

PanelBuilder32 Software



Quick Start

Catalog Number 2711-ND3

**Application Development Software for the
PanelView Standard Terminals**

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://literature.rockwellautomation.com>) 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.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product.
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.

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The information below summarizes the changes to this manual since the last revision.

Revision bars, as shown in the margin, identify updated information. These are the changes for this version of the document.

Version 3.83 of the PanelBuilder32 software now supports the Windows Vista operating system. This is the difference between Version 3.83 and the previous version.

Topic	Page
Added additional resources.	9
Removed references to Modbus throughout manual.	

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Introduction

Welcome to PanelBuilder32 software. To help you get started and become a successful user of the PanelBuilder32 software, this guide provides you with a sample application. It will take you through all the steps required to create, download, and run the application in a PanelView terminal.

Application tags and ladder logic are provided so that you can run the application on these communication networks:

- DH+ or DH-485
- EtherNet/IP
- ControlNet (unscheduled and scheduled)
- DeviceNet (I/O messaging)
- Remote I/O
- DF1

PanelBuilder32 software runs in the Microsoft Windows environment. You should be familiar with basic window operations such as using menus, dialogs and toolbars.

Additional Resources

PanelBuilder32 software provides extensive online help. For additional information, refer to these publications that you can download from <http://literature.rockwellautomation.com>.

Resource	Description
2711-GR003	Provides an overview of the features and functions of the PanelBuilder32 software.
2711-UM014	Describes how to install, configure, operate, and troubleshoot the PanelView Standard terminals.

Contents of This Guide

- Preface
An overview of this guide and what you need to create, download and run the sample application.
- Chapter 1 - *Initial system setup*
Describes the setup of system components.
- Chapter 2 - *Overview of sample application*
Provides a description of the sample application and its function.
- Chapter 3 - *Creating the sample application*
Provides step-by-step procedures for creating the sample application.
- Chapter 4 - *Configuring communication*
Shows how to configure network communication for your PanelView terminal and logic controller.
- Chapter 5 - *Entering application tags*
Shows how to use the tag editor to enter your application tags.
- Chapter 6 - *Downloading the application*
Shows how to validate and download your application to the PanelView terminal.
- Chapter 7 - *Running the application*
Shows how to run the application in the PanelView terminal.
- Appendix A - *Application Programs*
Listing of the available ladder logic programs suitable for your application. Also provides a printout of each program.

What You Need

This section lists the requirements for creating, downloading and running the application on a Remote I/O, DH+, DH-485, ControlNet, DeviceNet, EtherNet/IP, or DF1 network.

Download Cables

Your terminal has an RS-232 (DF1), RS-232 (DH485), or DH-485 port through which applications are transferred.

RS-232 Programming Port - To download an application to an RS-232 programming port on a PanelView terminal, you will need a download cable. Use one of these cables:

- 2706-NC13 (3 m/10 ft)
- 2711-NC13 (5 m/16.4 ft)
- 2711-NC14 (10 m/32.7 ft)

For the PanelView 300 Micro terminal, use one these cables:

- 2711-CBL-PM05 (5 m/15 ft)
- 2711-CBL-PM10 (10 m/30 ft)
- 1761-CBL-AP00 (.5 m/1.5 ft)
- 1761-CBL-PM02 (2 m/6.5 ft)

DH-485 Programming Port - To download an application to a DH-485 terminal you will need:

- 1747-PIC Personal Computer Interface Converter and a 1747-C10, -C11, or -C20 cable.

or

- 1761-NET-AIC link coupler and one these cables: 1747-CP3, 1761-CBL-AS03 (3 m/9.8 ft), or 1761-CBL-AS09 (9.9 m/27.5 ft).

The Personal Computer Interface Converter receives power from an SLC controller. If you are downloading to a terminal without an SLC connected, you will need either a power supply, catalog number 1747-NP1, or a powered link coupler, catalog number 1747-NET-AIC.

Communication Cables

DH-485 PanelView Terminals - To connect a PanelView DH-485 port to a DH-485 connector on an SLC controller, use a 1747-C10, -C11, or -C20 DH-485 cable.

RS-232 (DF1 or DH485) PanelView Terminals - To connect a PanelView RS-232/DF1 or DH485 communication port to an RS-232 port on a controller, use a 2706-NC13, 2711-NC13, or 2711-NC14 cable. To connect to the 8-pin RS-232 port on the MicroLogix 1000/1200/1500LSP controller, use a 2711-NC21 or -NC22 cable. Refer to the AIC+ Advanced Interface Converter User Manual, publication [1761-UM004](#), for additional network configurations.

For the 300 Micro terminal, use a 2711-CBL-HM05, -HM10, -PM05, or -PM10 cable.

Remote I/O Terminals - To connect the PanelView RIO port to an RIO port on a PLC controller, use the 1770-CD cable, equivalent to Belden 9463.

DH + PanelView Terminals - To connect the PanelView DH+ port to a DH+ port on a PLC controller, use the 1770-CD cable, equivalent to Belden 9463.

ControlNet Terminals - To connect the PanelView terminal to a ControlNet network, use coaxial cable 1786-CP.

EtherNet/IP Terminals - To connect the PanelView terminal to an EtherNet/IP network, use a Category 5 shielded and unshielded twisted-pair cable with RJ45 connectors.

DeviceNet Terminals -To connect the PanelView terminal to a DeviceNet network, use a 1485C-P1A50, -P1A150, or -P1A300 cable. Refer to the AIC+ Advanced Interface Converter User Manual, publication [1761-UM004](#), for additional network configurations.

Personal Computer

These are the minimum requirements for running PanelBuilder32 software:

- 100MHz Pentium Class 2 or greater PC compatible
- 30 MB free hard disk space required for a minimum installation
- 270 MB free hard disk space required for a full package installation
- 32 MB of installed RAM (48 MB RAM recommended)
- CD-ROM drive
- 500K free conventional memory

Software

Besides PanelBuilder32 software, you will also need to load the applicable controller programming and network configuration software.

SLC or MicroLogix

Advanced Programming Software (APS), SLC-500 AI Software, RSLogix 500 software

PLC

6200 Series Programming Software, PLC-5 AI Software, RSLogix 5 software

ControlLogix

- RSLogix 5000 software, version 2.01 or greater
- RSNetWorx for DeviceNet or DeviceNet Manager
- RSNetWorx for ControlNet

Sample Application and Ladder Logic

IMPORTANT

Installing the sample applications on your computer's hard drive is an option available during the installation of PanelBuilder32 software. If these files were not installed, you can still access them off the installation CD from the autorun menu.

The PanelBuilder32 installation CD contains:

- sample applications (.PBA) for each of the PanelView terminals.
- ladder logic to run the application for each of the communication protocols.

Refer to [Appendix A, Application Programs](#), for a list of these files.

PanelBuilder32 application (.pba) files are located in the Quick Start\PV directory on the PanelBuilder32 installation CD.

Ladder logic program (.rss, .rsp, .acd) files are located in the Quick Start\SLC, \ML, \CL or \PLC directories on the PanelBuilder32 installation CD.

All other program files, such as DeviceNet SDN, scanner files are located in the Quick Start\DNet, or \CNet directories on the PanelBuilder32 installation CD.

System Setup

PanelView terminals offer many communication options. In this chapter, we provide a brief summary of the minimum equipment setups required to run the sample application. For specifics such as cable termination and baud rates, we recommend that you refer to the user manual for your terminal. Refer to the section that applies to your terminal type.

- DH-485
- RS-232 (DH485)
- RS-232 (DF1)
- RIO
- DH+
- DeviceNet
- ControlNet
- EtherNet/IP

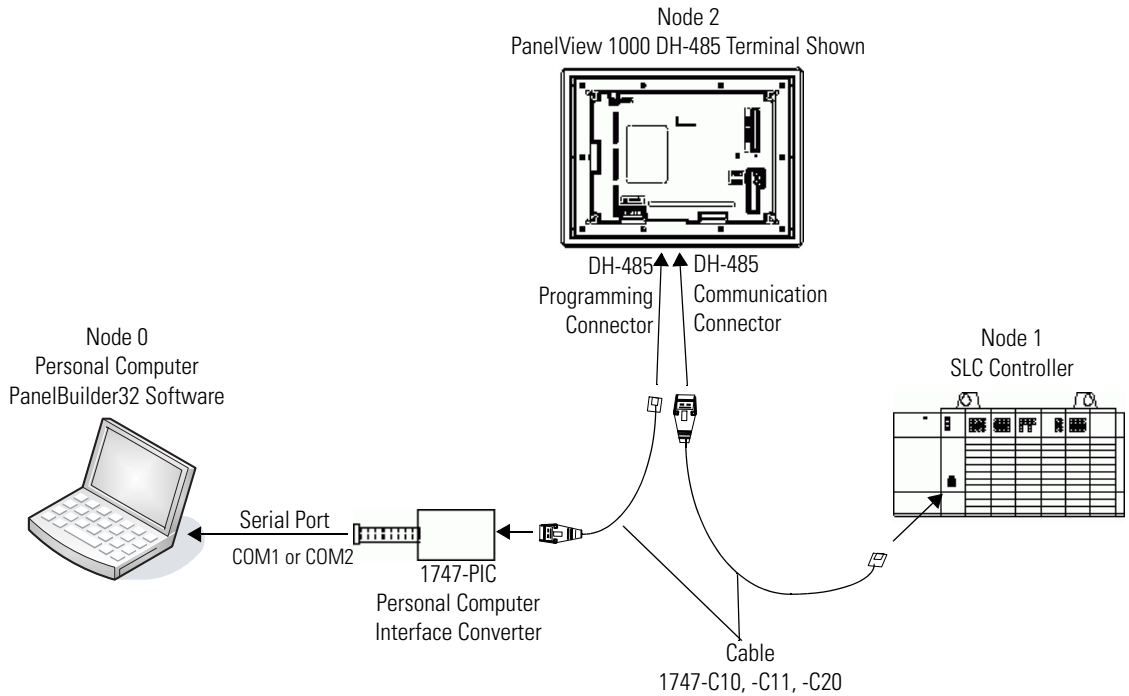
Safety Guidelines

Refer to the PanelView Standard Operator Terminals User Manual, publication [2711-UM014](#), for installation instructions and safety precautions.

If you are running this sample application as a pre-installation desktop setup, the same safety precautions still apply. Make sure that you disconnect power from devices prior to making communication connections.

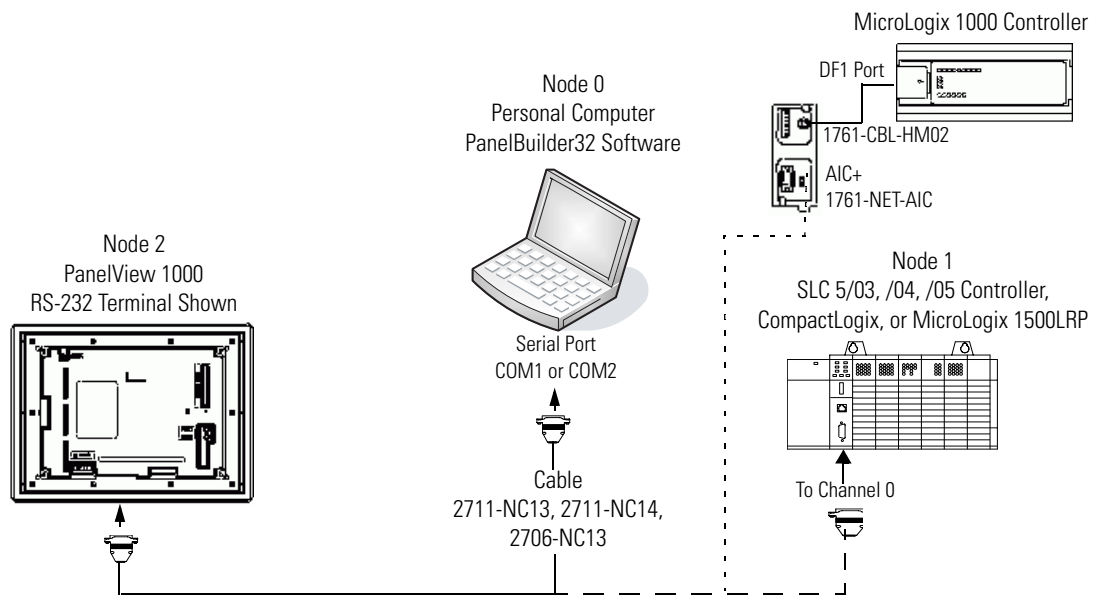
DH-485 Connections

DH-485 PanelView terminals communicate with external devices through either the DH-485 communication port or DH-485 programming connector. Some DH-485 terminals have an RS-232 port for printing.



RS-232 Connections (DH-485 Protocol)

RS-232 (DH485) versions of the PanelView terminal are available with one or two RS-232 ports. On terminals with two RS-232 ports, one of the ports is a printer port. The other RS-232 communication port is for connection to an SLC or computer.



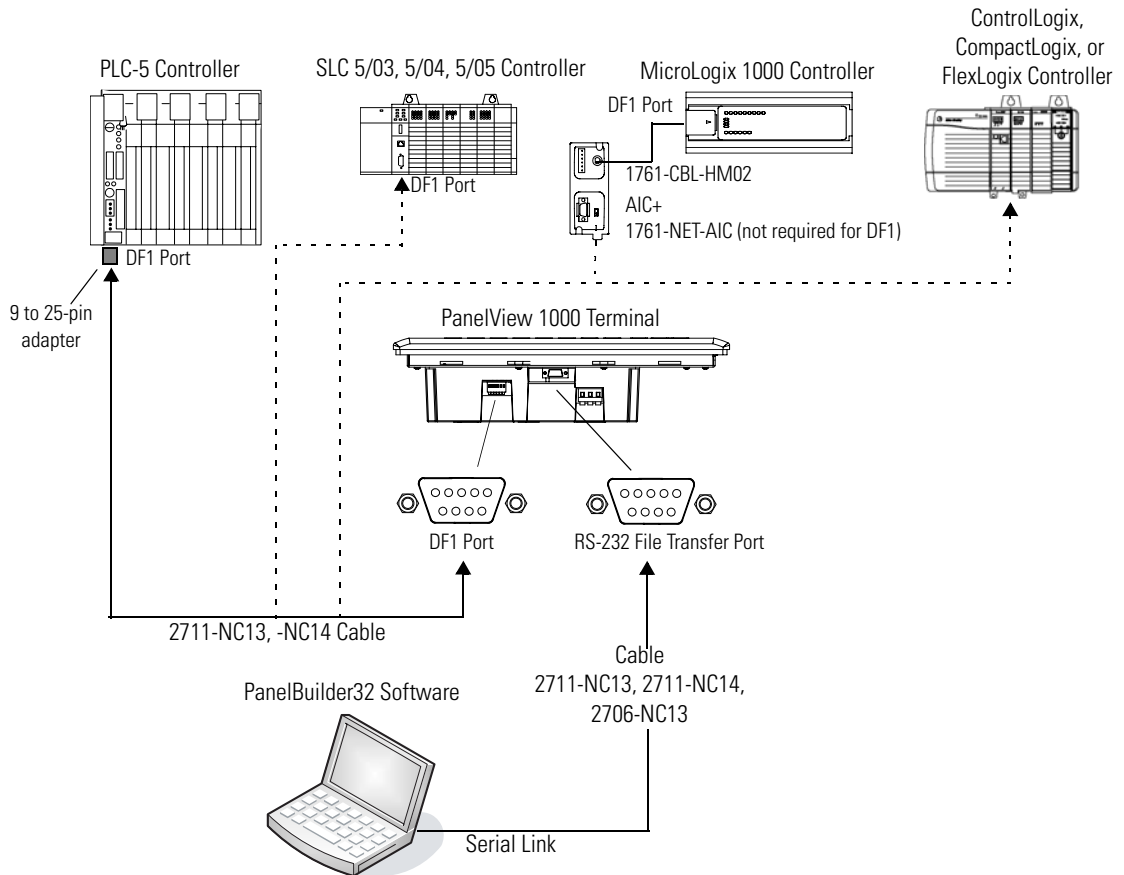
Use the same cable to transfer applications to the terminal and to the SLC 5/03, 5/04, 5/05 controller. Change cable connection to controller after downloading.

IMPORTANT

You must configure the Channel 0 Port of the SLC 5/03, 5/04, 5/05 or MicroLogix controller for DH-485 communication using APS, AI500 or RSLogix 500 programming software.

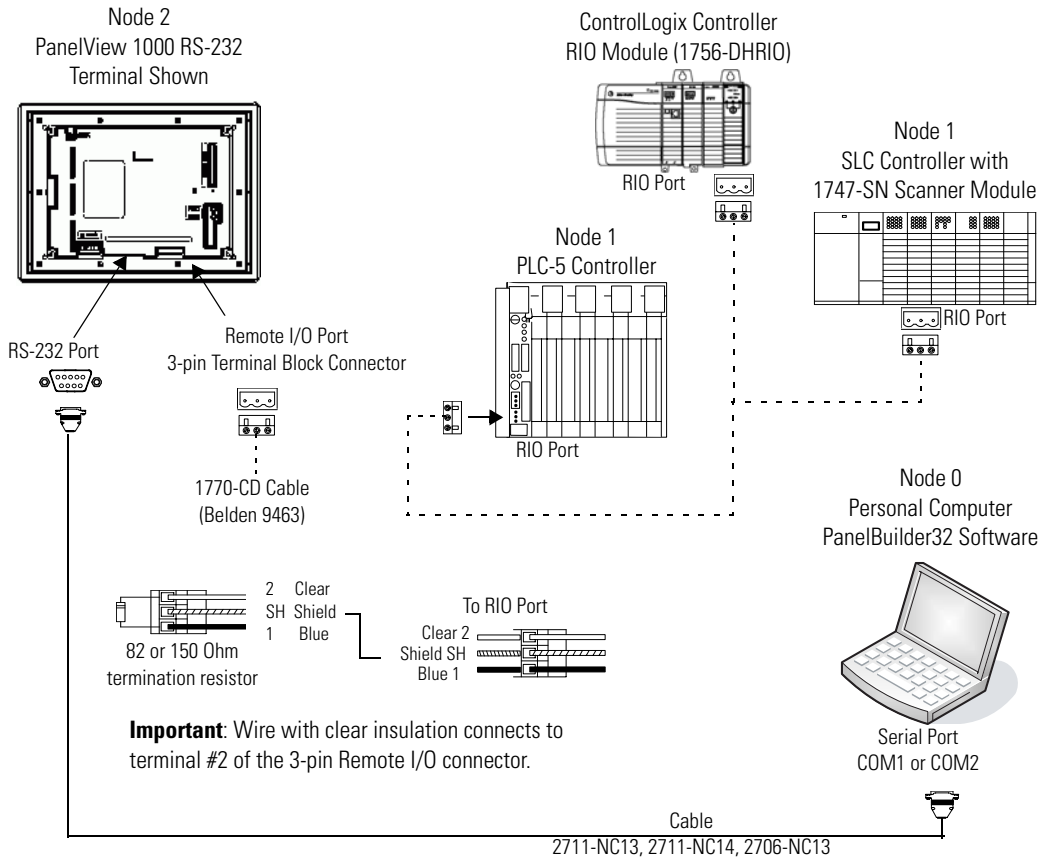
RS-232 Connections (DF1 Protocol)

DF1 versions of the PanelView terminal have a DF1 full-duplex communication port and an RS-232 file transfer/printer port. The DF1 port on the PanelView terminal is a 9-pin, male, RS-232 connector.



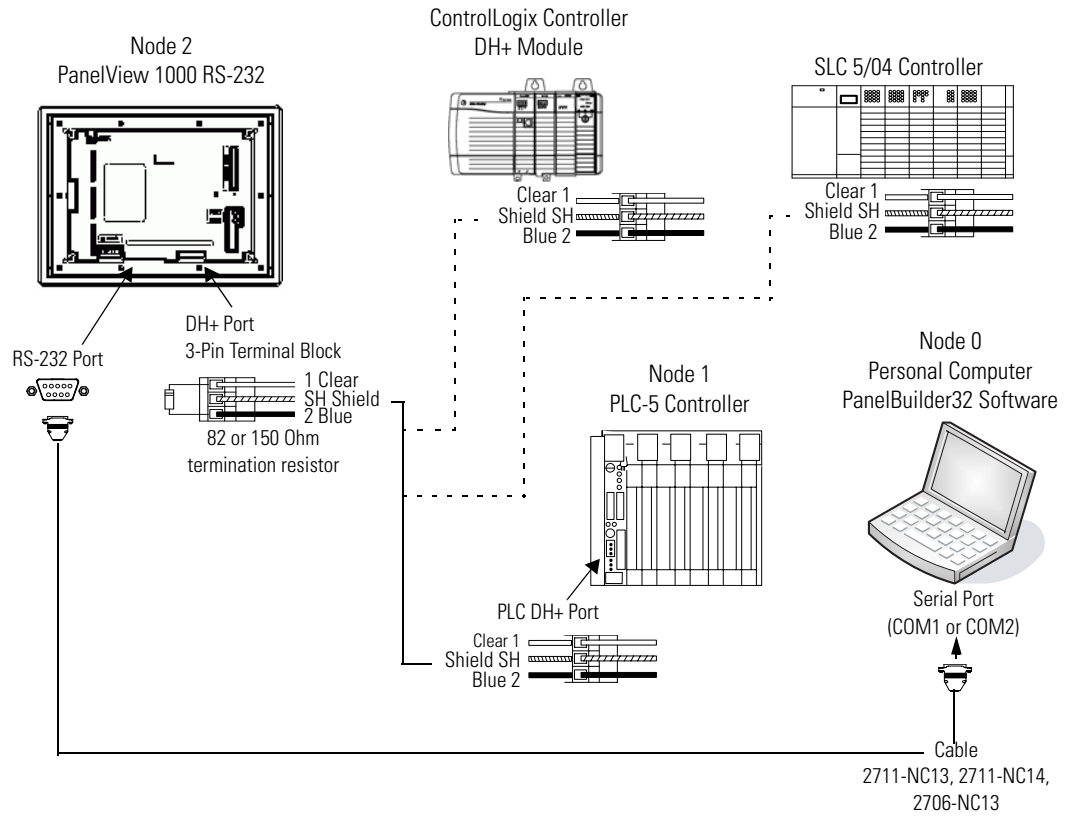
Remote I/O Connections

Remote I/O versions of the PanelView terminal have both an RIO adapter and an RS-232 file transfer/printer port. The RIO adapter lets the terminal connect to any 1771 Remote I/O link. The PanelView terminal connects to an RIO scanner using cable, catalog number 1770-CD, equivalent to Belden 9463.



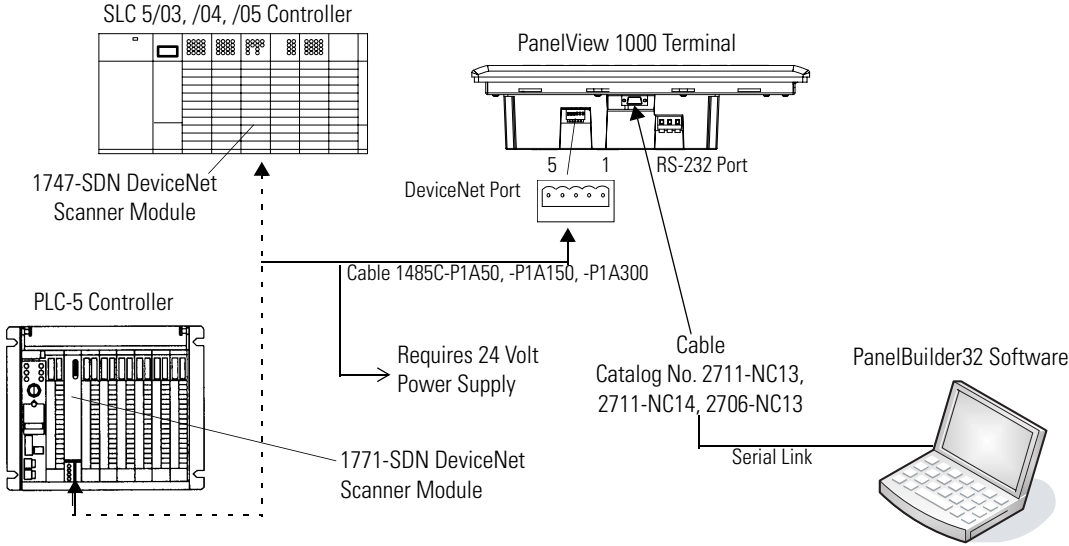
DH+ Connections

DH+ versions of the PanelView terminal have a DH+ communication port and an RS-232 file transfer/printer port. Connect the PanelView terminal to a DH+ link using Belden 9463 twin-axial cable, catalog number 1770-CD.



DeviceNet Connections

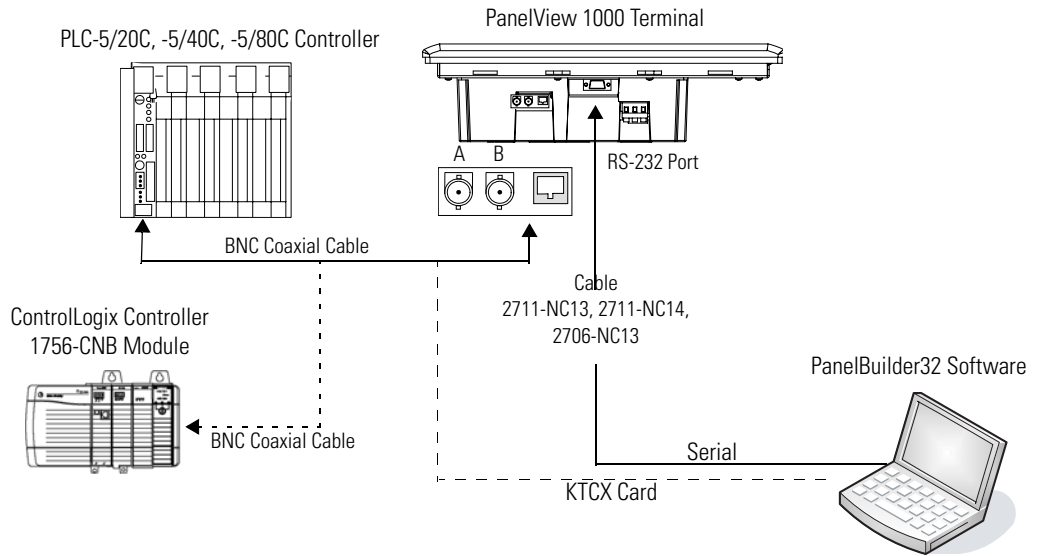
DeviceNet versions of the PanelView terminal have a DeviceNet communication port and an RS-232 port for file transfers/printing. Connect the PanelView terminal to a DeviceNet link using DeviceNet cable, catalog number 1485C-P1A50, -P1A150, -P1A300. The illustration shows an SLC or PLC controller. Another option would be a ControlLogix controller with a 1756-DNB module.



DeviceNet Terminal Block	Terminal	Signal	Function	Color
	1	COM	Common	Black
	2	CAN_L	Signal Low	Blue
	3	SHIELD	Shield	Uninsulated
	4	CAN_H	Signal High	White
	5	VDC+	Power Supply	Red

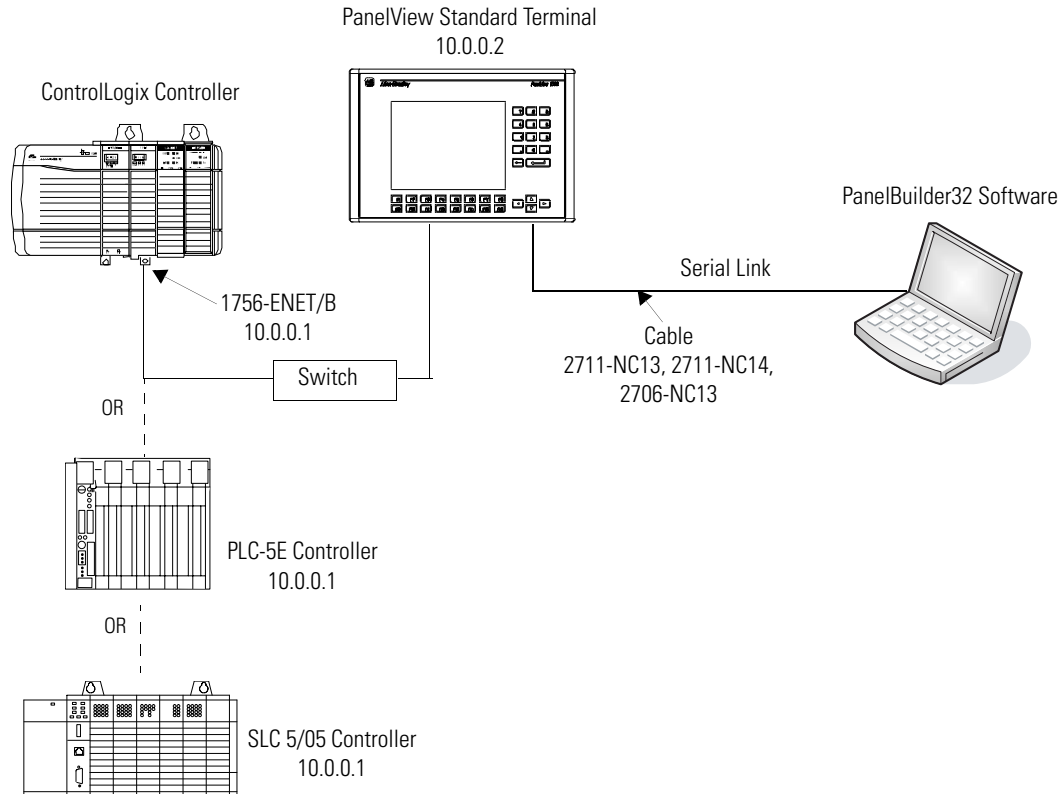
ControlNet Connections

ControlNet versions of the PanelView terminal have both a ControlNet communication port and an RS-232 port for file transfers/printing. Connect the PanelView terminal to a ControlNet link using BNC coaxial cable, catalog number 1786-RG6.



EtherNet/IP Connections

EtherNet/IP versions of the PanelView terminal have both an Ethernet port and an RS-232 port for file transfers/printing. Connect the PanelView terminal to a ControlLogix controller with a 1756-ENET/B or ENBx module, a PLC-5E controller, or an SLC 5/05 controller. The EtherNet/IP network uses a Category 5 shielded and non-shielded twisted-pair cable with RJ45 connectors.



Controller Ladder Logic

The controller logic programs for running the sample application are already created for you. The files are provided on the PanelBuilder32 installation CD. Refer to [Appendix A, Application Programs](#), for a list of these files.

Overview of Application

This chapter covers:

- purpose of application
- overview of application screens
- application tags

Purpose of Application

The application contains objects that control and monitor the status of a motor. The PanelView terminal reads/writes data to a specific controller based on the communication protocol.

- SLC, MicroLogix, FlexLogix, or CompactLogix controller on a DH-485 network
- SLC, PLC-5, or ControlLogix controller on a DH+ network
- SLC, PLC-5 or ControlLogix controller on a Remote I/O network
- SLC, PLC-5, MicroLogix, FlexLogix, CompactLogix, or ControlLogix controller on an RS-232 (DF1) network
- ControlLogix, PLC-5, or SLC controller on a DeviceNet network
- ControlLogix or PLC-5C controller on a ControlNet network (unscheduled)
- ControlLogix controller on a ControlNet network (scheduled)
- ControlLogix, PLC-5E, or SLC 5/05 controller on an EtherNet/IP network

Chapter 4, Configuring Communication, gives procedures for creating the application on a PanelView 600 keypad terminal.

- If creating the application for a touch screen terminal, touch cell input is automatically enabled and you do not have to assign function keys.
- If creating the application for other size terminals, use the appropriate text sizes.

You can create any of the sample applications for another PanelView terminal size. For instructions on how to do this, see page [53](#).

All of the sample applications are on the installation CD in the \QuickStart\PV directory.

Application Screens

The application contains 3 screens.

- **Motor Status** - contains objects to start or stop a motor, show the on/off status of the motor, and display the current motor speed.
- **Set Motor Speed** - contains a numeric entry object allowing you to enter a maximum speed for the motor.
If the motor speed is changed, the new speed won't take effect until the motor is stopped and started again.
- **Alarm Banner** - global display that opens over the Motor Status or Set Motor Speed screen when an alarm is triggered.

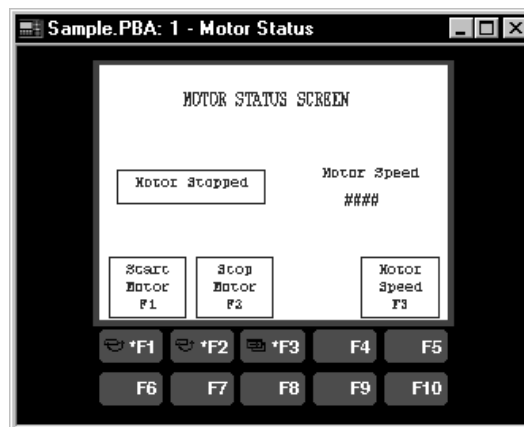
Both the Motor Status and Set Motor Speed screen contain a screen button allowing you to navigate between the two screens.

If you want the operator to access the Configuration Mode menu from a touch screen terminal, you should include a Goto Config screen button on the application screen. On keypad only terminals, press the left $\langle \square \rangle$ and right $\square \rangle$ arrow keys simultaneously on the terminal's keypad to display the configuration menu.

Motor Control and Status Screen

The Motor Status screen appears when you apply power to the terminal. It lets you:

- start or stop a motor.
- view the on/off status of the motor.
- view the speed of the motor.
- navigate to the Set Motor Speed screen.



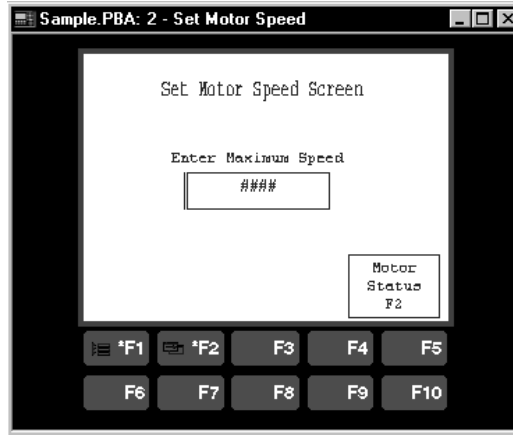
The table lists the objects on the Motor Status screen and their functions. Screen headings are created as background text.

Object	Object Type	Function
<div style="border: 1px solid black; padding: 2px; width: fit-content;">Start MOTOR F1</div>	Momentary Push Button (Normally Open)	Starts the motor when you press the F1 key or touch the screen object.
<div style="border: 1px solid black; padding: 2px; width: fit-content;">STOP MOTOR F2</div>	Momentary Push Button (Normally Open)	Stops the motor when you press the F2 key or touch the screen object.
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin-bottom: 2px;">Motor Running</div> <div style="border: 1px solid black; padding: 2px; width: fit-content;">Motor Stopped</div>	Multistate Indicator	Shows the on/off status of the motor.
Motor Speed ###	Numeric Data Display	Shows the current motor speed.
<div style="border: 1px solid black; padding: 2px; width: fit-content;">Motor Speed F3</div>	Goto screen button	Displays the Set Motor Speed screen when you press the F3 key or touch the screen object.

Set Motor Speed Screen

The Set Motor Speed screen lets you:

- enter a maximum speed for the motor.
- navigate to the Motor Status Screen.

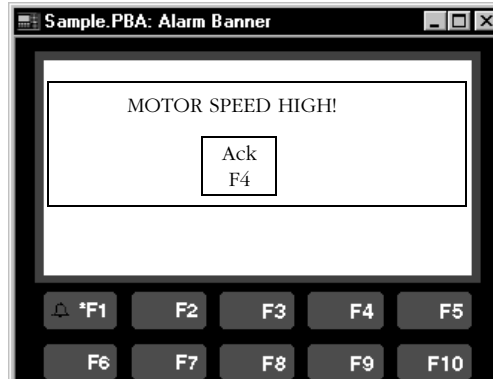


The table lists the objects on the Set Motor Speed screen and their functions. The screen heading and object labels are created as background text.

Object	Object Type	Function
Enter Maximum Speed: <div style="border: 1px solid black; padding: 2px; display: inline-block;">###</div> rpm	Numeric Entry	Opens the numeric scratchpad (when you press the F1 key or touch the screen object) where you enter the maximum motor speed (600 to 1800 RPM).
<div style="border: 1px solid black; padding: 2px; display: inline-block;">Motor Status F2</div>	Goto Screen Button	Displays the Motor Status screen when you press the F2 key or touch the screen object.

Alarm Banner

The Alarm Banner is a global display that opens over the Motor Status or Set Motor Speed screen when an alarm is triggered. It displays an alarm message when the motor speed exceeds 1200 rpm and another message when the motor speed exceeds 1500 rpm.



The table lists the objects on the Alarm Banner and their functions.

Object	Object Type	Function
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin-bottom: 5px;">MOTOR SPEED HIGH!</div> <div style="border: 1px solid black; padding: 2px; width: fit-content;">MOTOR SPEED HIGH-HIGH!</div>	Alarm Text	Displays messages when the motor speed reaches 1200 rpm and 1500 rpm.
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">ACK F4</div>	Acknowledge Alarm Button	Acknowledges the alarm in the alarm banner when you press the F4 key or touch the screen object.

Application Tags

The sample application requires only six tags. Tags are a group of parameters that define a controller address. Each tag is identified by a unique name.

The tags used in this application are assigned descriptive names. This makes it easier to create and modify an application.

- **Start_Motor** - assigned to the motor start button
- **Stop_Motor** - assigned to the motor stop button
- **Motor_Status_Ind** - assigned to the motor status indicator
- **Motor_Speed** - assigned to the motor speed data display
- **Set_Max_Motor_Speed** - assigned to the data entry display for motor speed
- **Speed_Alarm** - assigned to the trigger for the alarm banner

Tag information is entered in one of two ways.

- **Tag Form dialog** - accessed from an object's dialog by clicking the Edit Tags button. This allows editing of all tag fields.
- **Tag Editor** - accessed from the Tools menu or the System folder in the Application window. The tag editor displays all of the assigned tags within the application and allows editing of most tag fields.

Each application requires slightly different tag information depending on the communication protocol. Chapters 4 and 5 provide the information you need for each terminal type along with instructions for entering tags.

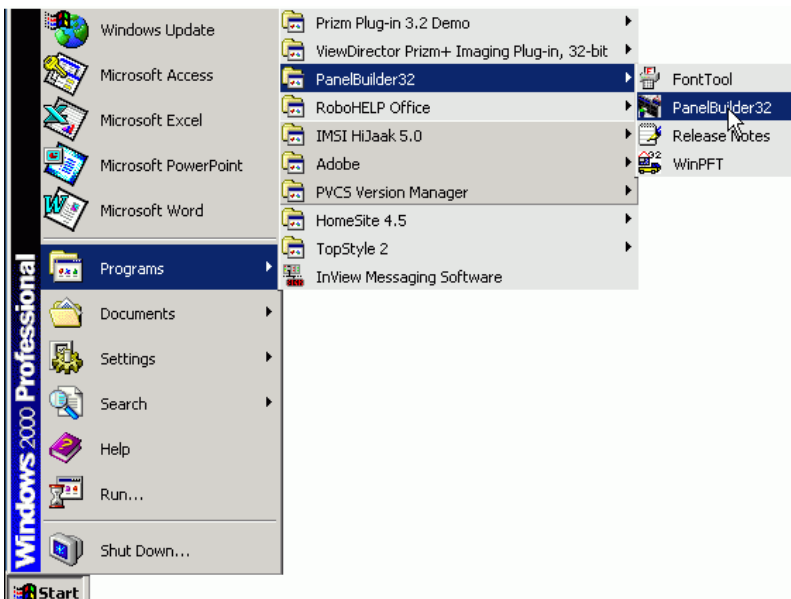
Creating the Application

Follow the procedures in this chapter to:

- create the application screens (Motor Status, Set Motor Speed, Alarm Banner).
- select the startup screen for the application.
- save the application.

Start PanelBuilder32

Click Start on the taskbar, then select Programs>PanelBuilder32>PanelBuilder32.



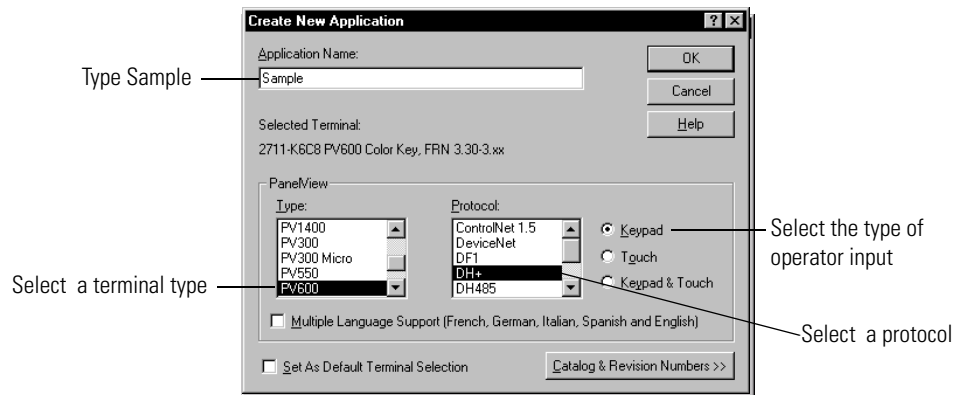
The PanelBuilder32 workspace opens with the startup dialog.

Create a New application

1. From the startup dialog, select Create a new application and click OK.

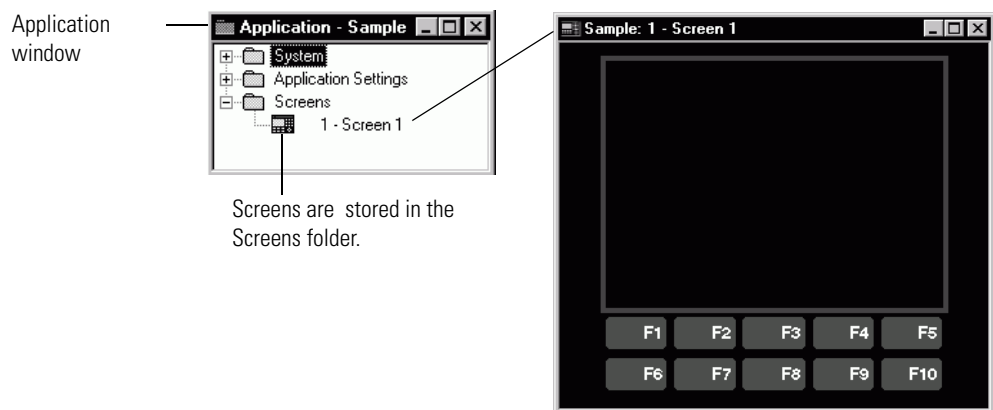


2. In the Create New Application dialog, enter a name for your application and select a PanelView terminal (type, protocol and type of operator input)



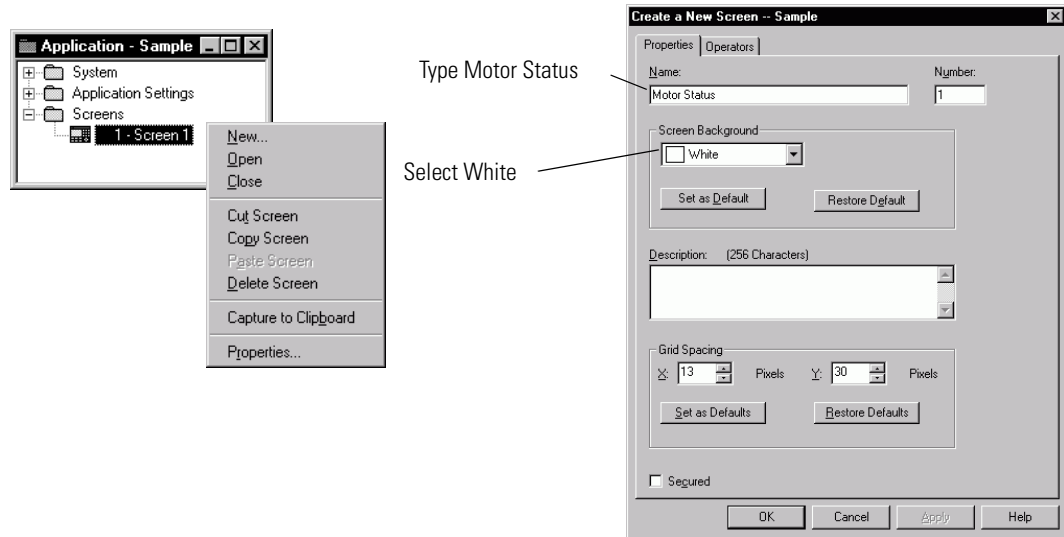
3. Click OK to exit the dialog.

The Application window opens showing the name of the application in the title bar. A blank screen opens with a default name and number - Screen 1.



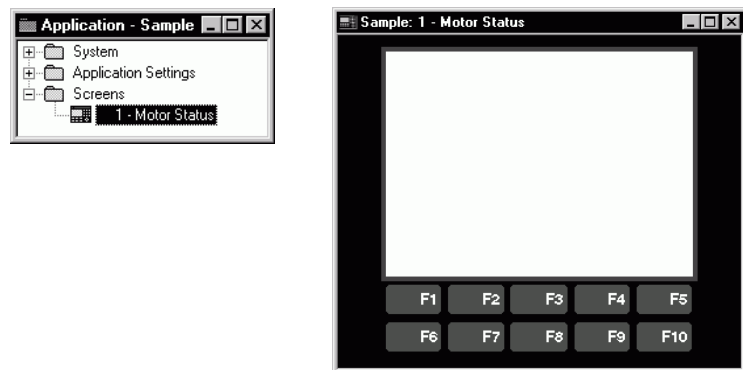
Follow these steps to rename and change the color of Screen 1.

1. Select Screen>Properties or right-click on Screen 1 in the Screens folder and select Properties from the shortcut menu.



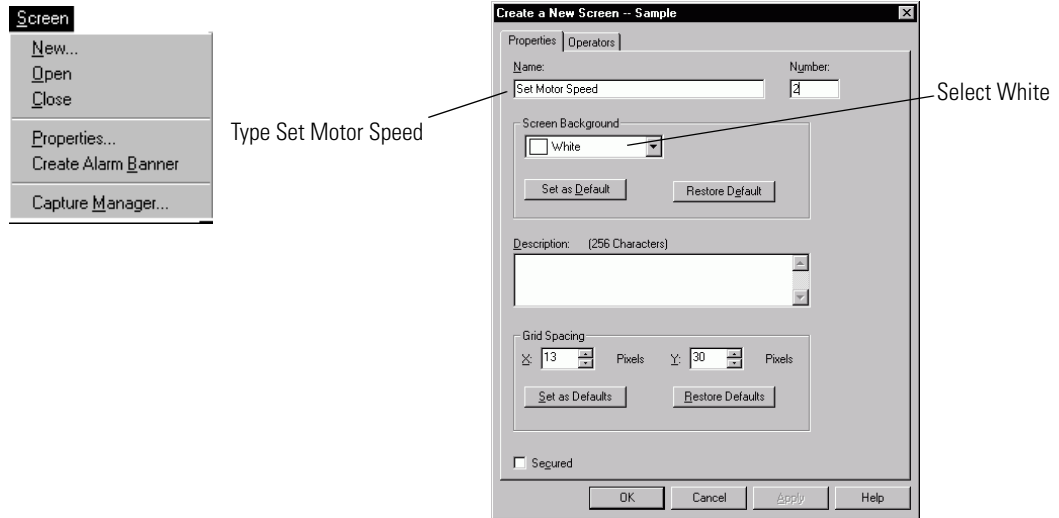
2. Type Motor Status in the Name field of the dialog
3. In the Background box, select White to change the screen background color.
4. Click OK to exit the dialog.

The screen's background is now white. The new screen name appears in the title bar of the screen and on the screen icon in the Screens folder.



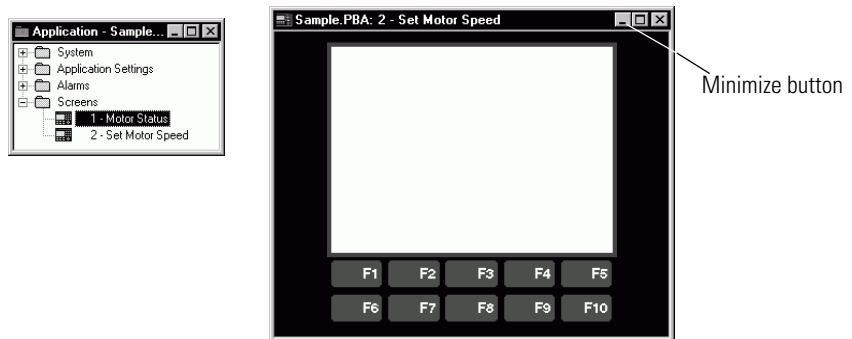
Create the Set Motor Speed Screen

1. Select Screen>New or right-click on the Motor Status screen in the Screens folder and select New from the shortcut menu.



2. Enter screen properties as shown above.
3. Click OK to exit the dialog.

A blank screen is opened with the screen name and number showing in the title bar. The Application Window also contains an icon for the new screen.



4. Click the Minimize button on the Set Motor Speed screen to reduce the window while you work on the Motor Status screen.

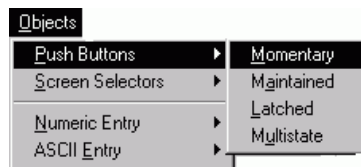
Create Objects on the Motor Status Screen

The Motor Status screen contains a start motor push button, stop motor push button, screen navigation button, motor speed display, motor status indicator, and a screen title.

Create the Start Motor Push Button



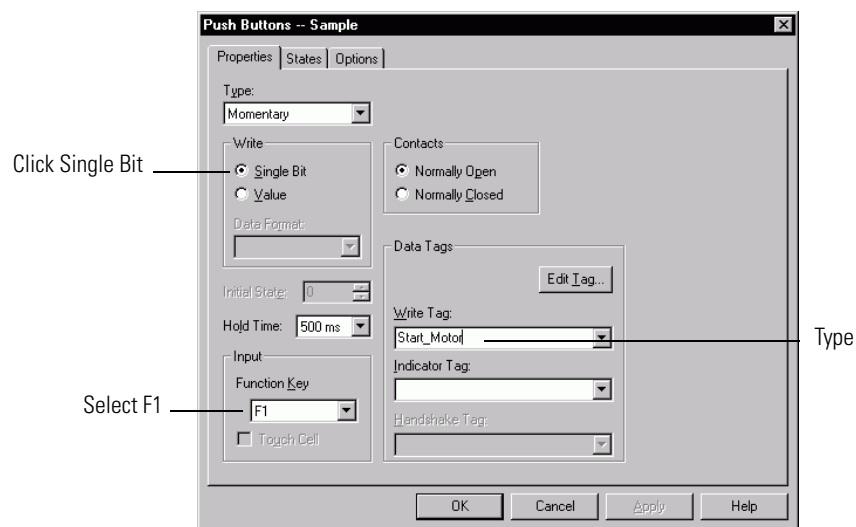
1. Select Objects>Push Buttons>Momentary.



2. Position the pointer (+) in the lower left of the screen where you want to draw the button, hold down the left mouse button and drag to size the button.



3. Double-click the object to open its dialog and set the properties shown.

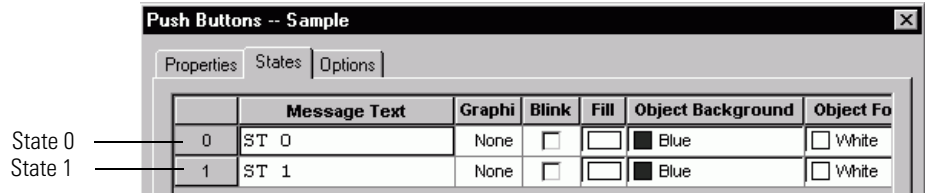


TIP

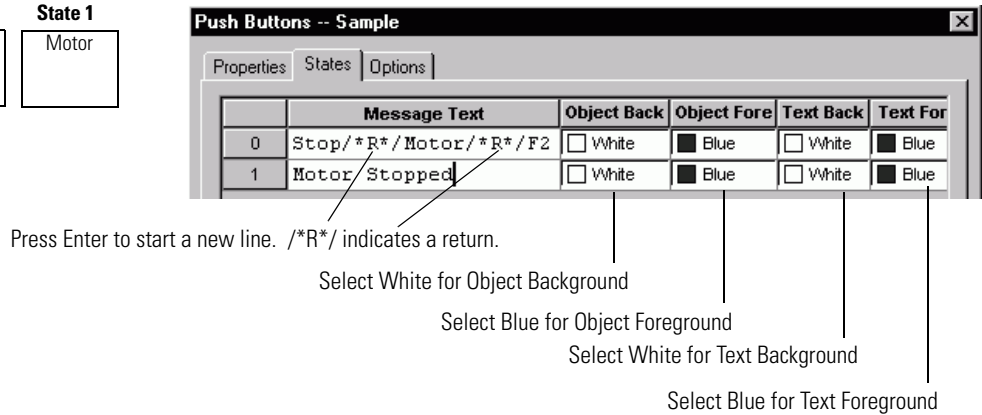
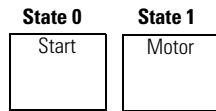
You will enter definitions for tags in Chapter 5, [Entering Application Tags](#).

- Click the States tab of the Push Buttons dialog.

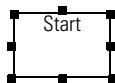
Each row defines text and formatting options for a push button state. Row 0 is state 0, row 1 is state 1. The default text for a 2-state push button is ST 0 and ST 1.



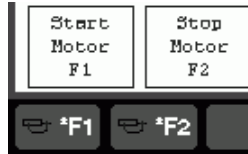
- Double-click in the Message Text field of each row and change the text as shown below. Also, change the default colors for the object and text.



- Click OK when done to exit dialog. The F1 key shows an icon of the push button indicating the key is assigned to an object. If you see an asterisk (*), the object is too small to fit the text. Click on the object and drag a handle until all of the text fits.



Create the Stop Motor Push Button

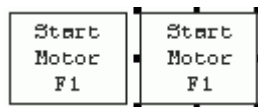


The F1 and F2 keys both have icons showing they are currently assigned to objects.

The Stop Motor push button is created using copy and paste commands.

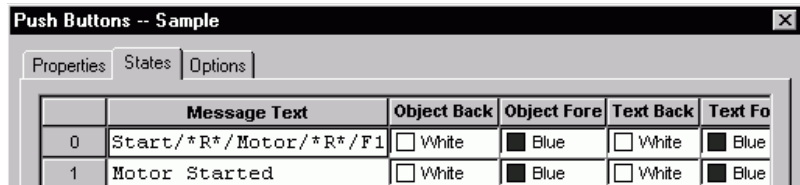


1. Select the Start Motor button, if not selected.
2. Select Edit>Copy or click the Copy tool on the toolbar.
3. Select Edit>Paste or click the Paste tool on the toolbar.
An outline of the button appears.
4. Move the outline to the right of the Start Motor push button and click the left mouse button to paste it on the screen.

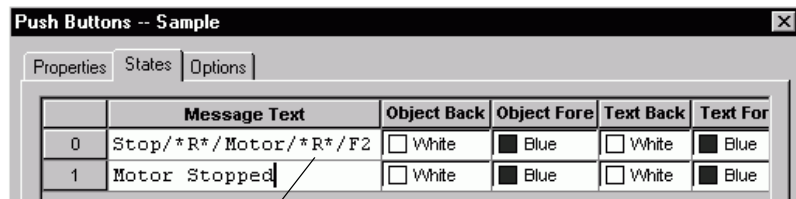
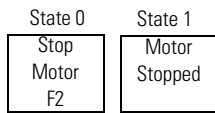


5. Double-click the pasted button to open its dialog and set the properties shown.

- Click the States tab of the Push Buttons dialog.



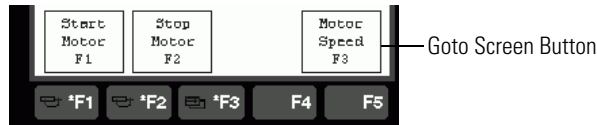
- Double-click in the Message Text field of each state and replace the text as shown below.



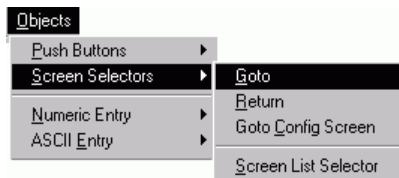
Remember, /*R*/ indicates a carriage return.

- Click OK to exit the dialog.

Create the Motor Speed Screen Button



1. Select Objects>Screen Selectors>Goto.



2. Position the pointer (+) in the lower right area of the screen where you want to draw the button, then hold down the left mouse button and drag to size the button.
3. Select Format>Toggle Fore/Background to reverse the object colors.



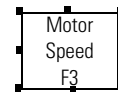
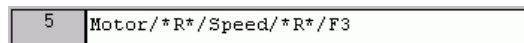
4. Select Format>Inner Text or click the Inner Text tool.
The Inner Text toolbar opens showing the default text for the button.

TIP

Click the Down Arrow at the right of the Text box to edit the text in a Text Edit dialog.

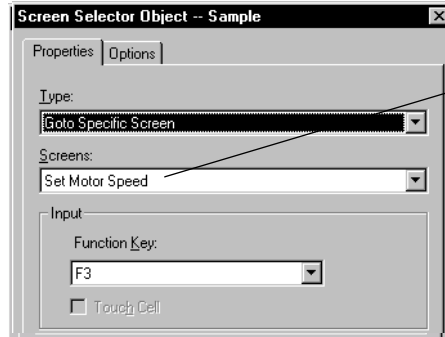


5. Replace the default text as shown.
As you replace the text it is also entered in the object.



6. Click anywhere outside the object to exit inner text mode.
The F3 key now shows an icon to show it is assigned to an object.

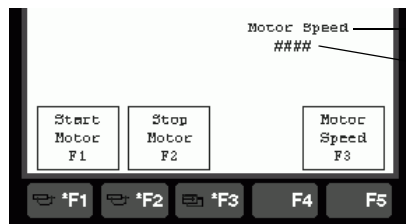
7. Double-click the Motor Speed screen button.
8. Select the properties as shown.



Select Set Motor Speed
This is the screen that displays when the operator presses the F3 key on the Motor Status screen.

9. Click OK to exit the dialog.

Create the Motor Speed Display



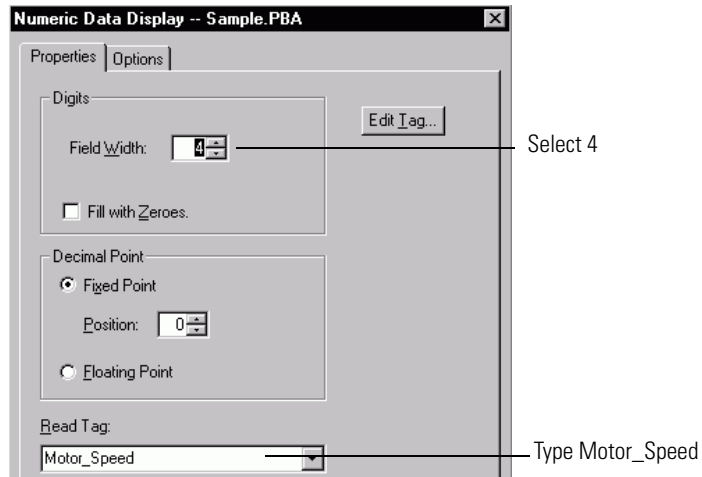
Text
Numeric Data Display

1. Select Objects>Numeric Data Display.
2. Position the pointer (+) above the Motor Speed screen button. Hold down the left mouse button and drag to size the button. The object is created with ##### characters as a placeholder for the numeric value. Each # represents a digit. The initial field width is six digits.



3. Select Format>Toggle Fore/Background to reverse the object colors.

4. Double-click the object to opens its dialog. Enter properties as shown.

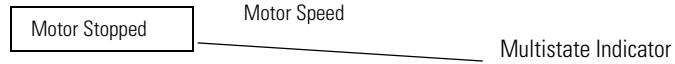


5. Click OK to exit the dialog.
The object now shows four #### characters as the maximum field width for the numeric value.
6. Select Objects>Text to create the label Motor Speed above the object.
7. Position the pointer (+) above the numeric data display, hold down the left mouse button and drag to draw the text box. You are placed in text mode.
8. Enter the text as shown.
As you enter the text it also entered in the object.

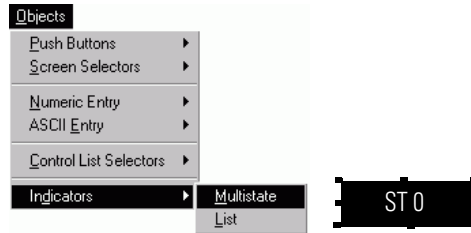


9. Click the Toggle Fore/Background icon to reverse the text colors.

Create the Motor Status Indicator



1. Select Objects>Indicator>Multistate.



2. Position the pointer (+) above the Start and Stop Motor push buttons, hold the left mouse button and drag to size the button.
3. Select Format>Toggle Fore/Background to reverse the object colors.

4. Double-click the object to open its dialog and then click the States tab.

Each row defines text and formatting options for each indicator state. Row 0 is state 0, row 1 is state 1. The default text for a multistate indicator is ST 0, ST 1, ST2, ST3. Indicators are initially created with 4 states (ST 0 - ST 3).

5. Select rows 2 and 3 by selecting row 2, holding down the Shift key and clicking row 3.

Right-click and select Delete State from the shortcut menu.

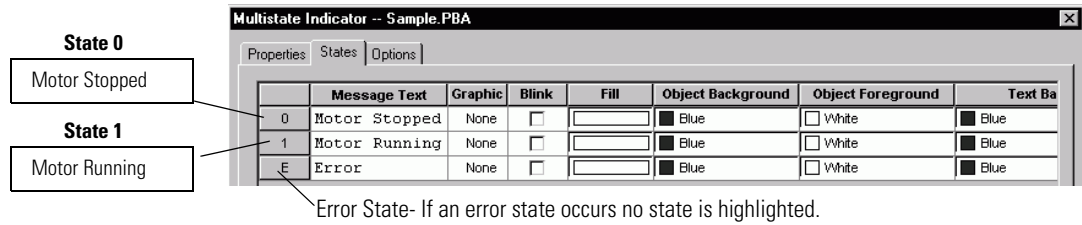
State 0

State 1

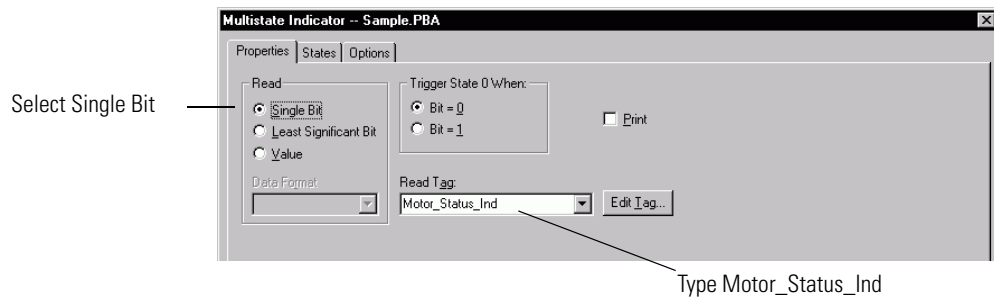
	Message Text	Graphic	Blink	Fill	Object Background	Object Foreground	T
0	ST 0	None	<input type="checkbox"/>		Blue	White	Blue
1	ST 1	None	<input type="checkbox"/>		Blue	White	Blue
2	ST 2	None	<input type="checkbox"/>		Blue	White	Blue
3	ST 3	None	<input type="checkbox"/>		Blue	White	Blue
E	Error	None	<input type="checkbox"/>		Blue	White	Blue

	Message Text	Graphic	Blink	Fill	Object Background	Object Foreground	T
0	ST 0	None	<input type="checkbox"/>		Blue	White	Blue
1	ST 1	None	<input type="checkbox"/>		Blue	White	Blue
E	Error	None	<input type="checkbox"/>		Blue	White	Blue

- Double-click in the Message Text field of row 0 and 1 and change the text as shown.



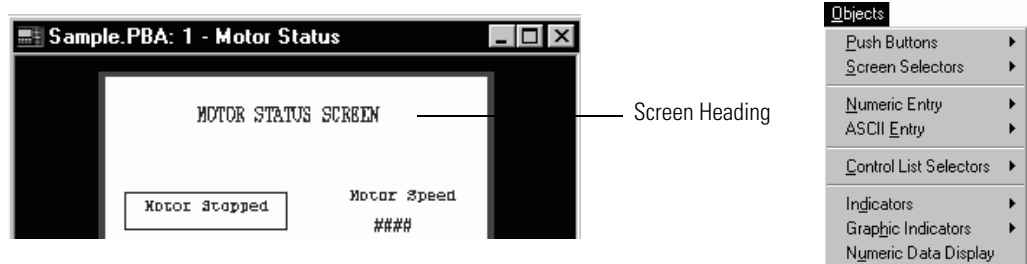
- Click the Properties tab and set the properties as shown.



TIP Because Single Bit only supports 2 states (State 0 and State 1), you must delete the extra states on the States tab before selecting Single Bit on the Properties tab.

- Click OK to exit the dialog.

Create the Screen Title for the Motor Status Screen



1. Select Objects>Text.
2. Position the pointer (+) at the top of the screen, hold down the left mouse button and drag to draw the text box.
You are placed in text mode.
3. Enter the text as shown; the text it also entered in the text box.



4. Click the Toggle Fore/Background tool to reverse the foreground and background colors of the object.
5. Click the Text Size tool and select 8 x 24 from the menu.
6. Deselect the object by clicking anywhere outside the object.

TIP

An asterisk appears (*) if the text box is too small for the text. Select the object and then drag a handle to size the text box until the text fits.

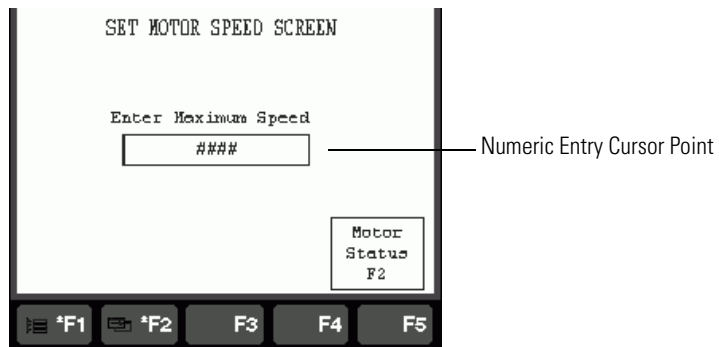
IMPORTANT

Select Arrange>Bring Dynamic Objects to Front to move control objects to the front of other objects. This makes sure the control objects are not covered by static objects such as text.

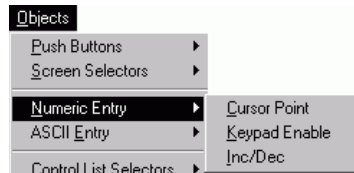
Create Objects on the Set Motor Speed Screen

The Set Motor Speed screen contains a numeric entry object, a screen navigation button, and a screen title.

Create a Numeric Entry Object to Set the Motor Speed



1. Open the Set Motor Speed screen (Screen 2) by clicking on the title bar of the minimized screen.
2. Select Objects>Numeric Entry>Cursor Point.

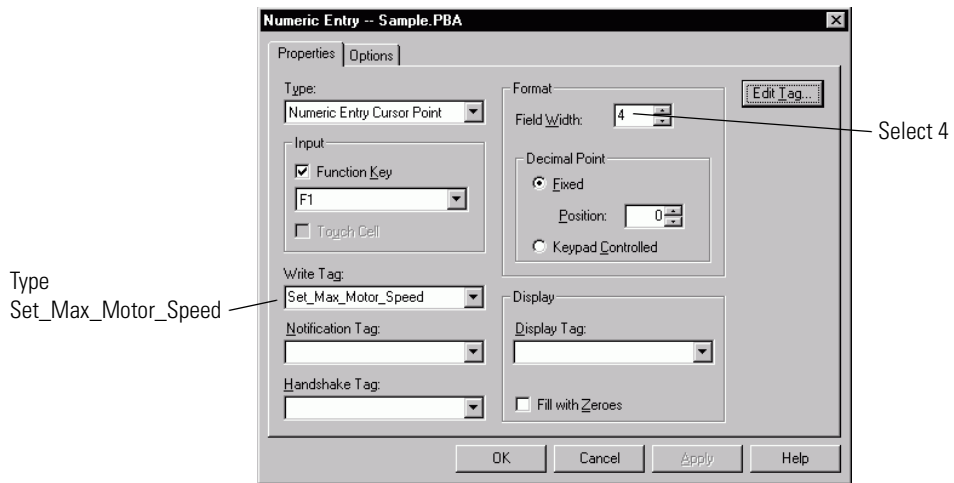


3. Position the pointer (+) in the middle of the screen, hold down the left mouse button and drag to draw the object.
The object is created with six ##### characters as a placeholder for the numeric value. Each # represents a digit. The initial field width is 6 digits.

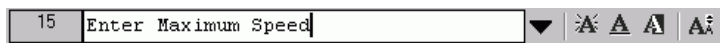


4. Select Format>Toggle Fore/Background to reverse the object colors.

5. Double-click the object and set the properties as shown.



6. Click OK to close the dialog.
The object shows four ##### characters as the maximum field width for the numeric value.
7. Select Objects>Text.
8. Position the pointer (+) above the numeric entry object, hold down the left mouse button and drag to draw the text box.
You are placed in text mode.
9. Enter the text as shown; the text it is also entered in the text box.



10. Click the Toggle Fore/Background tool to reverse the foreground and background colors of the object.
11. Deselect the object by clicking anywhere outside the object.

TIP

An asterisk (*) appears if the text box is too small for the text. Select the object and then drag a handle to size the text box until the text fits.

Create the Motor Status Screen Button



The Motor Status screen button is created by copying the Motor Speed screen button from screen 1 and then editing the button properties.

1. Select the Motor Speed screen button on the Motor Status screen.

Click anywhere in the Motor Speed screen to activate the screen.



2. Select Edit>Copy or click the Copy tool on the toolbar.

3. Click in the Set Motor Speed screen, or screen 2.



4. Select Edit>Paste or click the Paste on the toolbar.

An outline of the button appears.

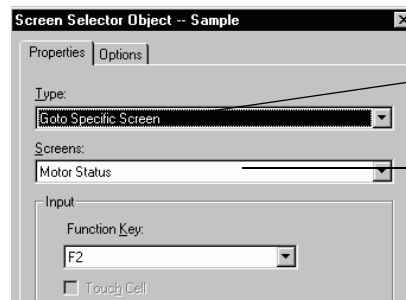
5. Move the object to the lower right of the screen and click the left mouse button to paste it.



6. Click the Inner Text tool to edit the text in the button; replace the current text with the new text as shown.



7. Double-click the object to open its dialog.



Select Goto Specific Screen

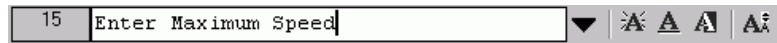
Select Motor Status

This is the screen that displays when the operator presses the F2 key on the Set Motor Speed screen.

8. Click OK to exit the dialog.

Create the Screen Title for the Set Motor Speed Screen

1. Select Objects>Text.
2. Position the pointer (+) at the top of the screen, hold down the left mouse button and drag to draw the text box.
You are placed in text mode.
3. Enter the text as shown; as you enter the text it also entered in the text box.



4. Click the Toggle Fore/Background tool to reverse the foreground and background colors of the object.
5. Click the Text Size tool and select 8 x 24 from the menu.
6. Deselect the object by clicking anywhere outside the object.

TIP

An asterisk (*) appears if the text box is too small for the text. Select the object and then drag a handle to size the text box until the text fits.

IMPORTANT

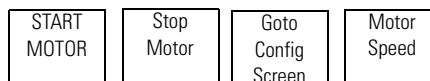
Select Arrange>Bring Dynamic Objects to Front to move control objects to the front of other objects. This makes sure control objects are not covered by static objects such as text.

Create a Goto Config Screen Button

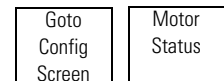
This section applies to touch screen only terminals. If you are creating the sample application for a keypad terminal, skip this section.

To allow an operator access to the touch screen only terminal's configuration mode menu, a Goto Config Screen button is required.

1. Select Objects>Screen Selectors>Goto Config Screen.
2. Position the pointer (+) to the left of the screen button on each screen.
Hold down the left mouse button and drag to draw the object.
3. Select Format>Toggle Fore/Background to reverse the object colors.



Motor Status Screen



Set Motor Speed Screen

Create the Alarm Banner and Messages

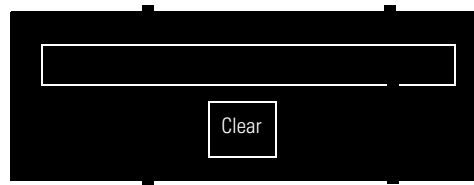
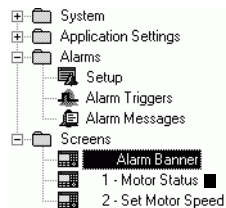
In this section, you will create:

- alarm banner that opens over the current screen when an alarm is triggered. The banner will contain a message display and an Acknowledge button.
- alarm trigger tag defining the address where the controller writes a bit to trigger an alarm.
- alarm messages to appear in the alarm banner when an alarm is triggered

Create the Alarm Banner

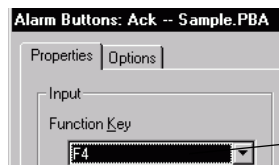
1. Select Screen>Create Alarm Banner.

The Alarm Banner is created in the Screens folder. The default banner appears with a message display and a Clear button.



On color terminals, the background color is red, the foreground color is white. On monochrome terminals, the background is white and the foreground black.

2. Decrease the height of the banner by clicking the bottom handle and drag up.
3. Deselect the banner by clicking outside the banner.
4. Click the Clear button and then select Edit>Cut or the Cut tool.
5. Select Objects>Alarm Buttons>Acknowledge.
6. Position the pointer (+) in the banner and left-click to drop the object.
7. Double-click the Ack button to open its dialog, then select the F4 key.

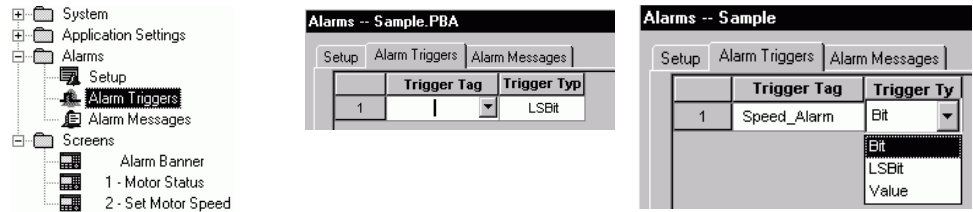


8. Click OK to exit the dialog.
9. Select Format>Inner Text and enter Ack/*R*/F4 in the text box.

Define an Alarm Trigger

This section defines the trigger tag. When an alarm condition occurs, a value is sent to the trigger tag address.

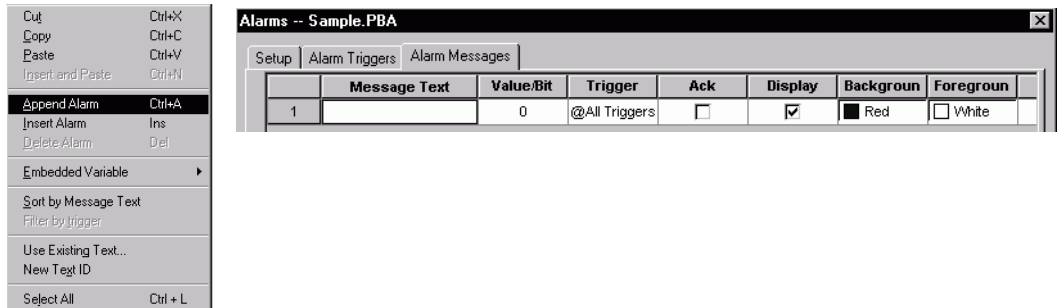
1. Double-click the Alarm Triggers icon in the Alarms folder.
Or select Application>Alarm Setup, then select the Alarm Triggers tab.



2. Type Speed_Alarm in the Trigger Tag field.
3. Select Bit from the Trigger Type field.

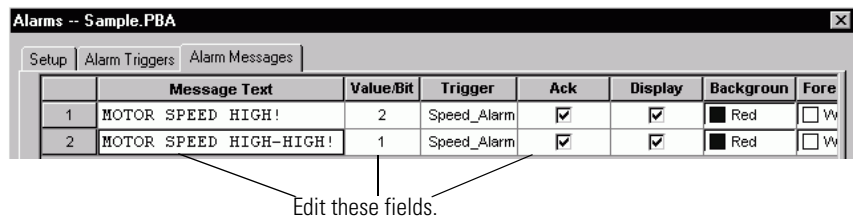
Defining Alarm Messages

1. Select the Alarm Messages tab on the Alarms dialog.
Each row defines an alarm message and its attributes.



2. Right-click and select Append Alarm from the shortcut menu to add a row.

3. For each row, edit the attributes shown:
 - Double-click in the Message Text field and type the alarm message.
 - Double-click in the Value/Bit (Bit offset) field and enter the value shown.
 - Click the check box in the Ack field.



4. Click OK to exit the Alarms dialog.

Bit triggered alarm messages are defined by a bit offset (Value/Bit field) from the Trigger Tag address. For example, if the Trigger Tag address is defined as B3:1/0, alarm messages can be triggered from addresses B3:1/1 and B3:1/2.

When the motor speed reaches 1200 rpm, the logic controller sets bit B3:1/2, triggering an alarm condition. The message MOTOR SPEED HIGH! will appear in the alarm banner.

$$\begin{array}{rcccl}
 \mathbf{B3:1/0} & + & \mathbf{2} & = & \mathbf{B3:1/2} \\
 \text{Trigger Tag Address} & & \text{Value/Bit of Alarm Message} & & \text{Logic Controller Address}
 \end{array}$$

When the motor speed reaches 1500 rpm, the logic controller sets bit B3:1/1, triggering an alarm condition. The message MOTOR SPEED HIGH HIGH! will appear in the alarm banner.

$$\begin{array}{rcccl}
 \mathbf{B3:1/0} & + & \mathbf{1} & = & \mathbf{B3:1/1} \\
 \text{Trigger Tag Address} & & \text{Value/Bit of Alarm Message} & & \text{Logic Controller Address}
 \end{array}$$

Close the Screens

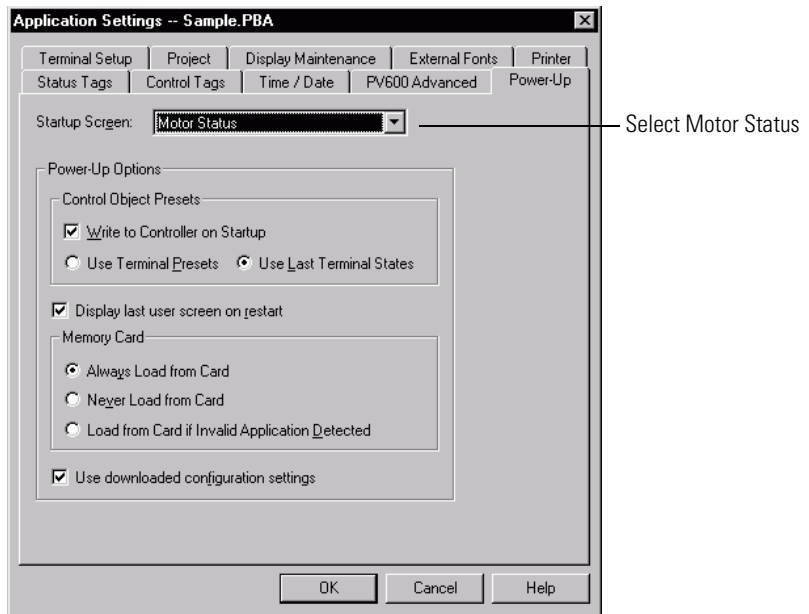
Close each screen by clicking the X in the title bar of the screen. Or select Screen>Close to close each screen.



Or select Windows>Close all Current Application Screens to close all screens.

Define the Startup Screen for the Application

1. Select Application>Settings.
2. Select the Power-Up tab.
3. From the Startup Screen list box, select Motor Status.



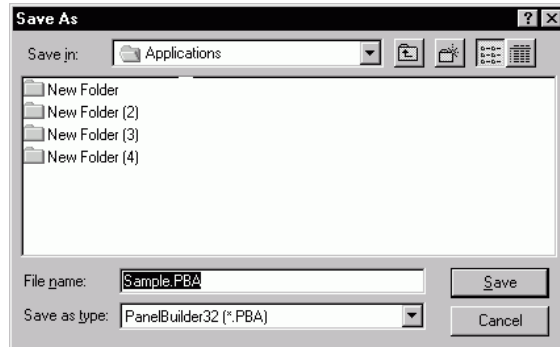
4. Click OK to exit the dialog.

Save the Application



1. Select File>Save or click the Save icon on the toolbar.

The file is saved to a default location using the application name and the .PBA file type.



2. Click the Save button to exit and save the application.

The file is saved to Program Files>Allen-Bradley>PanelBuilder32>Applications.

TIP

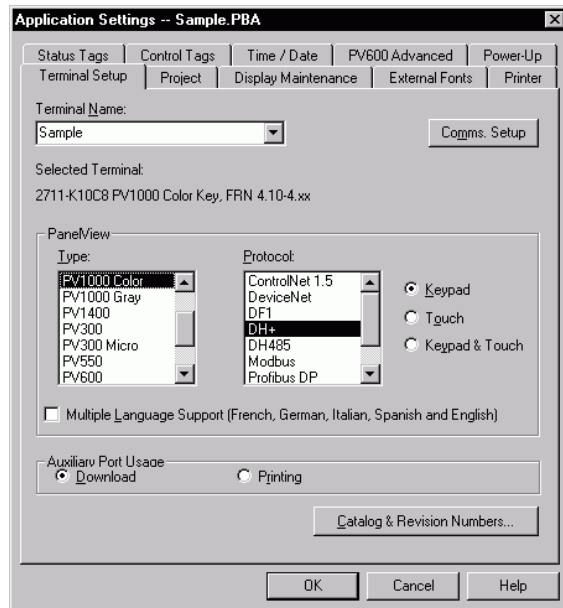
The next time you select File>Save the Save As dialog doesn't open. The file is saved to disk with the application name and the .PBA file type.

Convert Application for Another Terminal Type

The sample application was created for the PanelView 600 keypad terminal and is available for DH-485, DH+, DF1, Remote I/O, DeviceNet, EtherNet/IP, and ControlNet protocols. You can convert any one these applications to another terminal size such as the PanelView 1000 by following this procedure.

1. Select Application>Settings.
2. Click the Setup tab.

3. Select the PanelView terminal for which you want to convert the application.



4. When you click OK, the application is converted and validated for any errors.

If the application is converted successfully, the Exceptions window shows the message:

[Application] Conversion Passed - No Errors Found

IMPORTANT

Depending on the terminal size, you may want to reposition and resize objects appropriately. You may also want to adjust the text sizes.

If the terminal uses a different protocol, you can select the Convert option on the Edit Tag tab of the Tools>Options dialog and the tag editor will convert the current tags to the appropriate fields for the new protocol. You still need to update the tag data.

Configuring Communication

This chapter shows how to configure network communication for your PanelView terminal and logic controller. Configuration is provided for the following communication protocols:

- **DH-485** - configures a DH-485 PanelView terminal and an SLC or MicroLogix controller
- **DH+** - configures a DH+ PanelView terminal and a PLC-5, SLC 5/04, or ControlLogix DH+ module.
- **Remote I/O** - configures a Remote I/O terminal and a PLC-5, SLC 5/03, 5/04 or 5/05 controller with a 1747-SN/B scanner or ControlLogix DHRIO module.
- **ControlNet** - configures a ControlNet PanelView terminal and a ControlLogix CNet module or PLC-5 controller using scheduled or unscheduled messaging.
- **DeviceNet** - configures a DeviceNet PanelView terminal to communicate as a slave device to a PLC-5, SLC, or ControlLogix controller with a DeviceNet module.
- **EtherNet/IP** - configures an EtherNet/IP PanelView terminal to communicate with a ControlLogix controller (with 1756-ENET/B or /ENBx module), PLC-5E or SLC 5/05 on an EtherNet/IP network.
- **DF1** - configures a DF1 PanelView terminal and a PLC-5, SLC 5/03, 5/04, 5/05, MicroLogix, or ControlLogix controller. For a ControlLogix serial port, select PLC-5 controller type.

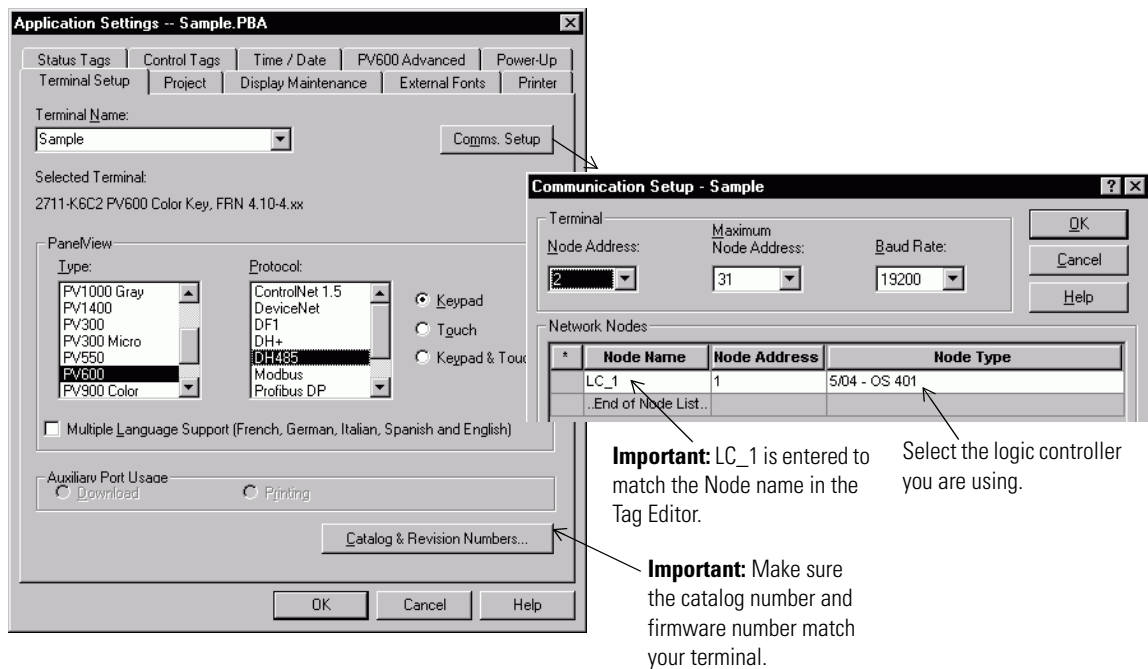
Refer to the section that is appropriate for your terminal.

Configure DH-485 Communication

This section defines the communication settings for a DH-485 PanelView terminal and logic controller on a DH-485 network.

1. Select Application>Settings.
2. Select the Terminal Setup tab.
3. Click the Comms. Setup button and set the parameters as shown.

To add a network node, right-click the Node Name field. Enter the Node Name, Node Address and Node Type for the controller you are using.



4. Click OK until you exit the Application Settings dialog.

Configure DH+ Communication

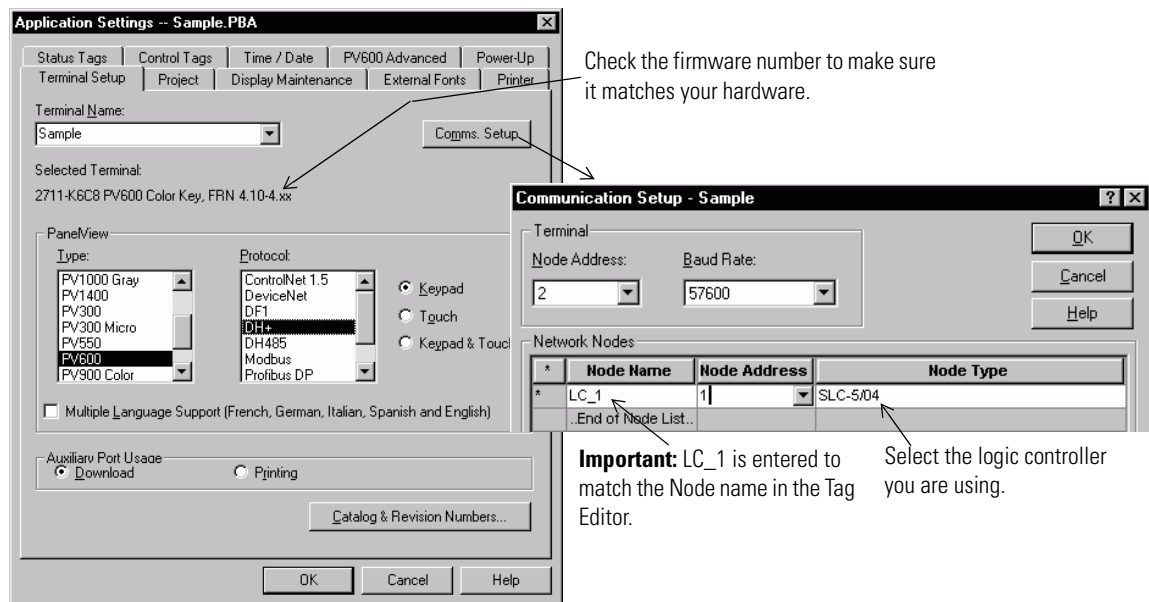
This section defines the communication settings for a DH+ PanelView terminal and logic controller on a DH+ network.

1. Select Application>Settings.
2. Select the Terminal Setup tab.
3. Click the Comms. Setup button.
4. Set the parameters as shown.

To add a network node, right-click on the Node Name field. Enter the Node Name, Node Address and Node Type of the logic controller you are using.

IMPORTANT

For ControlLogix controller, select a PLC-5 as the Node Type.

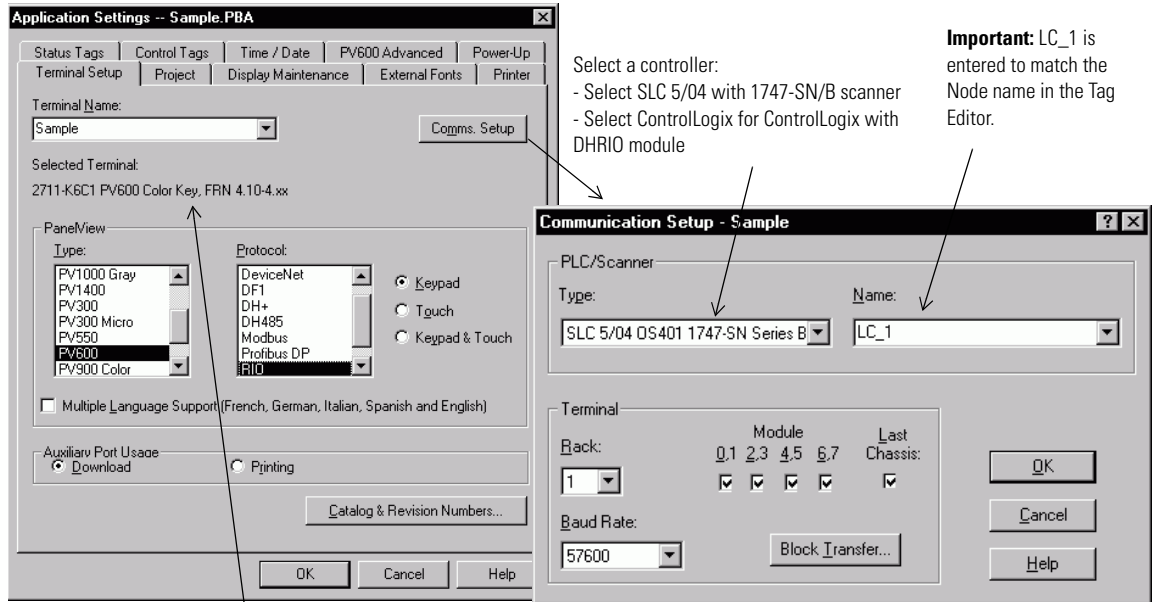


5. Click OK until you exit the Application Settings dialog.

Configure Remote I/O Communication

This section defines the communication settings for a Remote I/O PanelView terminal and logic controller on a Remote I/O network.

1. Select Application>Settings.
2. On the Terminal Setup tab, click the Comms. Setup button. Set the properties as shown.



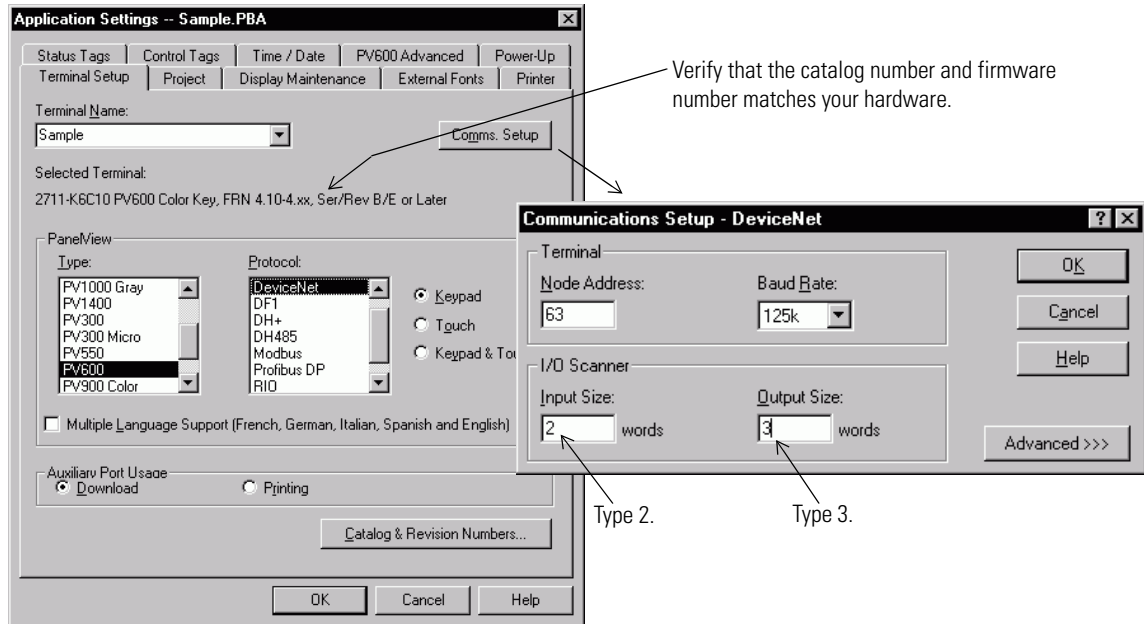
Check the firmware number to make sure it matches your hardware.

3. Click OK until you exit the Application Settings dialog.

Configure DeviceNet Communication

This section defines the communication settings for a DeviceNet PanelView terminal operating as a slave device on a DeviceNet network.

1. Select Application>Settings.
2. On the Terminal Setup tab, click the Comms. Setup button. Set the properties as shown.

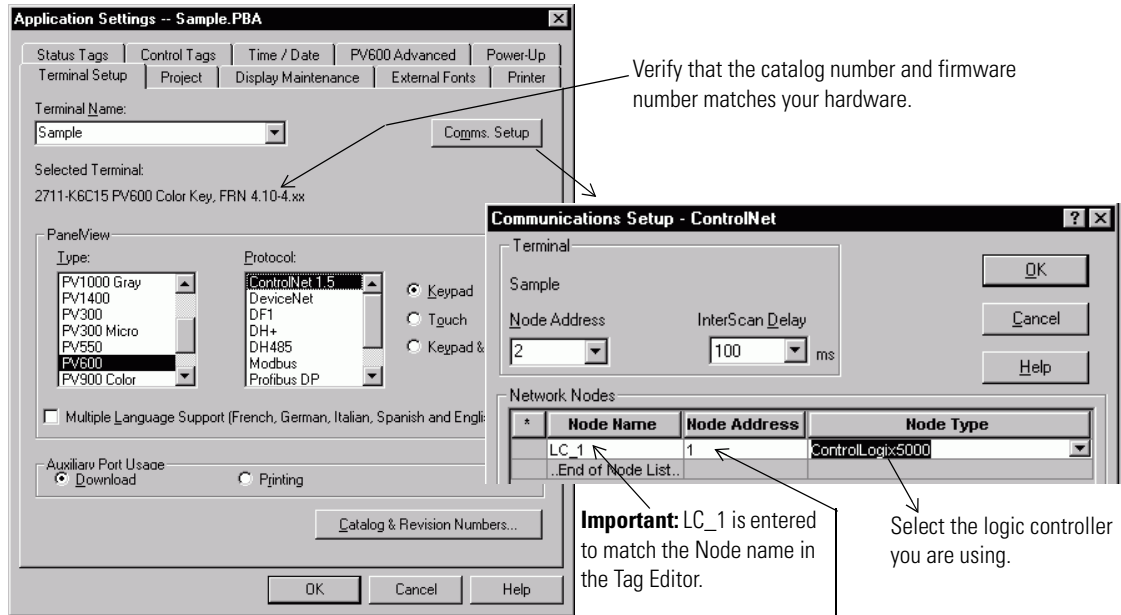


3. Click OK until you exit the Application Settings dialog.

Configure ControlNet Communication

This section defines the communication settings for a ControlNet PanelView terminal and ControlLogix controller on a ControlNet network.

1. Select Application>Settings.
2. On the Terminal Setup tab, click the Comms. Setup button. Set the properties as shown.



1 for Allen-Bradley PLC
 1 1 0 for ControlLogix, where:
 1 refers to the 1784-CNB node number (1 to 99)
 1 refers to the ControlLogix backplane number
 0 refers to ControlLogix slot number
 You must enter a space between the numbers as shown.

3. Click OK until you exit the Application Settings dialog.

Configure EtherNet/IP Communication

This section defines the communication settings for an EtherNet/IP PanelView terminal and a ControlLogix controller on an Ethernet/IP network.

1. Select Application>Settings.
2. On the Terminal Setup tab, click the Comms. Setup button. Set the properties as shown.

The image shows two overlapping dialog boxes from a software interface. The top dialog is 'Application Settings -- Sample' with the 'Terminal Setup' tab selected. The 'Comms. Setup' button is highlighted. The 'Selected Terminal' is '2711-K6C20 PV600 Color Key, FRN 4.20-4.xx'. The 'PanelView' section shows 'Type' set to 'PV600' and 'Protocol' set to 'EtherNet'. The bottom dialog is 'Communications Setup - Ethernet'. The 'Terminal' is 'new' and 'InterScan Delay' is '100 ms'. The 'Network Nodes' table is as follows:

*	Node Name	Node Address	Path	Node Type
*	LC_1	10.0.0.1	1 0	ControlLogix5000
	.End of Node List..			

The 'Ethernet Configuration' dialog is also visible, showing 'DHCP/BootP Enable' checked, IP Address '10.0.0.2', Subnet Mask '255.255.255.0', and various timeout settings.

Annotations include:

- An arrow pointing to the 'Selected Terminal' field with the text: "Verify that the catalog number and firmware number matches your hardware."
- An arrow pointing to the 'Comms. Setup' button in the 'Application Settings' dialog.
- An arrow pointing to the 'Node Name' 'LC_1' in the 'Network Nodes' table with the text: "Important: LC_1 is entered to match the Node name in the Tag Editor."
- An arrow pointing to the 'Node Address' '10.0.0.1' and 'Node Type' 'ControlLogix5000' in the 'Network Nodes' table with the text: "Enter the Node Address, Path, and Node Type as shown."
- An arrow pointing to the 'Ethernet Config' button in the 'Communications Setup' dialog with the text: "Click the **Ethernet Config** button. Set parameters as shown."

3. Click OK until you exit the Application Settings dialog.

Configure DF1 Communication

This section defines the communication settings for a DF1 PanelView terminal and a PLC-5 or SLC 5/03, /04, /05 controller through channel 0.

1. Select Application>Settings.
2. On the Terminal Setup tab, click the Comms. Setup button. Set the properties as shown.

The image shows two overlapping dialog boxes. The background dialog is 'Application Settings - Sample.PBA' with the 'Terminal Setup' tab selected. The 'Terminal Name' is 'Sample'. The 'Selected Terminal' is '2711-K6C16 PV600 Color Key, FRN 4.10-4.xx'. Under 'PanelView', the 'Type' is 'PV600' and the 'Protocol' is 'ControlNet 1.5'. The 'Comms. Setup' button is highlighted. The foreground dialog is 'Communications Setup - DF1'. It shows 'Terminal' as 'Sample' and 'Node Address' as '1'. The 'Baud Rate' is '9600'. The 'Parity/Stop Bits' are 'Odd/1'. The 'Error Detect' is 'CRC'. The 'Handshake' is 'Off'. Below is a 'Network Nodes' table:

*	Node Name	Node Address	Node Type
*	LC_1	1	SLC 5/04
	End of Node List...		

Annotations include: 'Verify that the catalog number and firmware number matches your hardware.' pointing to the terminal information; 'Important: LC_1 is entered to match the Node name in the Tag Editor.' pointing to the 'Node Name' 'LC_1'; and 'Select the logic controller you are using.' pointing to the 'Node Type' 'SLC 5/04'.

3. Click OK until you exit the Application Settings dialog.

Save the application



Select File>Save or click the Save tool on the toolbar.

Entering Application Tags

This chapter shows how to:

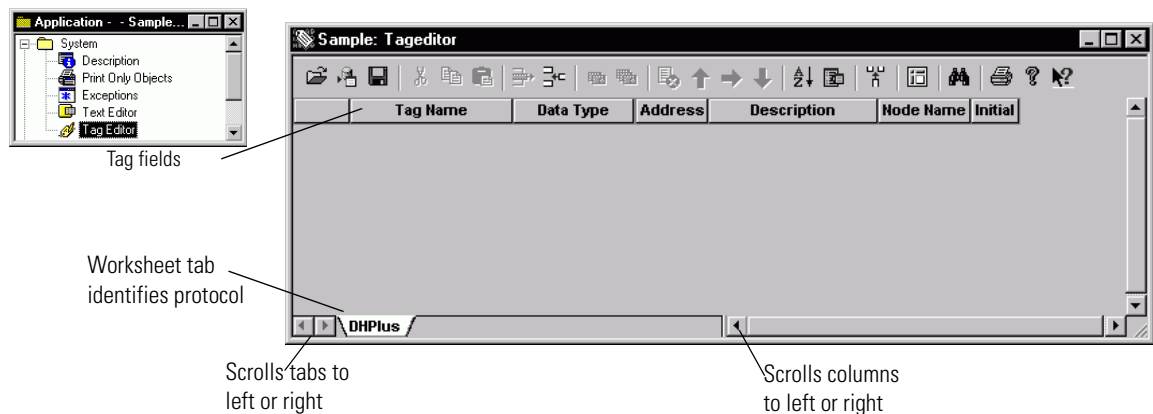
- open the tag editor.
- enter tags in the worksheet for each communication protocol.
- save the tags.

Open the Tag Editor

Follow these steps to open the tag editor:

- Select Tools>Tag Editor.
- Or open the System folder in the Application window and double-click on the Tag Editor icon.

A blank worksheet opens with the protocol name on its tab. The tag editor has its own menu bar and toolbar that remains active until you close the tag editor.



Description of the Application Tags

DH-485, DH+, and DF1 Application Tags

The table shows application tags used by the DH-485, DH+, and DF1 applications. Defaults are accepted for fields not shown in table. These tags are also used for EtherNet/IP (to a PLC-5E or SLC) and ControlNet (to a PLC-5C).

Tag Name	Data Type	Tag Address	Description	Node Name	Initial Value	Min	Max
Start_Motor	Bit	B3:0/0	Starts the motor	LC_1	0	0	0
Stop_Motor	Bit	B3:0/1	Stops the motor	LC_1	0	0	0
Motor_Status_Ind	Bit	B3:0/2	Shows on/off motor status	LC_1	0	0	0
Motor_Speed	Unsigned Integer	N7:0	Shows the motor speed	LC_1	0	0	65535
Set_Max_Motor_Speed	Unsigned Integer	N7:1	Sets the maximum speed	LC_1	1800	600	1800
Speed_Alarm	Bit	B3:1/0	Triggers alarm messages	LC_1	0	0	0

Remote I/O Application Tags

The table shows application tags used by the Remote I/O application. Defaults are accepted for fields not shown in table.

Tag Name	Data Type	Tag Address	Description	Node Name	Initial Value	Min	Max
Start_Motor	Bit	I:010/0	Starts the motor	LC_1	0	0	0
Stop_Motor	Bit	I:010/1	Stops the motor	LC_1	0	0	0
Motor_Status_Ind	Bit	O:010/0	Shows on/off motor status	LC_1	0	0	0
Motor_Speed	Unsigned Integer	O:011	Shows the motor speed	LC_1	0	0	65535
Set_Max_Motor_Speed	Unsigned Integer	I:011	Sets the maximum speed	LC_1	1800	600	1800
Speed_Alarm	Bit	O:012/0	Triggers alarm messages	LC_1	0	0	0

ControlNet Unscheduled Application Tags

The table shows application tags used by the ControlNet application using unscheduled messaging. Tags are shown for a ControlLogix application. Defaults are accepted for fields not shown in table.

Tag Name	Data Type	Tag Address	Description	Node Name	Initial Value	Min	Max
Start_Motor	Bit	Motor_Control.00	Starts the motor	LC_1	0	0	0
Stop_Motor	Bit	Motor_Control.01	Stops the motor	LC_1	0	0	0
Motor_Status_Ind	Bit	Motor_Control.02	Shows on/off motor status	LC_1	0	0	0
Motor_Speed	Signed Integer/INT	Motor_Speed[0]	Shows the motor speed	LC_1	0	0	65535
Set_Max_Motor_Speed	Signed Integer/INT	Motor_Speed[1]	Sets the maximum speed	LC_1	1800	600	1800
Speed_Alarm	Bit	Alarms.00	Triggers alarm messages	LC_1	0	0	0

ControlNet Scheduled Application Tags

The table shows application tags used by the ControlNet application using scheduled messaging. Defaults are accepted for fields not shown in table.

Tag Name	Data Type	Tag Address	Description	Node Name	Initial Value	Min	Max
Start_Motor	Bit	SI0:0/0	Starts the motor	ControlNet_Scheduled_File	0	0	0
Stop_Motor	Bit	SI0:0/1	Stops the motor	ControlNet_Scheduled_File	0	0	0
Motor_Status_Ind	Bit	S00:0/0	Shows on/off motor status	ControlNet_Scheduled_File	0	0	0
Motor_Speed	Signed Integer/INT	S00:1	Shows the motor speed	ControlNet_Scheduled_File	0	0	65535
Set_Max_Motor_Speed	Signed Integer/INT	SI0:1	Sets the maximum speed	ControlNet_Scheduled_File	1800	600	1800
Speed_Alarm	Bit	S00:2/0	Triggers alarm messages	ControlNet_Scheduled_File	0	0	0

DeviceNet Application Tags

The table shows application tags used by the DeviceNet application. Defaults are accepted for fields not shown in table.

Tag Name	Data Type	Tag Address	Description	Node Name	Initial Value	Min	Max
Start_Motor	Bit	I:00/0	Starts the motor	LC_1	0	0	0
Stop_Motor	Bit	I:00/1	Stops the motor	LC_1	0	0	0
Motor_Status_Ind	Bit	O:0/0	Shows on/off motor status	LC_1	0	0	0
Motor_Speed	Unsigned Integer	O:1	Shows the motor speed	LC_1	0	0	65535
Set_Max_Motor_Speed	Unsigned Integer	I:1	Sets the maximum speed	LC_1	1800	600	1800
Speed_Alarm	Bit	O:2/0	Triggers alarm messages	LC_1	0	0	0

EtherNet/IP Application Tags

The table shows application tags used by the ControlLogix controller in the EtherNet/IP application using controller addressing. Defaults are accepted for fields not shown in table.

Tag Name	Data Type	Tag Address	Description	Node Name	Initial Value	Min	Max
Start_Motor	Bit	Motor_Control.00	Starts the motor	LC_1	0	0	0
Stop_Motor	Bit	Motor_Control.01	Stops the motor	LC_1	0	0	0
Motor_Status_Ind	Bit	Motor_Control.02	Shows on/off motor status	LC_1	0	0	0
Motor_Speed	Signed Integer/INT	Motor_Speed[0]	Shows the motor speed	LC_1	0	0	65535
Set_Max_Motor_Speed	Signed Integer/INT	Motor_Speed[1]	Sets the maximum speed	LC_1	1800	600	1800
Speed_Alarm	Bit	Alarms.00	Triggers alarm messages	LC_1	0	0	0

Enter Application Tags

For all communication protocols enter the tags in the worksheet. Each worksheet tab shows the name of the protocol for which you are creating tags. For DeviceNet, make sure you click the DNet - IO Slave tab before entering tags. For Ethernet, click the ENet - Controller Address tab.

Follow these steps to enter tags and define their attributes. Tags are shown for DH+; other protocols are similar.



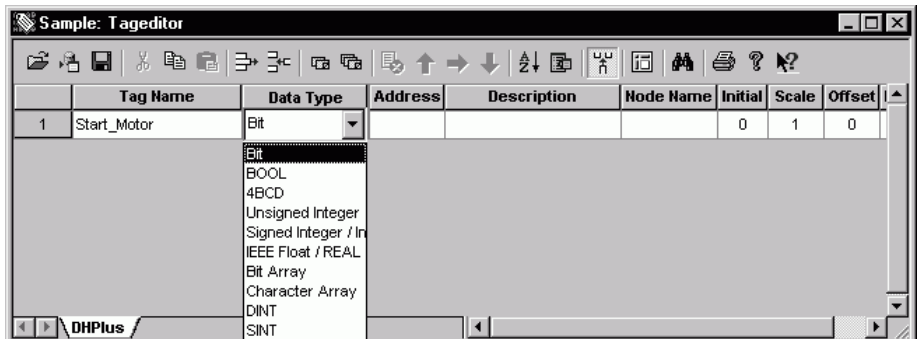
1. Select View>Extended Attributes or click the Extended Attributes tool to display the Initial, Minimum, Maximum, Offset and Scale fields.



2. Select Edit>Insert Tag or click the Insert Tag tool on the toolbar.
3. Double-click in the Tag Name field and type Start_Motor.



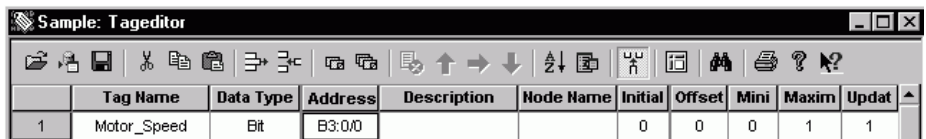
4. Click on the arrow in the Data Type field and select Bit.



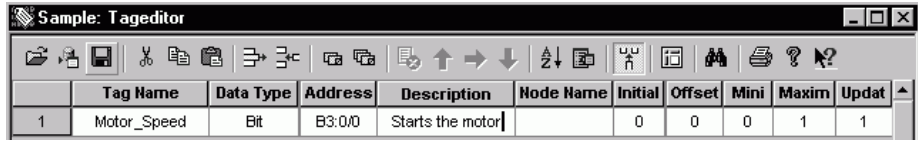
IMPORTANT

When working with a Character Array using a string (ST) data file, address the tag to the second offset in the data file, for example, ST9:0.1.

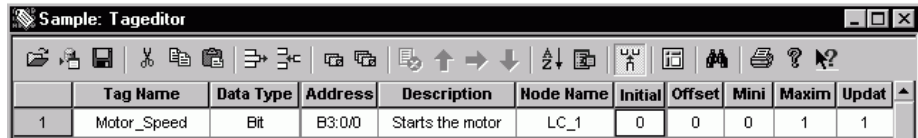
5. Double-click in the Address field and type B3:0/0.



- Double-click in the Description field and type Starts the Motor.

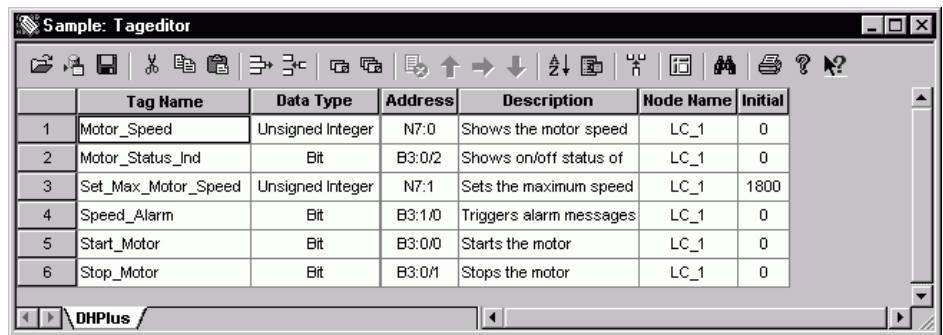



- Click on the arrow in the Node Name field and select LC_1. This node name was entered for the logic controller when you defined communication settings.




The defaults are accepted for the rest of the tag attributes. However, for the Set_Max_Motor_Speed tag enter 600 in the Minimum field, and 1800 in the Initial Value and Maximum fields.

- Repeat steps 2 through 7 to enter the rest of the tags. The tag editor should look similar to this when you are done entering your tags.



- Save the tags by selecting File>Save Project.
 - Close the tag editor by clicking the X in the title bar.
- 
- Close each screen by clicking the X in the title bar of the screen. Or select Screen>Close to close each screen.

Save the Application

 Select File>Save or click the Save icon on the toolbar.

Downloading the Application

This chapter shows how to:

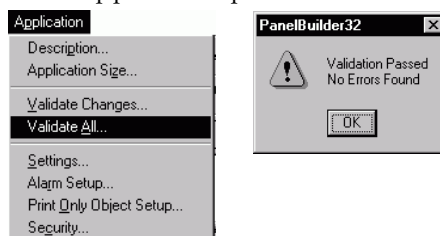
- validate the application.
- download the application using a point-to-point serial connection.
- close the application.

Check the Application for Errors

This section shows you how to validate the application for errors. The application is also validated automatically during the download process.

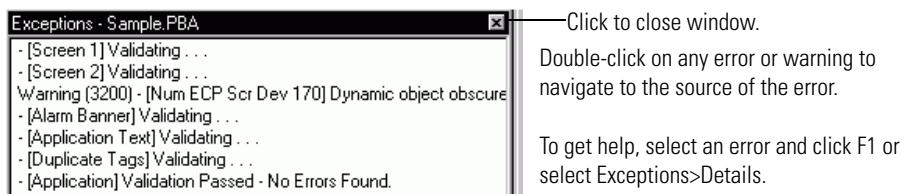
1. Select Application>Validate All. The application is checked for errors.

If the application passes validation, you'll see this dialog.



2. Click OK.

If any errors or warnings occur, the Exceptions window opens. Errors must be corrected, before you can download the application. Warnings are optional.



After clearing errors, you can reopen the Exceptions window by double-clicking the Exceptions window in the System folder of the Application window.

To get additional help on validating an application, select Help>Contents. Select the Index tab and enter the search words validate application.

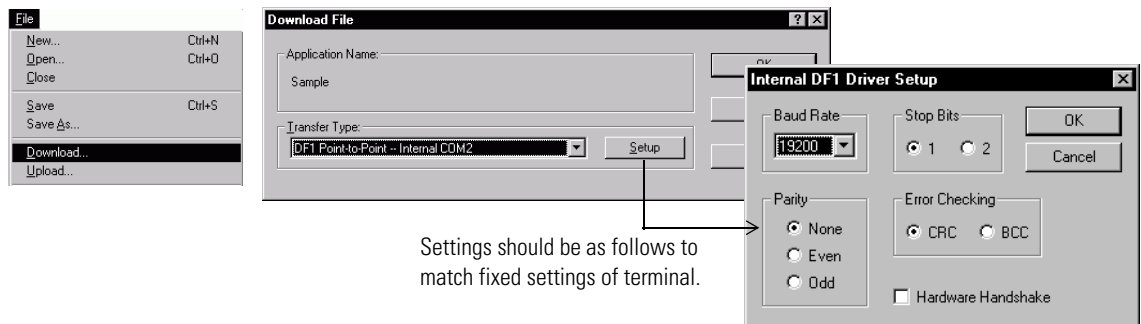
Download the Application

Follow these steps to download an application from your computer to a DH+, RIO, ControlNet, DeviceNet, or EtherNet/IP PanelView terminal using a point-to-point serial connection and PanelBuilder32's DF1 driver.

Check your cable connections as shown in Chapter 1.

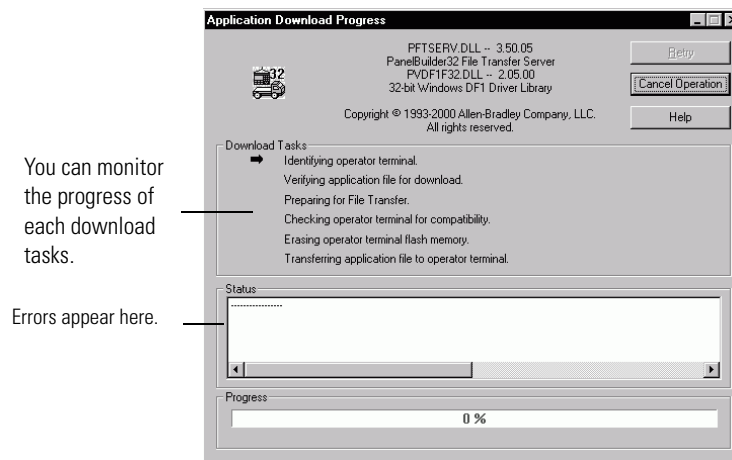
1. Select File>Download.

The Download File dialog opens. It shows the name of the application and the driver used to download the application.



2. Click OK.

The application is validated, checked for errors, then downloaded to the terminal. A dialog opens to show the status of the download.



When the download is complete, the terminal resets, verifies and displays the startup screen of the application.

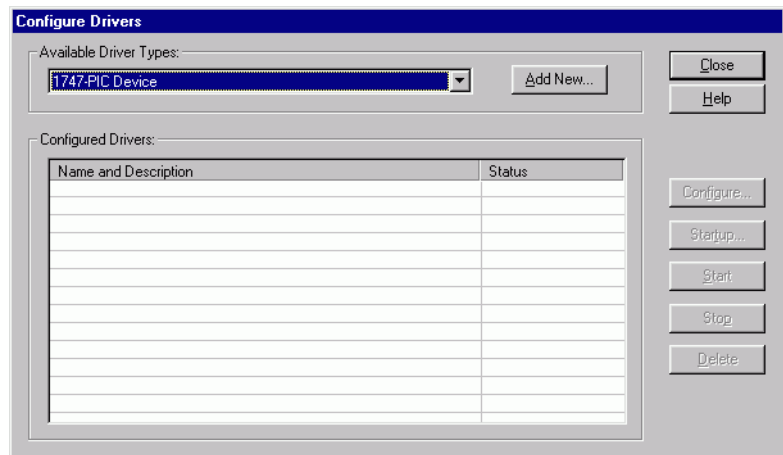
Follow these steps to download an application from your computer to a DH485 or RS-232 (DH485 protocol) PanelView terminal using the RSLinx Classic 1747-PIC Device driver. RSLinx Classic is installed as part of the PanelBuilder32 installation.

IMPORTANT The DF1 driver will not be available if any of the serial ports on your computer are configured to use an RSLinx Classic driver.

Check your cable connections as shown in Chapter 1.

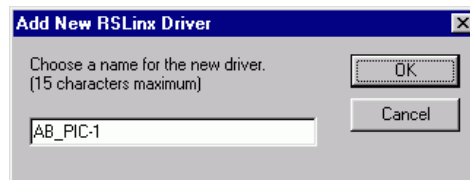
1. Configure the 1747-PIC driver as described in steps 2 through 5.
2. Select File>Workstation Setup and then select Configure RSLinx Classic drivers from the Workstation Setup dialog.

The Configure Drivers dialog opens.



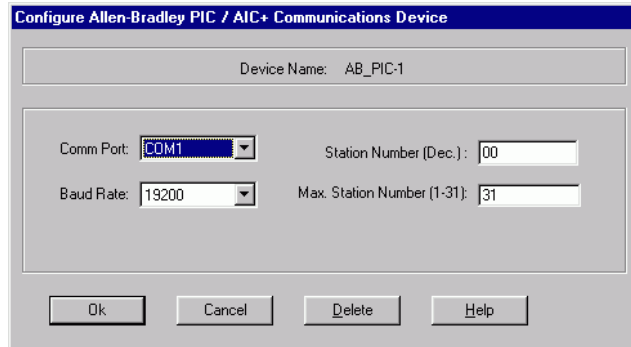
3. Select 1747-PIC /AIC+ Device from the pull-down menu and click Add New.

You are prompted to enter a driver name.



4. Click OK to save the driver name.

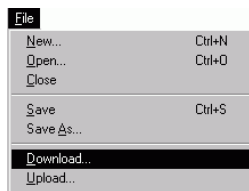
A dialog opens allowing you to enter the configuration of the PIC as shown.



5. Click OK and restart your computer to load the new driver.

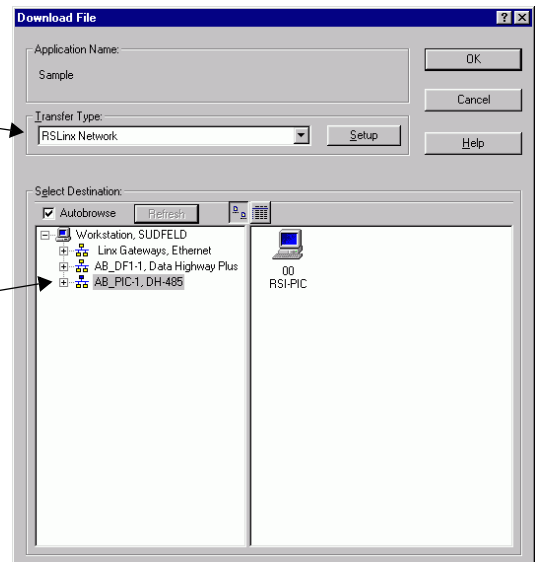
6. Select File>Download.

The Download File dialog opens. It shows the name of the application. Select the 1747-PIC Device as the driver used to download the application.



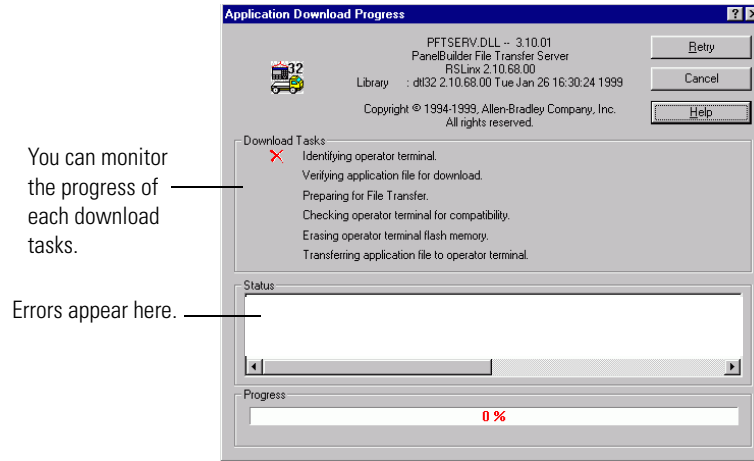
RSLink Network

1747-PIC Device



7. Click OK.

The application is validated, checked for errors, then downloaded to the terminal. A dialog opens to show the status of the download.

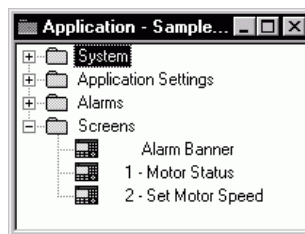


When the download is complete, the terminal resets, verifies and displays the startup screen of the application.

Close the Application and Exit PanelBuilder32

1. Select File>Close.

Or double-click the X in the upper corner of the Application Window.



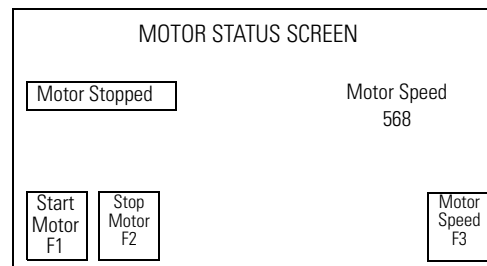
2. Select File>Exit to exit PanelBuilder32.

Running the Application

This chapter provides some guidance in checking the operation of the application.

Motor Status Screen

After receiving the downloaded application, the PanelView terminal displays the Motor Status screen

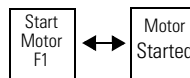


Follow these steps to start and stop the motor:

1. Press the [F1] key. On touch screens, touch



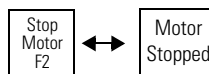
Notice how the Start / Stop Motor push button changes each time it is pressed.



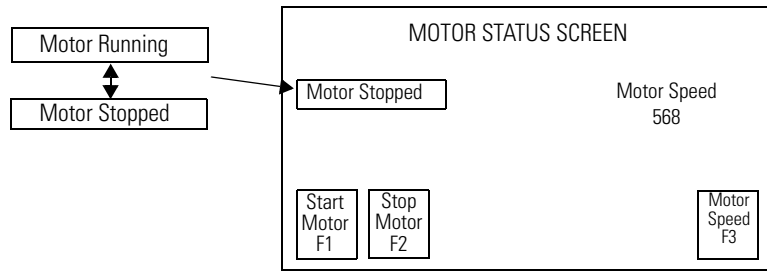
2. Stop the motor by pressing [F2] or on touch screens



Notice that the stop button also changes inner text each time it is pressed.



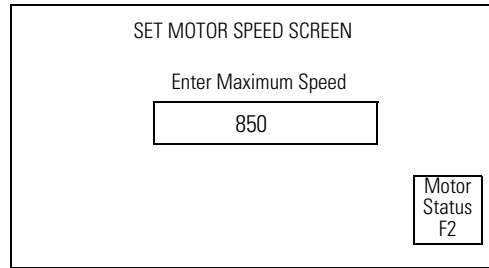
3. Press the Motor Start/Stop buttons and note how the motor status indicator also changes.



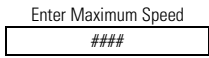
Motor Speed Screen

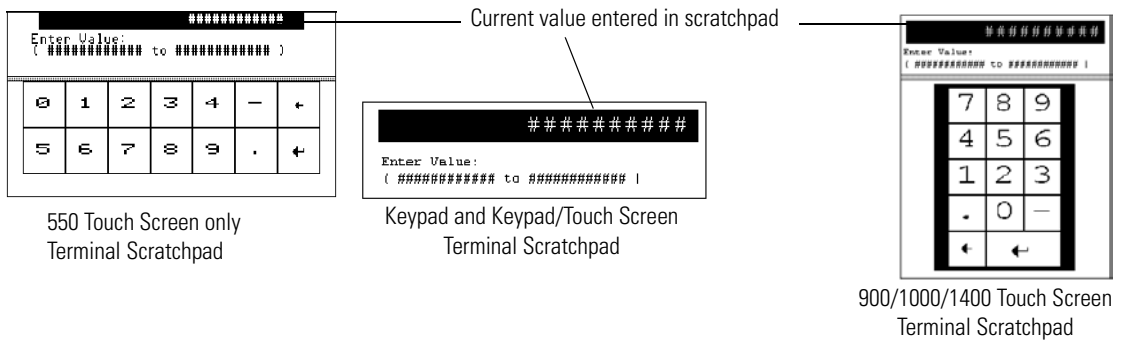
Access the Motor Speed Screen by pressing [F3]. On touch screens,

touch 



Follow these steps to enter a motor speed:

1. Press the [F1] key. On touch screens, touch . The numeric entry scratchpad opens.



2. Enter a motor speed between 600 and 1800 on the scratchpad using the numeric entry keys.

On touch screens, touch the numeric keys displayed on the screen.

TIP

During data entry, wait until the number you enter appears in the scratchpad before entering the next number.

3. Press Enter (↵) to save the value and close the scratchpad.

4. Press the [F2] key. On touch screens, touch

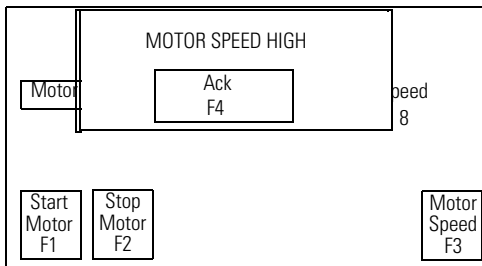


Notice the new motor speed displayed on the Status screen.

The new speed will not take effect until the motor is stopped and restarted.

Alarm Banner

Create an alarm condition by entering a motor max speed between 1200 and 1500 as described in the previous section and then starting the motor. An alarm banner is displayed over the current screen.



To acknowledge the alarm, press the [F4] key. On touch screens,

touch



The alarm banner is cleared.

TIP

When the motor speed is in the range 1500 -1800 rpm, a different alarm message is displayed.

Application Programs

This appendix lists the required ladder logic to run the sample application on the PanelView terminal.

- PanelBuilder32 application programs
- Ladder logic programs
- DeviceNet scanner configurations

PanelBuilder32 Application Programs

PanelBuilder32 application files are on the PanelBuilder32 installation CD in the QuickStart\PV directory.

PanelBuilder32 Application Files (Quickstart\PV directory)

File Name	Use with this application
CL_DHP.pba	<ul style="list-style-type: none"> ControlLogix controller with DH+ module (1756-DHRIO) DHRIO module configured for slot 1 Channel 1 of DHRIO set for 57.6K baud
CL_rio.pba	<ul style="list-style-type: none"> ControlLogix controller with RIO Module (1756-DHRIO) DHRIO module in slot 1 Channel 2 of DHRIO set for 57.6K baud
CLCNetS.pba	<ul style="list-style-type: none"> ControlLogix with a ControlNet Bridge (1756-CNB) ControlNet Bridge configured for slot 1 Scheduled messaging
CLCNetU.pba	<ul style="list-style-type: none"> ControlLogix with a ControlNet Bridge (1756-CNB) ControlNet Bridge configured for slot 1 Unscheduled messaging
CL_Enet.pba	<ul style="list-style-type: none"> ControlLogix controller with 1756-ENET/B module Network addressing Slot 1
PLC_Enet.pba	<ul style="list-style-type: none"> PLC-5E (Ethernet) controller
SLC_Enet.pba	<ul style="list-style-type: none"> SLC 5/05 (Ethernet) controller
DF1.pba	<ul style="list-style-type: none"> Any enhanced PLC-5, SLC-5/03, 5/04, 5/05, Micrologix controller
DNet.pba	<ul style="list-style-type: none"> 1756-DNB configured for slot 1 with ControlLogix controller or 1771-SDN configured for slot 1 with PLC-5 controller or 1747-SDN configured for slot 1 with SLC controller
MLDH485.pba	<ul style="list-style-type: none"> MicroLogix controller with RS-485
PLC_DHP.pba	<ul style="list-style-type: none"> PLC-5 controller with Data Highway +
PLC_RIO.pba	<ul style="list-style-type: none"> PLC-5 controller with Remote I/O
PLCCNetU.pba	<ul style="list-style-type: none"> PLC-5 controller with ControlNet Unscheduled messaging
SLC_DHP.pba	<ul style="list-style-type: none"> SLC 5/04 with Data Highway +
SLC_RIO.pba	<ul style="list-style-type: none"> SLC with Remote I/O Remote I/O module configured for slot 1
SLCDH485.pba	<ul style="list-style-type: none"> 1761-NET-AIC may be required Any SLC controller SLC 5/04 or 5/05 channel 0 can be configured for DH485 protocol. Configure the PanelBuilder application to match the PanelView catalog number.

Ladder Logic Programs

Ladder logic files are provided on the PanelBuilder32 installation CD.

ControlLogix Controller Programs (QuickStart\CL directory)

File Name	Use with this Application	Page
cnet_sch.acd	<ul style="list-style-type: none"> ControlLogix in slot 0 ControlLogix 1756-CNB module in slot 1 Scheduled messages 	83
cnet_unsch.acd	<ul style="list-style-type: none"> ControlLogix in slot 0 ControlLogix 1756-CNB module in slot 1 Unscheduled messages 	84
dhp.acd	<ul style="list-style-type: none"> ControlLogix in slot 0 1756-DHRIO module in slot 1 Channel 1 of DHRIO set for 57.6K baud 	85
dnet.acd	<ul style="list-style-type: none"> ControlLogix in slot 0 ControlLogix 1756-DNB module in slot 1 Baud rate set at 125K 	86
rio.acd	<ul style="list-style-type: none"> ControlLogix in slot 0 IP Address is 10.0.0.1 1756-DHRIO module in slot 1 Channel 2 of DHRIO set for 57.6K baud 	87
enet.acd	<ul style="list-style-type: none"> ControlLogix in slot 0 1756-ENET/B module in slot 1 Network Addressing is message type 	88

PLC-5 Controller Programs (QuickStart\PLC directory)

File Name	Use with this Application	Page
cnet.rsp	<ul style="list-style-type: none"> PLC-5C controller 	106
dhp_df1.rsp	<ul style="list-style-type: none"> Any enhanced PLC-5 controller for DF1 Any PLC-5 controller for DH+ 	108
dnet.rsp	<ul style="list-style-type: none"> Any PLC-5 controller 1771-SDN DeviceNet scanner in slot 1 	110
rio.rsp	<ul style="list-style-type: none"> Any PLC-5 controller Remote I/O port 	112
enet.rsp	<ul style="list-style-type: none"> PLC-5E (Ethernet) controller IP Address is 10.0.0.1 	114

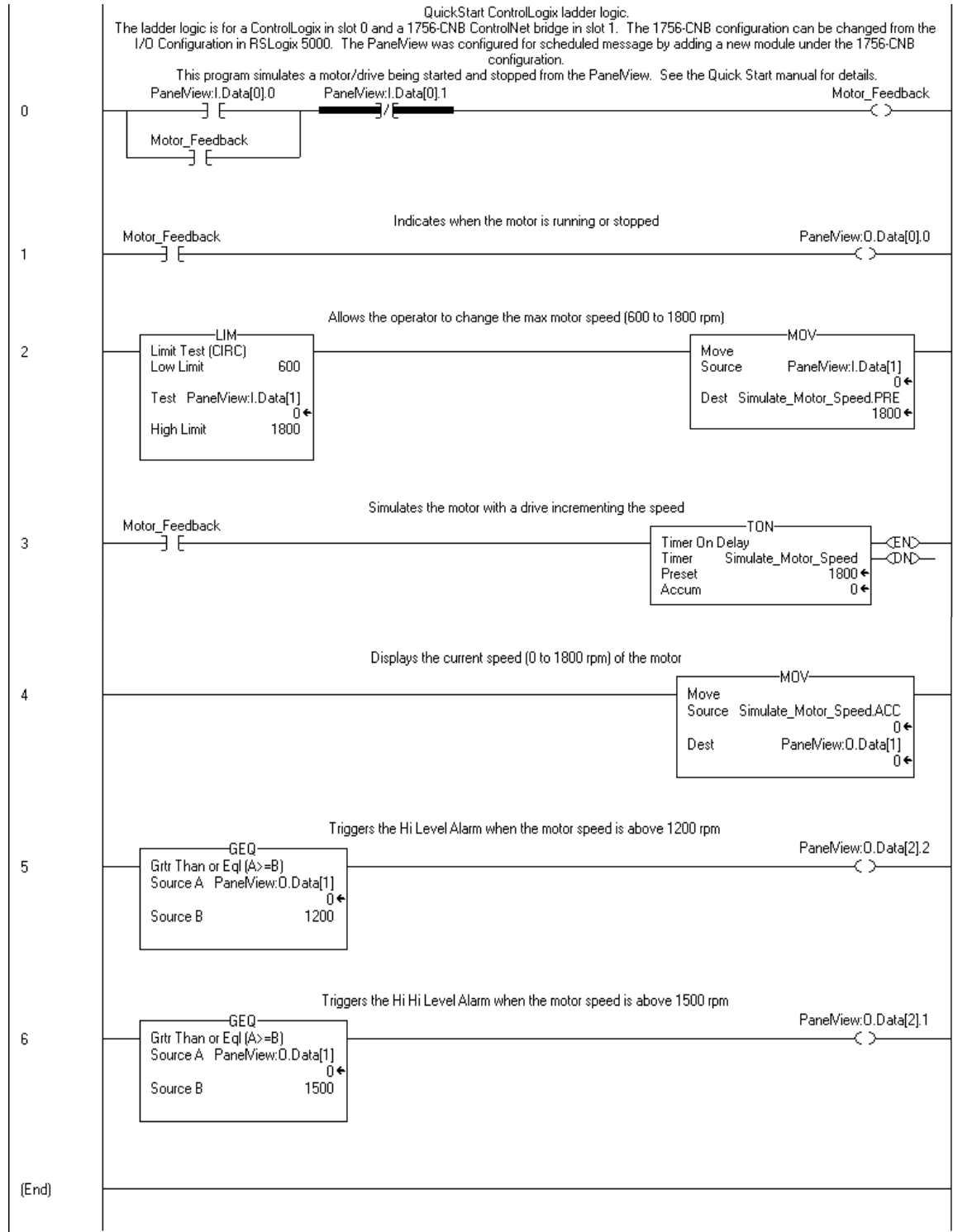
SLC Controller Programs (QuickStart\SLC directory)

File Name	For Use with this Application	Page
dh485.rss	<ul style="list-style-type: none"> Channel 0 must be used on an SLC-5/04 or 5/05 controller with a 1761-NET-AIC Link Coupler 	94
df1.rss	<ul style="list-style-type: none"> SLC 5/03, 5/04, 5/05 controller Channel 0 configured for DF1, no-parity, CRC, and no handshaking. Baud rate set at 9600 <p>Important: You may need to convert the ladder logic for the appropriate controller.</p>	90
dhp.rss	<ul style="list-style-type: none"> SLC 5/04 controller Channel 1 configured for DH+ at 57.6K baud. 	98
dnet.rss	<ul style="list-style-type: none"> SLC 5/02, 5/03, 5/04, 5/05 controller 1747-SDN DeviceNet scanner in slot 1 Baud rate set at 125K <p>Important: You may need to convert the ladder logic for the appropriate controller.</p>	100
rio.rss	<ul style="list-style-type: none"> SLC 5/02, 5/03, 5/04, 5/05 controller 1747-SN scanner in slot 1 Baud rate set at 57.6K <p>Important: You may need to convert the ladder logic for the appropriate controller.</p>	102
enet.rss	<ul style="list-style-type: none"> SLC 5/05E (Ethernet) controller IP Address is 10.0.0.1 	104

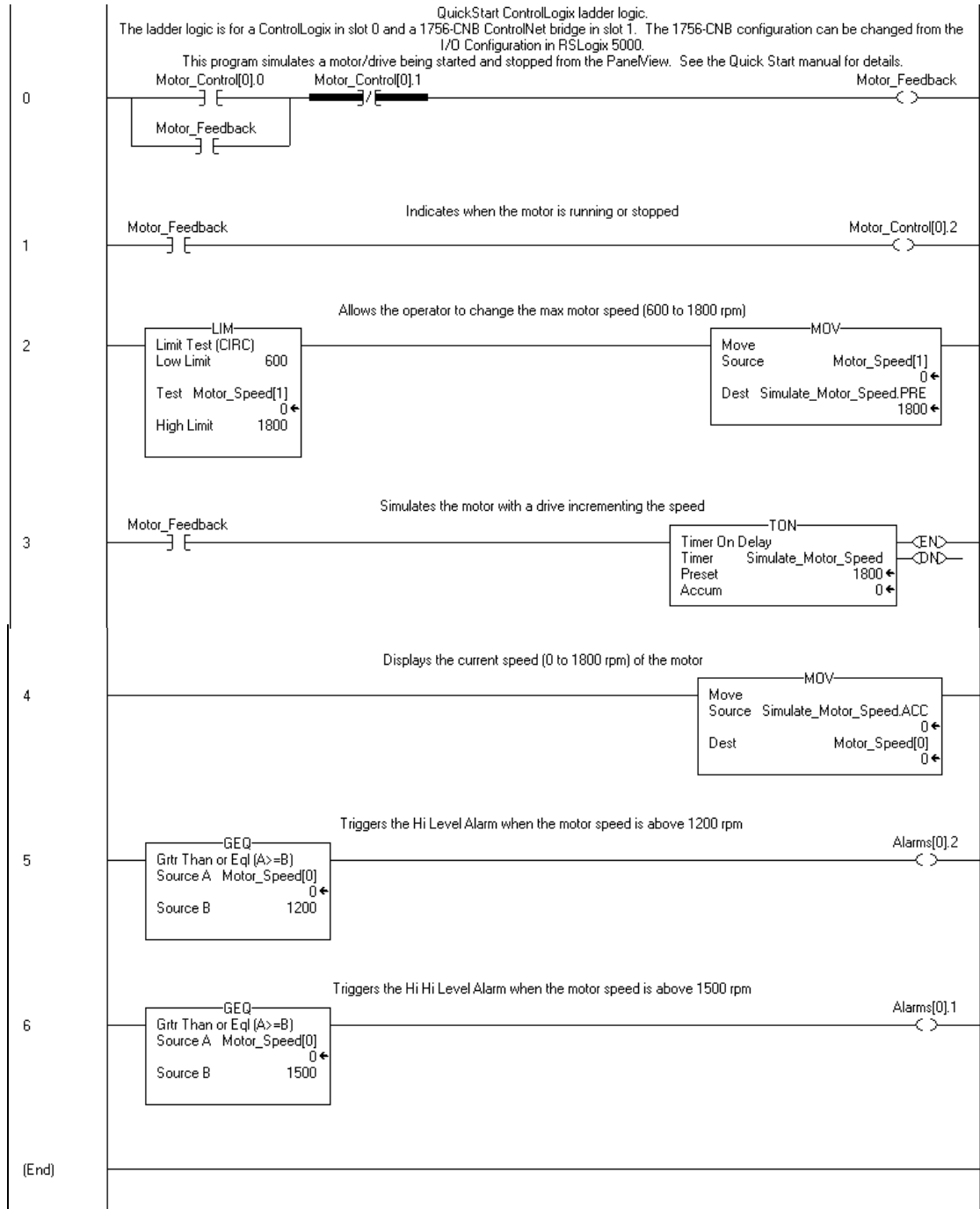
MicroLogix Controller Programs (QuickStart\ML directory)

File Name	For Use with this Application	Page
df1.rss	<ul style="list-style-type: none"> MicroLogix 1000 Series C or later controller <p>Important: You may need to convert the ladder logic for the appropriate controller.</p>	92
dh485.rss	<ul style="list-style-type: none"> MicroLogix 1000 Series C or later controller 1761-NET-AIC Link Coupler may be needed Channel 0 must be used on an SLC-5/04 or 5/05 with a 1761-NET-AIC Link Coupler <p>Important: You may need to convert the ladder logic for the appropriate controller.</p>	96

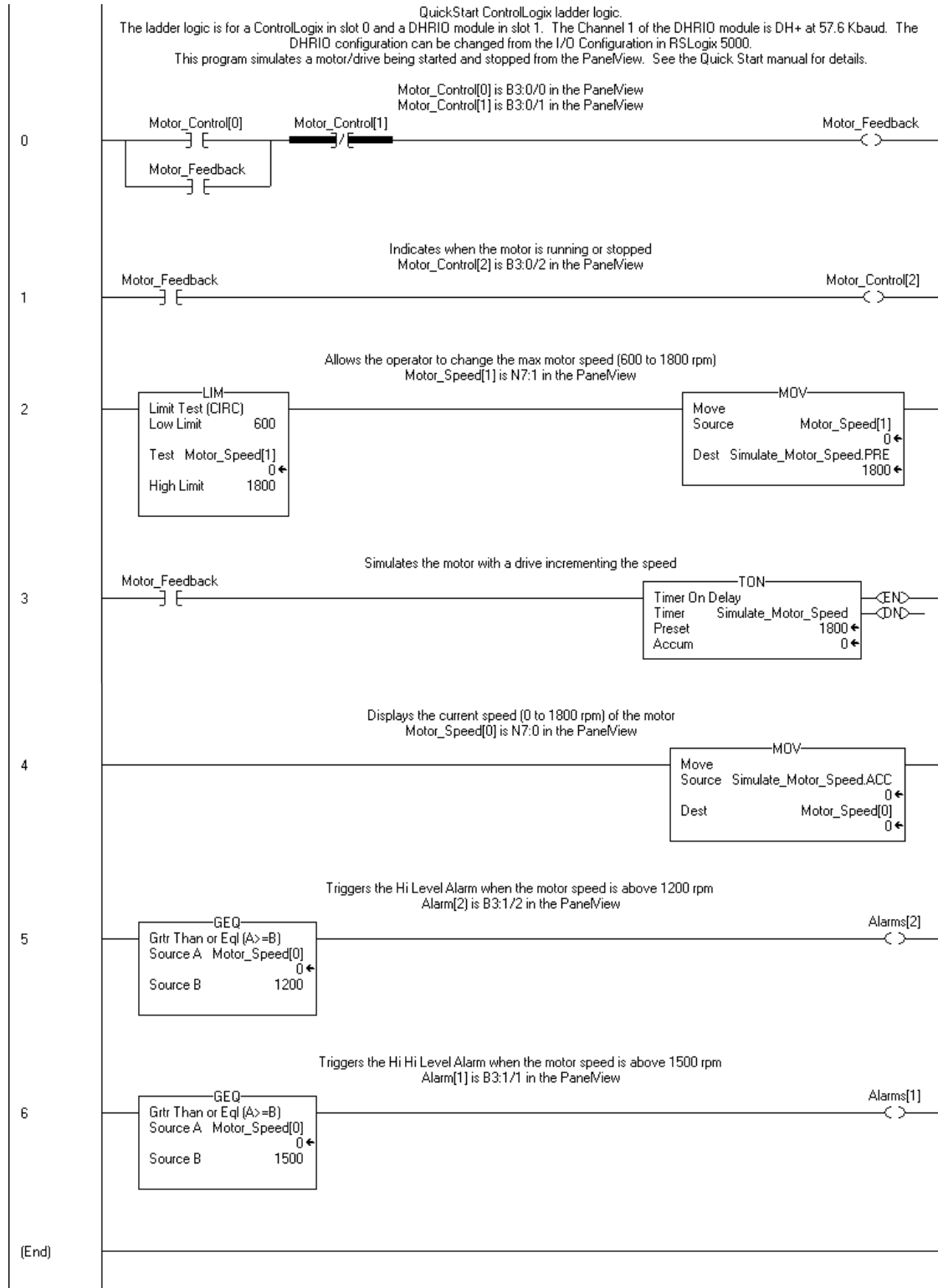
cnet_sch.acd



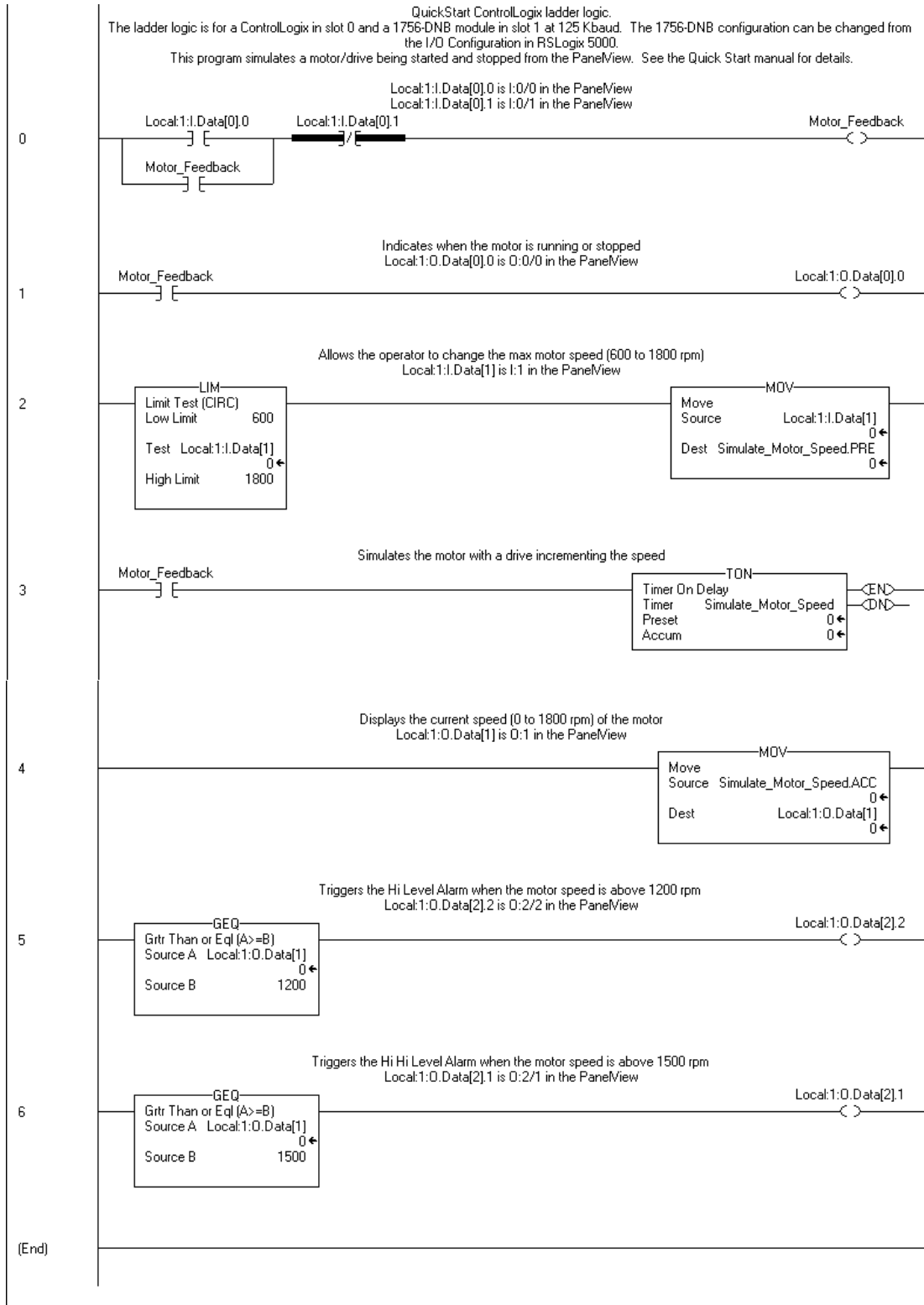
cnet_unsch.acd



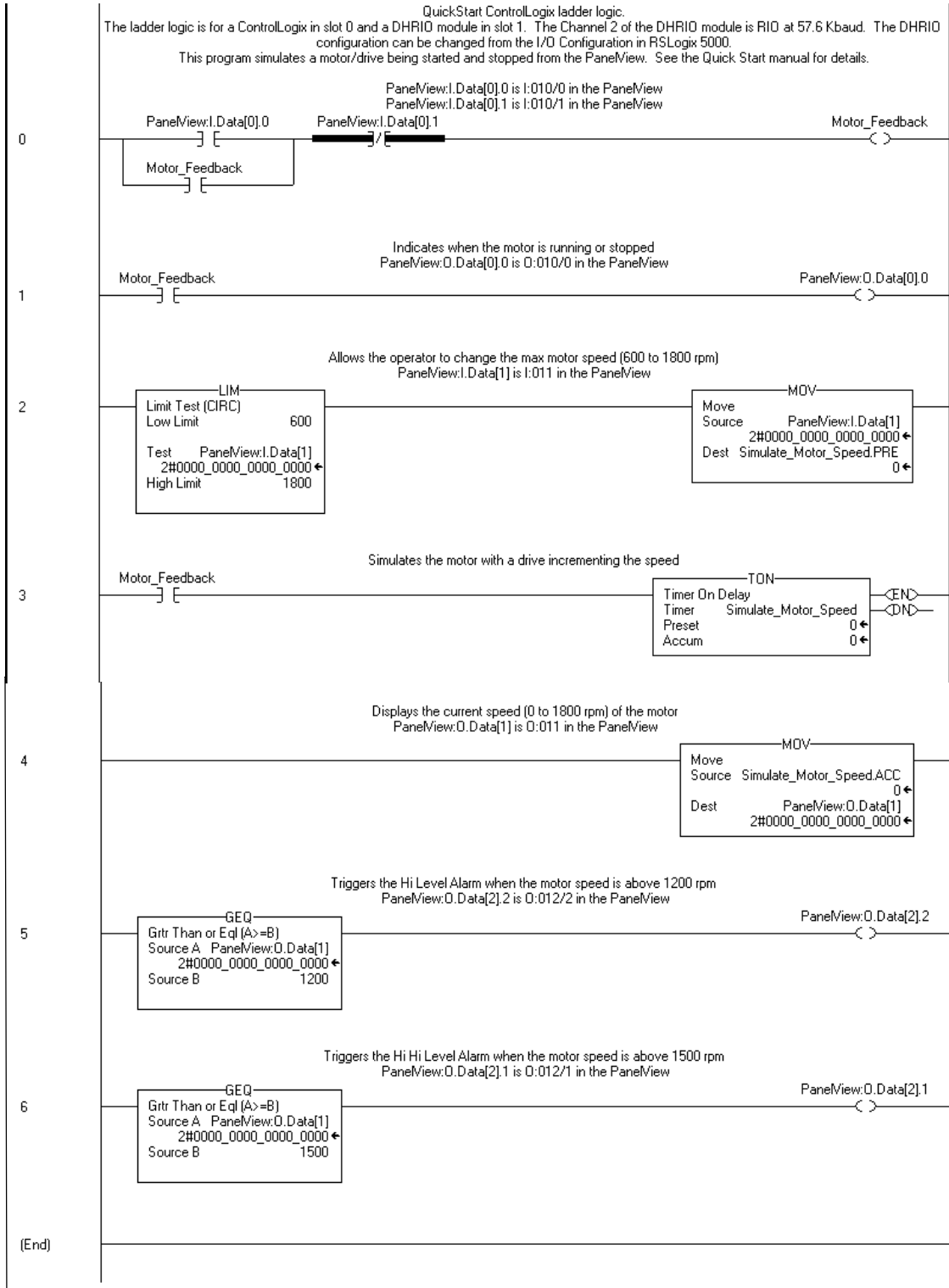
dhp.acd



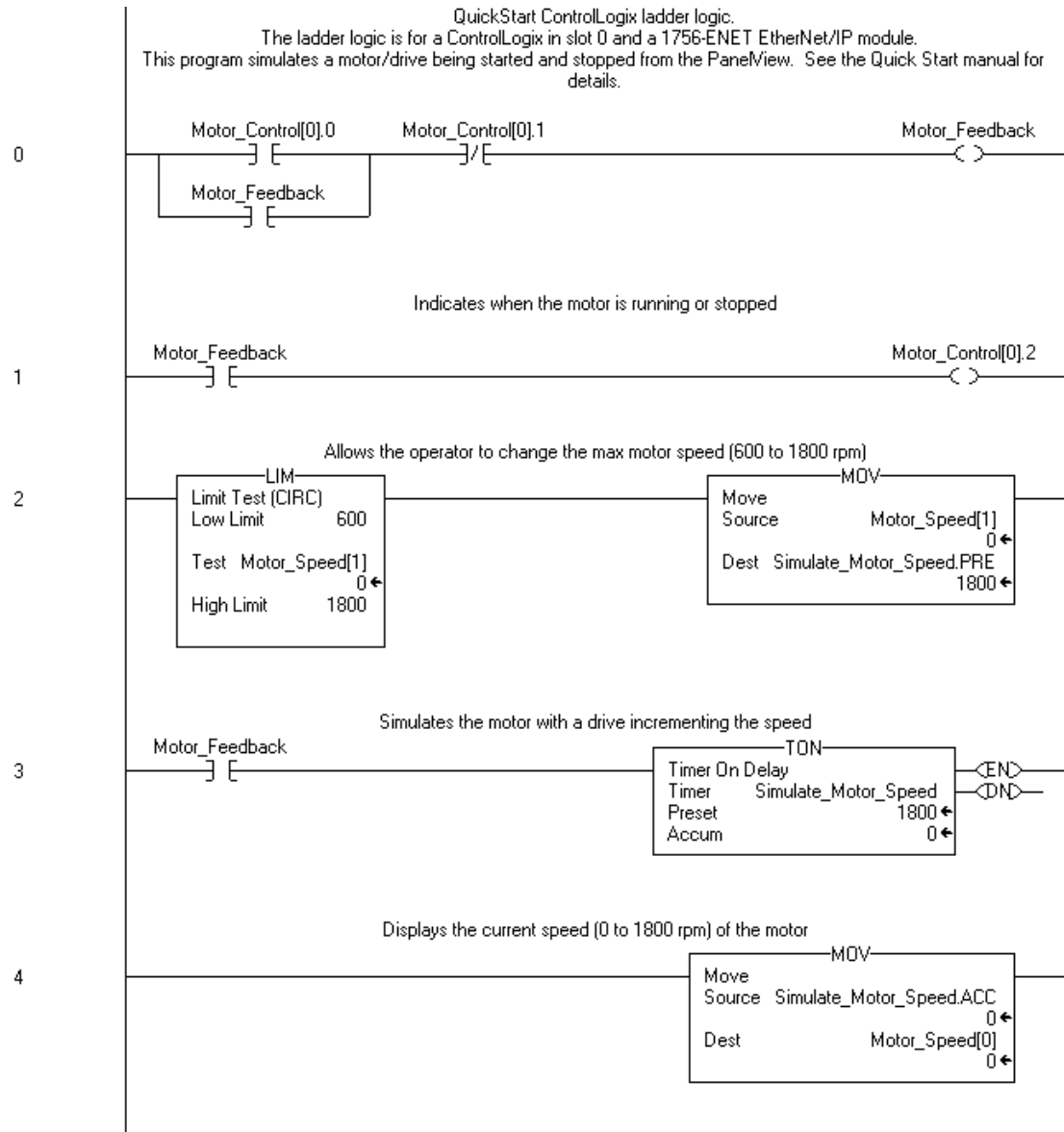
dnet.acd

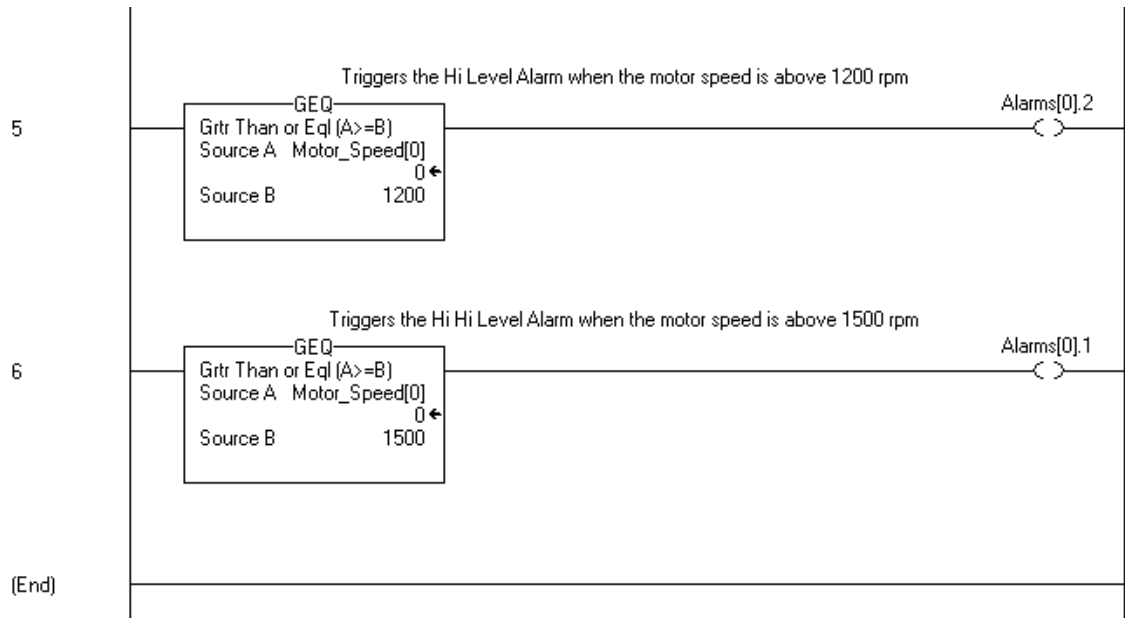


rio.acd

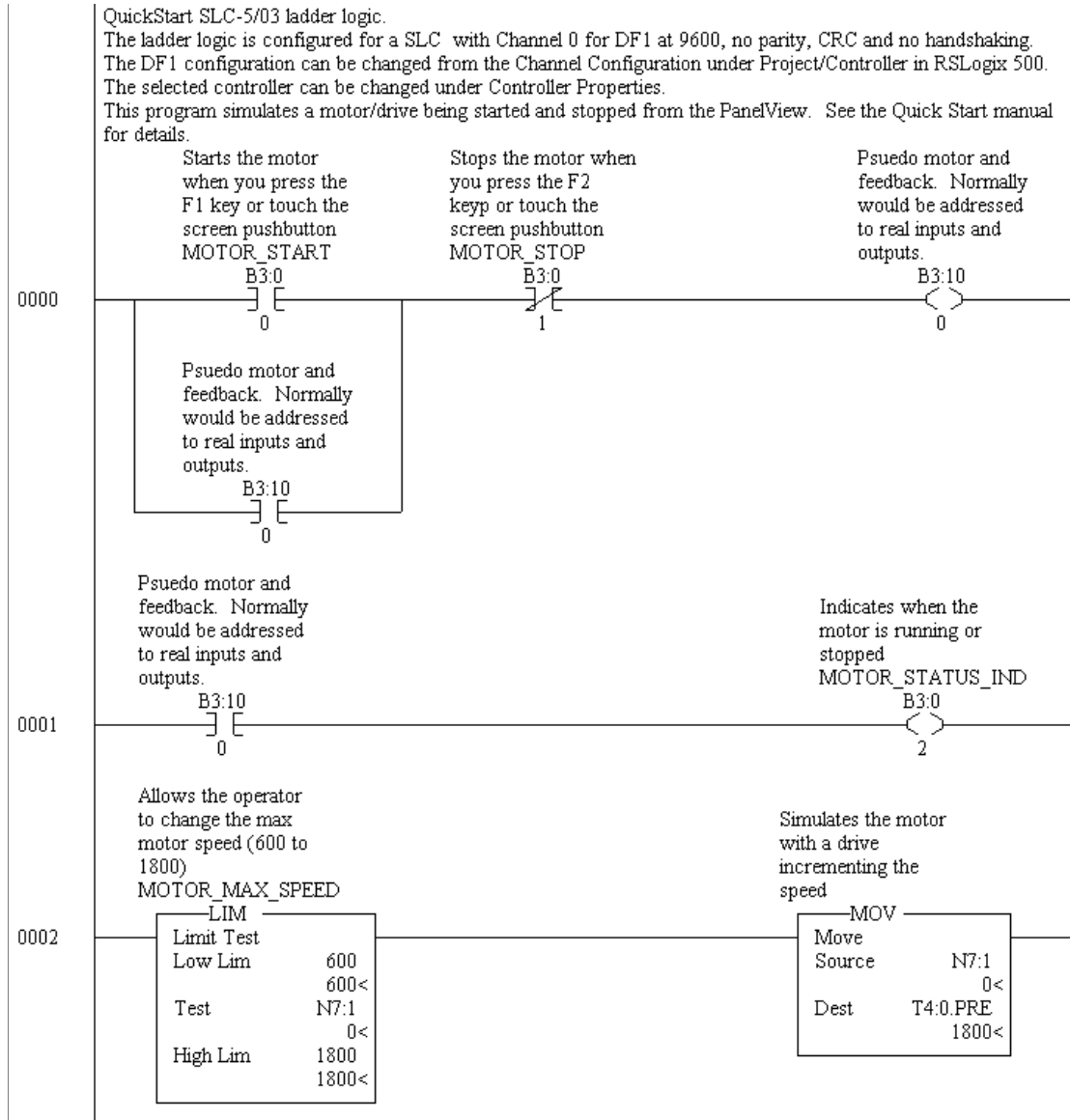


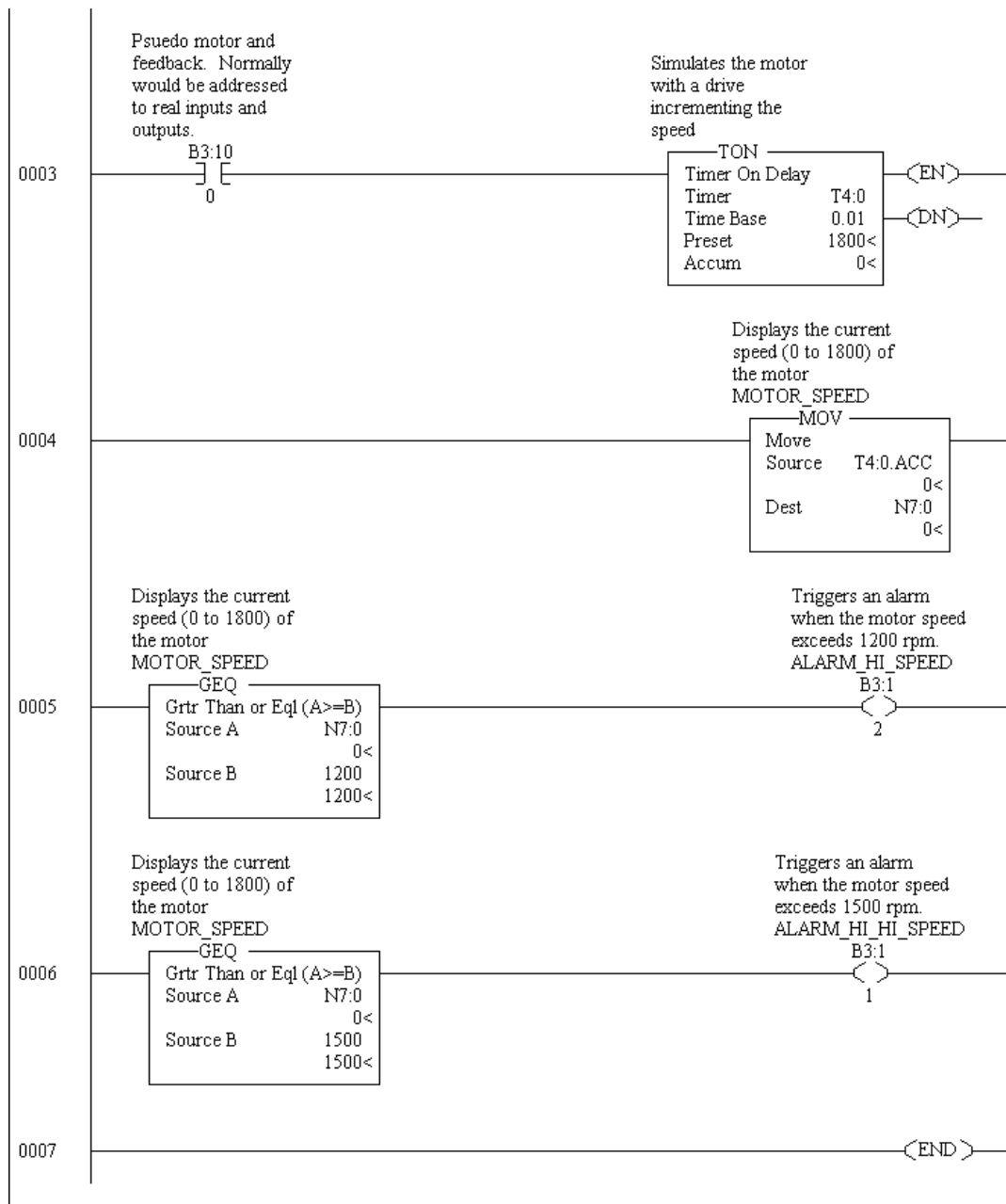
enet.acd



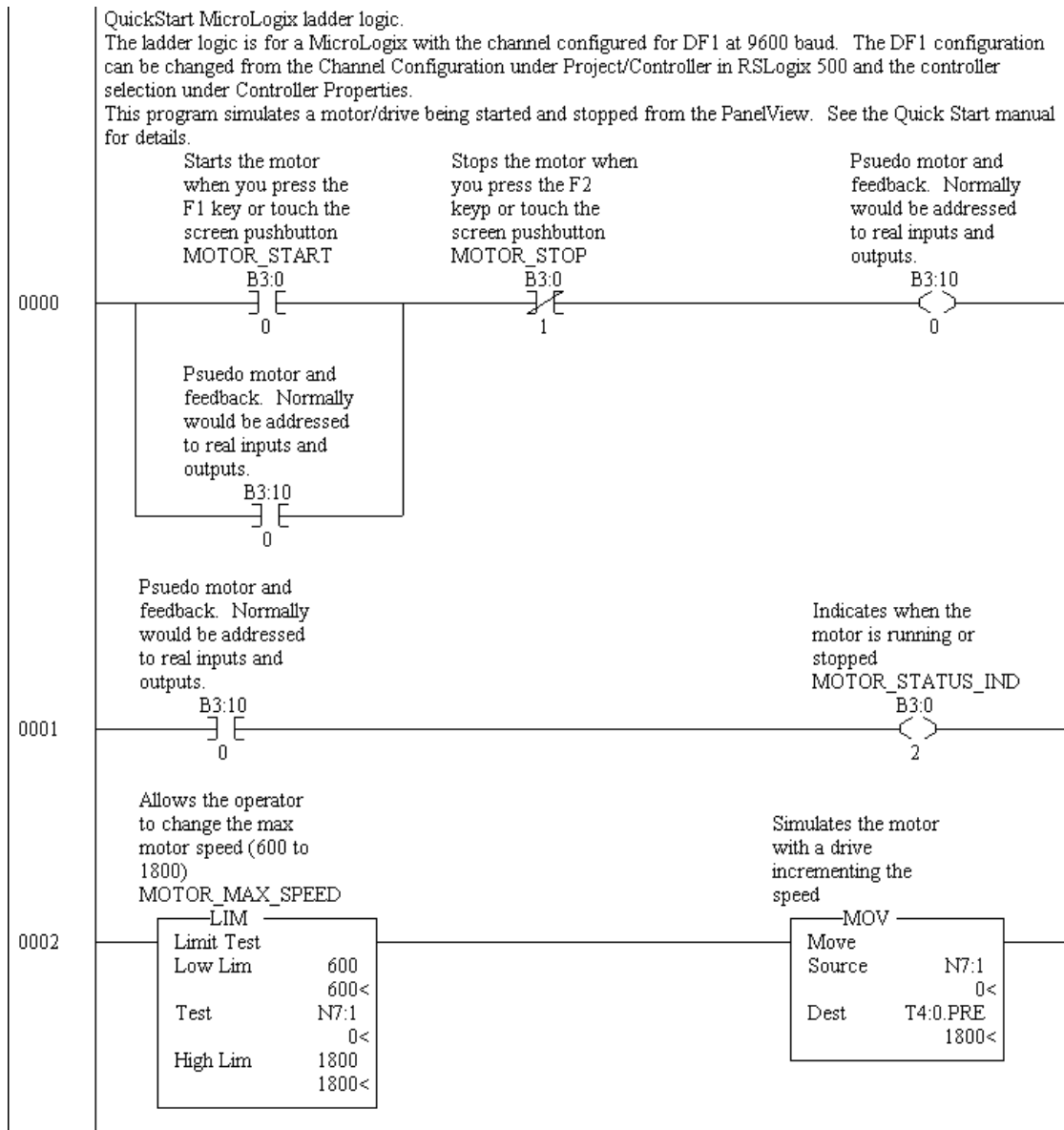


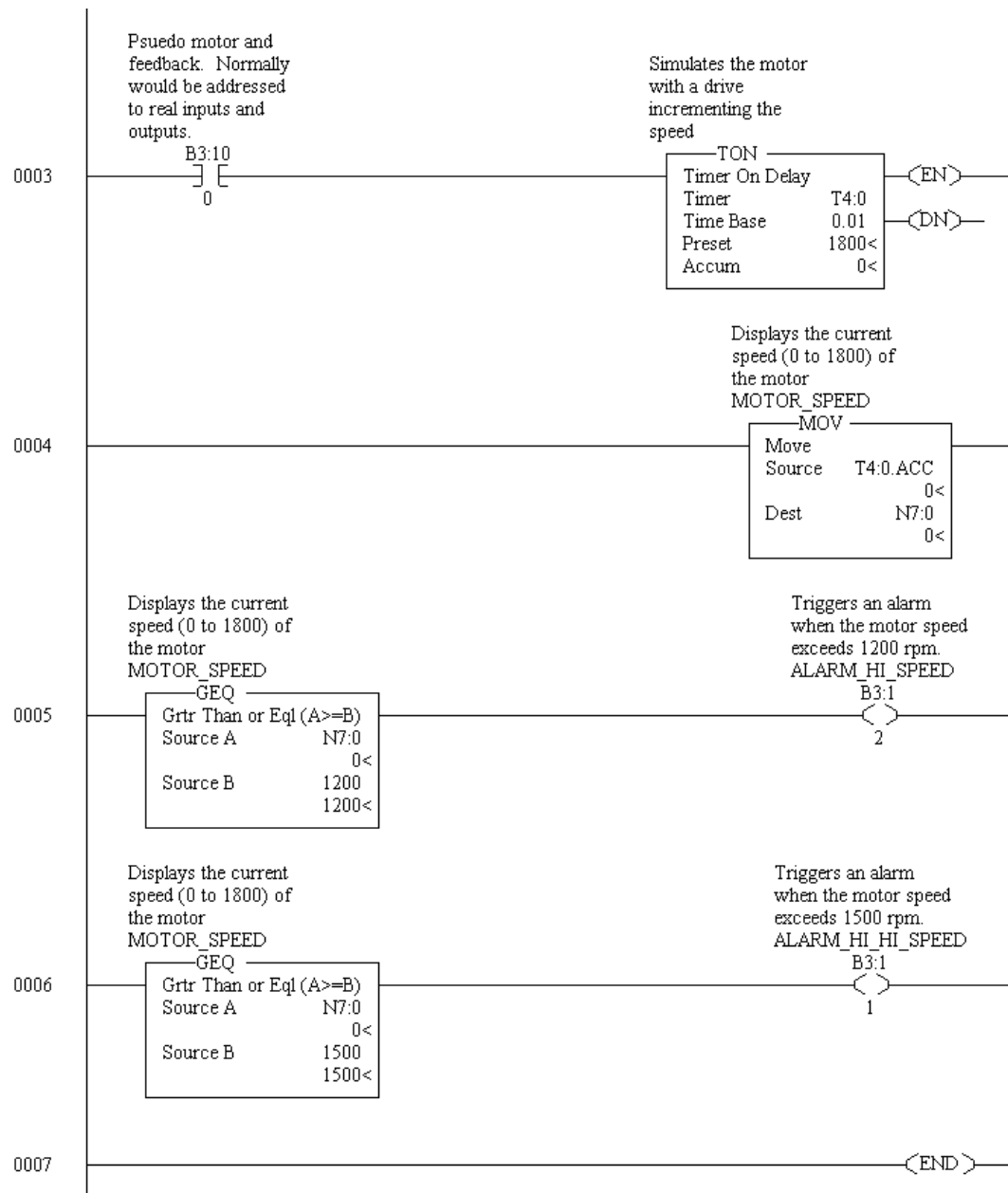
df1.rss



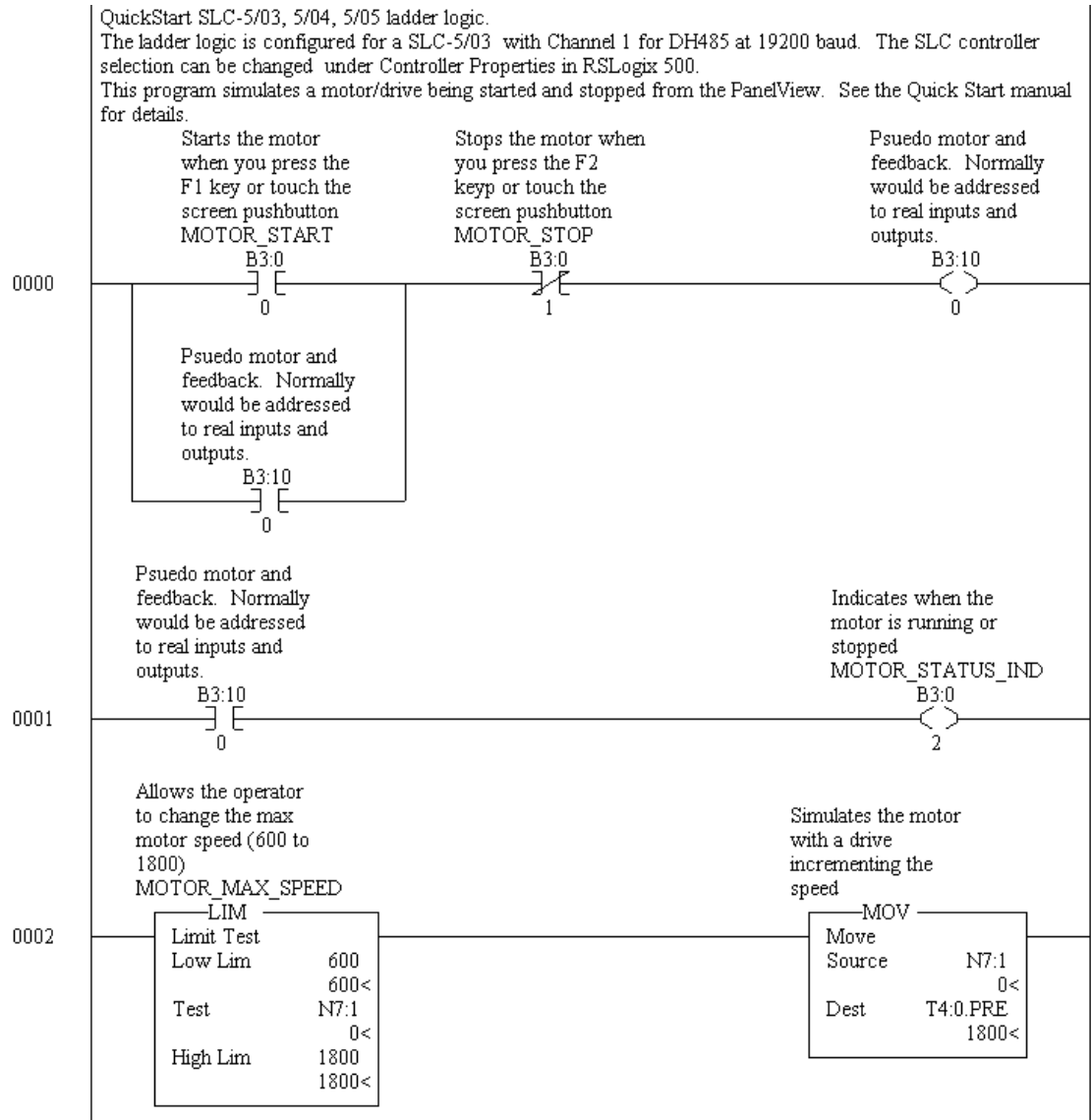


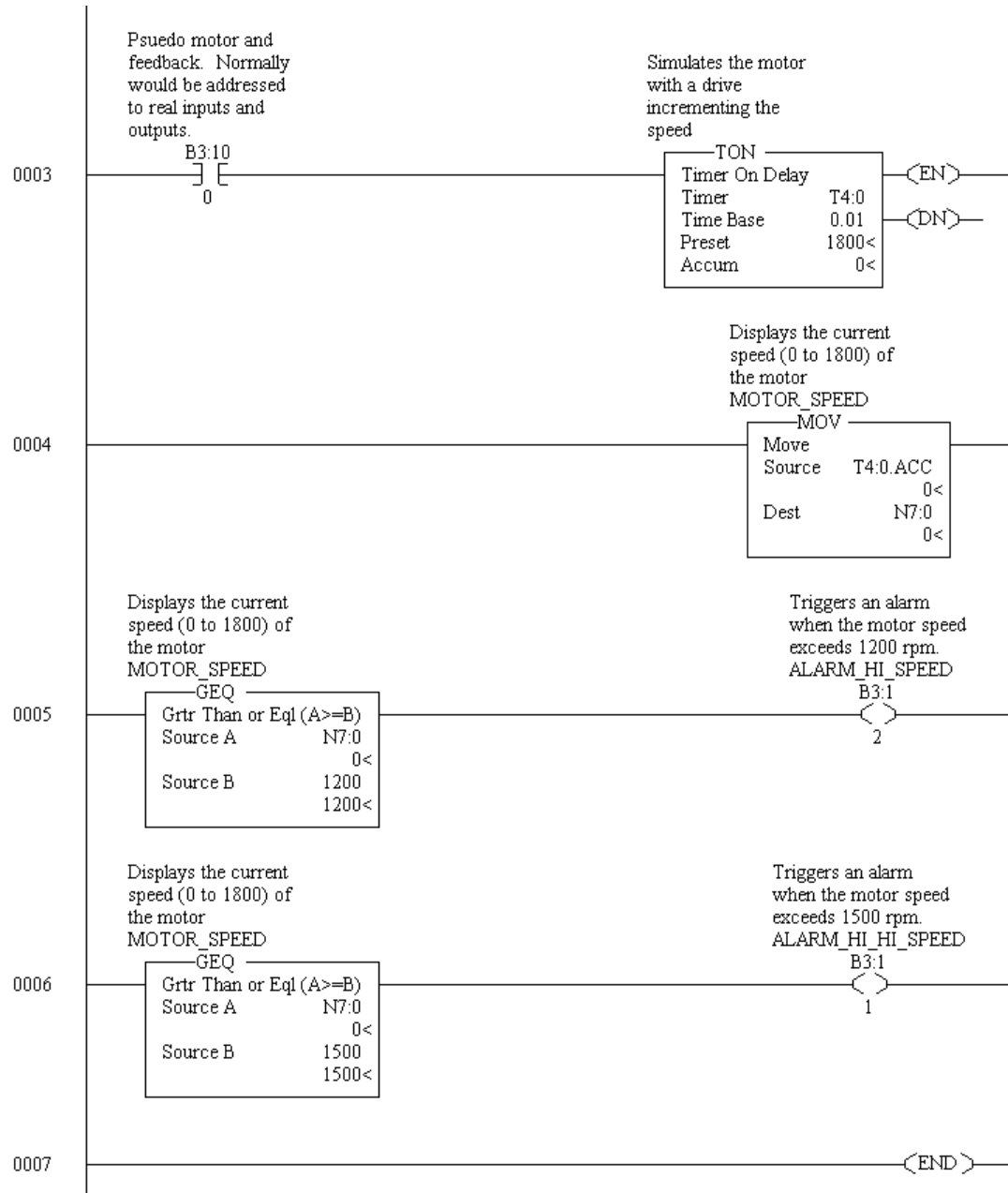
df1.rss (for MicroLogix family)



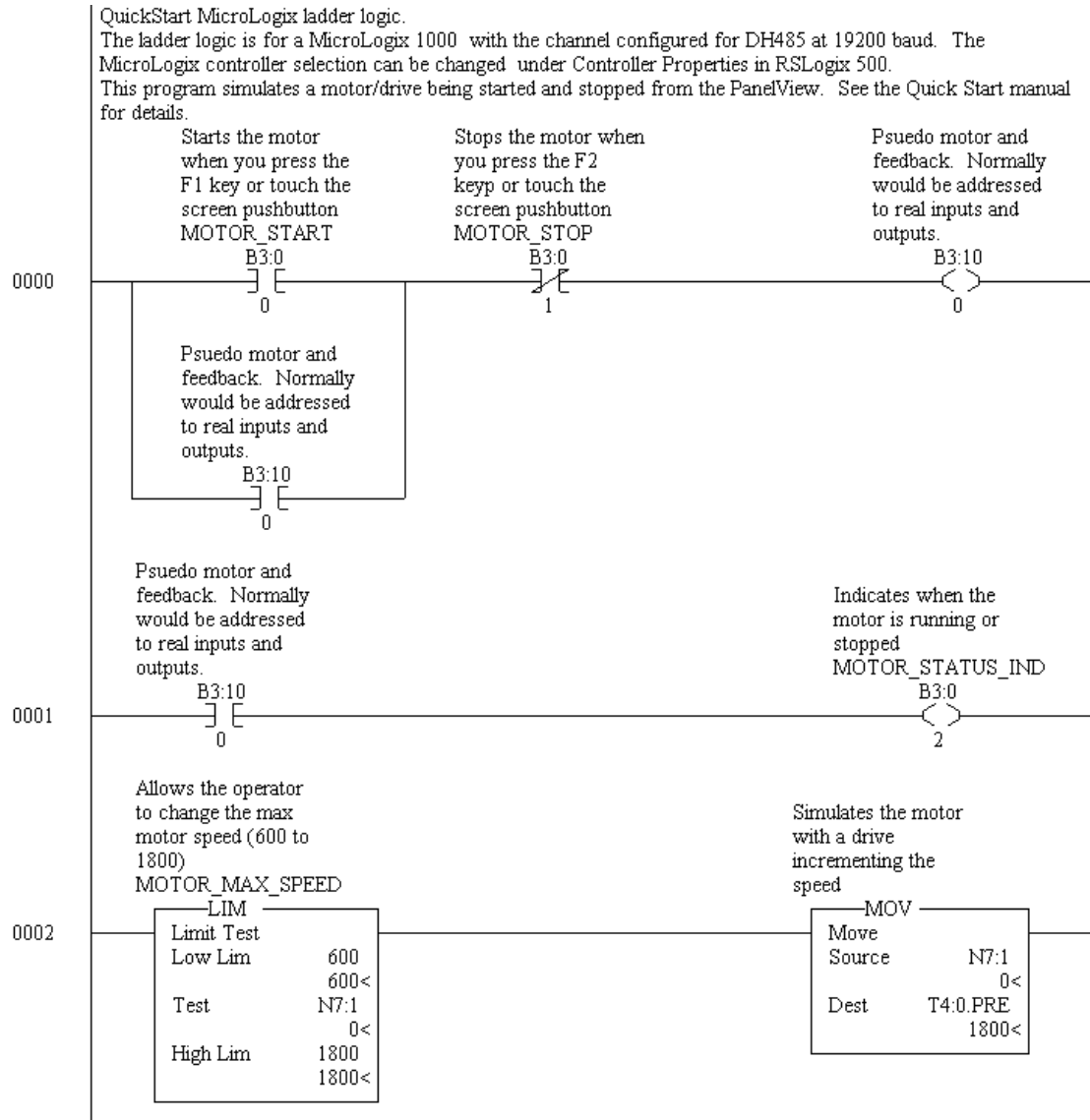


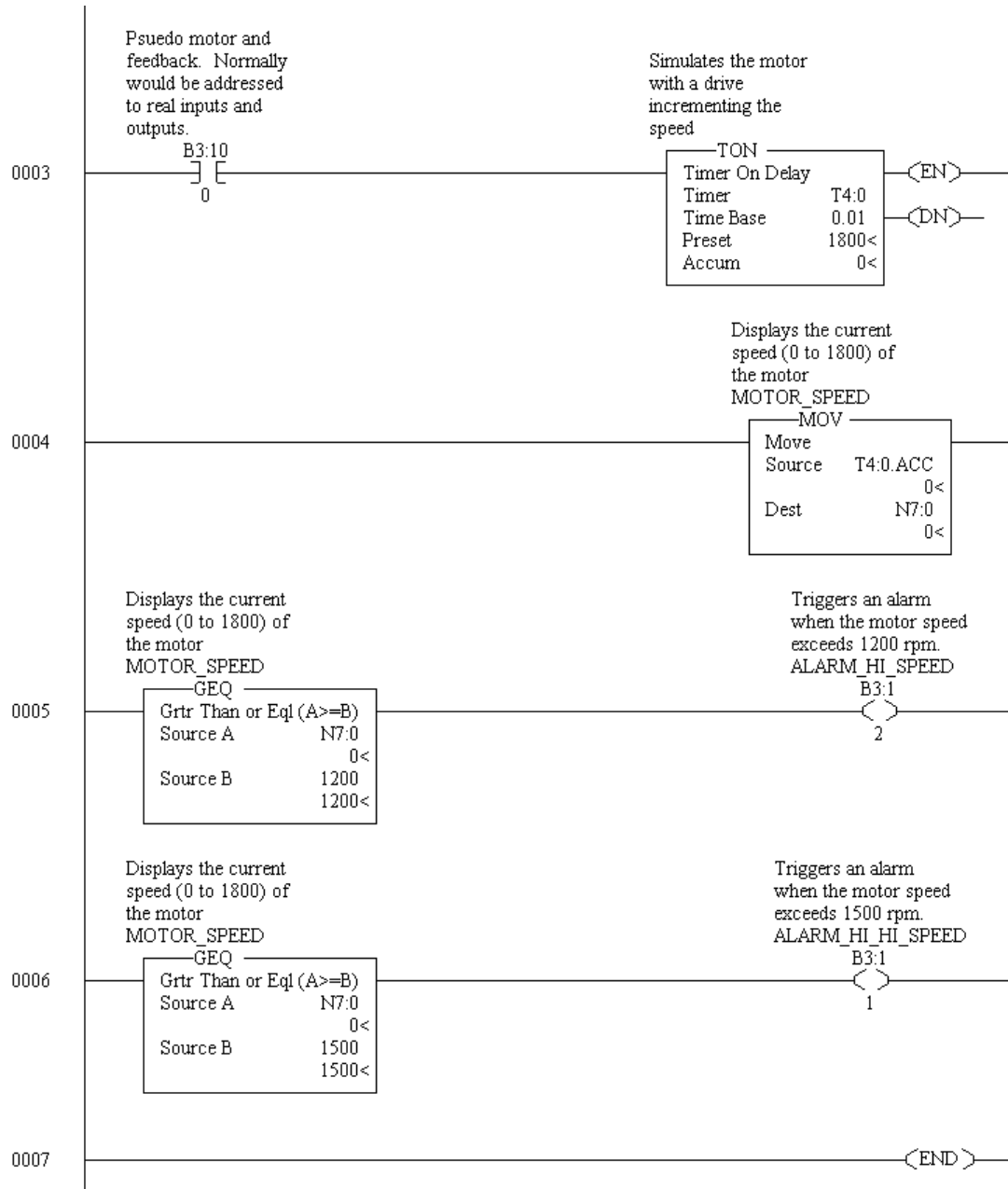
dh485.rss



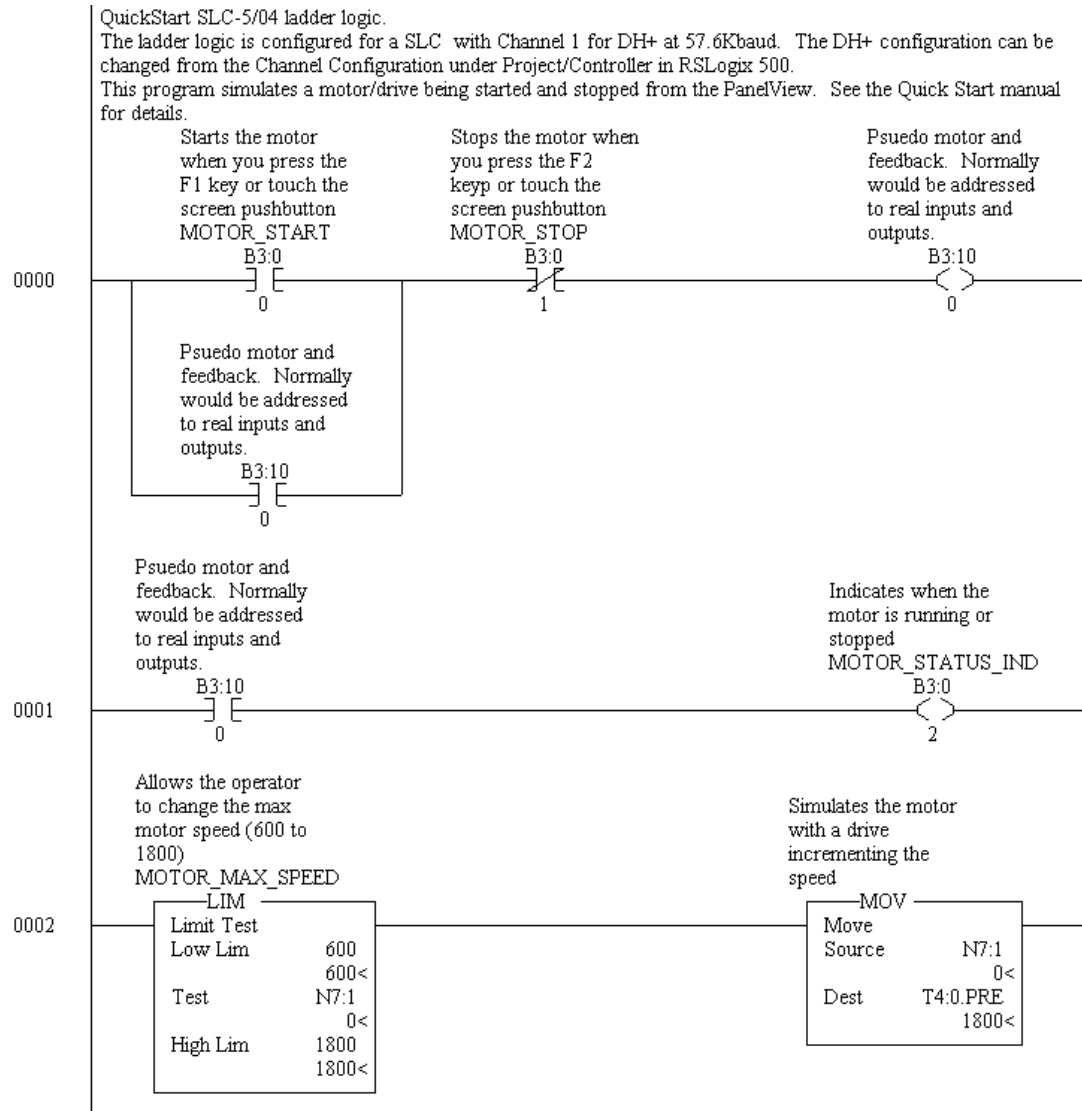


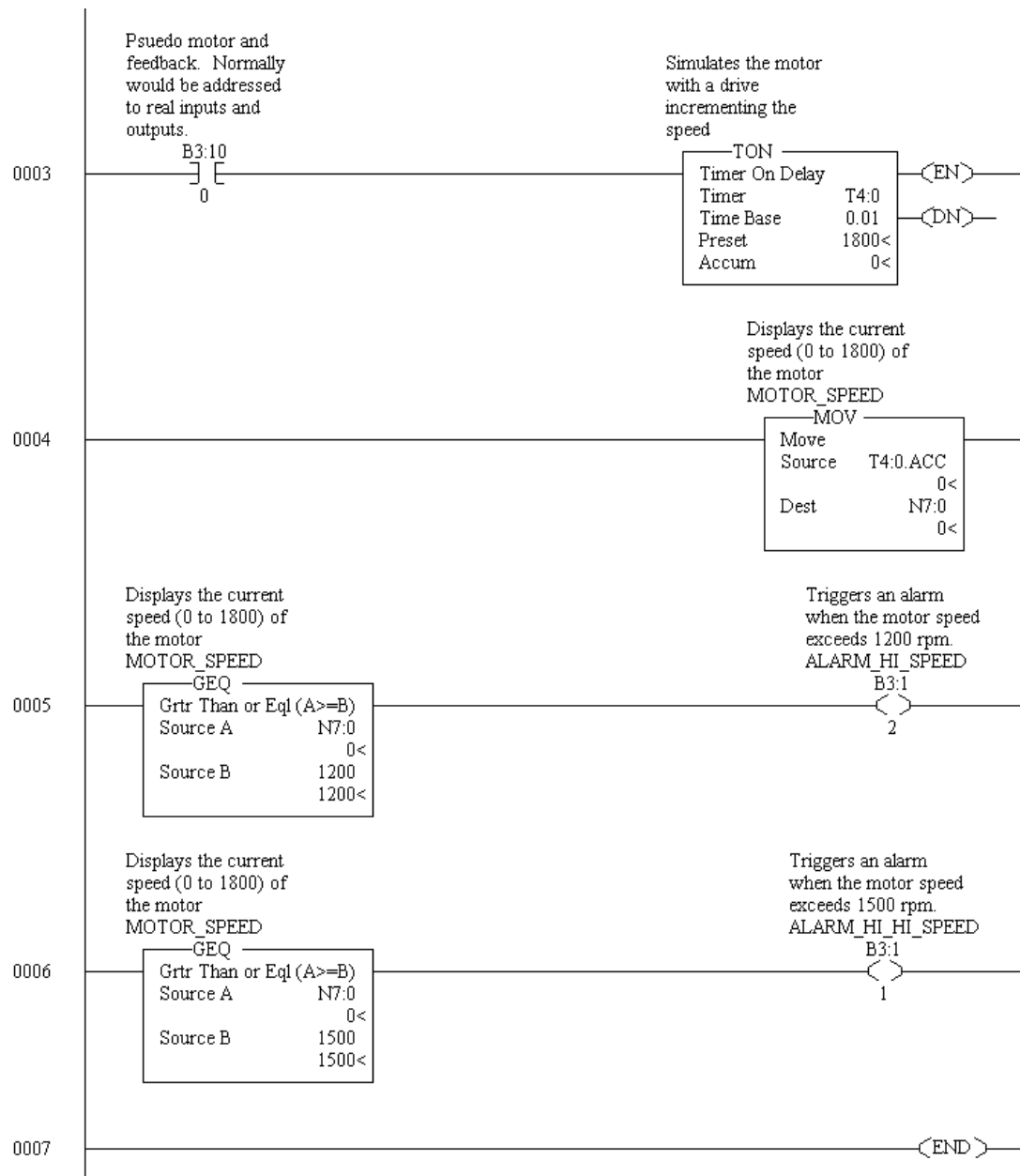
dh485.rss (for MicroLogix family)



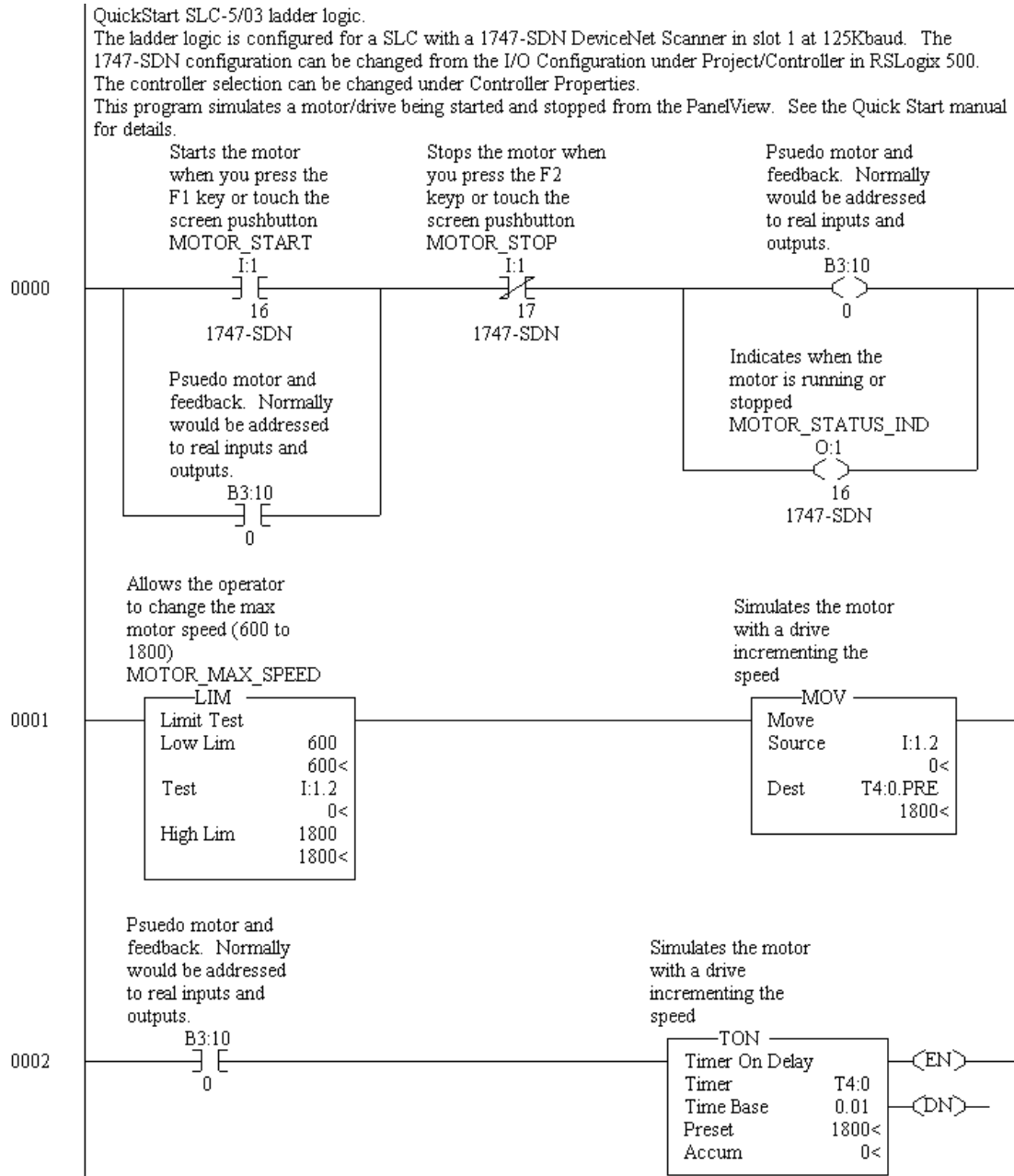


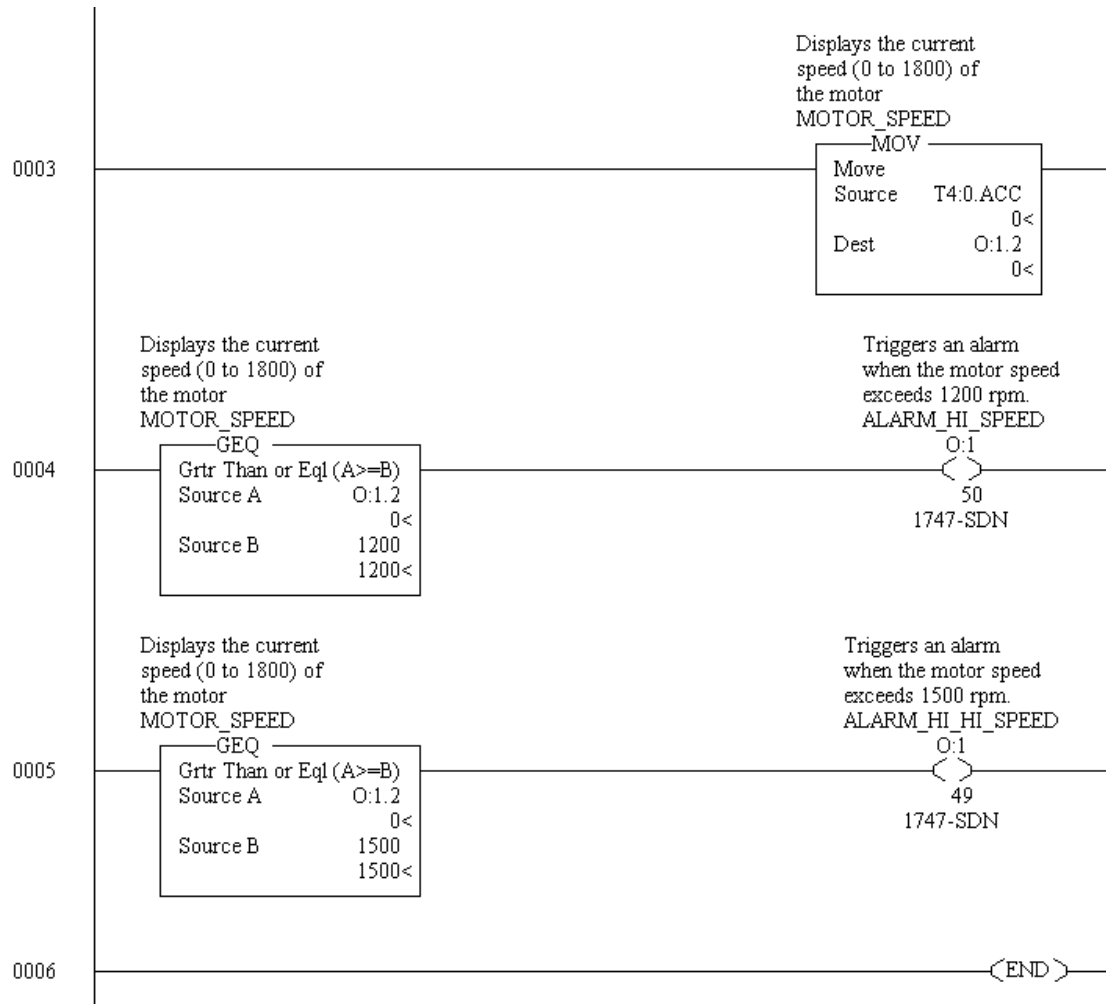
dhp.rss



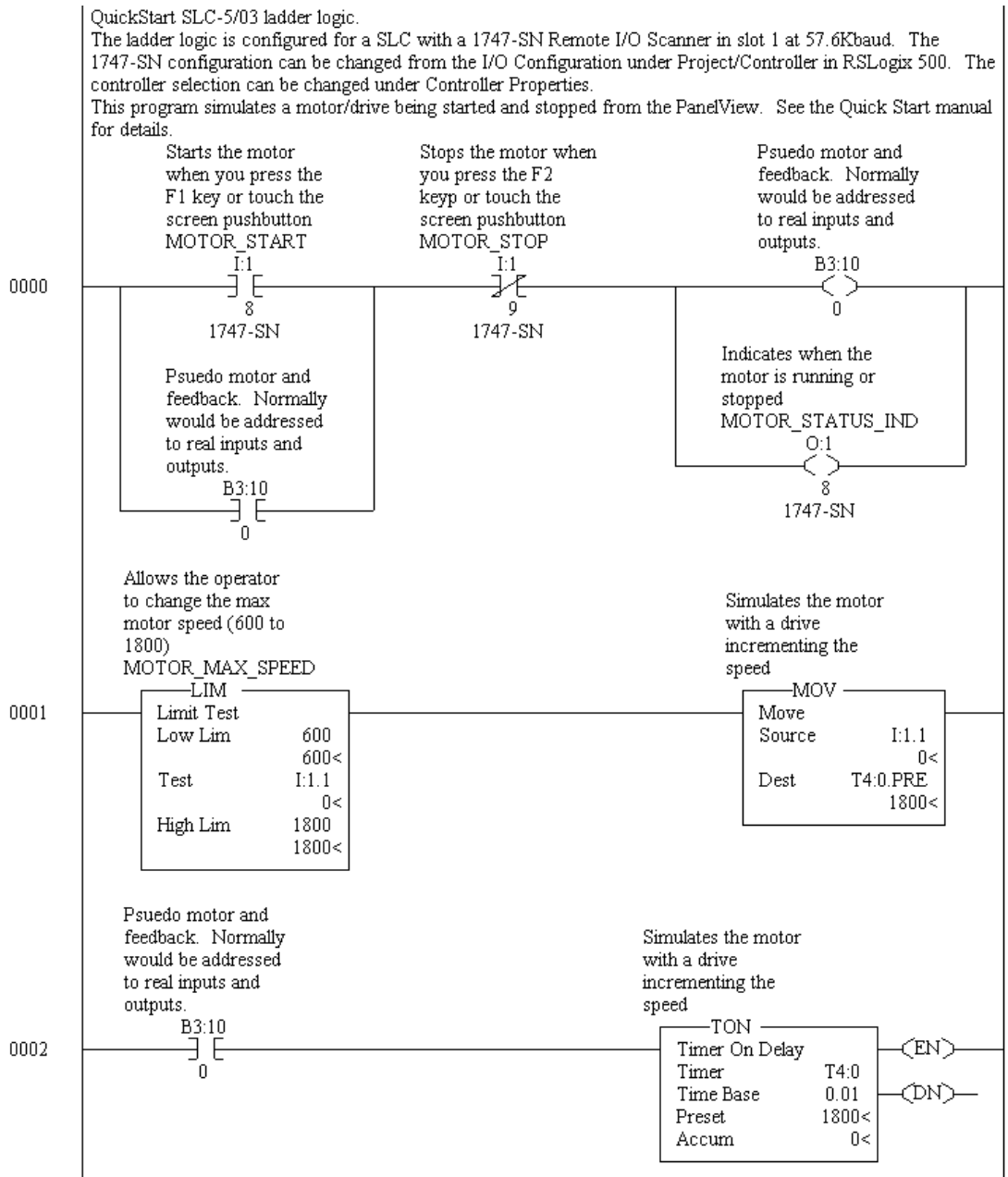


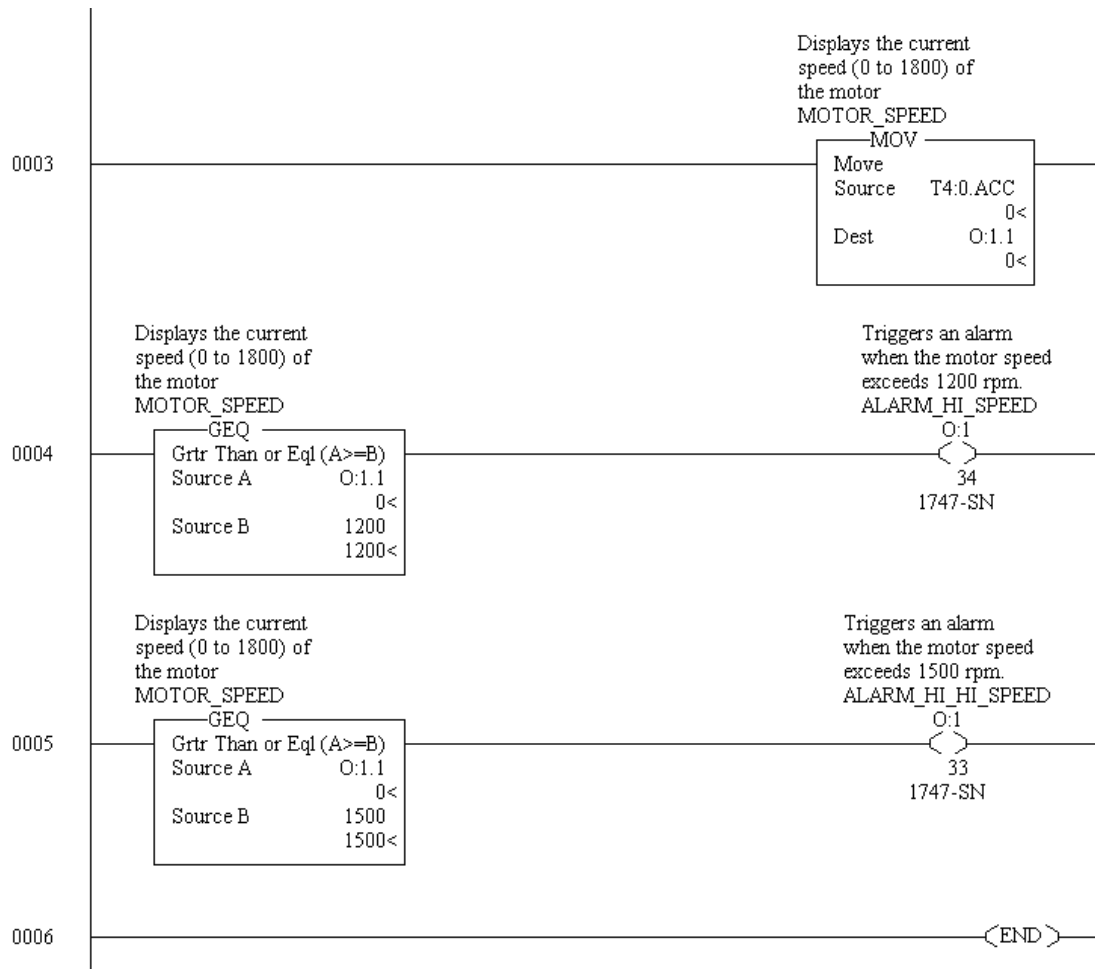
dnet.rss



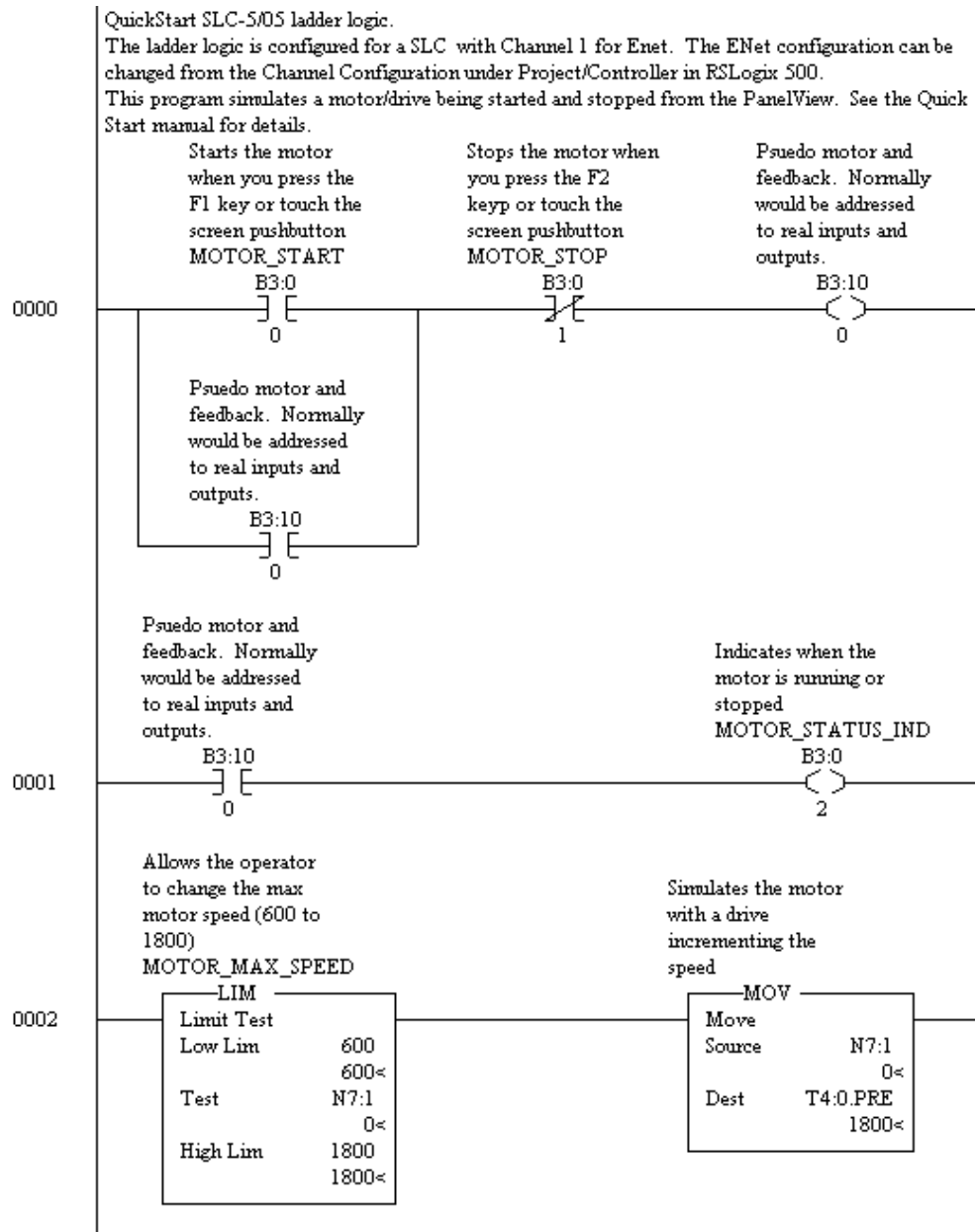


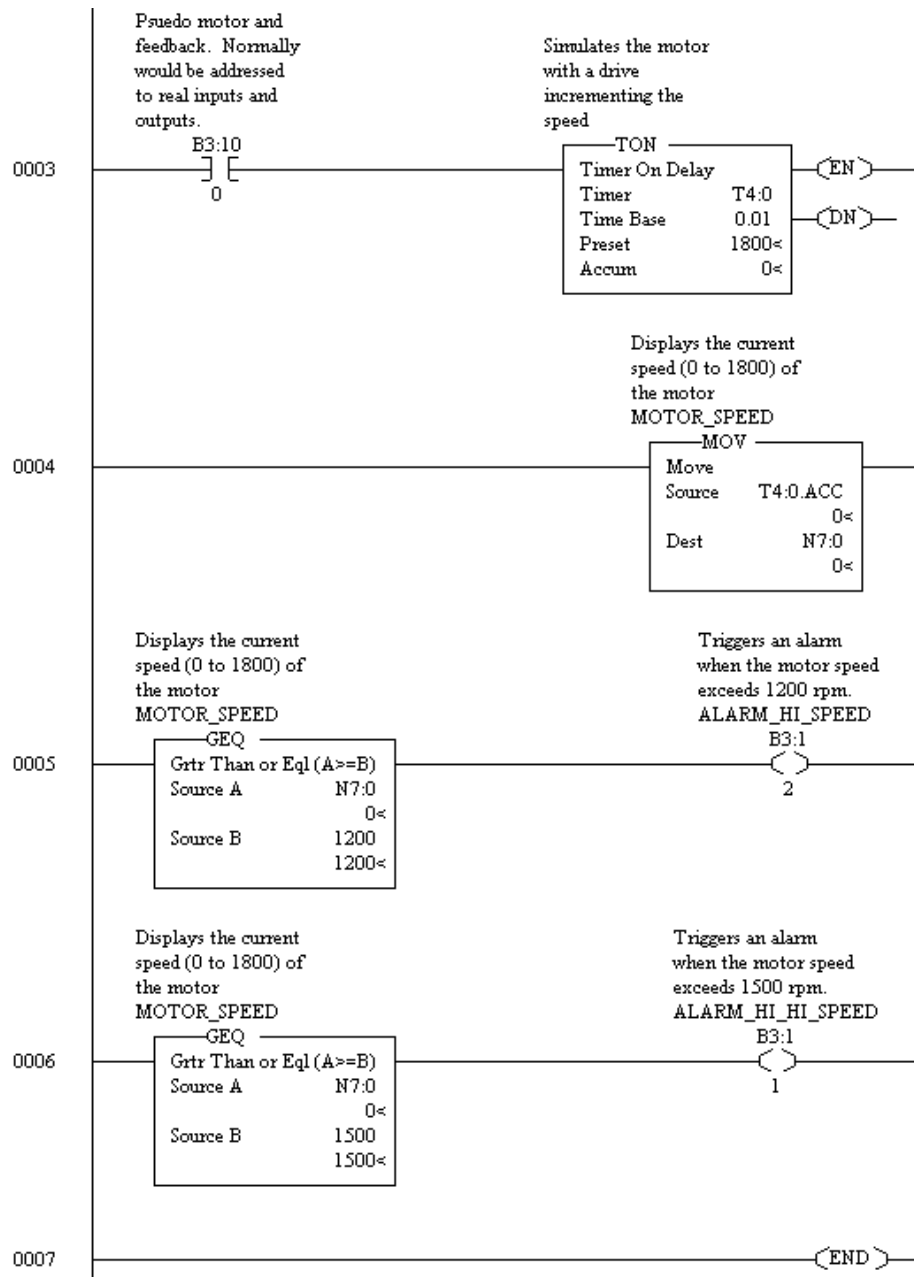
rio.rss

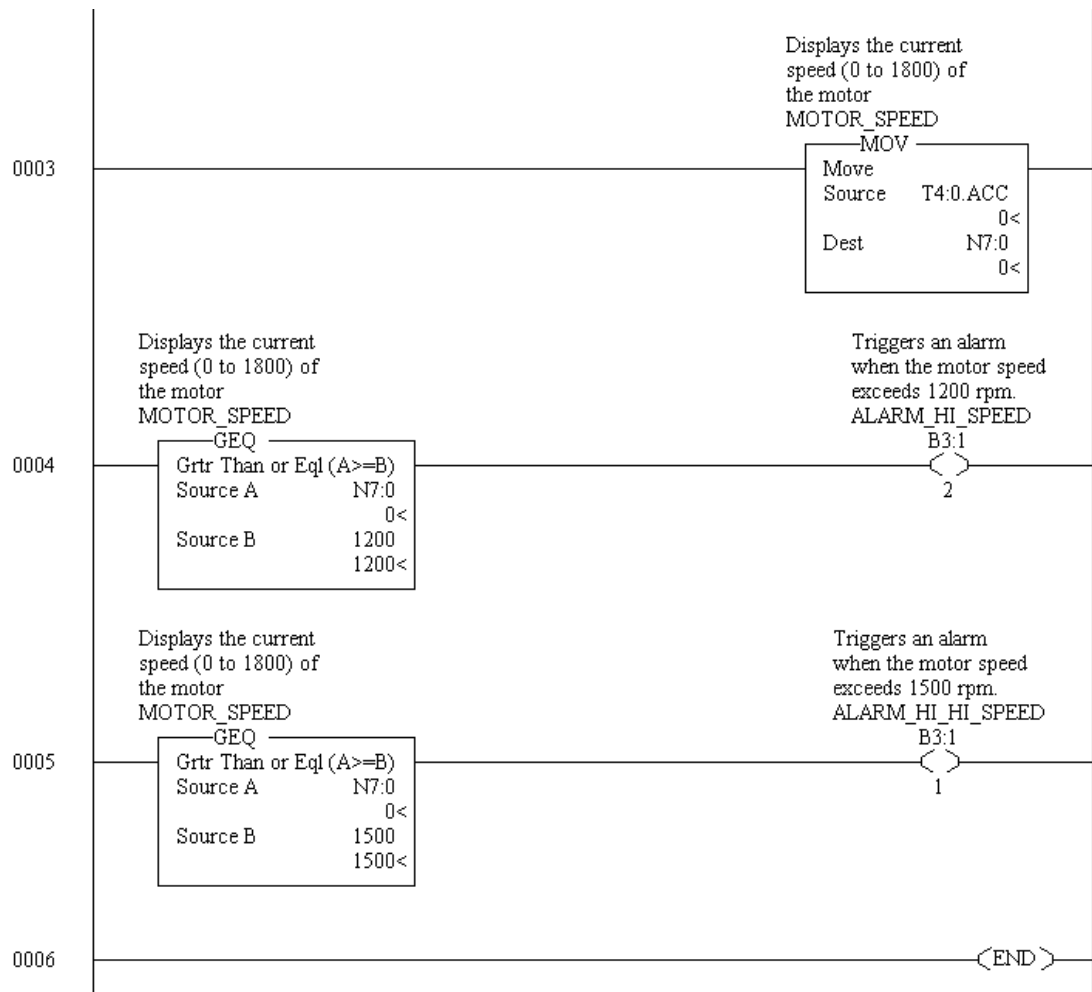




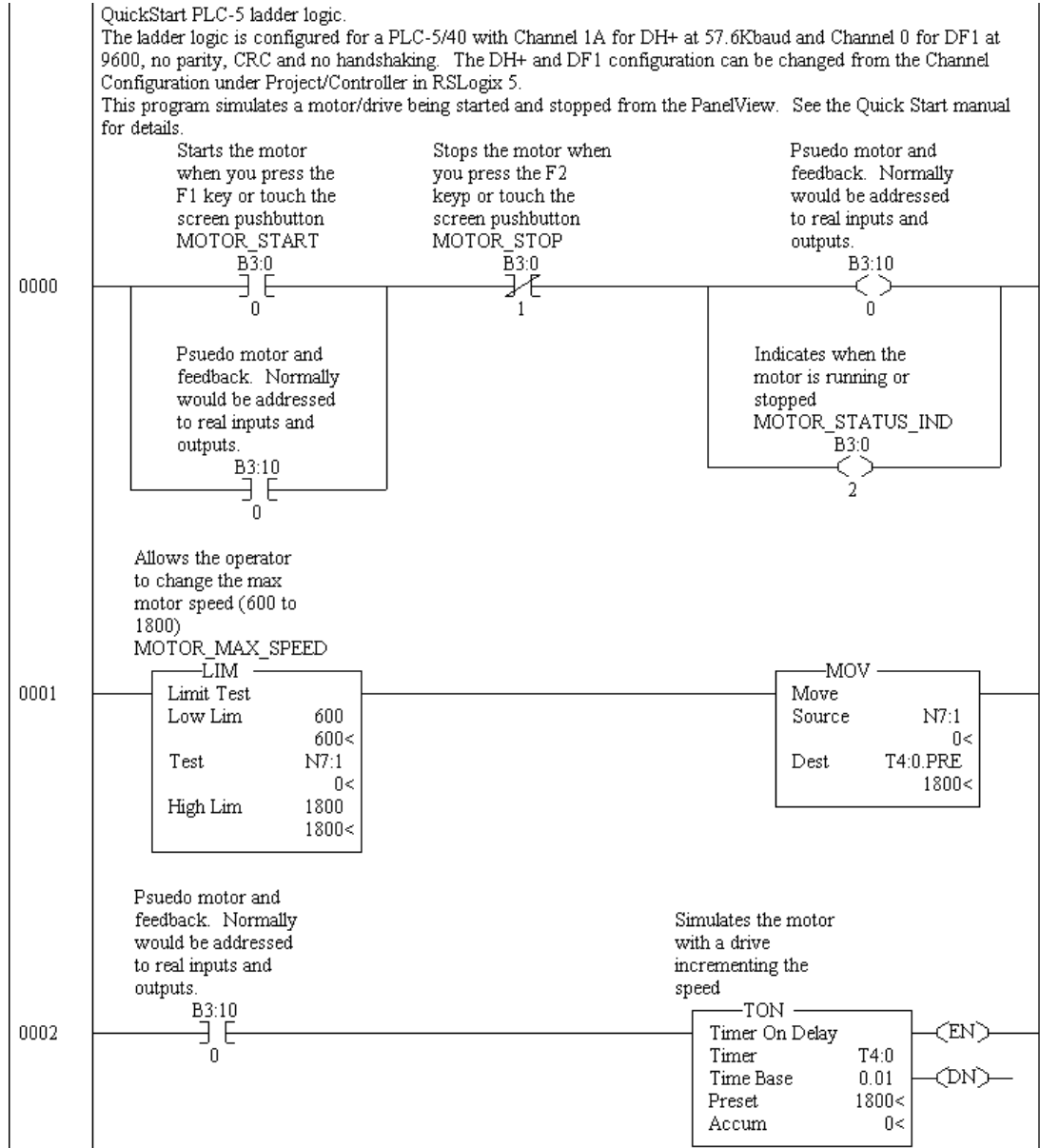
enet.rss

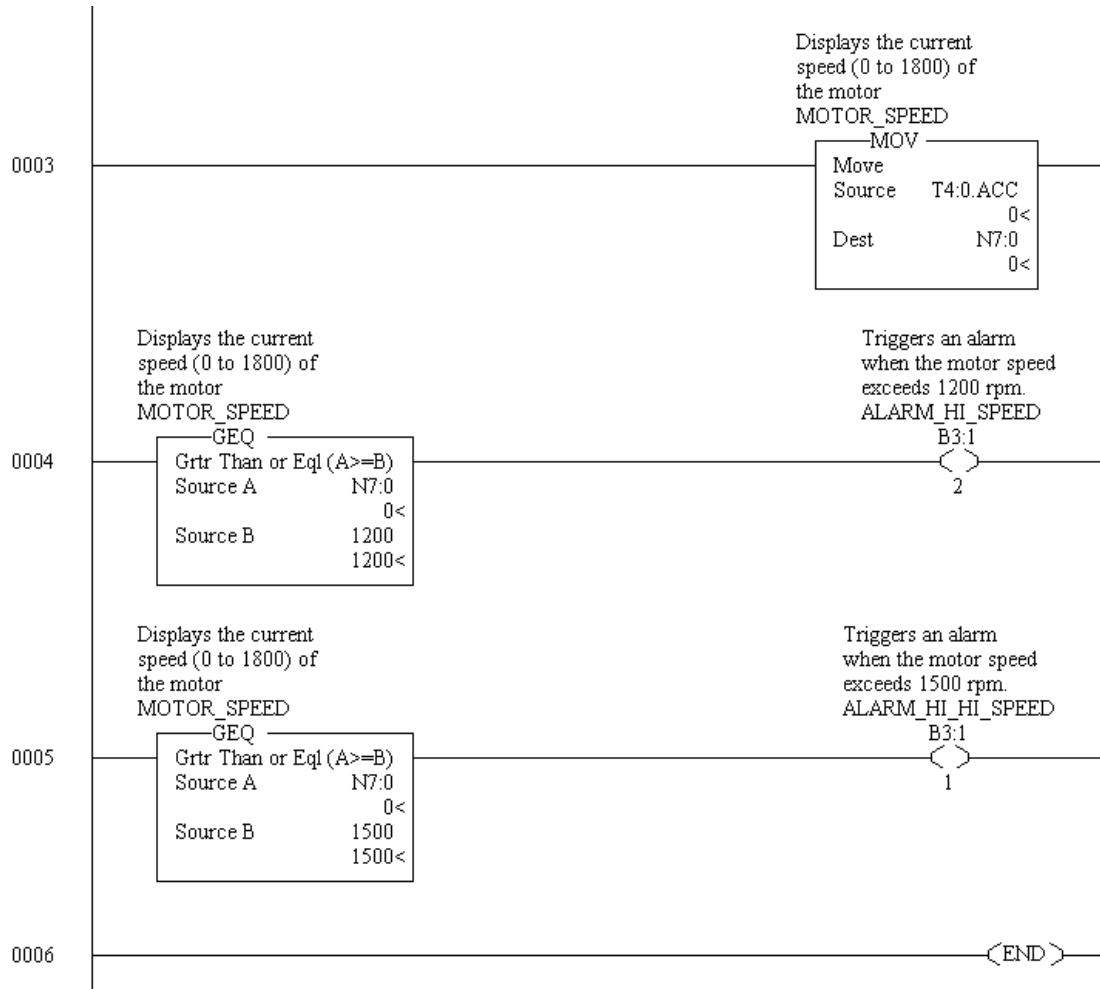




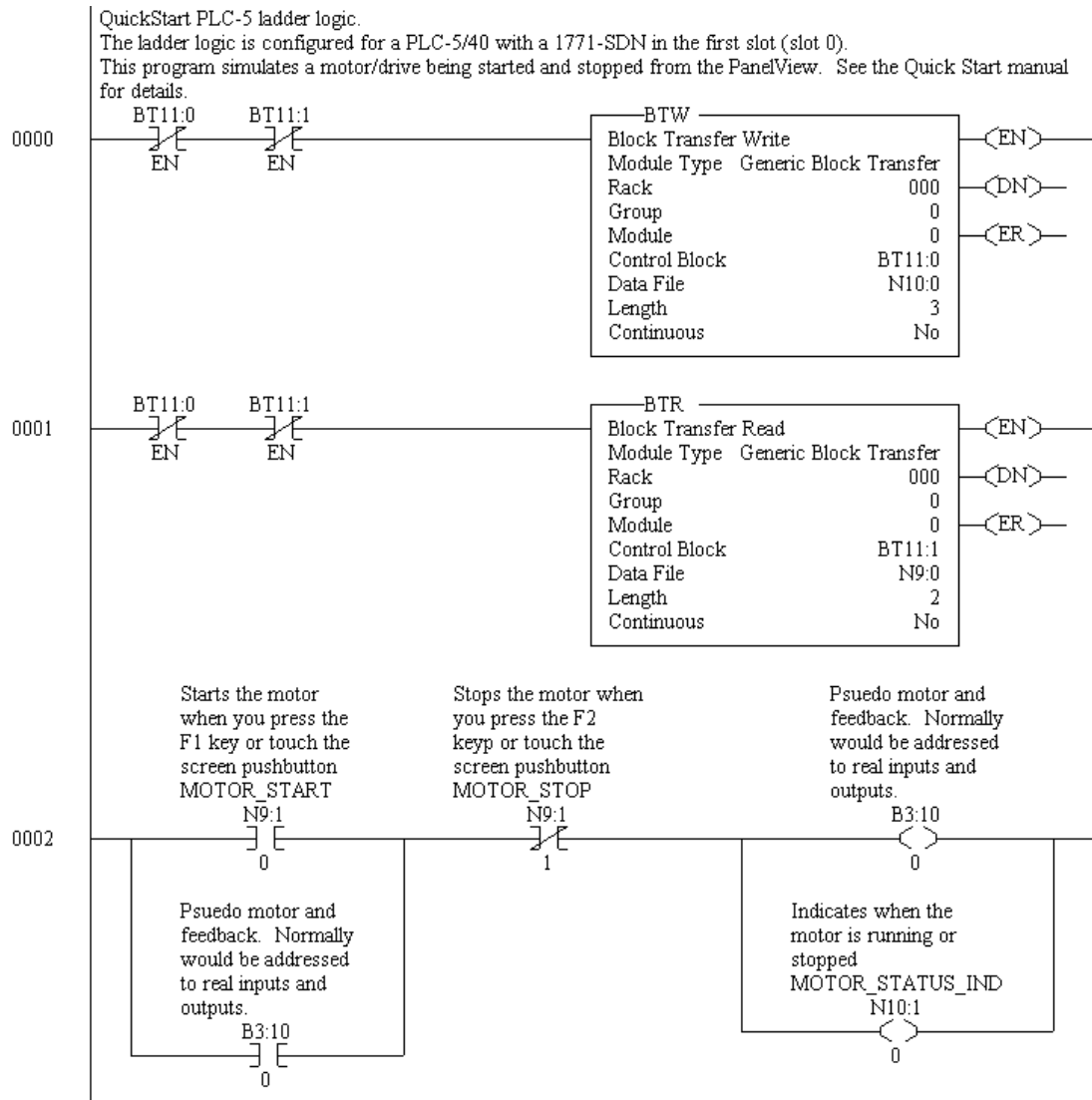


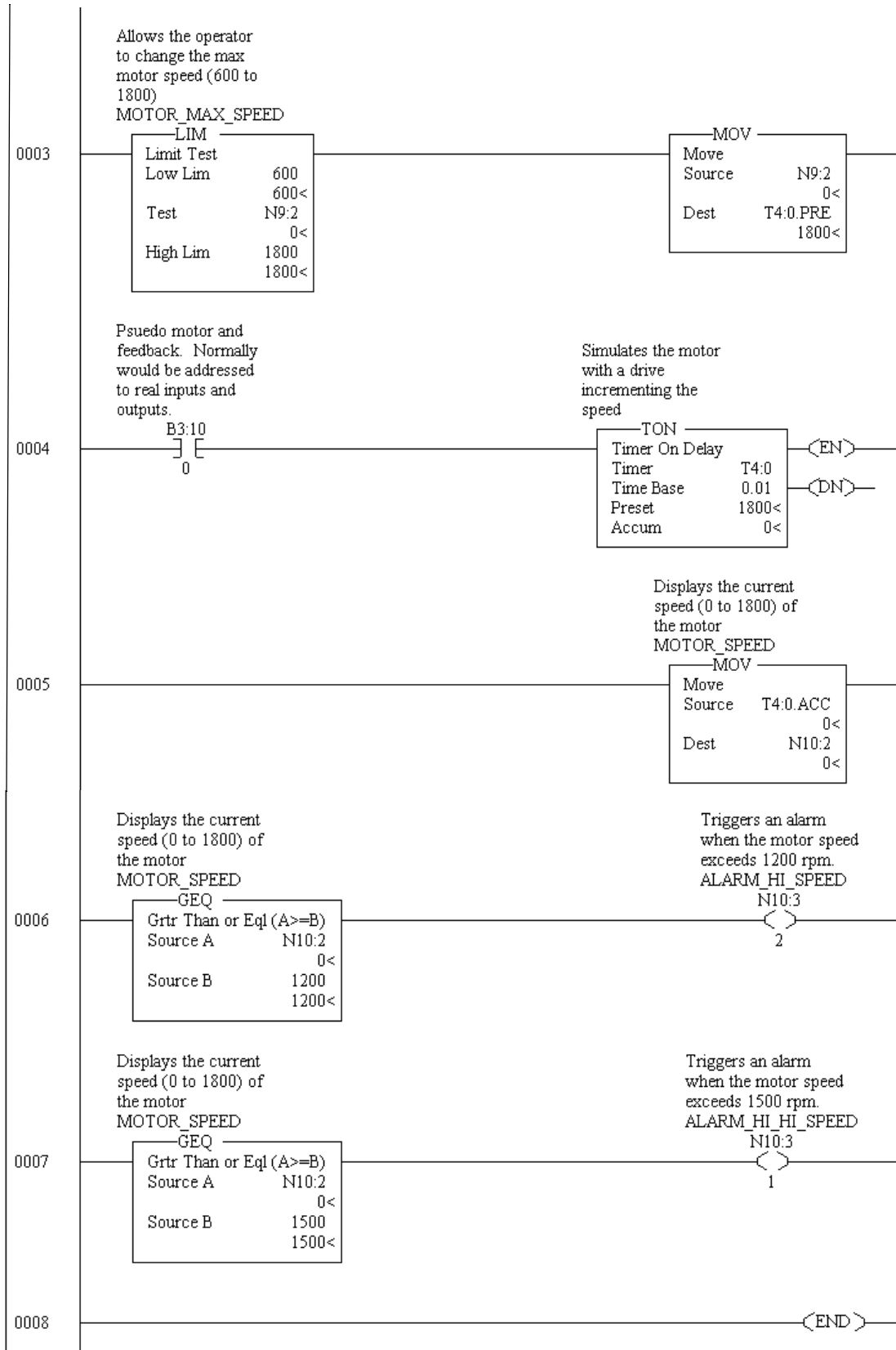
dhp_df1.rsp



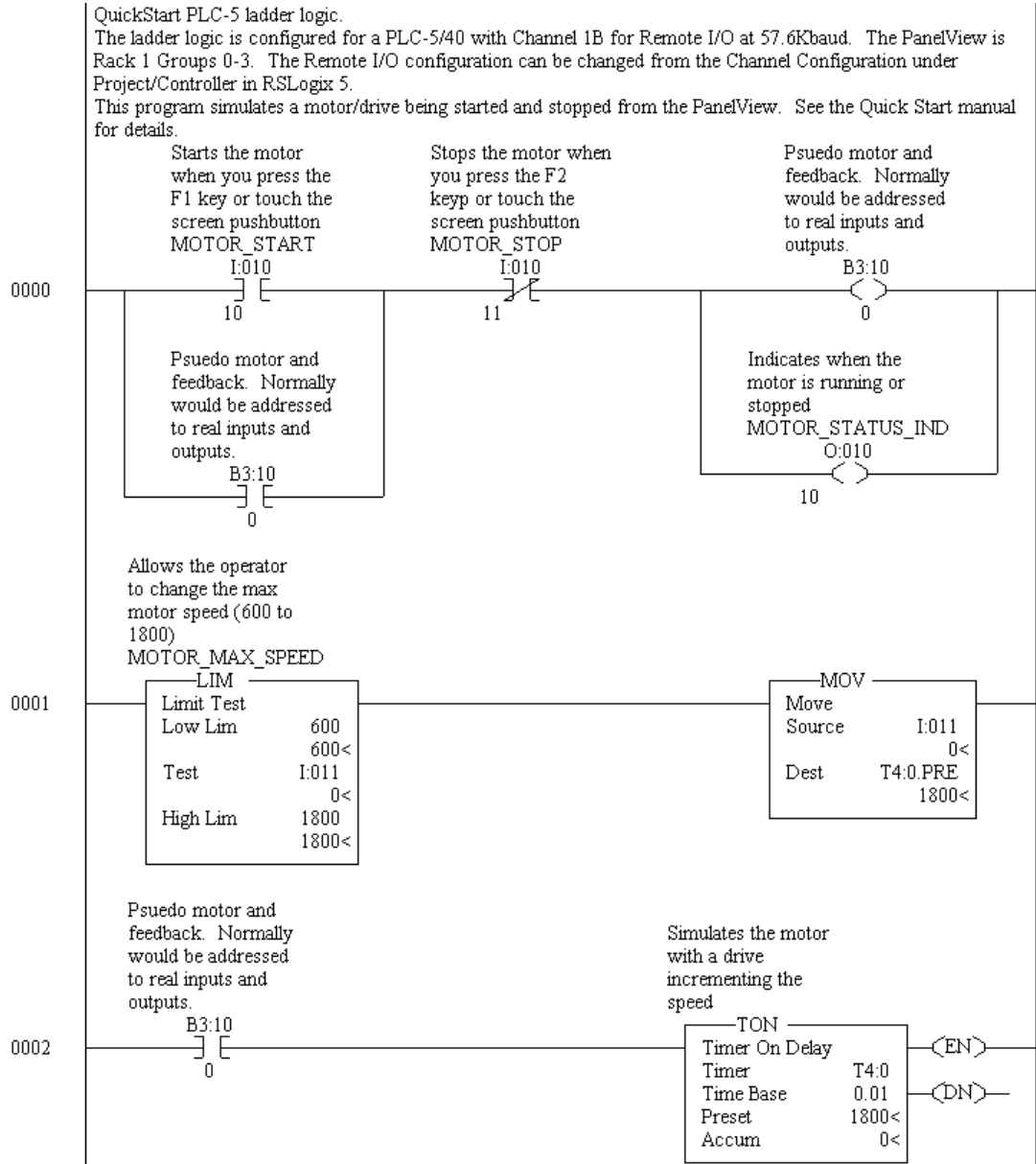


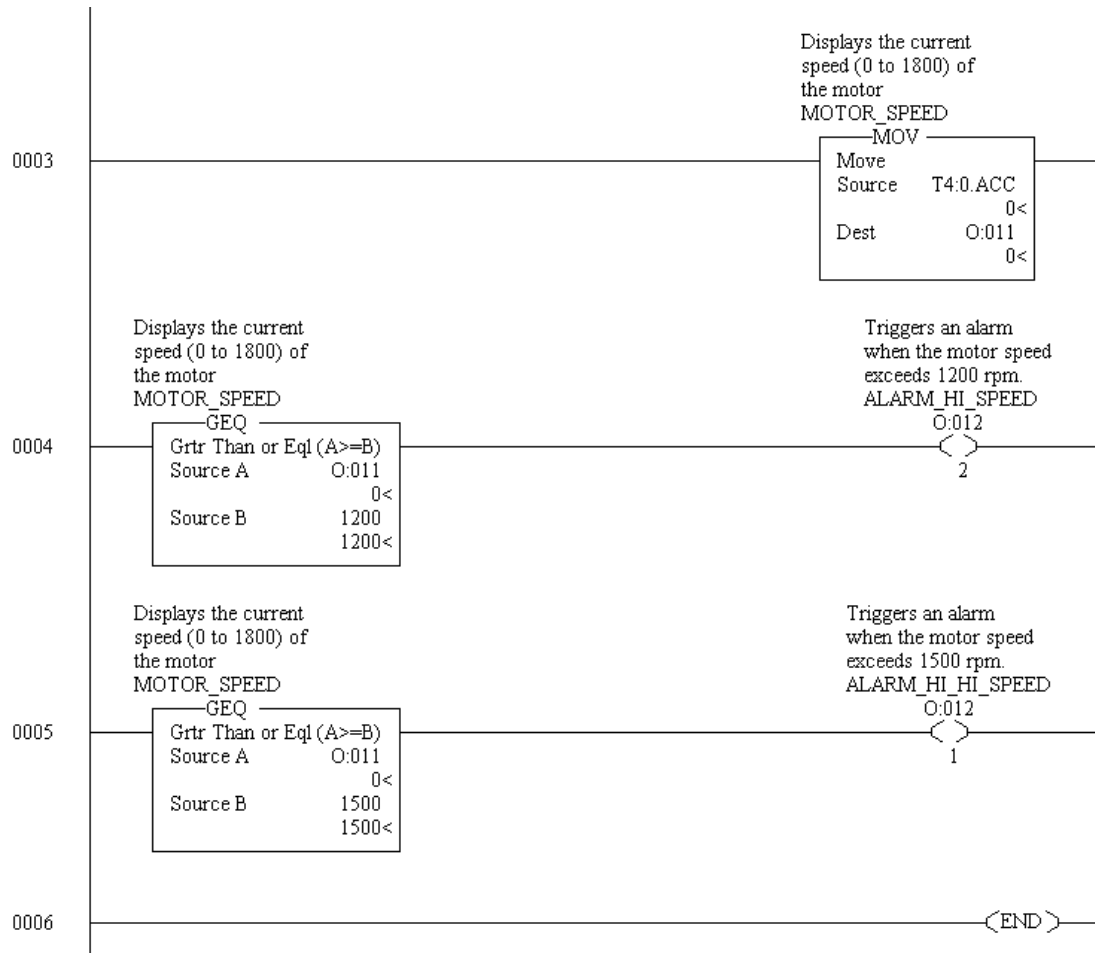
dnet.rsp



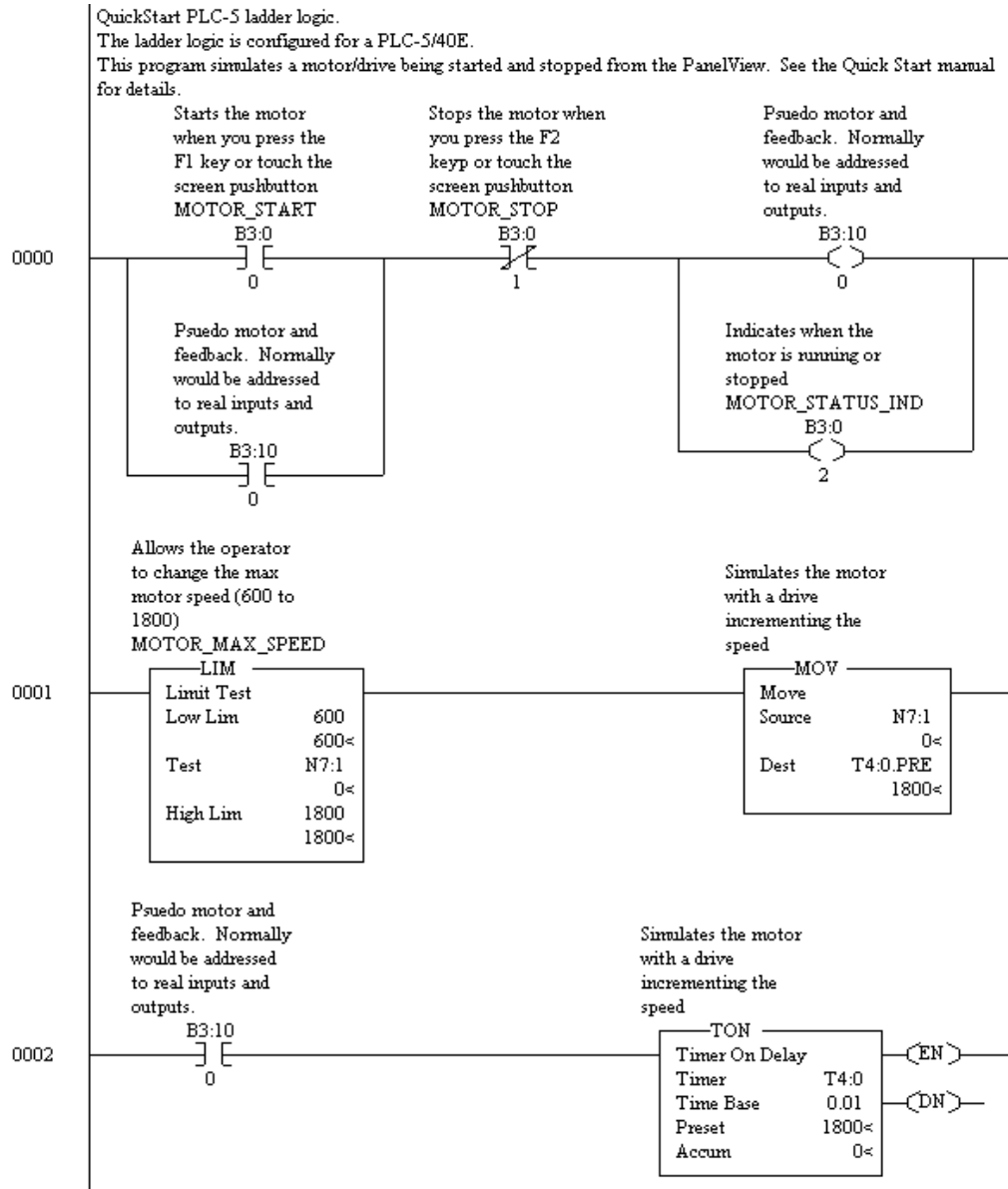


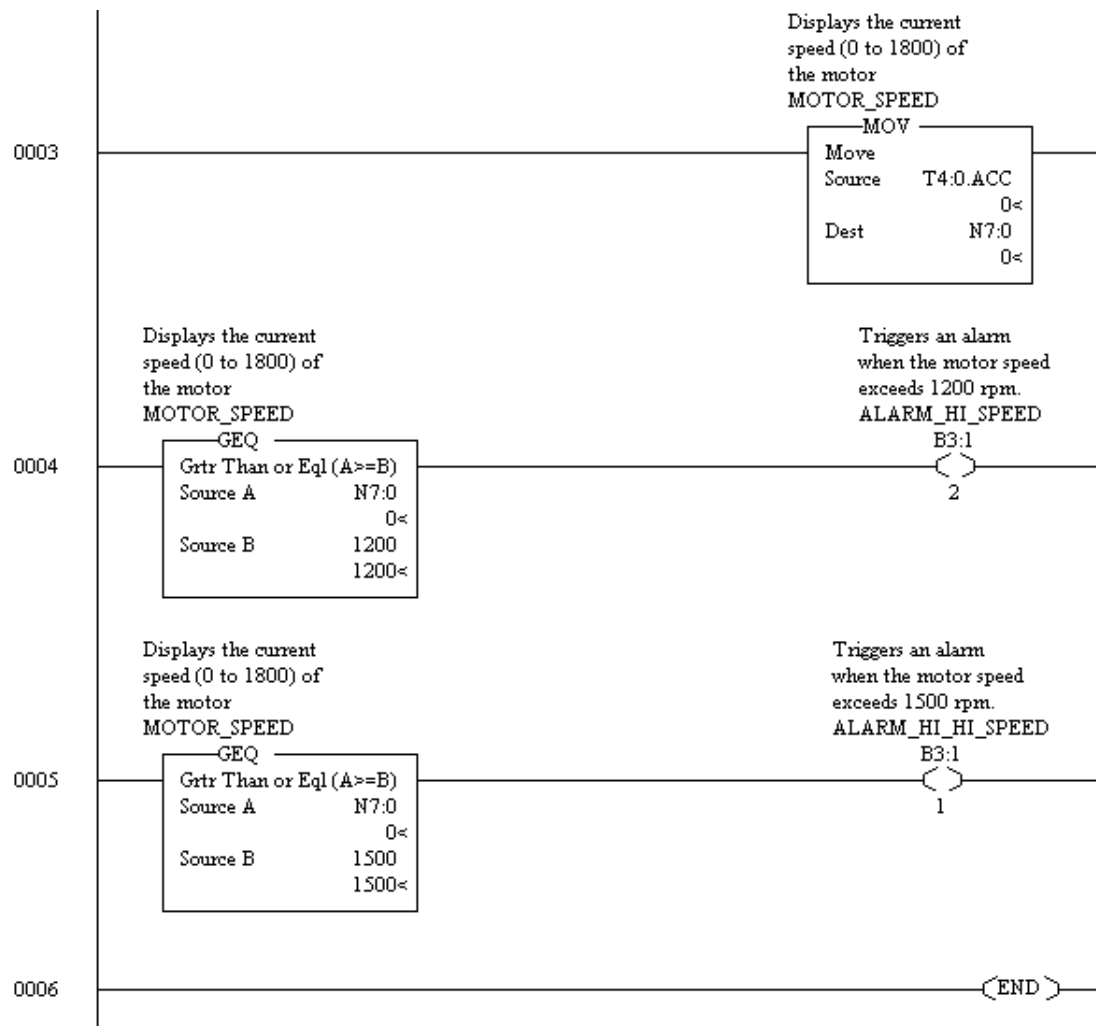
rio.rsp





enet.rsp





Scanner Programs

These files are provided on the PanelBuilder32 installation CD in the (**\QuickStart\DNet directory**).

DeviceNet Applications using RSNetworkx for DeviceNet

File Name	Use with these application files:
1747sdn.dnt	<ul style="list-style-type: none">• dnet.rss• dnet.pba
1756dnb.dnt	<ul style="list-style-type: none">• dnet.acd• dnet.pba
1771sdn.dnt	<ul style="list-style-type: none">• dnet.rsp• dnet.pba

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Installation Assistance

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

United States	1.440.646.3434 Monday – Friday, 8am – 5pm EST
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Rockwell Automation tests all of its products to 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 in order to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

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