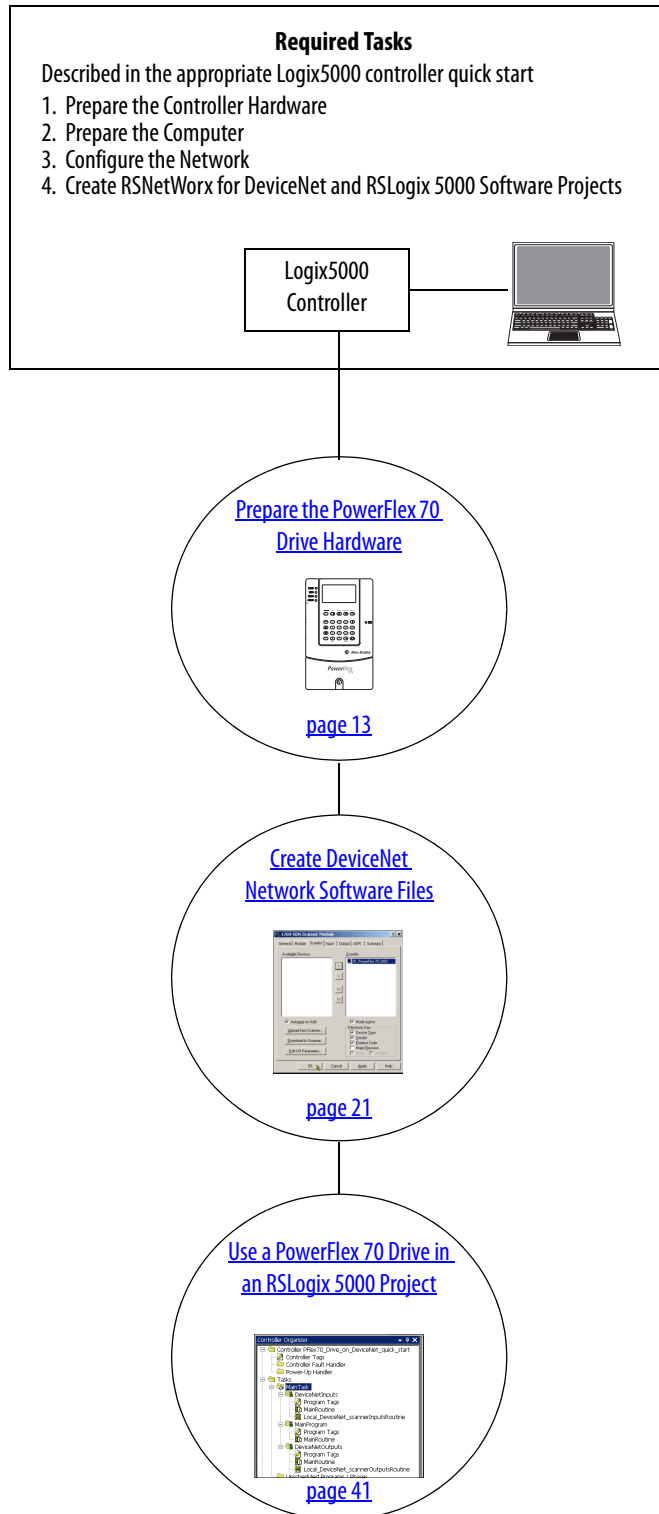
For example, if a Logix5000 control system operates on a DeviceNet network, the system might use remote I/O modules, HMI devices, and drives in addition to the controller and communication modules.

For a complete list of Logix5000 control system quick starts that describe how to use other devices in Logix5000 control systems, see the Integrated Architecture: Logix 5000 Control Systems Quick Starts Quick Reference, publication [IASIMP-QR024](#).

The beginning of each chapter contains the following information. Read these sections before beginning work in each chapter:

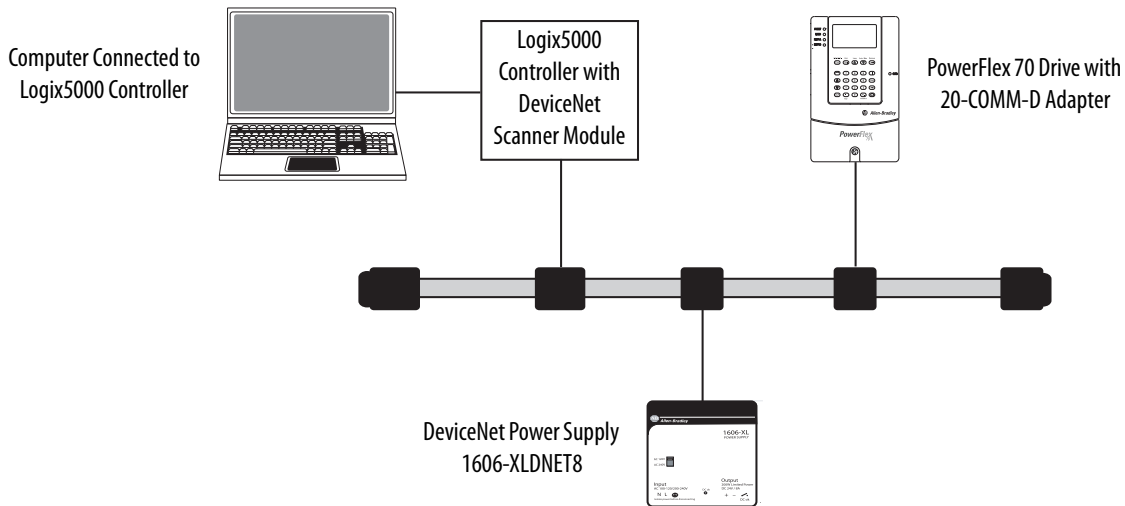
- **Before You Begin** - This section lists the tasks you must complete before starting the chapter.
- **What You Need** - This section lists the tools that are required to complete the tasks in the current chapter. This includes, but is not limited to, hardware and software.
- **Follow These Steps** - This section illustrates the steps in the current chapter.

Where to Start



How Hardware is Connected

This quick start demonstrates the following Logix5000 control system that uses PowerFlex 70 drives on a DeviceNet network.



Required Software

To complete examples in this quick start, you need this software.

Software	Required Software Version, min	Required for This Task
RSLogix 5000	20.00.00 or later ⁽¹⁾	Change RSLogix 5000 projects to use PowerFlex 70 drives.
RSNetWorx for DeviceNet	11.00.00	Modify DeviceNet configuration file to include the PowerFlex 70 Drives described in this publication.
DeviceNet Tag Generator	20.00.00 or later	Generate new programs and tags in your RSLogix 5000 project.

(1) RSLogix 5000 software, version 20.00.00 or later, is required for use of this quick start because the example Logix5000 controller, and associated tasks, described herein are completed in a CompactLogix 5370 L3 control system. CompactLogix 5370 control systems require RSLogix 5000 software, version 20.00.00 or later. If you connect a PowerFlex 70 drive over a DeviceNet network in a Logix5000 control system that uses a different controller, the minimum software version may differ.

Parts List

You need these parts to use this publication.

✓	Quantity	Cat. No.	Description
	1	20A-B4P2A0AYNNCO	PowerFlex 70 drive
	1	20-COMM-D	DeviceNet adapter for use with the PowerFlex 70 drive
	1	1485K-P1F5-R5	KwikLink™ right-angle micro male to micro female connector cable
	1	1799-DNC5MMS	5-pin linear to micro male adapter
	1	1485P-P1E4-R5	KwikLink sealed micro connector

Additional Resources

Use the additional resources listed in this table for more information when using PowerFlex 70 drives over a DeviceNet network in a Logix5000 controller project.

Resource	Description
PowerFlex 70 User Manual, publication 20A-UM001	Provides details on how to install, program, and edit parameters for the PowerFlex 70 drive.
PowerFlex 70 DeviceNet Adapter User Manual, publication 20COMM-UM002	Provides details on how to install, configure, and use the adapter.
DeviceNet Modules in Logix5000 Control Systems, publication DNET-UM004	Provides details regarding the installation, configuration, and operation of DeviceNet modules.
Uploading an EDS File From a Drive, Knowledgebase ID 20539, http://www.rockwellautomation.com/knowledgebase/	Provides an explanation about uploading EDS files from drives.
Knowledgebase article ID 20539 at http://support.rockwellautomation.com/	Provides details about uploading EDS files from the drive.
ControlLogix Controllers Common Procedures Programming Manual, publication 1756-PM001	Provides details about adding and configuring modules, establishing communication, and writing ladder logic.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation® industrial system.
Product Certifications website, http://www.ab.com	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at <http://www.rockwellautomation.com/literature/>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Notes:

Prepare the PowerFlex 70 Drive Hardware

In this chapter, you learn how to complete the following tasks:

- Mount and wire power to a PowerFlex 70 drive.
- Set the DeviceNet communication card's operation mode, node address, and communication rate.
- Connect the communication card to the drive.
- Connect the communication card to the network.

Before You Begin

Before you begin, complete these tasks described in [Before Using This Publication on page 5](#):

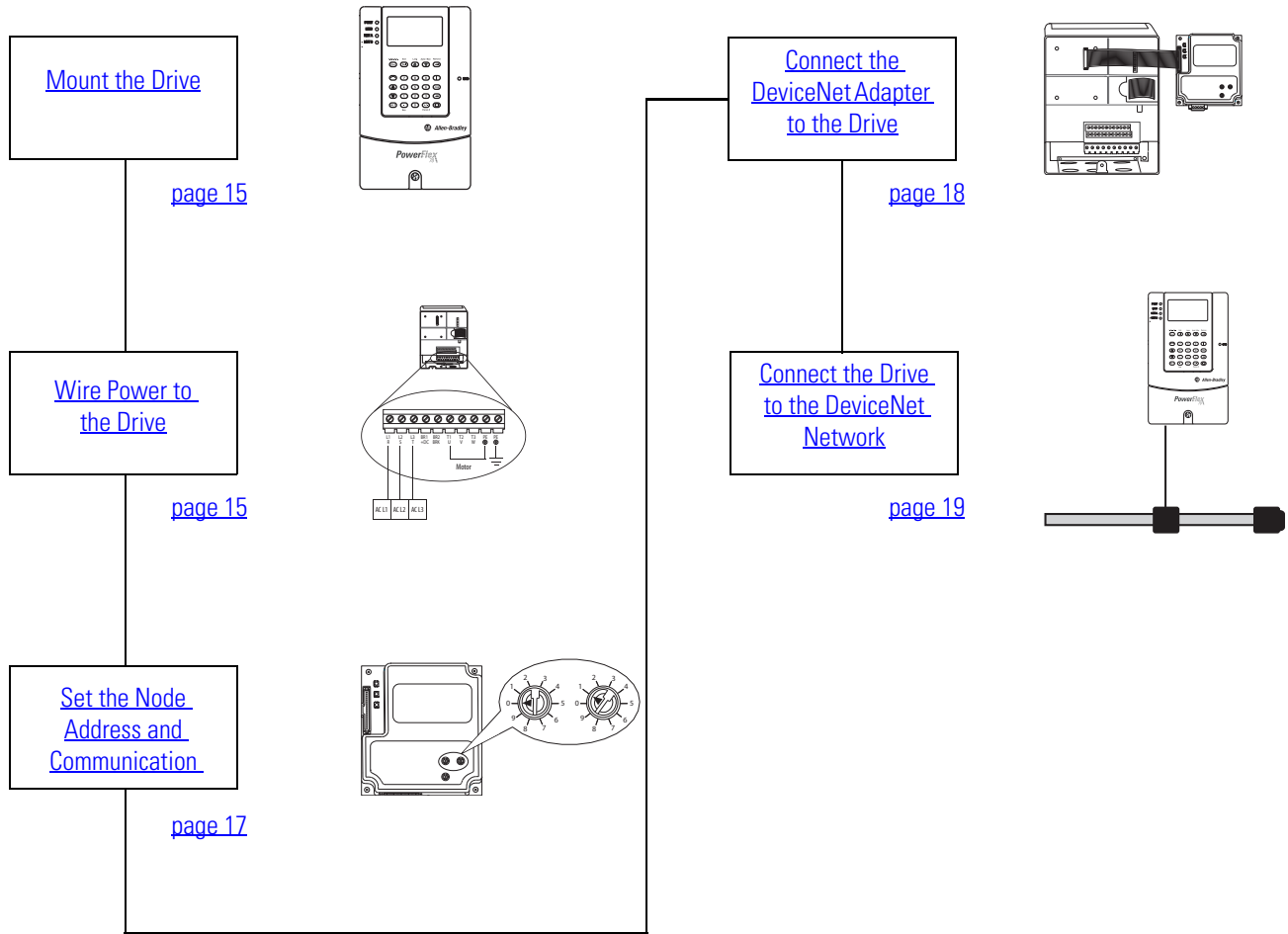
- [Prepare the Logix5000 control system hardware](#) - Verify the control system and the DeviceNet network are powered.
- [Prepare the computer](#)
- [Configure the network](#)
- [Create an RSLogix 5000 project](#) - The example RSLogix 5000 project used in this quick start uses a CompactLogix 5370 L3 controller.

What You Need

This table lists the products you need to complete the tasks described in this chapter.

Quantity	Cat. No.	Description
1	20A-B4P2A0AYNNNC0	PowerFlex 70 drive AC drive
1	20-COMM-D	DeviceNet adapter for use with the PowerFlex 70 drive
1	1485K-P1F5-R5	KwikLink right-angle micro male to micro female connector cable
1	1799-DNC5MMS	5-pin linear to micro male adapter
1	1485P-P1E4-R5	KwikLink sealed micro connector

Follow These Steps



Mount the Drive

For the purpose of this quick start, the PowerFlex 70 drive can be propped in a safe and convenient location.

For complete mounting instructions, see the PowerFlex 70 Drive User Manual, publication [20A-UM001](#).

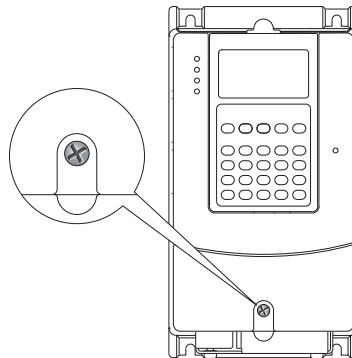
Wire Power to the Drive



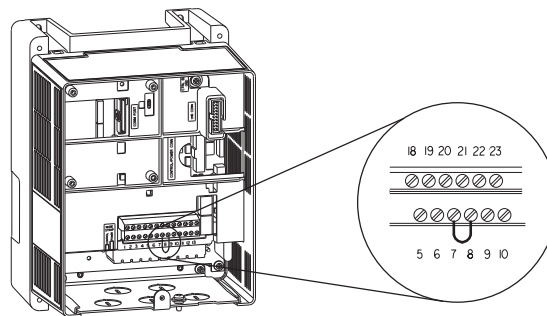
WARNING: Verify that all incoming power is turned off before wiring power.

Do not apply incoming power before connecting the DeviceNet adapter to the drive.

1. Loosen the screw and remove the cover.



2. Verify that a jumper is installed between I/O terminals 7 and 8.
3. If there is no jumper between I/O terminals 7 and 8, install one before proceeding.




4. Loosen the screws and slide the metal plate out of the drive.

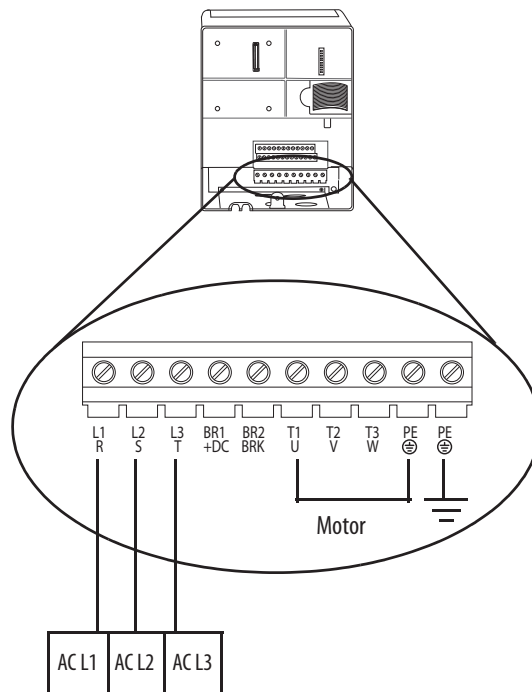
The 20A-B4P2A0AYNNNC0 drive can use any of the following inputs:

- 208V AC three phase
- 230V AC three phase

In this quick start, you use 208V AC/240V AC three phase.

5. Connect the AC power conductors to the drive terminals as described in the following table and tighten the screws.

Connect	To
ACL1	L1 R
ACL2	L2 S
ACL3	L3 T
Chassis ground	PE 

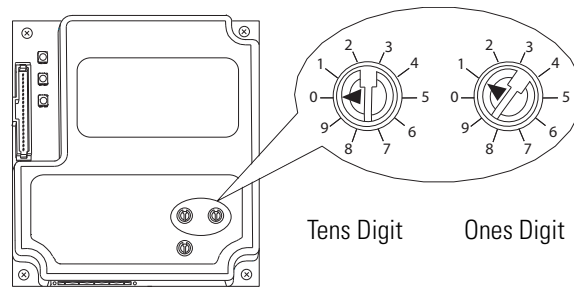


For complete information on wiring a PowerFlex 70 drive, see the PowerFlex 70 AC Drives User Manual, publication [20A-UM001](#).

Set the Node Address and Communication Rate

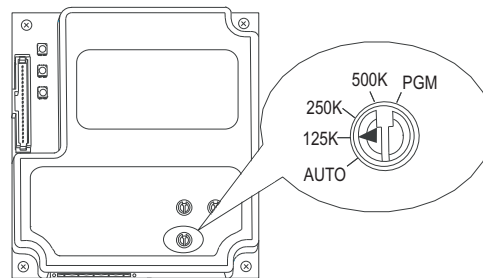
1. Use a small screwdriver to rotate the switches to the desired value to set the adapter's node address.

This quick start uses a node address 1.



2. Use a small screwdriver in the same manner to set the DeviceNet adapter's communication rate.

This quick start uses 125 Kbps.

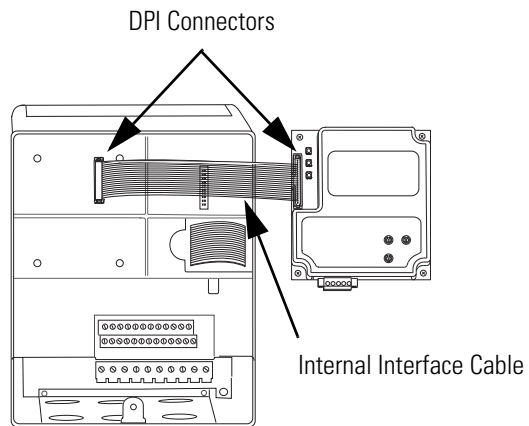


Connect the DeviceNet Adapter to the Drive

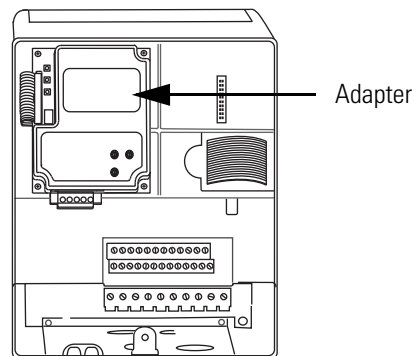


WARNING: Verify that all incoming power is turned off before connecting the adapter to the drive.

1. Connect the Internal Interface cable to the DPI connector on the drive and then to the DPI connector on the adapter.



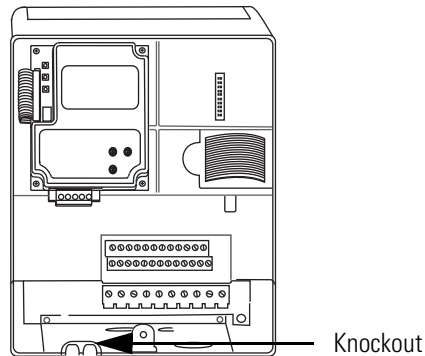
2. Fold the cable behind the adapter without creasing it and mount the adapter on the drive by using four captive screws.



Connect the Drive to the DeviceNet Network

1. Remove a knockout from the bottom plate on the drive.

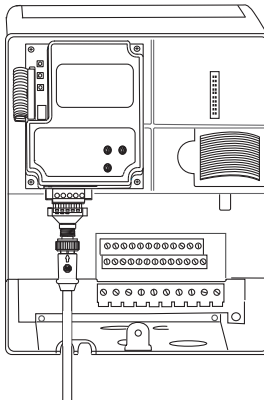
A hole is created at the bottom of the drive through which you can route a connector cable.



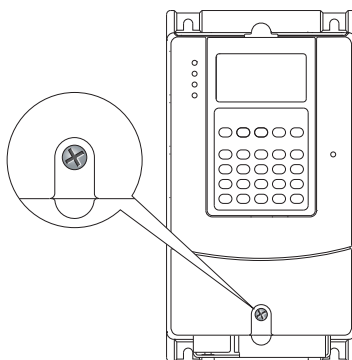
2. Connect the 1799-DNC5MMS 5-pin linear to micro male adapter to the female end of the 1485K-P1F5-R5 KwikLink right-angle micro male to micro female connector cable.



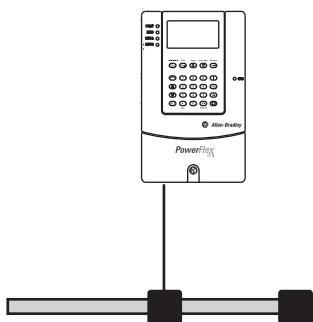
3. Route the connector cable through the hole in the bottom of the drive and connect it to the DeviceNet connector on the adapter.



4. Place the cover on the drive and tighten the screw.



5. Connect the drive to the DeviceNet network.
6. Apply power to the drive.



Create DeviceNet Network Software Files

In this chapter, you complete the following tasks:

- Register an EDS file in RSNetWorx for DeviceNet software
- Set the DeviceNet scanner module's node address
- Create a DeviceNet configuration file
- Associate a DeviceNet configuration file with an RSLogix 5000 project
- Create a DeviceNet scanlist

IMPORTANT

Multiple Logix5000 control systems can use PowerFlex 70 drives over a DeviceNet network. For example purposes, this quick start describes the use of PowerFlex 70 drives over a DeviceNet network in a CompactLogix 5370 L3 control system.

If you have already completed the steps in this chapter before using this quick start, skip to [Chapter 3, Use a PowerFlex 70 Drive in an RSLogix 5000 Project on page 41](#).

Before You Begin

Before you begin, you must complete these tasks:

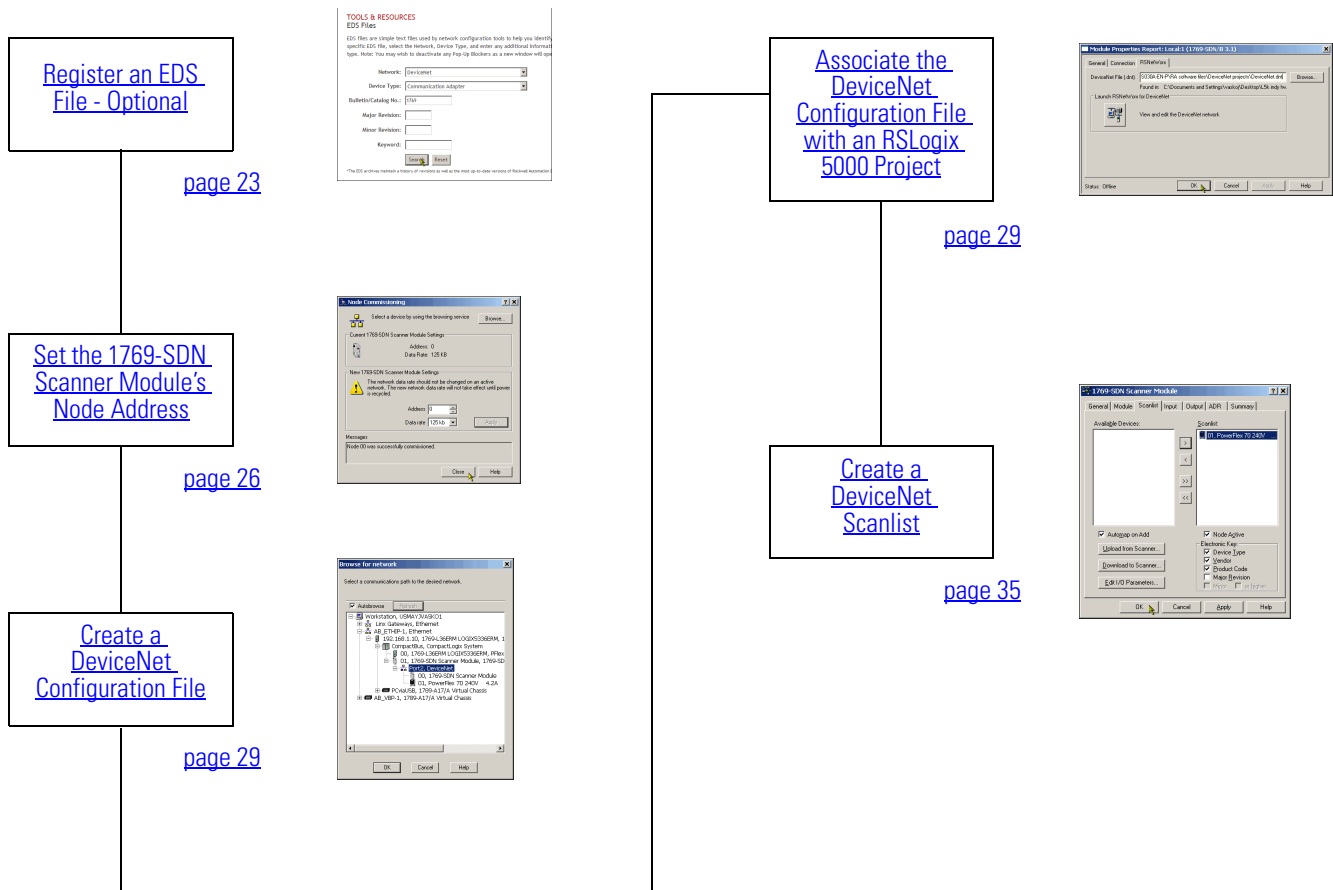
- These tasks described in [Before Using This Publication on page 5](#):
 - [Prepare the Logix5000 control system hardware](#)
 - [Prepare the computer](#)
 - [Configure the network](#)
 - [Create an RSLogix 5000 project](#)

- These tasks described in Chapter 1, [Prepare the PowerFlex 70 Drive Hardware on page 13](#):
 - [Mount the Drive](#)
 - [Wire Power to the Drive](#)
 - [Set the Node Address and Communication Rate](#)
 - [Connect the DeviceNet Adapter to the Drive](#)
 - [Connect the Drive to the DeviceNet Network](#)

What You Need

You need RSNetWorx for DeviceNet software to complete the tasks in this chapter.

Follow These Steps

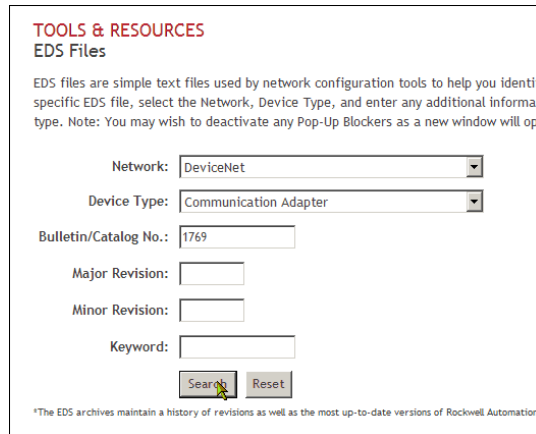


Register an EDS File - Optional

You might need to register a device for use in RSNetWorx for DeviceNet software so the software recognizes the device and uses it appropriately. You register an electronic data sheet (EDS) file in the software.

If you do not need to register an EDS file in RSNetWorx for DeviceNet software, skip to [Set the 1769-SDN Scanner Module's Node Address on page 26](#).

1. Access the Rockwell Automation website that provides access to EDS files at: <http://www.rockwellautomation.com/resources/eds/>.
2. Use the pull-down menus to narrow the search parameters.

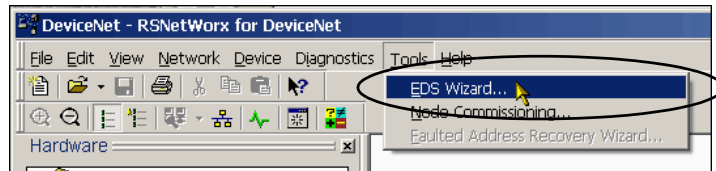


3. Click the link for the file you need to register.
4. Save the file to a location on your computer that you will remember.

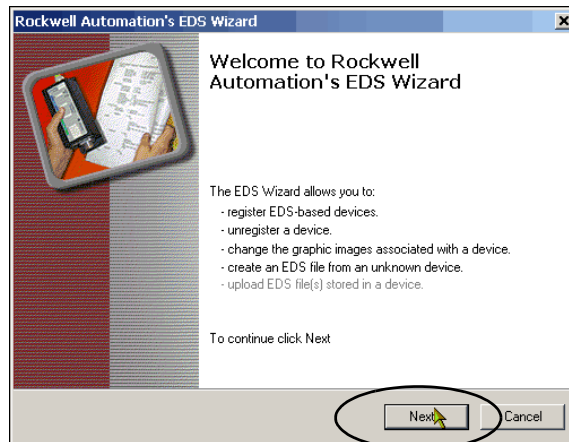
EDS FILE SEARCH RESULTS

Brand	Details & Download	Device Type	Product	Catalog Number	Major Rev.	Minor Rev.
Allen-Bradley	Details Download	Communication Adapter	1769-SDN Scanner Module	1769-SDN	1	1
Allen-Bradley	Details Download	Communication Adapter	1769-SDN Scanner Module	1769-SDN	2	1
Allen-Bradley	Details Download	Communication Adapter	1769-SDN Scanner Module	1769-SDN	3	10
Allen-Bradley	Details Download	Communication Adapter	1769-SDN Scanner Module	1769-SDN	4	2

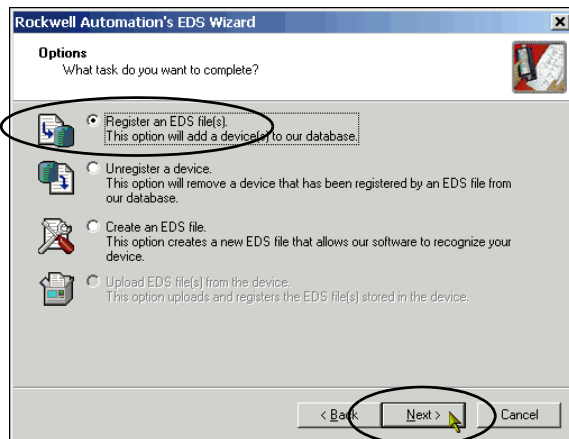
5. In RSNetWorx for DeviceNet software, choose EDS Wizard... from the Tools pull-down menu.



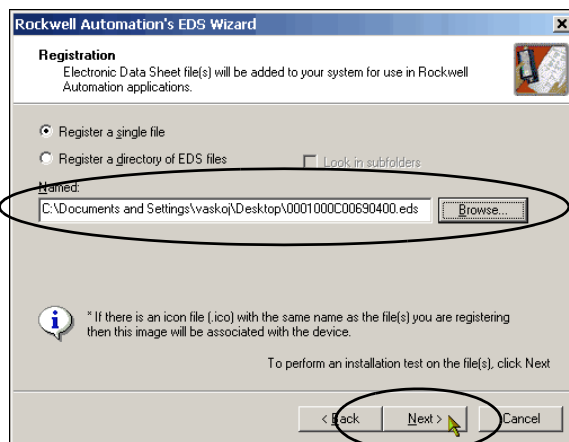
6. When the EDS dialog box appears, click Next.



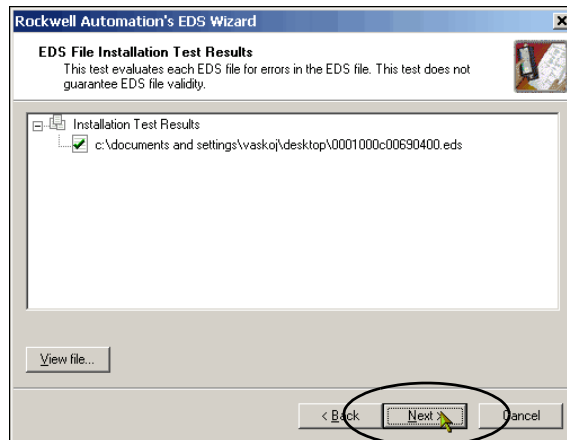
7. Verify that Register an EDS file(s) is checked and click Next.



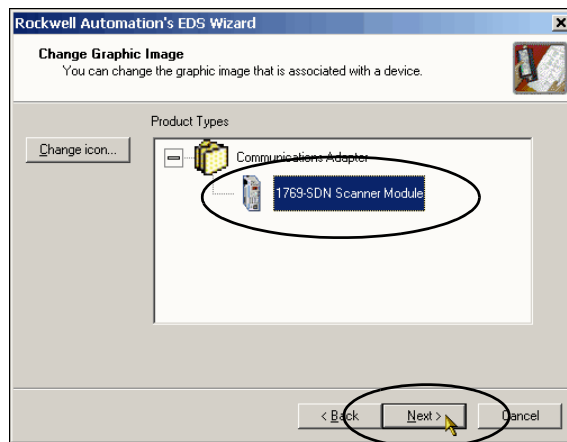
8. Browse to the EDS file and click Next.



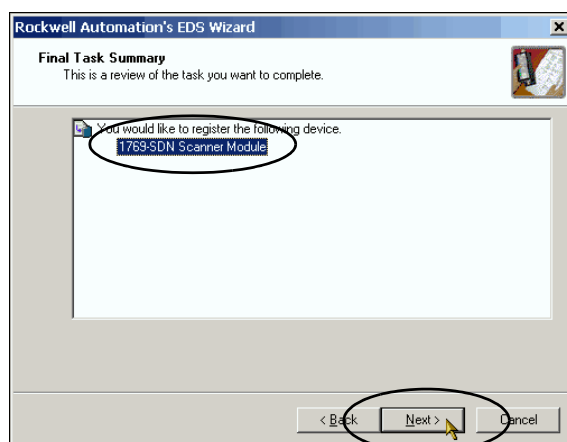
9. When the EDS File Installation Test Results screen appears, click Next.



10. Select the graph image for the device you want to register and click Next.



11. Select the device you want to register and click Next.
12. Click Finish when the registration is successful.



Set the 1769-SDN Scanner Module's Node Address

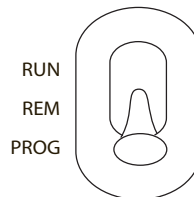
This quick start describes how to use a PowerFlex 70 drive in a CompactLogix 5370 L3 control system over a DeviceNet network. The computer is connected to the controller via an EtherNet/IP network, and the controller accesses the drive on the DeviceNet network via a 1769-SDN scanner module installed in a local expansion module slot.

IMPORTANT The tasks described in this section require the use of the Node Commissioning tool in RSNetWorx for DeviceNet software. If you are using RSLogix 5000 software, version 20 or later, as required with this quick start, the Node Commissioning tool was an optional choice during the software installation. If you did not install the Node Commissioning tool previously, do so now.

To complete the steps described in this chapter, the scanner module uses the DeviceNet network node address 0:

- If your scanner module's node address is already set to 0, you can skip this section and move to [Create a DeviceNet Configuration File on page 29](#).
- If your scanner module's node address is not set to 0, use this section to learn how to change it from its current value. For example purposes, the scanner module's node number is 3 before it is changed.

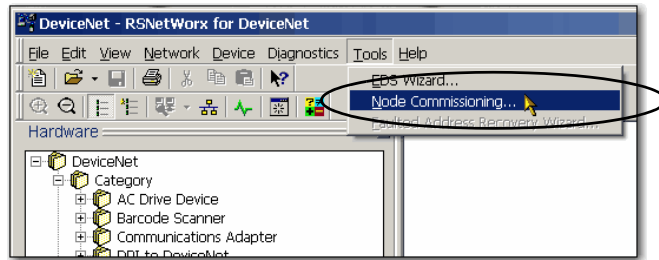
1. Verify the controller's mode switch is in the PROG position.



2. Start RSNetWorx for DeviceNet software.



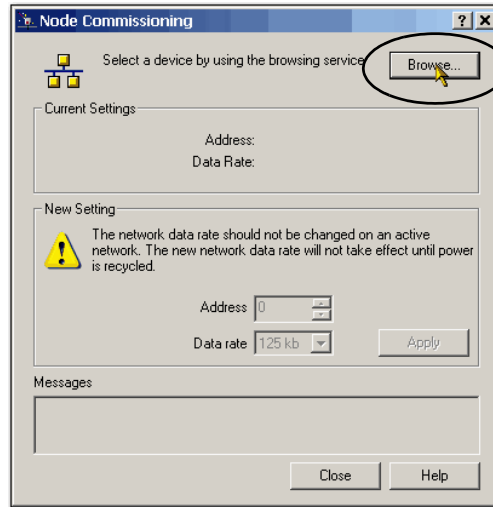
- From the Tools menu, choose Node Commissioning.



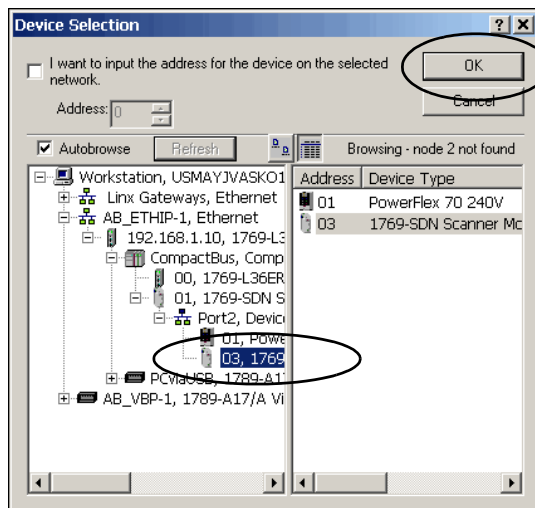
- Click Browse.

When the Device Selection dialog box appears, browse to the 1769-SDN scanner module over an EtherNet/IP network or USB connection.

This example uses an EtherNet/IP network connection.



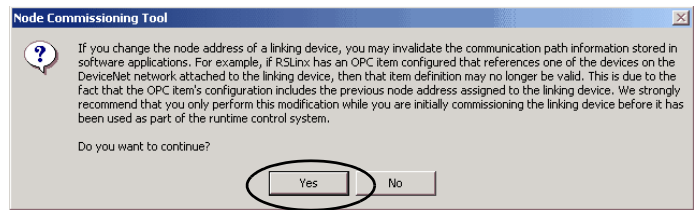
- Under the AB_ETHIP-1 driver, expand the path to the 1769-SDN scanner module as shown in the example graphic.



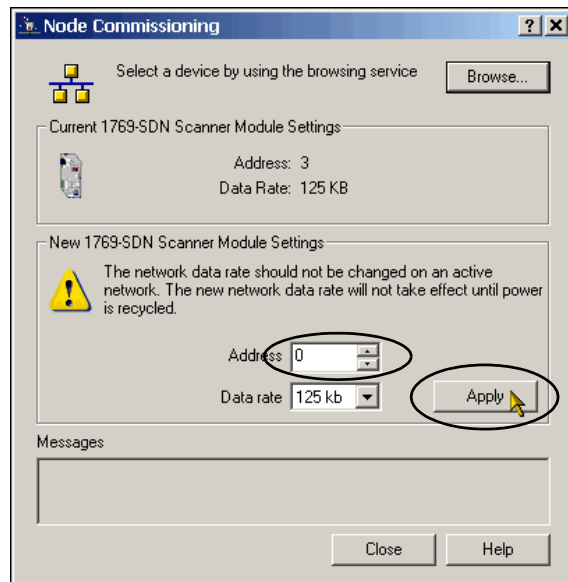
- Click OK.

7. If you receive a linking device warning, click Yes.

The Node Commissioning dialog box is populated with the 1769-SDN module's current settings.

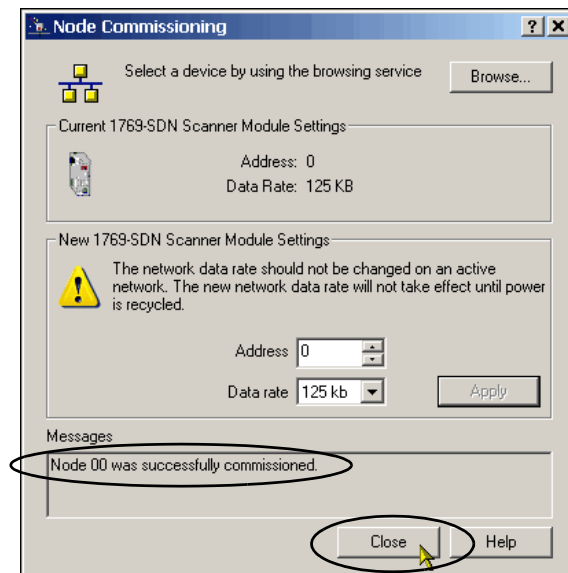


8. Enter a node address of 1 for the 1769-SDN scanner module and click Apply.



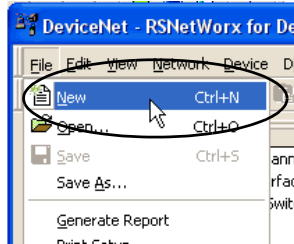
The Address is applied and is confirmed in the Messages box.

9. Record the node address.
10. Click Close.

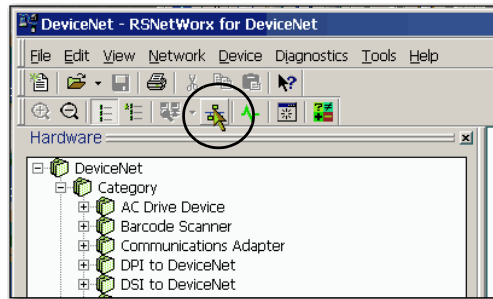


Create a DeviceNet Configuration File

1. From the File menu, choose New.

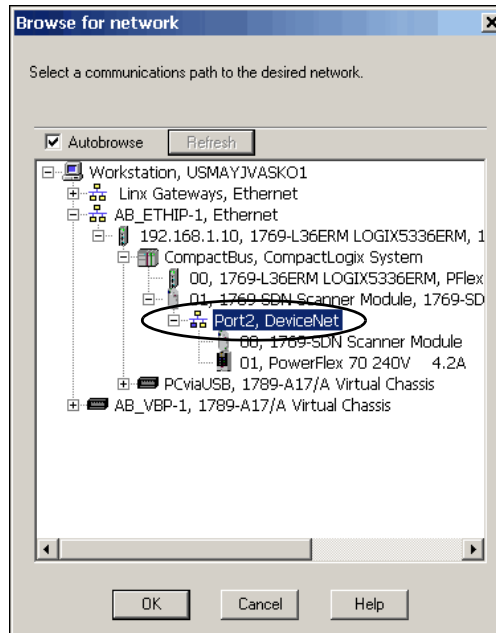


2. Click Who Active to go online.



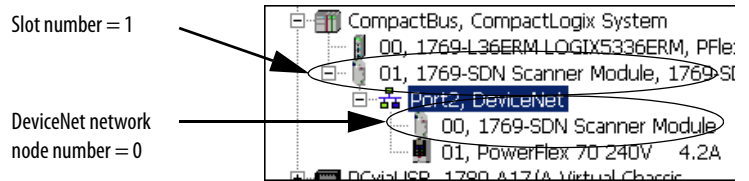
3. Expand the networks to the appropriate DeviceNet network.

In this example, the network is Port 2, DeviceNet.



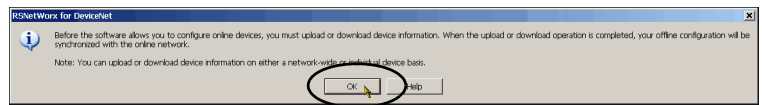
4. Record the following information about the scanner module:

- Slot number in the CompactBus = 1
- DeviceNet network node number = 0



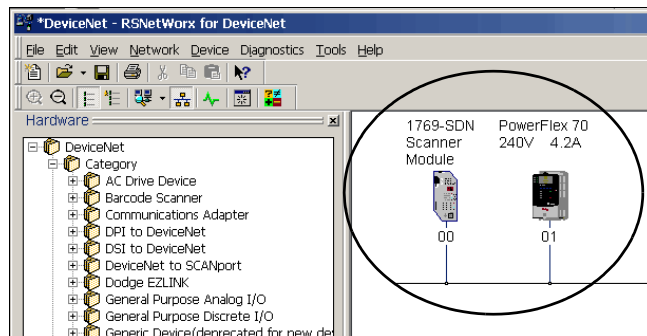
5. Click OK.

6. Click OK when the alert about uploading or downloading device information appears.

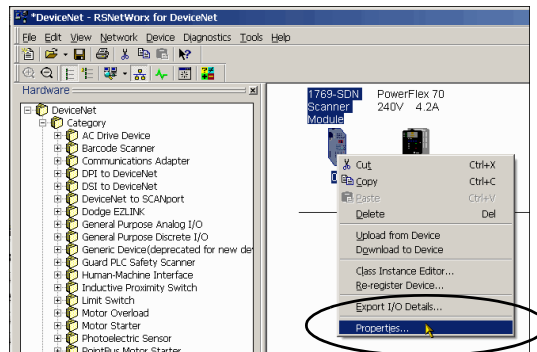


RSNetWorx for DeviceNet software browses the network and shows the scanner module at DeviceNet network node 0 and the drive at node 1.

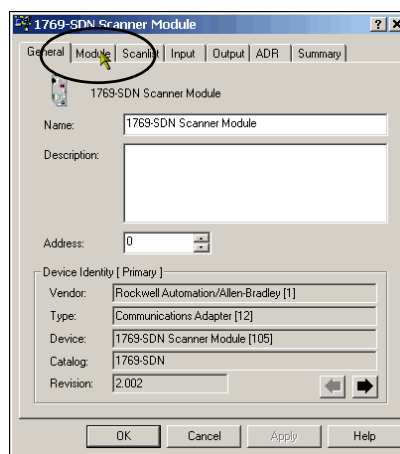
TIP Once the software browses the DeviceNet network to recognize the two nodes installed while completing the tasks described in this quick start, you can click Cancel and the browse function ends.



7. Right-click the scanner module and choose Properties.

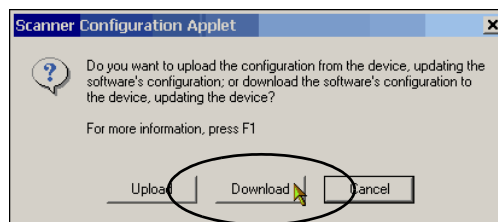


8. Click the Module tab.



9. Click Download.

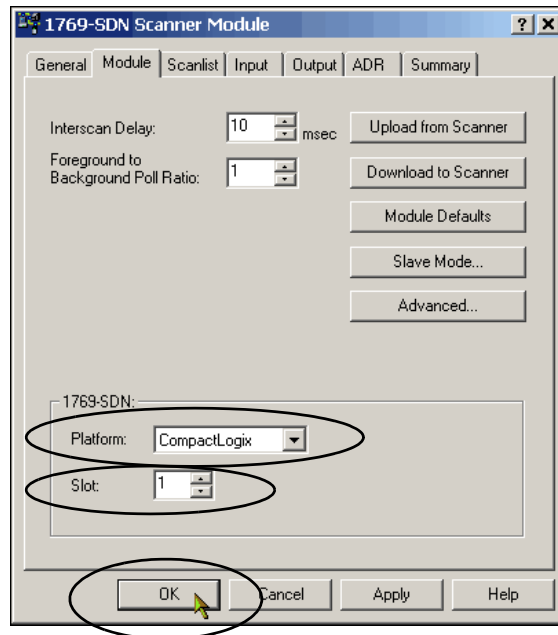
All configuration is cleared from the scanner module, and the software is synchronized with the module.



IMPORTANT

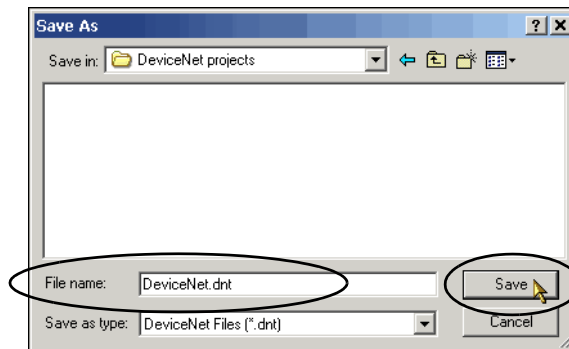
If you receive a fault message on your PowerFlex 70 drive, press  on the keypad to clear the fault.

- 10. From the Platform pull-down menu, choose CompactLogix.
- 11. Enter the slot number of the 1769-SDN scanner module.
- 12. Click OK.



- 13. Save the file and record the file name and path.
- This quick start uses the example file name DeviceNet.dnt.

- 14. Close RSNetWorx for DeviceNet software.

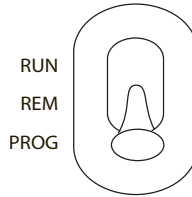


Associate the DeviceNet Configuration File with an RSLogix 5000 Project

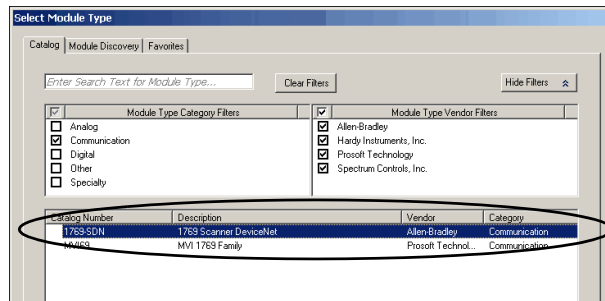
You must associate the DeviceNet network configuration file with your RSLogix 5000 project.

TIP If you already created an RSLogix 5000 project for your Logix5000 controller, as described in Logix5000 controller quick starts, go to [step 5 on page 34](#).

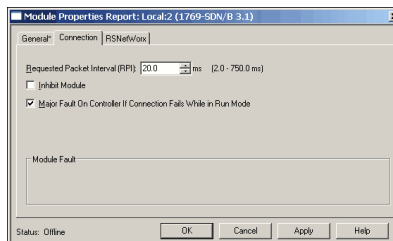
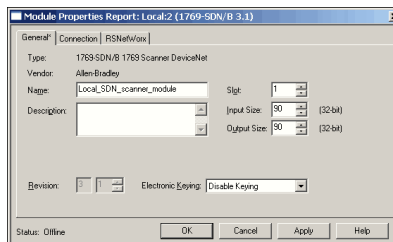
1. Verify the controller's mode switch is in the PROG position.
2. Open a new RSLogix 5000 project.
3. Add the appropriate DeviceNet scanner module to the controller's I/O configuration.



This example uses a 1769-SDN scanner module in a CompactLogix 5370 L3 controller project.



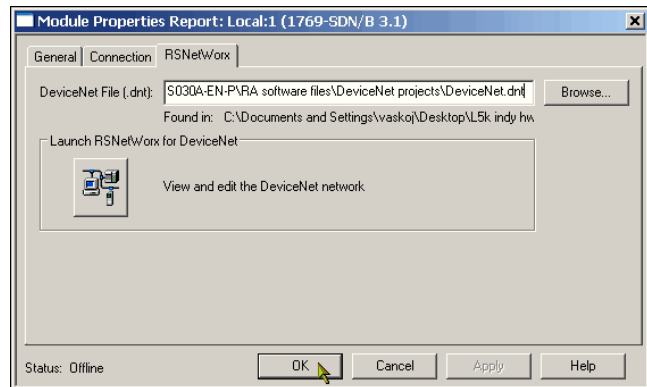
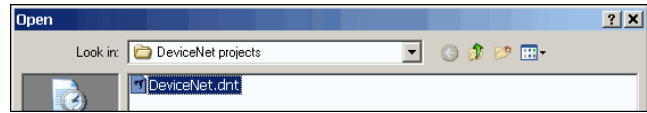
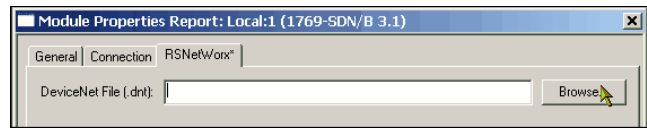
4. Configure the scanner module's parameters on the General and Connection tabs as desired.



5. Configure the scanner module's parameters on the RSNetWorx tab to associate the RSLogix 5000 project with the DeviceNet configuration file created in [Create a DeviceNet Configuration File on page 29](#).

IMPORTANT If you skipped [step 1](#)...[step 4](#) because you already created an RSLogix 5000 project for your Logix5000 controller, verify that the project is open and you have accessed the scanner module's RSNetWorx configuration tab.

- a. On the click Browse.
- b. Navigate to the DeviceNet configuration file and click Open.



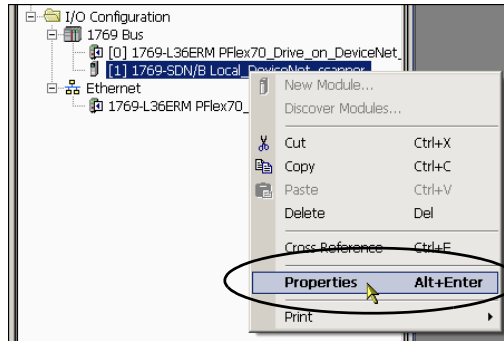
6. Click OK.
7. Save the RSLogix 5000 project and download it to your Logix5000 controller.

This example uses the name **PFlex70_Drive_on_DeviceNet_quick_start.acd**

8. Go offline but leave the RSLogix 5000 project open.

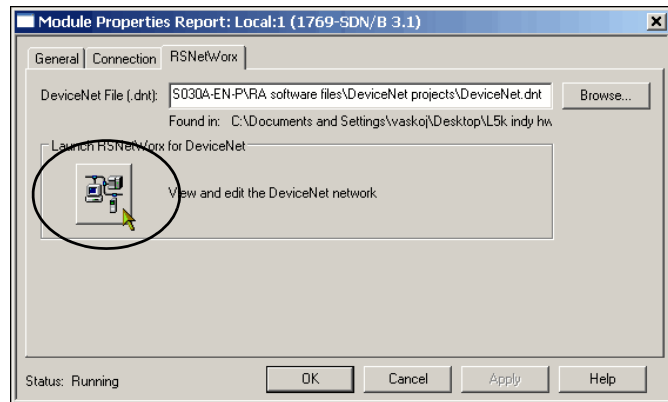
Create a DeviceNet Scanlist

1. Verify that your RSLogix 5000 project that is used with this quick start is open and online.
2. In your RSLogix 5000 project, right-click the scanner module and choose properties.



3. On the RSNetWorx tab, click the Launch RSNetWorx for DeviceNet icon.

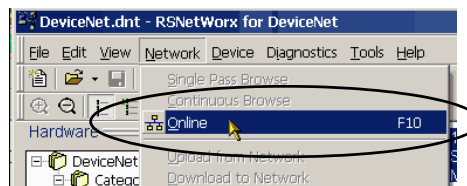
If the project is not associated with the configuration file, use the Browse function to associate them with each other.



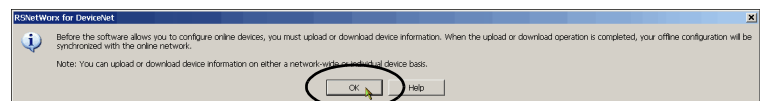
4. Click the Launch RSNetWorx for DeviceNet icon.

The RSNetWorx for DeviceNet launches and opens the DeviceNet configuration file associated with your RSLogix 5000 project.

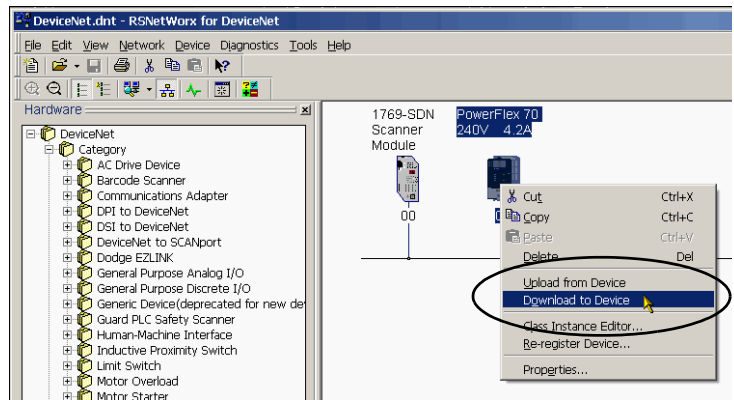
5. From the Network menu, choose Online.



6. If prompted to upload or download device information, click OK.

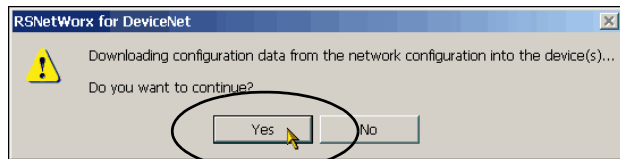


- 7. Right-click the PowerFlex 70 drive and choose Download to Device.

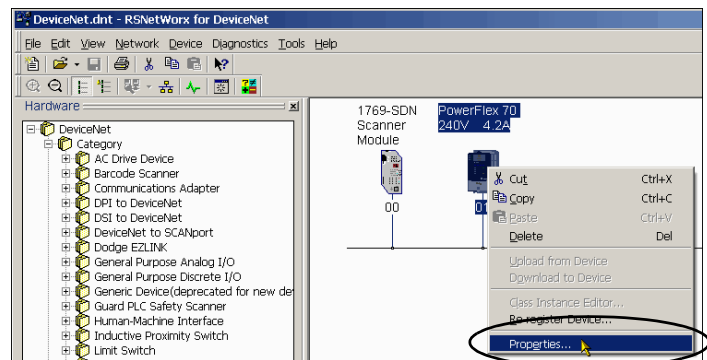


- 8. When prompted to continue configuration download, click Yes.

The configuration downloads to the PowerFlex 70 drive.



- 9. Right-click the PowerFlex 70 drive and choose Properties.

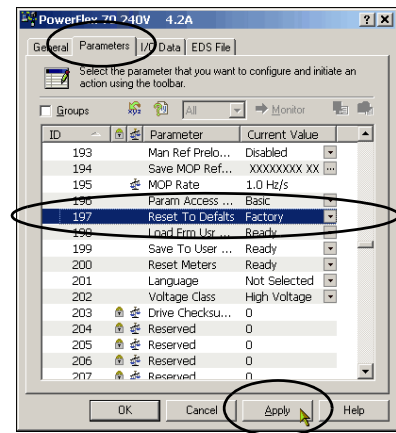


10. If your drive has not been previously used, skip to [step 12](#).

11. If your PowerFlex 70 drive has been used previously, reset it to factory defaults.

- a. Click the Parameters tab.
- b. From the Parameter 197, Reset to Defaults pull-down menu, choose Factory.
- c. Click Apply.

Optional Selection

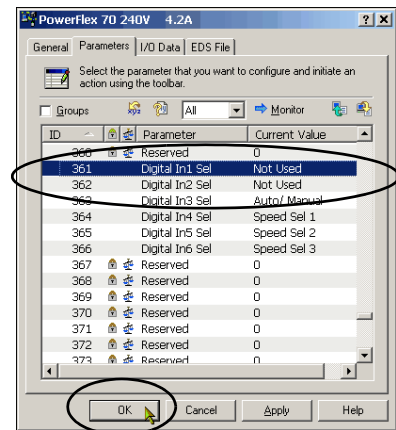
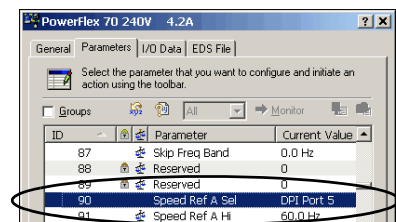


12. Use the pull-down menus to change the following parameters.

ID	Parameter	Required Value
90	Speed Ref A Sel	DPI Port 5
361	Digital In1 Sel	Not used
362	Digital In2 Sel	Not used

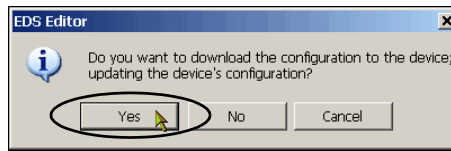
IMPORTANT In this example, you do not need to change any other parameters because this quick start does not include a motor. In real-world applications, the drive is always connected to, and controls, a motor. In that case, you must change additional parameters, for example, parameters 41...45.

Required Selections

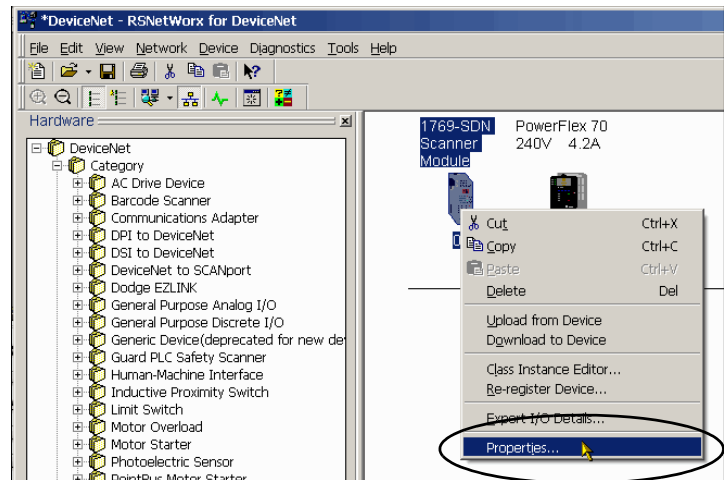


13. Click OK.

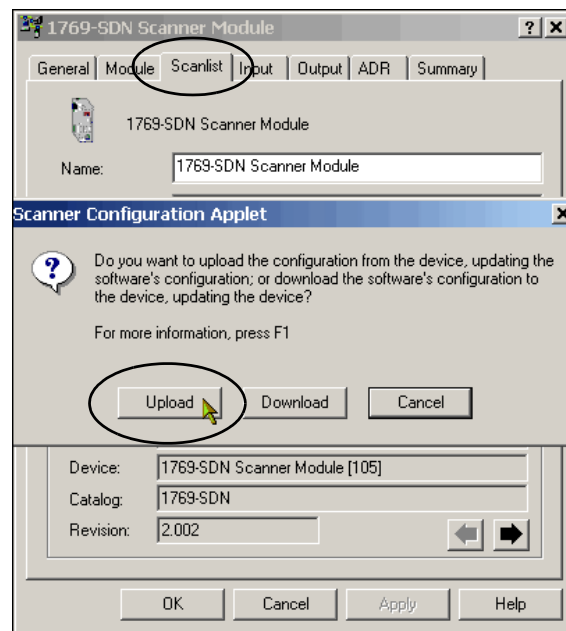
- When prompted to download the configuration and update the device, click Yes.



- Right-click the 1769-SDN scanner module and choose Properties.



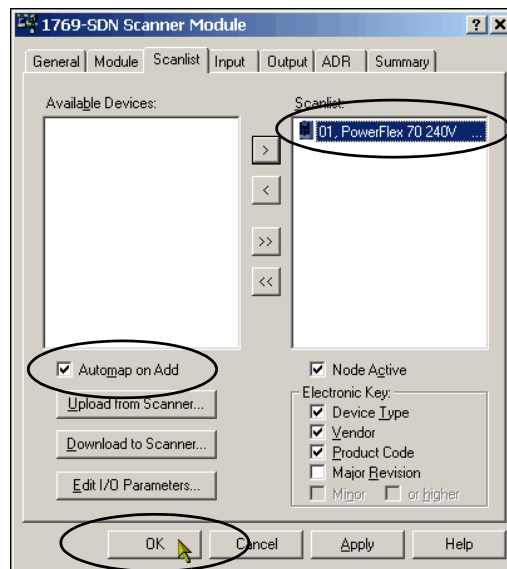
- Click the Scanlist tab on the 1769-SDN Scanner Module dialog box.



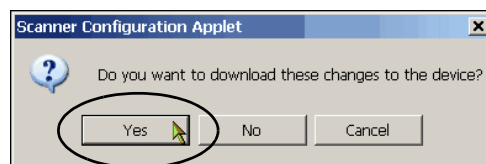
- When prompted to upload or download the configuration, click Upload.

When the upload is complete, the Scanlist tab appears.

18. Verify that Automap on Add is checked.
19. Click the right arrow to move the PowerFlex 70 drive to the Scanlist.
20. Click OK.



21. When prompted to download changes, click Yes.
22. Click OK.



23. Save the file and close RSNetWorx for DeviceNet software.

Notes:

Use a PowerFlex 70 Drive in an RSLogix 5000 Project

In this chapter, you complete the following tasks:

- Create DeviceNet tags with the DeviceNet Tag Generator tool
- Download the updated RSLogix 5000 project to your controller
- Test the drive tags

IMPORTANT

Multiple Logix5000 control systems can use PowerFlex 70 drives over a DeviceNet network. For example purposes, this quick start describes the use of PowerFlex 70 drives over a DeviceNet network in a CompactLogix 5370 L3 control system that includes a 1769-SDN scanner module in a local expansion module slot.

This section uses an RSLogix 5000 project that matches the control system described previously and is named **PFlex70_Drive_on_DeviceNet_quick_start.acd**. The 1769-SDN scanner module has been configured so the RSNetWorx tab links the RSLogix 5000 project to the DeviceNet file created in [Create a DeviceNet Configuration File on page 29](#).

If you use a different Logix5000 controller and DeviceNet scanner module, you can complete the tasks in this chapter but must account for any software differences.

Before You Begin

Before you begin, you must complete these tasks:

- These tasks described in [Before Using This Publication on page 5](#):
 - [Prepare the Logix5000 control system hardware](#)
 - [Prepare the computer](#)
 - [Configure the network](#)
 - [Create an RSLogix 5000 project](#)

- These tasks described in Chapter 1, [Prepare the PowerFlex 70 Drive Hardware on page 13](#):
 - [Mount the Drive](#)
 - [Wire Power to the Drive](#)
 - [Set the Node Address and Communication Rate](#)
 - [Connect the DeviceNet Adapter to the Drive](#)
 - [Connect the Drive to the DeviceNet Network](#)

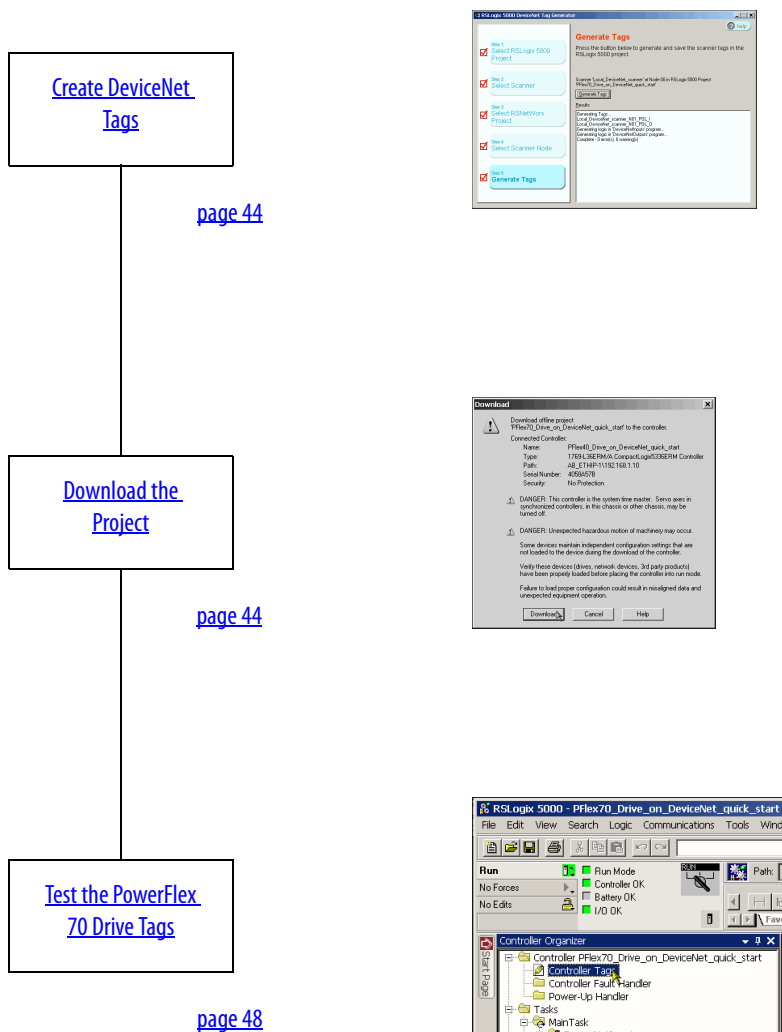
- These tasks described in [Chapter 2, Create DeviceNet Network Software Files on page 21](#):
 - [Set the 1769-SDN Scanner Module's Node Address](#)
 - [Create a DeviceNet Configuration File](#)
 - [Create a DeviceNet Scanlist](#)

What You Need

You need the following software to complete the tasks in this chapter:

- DeviceNet Tag Generator tool in RSLogix 5000 software
- RSLogix 5000 software

Follow These Steps



Create DeviceNet Tags

IMPORTANT

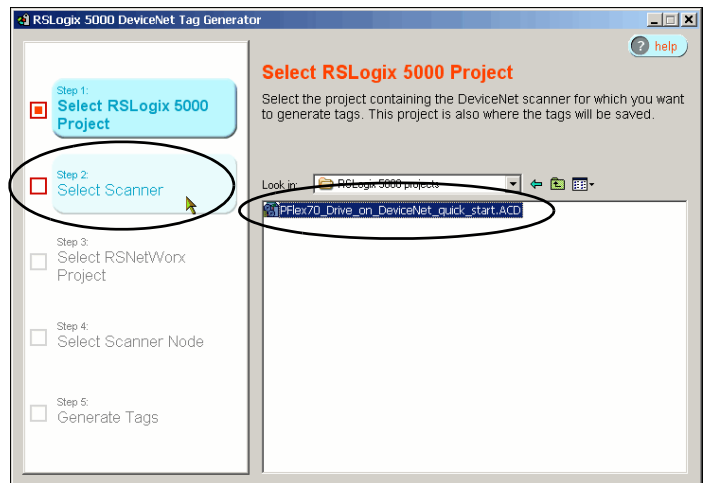
Before running the DeviceNet Tag Generator, verify the following:

- RSNetWorx for DeviceNet software is **closed**.
- RSLogix 5000 project is open and offline.

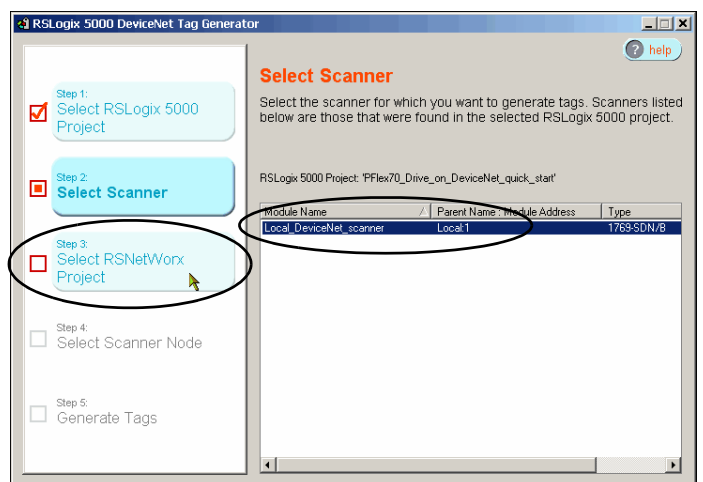
1. Launch the DeviceNet Tag Generator tool.



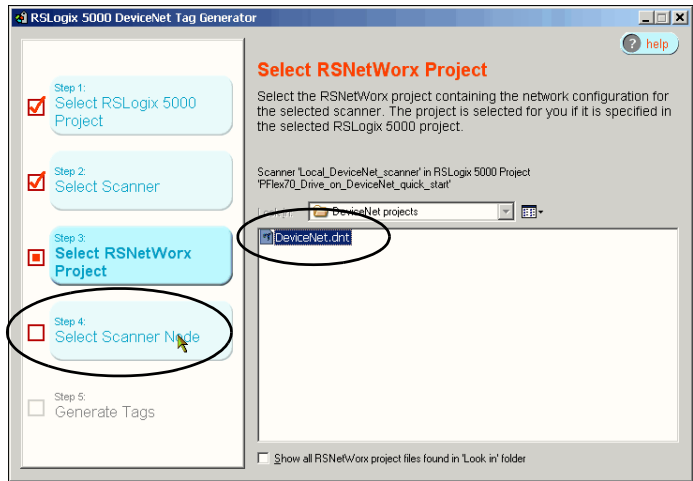
2. Select your RSLogix 5000 project and click Select Scanner.



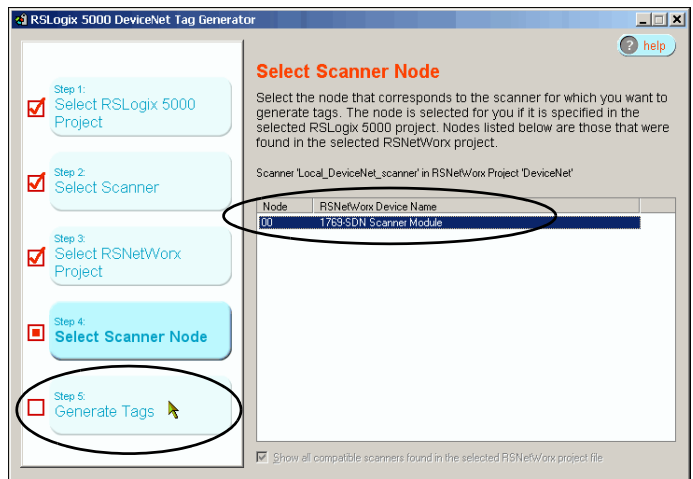
3. Select the 1769-SDN scanner module that scans the network where the device is located and click Select RSNetWorx Project.



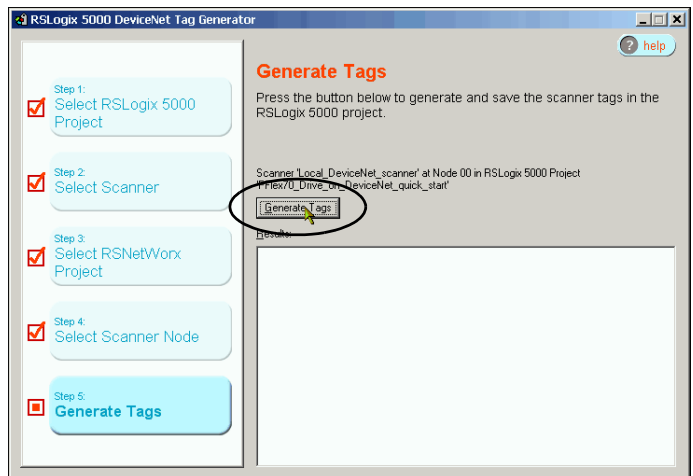
4. Select the main DeviceNet configuration file and click Select Scanner Node.



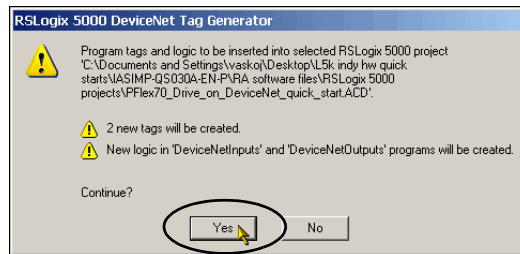
5. Select the node of the DeviceNet scanner module and click Generate Tags.



6. Click Generate Tags.

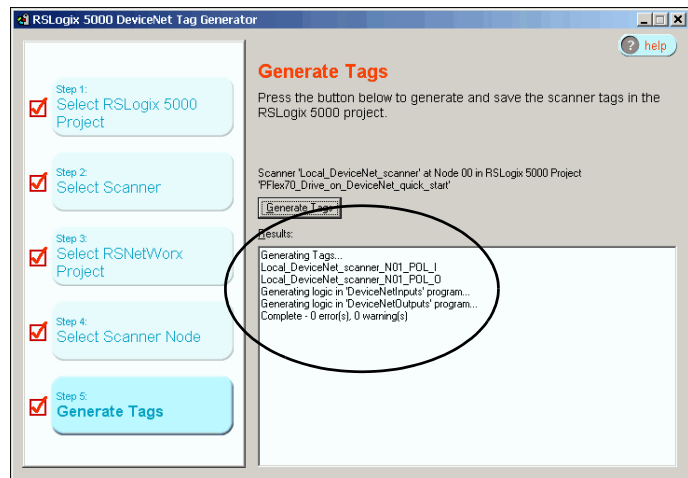


7. When prompted to continue, click Yes.

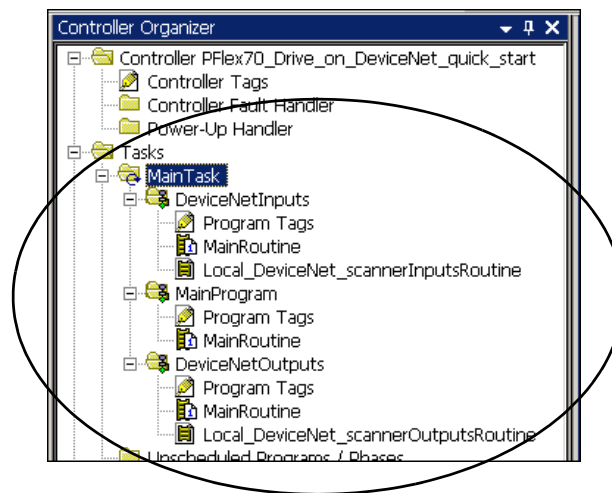


When tag generation is complete, the text log appears.

8. Close the DeviceNet Tag Generator.

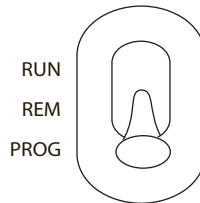


The DeviceNet Tag Generator created new programs and tags that were added to the controller organizer in your RSLogix 5000 project.

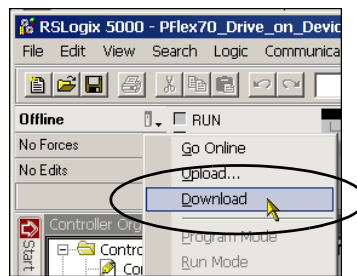


Download the Project

1. Save your RSLogix 5000 project.
2. Verify that the controller's mode switch is in the PROG position.



3. Click the Controller Status icon and choose Download.




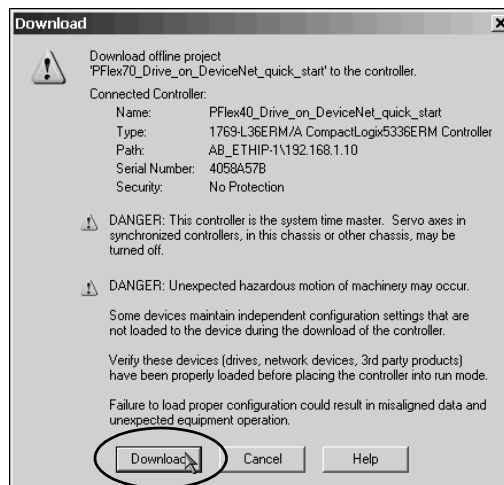
4. On the Download dialog box, click Download.

The project downloads to the controller.

IMPORTANT

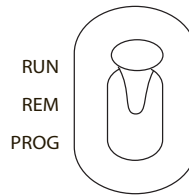
If you receive a fault message on your PowerFlex 70 drive, press

 on the keypad to clear the fault.

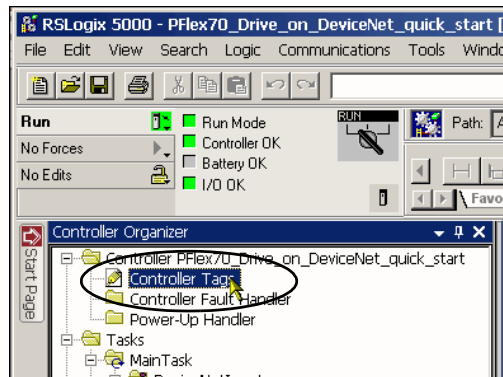


Test the PowerFlex 70 Drive Tags

1. Move the controller's mode switch to the RUN position.



2. In the configuration tree, double-click Controller Tags.



3. Change the O.CommandRegister.Run tag to 1.

The 1769-SDN scanner module transitions to Run mode.

4. If you receive a fault message on your PowerFlex 70 drive, press



on the keypad to clear the fault.

A screenshot of the 'Controller Tags' table in RSLogix 5000. The table shows a list of tags with their names, values, force masks, and styles. The 'Local:1:0.CommandRegister.Run' tag is highlighted with a blue oval, and its value is set to 1.

Name	Value	Force Mas	Style
Local:1:1	(...)	(...)	
Local:1:0	(...)	(...)	
Local:1:0.CommandRegister	(...)	(...)	
Local:1:0.CommandRegister.Run	1		Decimal
Local:1:0.CommandRegister.Fault	0		Decimal
Local:1:0.CommandRegister.DisableNetwork	0		Decimal
Local:1:0.CommandRegister.HaltScanner	0		Decimal
Local:1:0.CommandRegister.Reset	0		Decimal

- Change the Local_DeviceNet_scanner_N01_POL_O.Reference tag to 15000.

This value is the speed to which your drive accelerates.

Local_DeviceNet_scanner_N01_POL_O	{...}
Local_DeviceNet_scanner_N01_POL_O.LogicCommand	2#0000...
Local_DeviceNet_scanner_N01_POL_O.Stop	0
Local_DeviceNet_scanner_N01_POL_O.Start	0
Local_DeviceNet_scanner_N01_POL_O.Jog	0
Local_DeviceNet_scanner_N01_POL_O.ClearFault	0
Local_DeviceNet_scanner_N01_POL_O.Forward	0
Local_DeviceNet_scanner_N01_POL_O.Reverse	0
Local_DeviceNet_scanner_N01_POL_O.LocalControl	0
Local_DeviceNet_scanner_N01_POL_O.MOPInc	0
Local_DeviceNet_scanner_N01_POL_O.Accel1	0
Local_DeviceNet_scanner_N01_POL_O.Accel2	0
Local_DeviceNet_scanner_N01_POL_O.Decel1	0
Local_DeviceNet_scanner_N01_POL_O.Decel2	0
Local_DeviceNet_scanner_N01_POL_O.SpdRefID0	0
Local_DeviceNet_scanner_N01_POL_O.SpdRefID1	0
Local_DeviceNet_scanner_N01_POL_O.SpdRefID2	0
Local_DeviceNet_scanner_N01_POL_O.MOPDec	0
Local_DeviceNet_scanner_N01_POL_O.Reference	15000

- Change the Local_DeviceNet_scanner_N01_POL_O.Start tag to 1.

The display on the drive registers the speed increase in Hertz until the value entered at the reference tag is reached.

Local_DeviceNet_scanner_N01_POL_O	{...}
Local_DeviceNet_scanner_N01_POL_O.LogicCommand	2#0000...
Local_DeviceNet_scanner_N01_POL_O.Stop	0
Local_DeviceNet_scanner_N01_POL_O.Start	1
Local_DeviceNet_scanner_N01_POL_O.Jog	0

- Change the O.Start tag back to 0.

Local_DeviceNet_scanner_N01_POL_O	{...}
Local_DeviceNet_scanner_N01_POL_O.LogicCommand	2#0000...
Local_DeviceNet_scanner_N01_POL_O.Stop	0
Local_DeviceNet_scanner_N01_POL_O.Start	0
Local_DeviceNet_scanner_N01_POL_O.Jog	0

8. Change the O.Stop tag to 1.

The display on the drive shows a speed decrease until the drive reaches 0.00 Hz.

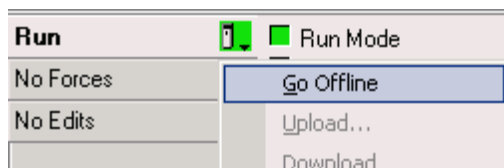
[-] Local_DeviceNet_scanner_N01_POL_0	{...}
[+] Local_DeviceNet_scanner_N01_POL_0.LogicCommand	2#0000...
Local_DeviceNet_scanner_N01_POL_0.Stop	1
- Local_DeviceNet_scanner_N01_POL_0.Start	0
- Local_DeviceNet_scanner_N01_POL_0.Loc	0

9. Change the Stop tag back to 0.

[-] Local_DeviceNet_scanner_N01_POL_0	{...}
[+] Local_DeviceNet_scanner_N01_POL_0.LogicCommand	2#0000...
Local_DeviceNet_scanner_N01_POL_0.Stop	0
- Local_DeviceNet_scanner_N01_POL_0.Start	0

10. Select Go Offline.

By starting and stopping the drive, you verified the following:



- The controller is correctly communicating with the drive.
- The drive can receive simple commands.

Numerics

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- 1785P-P1E4-R5 Kwiklink sealed micro connector** 11, 14
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