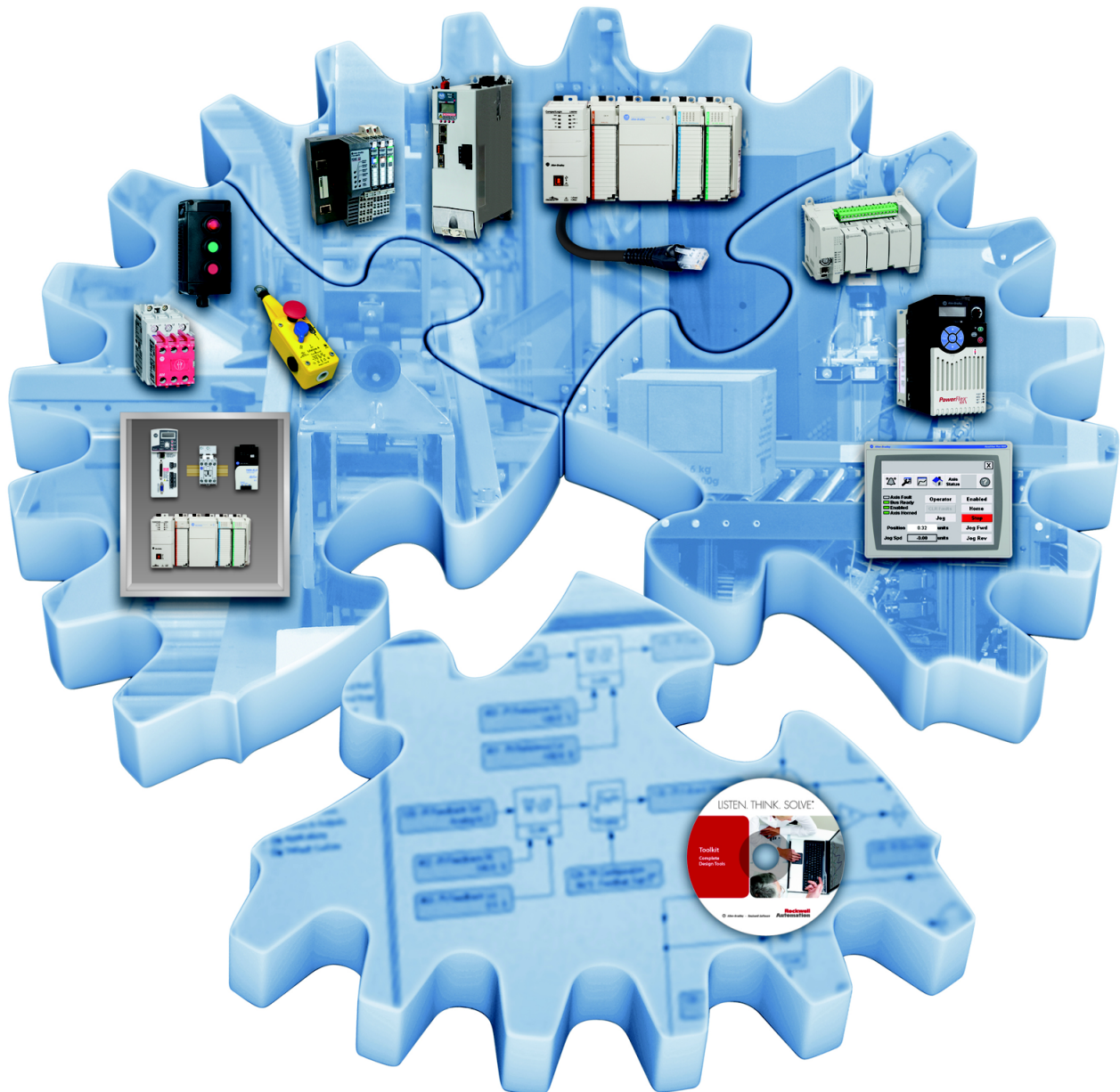


Logix5000 Systems: Connect PowerFlex 70 Drives over an EtherNet/IP Network



Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

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.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

Reproduction of the contents of this manual, in whole or in part, without written permission of Rockwell Automation, Inc., is prohibited.

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.

IMPORTANT

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

Labels may also be on or inside the equipment to provide specific precautions.



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.

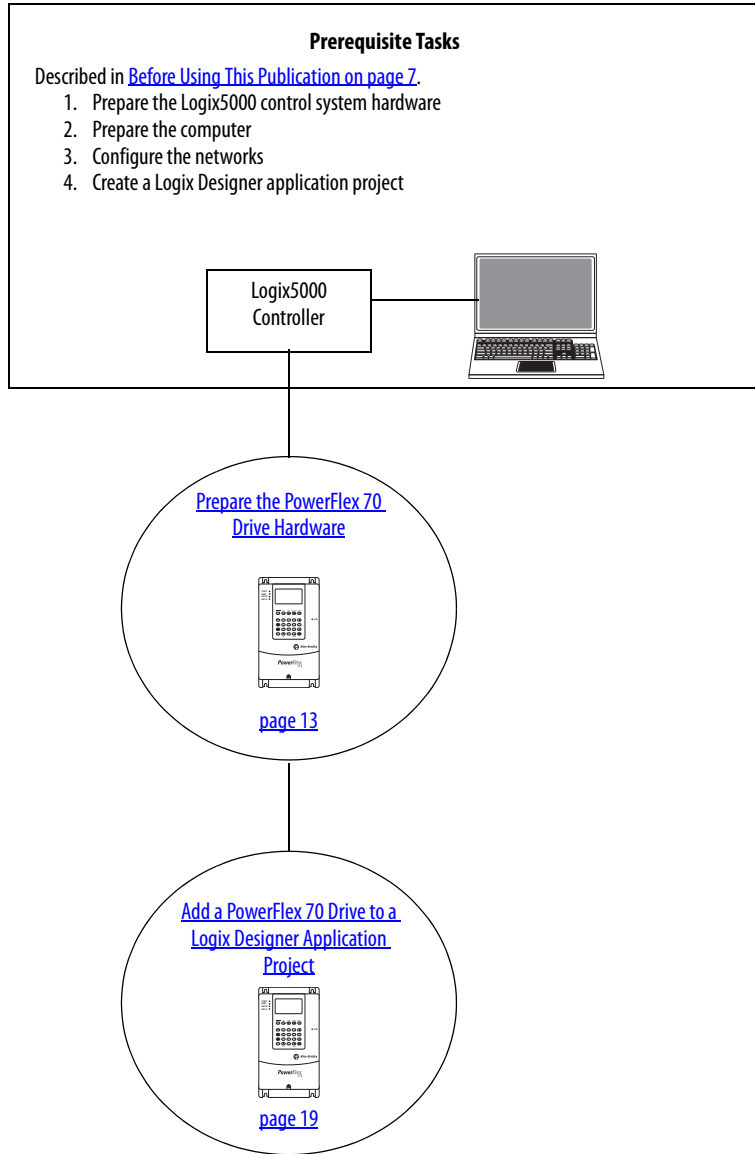


BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.



ARC FLASH HAZARD: Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

Follow this path to connect a PowerFlex 70 drive over an EtherNet/IP Network.



Notes:

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Notes:

About This Publication

This quick start provides examples and procedures for including a PowerFlex® 70 drive in a Logix5000™ control system over an EtherNet/IP network. The programming examples are not complex, and offer easy solutions to verify that the devices function and communicate properly.

- IMPORTANT**
- This publication describes **example tasks** that you complete when using a PowerFlex 70 drive on an EtherNet/IP network. The tasks that are described are **not** the only tasks you can complete with the PowerFlex 70 drive on an EtherNet/IP network.
 - This publication describes how to use a 20AB4P2A0AYNNC0 PowerFlex 70 AC drive to complete the example tasks. You can use other PowerFlex 70 drives to complete the tasks. If you choose to use another drive, you must account for differences between drives. For example, chapter 2 describes how to wire power to the 20AB4P2A0AYNNC0 drive. If you use another PowerFlex 70 drive, make sure that you understand the power requirements for the drive before you connect power to the drive.

Before Using This Publication

You can only complete the tasks in this publication after you first complete some prerequisite tasks with a Logix5000 controller. For example, before you can add a PowerFlex 70 drive to a Logix Designer project, as described in [page 19](#), you must first create the project in a Logix5000 controller.

[Table 1](#) describes the tasks that you must complete before using this publication.

- IMPORTANT** The example graphics that are shown in [Table 1 - Required Tasks to Complete before Using This Quick Start on page 7](#) are for CompactLogix™ 5370 L3 controllers. Depending on the Logix5000 controller you use, the specific steps to complete the tasks described in the table can vary.

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](#).

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

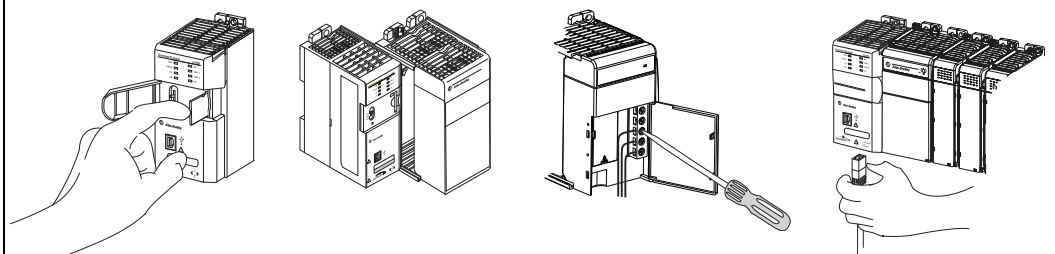

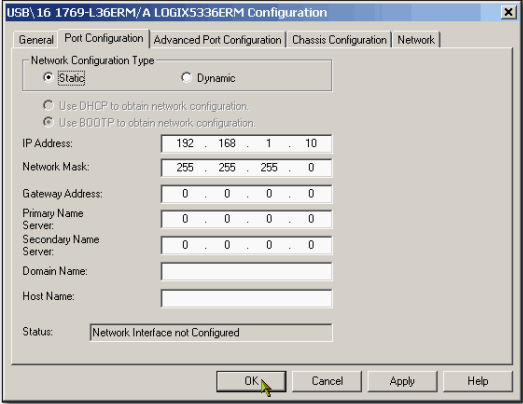
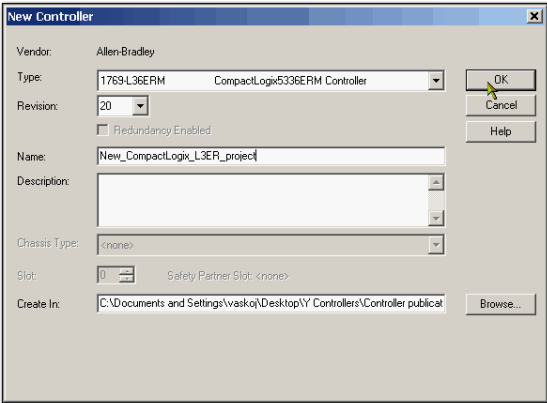
Task	Description
Prepare the Logix5000 control system hardware	<p>Assemble the control system and connect to necessary communication networks. Some components, for example, the Logix5000 controller and system power supply, are required. Other components, for example, a network communication module, are optional. These example graphics show the assembly of one Logix5000 controller.</p>  <p>IMPORTANT: This task excludes installation of specific hardware components, for example, PowerFlex 70 drives, used over the networks included in your application.</p>

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

Task	Description
<p>Prepare the computer</p>	<p>Install the required software on your computer. The Studio 5000 Engineering & Design Environment™ combines engineering and design elements into a common environment. The first element in the Studio 5000® environment is the Logix Designer application. Logix Designer is the rebranding of RSLogix™ 5000 software. Logix Designer is the product to program Logix5000 controllers for discrete, process, batch, motion, safety, and drive-based solutions.</p>  <p>The Studio 5000 environment is the foundation for the future of Rockwell Automation® engineering design tools and capabilities. It is the one place for design engineers to develop all elements of their control system.</p>
<p>Configure the networks</p>	<p>Assign an IP address to the controller communication port or communication module in your Logix5000 control system. Complete other required tasks that are associated with the networks used in your application.</p> 
<p>Create a Logix Designer application project</p>	<p>Create a project to use with your Logix5000 controller. A project includes all desired control system components and necessary programming. For example, add ladder logic to test tasks that are associated with individual system components.</p> 

Controller and Other Component Quick Starts

This quick start describes how to use one device on one network in a Logix5000 control system. Typically, a Logix5000 control system includes more than the controller and one device on one network.

For example, a Logix5000 control system that operates on an EtherNet/IP network can have:

- Controller
- Power supply
- Communication modules
- Remote I/O modules
- Drives
- HMI terminals

Other quick starts describe how to use different devices on different networks in Logix5000 control systems. For more information, see the Integrated Architecture: Logix5000 Control Systems Quick Starts Quick Reference, publication [IASIMP-QR024](#).

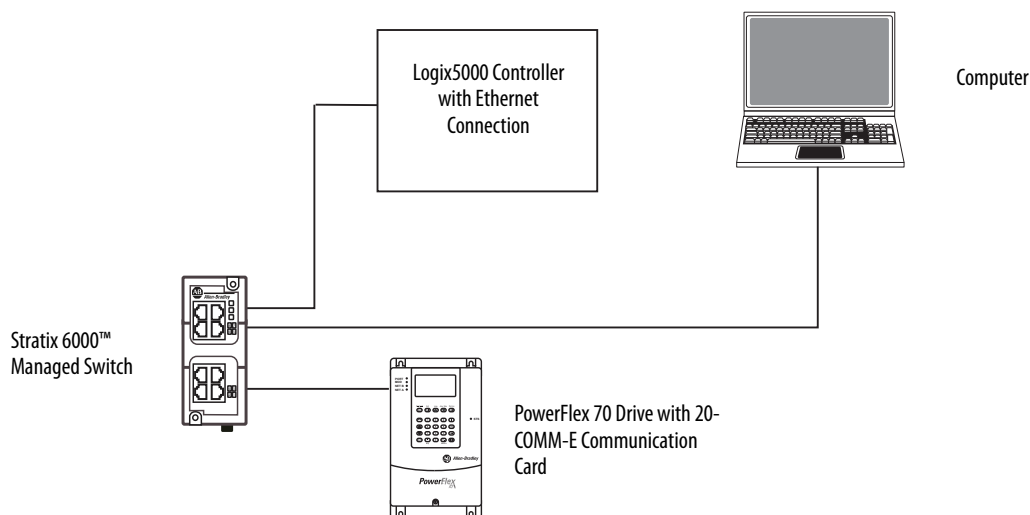
Use Each Chapter

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

- **Before You Begin** - This section lists the tasks that you must complete before starting the chapter.
- **What You Need** - This section lists the tools that are required to complete the tasks in the chapter.
- **Follow These Steps** - This section illustrates the steps in the current chapter.

How Hardware is Connected

This quick start demonstrates the following control system.



Required Software

To complete examples in **this quick start**, you need the software shown in this table.

Software	Required Version	Required for This Task
Studio 5000 environment	21.00.00 or later ⁽¹⁾	Create or change Logix Designer application projects to use PowerFlex 70 drives. The Logix Designer application is an element of the Studio 5000 Environment and is used to create Logix5000 controller projects.
BOOTP/DHCP utility	Version is automatically installed with the Logix Designer application, and varies according to the application version	Set IP address for PowerFlex 70 drive.

(1) Studio 5000 Environment version 21.00.00 or later, is required to use this quick start because it includes the Logix Designer application version 21.00.00 or later. The examples in this quick start feature a CompactLogix 5370 L3 control system that uses the Logix Designer application, version 21.00.00. If you connect a PowerFlex 70 drive over an EtherNet/IP network in a Logix5000 control system that uses another controller, this software requirement can differ.

Parts List

You need these parts to complete the tasks in this quick start.

✓	Quantity	Cat. No.	Description
	1	20AB4P2A0AYNNNC0 ⁽¹⁾	PowerFlex 70 AC drive
	1	20-COMM-E	Communication adapter for use with the PowerFlex 70 drive
	3	1585J-M8PBJM-2	RJ45 to RJ45 patchcord Ethernet cables

(1) This publication describes how to use a 20AB4P2A0AYNNNC0 PowerFlex 70 AC drive to complete the example tasks. You can use other PowerFlex 70 drives to complete the tasks. If you choose to use another drive, you must account for differences between drives. For example, chapter 2 describes how to wire power to the 20AB4P2A0AYNNNC0 drive. If you use another PowerFlex 70 drive, make sure that you understand the power requirements for the drive before you connect power to the drive.

For each prerequisite task in [Table 1 - Required Tasks to Complete before Using This Quick Start on page 7](#), a parts list is included in the documentation that is associated with the task.

Additional Resources

Use the resources in this table for more information when using PowerFlex 40 drives over an EtherNet/IP network in a Logix5000 controller project.

Resource	Description
PowerFlex 70 User Manual, publication 20A-UM001	Describes how to install, program, and edit parameters for PowerFlex 70 drives.
PowerFlex 20-COMM-E EtherNet/IP Adapter User Manual, publication 20COMM-UM010	Describes how to install, configure, and use a PowerFlex 70 EtherNet/IP adapter.
EtherNet/IP Modules in Logix5000 Control Systems, publication ENET-UM001	Describes how to install, configure, and operate EtherNet/IP modules.
ControlLogix [®] Controllers Common Procedures Programming Manual, publication 1756-PM001	Provides information on how to add and configure modules, establish communication, and write 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 20A-B4P2A0AYNNNC0 drive.

IMPORTANT This publication describes how to use a 20AB4P2A0AYNNNC0 PowerFlex 70 AC drive to complete the example tasks. You can use other PowerFlex 70 drives to complete the tasks. If you choose to use another drive, you must account for differences between drives. For example, chapter 2 describes how to wire power to the 20AB4P2A0AYNNNC0 drive. If you use another PowerFlex 70 drive, make sure that you understand the power requirements for the drive before you connect power to the drive.

- Configure EtherNet/IP communication for the drive.

Before You Begin

Before using this chapter, you must complete the tasks that are listed in [Before Using This Publication on page 7](#):

- [Prepare the Logix5000 control system hardware](#)
- [Prepare the computer](#)
- [Configure the networks](#) - The tasks in this chapter require an EtherNet/IP network.
- [Create a Logix Designer application project](#)

The example Logix Designer project that you create in this chapter uses a CompactLogix 5370 L3 controller.

What You Need

Use these products to complete the tasks in this chapter.

Quantity	Cat. No.	Description
1	20AB4P2A0AYNNNC0 ⁽¹⁾	PowerFlex 70 AC drive
1	20-COMM-E	Communication adapter for use with the PowerFlex 70 drive
1	1585J-M8PBJM-2	RJ45 to RJ45 patchcord Ethernet cable

(1) This publication describes how to use a 20AB4P2A0AYNNNC0 PowerFlex 70 AC drive to complete the example tasks. You can use other PowerFlex 70 drives to complete the tasks. If you choose to use another drive, you must account for differences between drives. For example, chapter 2 describes how to wire power to the 20AB4P2A0AYNNNC0 drive. If you use another PowerFlex 70 drive, make sure that you understand the power requirements for the drive before you connect power to the drive.

Follow These Steps

[Mount the 20AB4P2A0AYNNNC0 Drive](#)

[page 14](#)

[Wire Power](#)

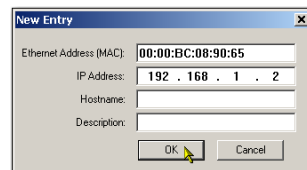
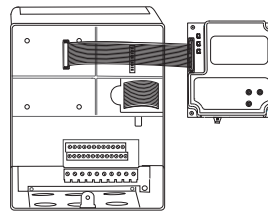
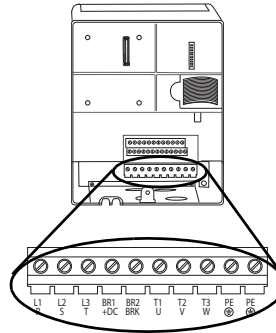
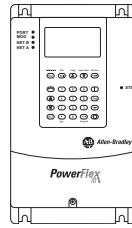
[page 15](#)

[Connect the EtherNet/IP Adapter to the Drive](#)

[page 16](#)

[Configure the EtherNet/IP Adapter](#)

[page 16](#)



Mount the 20AB4P2A0AYNNNC0 Drive

You mount the drive upright on a flat, vertical, and level surface with considerations for minimum mounting clearance, ambient operating temperature, debris protection, and storage.

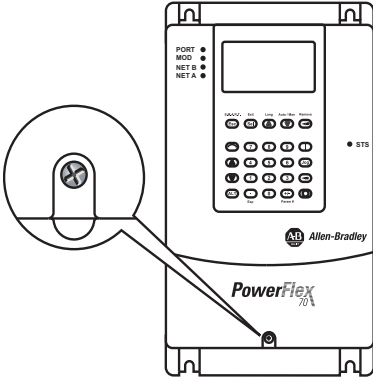
To complete the tasks in this chapter, mount the 20AB4P2A0AYNNNC0 drive on a DIN rail. For complete mounting instructions, see the PowerFlex 70 Drive User Manual, publication [20A-UM001](#).

Wire Power



WARNING: Verify that all incoming power is turned off before wiring power.
Do not turn incoming power on before connecting the EtherNet/IP adapter to the drive.

1. Loosen the screw at the bottom of the drive, as shown, and remove the cover.




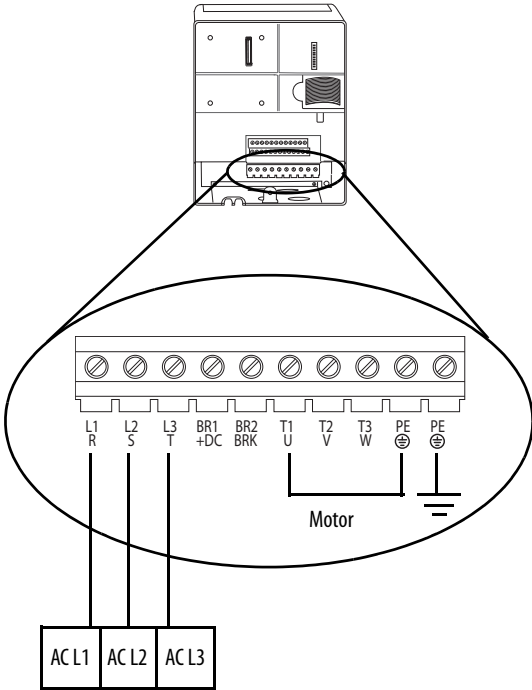
2. Loosen the screws and slide the metal plate out of the drive.

The 20AB4P2A0AYNNNC0 drive uses only the following inputs:

- 208V AC three phase
- 240V AC three phase

3. Connect the AC power conductors to the drive terminals according to 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](#).

Connect the EtherNet/IP Adapter to the Drive

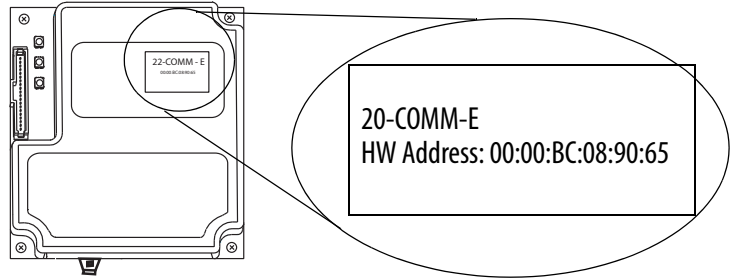


WARNING: Turn off all incoming power before you connect the adapter to the drive.

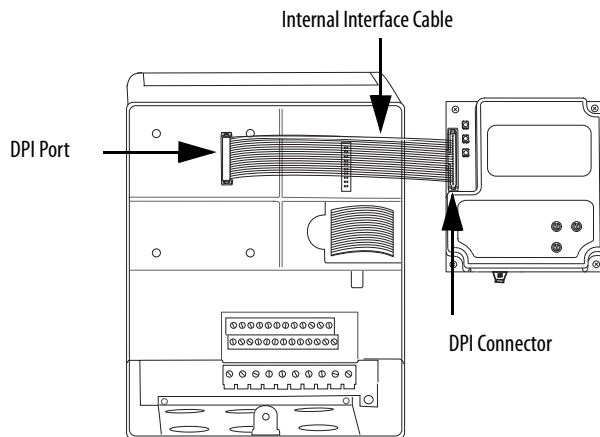
1. Before you connect the PowerFlex 20-COMM-E EtherNet/IP adapter to the PowerFlex 70 drive, record the Ethernet (MAC ID) address.

You need this number to set an IP address for the adapter, as described in [Configure the EtherNet/IP Adapter on page 17](#).

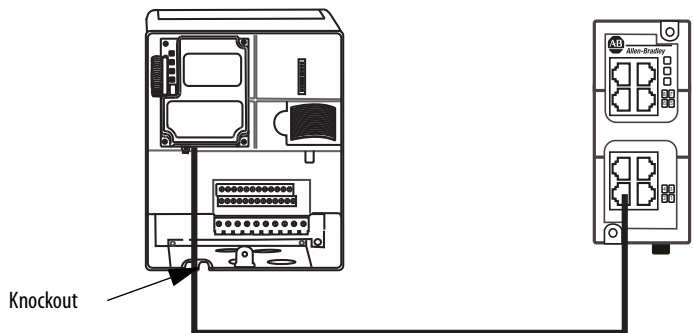
The MAC ID address uses format *xx:xx:xx:xx:xx:xx* where each *x* is a letter or numeral. The MAC ID is on the adapter product ID label as shown in the example graphic.



2. Connect the Internal Interface cable to the DPI port on the drive, and to the DPI connector on the adapter.
3. Fold the cable under the adapter without creasing, and secure the adapter on the drive using the captive screws.



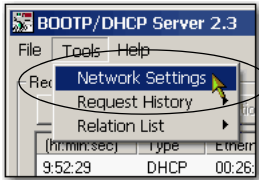
4. Remove a knockout from the bottom plate of the drive and route the Ethernet cable through it.
5. Connect one end of an Ethernet cable to the Ethernet adapter, and the other end to the Ethernet switch.
6. Replace drive cover.



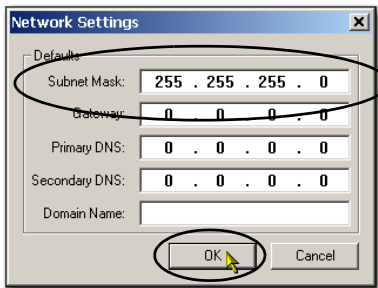
Configure the EtherNet/IP Adapter

The PowerFlex 20-COMM-E EtherNet/IP Adapter requires a network IP address to operate on an EtherNet/IP network. You use the BOOTP/DHCP server to assign an IP address.

1. Retrieve the MAC ID you recorded in step 1 on [page 16](#).
2. Start the BOOTP/DHCP utility.
3. From the Tools menu, choose Network Settings.



4. Type the Subnet Mask of the network.

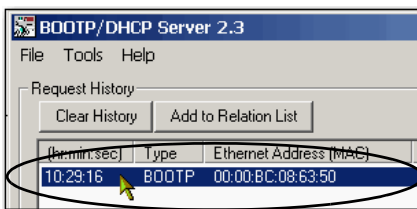


The Gateway address, Primary and/or Secondary DNS address, and Domain Name fields are optional.

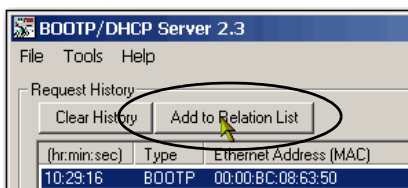
5. Click OK.

The Request History panel appears with the hardware addresses of all devices issuing BOOTP requests.

6. Select the appropriate device, that is, the device with the MAC ID that matches your PowerFlex 70 drive.

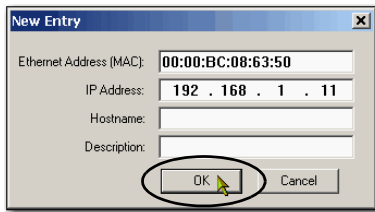


7. Click Add to Relation List.

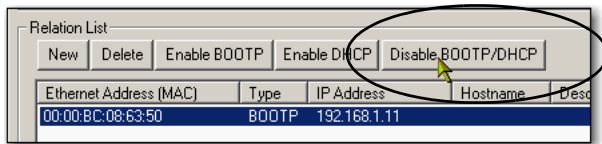


The New Entry dialog box appears.

8. Type an IP address, Hostname, and Description for the adapter.



9. Click OK.
10. To assign this configuration permanently to the adapter, wait for the adapter to appear in the Relation List panel and select it.
11. Click Disable BOOTP/DHCP.



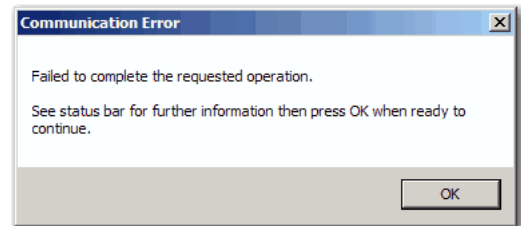
IMPORTANT

If you do not click Disable BOOTP/DHCP, on a power cycle, the host controller clears the current IP configuration and begins sending BOOTP requests again.

When power is cycled, the adapter uses the assigned configuration and does not issue a BOOTP request.

If you receive a communication error message, then use the LCD HIM on the drive to access the 20-COMM-E adapter and complete the following tasks:

- Disable BOOTP [Parameter 3]
- Set the IP address [Parameters 4 - 7]
- Set the Subnet mask [Parameters 8- 11]
- Set the Gateway address Parameters 12- 15]



For more information on using the adapter parameters to assign an IP address, see the PowerFlex 20-COMM-E EtherNet/IP Adapter User Manual, publication [20COMM-UM010](#).

Additional Resources

For a list of additional resources that can assist you when preparing the PowerFlex 70 drive hardware, see [page 11](#).

Add a PowerFlex 70 Drive to a Logix Designer Application Project

In this chapter, you add a PowerFlex 70 drive to a Logix Designer application project and configure it. You also download the project to the controller so you can verify communication with the drive.

Before You Begin

You must complete these tasks that are listed in [Before Using This Publication on page 7](#):

- [Prepare the Logix5000 control system hardware](#)
- [Prepare the computer](#)
- [Configure the networks](#) - The tasks in this chapter require an EtherNet/IP network.
- [Create a Logix Designer application project](#)

The example Logix Designer project that you create in this chapter uses a CompactLogix 5370 L3 controller.

- Prepare the 20AB4P2A0AYNNNC0 drive as described in Chapter 1, [Prepare the PowerFlex 70 Drive Hardware on page 13](#), including:
 - [Mount the 20AB4P2A0AYNNNC0 Drive](#)
 - [Wire Power](#)
 - [Connect the EtherNet/IP Adapter to the Drive](#)
 - [Configure the EtherNet/IP Adapter](#)

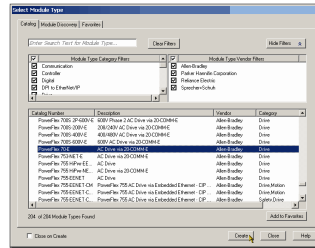
What You Need

You need the Logix Designer application to complete the tasks in this chapter.

Follow These Steps

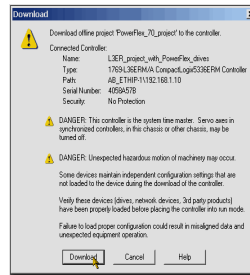
Add the Drive to the Logix Designer Application Project

page 21



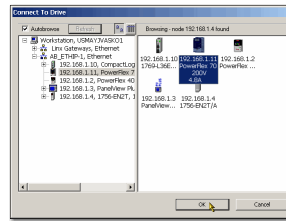
Download the Project

page 25



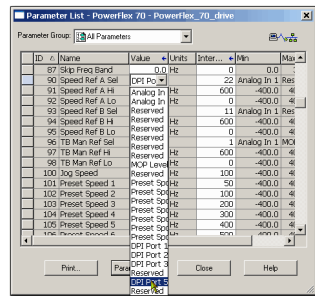
Connect to the PowerFlex 70 Drive

page 26



Edit the Drive Parameters

page 28



Test the Drive Tags

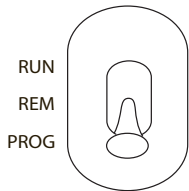
page 33

Path	Value	Units	Inter...	Min	Max
PowerFlex_70_drive0	(...)	(...)	(...)	(...)	(...)
PowerFlex_70_drive0.DriveLogRat	2#0000_0000_0000...				Binary INT
PowerFlex_70_drive0.DriveLogRat_Accel1	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_Accel2	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_ClearFault	1	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_Decel1	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_Decel2	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_Forward	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_Log	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_LocalCov1	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_MDPDec	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_MDPInc	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_Reverse	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_SpdField0	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_SpdField01	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_SpdField02	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_Start	0	Decimal			BOOL
PowerFlex_70_drive0.DriveLogRat_Stop	0	Decimal			BOOL

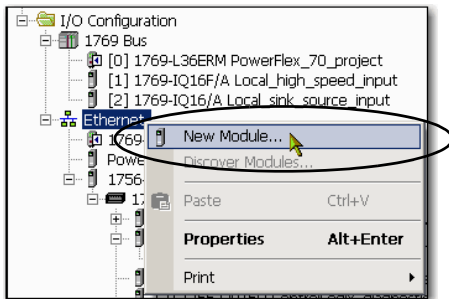
Add the Drive to the Logix Designer Application Project

IMPORTANT The tasks in this section use a Logix Designer application version 21.00.00 project for a CompactLogix 5370 L3 controller. If you use a different Logix5000 controller, then your project version can be different.

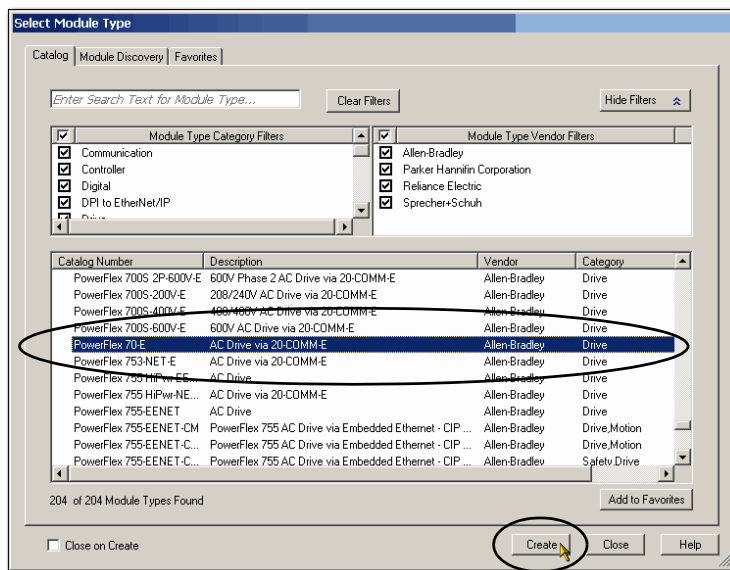
1. Verify that your Logix Designer application project is offline.
2. Verify that the Logix5000 controller mode switch is in the PROG mode position.



3. Right-click your network port and choose New Module.

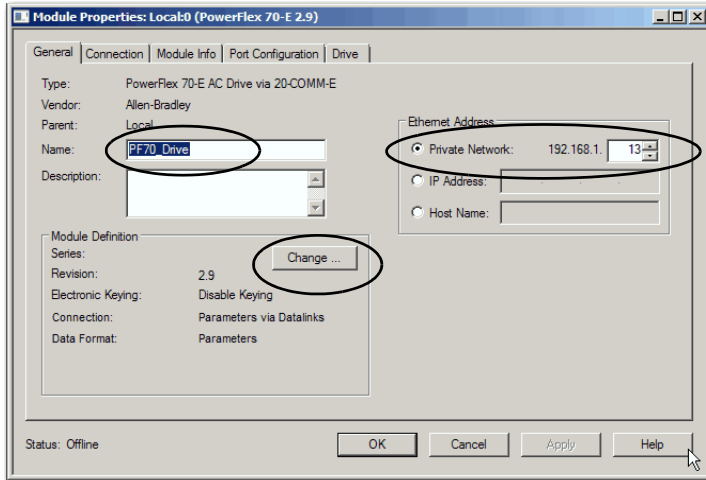


4. Select your PowerFlex 70 drive and click Create.

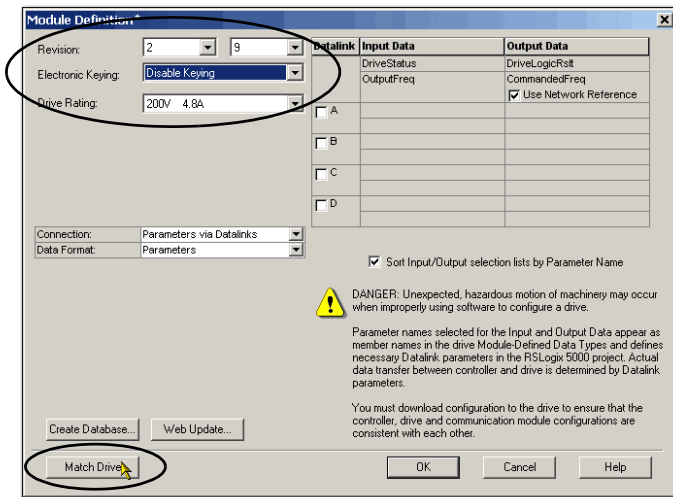


The Select Module Type dialog box can look different if you are using a different Logix5000 controller and application version than what is used in this publication.

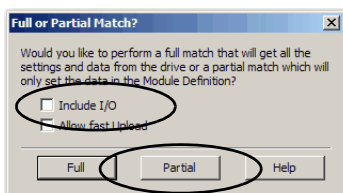
5. On the New Module dialog box, complete the following tasks:
 - a. Enter a name for the drive.
 - b. Enter the same IP address for the drive as the IP address you assigned to the EtherNet/IP adapter in [Configure the EtherNet/IP Adapter on page 17](#).
 - c. Click Change.



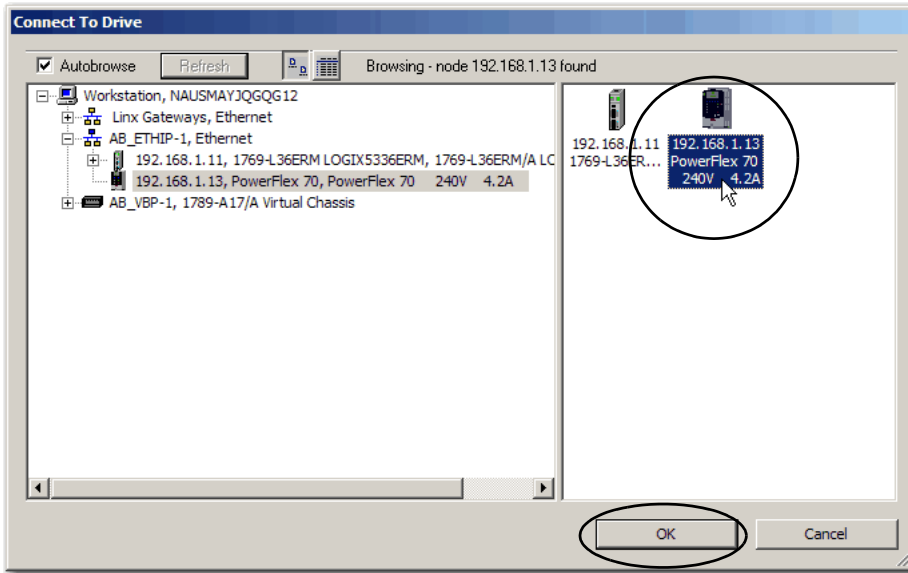
6. On the Module Definition dialog box, complete the following tasks.
 - a. Select the appropriate Revision of the firmware that is on your drive.
 - b. Select Disable Keying.
 - c. Select the Drive Rating that matches your PowerFlex 70 drive.
 - d. Click Match Drive.



7. On the Full or Partial Match dialog box, clear Include I/O.
8. Click Partial.



9. On the Connect to Drive dialog box, navigate to the drive.
10. Select the drive and click OK.



The software shows a Creating Device Database File dialog box that tracks the progress of the function.

No action is necessary.

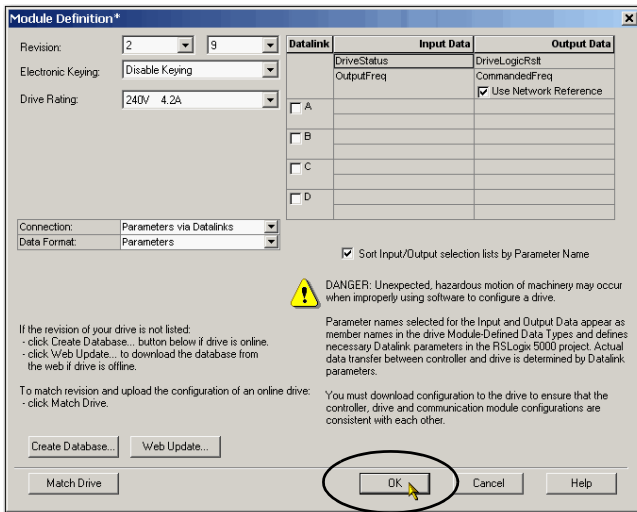
IMPORTANT If your computer already has a database on it, then the software does not create a database.

A dialog box appears with the message, 'Match to online drive completed successfully.'

11. Click OK.

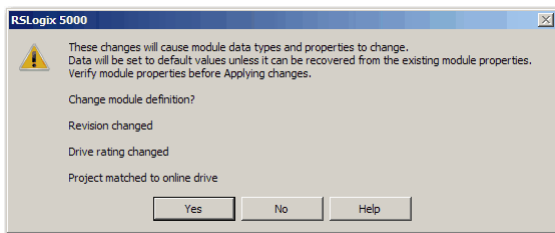


12. On the Module Definition dialog box, click OK.



A confirmation dialog box appears asking if you want to change the module definitions.

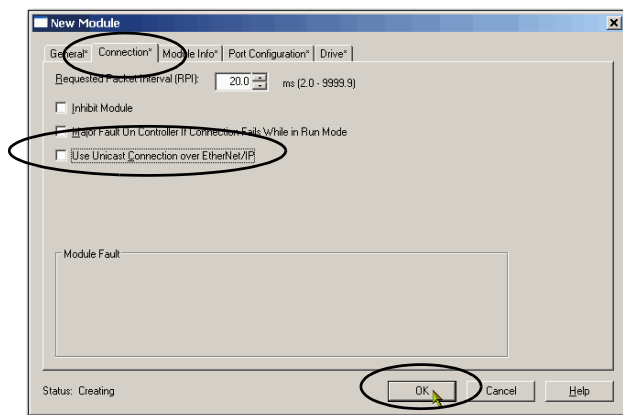
13. Click Yes.



14. On the New Module dialog box, click the Connection tab.

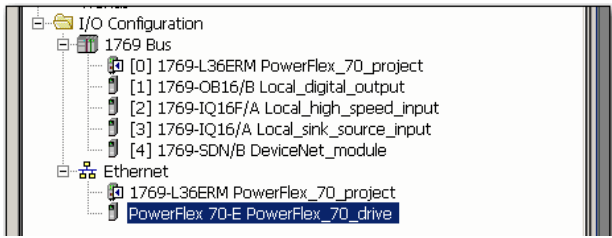
15. Clear Use Unicast Connection over EtherNet/IP.

16. Click OK.

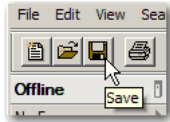


17. On the Select Module Type dialog box, click Close.

The PowerFlex 70 drive is added to the controller organizer under the network port.

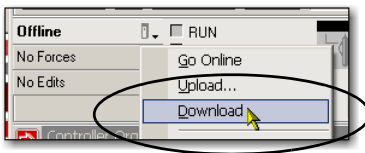


18. Save the project.

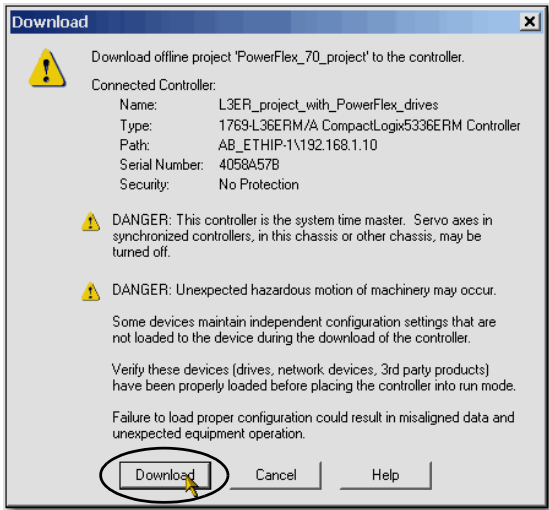


Download the Project

1. Click the Controller Status icon, and choose Download.



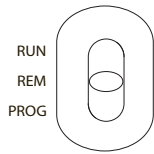
2. On the Download dialog box, click Download.



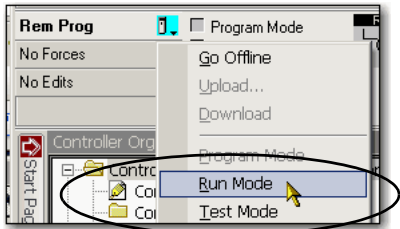
The project downloads to the controller.

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

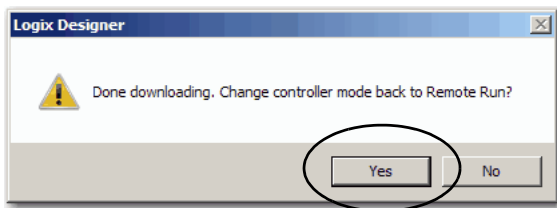
- Put the controller mode switch in the REM position.



- Change the Logix Designer application project to Run mode.



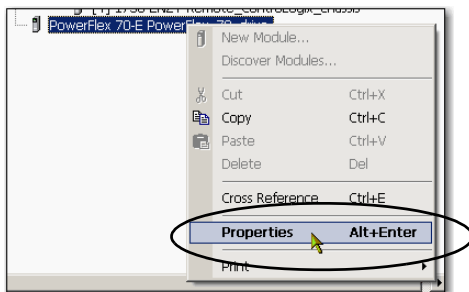
- When asked to Change controller mode back to Remote Run, click Yes.



Connect to the PowerFlex 70 Drive

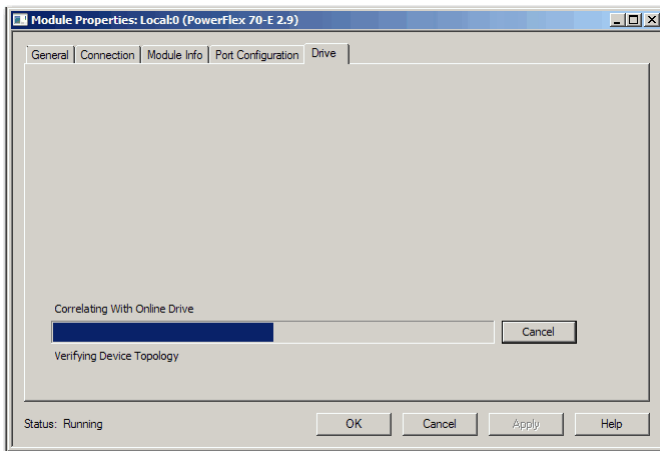
Complete these steps to connect to the drive.

- Right-click the drive and choose Properties.



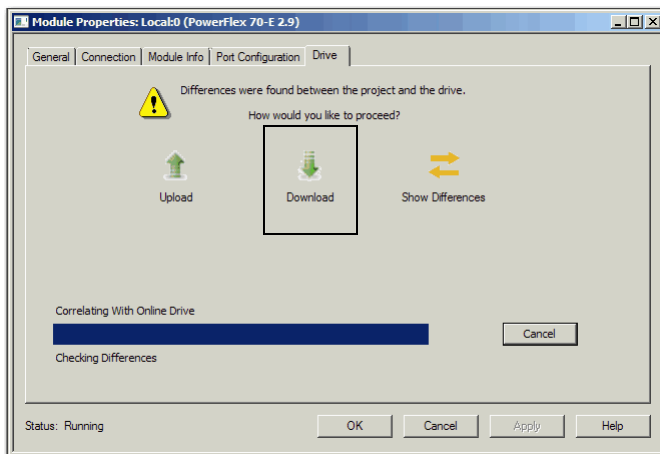
2. Click the Drive tab.

The application connects to the drive.



If there are differences between the project and the drive, then the Logix Designer application alerts you.

3. Click Download.

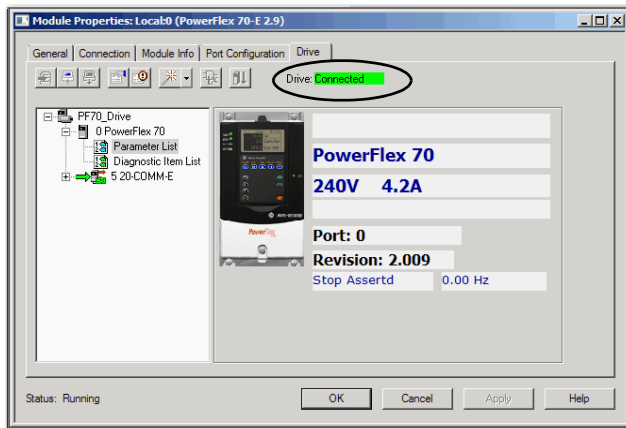


The software shows a Creating Device Database File dialog box that tracks the progress of the function.

No action is necessary.

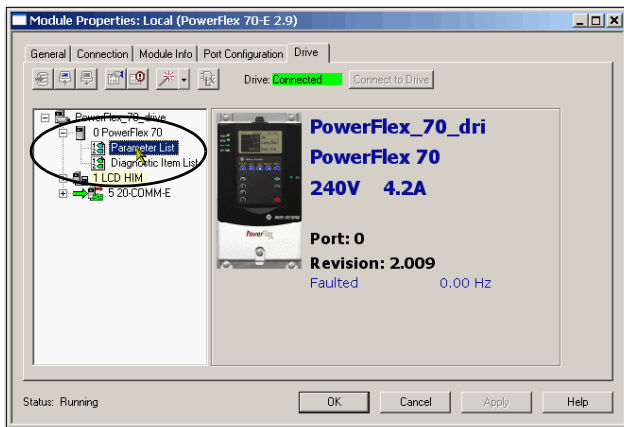
IMPORTANT If your computer already has a database on it, the software does not create a database.

After the download and drive database creation is complete, the drive status changes to connected.

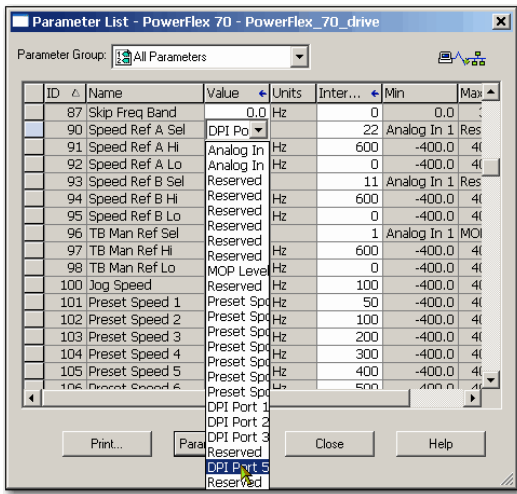


Edit the Drive Parameters

1. In the Logix Designer application, choose Go Offline.
2. On the Drive tab, double-click Parameter List.



- To change drive parameters, click the Value column cell for the parameter.

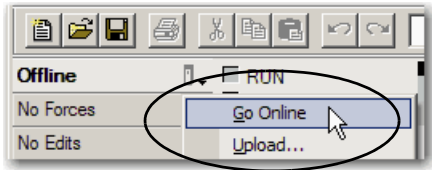


Some Value cells use pull-down menus and others let you type a value.

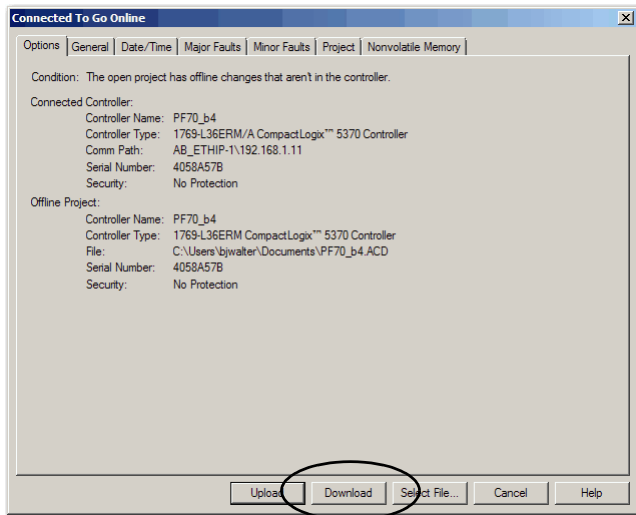
- Change the parameters listed in the following table to the values shown.

Parameter	Name	Value
Parameter 61	Autotune	Ready
Parameter 90	Speed Ref A Sel	DPI Port 5
Parameter 300	Data In A1	0
Parameter 301	Data In A2	0
Parameter 302	Data In B1	0
Parameter 303	Data In B2	0
Parameter 304	Data In C1	0
Parameter 305	Data In C2	0
Parameter 306	Data In D1	0
Parameter 307	Data In D2	0
Parameter 310	Data Out A1	0
Parameter 311	Data Out A2	0
Parameter 312	Data Out B1	0
Parameter 313	Data Out B2	0
Parameter 314	Data Out C1	0
Parameter 315	Data Out C2	0
Parameter 316	Data Out D1	0
Parameter 317	Data Out D2	0
Parameter 361	Digital In1 Sel	Not Used
Parameter 362	Digital In2 Sel	Not Used
Parameter 363	Digital In3 Sel	Not Used
Parameter 364	Digital In4 Sel	Not Used
Parameter 365	Digital In5 Sel	Not Used
Parameter 366	Digital In6 Sel	Not Used

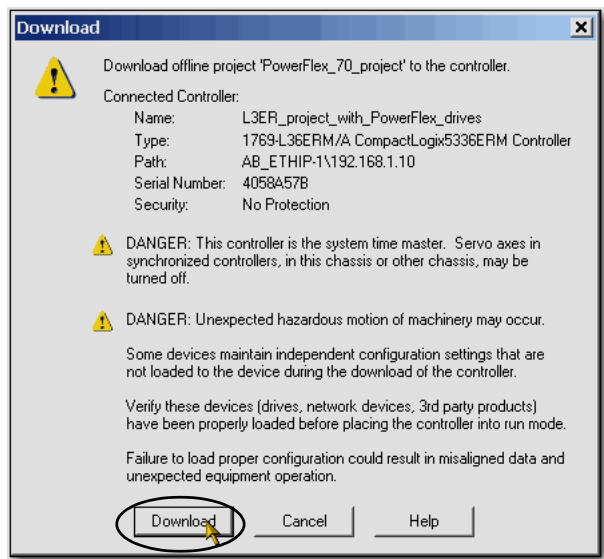
5. Click Close.
6. To close the PowerFlex 70 Properties dialog box, click OK.
7. Click Go Online.



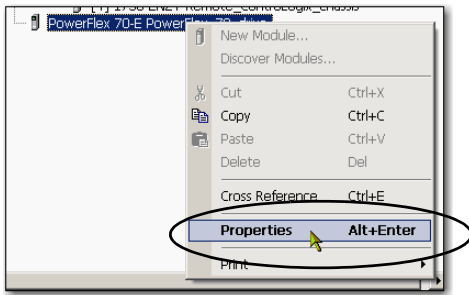
8. On the Connected to Go Online dialog box, click Download.



9. On the Download dialog box, click Download.

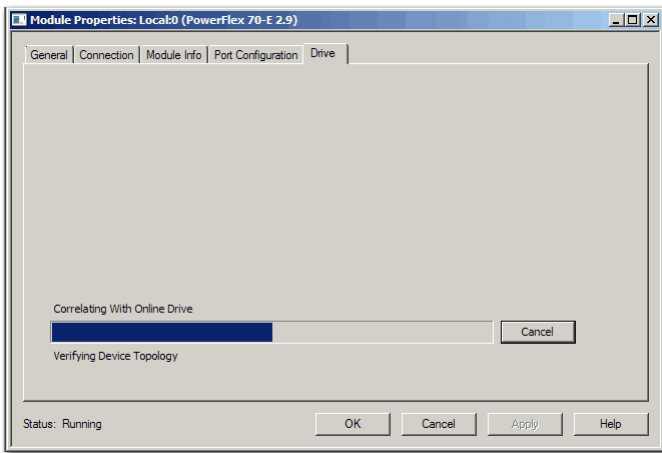


10. Right-click the drive and choose Properties.



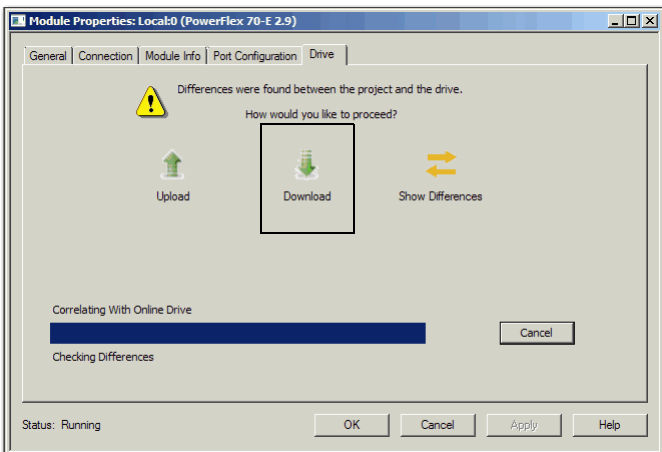
11. Click the Drive tab.

The application connects to the drive.

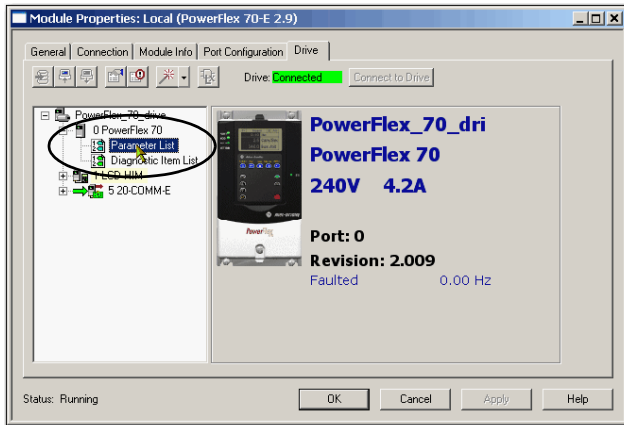


If there are differences between the project and the drive, then the Logix Designer application alerts you.

12. Click Download.

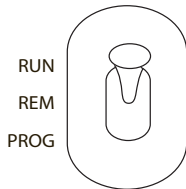


13. When the Drive tab shows Connected, continue with the next section.

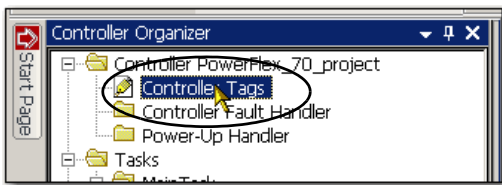


Test the Drive Tags

1. If the STS status indicator on the drive blinks red, then push the Stop button on the drive to clear the fault.
The STS status indicator now blinks green.
2. Move the controller mode switch to RUN.



3. Double-click Controller Tags.



4. On the Monitor Tags tab, expand the PowerFlex 70 output tag.
5. Change the ClearFault tag to 1 to clear any initial faults.

PowerFlex_70_drive1	(...)	(...)		AB:Pow
PowerFlex_70_drive0	(...)	(...)		AB:Pow
PowerFlex_70_drive0.DriveLogicRslt	2#0000_0000_0000...		Binary	INT
PowerFlex_70_drive0.CommandedFreq	0		Decimal	INT
PowerFlex_70_drive0.DriveLogicRslt_Accel1	0		Decimal	BD0L
PowerFlex_70_drive0.DriveLogicRslt_Accel2	0		Decimal	BD0L
PowerFlex_70_drive0.DriveLogicRslt_ClearFault	1		Decimal	BD0L
PowerFlex_70_drive0.DriveLogicRslt_Decel1	0		Decimal	BD0L
PowerFlex_70_drive0.DriveLogicRslt_Decel2	0		Decimal	BD0L
PowerFlex_70_drive0.DriveLogicRslt_Forward	0		Decimal	BD0L
PowerFlex_70_drive0.DriveLogicRslt_Log	0		Decimal	BD0L
PowerFlex_70_drive0.DriveLogicRslt_LocalContrl	0		Decimal	BD0L

6. Change the ClearFault tag back to 0.

PowerFlex_70_drive0	(...)	(...)		AB:Pow
PowerFlex_70_drive0.DriveLogicRslt	2#0000_0000_0000...		Binary	INT
PowerFlex_70_drive0.CommandedFreq	0		Decimal	INT
PowerFlex_70_drive0.DriveLogicRslt_Accel1	0		Decimal	BD0L
PowerFlex_70_drive0.DriveLogicRslt_Accel2	0		Decimal	BD0L
PowerFlex_70_drive0.DriveLogicRslt_ClearFault	0		Decimal	BD0L
PowerFlex_70_drive0.DriveLogicRslt_Decel1	0		Decimal	BD0L
PowerFlex_70_drive0.DriveLogicRslt_Decel2	0		Decimal	BD0L

7. Expand the PowerFlex 70 input tag.
8. Verify that the I.DriveStatus_Ready tag value is 1.

PowerFlex_70_drive1	(...)	(...)	AB:PowerFlex70...
PowerFlex_70_drive1.DriveStatus	2#0000_1110_0100...	Binary	INT
PowerFlex_70_drive1.DriveStatus_Accelerating	0	Decimal	BOOL
PowerFlex_70_drive1.DriveStatus_Active	0	Decimal	BOOL
PowerFlex_70_drive1.DriveStatus_ActualDir	1	Decimal	BOOL
PowerFlex_70_drive1.DriveStatus_Alarm	1	Decimal	BOOL
PowerFlex_70_drive1.DriveStatus_AtSpeed	0	Decimal	BOOL
PowerFlex_70_drive1.DriveStatus_CommandDir	1	Decimal	BOOL
PowerFlex_70_drive1.DriveStatus_Decelerating	0	Decimal	BOOL
PowerFlex_70_drive1.DriveStatus_Faulted	0	Decimal	BOOL
PowerFlex_70_drive1.DriveStatus_LocalD0	1	Decimal	BOOL
PowerFlex_70_drive1.DriveStatus_LocalD1	1	Decimal	BOOL
PowerFlex_70_drive1.DriveStatus_LocalD2	1	Decimal	BOOL
PowerFlex_70_drive1.DriveStatus_Ready	1	Decimal	BOOL
PowerFlex_70_drive1.DriveStatus_SpdRefD0	0	Decimal	BOOL
PowerFlex_70_drive1.DriveStatus_SpdRefD1	0	Decimal	BOOL

This tag indicates that the drive is ready to start.

9. Under the PowerFlex 70 output tag, change the O.CommandedFreq tag to 15000 engineering units (approximately 59.5 Hz).

PowerFlex_70_drive0	(...)	(...)	AB:PowerFlex70...
PowerFlex_70_drive0.DriveLogicRst	2#0000_0000_0000...	Binary	INT
PowerFlex_70_drive0.CommandedFreq	15000	Decimal	INT
PowerFlex_70_drive0.DriveLogicRst_Accel1	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Accel2	0	Decimal	BOOL



WARNING: If there is a motor attached to your drive, completing the next step causes the motor to turn.

10. Change the Start tag to 1.

PowerFlex_70_drive0	(...)	(...)	AB:PowerFlex70...
PowerFlex_70_drive0.DriveLogicRst	2#0000_0000_0000...	Binary	INT
PowerFlex_70_drive0.CommandedFreq	15000	Decimal	INT
PowerFlex_70_drive0.DriveLogicRst_Accel1	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Accel2	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_ClearFault	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Decel1	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Decel2	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Forward	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Jog	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_LocalContnl	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_MOPDec	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_MOPInc	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Reverse	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_SpdRefD0	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_SpdRefD1	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_SpdRefD2	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Start	1	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Stop	0	Decimal	BOOL

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

11. Change the Start tag back to 0.

PowerFlex_70_drive0	(...)	(...)	AB:PowerFlex70...
PowerFlex_70_drive0.DriveLogicRst	2#0000_0000_0000...	Binary	INT
PowerFlex_70_drive0.CommandedFreq	15000	Decimal	INT
PowerFlex_70_drive0.DriveLogicRst_Accel1	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Accel2	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_ClearFault	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Decel1	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Decel2	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Forward	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Jog	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_LocalContnl	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_MOPDec	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_MOPInc	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Reverse	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_SpdRefD0	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_SpdRefD1	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_SpdRefD2	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Start	0	Decimal	BOOL
PowerFlex_70_drive0.DriveLogicRst_Stop	0	Decimal	BOOL

12. Change the Stop tag to 1.

PowerFlex_70_drive:0	(...)	(...)	AB:Power
PowerFlex_70_drive:0.DriveLogicRst	2#0000_0000_0000...		Binary INT
PowerFlex_70_drive:0.CommandedFreq	15000		Decimal INT
PowerFlex_70_drive:0.DriveLogicRst_Accel1	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Accel2	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_ClearFault	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Decel1	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Decel2	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Forward	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Jog	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_LocalContl	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_MOPDec	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_MOPInc	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Reverse	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_SpdRefID0	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_SpdRefID1	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_SpdRefID2	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Start	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Stop	1		Decimal BOOL

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

13. Change the Stop tag back to 0.

PowerFlex_70_drive:0	(...)	(...)	AB:Power
PowerFlex_70_drive:0.DriveLogicRst	2#0000_0000_0000...		Binary INT
PowerFlex_70_drive:0.CommandedFreq	15000		Decimal INT
PowerFlex_70_drive:0.DriveLogicRst_Accel1	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Accel2	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_ClearFault	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Decel1	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Decel2	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Forward	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Jog	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_LocalContl	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_MOPDec	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_MOPInc	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Reverse	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_SpdRefID0	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_SpdRefID1	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_SpdRefID2	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Start	0		Decimal BOOL
PowerFlex_70_drive:0.DriveLogicRst_Stop	0		Decimal BOOL

14. Go Offline.

By starting and stopping the drive, you verified the following conditions exist in your application:

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

Additional Resources

For a list of additional resources that can assist you when adding a PowerFlex 70 drive to a Logix Designer application project, see [page 11](#).

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Notes:

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products.

At <http://www.rockwellautomation.com/support> you can find technical and application notes, sample code, and links to software service packs. You can also visit our Support Center at <https://rockwellautomation.custhelp.com/> for software updates, support chats and forums, technical information, FAQs, and to sign up for product notification updates.

In addition, we offer multiple support programs for installation, configuration, and troubleshooting. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://www.rockwellautomation.com/services/online-phone>.

Installation Assistance

If you experience a problem within the first 24 hours of installation, review the information that is contained in this manual. You can contact Customer Support for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
Outside United States or Canada	Use the Worldwide Locator at http://www.rockwellautomation.com/rockwellautomation/support/overview.page , or contact your local Rockwell Automation representative.

New Product Satisfaction Return

Rockwell Automation tests all of its products to help ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

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