



Allen-Bradley

Migrating PanelView Enhanced Terminal Applications

Quick Start

**Rockwell
Automation**

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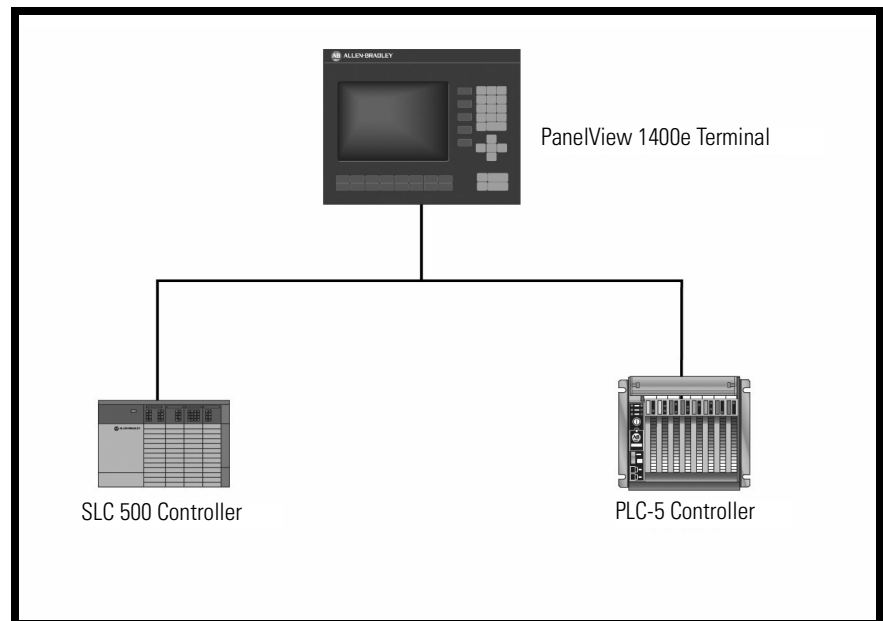
Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

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.

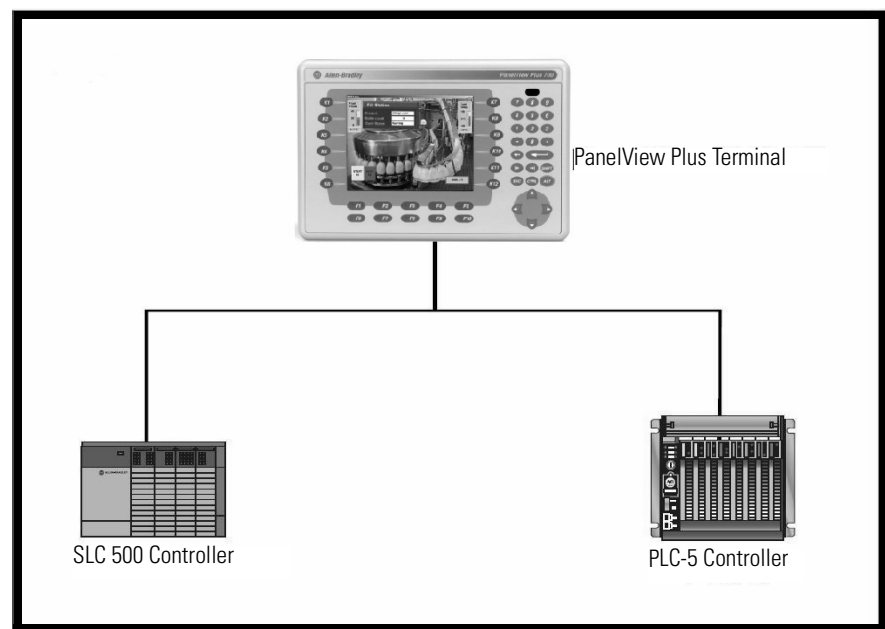
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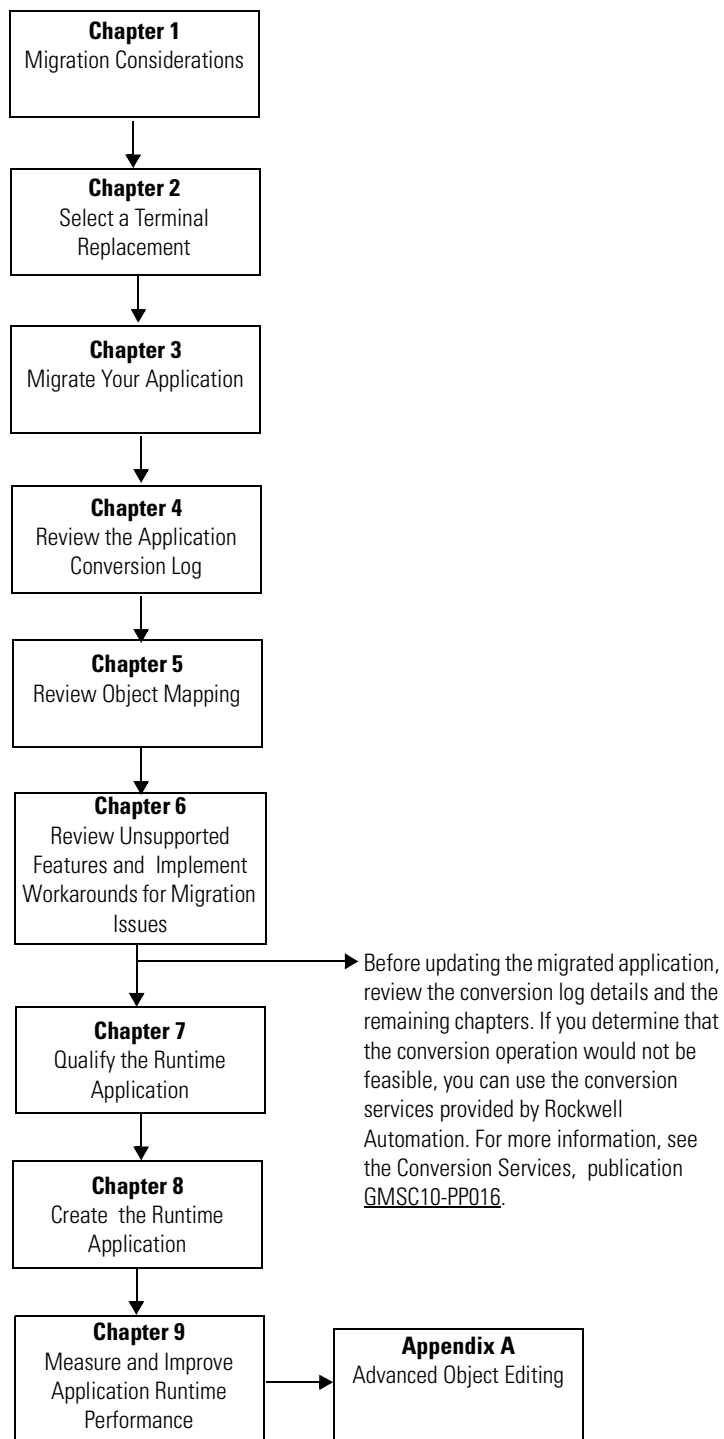
We Can Get You From Here...



...To Here



Follow this path to migrate your PanelView 1000e or 1400e terminal and application to the PanelView Plus terminal platform.



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Introduction

This document provides guidelines and procedures for migrating a PanelView 1000e or 1400e terminal application to the PanelView Plus terminal platform. The procedures and guidelines cover:

- selecting and optionally installing a PanelView Plus terminal replacement.
- migrating your PanelView 1000e or 1400e application to FactoryTalk View Machine Edition software.
- updating the migrated application and ladder logic, as necessary, to verify compatibility with FactoryTalk View Machine Edition software.
- reviewing and implementing workarounds for unsupported features.
- verifying the correct operation of the migrated application on the PanelView Plus terminal.
- measuring and improving performance of the migrated application.

The procedures and guidelines are designed to make the migration process as easy as possible.

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

- **Before You Begin** - This section lists the steps that must be completed and decisions that must be made before starting the chapter. The chapters in this quick start must be completed or reviewed in the order in which they appear.
- **What You Need** - This section lists the items that are required to complete the steps in the current chapter. This includes, but is not limited, to hardware and software.
- **Follow These Steps** - This section illustrates the path or steps in the current chapter.

Also note that the electronic version of this publication contains links to other publications for easier navigation and reference.

Audience

This quick start was created to assist a user familiar with Rockwell Automation HMI products on how to convert an existing application for the PanelView Plus terminal platform.

Required Software

The table provides the software required to convert a PanelView 1000e or 1400e application to a PanelView Plus application.

Software	Version
FactoryTalk View Studio, which includes: <ul style="list-style-type: none"> • FactoryTalk View Machine Edition • RSLinx Enterprise 	Version 5.0
PanelBuilder 1400e Software	Version 5.16

Migration Services

This migration service	Includes	For more information
Step Forward Program	Provides a credit for returned product. <ul style="list-style-type: none"> • PanelView 1400e to PanelView 1000e • PanelView Enhanced to PanelView Plus 	Consult your local distributor for details
PV1000e Migration Kits	PV1000e terminal and adapter plate at a reduced price	Consult your local distributor for details
PanelView Plus Starter Kits	PanelView Plus terminal and associated software at a reduced price to help you get started with a new product family.	Consult your local distributor for details
Bundled Migration Services	<ul style="list-style-type: none"> • PanelView Enhanced to PanelView Plus terminal hardware conversion • PanelView Enhanced to PanelView Plus application file conversion • Turnkey service including any ladder logic changes required • Delivered onsite by Rockwell Automation service engineers • Project supervision and conversion engineering services • Standardized service bundle • Fixed price proposal 	For more information on services, go to this website: http://rockwellautomation.com/services/onsite

Conventions

This manual uses the following conventions.

Convention	Meaning	Example
Courier font	Type or enter text exactly as shown.	Type cmd.
Check or uncheck	Click to activate or deactivate a checkbox.	Check the Disable Keying checkbox.
Click	Click the left mouse button once while the cursor is positioned on object or selection.	Click Browse.
Double-click	Click the left mouse button twice in quick succession while the cursor is positioned on object or selection.	Double-click the application icon.
Expand	Click the + to the left of a given item /folder to show its contents.	Expand HMI tags.
Right-click	Click the right mouse button once while the cursor is positioned on object or selection.	Right-click on Program Files.
Select	Click to highlight a menu item or list choice.	Select the SBCP ActiveX file.
>	Shows nested menu selections as menu name followed by menu selection.	Select Object>ActiveX Control.

Additional Resources

Resource	Description
Adapter Kit for PanelView 1400e Touch Screen Terminal Cutout Installation Instructions, publication 2711-IN023	Provides details on how to use the cutout adapter kit, catalog number 2711P-RAT12E, to mount a PanelView Plus or PanelView Plus CE 1250 touch screen terminal into an existing PanelView 1400e touch screen panel cutout.
Adapter Kit for PanelView 1200/1200e/1400e Keypad Terminal Cutout installation instructions, publication 2711P-IN015	Provides details on how to use the cutout adapter kit, catalog number 2711P-RAK12E, to mount a PanelView Plus or PanelView Plus CE 1250 keypad terminal into an existing PanelView 1400e keypad panel cutout.
Adapter Kit for PanelView Standard or PanelView e Terminal Cutouts Installation Instructions, publication 2711P-IN010	Provides details on how to use the: <ul style="list-style-type: none"> cutout adapter kit, cat. no. 2711P-RAK10, to mount a PanelView Plus or PanelView Plus CE 1000 keypad terminal into an existing PanelView 1000e keypad panel cutout. cutout adapter kit, cat. no. 2711P-RAT10, to mount a PanelView Plus or PanelView Plus CE 1000 touch screen terminal into an existing PanelView 1000e touch screen, panel cutout.
PanelView Plus Terminals and Display Modules Installation Instructions, publication 2711P-IN001	Provides details on how to install the PanelView Plus 1250 or 1500 terminal in a panel.
Visualization Platforms Selection guide, publication VIEW-SG001	Provides catalog numbers for the PanelView Plus terminals.
FactoryTalk View Studio online help	Provides information and procedures for creating and editing a FactoryTalk View Machine Edition application and supported features.

Migration Considerations

Introduction

This chapter covers considerations to address before migrating a PanelView 1000e or 1400e application to the PanelView Plus platform.

Migration Considerations

The table provides an explanation of things to consider when migrating an application.

Migration Consideration	Explanation	For More Information
Application reuse?	Do you need to reuse your PanelView 1000e or 1400e application and PLC ladder logic? If so, you can convert your application for a PanelView Plus terminal using FactoryTalk View Machine Edition (ME) software. The application and PLC ladder logic may require updates because some objects or features may not directly migrate to FactoryTalk View ME software. If you do not want to reuse your current application but instead create a new one with FactoryTalk View ME software, you can stop here.	Reviewing Object Mapping, page 35 Reviewing and Modifying Expressions, page 37 Reviewing Unsupported Features, page 41
Use multiple RIO racks?	Does your application require more than one rack of discrete Remote I/O? The PanelView Plus terminals support multiple racks of discrete Remote I/O, depending on the scanner type.	
Require relay or beeper?	Does your application use a built-in alarm relay or beeper? The PanelView Plus terminals do not support a built-in alarm relay or beeper. However, you can use an external alarm relay.	Reviewing Terminal Comparisons, page 17

Migration Consideration	Explanation	For More Information
Required enhanced features?	<p>Does your application require enhanced features? If so, you can take advantage of the advanced features offered by the PanelView Plus terminals.</p> <ul style="list-style-type: none">• Functions: trending, data logging, alarming, information and local messages, expressions, security, language switching, recipes, global objects, multiversion support, face plates, graphic libraries, parameter files, rich graphics, and animation.• Communication: Ethernet, ControlNet, DeviceNet, DHPlus, Remote I/O, and third party PLC connectivity.• Hardware: Analog resistive touchscreen, x86 processor, up to 128 MB of application memory, modular display, communication, and logic components, USB support, high-bright display, and stainless steel bezel options.• Remote connectivity: FTP, Web server, VNC, remote desktop. Applies only to PanelView Plus CE terminals.• Other: Adobe PDF, PowerPoint, Word, Excel, and MPEG viewers, Internet Explorer (full-featured), various ActiveX controls. Applies only to PanelView Plus CE terminals.	
What are the terminal replacement options?	The terminal replacement options for the PanelView 1000e and 1400e terminals are the PanelView Plus 1250 or 1500 terminals.	Selecting a Terminal Replacement, page 16

The rest of this document steps you through the process of selecting a replacement terminal, migrating, and testing the application.

Select a Terminal Replacement

Introduction

In this chapter, you will select and optionally install a PanelView Plus terminal replacement for your PanelView 1000e or 1400e terminal.

Before You Begin

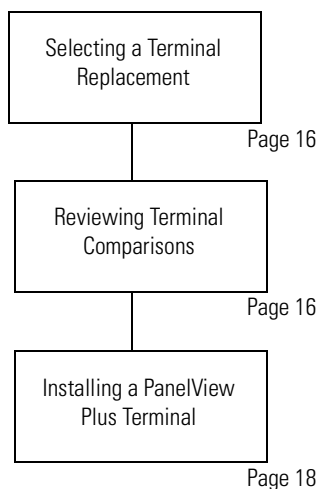
Review the migration considerations table (chapter 1).

What You Need

Nothing is required.

Follow These Steps

Follow these steps to select a PanelView Plus 1250 or 1500 terminal as a replacement for your PanelView 'e' terminal.



Selecting a Terminal Replacement

Replacement options for the PanelView 1000e and 1400e terminals include the PanelView Plus or PanelView Plus CE 1250 and 1500 terminals. Some of the PanelView Plus terminals fit directly into the existing panel cutout of the PanelView 'e' terminals; others will require an adapter plate.

PanelView Plus Replacement Terminals

For this PanelView 'e' terminal	Select one of these replacement terminals	Adapter Plate Required	Adapter Plate Cat. No.
PanelView 1000e touch screen	PanelView Plus 1250 touch screen PanelView Plus CE 1250 touch screen ⁽¹⁾	No	—
PanelView 1000e keypad	PanelView Plus 1250 keypad or keypad and touch PanelView Plus CE 1250 keypad or keypad and touch ⁽¹⁾	No	—
PanelView 1400e touch screen	PanelView Plus 1250 touch screen PanelView Plus CE 1250 touch screen ⁽¹⁾	Yes	2711P-RAT12E
	PanelView Plus 1500 touch screen PanelView Plus CE 1500 touch screen ⁽¹⁾	Yes ⁽²⁾	2711P-RAT15
PanelView 1400e keypad	PanelView Plus 1250 keypad or keypad and touch PanelView Plus CE 1250 keypad or keypad and touch ⁽¹⁾	Yes	2711P-RAK12E
	PanelView Plus 1500 keypad or keypad and touch PanelView Plus CE 1500 keypad or keypad and touch ⁽¹⁾	Yes ⁽²⁾	2711P-RAK15

⁽¹⁾ The PanelView Plus CE terminal is required if your application requires the set bit cursor point function.

⁽²⁾ The PanelView Plus or PanelView Plus CE 1500 terminal will fit in the existing PanelView 1400e panel cutout. The adapter plate is required only to cover the stud mounting holes.

Reviewing Terminal Comparisons

Review dimensions and other pertinent information comparing the PanelView 1000e and 1400e keypad and touch terminals with the equivalent PanelView Plus or PanelView Plus CE 1250 or 1500 terminals.

The PanelView Plus 1250 and 1500 terminals are available as preconfigured units or separate modular components. The catalog numbers of the preconfigured units are specific to operator input, display size, communication, power, and memory requirements.

For a list of valid catalog numbers for preconfigured units or modular components of the PanelView Plus terminals, refer to this website:

<http://www.ab.com/catalogs/>

Touch Screen Terminal Comparisons

Attribute	PanelView 1000e Cat. No. 2711e-T10C6	PanelView 1400e Cat. No. 2711e-T14C6	PanelView Plus 1250 Cat. No. 2711P-T12Cxxx	PanelView Plus 1500 Cat. No. 2711P-T15Cxxx
Depth, approx.	157 mm (6.18 in.)	404 mm (15.9 in.)	55 mm (2.18 in.) ⁽¹⁾	65 mm (2.55 in.) ⁽¹⁾
Panel cutout, H x W	257 x 338 mm 10.11 x 13.29 in.	326 x 391 mm 12.85 x 15.375 in.	257 x 338 mm 10.11 x 13.29 in.	305 x 391 mm 12.0 x 15.4 in.
Alarm relay	24V ac, 1 A 24V dc, 1 A	250V ac, 18A 30V dc, 8 A	Requires external relay	Requires external relay
Display	10.4 in. VGA TFT flat panel display	14.0 in. VGA/SVGA CRT	12.1 in. SVGA TFT flat panel display	15.1 in. SVGA TFT flat panel display
Operator input	Touch screen	Touch screen	Touch screen	Touch screen

⁽¹⁾ Optional add-on communication modules will increase the overall depth of the product.

Keypad Terminal Comparisons

Attribute	PanelView 1000e Cat. No. 2711e-K10C6	PanelView 1400e Cat. No. 2711e-K14C6	PanelView Plus 1250 Cat. No. 2711P-K15Cxxx	PanelView Plus 1500 Cat. No. 2711P-K15xxx
Depth, approx.	156 mm (6.15 in.)	404 mm (15.9 in.)	55 mm (2.18 in.) ⁽¹⁾	65 mm (2.55 in.) ⁽¹⁾
Panel cutout, H x W	257 x 390 mm 10.11 x 15.35 in.	326 x 429 mm 12.85 x 16.90 in.	257 x 390 mm 10.11 x 15.35 in.	305 x 419 mm 12.0 x 16.5 in.
Alarm relay	24V ac, 1 A 24V dc, 1 A	250V ac, 8 A 30V dc, 8 A	Requires external relay	Requires external relay
Display	10.4 in. VGA TFT flat panel display	14.0 in. VGA/SVGA CRT	12.1 in. SVGA TFT flat panel display	15.1 in. SVGA TFT flat panel display
Operator input	Keypad	Keypad	Keypad	Keypad

⁽¹⁾ Optional add-on communication modules will increase the overall depth of the product.

Installing a PanelView Plus Terminal

Install the selected PanelView Plus 1250 or 1500 terminal into the existing PanelView 1000e or 1400e panel cutout. You may need an adapter plate depending on your terminal selection.

To assist you with the installation, refer to:

- PanelView Plus Terminals and Display Modules Installation Instructions, publication [2711P-IN001](#).
- Appropriate adapter plate installation instructions, if required.

Migrate Your Application

Introduction

In this chapter, you will import your existing PanelBuilder 1400e application into FactoryTalk View Machine Edition (ME) software.

Different software is used by each PanelView terminal platform to develop applications.

- PanelView 1000e and 1400e terminals run applications created with PanelBuilder 1400e configuration software.
- PanelView Plus terminals run applications created with FactoryTalk View ME software.

Before You Begin

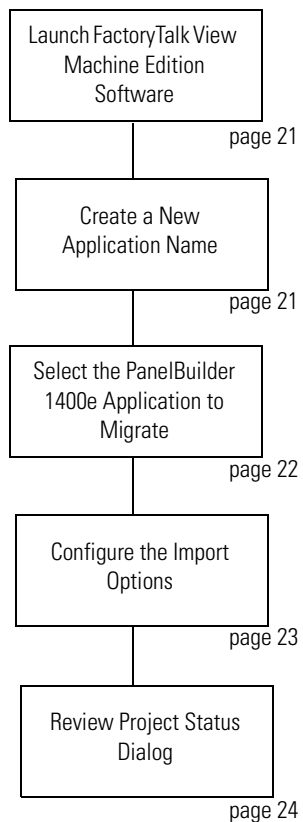
- Review the migration considerations table (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Optionally install the PanelView Plus terminal replacement (Chapter 2). You can install the terminal after migrating and testing your application.

What You Need

- FactoryTalk View Studio software
- PanelBuilder 1400e .pvc application file. The application file can reside on your local hard drive or a CompactFlash card.

Follow These Steps

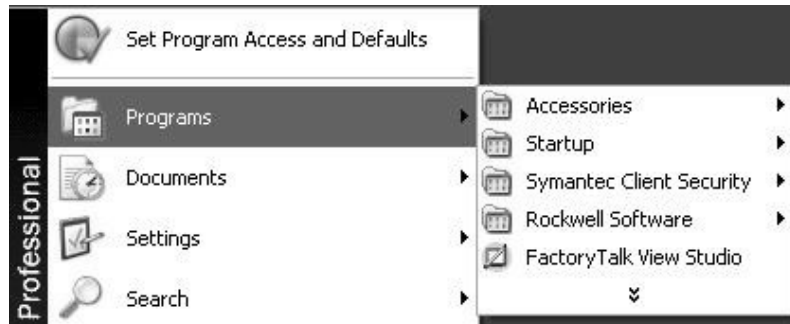
Follow these steps to import your PanelBuilder 1400e application into FactoryTalk View Machine Edition software.



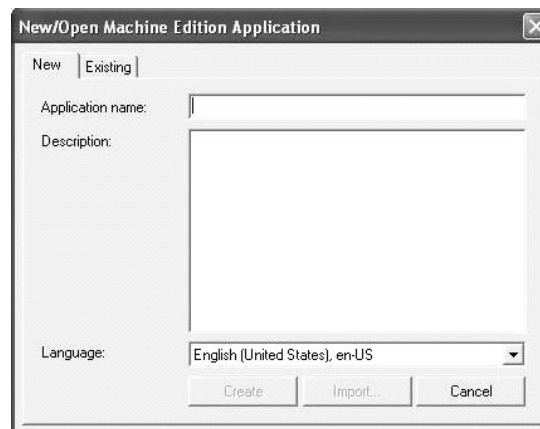
Import Application

Follow the steps in this procedure to migrate any PanelView 1000e or 1400e application into FactoryTalk View Machine Edition software.

1. Launch FactoryTalk View Studio software.

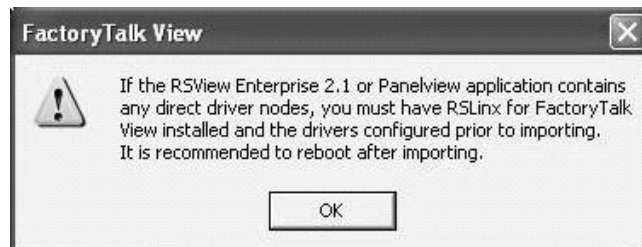


2. Click the New tab.
3. Enter an Application name and click Import.

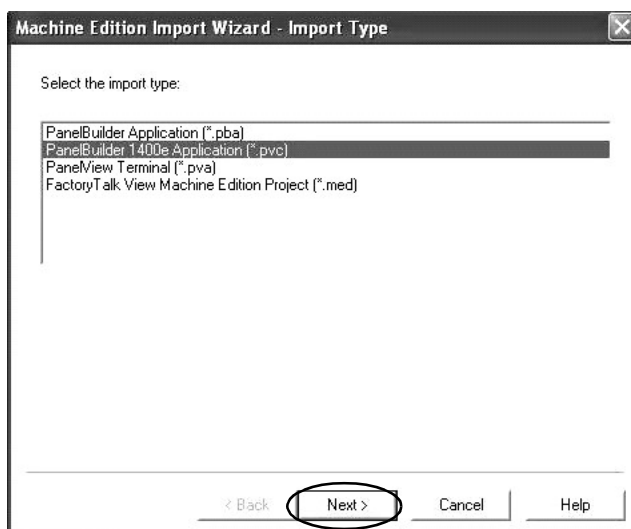


4. Read the FactoryTalk View dialogue and click OK.

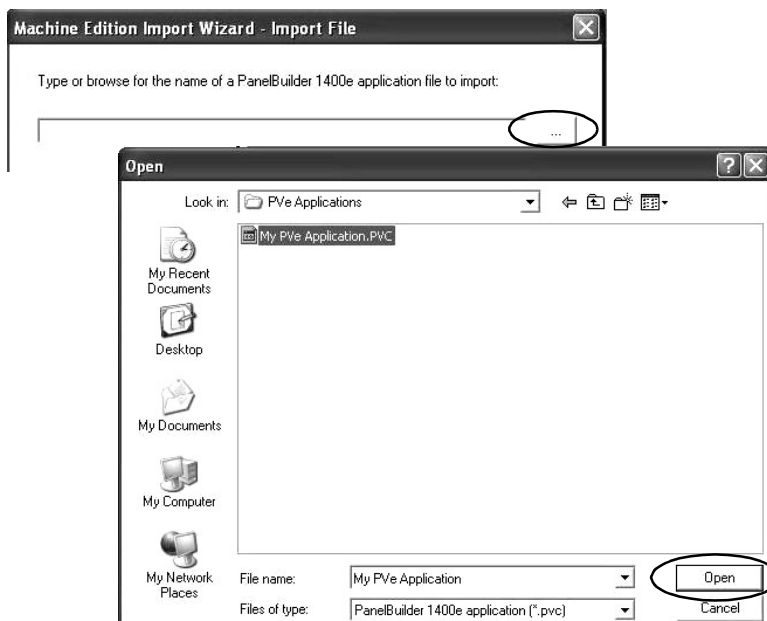
RSLink for FactoryTalk does not need to be installed prior to importing your PanelBuilder 1400e application.



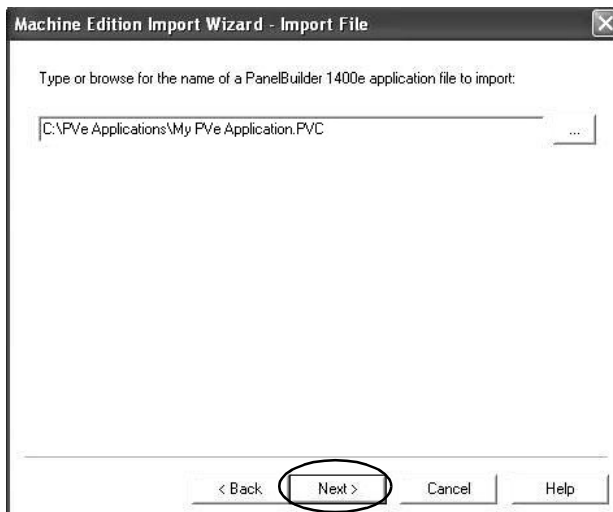
5. Select PanelBuilder 1400e Application (*.pvc) and click Next.



6. Click the ... button.
7. Browse to and select your PanelBuilder 1400e .pvc application and click Open.

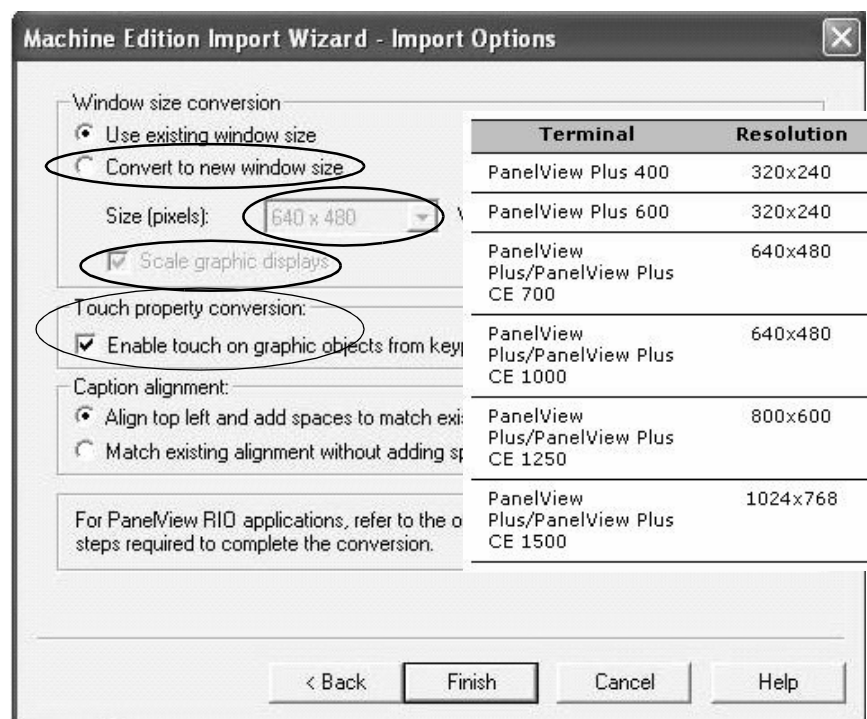


8. Click Next.



9. Configure the import options based on your replacement terminal. Click Help at any time for clarification of each dialog option.

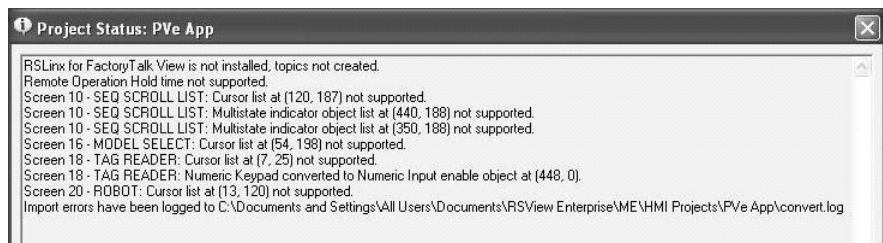
- Check the Convert to new window size checkbox.
- Select the size (in pixels) of your PanelView Plus terminal display as shown in chart.
- Check the Scale graphic displays checkbox. When selected, this setting rescales all displays.
- If your original PanelView e terminal used a touch screen or touch/keypad, check the box under Touch property conversion.
- Click the Help button and read the differences between the caption alignment options and select an option for your new application.
- Click Finish.



The Importing Progress dialog shows the conversion status. This process may take a while, depending on the size of your application. When completed, you will see the Project Status dialog in the next step.



- 10.** Review the Project Status dialog and click OK.



- 11.** Repeat steps 1 through 10 for each PanelBuilder 1400e application you want to migrate to FactoryTalk View ME software.

Review the Application Conversion Log

Introduction

In this chapter, you will review the conversion log generated by FactoryTalk View Machine Edition (ME) software. The results of this log will help you to determine what updates are required in your converted application.

Before You Begin

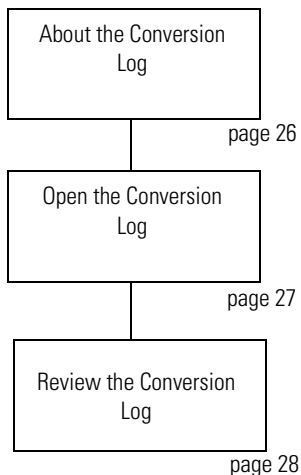
- Review migration considerations (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Install the PanelView Plus terminal in the existing PanelView 1000e or 1400e panel cutout (Chapter 2).
- Import your PanelBuilder 1400e .pvc application into FactoryTalk View ME software (Chapter 3).

What You Need

- A PanelBuilder 1400e application migrated into FactoryTalk View ME software. This was done in Chapter 3.
- The new name given the migrated application in FactoryTalk View ME software. This was done in Chapter 3.
- Conversion log generated by the FactoryTalk View ME import wizard.

Follow These Steps

Follow this path to review changes that are required to your FactoryTalk View ME application.



About the Conversion Log

The application conversion log is generated by the Import Wizard when you import your PanelBuilder 1400e application into FactoryTalk View ME software. This log provides detailed information about objects or features that did not convert directly from your PanelBuilder 1400e application. Use this log as a guide to update your application accordingly. Modifications to the application are required to verify that the application will operate correctly in FactoryTalk View ME software.

IMPORTANT

It is important that you review each object and feature in the converted application to verify that each will function as expected. Because objects or features may not map directly into FactoryTalk View ME software, you may need to update your ladder logic to achieve the same operational results as your PanelBuilder 1400e application.

Open the Conversion Log

The conversion log is stored with the new application that you created when importing your PanelBuilder 1400e application into FactoryTalk View ME software.

Follow these steps to locate the conversion log.

1. Navigate to this folder location.

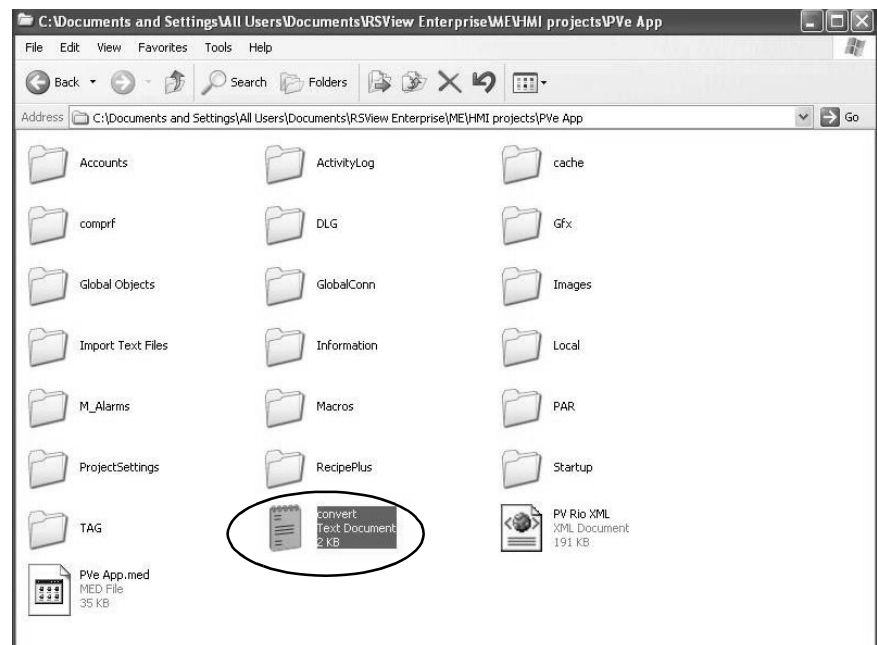
C:\Documents and Settings\All Users\Documents\RSView Enterprise\ME\HMI projects\

TIP

All of your FactoryTalk View ME applications will be located in this folder. This includes new or imported applications.

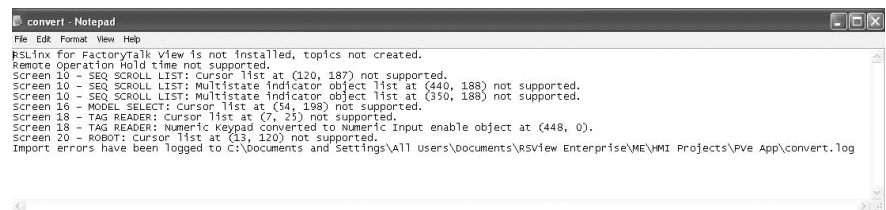
2. Double-click the HMI project folder that contains the new application name you created.

You entered this name in the import wizard when importing your PanelBuilder 1400e application into FactoryTalk View ME software.



3. Double-click the convert.log file generated by the import wizard when you imported your application.

Your convert.log file will vary from the example shown.



Review the Conversion Log

The conversion log contains a list of messages from warnings, errors, and unsupported features or objects in the converted application. You can compare these messages to those in the table below for information on why the message was logged.

Most conversion log messages identify these attributes for a FactoryTalk View ME object:

- Display name
- Position (x,y) of the object
- New graphic object name

You can use this information to locate the object and make required modifications. The description for a message may reference a workaround in this document.

IMPORTANT

Some features or objects are no longer supported in FactoryTalk View ME software. However, new features or objects are available providing the same or enhanced functionality.

Match the messages in the conversion log with the messages in the table. The Display Name, Object Name, and Position Text references in the messages are unique for each application.

Conversion Log Messages

Message	Applies to this PanelBuilder 1400e object	Description
Blinking wallpaper objects not supported. <Object Name> at <Position> on <Display Name>.	<ul style="list-style-type: none"> • Image • Text • Drawing 	<p>A PanelBuilder 1400e object with blink set to true was converted to wallpaper.</p> <ul style="list-style-type: none"> • At runtime, the PanelView 'e' object would blink. • In FactoryTalk View ME software, the object will not blink at runtime because wallpaper objects are disabled.
Screen Select Keypad converted to a default Display List Selector. <Object Name> at <Position> on <Display Name>.	Screen Select Keypad	<p>A PanelBuilder 1400e display contained a Screen Select Keypad object.</p> <p>FactoryTalk View ME software does not support a Screen Select Keypad object so converts it to a default Display List Selector, which needs to be configured.</p>
Screen Keypad Enable converted to a default Display List Selector. <Object Name> at <Position> on <Display Name>.	Screen Select Keypad	<p>A PanelBuilder 1400e display contained a Screen Keypad Enable object.</p> <p>FactoryTalk View ME software does not support a Screen Keypad Enable object so converts it to a default Display List Selector, which needs to be configured.</p>

Conversion Log Messages

Message	Applies to this PanelBuilder 1400e object	Description
"Fixed Position" decimal point display option not supported. <Object Name> at <Position> on <Display Name>.	<ul style="list-style-type: none"> Numeric Input Cursor Point Numeric Data Display 	<p>The object has its Decimal Point Display option set to Fixed Position.</p> <p>FactoryTalk View ME software does not support an option to display a decimal point in a numeric value. You can achieve the same result using an expression.</p> <p>For information on a workaround, refer to page 82.</p>
"PLC Controlled" decimal point display option not supported. <Object Name> at <Position> on <Display Name>.	<ul style="list-style-type: none"> Numeric Input Cursor Point Numeric Data Display 	<p>The object has its Decimal Point Display option set to PLC Controlled.</p> <p>FactoryTalk View ME software does not support an option to display a decimal point in a numeric value. You can achieve the same result using an expression.</p> <p>For information on a workaround, refer to page 81.</p>
"Fixed Position" decimal point input option not supported. <Object Name> at <Position> on <Display Name>.	<ul style="list-style-type: none"> Numeric Input Cursor Point Numeric Keypad Enable Numeric Keypad object 	<p>The object has its Decimal Point Input option set to Fixed Position.</p> <p>FactoryTalk View ME software does not support an option to input a decimal point in a numeric value. You can achieve the same result using an expression.</p> <p>For information on a workaround, refer to page 82.</p>
"PLC Controlled" decimal point input option not supported. <Object Name> at <Position> on <Display Name>.	<ul style="list-style-type: none"> Numeric Input Cursor Point Numeric Keypad Enable Numeric Keypad 	<p>The object has its Decimal Point Input option set to PLC Controlled.</p> <p>FactoryTalk View ME software does not support an option to input a decimal point in a numeric value. You can achieve the same result using an expression.</p> <p>For information on a workaround, refer to page 81.</p>
"Decimal Key Controlled" decimal point input option not supported. <Object Name> at <Position> on <Display Name>.	<ul style="list-style-type: none"> Numeric Input Cursor Point Numeric Keypad Enable Numeric Keypad 	<p>The object has its Decimal Point Input option set to Decimal Key Controlled.</p> <p>FactoryTalk View ME software does not support an option to input a decimal point in a numeric value. You can achieve the same result using an expression.</p> <p>For information on a workaround, refer to page 81.</p>
Numeric Keypad converted to a Numeric Input Enable. <Object Name> at <Position> on <Display Name>.	Numeric Keypad	<p>The display contains a Numeric Keypad object.</p> <p>FactoryTalk View ME software does not support a Numeric Keypad object so converts it to a Numeric Input Enable, which needs to be configured.</p>

Conversion Log Messages

Message	Applies to this PanelBuilder 1400e object	Description
Date labels not supported on Trend's X-Axis. <Object Name> at <Position> on <Display Name>.	Trend	A trend has one or more of its minimum, median or maximum date labels enabled. The FactoryTalk View ME trend displays the current date in its title. It does not display the minimum, median or maximum date as part of its X-axis.
Blinking pens not supported by Trend. <Object Name> at <Position> on <Display Name>.	Trend	A trend had one or more of its pens configured to blink. The FactoryTalk View ME trend does not allow any of its pens to blink.
Background screen plotting of pens using expressions not supported by Trend. <Object Name> at <Position> on <Display Name>.	Trend	A trend has one of its pens configured to use background screen plotting and has an expression assigned to the Pen Value control. The FactoryTalk View ME trend supports background screen plotting by adding the tags assigned to the Pen1 to Pen8 controls to a Data Log Model. You cannot add expressions to a Data Log Model.
Cursor List object at <PV 'e' Position> on <Display Name> not supported.	Cursor List	A display contains a Cursor List object. FactoryTalk View ME software does not support a Cursor List object so does not convert it. See page 68 for a workaround.
Multistate Indicator Object List at <PV 'e' Position> on <Display Name> not supported.	Multistate Indicator Object List	A display contains a Multistate Indicator Object List. FactoryTalk View ME software does not support a Multistate Indicator Object List so does not convert it. See page 56 for a workaround.
Local Message Object List at <PV 'e' Position> on <Display Name> not supported.	Local Message Object List.	A display contained a Local Message Object List. FactoryTalk View ME software does not support a Local Message Object List so does not convert it. See page 60 for a workaround.
Numeric Data Display Object List at <PV 'e' Position> on <Display Name> not supported.	Numeric Data Display Object List	A display contains a Numeric Data Display Object List. FactoryTalk View ME software does not support a Numeric Data Display Object List so does not convert it. See page 64 for a workaround.
Multi-Line Alarm Window blinking not supported by [ALARM] display.	Alarm Configuration	The Alarm Message Window is enabled with: <ul style="list-style-type: none"> Multi-line set. Blink enabled. The multiline Alarm Window is converted to a FactoryTalk View ME software [ALARM] display containing an Alarm List object.

Conversion Log Messages

Message	Applies to this PanelBuilder 1400e object	Description
"PLC Controlled Audio" alarm control not supported.	Alarm Configuration	The PLC Controlled Audio control has a tag assigned. FactoryTalk View ME software does not support a PLC Controlled Audio alarm control so does not convert it.
"PLC Controlled Relay" alarm control not supported.	Alarm Configuration	The PLC Controlled Relay control has a tag assigned. FactoryTalk View ME software does not support a PLC Controlled Relay alarm control so does not convert it.
Alarm message "Relay" option not supported.	Alarm Message Configuration	One or more relay flags has been enabled for alarm messages. FactoryTalk View ME software does not support the triggering of a relay when an alarm is triggered so will not convert this feature.
Only one hold time is used for alarming. "Remote Alarm Operation Hold Time" not supported.	Alarm Configuration	One or more of these controls has a tag assigned: <ul style="list-style-type: none"> • Silence Alarms to PLC • Clear Window to PLC • QTY/TIME Reset to PLC • Message to PLC FactoryTalk View ME software supports only one hold time for alarming and this will be set to the value of the PanelView 'e' Remote Alarm Ack Control Hold Time. The value of the PanelView 'e' Remote Alarm Operation Hold Time does not convert.
"Remote Alarm Control Delay Time" not supported.	Alarm Configuration	These controls have a tag assigned: <ul style="list-style-type: none"> • Acknowledge to PLC • Acknowledge Control • Message to PLC In FactoryTalk View ME software, if the Ack control is assigned to an alarm trigger, the terminal will immediately set the Ack control without waiting for a delay time when the alarm is acknowledged. The Remote Alarm Control Delay Time does not convert.
Bit Acknowledging of alarms not supported.	Alarm Configuration	The Alarm Acknowledge to PLC option is set to Bit and the Acknowledge to PLC control has one or more tags assigned. FactoryTalk View ME software does not support bit acknowledging of alarms so does not convert the Acknowledge to PLC tags.
Screen security settings not converted for <Display Name>.	Secure Screen Configuration	A screen has one or more Authorize Operator settings enabled. Screen security is not converted. FactoryTalk View ME software does support display security. Security is configured differently.
RSLink for FactoryTalk View is not installed, topics not created.	Communication	You need to recreate the shortcut name to the PLC in RSLink Enterprise software under Communication Setup.
<PanelView 'e' Tag Name> converted to memory tag, as its address is blank.		Any PanelView 'e' Remote I/O tag with a blank address is converted to an HMI memory tag.

Conversion Log Messages

Message	Applies to this PanelBuilder 1400e object	Description
<PanelView 'e' Tag Name> converted to memory tag, as its data type is not supported.		Any PanelView 'e' Remote I/O tags with these data types are converted to HMI memory tags. <ul style="list-style-type: none"> • 1 Digit BCD • 2 Digit BCD • 3 Digit BCD • 5 Digit BCD • 6 Digit BCD • 7 Digit BCD
<PanelView 'e' Tag Name> converted to memory tag, as the "Bit Position" data type is not supported.		If the data type of a PanelView 'e' Remote I/O tag is bit position but the address does not reference a single bit, the tag is converted to an HMI memory tag.
<PanelView 'e' Tag Name> converted to memory tag, as its addresses references an undefined rack.		If a PanelView 'e' Remote I/O tag has an address with an undefined rack, the tag is converted to an HMI memory tag.
<PanelView 'e' Tag Name> converted to memory tag, as its addresses is invalid.		If a PanelView 'e' Remote I/O tag does not have a valid I/O address or block transfer address, the tag is converted to an HMI memory tag.

Review Object Mapping

Introduction

In this chapter, you will review how objects and expressions from PanelBuilder 1400 software map to FactoryTalk View Machine Edition (ME) software.

Before You Begin

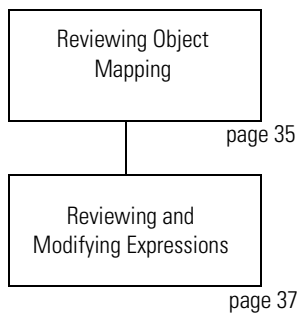
- Review migration considerations (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Optionally install the PanelView Plus terminal in the existing PanelView 1000e or 1400e panel cutout (Chapter 2).
- Import your PanelBuilder 1400e .pvc application into FactoryTalk View ME software (Chapter 3).
- Review the conversion log for your migrated application (Chapter 4).

What You Need

- A PanelBuilder 1400e application migrated into FactoryTalk ME software.
- Conversion log generated by the FactoryTalk View ME Import Wizard.

Follow These Steps

Follow these steps to review how PanelBuilder 1400e objects and expressions map to FactoryTalk View ME software. This information will help you correct application errors listed in the conversion log.



Reviewing Object Mapping

This table identifies PanelBuilder 1400e graphic objects that migrate into a FactoryTalk View ME application.

IMPORTANT

It is important that you verify the function of all objects after importing your application to FactoryTalk View ME software. New objects may not function as expected.

Mapping Objects Between PanelBuilder 1400e and FactoryTalk View ME Software

This PanelBuilder 1400e object	Maps to this FactoryTalk View ME object	Explanation
Increment Value Button	Ramp Button	
Decrement Value Button	Ramp Button	
Increment Value Button with Display	Ramp Button and Numeric Display	
Decrement Value Button with Display	Ramp Button and Numeric Display	
Small and Large ASCII Input	String Input Enable	
Arc with Fill Style set to Solid	ME Arc and ME Line	The PanelBuilder 1400e object is a closed shape; the View ME object is not closed between the arc of two points.
Screen List Selector	Screen List Selector	
Screen List Selector Enter Button	Enter List Key	
Screen List Selector Down Cursor Button	Move Down List Key	
Screen List Selector Up Cursor Button	Move Up List Key	
Control List Selector	Control List Selector	
Control List Selector Enter Button	Enter List Key	
Control List Selector Down Cursor Button	Move Down List Key	
Control List Selector Up Cursor Button	Move Up List Key	
Small and Large Screen Select Keypad	Display List Selector	You will need to configure this object to change to the appropriate displays.
Screen Keypad Enable	Display List Selector	You will need to configure this object to change to the appropriate displays.
Goto Screen Button	Goto Display Button	
Return to Previous Screen Button	Return to Display Button	
ASCII Display	String Display	
Numeric Keypad Enable Button	Numeric Input Enable Button	
Normally Open Momentary Push Button	Momentary Push Button	
Normally Closed Momentary Push Button	Momentary Push Button	

Mapping Objects Between PanelBuilder 1400e and FactoryTalk View ME Software

This PanelBuilder 1400e object	Maps to this FactoryTalk View ME object	Explanation
Multistate Indicators	Multistate Indicators	
Numeric Display	Numeric Display	
Screen Print Button	Screen Print Button	
Time Display	Time and Date Display	Set to show time only.
Date Display	Time and Date Display	Set to show date only.
Alarm History Sort By Time/Sort By Value	Sort Alarms Button	
Alarm Status Reset Qty/Time Button	Reset Alarm Status Button	
Alarm Panel	Alarm Banner	
Single Line Alarm Window	Alarm Banner	
Alarm Status Screen	Alarm Status List	
Local Messages	Local Messages	
Information Messages	Information Messages	
Bar Graphs	Bar Graphs	
Trend	Trend	
Text	Text	
Drawing Objects	Drawing Objects	
ISA Symbols	ISA Symbols	
Bitmaps, DXF Images	Bitmaps, DXF Images	
Digital and String Tag Types	Bit and String Tag Types	
Supported Analog Tag Types: <ul style="list-style-type: none"> • Unsigned Integer • Integer • Long Integer • Floating Point • Byte • 3-BCD, 4-BCD, 8-BCD 	Supported Analog Tag Types: <ul style="list-style-type: none"> • Unsigned Integer • Integer • Long Integer • Floating Point • Byte • 3-BCD, 4-BCD 	
Supported communication: <ul style="list-style-type: none"> • DH Plus • Remote I/O multitrack • ControlNet 	Supported communications: <ul style="list-style-type: none"> • DH Plus • Remote I/O multitrack • ControlNet 	
File transfers occur over DH+ or ControlNet networks.	File transfers occur over DH+ or ControlNet networks. No bridging network protocols.	
File transfers use a memory card.	File transfers use a CompactFlash card.	

Reviewing and Modifying Expressions

If any objects in your PanelView 1000e or 1400e application contain expressions, you need to review the order of precedence in each expression. The order of precedence may be different between PanelBuilder 1400e software and FactoryTalk View ME software.

The table compares the order of precedence in expressions between PanelBuilder 1400e and FactoryTalk View ME software.

IMPORTANT

The text "--check and reuse as needed--" precedes all migrated expressions. Remove this text from each expression and verify the order of precedence.

The conversion log does not indicate which objects contained expressions with the "--check and reuse as needed--" text. Refer to Appendix A. Tag substitution provides a method of identifying if a display contains expressions that require updates. The object explorer section also describes how to highlight objects with expressions on the display.

Expressions: Order of Precedence	
PanelBuilder 1400e Software	FactoryTalk View ME Software
()	()
- (negation)	NOT, ~ (tilde)
*, / (floating point division)	*, /, MOD, %, **, AND, &&, &, >>, <<
\ (integer point division)	+, -, OR, , ^
MOD	EQ, =, NE, <>, LT, <, GT, >, LE, <=, GE, =>
+, - (subtraction)	Unchanged
+, <>, < >, <=, >=	Unchanged
NOT	Unchanged
And	Unchanged
Or	Unchanged
Xor	Unchanged

Review Unsupported Features and Implement Workarounds for Migration Issues

Introduction

In this chapter, you will review unsupported features in FactoryTalk View Machine Edition (ME) software and workarounds for common migration issues. This will help you to resolve errors in the migrated application.

Before You Begin

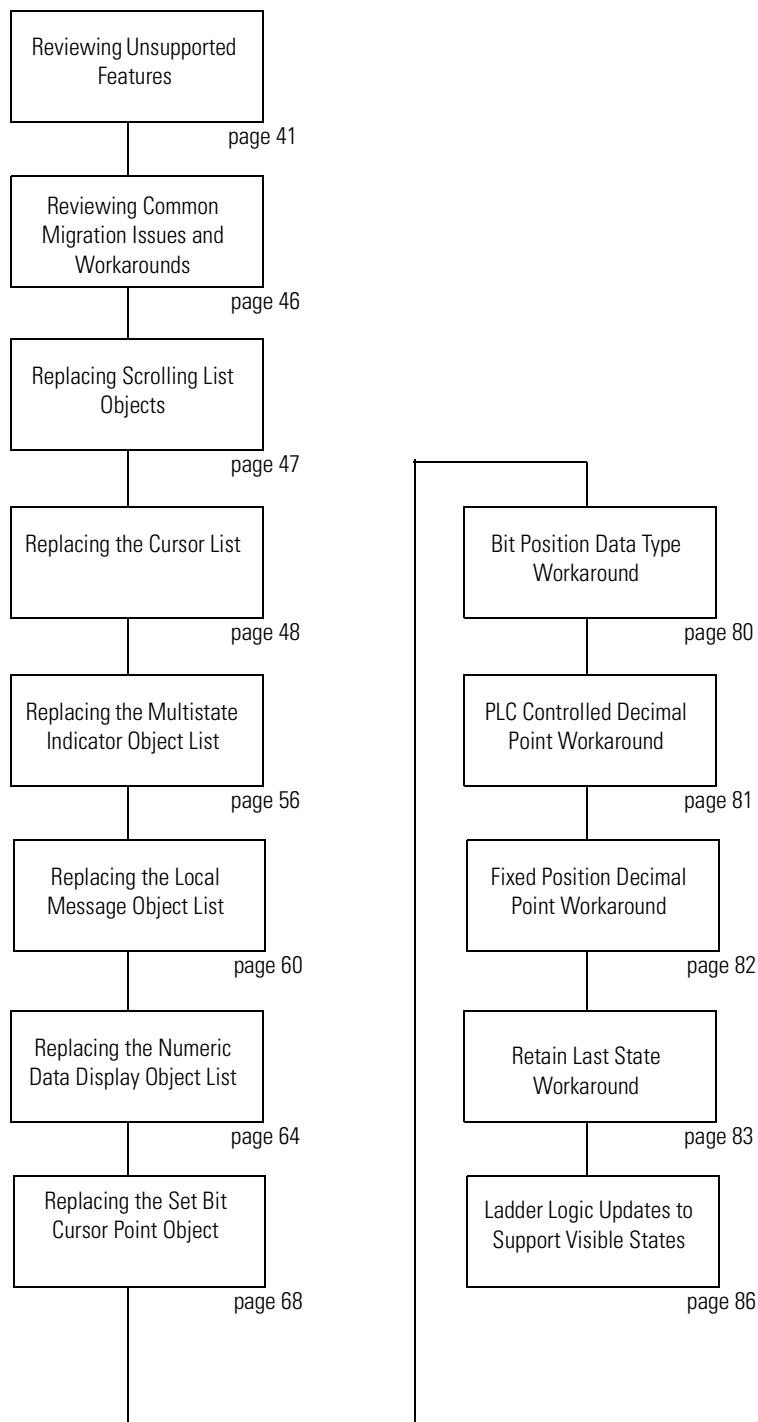
- Review migration considerations (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Optionally install the PanelView Plus terminal in the existing PanelView 1000e or 1400e panel cutout (Chapter 2).
- Import your PanelBuilder 1400e .pvc application into FactoryTalk View ME software (Chapter 3).
- Review the conversion log for your migrated application (Chapter 4).
- Review object and expression mapping (Chapter 5).

What You Need

- A migrated PanelBuilder 1400 application into FactoryTalk ME software.
- Conversion log generated by the FactoryTalk View ME Import Wizard.

Follow These Steps

Follow this path to review unsupported features in FactoryTalk View ME software and workarounds for common migration issues.



Reviewing Unsupported Features

Some PanelBuilder 1400e objects or features are not supported in FactoryTalk View Machine Edition software. Compare the conversion log with the information on unsupported features to assist with updates to your migrated application. Additional information is provided where it is possible to achieve the same result using another option or work around in your migrated application.

Unsupported Objects or Features in FactoryTalk View Machine Edition

For this PanelBuilder 1400e object	These features are unsupported in FactoryTalk View ME software	Additional Information
Trend	Blinking Pens	
	Date Labels on X-Axis	Date is displayed in the trend title.
	Background Screen Plotting	You can plot tag values in the background by assigning the tags to a data log model. Tags configured for background screen plotting are automatically assigned to a data log model on conversion. However, data log models do not plot expression values. Expressions configured for background screen plotting are not converted.
Scrolling List Objects <ul style="list-style-type: none"> Cursor List Multistate Indicator Object List Local Message Object List Numeric Data Display Object List 	Blank States	For information on replacement objects in FactoryTalk View ME software, refer to page 47.
Set Bit Cursor Point	Object Not Supported	For information on replacement objects , refer to ID: 44265 in the Knowledgebase and also to page 68.
Numeric Display	Polarity	If a PanelBuilder 1400e application was configured with the polarity control requiring a negative number to display the minus sign, the numeric display will not work properly after the application is converted.
	Implicit	The implicit option in a PanelBuilder 1400e application is converted to a fixed position in the new object. Review these objects to verify that the number of digits and decimal places are adequate for displaying the correct value.
Numeric Input Cursor Point	Fixed Position Decimal	Fixed Position Decimal will convert correctly. You need to remove the comments from the expressions.
	PLC Controlled Decimal Display	PLC Controlled Decimal Display may or may not convert correctly. For information on a workaround in FactoryTalk View ME software, refer to page 81.
	Retain Cursor on Cancel	
Goto Configure Mode Button	Object not converted	

Unsupported Objects or Features in FactoryTalk View Machine Edition

For this PanelBuilder 1400e object	These features are unsupported in FactoryTalk View ME software	Additional Information
Wallpaper, Image, Text, Arc, Ellipse, Line, Panel, Rectangle, Wedge	Blink Property	<p>If you want an object to blink at runtime, unlock the wallpaper. In FactoryTalk View ME software, all of the list objects except images and panels use color animation to blink.</p> <ul style="list-style-type: none"> • Panels use the blink property to blink. • Color images do not blink. • Monochrome images use the blink property to blink.
All Objects	Object Names	Object names are replaced with default object names in FactoryTalk View ME software. The PanelBuilder 1400e object name is used for the object's description. You can view and edit the name and description in the property panel.
	Caption and Image Placement	<p>FactoryTalk View ME software supports one, three, or nine positions for captions and images, depending on the type of object. On conversion, captions and images are positioned using the closest match. Some captions might:</p> <ul style="list-style-type: none"> • overlap images. • be truncated. • be clipped to fit the object. <p>Realign or resize objects for best fit.</p>
	Multiple Image Labels	FactoryTalk View ME software supports one image label per object or state. If a PanelBuilder 1400e object is configured to use multiple image labels, only the top left image is converted. Create a single image from multiple ones.
	Text Overlap	Change the border width or resize objects.
	Expressions	<p>Expressions are converted without modification and then commented.</p> <ul style="list-style-type: none"> • Warning text is placed at the beginning of the first line of the expression. • Exclamation marks (!) are placed at the beginning of each subsequent line of the expression. <p>To enable the expression, you must remove the warning text and exclamation marks, and revise the syntax if necessary.</p>
	Expression Length	The maximum length of expressions in FactoryTalk View ME software is 1024 characters. If a PanelBuilder 1400e expression contains more than 1024 characters, the excess characters are not converted. Modify the expressions as needed.

Unsupported Objects or Features in FactoryTalk View Machine Edition

For this PanelBuilder 1400e object	These features are unsupported in FactoryTalk View ME software	Additional Information
All Displays	Display Names	In FactoryTalk View ME software, unsupported characters in display names are replaced with the underscore character.
	Graphic Alignment	The graphics may not line up and appear properly. Resize graphics as needed.
Remote Alarm Ack	Bit Array Data Types	Workaround with ladder logic change by using the ack value to indirectly change a tag in an array.
Alarming Controls	Acknowledge To PLC Control	
	Remote Alarm Control Delay Time	When an alarm is acknowledged in the FactoryTalk View ME application, the Ack control, if assigned, is set immediately, without waiting for a delay time. Update the ladder logic to implement a delay timer in PLC.
	PLC Controlled Relay Control	The terminal does not have a relay. Use the PLC controller to turn on device.
	PLC Controlled Audio Control	The terminal does not have audio. Use the PLC controller to turn on a horn.
	Blinking Alarm Messages	
	Alarm Relays	The terminal does not have a relay. Use the PLC controller to turn on device.
	Remote Alarm Operation Hold Time	The PanelBuilder 1400e Remote Alarm Ack Control Hold Time will be used for all alarm hold times. You can change the hold time in the Advanced tab of the Alarm Setup editor in FactoryTalk View ME software.
	Alarm Handshaking	
	Message Handshake Control	
Security	Runtime Password Changes	In the PanelBuilder 1400e software, user passwords are set up in the configuration mode screens. FactoryTalk View ME software requires the Change Password button on a display.
	Display Security Settings	FactoryTalk View ME software uses a different method to assign security to graphic displays. You must reapply security. The software uses a logon system of security similar to RSVIEW32 software. Once logged on, the operator does not need to re-enter the password until manually logged off, or optionally after an idle time.

Unsupported Objects or Features in FactoryTalk View Machine Edition

For this PanelBuilder 1400e object	These features are unsupported in FactoryTalk View ME software	Additional Information
Communications (RIO)	Passthrough Downloads	Use an Ethernet connection or a CompactFlash card to transfer files.
	Remote I/O Connector Wiring	The Remote I/O connector wiring for the PanelView Plus terminal is reversed from the PanelView 1000e and 1400e terminals.
	Remote I/O Tag with Blank Address	Remote I/O tags with blank addresses are converted to HMI memory tags. An error is recorded in the conversion log.
Data Types	Bit Position	<p>If a bit position data type does not reference a single bit, it is converted to an HMI memory tag. An error is recorded in the conversion log.</p> <ul style="list-style-type: none"> • Create an expression to isolate the bits used to drive the state of the display object, such as a multistate indicator. For information on how to implement this workaround, refer to page 80. • For write objects, such as push buttons, there is no workaround except to change the ladder logic. • For Remote I/O, you may need to change the Rack/Block Transfer configuration. • For DH+ and ControlNet, unscheduled tags with the bit position data type are converted to HMI analog tags with a data type of default.
	Binary	<p>A binary tag is converted to an HMI memory tag if it does not reference:</p> <ul style="list-style-type: none"> • a single bit. • a single word. • a length or range of 8 or 16 bits and does not start at an offset of 0 or 8 (SLC controller) or 10 (PLC-5 controller). <p>An error is recorded in the conversion log.</p> <ul style="list-style-type: none"> • Create an expression to isolate the bits used to drive the state of display object, such as a multistate indicator. • For write objects such as push buttons, there is no workaround.
	BCD	<p>BCD data types are not supported: 1-BCD, 2-BCD, 5-BCD, 6-BCD, 7-BCD, 8-BCD.</p> <p>Tags that use this data type are converted to analog tags with the default data type. The default data type uses floating point values.</p>
	Byte	If the byte address does not have a bit offset of 0 or 8, it is converted to an HMI memory tag. The error is recorded in the conversion log

Unsupported Objects or Features in FactoryTalk View Machine Edition

For this PanelBuilder 1400e object	These features are unsupported in FactoryTalk View ME software	Additional Information
Data Types	Block Tags	Block tags monitor alarms in PanelBuilder 1400e applications and are converted to bit arrays. An error is recorded in the conversion log.
	Analog Tags with One Bit Length	PanelBuilder 1400e analog tags that are one bit in length (0 is min, 1 is max) convert to analog tags in FactoryTalk View ME software, but the value is 0 and -1 (all bits off, all bits on). This feature is typically used for indicator objects with two states. In a FactoryTalk View application, this results in an incorrect state. Change analog tags to bit data types. Important: No message appears in the conversion log. Modify any analog tags that are one bit in length.
File Transfers	Transfer Inhibit	These three controls are not necessary in FactoryTalk View ME software because the transfer utility lets you transfer the runtime project file while running a project on the runtime terminal.
	Transfer Request	
	Transfer Status	
Design Time Features	Tag Cross-Reference	
	Screen Captures	
	Application Validation	
	Application memory usage calculation	
	Saving applications to a user specified location	
	Tag Search and Replace	Use tag substitution on each page or see Knowledgebase ID: 29942. RSVIEW Graphic Tags Search and Replace using Graphics XML Exported Files
	Default Object/Graphic Display Settings	
Power Up Options	Write Last Terminal State to Controller	

Reviewing Common Migration Issues and Workarounds

Some graphic objects, data types, and other features do not migrate directly into FactoryTalk View ME software. The most common migration issues relate to these objects or features:

- Scrolling list objects
- Cursor list objects
- Set bit cursor point objects
- Bit position data type
- PLC controlled or fixed position decimal
- Retain last state
- Ladder logic updates to support visible states

FactoryTalkView ME software provides replacement objects and workarounds that provide the same if not similar functionality.

Required Files and Utilities

The Rockwell Automation Knowledgebase document contains files and utilities to simplify the migration process.

Document ID: 44265

Document Title: Migrating PanelView Enhanced Terminal Applications

Download the Migration Solutions.zip attachment containing the required files and utilities. This file contains a Migration Solutions.apa demo project, the tag converter wizard utility, and a set bit cursor point ActiveX Control.

- **Migration solutions demo project** contains replacement objects for the cursor list, local message list, multisate indicator object list, numeric data display object list and the set bit cursor point. You can import these displays into your converted application, copy the objects, and then configure them.

To see how the set bit cursor point works, click the Display Test Run button on the set bit cursor point display.

- **Tag converter wizard utility** optimizes tags in the converted application. To improve performance, the utility converts HMI tags to alias or direct reference tags.
- **Set bit cursor point ActiveX control** replaces the set bit cursor point object in the converted application. To activate this control, it needs to be registered on our computer and the PanelView Plus CE terminal

Replacing Scrolling List Objects

Scrolling list objects in PanelBuilder 1400e software consists of a cursor list and one or more object lists. The operator can move through a maximum of 999 items within these object lists.

Scrolling lists can multiplex PLC output data to the PanelView 'e' terminal, minimizing the ladder logic required to display and edit large amounts of data.

FactoryTalk View ME software does not support scrolling list objects, but does provide replacement objects to perform the same operations.

Replacement Objects for Scrolling List Objects

Replace this PanelView 'e' object	With this FactoryTalk View ME object	See
Cursor List	<ul style="list-style-type: none">• Piloted Control List Selector• Key buttons• Terminal function keys	<ul style="list-style-type: none">• Page 48• Page 53• Page 55
Multistate Indicator Object List	Multistate Indicator	Page 56
Local Message Object List	Local Message	Page 60
Numeric Data Display Object List	Numeric Data Display	Page 64

Replacing the Cursor List

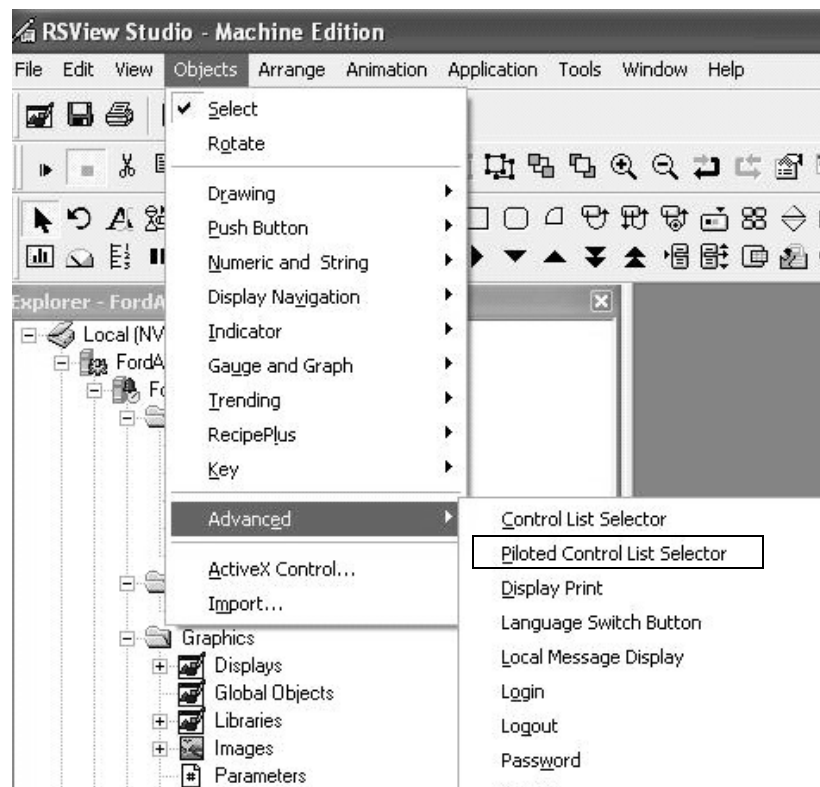
Replacement objects for the cursor list object in FactoryTalk View ME software are the piloted control list selector, key objects, and terminal function keys.

- The piloted control list selector replaces the cursor list.
- The key objects provide on-screen navigation for the list such as up cursor, down cursor, and the enter key.
- The terminal function keys are assigned to the key objects allowing the operator to navigate the list on keypad terminals.

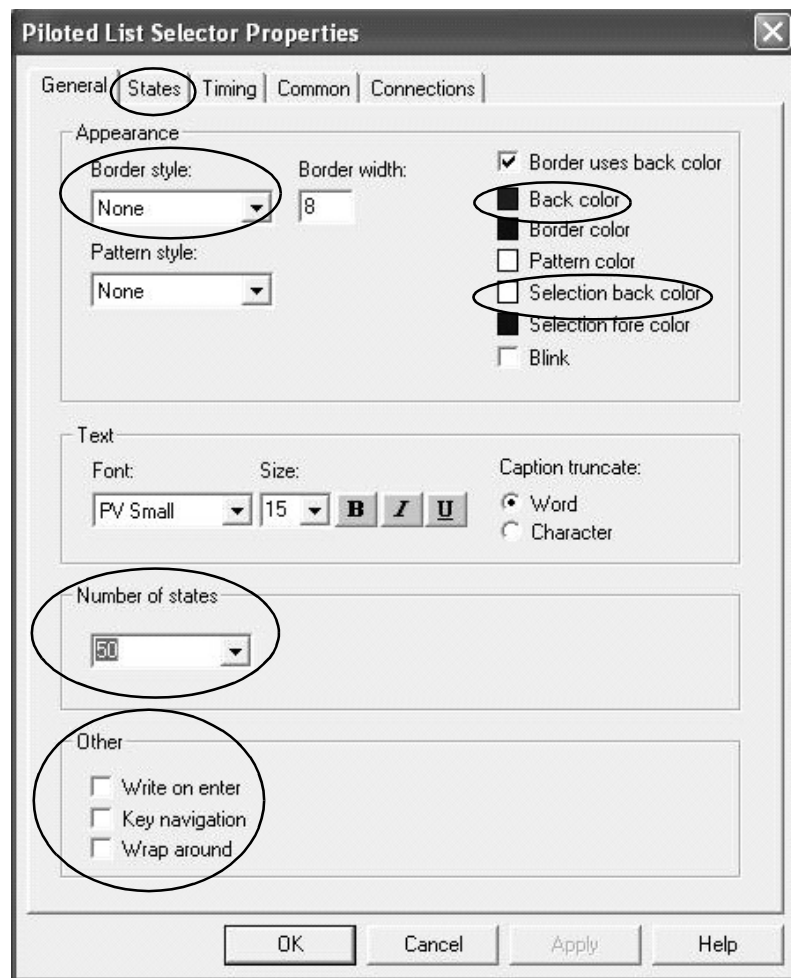
Create a Piloted Control List Selector

Follow these steps to replace the cursor list object with a piloted control list selector.

1. Select Objects>Advanced>Piloted Control List Selector.
2. Draw and size the object on your display.



3. Double-click the piloted control list selector object to open its properties.
4. In the Border style pull-down list, select None so when this object is grouped it appears as a single object.
5. In the Number of states pull-down list, select the number of states to match the original PanelBuilder 1400e cursor list object.
6. Set the Back color to match the background properties of the original cursor list object.
7. Set the Selection back color to match the foreground properties of the original cursor list object.
8. Under Other, verify that all boxes are unchecked.
9. Click the States tab.



10. Configure each state.

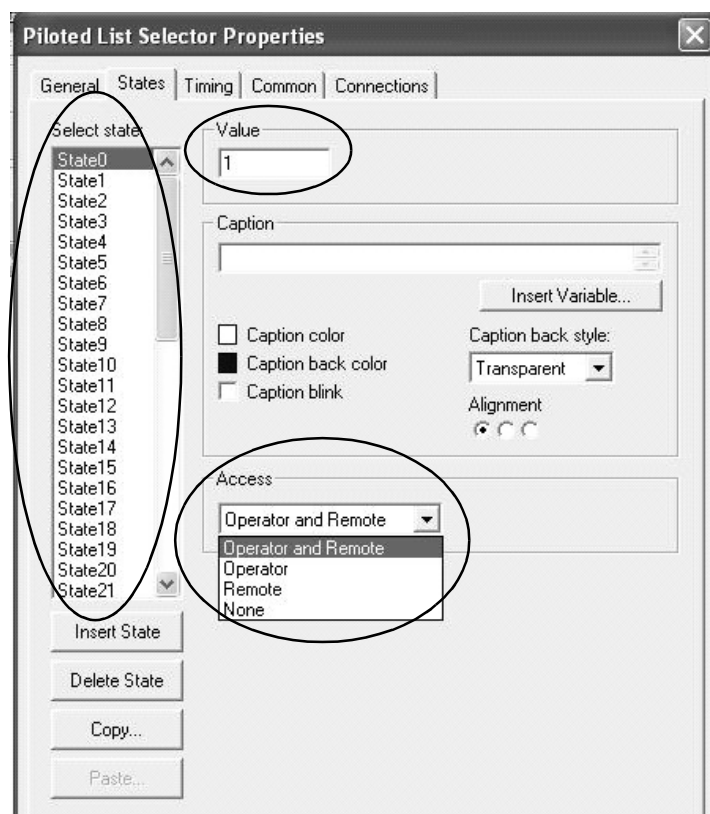
- a. Select a state.
- b. Enter a Value that matches the state value of the original cursor list.

- c. Select an Access option for the state.

The default access is Operator and Remote. This option provides the same functionality as the original cursor list.

Select None for any state that was a skipped state in the original cursor list.

- d. Repeat a to c for each state that was in the original cursor list object.



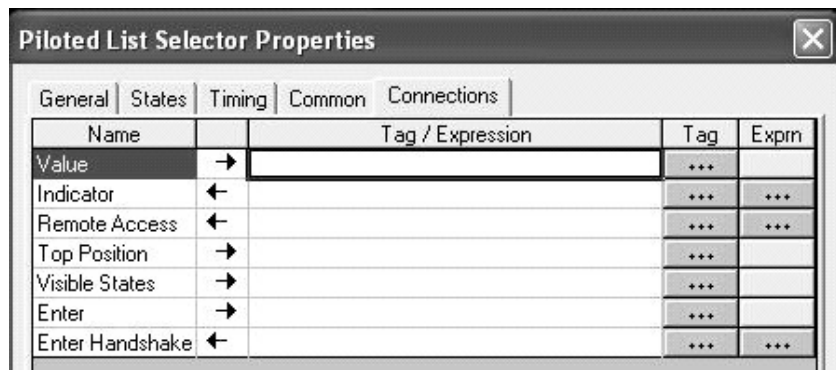
Access Options	Description
Operator and Remote	Both the operator and the controller can select the state. This is the default.
Operator	Only an operator can select the state.
Remote	The state can only be selected remotely.
None	<p>The state cannot be selected. This is equivalent to a skipped state in the original cursor list.</p> <p>When the operator scrolls to a skipped state in a PanelBuilder 1400e application, the list skips past the state. Because the operator cannot select the state, the state value is never written to the object's Cursor Indicator to PLC connection.</p> <p>When the operator scrolls to a None state in a FactoryTalk View ME application, the cursor becomes hollow to indicate that the state is invalid. Because the state cannot be selected, the state value is never written to the object's Value connection.</p>

11. Click the Connections tab.

12. Assign a tag or expression to each connection as needed.

The table below cross references each connection.

13. Click OK when done.



Mapping Piloted Control List Selector Connections

PanelBuilder 1400e tag connection maps To	This FactoryTalk View ME connection	Connection Type	Description
Cursor Indicator to PLC	Value	Read and Write	<p>When a display that includes a piloted control list selector is opened and the operator has control of the list, the application reads the Value connection to determine what state to select. When the operator selects a valid state, the state's value is written to the Value connection. The application does not read the Value connection at any other time.</p> <p>If the list is remotely controlled, you do not need to assign the Value connection. The remote controller uses the Indicator connection to select a state. If the Value connection is assigned, the value of the selected state is written to the Value connection.</p> <p>If the Write on enter checkbox is checked (on the General tab), the application does not write to the Value connection until the operator selects a state and presses Enter.</p> <p>If the Write on enter checkbox is not checked (on the General tab), the application writes to the Value connection as soon as a state is selected. The Enter and Enter Handshake controls are ignored.</p>
Cursor Control from PLC	Indicator	Read	When the list is remotely controlled, this connection is used to select a state in the list.
Enable PLC to Controlled List	Remote Access	Read	<p>This connection determines whether the operator or a remote controller selects states in the list. If you assign a tag or an expression to this connection, the object is remotely controlled. The object is remotely controlled if the tag or expression is assigned to a nonzero value.</p> <p>If you do not assign this connection or if the connection is assigned and set to a value of 0, the object is controlled by the operator.</p>
Top Position to PLC	Top Position	Write	When the list scrolls, the value of the top visible state in the list is written to the Top Position tag.

Mapping Piloted Control List Selector Connections

PanelBuilder 1400e tag connection maps To	This FactoryTalk View ME connection	Connection Type	Description
	Visible States	Write	<p>Assign an array tag to this connection. When the list scrolls, the values of the visible states are written to the array tag. The first visible state is written to the first element of the array tag, the second visible state is written to the second element of the array tag, and so on. The length of the array tag must be equal to the number of visible states in the object.</p> <p>The syntax of the array tag depends on the type of OPC data server the application is using. If you are using RSLinx Enterprise software, you must use this syntax.</p> <p>Syntax: [shortcut]tagname,Larraylength Example: [PLC5]N7:0,L5</p> <p>Do not leave a space between the tag address and the length.</p> <p>Correct: [PLC5]N7:0,L5 Incorrect: [PLC5]N7:0, L5</p> <p>In PanelBuilder 1400e software, an individual tag is assigned to each visible state. In FactoryTalk View ME software, you cannot assign an individual tag to each visible state. If an action is required when the operator selects a visible state, you must update the ladder logic. You must use a direct reference for this assignment. You cannot use an HMI tag.</p> <p>For details on how to implement the workaround for visible states, refer to Ladder Logic Changes on page 86.</p>
Enter Key Control ⁽¹⁾	Enter	Write	This connection accepts values of 0 or 1. The connection determines how long the Enter key press is registered. Use this connection for Enter key handshaking.
Enter Handshake ⁽¹⁾	Enter Handshake	Handshake	<p>This connection resets the Enter connection using the Handshake reset type property specified on the Timing tab. Use this connection for Enter key handshaking if you want the Enter connection to be reset when a value at the data source changes.</p> <p>If you assign an expression, the application calculates the value of the expression and resets the Enter connection when the expression value meets the conditions of the Handshake reset type option.</p>

⁽¹⁾ Available only when you enable the cursor list enter button.

Retain Last State

PanelBuilder 1400e software has a Retain the Last State feature for the cursor list object.

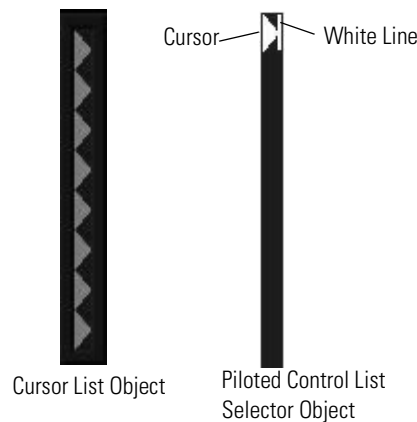
- When you return to a display with the cursor list object and this feature is enabled, the last selected state is retained and reselected.
- When you return to a display with the cursor list object and this feature is disabled, the selected state is determined by the value read at the Cursor Indicator to PLC connection.

The piloted control list selector in FactoryTalk View ME software does not have an equivalent feature to Retain the Last State. The object always reads the Value connection to determine what state to select. For information on a workaround for this functionality, refer to page 83.

Resize the Piloted Control List Selector

You need to resize the piloted control list selector to make it appear visually the same as the cursor list object.

Resize the object so that only the cursor is visible.



TIP

To hide the white line next to the cursor, place a line object over it, and assign a background color that matches the list. The covered line will not be visible to the operator. Group the objects so when the object is resized, the line remains hidden.

Assign Navigation Keys to Piloted Control List Selector

In PanelBuilder 1400e software, you use key objects and terminal function keys to navigate through the cursor list. FactoryTalk View ME software provides similar objects and keys to navigate through the piloted control list selector.

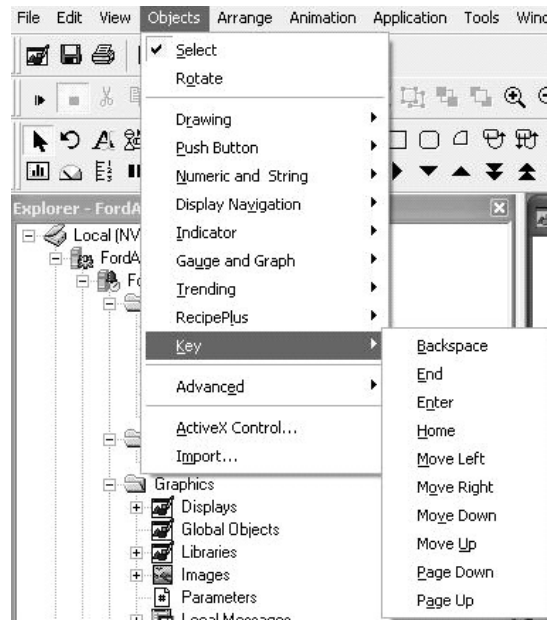
Mapping Key Objects

This key object in FactoryTalk View ME software	Replaces this cursor list button in PanelBuilder 1400e software
Move Up	Up Cursor
Move Down	Down Cursor
Page Up	Page Up
Page Down	Page Down
Home	Home
End	End
Enter	Enter

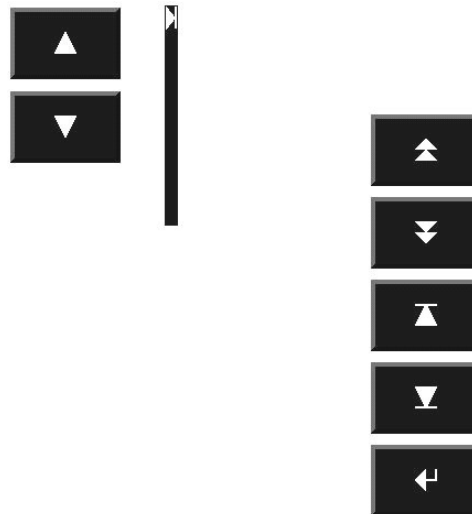
Follow these steps to create key objects for the piloted control list selector.

1. Open the display with piloted control list selector.
2. Select Objects>Key> and an option, then draw the object on the display.

You can use all of the objects on the key submenu to navigate a piloted control list selector, except for Backspace.



3. Repeat step 2 until the display contains all of the required navigation keys.
- This example shows all keys assigned to the piloted control list selector.



4. Link each key to the piloted control list selector.
 - a. Double-click each key.
 - b. Assign the Send press to Linked Object setting to the piloted control list selector.
 - c. Assign the Linked Object setting to the piloted control list selector.

TIP

You can replace the arrows and symbols in the keys with text.

- Double-click each key object to open its properties.
- On the Label tab, type the desired caption.
- Remove the image associated with the key from the Image field.

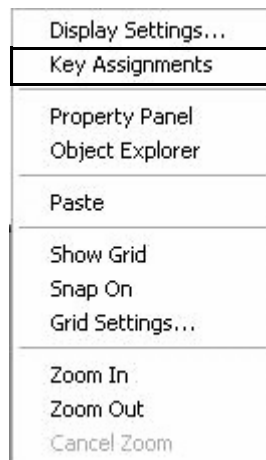
Assign Function Keys to a Piloted Control List Selector

The final procedure in configuring a piloted control list selector is to assign F or K key functions to the navigation buttons. This is required only for terminals with a keypad.

Follow these steps to assign F or K terminal function keys to the navigation keys on the display.

1. Right-click an empty area of the display and select Key Assignments from the shortcut menu.

The Key Assignment Properties dialog opens.



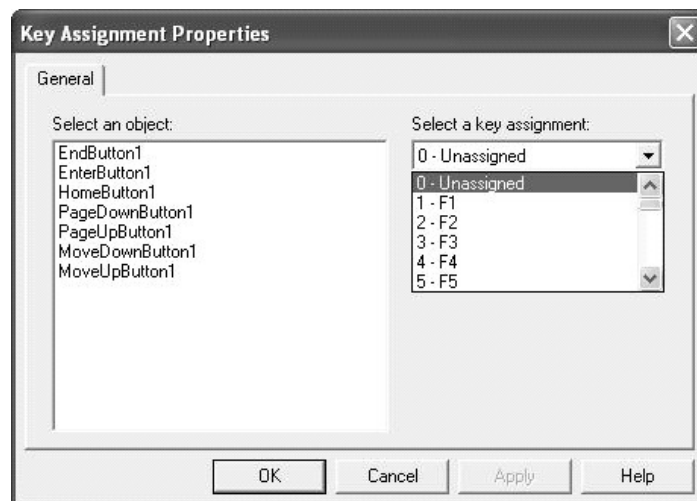
2. Select a key object on the left side of the dialog.

3. Select a key assignment to associate with the object.

Use the key assignments from the original cursor list object.

4. Repeat steps 2 and 3 for each key assignment.

5. Click OK when done.



You have successfully created the piloted control list selector to replace the original cursor list object. You now need to create the object lists that will be grouped with the piloted control list selector.

Replacing the Multistate Indicator Object List

In PanelBuilder 1400e software, the multistate indicator object list consists of up to 24 multistate indicator objects. Because these objects function as a list, they are configured as a group, not individually.

Each multistate indicator in the list allows the operator to view the state of a PLC operation on the screen. Each indicator supports from 2 to 255 states. For each state, you can define unique state values, labels, colors and attributes. The multistate indicators can have two different vertical heights: single or double height.

FactoryTalk View ME software provides the multistate indicator as a replacement for the multistate indicator object list. Because the multistate indicator only allows you to assign a single indicator tag to the object, you will need to create multiple objects and group them together. For example, if the original multistate indicator object list has four visible states, then you will need to create four multistate indicators and group them together to achieve the same look and feel.

Create Multistate Indicators

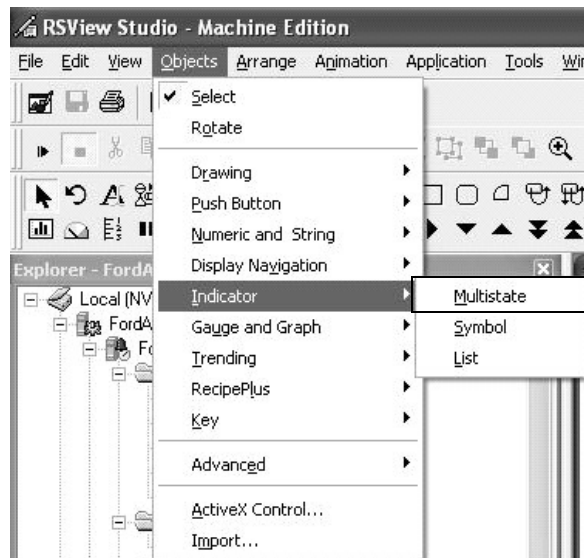
Follow these steps to create multistate indicators.

1. Open the display with the piloted control list selector.

2. Select Objects>Indicator>Multistate and draw the object.

The objects look similar but are different.

- The PanelBuilder 1400e multistate indicator object list let you assign a tag to each state you define.
- The FactoryTalk View ME multistate indicator lets you assign only a single indicator tag to the object. You will need to create as many multistate indicators as there are visible states in the original multistate indicator list object.



FactoryTalk View ME
Multistate Object



PanelBuilder 1400E
Multistate Indicator Object List

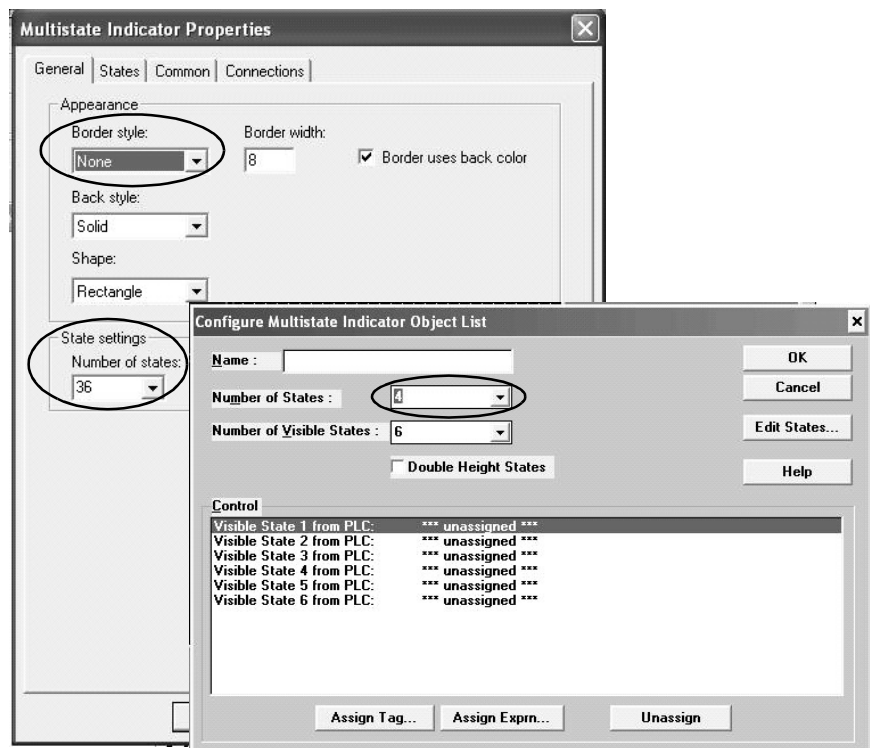
- Double-click the multistate object to view its properties.

- Set the Border style to None.

When you group the multistate indicators they will look as one object with a continuous border.

- Under State settings, select the number of states to match the original multistate indicator object list.

The dialog for the original multistate indicator object list is shown only for clarification.



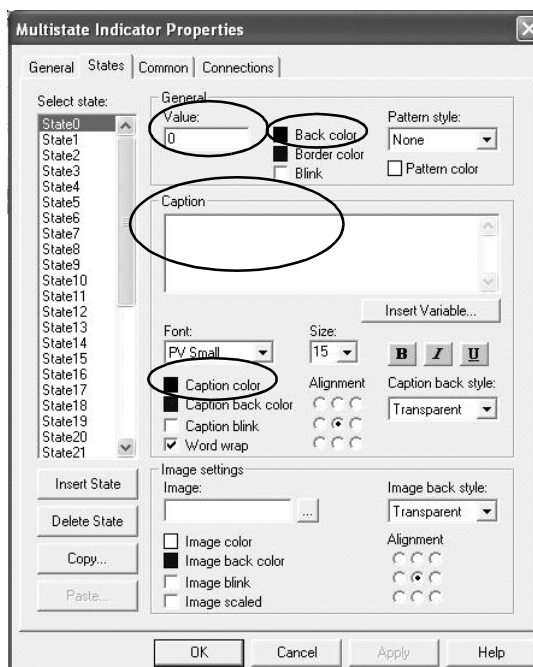
- Click the States tab.

- For each state, configure these properties to match the original multistate indicator object list.

- Value
- Caption
- Back Color

Apply the foreground color of the original multistate indicator object list to the Caption color for each state in the new multistate indicator.

Apply the original background color to the Back color of each state in the new object.



IMPORTANT

Use the same font for each state so that the caption aligns properly with the cursor of the piloted control list selector. Move the cursor up and down the piloted control list selector to verify that the cursor aligns with each multistate indicator. Adjust if necessary.

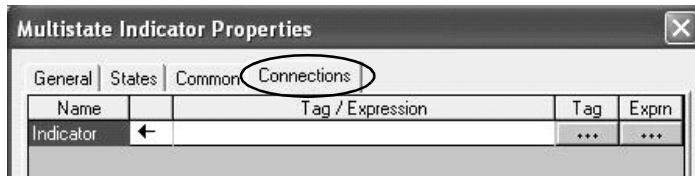
8. Click the Connections tab.

The PanelBuilder 1400e multistate indicator object list let you configure the number of visible states. For each visible state, you then defined an associated tag connection.

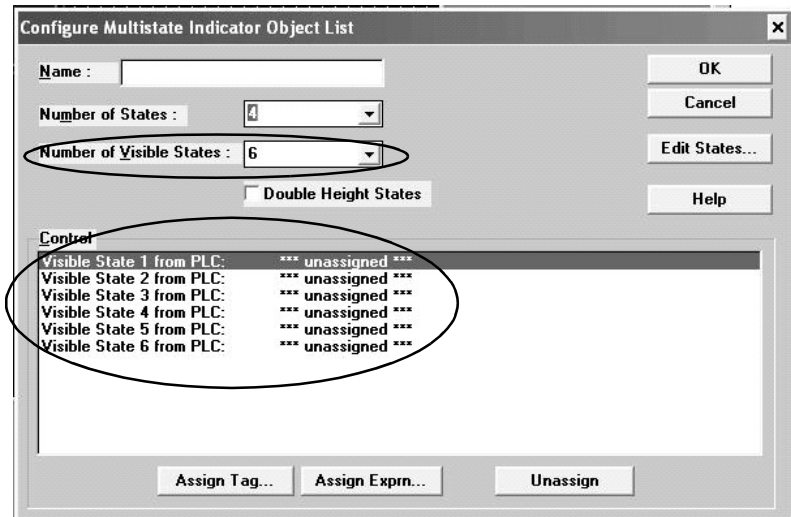
Because FactoryTalk View ME does not support this object, you must assign each of the 'Visible State x from PLC' connections to a single multistate indicator. Create as many multistate indicators as there are visible states.

9. Assign the 'Visible State 1 from PLC' associated tag to the Indicator connection.
10. Click OK to accept changes.
11. Select the multistate indicator object and press Ctrl+C to copy the object.
12. Press Ctrl+V to paste the copied object.
13. Repeat steps 11 and 12 until the number of multistate indicators on the display matches the number of visible states.
14. Double-click a copy of the multistate indicator object to open its properties.
15. Click the Connections tab.
16. Assign the 'Visible State 2 from PLC' associated tag to the indicator connection.
17. Repeat steps 14 to 16 until you have assigned the visible state tag to the Indicator connection of each multistate indicator.

FactoryTalk View ME Object

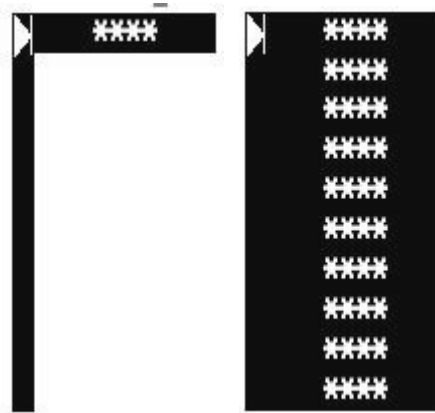


Original PanelBuilder 1400e Object

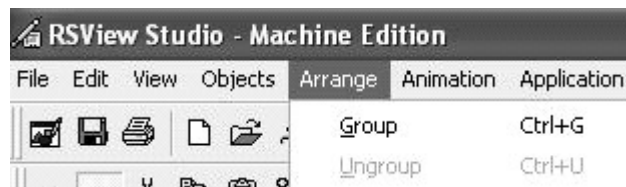
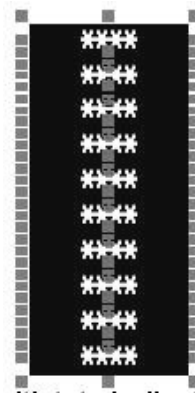


Resize and Align Multistate Indicators

1. Resize one of the multistate indicators so that it aligns with the cursor of the piloted control list selector.
2. Continue to resize and align all multistate indicators so they appear as a list.
3. Verify that cursor aligns with the next multistate indicator when scrolling to the next state in the piloted control list selector.
4. Select all multistate indicators by holding down the Ctrl key and clicking each object.
Do not include the piloted control list selector in the selection.
5. Select Arrange>Group to include selected multistate objects in one group.
When you resize the group, all individual objects are automatically resized.



The easiest way to resize the multistate indicators is to divide the height of the object by the number of visible states.



Replacing the Local Message Object List

In PanelBuilder 1400e software, the local message object list displays from 2...24 message strings. Because the local message object list function as a list, it is configured as a group, not individually.

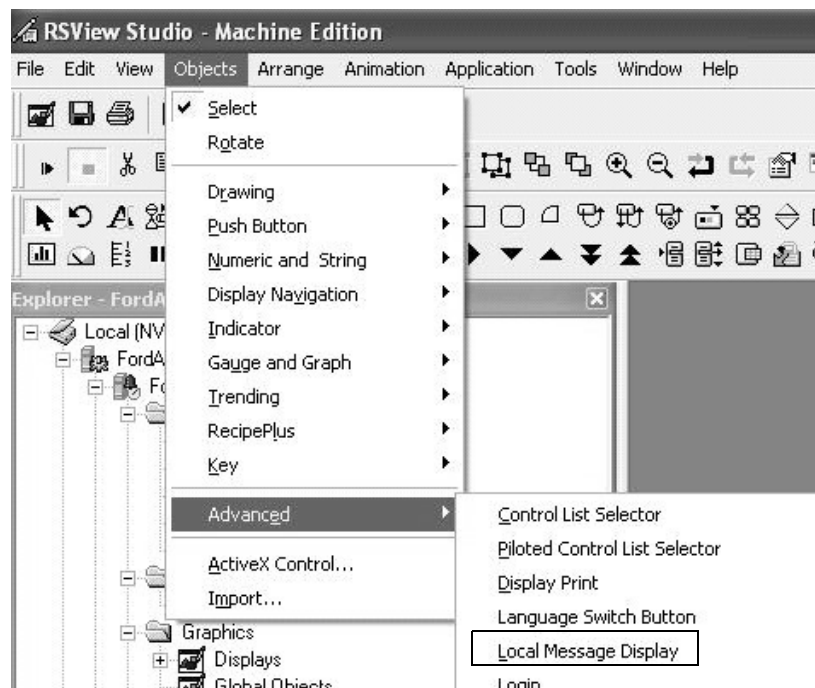
FactoryTalk View ME software provides the local message display as a replacement for the local message object list. Because the local message display only allows you to assign a single tag to the object, you will have to create multiple message displays and group them together. For example, if the local message object list has four visible messages, then you will need to create four local message displays and group them together to achieve the same look.

Create Local Message Displays

Follow these steps to create local message displays.

1. Open the display with the piloted control list selector.
2. Select Objects>Advanced>Local Message Display and draw the object.

- The PanelBuilder 1400e local message object list lets you assign a tag to each state (message) you define.
- The FactoryTalk View ME local message display lets you assign only a single indicator tag to the object. You will need to create as many local message displays as there are visible states (messages) in the original local message object list.



3. Double-click the local message display to open its properties.

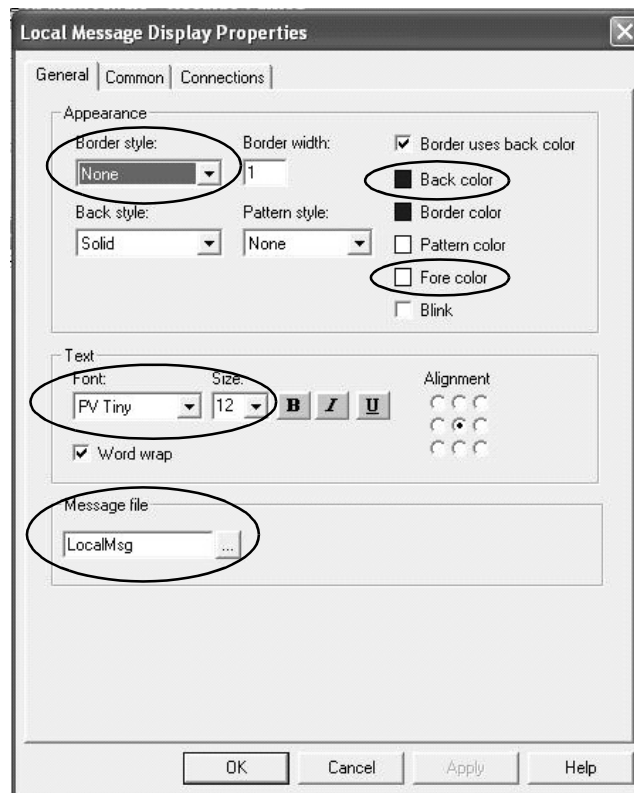
4. Set the Border style to None.

When you group the local message displays they will look as one object with a continuous border.

5. Set the Back color to match the background color of the PanelBuilder 1400e local message object list.

6. Set the Fore color to match the foreground color of the PanelBuilder 1400e local message object list.

7. Set the Font to match the font used in the PanelBuilder 1400e application.



IMPORTANT

Use the same font for each local message display so that the captions align properly with the cursor of the piloted control list selector. When all message displays are properly aligned, navigate up and down the piloted control list selector to verify that the cursor aligns with each local message string.

8. Click the ... button under Message File to select the 'LocalMsg' file that was converted from your PanelBuilder 1400e application.

The local message file contains all of the strings that will display in the local message display as the operator navigates through the piloted control list selector.

TIP

FactoryTalk View ME software supports multiple local message files. To improve screen performance you want to create new local message files from the migrated "LocalMsg" file. You can link the new message files to the local message objects instead of having every local message object parse a large file which decreases screen performance.

9. Click the Connections tab.

The PanelBuilder 1400e local message object list lets you configure the number of visible states. For each visible state, you then define an associated tag connection.

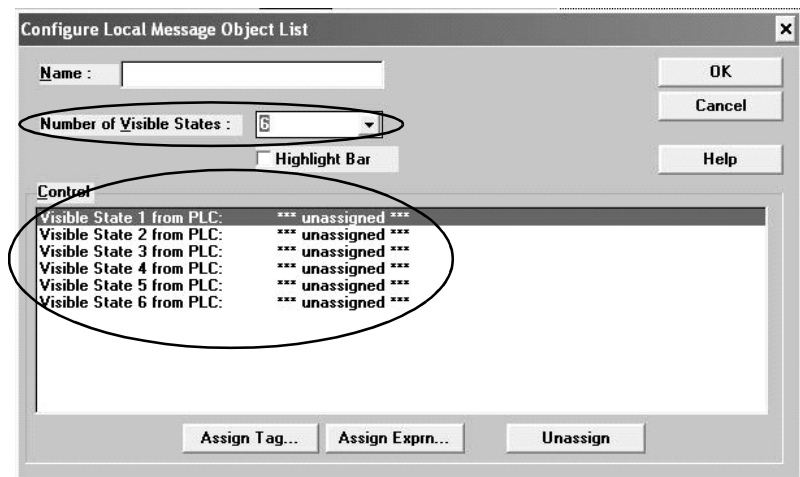
Because FactoryTalk View ME does not support a local message object list, you must assign each of the 'Visible State *x* from PLC' connections to a single local message display. Create as many displays as there are visible states (messages).

10. Assign the 'Visible State 1 from PLC' associated tag to the Value connection.
11. Click OK to accept changes.
12. Select the local message display object and press Ctrl+C to copy the object.
13. Press Ctrl+V to paste the copied object.
14. Repeat steps 11 and 12 until the number of pasted local message displays matches the number of visible states (messages).

FactoryTalk View Object



Original PanelBuilder 1400e Object



15. Double-click a copy of the local message display to open its properties.
16. Click the Connections tab.
17. Assign the 'Visible State 2 from PLC' associated tag to the Value connection.
18. Repeat steps 14 to 16 until you have assigned the visible state tag to the Value connection of each local message display.

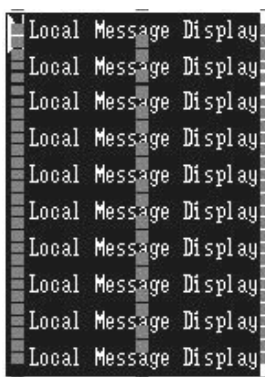
Resize and Align the Local Message Displays

1. Resize one of the local message displays so that it aligns with the cursor of the piloted control list selector.
2. Continue to resize and align all local message displays so they appear as a list.
3. Verify that cursor aligns with the next local message display when scrolling to the next state in the piloted control list selector.

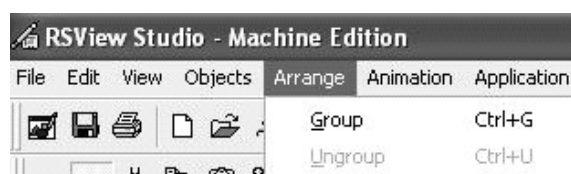


The easiest way to resize the multistate indicators is to divide the height of the object by the number of visible states.

4. Select all local message displays by holding down the Ctrl key and clicking each object.
Do not include the piloted control list selector in the selection.



5. Select Arrange>Group to include selected message displays in a single group. When you resize the group, all individual objects are automatically resized.



Replacing the Numeric Data Display Object List

In PanelBuilder 1400e software, the numeric data display object list displays a list of PLC values. The minimum width of the list depends on the range of values you want to show. This object is retentive because the scrolling list that controls it is retentive.

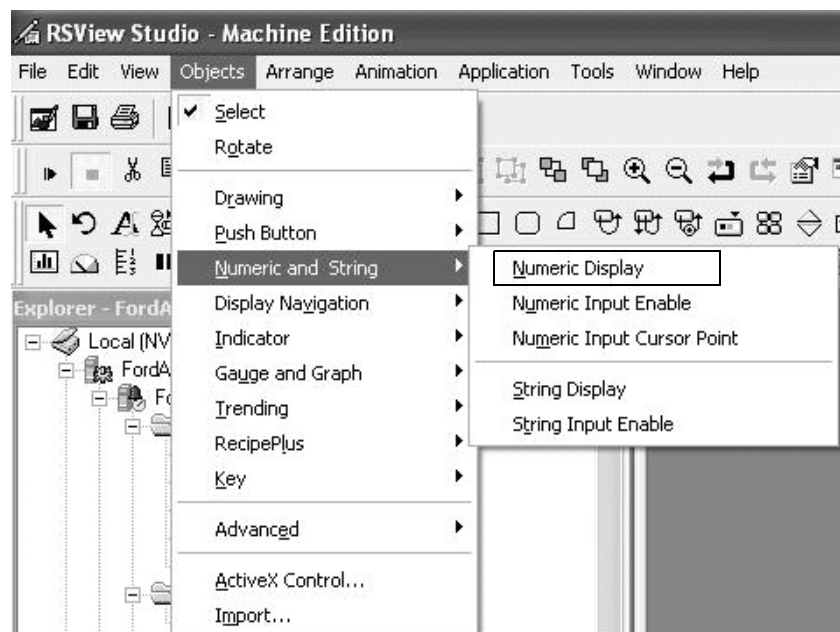
FactoryTalk View ME software provides the numeric display object as an alternative to the numeric data display object list. Because the numeric display only allows you to assign a single tag to the object, you will have to create multiple displays and group them together. For example, if the numeric data display object list has four visible PLC values, then you will need to create four numeric displays and group them together to achieve the same look.

Create Numeric Displays

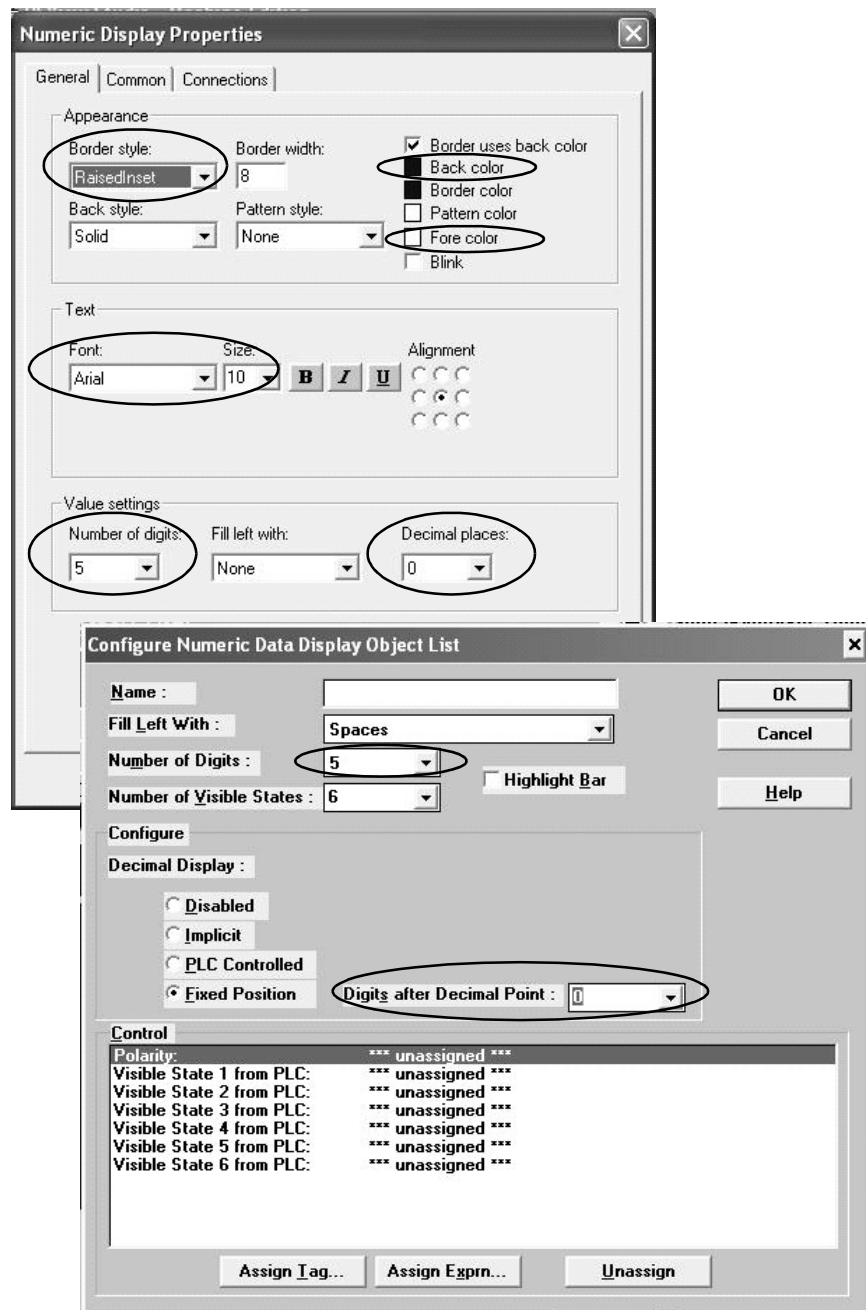
Follow these steps to create numeric displays.

1. Open the display with the piloted control list selector.
2. Select Objects>Numeric and String>Numeric Display and draw the object.

- The PanelBuilder 1400e numeric data display object list lets you assign a tag for each PLC value you want to display.
- The FactoryTalk View ME numeric display lets you assign only a single indicator tag to the object. You will need to create as many numeric displays as there are visible PLC values in the original numeric data display object list.



3. Double-click the numeric display to open its properties.
4. Set the Border style to None.
When you group the numeric displays they will look as one object with a continuous border.
5. Set the Back color to match the background color of the PanelBuilder 1400e numeric data display object List.
6. Set the Fore color to match the foreground color of the PanelBuilder 1400e numeric data display object list.
7. Set the Font to match the font used in the PanelBuilder 1400e application.
8. Set the Number of digits to match the PanelBuilder 1400e numeric data display object list.
9. Set the number of Decimal places to match the Digits after Decimal Point value in the PanelBuilder 1400e numeric data display object list.



Original PanelBuilder 1400e Object

IMPORTANT

The PLC controlled decimal point option is not supported in the numeric display object. You can use an expression on the object's Connections tab to provide similar functionality. For more information on this workaround, see page 81.

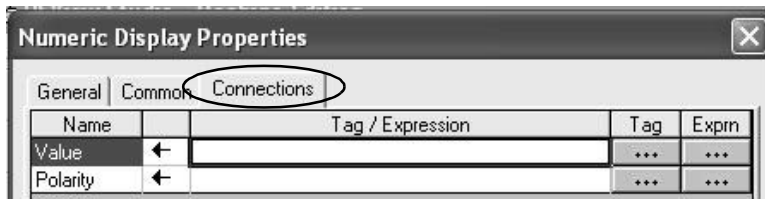
10. Click the Connections tab.

The PanelBuilder 1400e numeric data display object list lets you configure the number of visible states. For each visible state, you then define an associated tag connection.

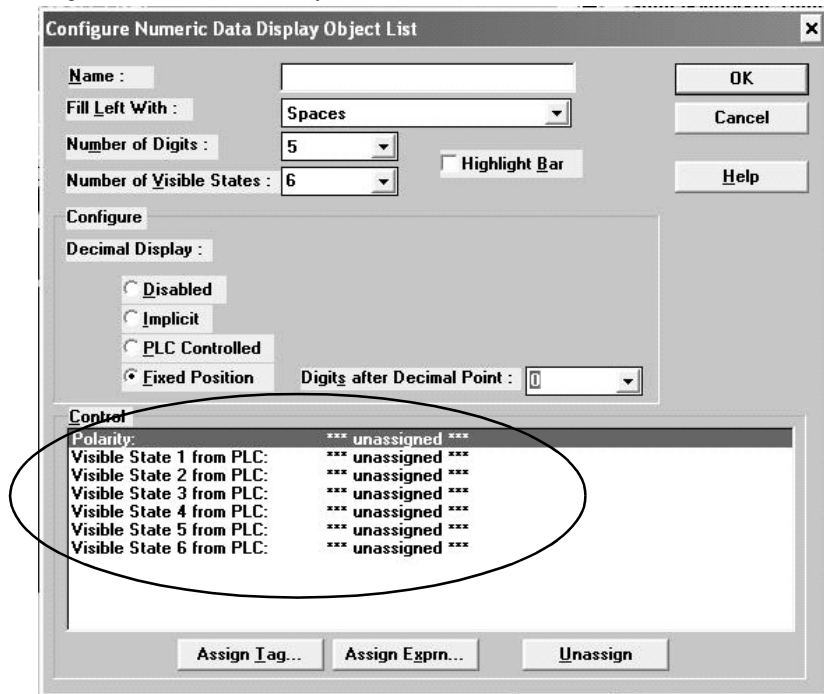
Because FactoryTalk View ME does not support a numeric data display object list, you must assign each of the 'Visible State x from PLC' connections to a single numeric display object. Create as many numeric displays as there are visible states.

11. Assign the 'Visible State 1 from PLC' associated tag to the Value connection.
12. Click OK to accept changes.

FactoryTalk View Object



Original PanelBuilder 1400e Object

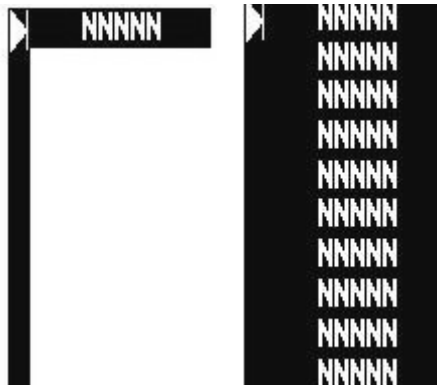


13. Select the numeric display object and press Ctrl+C to copy the object.
14. Press Ctrl+V to paste the copied object.
15. Repeat steps 11 and 12 until number of pasted numeric displays matches the number of visible states in the original PanelBuilder 1400e object.

16. Double-click a copy of the numeric display to open its properties.
17. Click the Connections tab.
18. Assign the 'Visible State 2 from PLC' associated tag to the Value connection.
19. Repeat steps 15 to 17 until you have assigned the visible state tag to the Value connection of each numeric display.

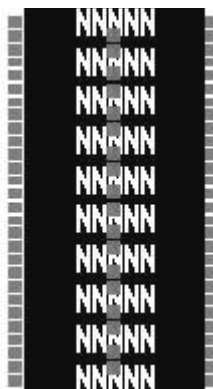
Resize and Align the Numeric Displays

1. Resize one of the numeric displays so that it aligns with the arrow of the piloted control list selector.
2. Continue to resize and align all numeric displays so they appear as a list.
3. Verify that the arrow aligns with the next numeric display when scrolling to the next state in the piloted control list selector.

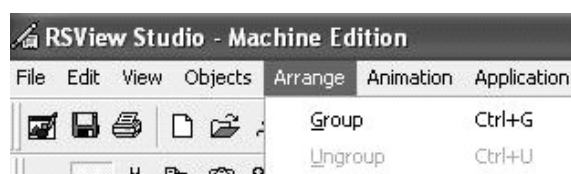


The easiest way to resize the multistate indicators is to divide the height of the object by the number of visible states.

4. Select all numeric displays by holding down the Ctrl key and clicking each object.
Do not include the piloted control list selector in the selection.



5. Select Arrange>Group to include selected numeric displays in a single group.
When you resize the group, all individual objects are automatically resized.



Replacing the Set Bit Cursor Point Object

In PanelBuilder 1400e software, the set bit cursor point object was available only on keypad terminals. FactoryTalk View ME software provides an ActiveX control as an alternative to the set bit cursor point object. To use this control, you must use a PanelView Plus CE terminal. The ActiveX control must be registered on the terminal. The open Windows CE environment of the PanelView Plus CE terminal allows you to do this.

You must download, register, and configure the ActiveX control in your FactoryTalk View ME application. See page 46 for the location of these files.

Register the ActiveX Control on Your Computer

Follow these steps to register the ActiveX control for the set bit cursor point object on your computer.

1. Extract the downloaded files to a location on your hard drive.

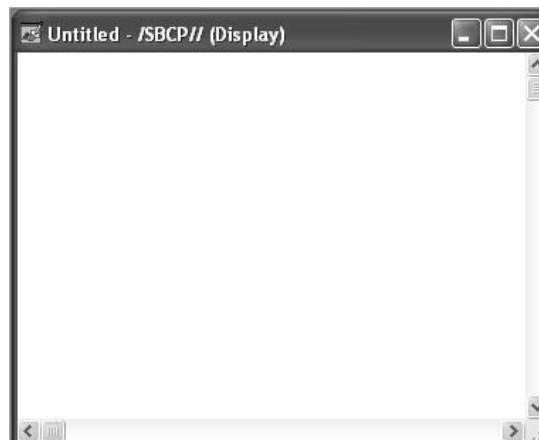


TIP

The Migration Solutions.apa file contains a set bit cursor point object display which you can test run to review how the object works.

2. Open your migrated application in FactoryTalk View ME software.

3. Open a new display.

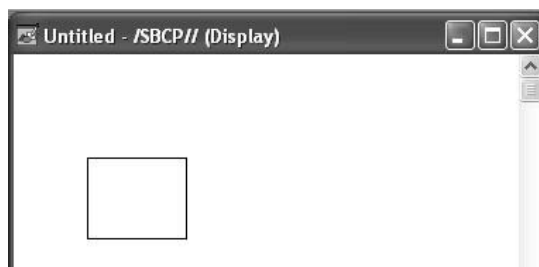


4. With the display selected, select Object>ActiveX Control.

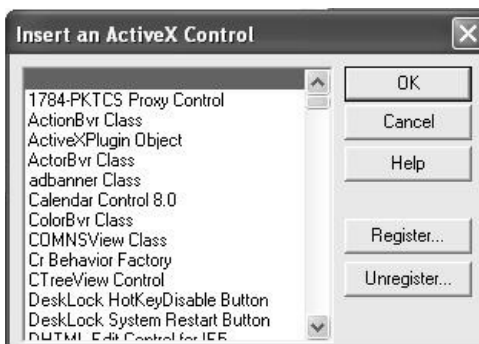


5. Draw a box on the display.

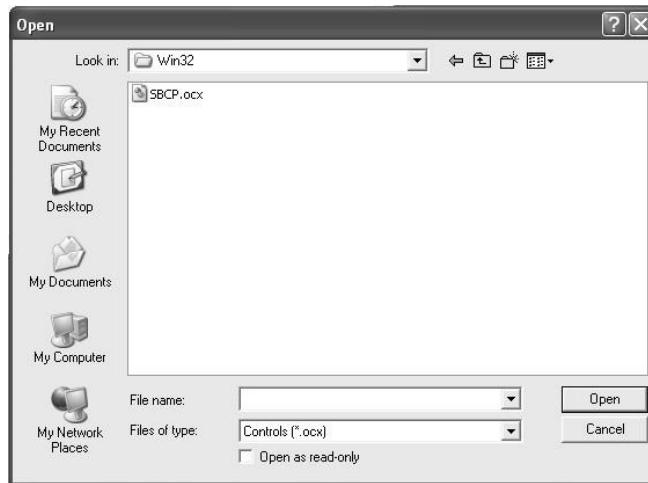
You will see ActiveX under the mouse pointer to indicate that you are drawing an ActiveX object.



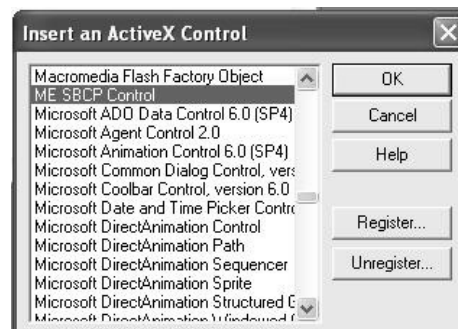
6. Click the Register button.



7. In the Open dialog:
 - a. Select the SBCP ActiveX file (*.ocx) in the Win32 folder where you extracted files.
 - b. Click Open to register the control.



8. Scroll down to the ME SBCP Control and click OK.



9. Click OK when the warning appears.

The warning indicates that you need to load the same ActiveX control on the PanelView Plus CE terminal for runtime operation. You will do this later.



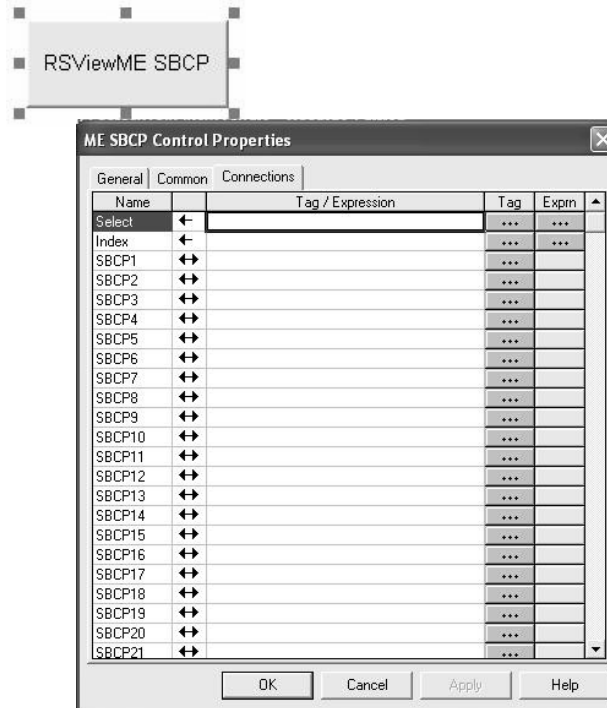
Configure the Set Bit Cursor Point ActiveX Control

Follow these steps to configure the set bit cursor ActiveX control.

1. Double-click the ActiveX control.
2. Click the Connections tab.
3. Assign a tag or expression to the Select, Index, and SBCP connections.

The table defines each connection.

4. Click OK when done.



Connection	Connection type	Description
Select	Read	<p>A zero to non-zero transition activates the control.</p> <ul style="list-style-type: none"> • If the value of the Index connection matches an assigned SBCP connection, the Select connection is set to 1. • The control becomes inactive if the value of the connection is zero. <p>This is a required connection.</p>
Index	Read	<p>The tag assigned to this connection is typically an integer. Set the initial value to 1. The ActiveX control will mimic behavior similar to the PanelView 'e' terminal, which is to select the first item when the control is used the first time.</p> <p>A Ramp button pair is typically assigned to the Index connection with the limits based on the number of cursor points on the display.</p> <p>This is a required connection.</p>
SBCP	Read/Write	<p>The SBCP connections are named SBCP1 through SBCP100. Each represents a value control of the set bit cursor point object in the PanelView 'e' terminal.</p> <p>The SBCP ActiveX control writes either a 0 or 1 to the SBCP connections. Only one SBCP connection can be set to 1 at a time.</p> <p>The value of the Index property determines which SBCP connection to set to 1. If the Index connection is set to 1, then SBCP1 is set to 1 and all others are set to 0.</p>

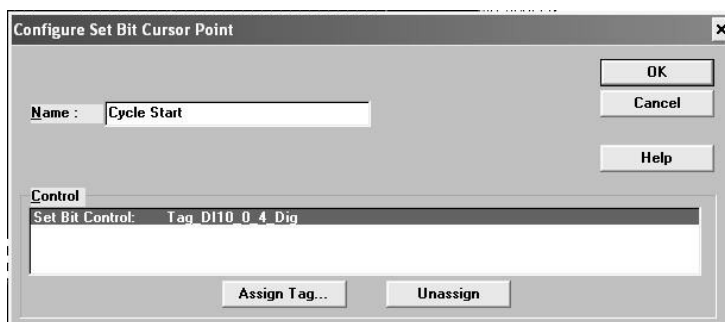
Migrate the Set Bit Cursor Point Object

Follow these steps to migrate the existing set bit cursor point from each PanelBuilder 1400e display manually.

IMPORTANT

This procedure requires that you open your original PanelBuilder 1400e application.

1. In the PanelBuilder 1400e application, open the first display that uses a set bit cursor point.
2. In the FactoryTalk View ME migrated application, open the same display.
3. In the PanelBuilder 1400e display, select the first set bit cursor point the operator would activate.
4. Double-click the object to open its properties.
5. In the FactoryTalk View ME display, assign the same tag from the PanelBuilder 1400e display (step 3) to the activeX SBCP connection.
6. Repeat steps 3 and 5 for each set bit cursor point object on the display.
7. In FactoryTalk View ME, assign a digital memory tag to the Select connection.
8. Assign an integer memory tag to the Index connection.

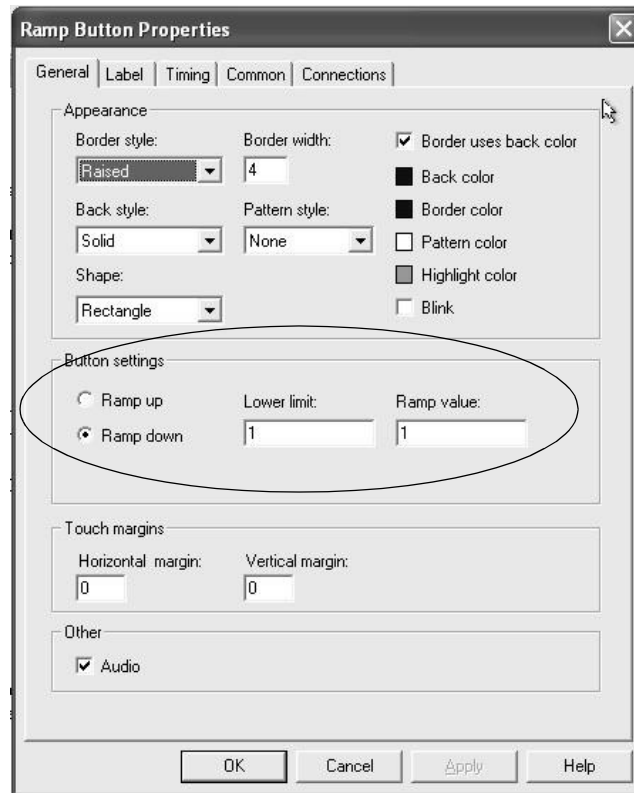
**TIP**

If you require the set bit cursor point to be active when the operator enters a display, set the initial value of the tag assigned to the Select connection to 1.

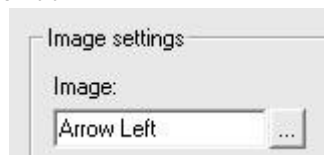
9. Draw four ramp buttons on the display so the operator can navigate through each set bit cursor point object.

Use a left, right, up and down ramp button.

10. Double-click one of the ramp buttons and select properties for a left ramp button.
 - a. Set the Ramp down Lower limit to 1.
 - b. Set the Ramp value to 1.
 - c. On the Label tab, set the Image to Arrow Left.
 - d. On the Connection tab, set the Value connection to the same tag in step 8.



Label Tab

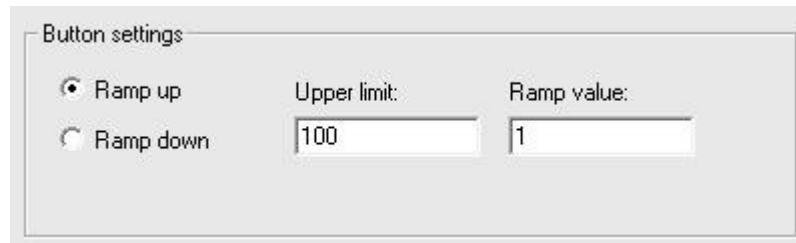


Connections Tab



11. Double-click another ramp button and select properties for a right ramp button.

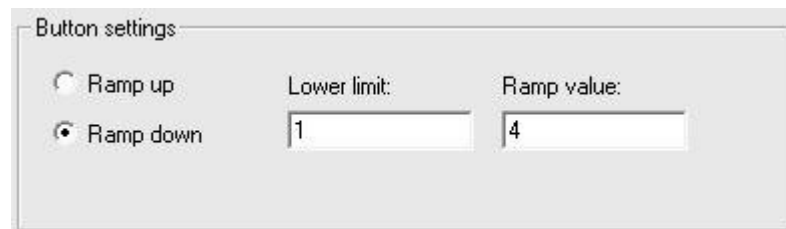
- Set the Ramp down Upper limit to 100.
Set the upper limit to the number of set bit cursor point objects on the display.
- Set the Ramp value to 1.
- On the Label tab, set the Image to Arrow Right
- On the Connection tab, set the Value connection to the same tag in step 8.



12. Double-click another ramp button and select properties for an up ramp button.

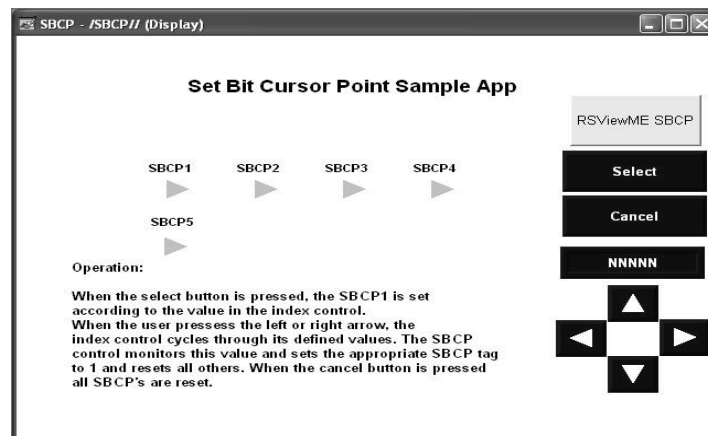
- Set the Ramp down Lower limit to 1.
- Set the Ramp value to the last set bit cursor point value on the row.

For example, if you have four set bit cursor points per row and five rows, then the ramp value is 4.



In this example, if you click the Up Ramp button on the second row at position 5, you would expect it to ramp down by 4, so the set bit cursor point starts at the first set bit cursor point on the first row.

- On the Label tab, set the Image to Arrow Up.
- On the Connection tab, set the Value connection to the same tag in step 8.



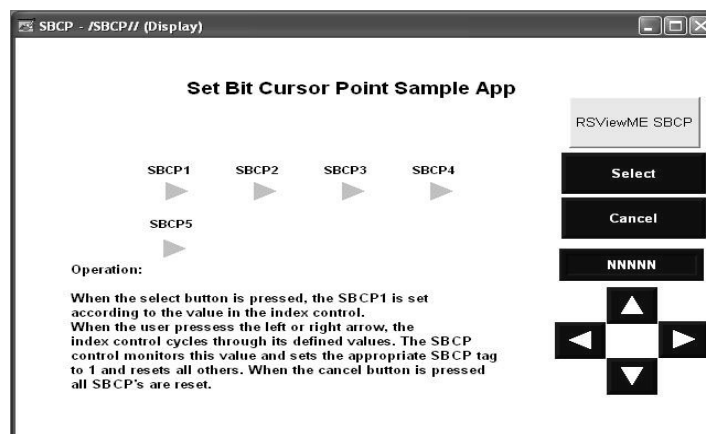
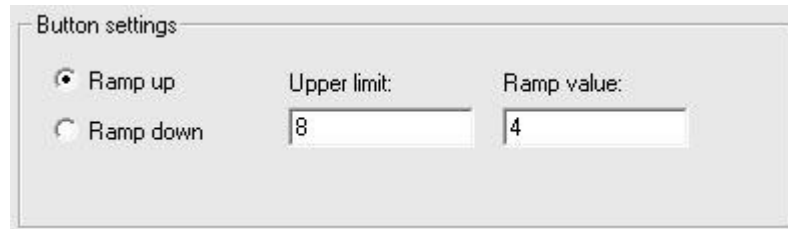
13. Double-click another ramp buttons and select properties for a down ramp button.

- a. Set the Upper limit to the first set bit cursor point on the last row.
- b. Set the Ramp value to the last set bit cursor point value on the row.

For example, if you have four set bit cursor points and three rows, then set the Ramp value to 4 and the Upper limit to 9.

In this example, if you clicked the down ramp button on the second row at position 5, it would ramp up by 4. The set bit cursor point starts at the first set bit cursor point on the next row, 9.

- c. On the Label tab, set the Image to Arrow Down.
- d. On the Connection tab, set the Value connection to the same tag in step 8.



TIP

For keypad only terminals, you need to assign function keys to each of the ramp arrow buttons so the operator can interact with the display. Right click an empty area of the display and select Key Assignments to assign function keys.

14. Add a numeric display to the display and set the Value connection to the same tag in step 8.

The numeric display helps the operator to identify the set bit cursor points.

15. Add an interlock push button to the display, assign the tag in step 7 to the Value connection, and set the button value to 1.

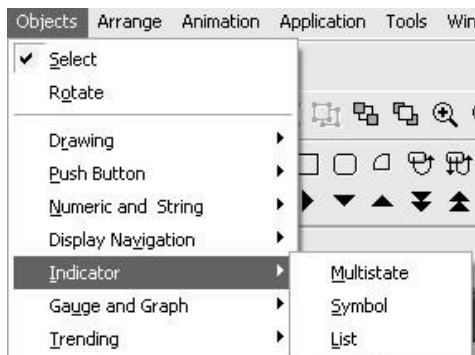
The operator can enable the ActiveX control by clicking the interlock push button, setting the Select connection value to 1.

16. Add another interlock push button to the display, assign the tag in step 7 to the Value connection, and set the button value to 0.

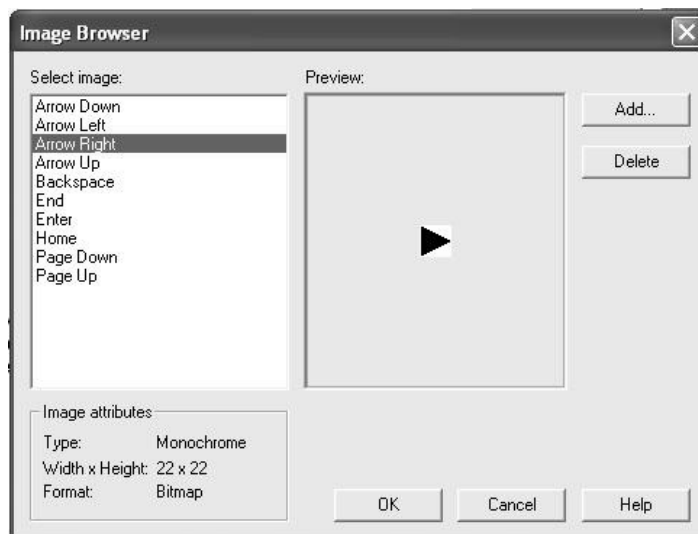
The operator can disable the ActiveX control by clicking the interlock push button, setting the Select connection value to 0.

Provide Visual Feedback

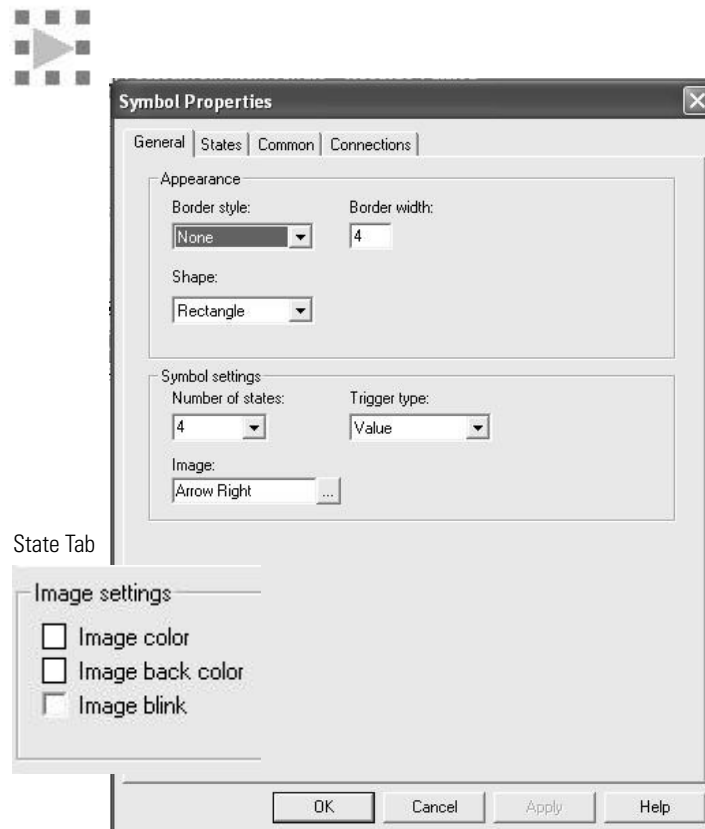
1. Select
Objects>Indicators>Symbol.
2. Draw a box on the display.



3. In the Image Browser, select Arrow Right and click OK.



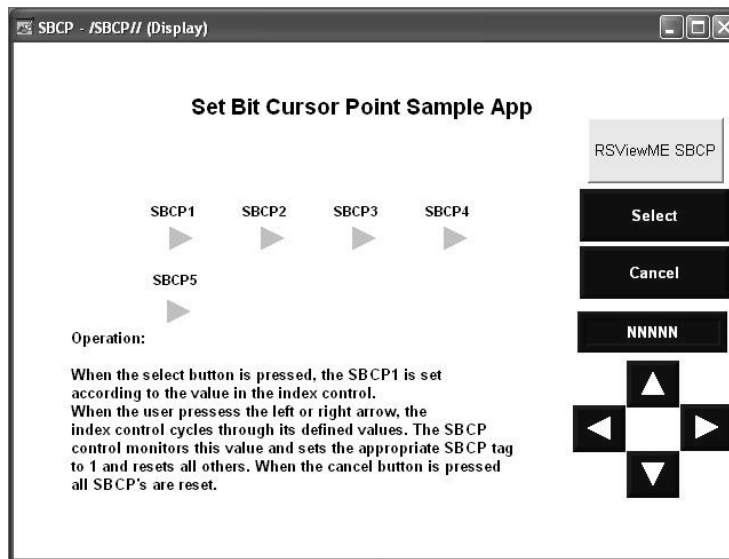
4. Double-click the symbol object to open its properties.
 - a. Set the Number of States to 2.
 - b. On the States tab, configure state 0 to have the same image color and image back color as the display.
 - c. On the Connections tab, assign the tag assigned to the Set Bit Cursor Point SBCP1 connection.
 - d. Click OK.



5. Copy and paste the symbol object for each set bit cursor point you want on the display.

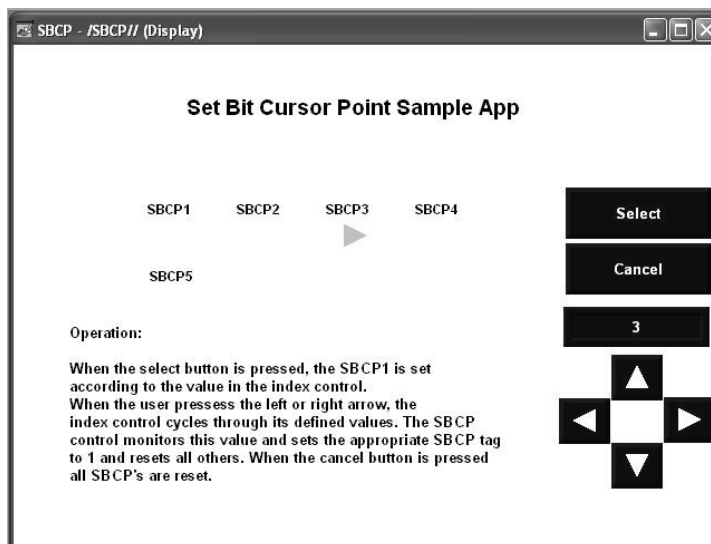
6. Repeat step 6 for each symbol copied in step 8 and assign the SBCPx connection tags.

In the example, the Select button enables the set bit cursor point and the Cancel button disables it. The arrows let the operator navigate through each of the SBCP tags assigned. In this example, a symbol object provides visual feedback for the object or tag being referenced.



In Run mode, only one symbol object is active at a time, providing visual feedback to the operator.

7. Repeat all steps starting with the procedure on page 72 for each display that uses a set bit cursor point object.



Register the ActiveX Control on a PanelView CE Terminal

Follow these steps to install and register the SBCP ActiveX control on the PanelView Plus CE terminal.

1. Copy the contents of the VVCE41 folder, in the extracted ME SBCP ActiveX Control folder, to the root of an empty CompactFlash card.
2. Rename the Install.bat file to Batch.bat.
3. Turn on the PanelView Plus CE terminal without an application running and
4. Insert a CompactFlash card into the card slot.

The autorun.exe will call the install batch file to install the necessary files, and register the ActiveX control.

5. Restart the terminal and remove the CompactFlash card after a display indicates that all the files were copied and registered.

The PanelView Plus CE terminal can now run your application that requires the set bit cursor point ActiveX control.

Bit Position Data Type Workaround

If a bit position data type does not reference a single bit, it is converted to an HMI memory tag. An error is recorded in the conversion log.

- If the object using this data type is an indicator (read operation), there is a workaround.
- If the object using this data type is a button (write operation), the feature is unsupported.

The workaround for the bit position data type in an indicator object (read operation) is to use this expression in the object.

```
If ((YourTagHere) & 1) ==1 Then 1
Else If ((YourTagHere >> 1) & 1) ==1 Then 2
Else if ((YourTagHere >> 2) & 1) ==1 Then 3
Else if ((YourTagHere >> 3) & 1) ==1 Then 4
Else if ((YourTagHere >> 4) & 1) ==1 Then 5
Else if ((YourTagHere >> 5) & 1) ==1 Then 6
Else if ((YourTagHere >> 6) & 1) ==1 Then 7
Else if ((YourTagHere >> 7) & 1) == 1 Then 8
Else if ((YourTagHere >> 8) & 1) ==1 Then 9
Else if ((YourTagHere >> 9) & 1) ==1 Then 10
Else if ((YourTagHere >> 10) & 1) ==1 Then 11
Else if ((YourTagHere >> 11) & 1) ==1 Then 12
Else if ((YourTagHere >> 12) & 1) ==1 Then 13
Else if ((YourTagHere >> 13) & 1) ==1 Then 14
Else if ((YourTagHere >> 14) & 1) ==1 Then 15
Else if ((YourTagHere >> 15) & 1) ==1 Then 16
Else 0
```

Simply, replace *YourTagHere* with your bit position tag and the expression will determine what LSB is high and return its value to the indicator object.

The expression uses a series of Bit Shift and AND commands to determine if the LSB is high. If the LSB is high, then depending on the number of the bit shifts completed, the expression will return a value associated with the bit location.

For example, if the value of your tag is 500 (111110100 in binary), the expression will return the value 3 because it is the high LSB.

PLC Controlled Decimal Point Workaround

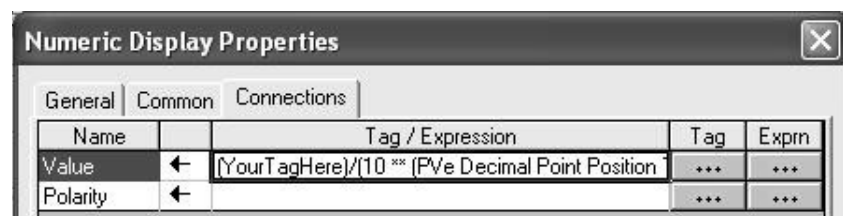
If a numeric object in your PanelBuilder 1400e application was imported into FactoryTalk View ME software with a PLC controlled decimal point, an error is recorded in the conversion log.

PLC Controlled Decimal Point input option not supported

As a workaround, use this expression for the Value connection in your numeric object.

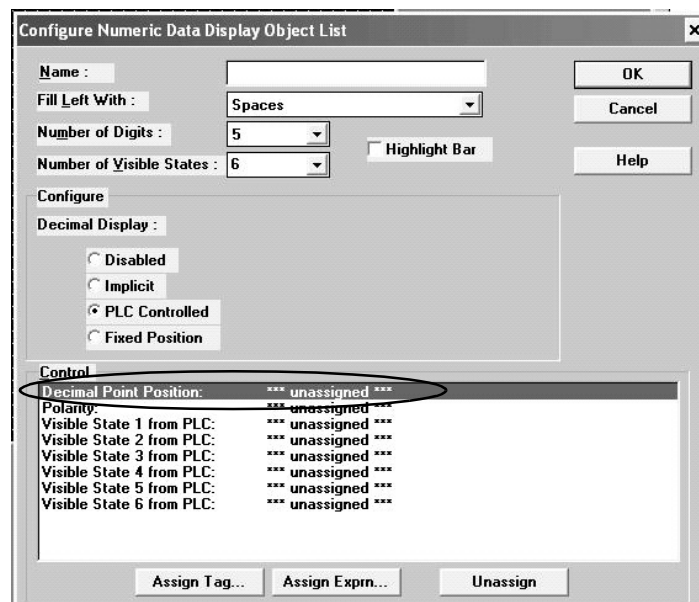
$(YourTagHere)/(10^{**} (PVe \text{ Decimal Point Position Tag}))$

This expression will let you input a decimal point in a numeric value.



Replace these items in the expression.

- Replace *YourTagHere* with a tag having a value you want to display.
- Replace *PVe Decimal Point Position Tag* with the tag assigned to the Decimal Point Position connection in the original PanelBuilder 1400e graphic object.



TIP

You may need to configure the number of digits the object displays and the number of decimal places to show depending on the FactoryTalk View ME object. These fields are typically on the General tab of the object's Properties dialog.

Fixed Position Decimal Point Workaround

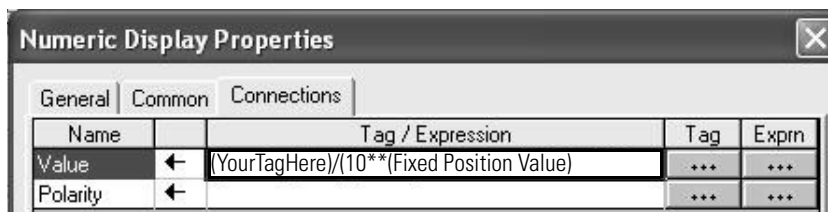
If a numeric object in the PanelBuilder 1400e application was imported into FactoryTalk View software with a fixed position decimal point, an error is recorded in the conversion log.

Fixed Position Decimal Point input option not supported

As a workaround, use this expression for the Value connection in your numeric object.

$(YourTagHere)/(10^{**} (Fixed\ Position\ Value))$

This expression will let you input a decimal point in a numeric value.



Replace these items in the expression.


- Replace *YourTagHere* with a tag having a value you want to display.
- Replace *Fixed Position Value* with the value defined in the Digits after Decimal Point field of the original PanelBuilder 1400e graphic object.

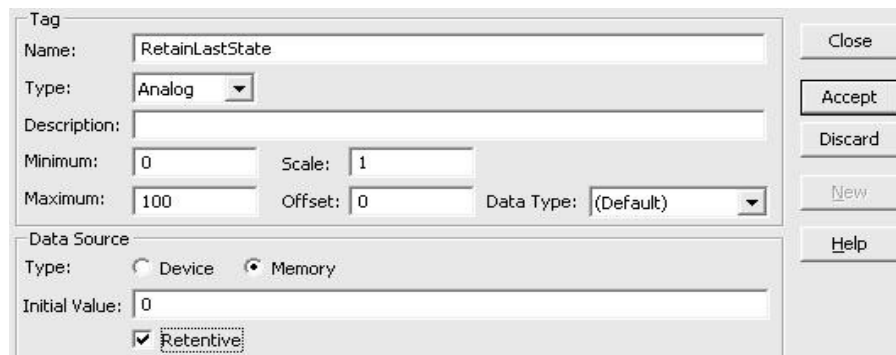
Retain Last State Workaround

PanelBuilder 1400e software has a Retain the Last State feature for the cursor list object. If this feature is enabled, when the operator returns to a display with the cursor list, the last selected state is retained and reselected. To achieve the same functionality in your FactoryTalk View ME application, you need to implement this workaround.

- Set up a Display Shutdown macro to write the currently selected value to a memory tag.
- Set up a Display Startup macro to read the value of the memory tag and write the value to the Value connection of the piloted control list selector.

Follows these steps to implement the workaround.

1. Open your new application migrated into FactoryTalk View ME software.
2. In the Explorer window, expand HMI Tags and double-click Tags to open the tag database.
 
3. Create a new tag.
 - a. Name the tag RetainLastState.
 - b. Set the Tag Type to Analog.
 - d. Set the Minimum and Maximum values to the number of items the piloted control list selector will scroll through.
 - e. Select Memory as the Data Source Type.
 - f. Set the Initial Value to 0.
 - g. Verify the Retentive check box is checked.
4. Click Accept to save the changes.

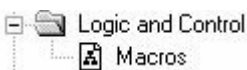


Create a similar tag for each piloted control list selector that requires the Retain the Last State feature.

TIP

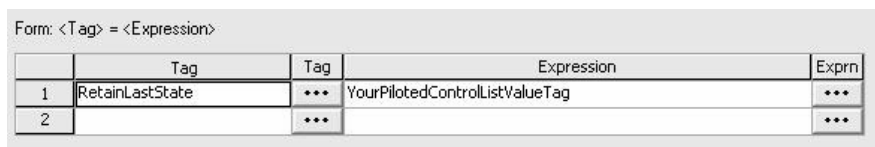
The retentive feature retains the last value written to the tag. If you cycle power to the terminal, the last known value written to the tag is loaded instead of the Initial value.

5. In the Explorer window, expand Logic and Control and double-click Macros.

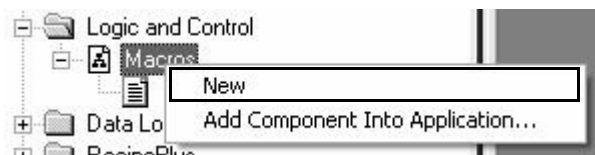


6. Follow these steps in the Macro Editor.

- a. Under the Tag column, browse for and select the RetainLastTag tag.
- b. Under Expression, browse for and select the tag you assigned to the Value connection in the piloted control list selector.
- c. Click Close and then Save to save your changes.
- d. Name the file Retain Last State.



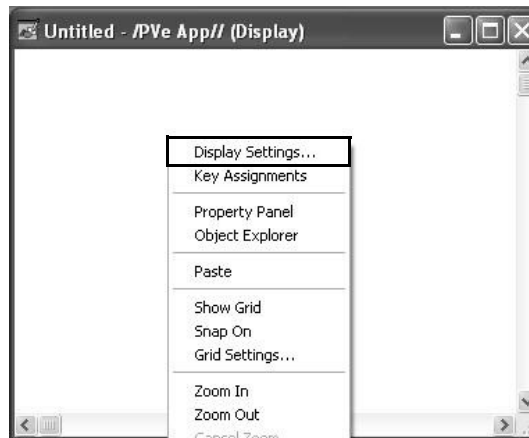
7. Right-click Macro and select New.



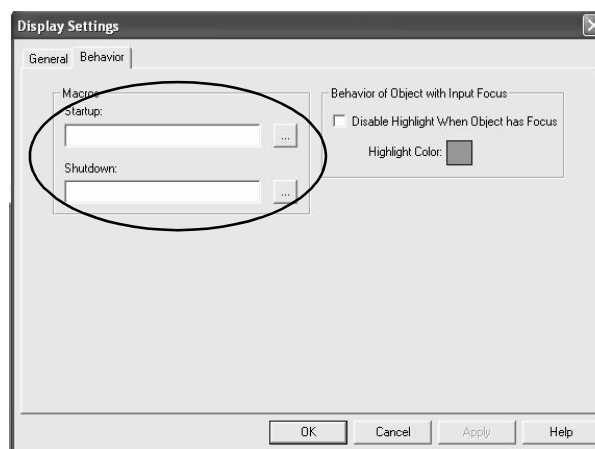
8. Follow these steps in the Macro Editor.

- a. Under the Tag column, browse for and select the tag you assigned to the Value connection in the Piloted control list.
- b. Under Expression, browse for and select the RetainLastTag tag.
- c. Click Close and then Yes to save your changes.
- d. Name the file Restore Last State.

9. Double-click the display with the piloted control list selector that requires the Retain the Last State feature.
10. Right-click an empty area of the screen and select Display Settings.



11. Click the Behavior tab.
12. Click the ... button under Macros startup to browse for and select the Restore Last State macro file.
13. Click the ... button under Macros shutdown to browse for and select the Restore Last State macro file.
14. Click OK to accept the changes.



15. Click X on the display and save all changes.

TIP

You will need to repeat this procedure for each piloted control list selector that requires the Retain the Last State feature. This includes the creation of new tags and new macro files.

You have completed the workaround for the Retain the Last State feature. When you open a display with a piloted control list selector, the startup display macro restores the state value from the RetainLastState tag to the Value connection of the piloted control list selector. When you navigate to a different display, the shutdown macro copies the last state value of the piloted control list selector to the RetainLastState tag.

Ladder Logic Updates to Support Visible States

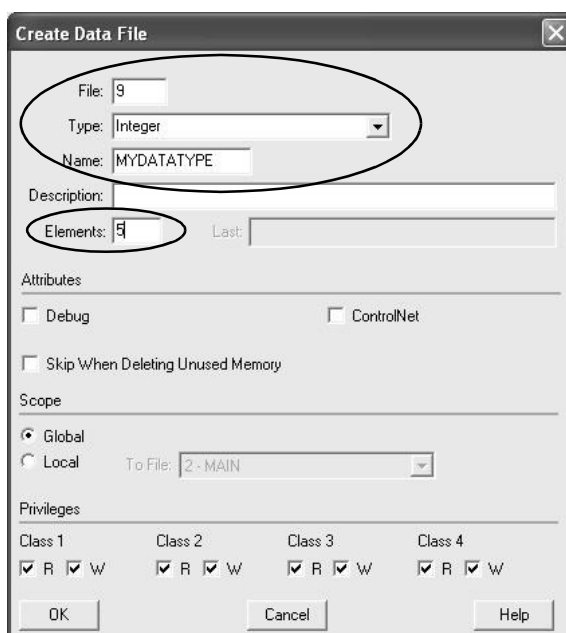
Because the piloted control list selector uses an array tag, not individual tags, to implement visible states, you need to make changes to your ladder logic.

Follow these steps to update your ladder logic using RSLogix 5 software. The same steps would apply if using RSLogix 500 software.

1. Create a new data file.



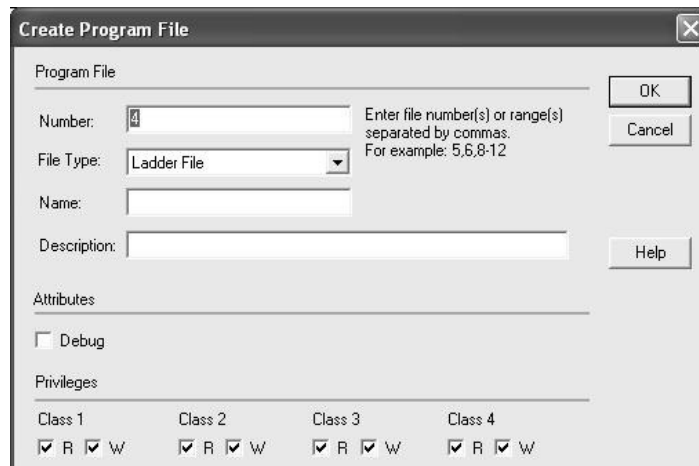
2. Configure these parameters for the data file.
 - a. Accept the File value.
 - b. Set the Type to Integer.
 - c. Enter a meaningful Name for the file.
 - d. For Elements, enter the number of visible states in the original PanelBuilder 1400e cursor list object.
 - e. Click OK to save your settings.



3. Right-click on Program Files and select New to add a new program file to the PLC program.



4. Configure these parameters for the program file.
 - a. Accept the Number value.
 - b. Set the File Type to Ladder File.
 - c. Enter a meaningful Name for the program file.
 - d. Click OK to save your settings.



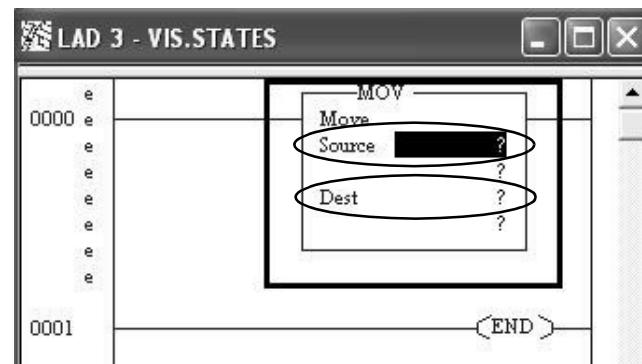
5. Double-click the program file you just created.



6. On the tabbed instruction bar, select the Move/Logic tab and click MOV.



7. Configure the MOV instruction.
 - a. For Source, enter the first word location in the new data file you just created.
 - b. For Destination, enter the tag address for the original Visible State 1 to PLC connection.



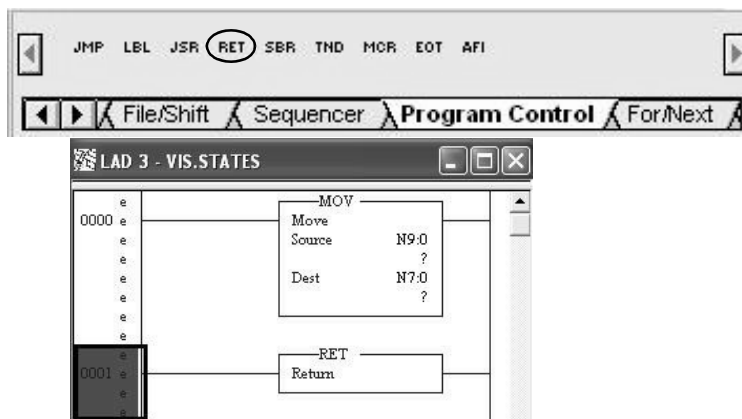
8. Click the next empty rung.
 9. Repeat steps 6 to 8 until the number of MOV instructions matches the number of visible states in the original control list object.
- As you repeat each step, enter the next word in the data file for the Source and the next visible state as the Destination.

10. Click the next empty rung.

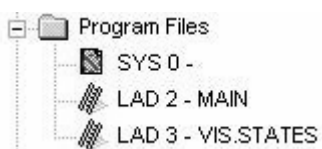
11. On the tabbed instruction bar, select the Program Control tab and click RET.

The RET command exits the subroutine and returns you to the MAIN program.

12. Click X and save your changes.



13. Double-click your main program file.



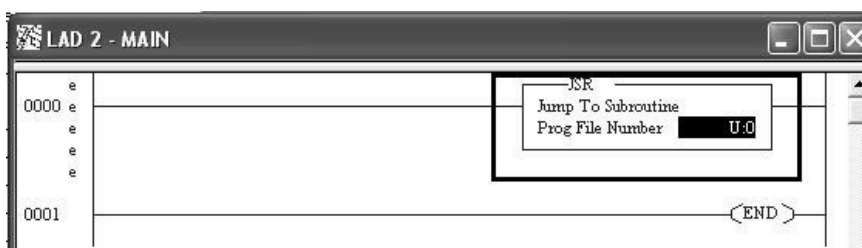
14. Click the last rung.

15. On the tabbed instruction bar, select the Program Control tab and click JSR.

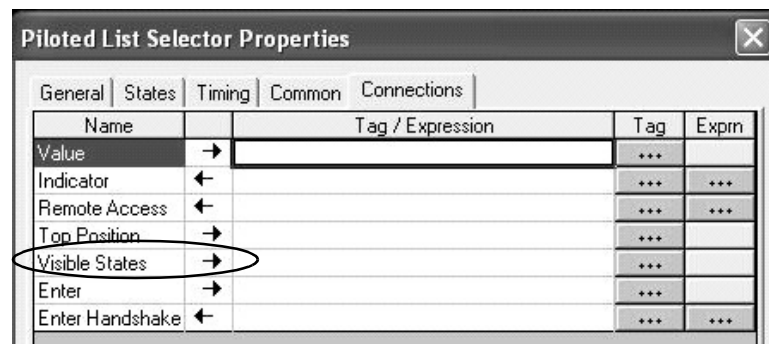
16. The JSR instruction jumps to the subroutine that handles all the visible state MOV instructions just created.

17. In the JSR subroutine, set the Prog File Number to the number specified in the Program File that handles all the MOV instructions.

18. Click X to save all changes.



19. On the Connections tab of your piloted control list selector, assign the appropriate tag to the Visible States connection.



This is the address syntax for the Visible States tag.

{[PLC5]N7:0,L5}

Replace	With
N7:0	The first element in the data file you created.
5 in L5	The number of elements you entered in the new data file or the number of visible states in the original cursor list object.
PLC5	Shortcut name you defined in Communication Setup of RSLinx Enterprise software.

The visible state ladder logic changes are now complete.

- When the Main Routine runs, the JSR instruction jumps to the new program file you created.
- In the new program file, the FactoryTalk View ME piloted control list selector writes the visible states into the elements of the new data file you created.
- The ladder logic in the program file moves the contents of the elements into the original Visible State x to PLC tags that were defined in the cursor list object, and then returns to the Main Routine.

Qualify the Runtime Application

Introduction

In this chapter, you will qualify the integrity of your converted application before downloading and running it in your production environment. Because you are using different software with new features and functionality, it is important to validate the application for proper operation.

Before You Begin

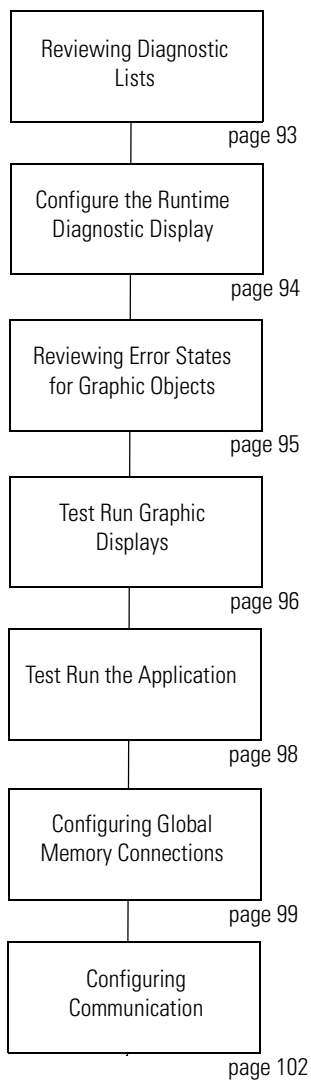
- Review migration considerations (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Optionally install the PanelView Plus terminal in the existing PanelView 1000e or 1400e panel cutout (Chapter 2).
- Import your PanelBuilder 1400e .pvc application into FactoryTalk View ME software (Chapter 3).
- Review the conversion log for your migrated application (Chapter 4).
- Review object and expression mapping (Chapter 5).
- Review unsupported features and common migration issues (Chapter 6).

What You Need

Converted FactoryTalk ME application with unsupported features and workarounds for migration issues.

Follow These Steps

Follow these steps to configure diagnostics, validate, test run, configure global memory connections, download, and run your converted application on a PanelView Plus terminal.



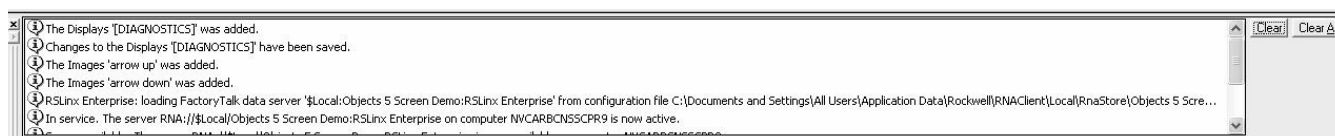
Reviewing Diagnostic Lists

On your development computer, FactoryTalk View ME software features a diagnostic list at the bottom of the application window. You can configure FactoryTalk diagnostics to display information, warnings, and errors during application development and runtime operation.

When you test run your application, the diagnostic list displays messages and errors logged by the application. Use this list to identify the graphic objects or features that generated the messages or errors. Correct these errors during the validation process.

The diagnostic lists lets you Clear one or all messages in the list.

- Click the Clear button to delete the message that is displayed. If you resize the list to display more than one message, select a message and then click Clear.
- Click the Clear All button to delete all messages in the list.



To view this diagnostic information during runtime, use either the

- default [DIAGNOSTICS] graphic display
- or diagnostic list object in a customized graphic display.

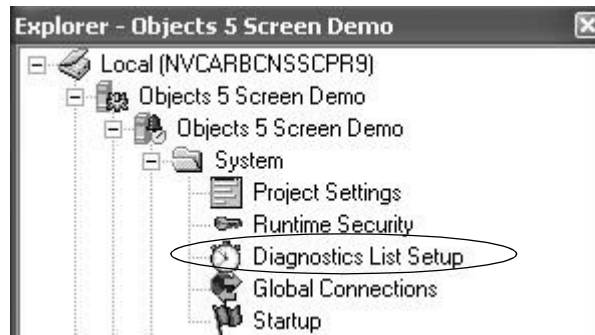
TIP

The [DIAGNOSTICS] display is in the Libraries editor of the application Explorer window if not already included in your application displays. Import the [DIAGNOSTIC] display if you are going to use it.

Configure the Runtime Diagnostic Display

Follows these steps to configure the default [DIAGNOSTICS] display to log errors or warnings generated during runtime operation.

1. Launch FactoryTalk View ME if not open.
2. Open your converted application.
3. Expand the System folder in your application Explorer window.
4. Double-click Diagnostic List Setup.



5. Under Runtime display, verify that [DIAGNOSTICS] is the Display name.

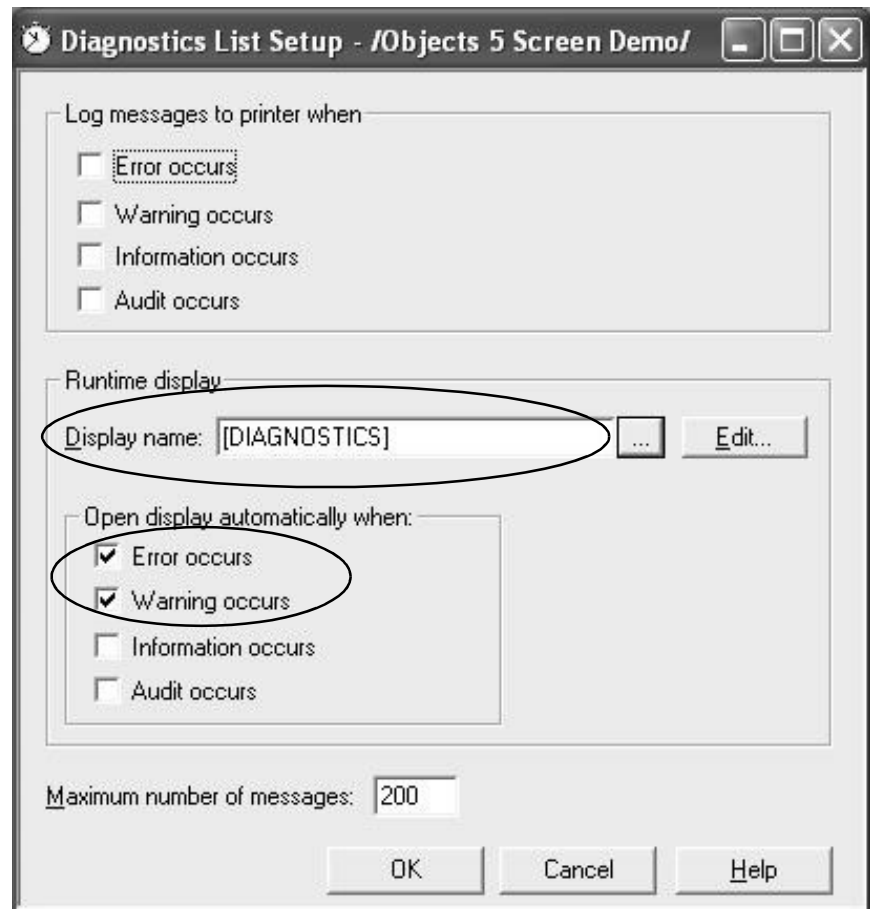
This is the default diagnostic display that pops up during runtime when configured events occur.

6. Check the boxes next to the messages that you want to appear in the display when events occur during runtime.

Always log errors and warnings during runtime.

For information on how each dialog option is designed to function during runtime, click Help.

7. Click OK.



Reviewing Error States for Graphic Objects

In FactoryTalk View ME software, error conditions for visible objects may be different than those in PanelBuilder 1400e software. The Object Error Mode table clarifies what happens when errors occur for objects when tags are unavailable or communication is lost.

For additional information on objects, refer to the online help.

Object Error Mode

Graphic Object	Visible Error Mode
<ul style="list-style-type: none"> • Momentary Push Button • Maintained Push Button • Latched Push Button • Multistate Push Button 	The caption displays 'default error message' for the error state.
<ul style="list-style-type: none"> • Interlock Push Button • Ramp Push Button 	<p>No visible error message or error condition is displayed.</p> <p>When you click on these objects, an error message is generated and logged to the diagnostic list object.</p>
<ul style="list-style-type: none"> • Numeric Display • Numeric Input Cursor 	These objects display asterisks, *****.
<ul style="list-style-type: none"> • Numeric Input Enable • String Input Enable • String Display 	<p>No visible error message or error condition is displayed.</p> <p>When you click on these objects, an error message is generated and logged to the diagnostic list object.</p>
<ul style="list-style-type: none"> • Goto Display Button • Return To Display Button • Display List Selector • Close Display Button 	<p>No visible error message or error condition is displayed.</p> <p>If communication to the PLC controller is lost, these buttons still let you navigate through your application.</p>
Multistate Indicator	The caption displays Error for the error state.
Symbol Properties	The object shows the image color defined in the error state.
List Indicator	No visible error message or error condition is displayed.
Bar Graph Gauge	This object shows a transparent wireframe box.
Scale	No visible error message or error condition is displayed.
Local Message Display	This object displays question marks, ??????, in the error state.

Object Error Mode

Graphic Object	Visible Error Mode
<ul style="list-style-type: none"> • Backspace • End • Enter • Home • Move Left • Move Right • Move Down • Page Up • Page Down 	No visible error message or error condition is displayed.
<ul style="list-style-type: none"> • Sort Alarm • Reset Alarm • Alarm Banner • Alarm Status List 	No visible error message or error condition is displayed.
Display Print	No visible error message or error condition is displayed.
Trend	This object appears not to have any pens and does not perform real-time trending.
Time and Date	No visible error message or error condition is displayed.

Test Run Graphic Displays

FactoryTalk View ME software provides a Test Display mode to test the animation and assigned tags connected to objects in a graphic display. Any information, warning, or errors are logged to the diagnostic list for your review.

Test Display mode tests all objects in a display:

- Button objects
- Numeric and string object to verify that correct values are displayed
- Objects that require user input
- Objects that use animation

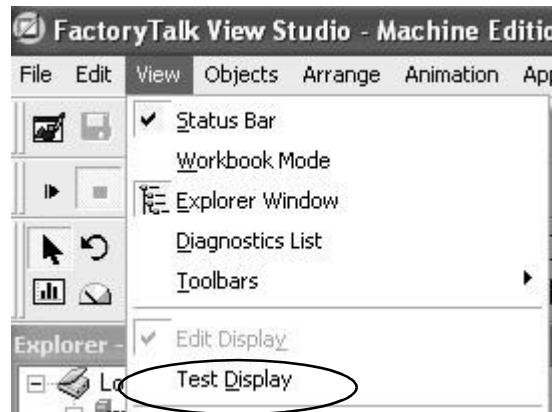
For each object tested, review and correct any errors and warnings logged to the diagnostic list. Retest the display object before proceeding to the next object.

IMPORTANT

In Test Display mode, objects in the display are activated and connected to assigned tags. Only tags connected to objects in the display will work. Links to other displays or alarms, including data logging, macros, global connections, and information messages will not work. Configure communication to the PLC controller before test running the display or all objects will show their error states.

Follow these steps to activate Test Display mode for a display and then return to Edit mode. Running Test Display mode and correcting logged errors in Edit mode is an iterative process.

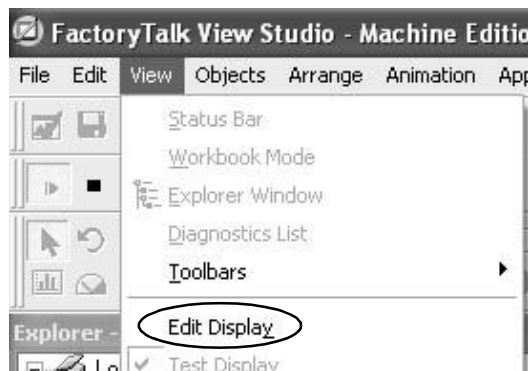
1. Open the display you want to test.
2. Access Test Display mode in one of two ways.
 - Choose Test Display from the View menu



- or click the Test Display button on the toolbar.



3. Return to Edit mode in one of two ways.
 - Choose Edit Display from the View menu



- or click the Edit Display button on the toolbar.



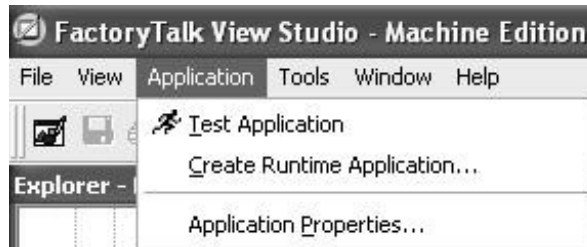
Test Run the Application

After testing and verifying that each graphic display is error free, you are ready to test run the entire application. Application Test mode lets you navigate through the entire application to validate functions not tested in Display Test mode. Some of these features include alarming, data logging, information messages, global connections, and macros.

As you navigate through displays in Application Test mode, the Diagnostic List logs warnings and errors as they occur. Correct all logged errors and then retest the application to validate error correction.

Follow these steps to test run an application.

1. Open your converted application in FactoryTalk View ME software.
2. Test the application in one of two ways.
 - Choose Test Application from the Application menu
 - or click the Test Application icon on the toolbar.



The emulator opens on your computer and runs the application. There is a two hour limit for using the runtime emulator.

TIP

Local messages and graphic objects configured for multiple languages will display in the application's current language while in Test Application mode.

3. Press x on your keyboard to exit the emulator.

TIP

The emulator window requires focus when pressing the x key to exit the emulator.

Configuring Global Memory Connections

FactoryTalk View ME software provides global connections to monitor the memory usage of an application during runtime.

- MERuntime Memory Usage - This is a new option.
- Available RAM
- Total RAM Usage

IMPORTANT

When developing and testing a FactoryTalk View ME application on the PanelView Plus terminal, monitor the values of these connections to verify that the application does not exceed the available RAM installed in the terminal.

Hardware Limitations

PanelView Plus terminals have a 32 MB process limit. The application cannot consume more than 32 MB of memory at runtime. Run the application on the PanelView Plus terminal with the MERuntime RAM Usage connection enabled to determine if the application is approaching this limit. Navigate to all screens and exercise all functions of the application to monitor memory usage.

IMPORTANT

When running an application on a PanelView Plus terminal, FactoryTalk View ME Station has a tag connection cache threshold of 26 MB. If the MERuntime RAM Usage exceeds 26 MB, screen change performance decreases significantly as the system adds and removes tag connections from the cache.

If the MERuntime RAM Usage exceeds 26 MB for the application and performance is slow, you can do one of two things:

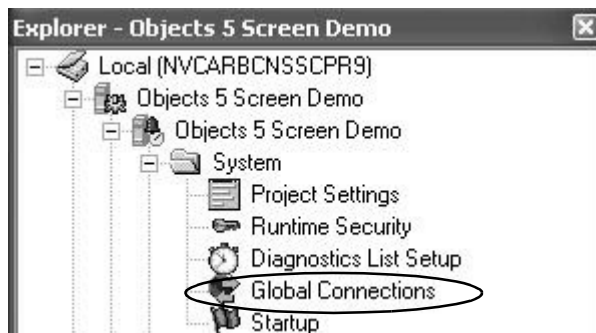
- Modify the application to reduce memory usage.
- Move the application to a PC-based industrial computer.

Configure Global Connections

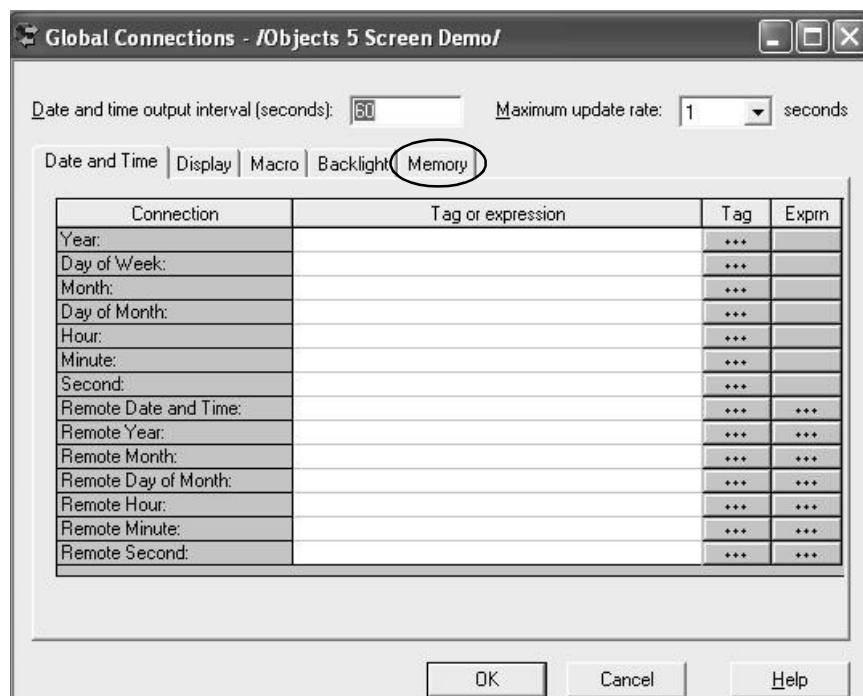
Follow these steps to set up global memory connections in your converted application.

1. Open your converted application in FactoryTalk View ME software.
2. In the Explorer window, double-click the Global Connections icon.

The Global Connections editor opens.

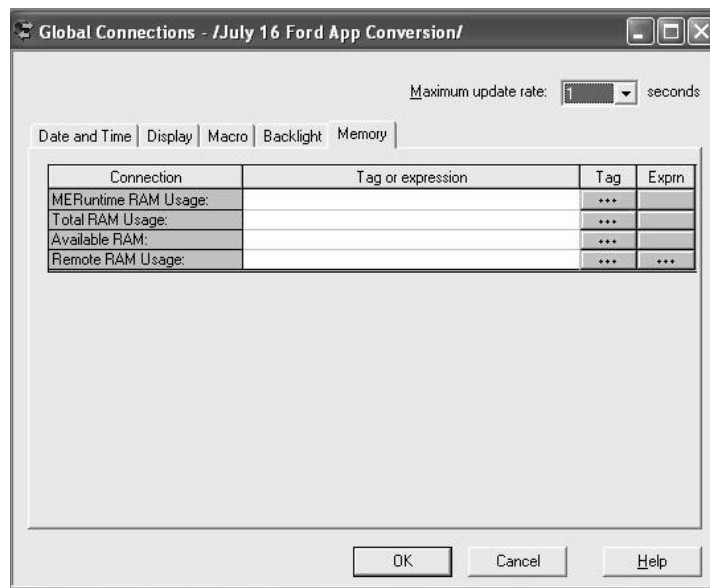


3. Click the Memory tab.



4. Configure the global memory connections to monitor the amount RAM used by the runtime application.

Refer to the table for a description of each connection.


TIP

Assign these tags to a display or trend object in your application so that you can monitor memory usage at runtime.

Global Memory Connections

For this global connection		Assign this tag type	Connection Type
MERuntime RAM Usage	When this connection is assigned, and the Remote RAM Usage connection is set to a nonzero value the application writes the KB of RAM used by the runtime application to this connection, once every 10 seconds.	Analog Tag	Read-write
Total RAM Usage	When this connection is assigned and the Remote RAM Usage connection is set to a nonzero value, the application writes the total KB of RAM used by all processes running on the terminal to this connection, once every 10 seconds.	Analog tag	Read-write
Available RAM	When this connection is assigned and the Remote RAM Usage connection is set to a nonzero value, the application writes the the amount of unused KB of RAM on the runtime terminal to the Available RAM connection, once every 10 seconds.	Analog tag	Read-write
Remote RAM Usage	When this connection is set to a nonzero value, the MERuntime RAM Usage, Total RAM Usage and Available RAM Usage connections are active.	Assign a tag or an expression	Read-write

5. Click OK.

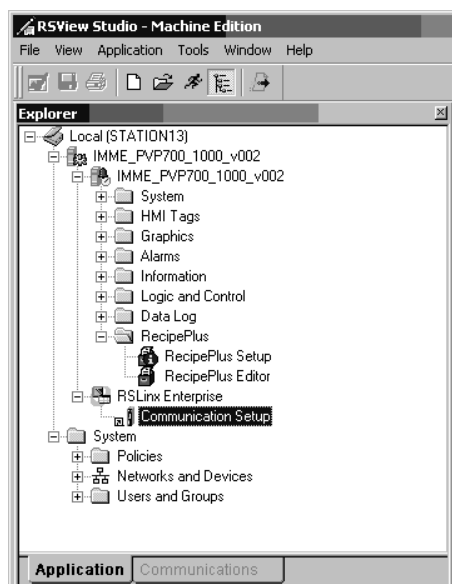
Configuring Communication

You are now ready to configure communication for your imported application. Because this is a new application, a communication configuration does not exist. The configuration will vary depending on the communication protocol you use.

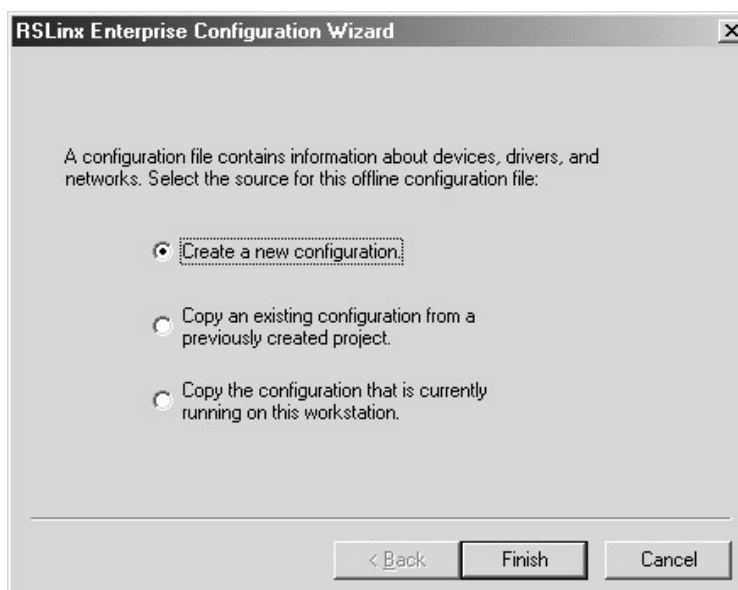
Remote I/O Communication

Follow these steps to configure a new Remote I/O configuration for your application.

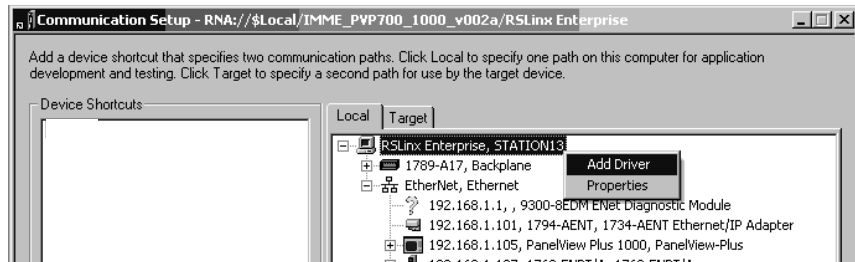
1. In the Explorer window, expand RSLinx Enterprise and double-click Communication Setup.



2. Select Create a New Configuration and click Finish.



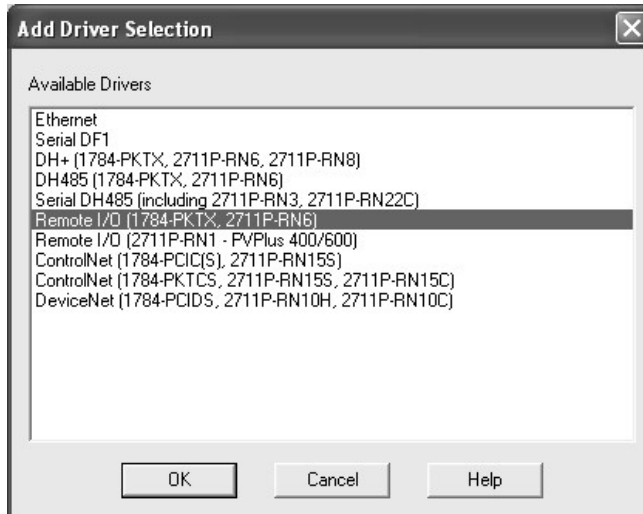
3. In the Communication Setup dialog, select the local tab.
4. Right-click RSLinx Enterprise and select Add Driver.



5. Select the Remote I/O (1784-PKTX, 2711P-RN6) driver and click OK.

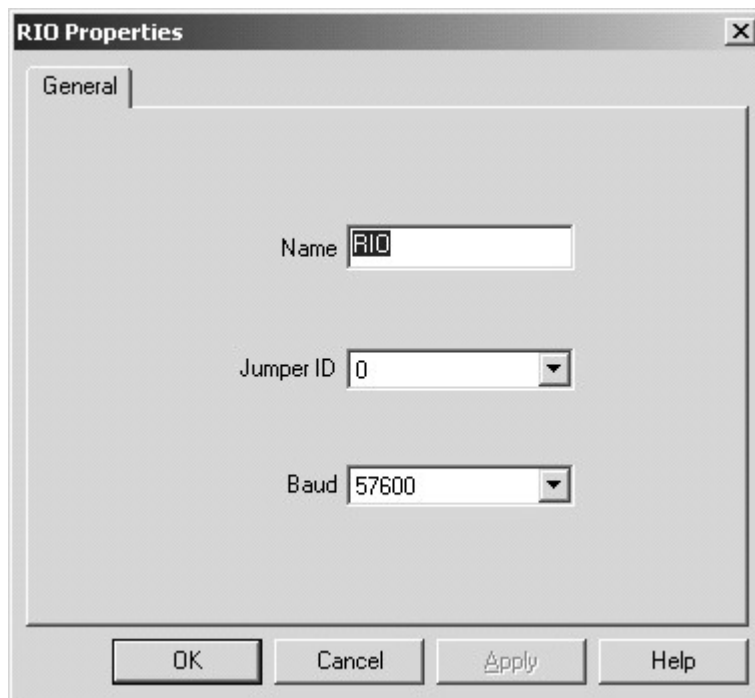
The 2711P-RN6 driver is required for PanelView Plus 700 to 1500 terminals.

The 2711P-RN1 driver is required for PanelView Plus 400 and 600 terminals.

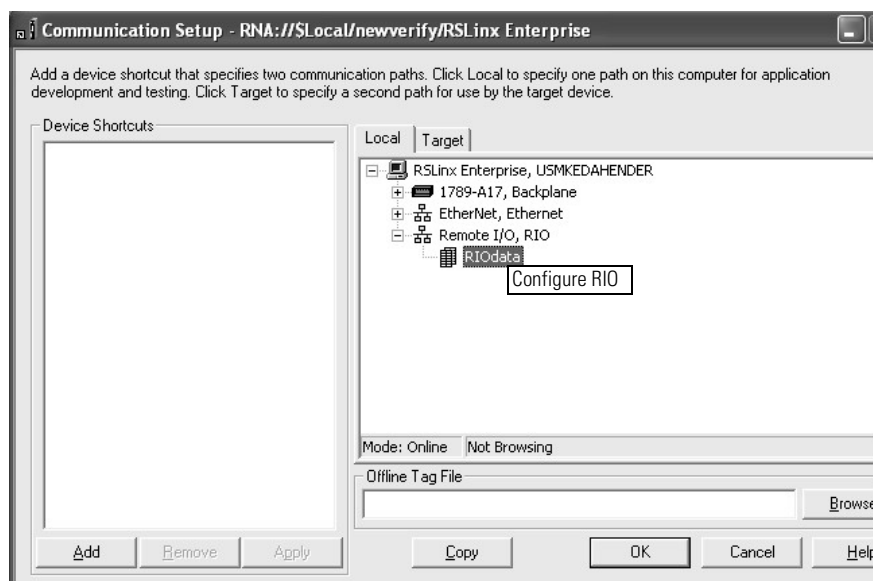


6. Configure Remote I/O Properties.
 - a. Accept the default name and default Jumper ID.
 - b. Set the baud rate to match the original baud rate setting of the Remote I/O network.
 - c. Click OK.

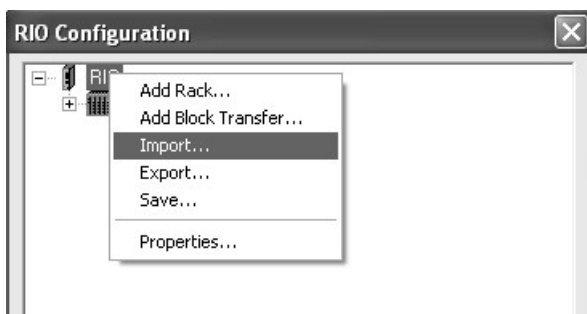
On a Remote I/O network, the configuration on the local tab is accessed to browse for tags but no communication takes place. When browsing for tags on a DH+ network, RSLinx communicates with the controller to acquire the available registers.



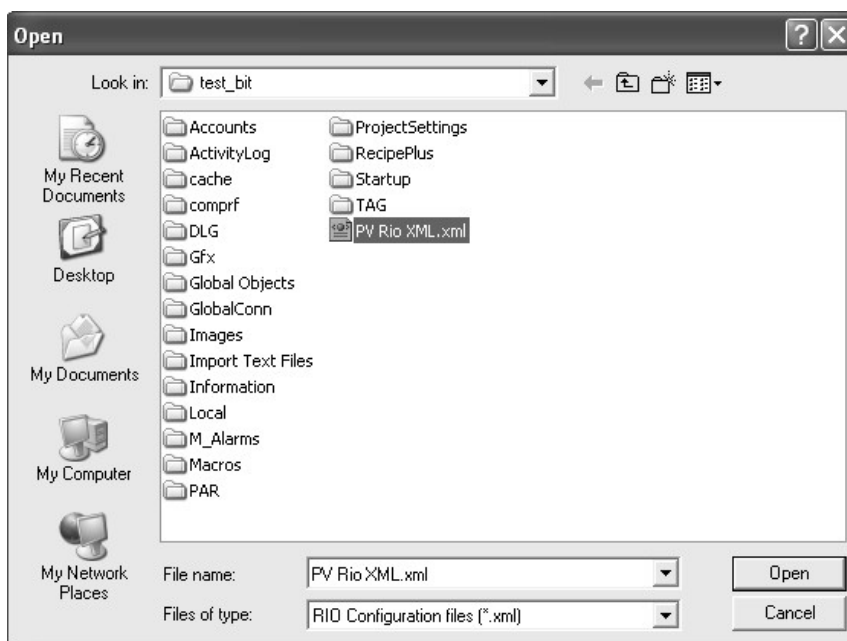
7. Expand the Remote I/O, RIO driver.
 - a. Right-click RIOdata.
 - b. Select Configure RIO.



8. Right-click RIO and select Import.



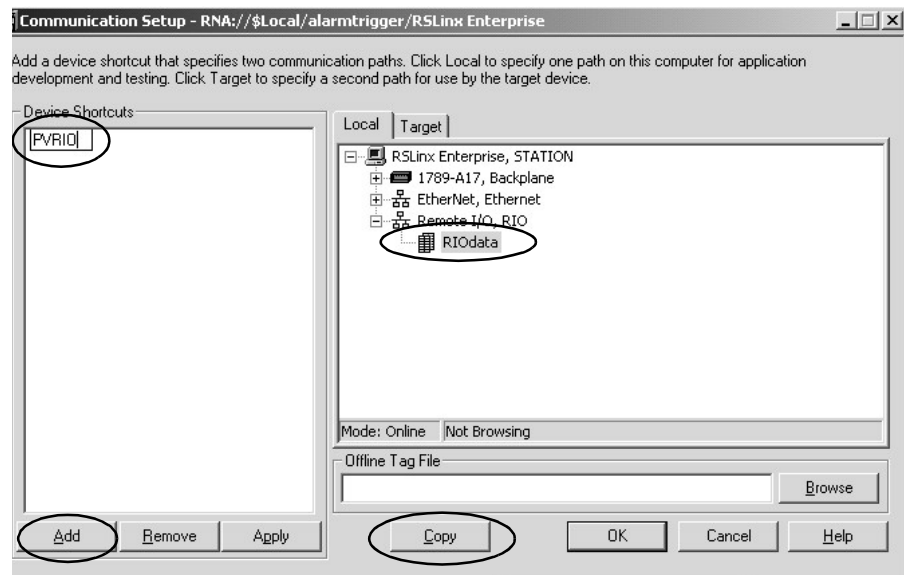
9. Import the PV Rio XML.xml file located under the new FactoryTalk View ME application that was created.
 - a. Select the file.
 - b. Click Open.



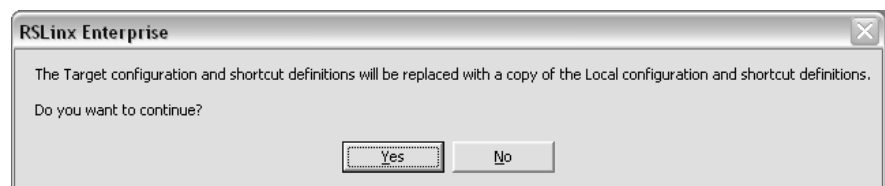
10. Save the RIO configuration and click OK.



11. Click Add to add a device shortcut named PVRIO.
12. Expand the Remote I/O, RIO driver and select RIOdata.
13. Click Apply under Device Shortcuts.
14. Click Copy to copy the local configuration to the Target tab.



15. Click Yes.

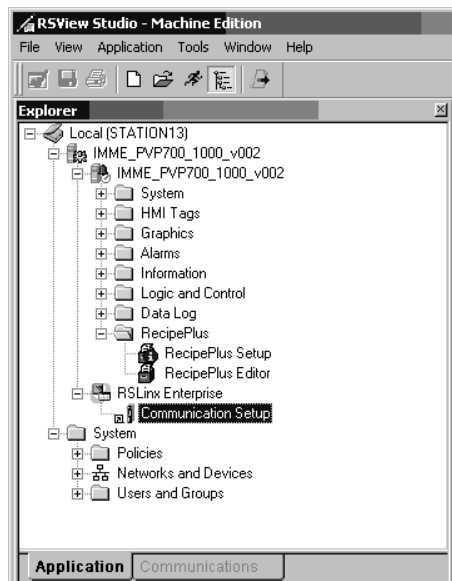


16. Click the Target tab to verify the copy operation.
17. Click OK to save changes.

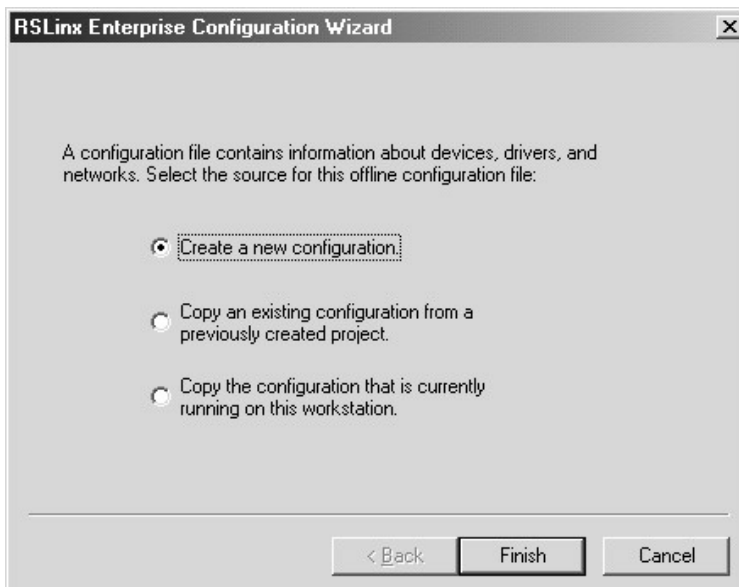
Configure DH+ Communication

Follow these steps to configure a new DH+ configuration for your application.

1. In the Explorer window, expand RSLinx Enterprise and double-click Communication Setup.

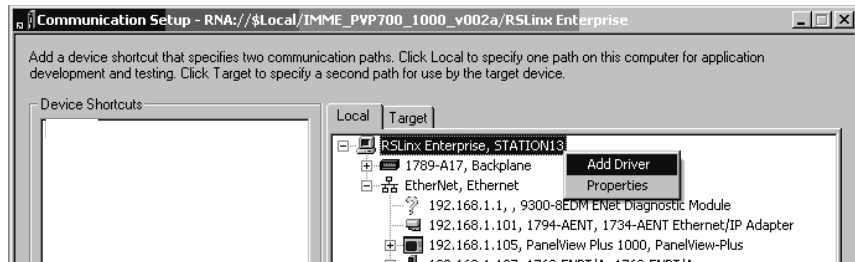


2. Select Create a New Configuration and click Finish.

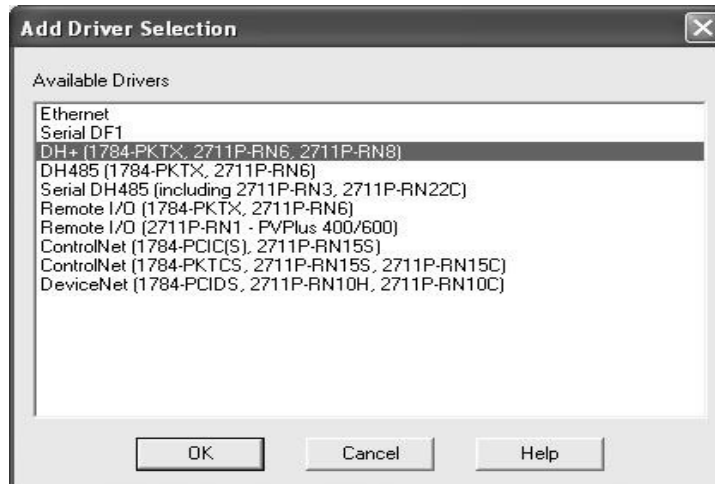


3. In the Communication Setup dialog, select the local tab.

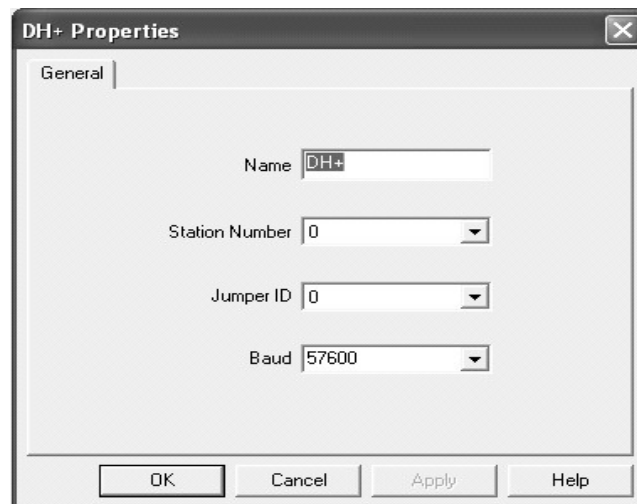
4. Right-click RSLinx Enterprise and select Add Driver.



5. Select the DH+ (1784-PKTX, 2711P-RN6, 2711P-RN8) driver and click OK.



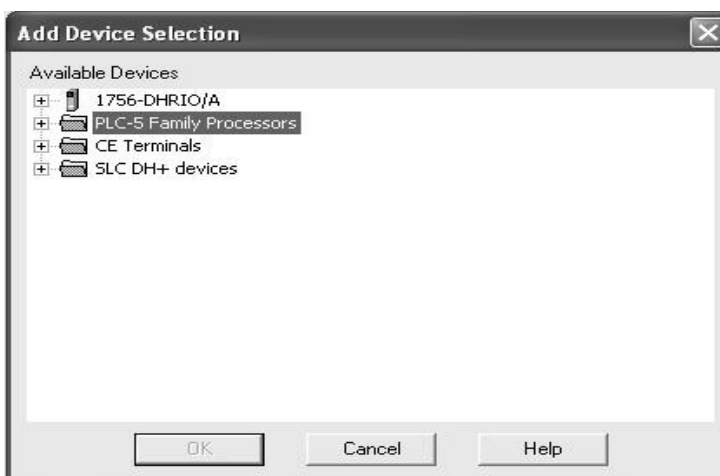
6. Configure DH+ Properties.
 - a. Accept the default name.
 - b. Set the station number to a unique number not used by any other device on this network.
 - c. Set the jumper ID to match the jumpers on the 1784-PKTX card.
 - d. Set the baud rate of DH+ network to match the device you are connecting too.
 - e. Click OK



7. Right-click the DH+ driver and select Add Device.



8. In the Add Device Section, browse the folders and select the device your terminal will be connecting to and click OK.

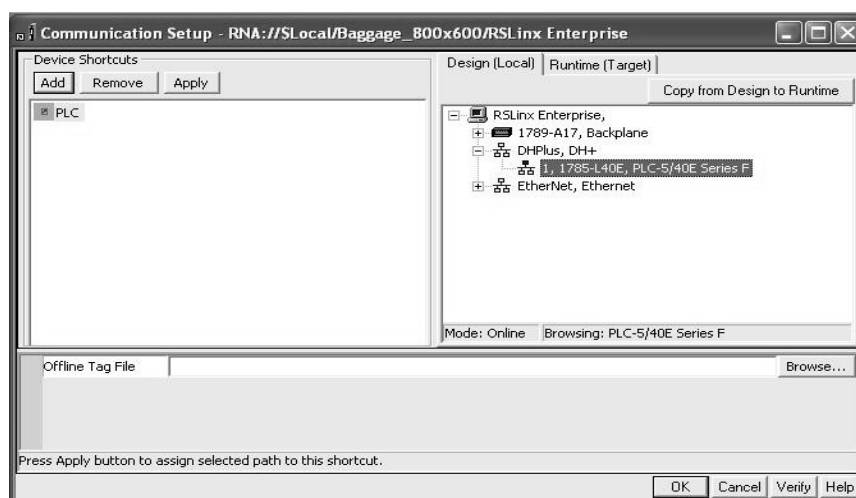


9. Depending on the device you selected you may need to configure the IP, Slot or Address of that device on your network.

10. Click Add to add a device shortcut and name it to the original topic name the PanelView e used.

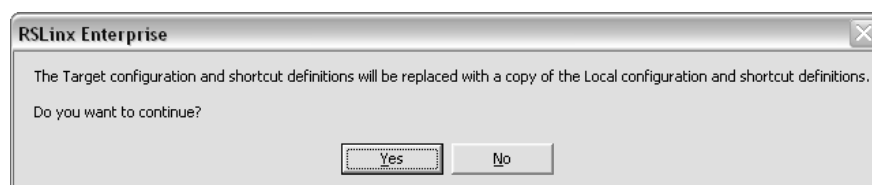
11. Expand the DHPlus, DH+ driver and select your device.

12. Select your shortcut and the device under the DH+ driver and click Apply.



13. Click Copy to copy the local configuration to the Target Tab.

14. Click Yes



15. Click OK to save the changes.

ControlNet Communications

Refer to ControlNet Communications for PanelView Plus Terminals user manual, publication, [2711P-UM003](#), for step-by-step details on how to configure ControlNet Scheduled and Unscheduled communication with FactoryTalk View ME software.

Create the Runtime Application

Introduction

In this chapter, you will create, download, and run the migrated application with all modifications.

Before You Begin

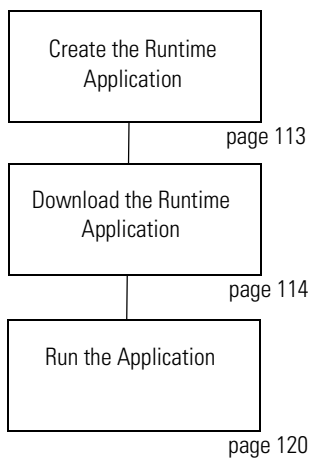
- Review migration considerations (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Optionally install the PanelView Plus terminal in the existing PanelView 1000e or 1400e panel cutout (Chapter 2).
- Import your PanelBuilder 1400e .pvc application into FactoryTalk View ME software (Chapter 3).
- Review the conversion log for your migrated application (Chapter 4).
- Review object and expression mapping (Chapter 5).
- Review unsupported features and common migration issues (Chapter 6).
- Qualify the runtime application (Chapter 7).

What You Need

- Converted FactoryTalk ME application with unsupported features and workarounds for migration issues.
- Qualified runtime application.

Follow These Steps

Follow these steps to create a runtime application, download, and run the application on the PanelView Plus terminal.



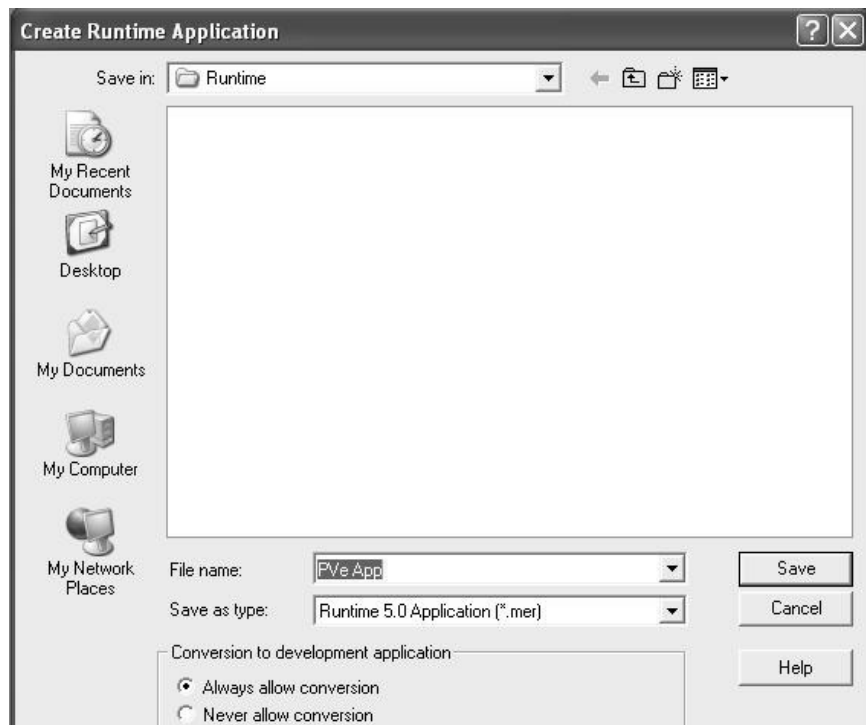
Create the Runtime Application

Now that you have configured global memory connections to monitor memory performance of the application at runtime, you are ready to create the runtime file. If you did not configure global memory connections, please return to the previous section.

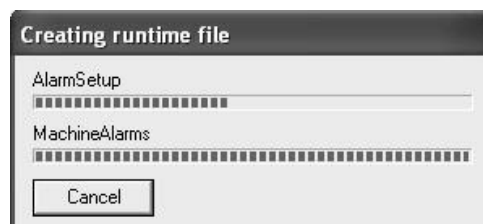
Follow these steps to compile a Machine Edition .mer file that you can then download to a PanelView Plus terminal.

1. Open your converted application in FactoryTalk View ME software.
2. Choose Create Runtime Application from the Application menu.
3. Enter a name for your runtime application or accept the default name.
4. Click Save to create the runtime file.

The file is saved to the default runtime location.



A dialog shows the status of the runtime file creation. When the process completes, the dialog automatically closes.



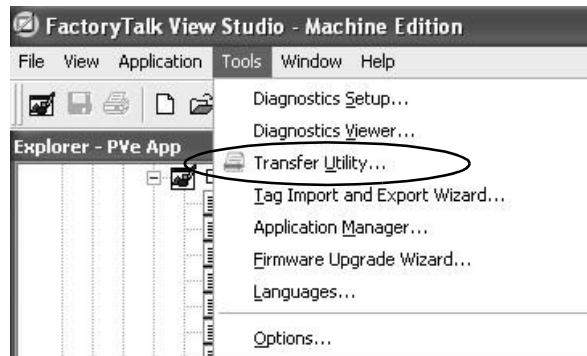
Download the Runtime Application

You can download your runtime .mer application to the PanelView Plus terminal using an Ethernet connection or a CompactFlash card.

Download Application Using Ethernet Connection

Follow these steps to download your runtime application to the PanelView Plus terminal using an Ethernet connection.

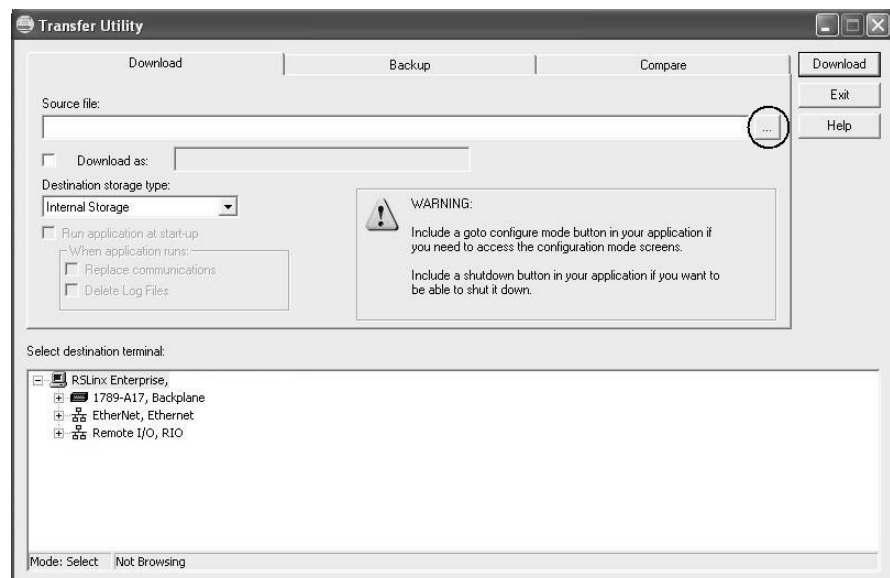
1. Establish an Ethernet connection between your computer and the terminal.
2. Launch the transfer utility in one of two ways.
 - a. Choose Transfer Utility from the Tools menu.



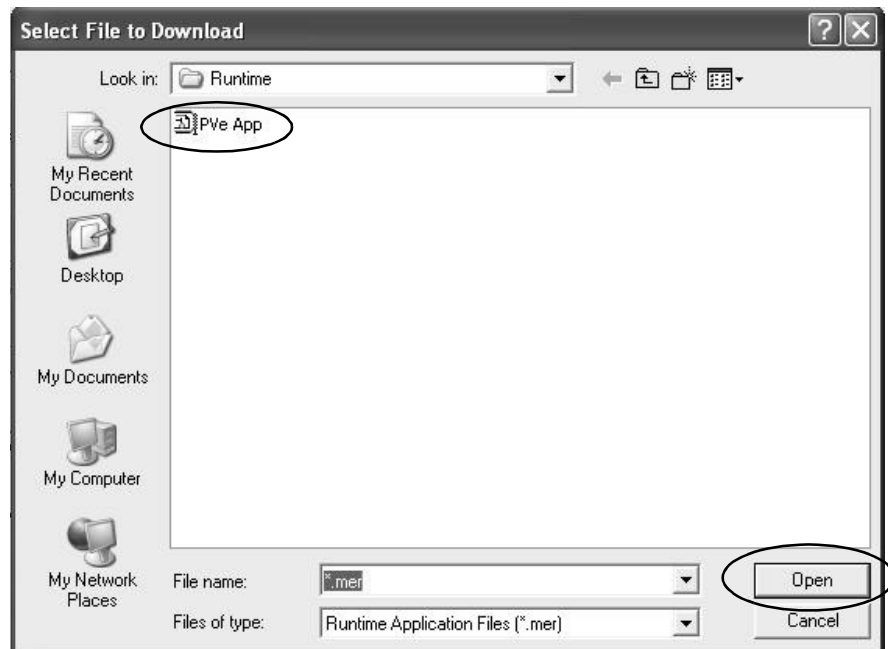
- b. Click the appropriate tool on the toolbar.



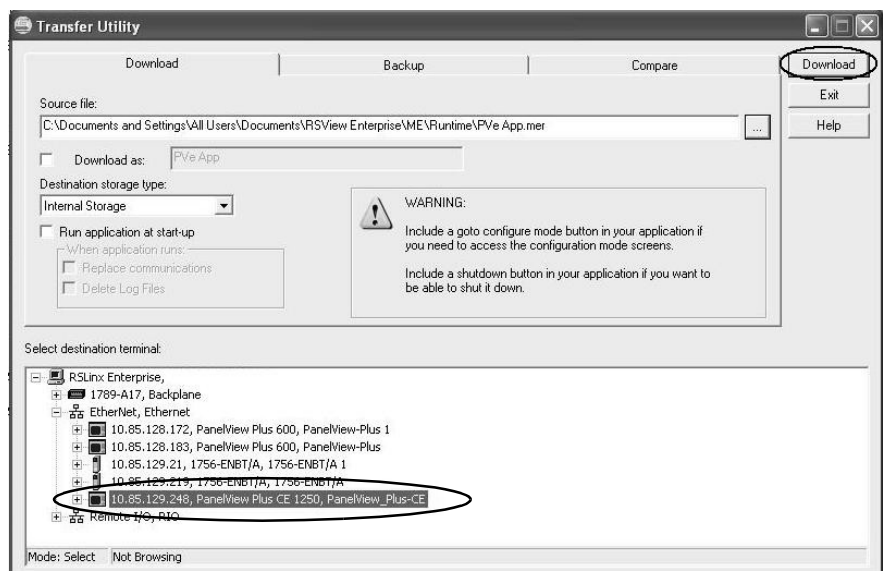
3. Click the ... button to browse for the runtime file you just created.



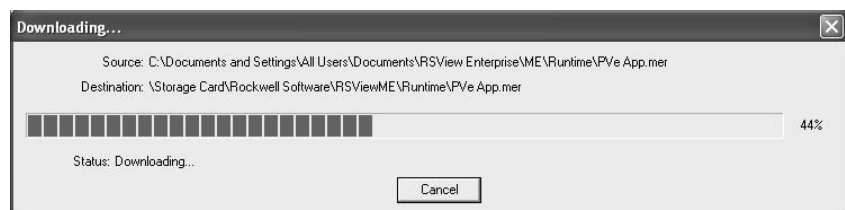
4. Select the runtime file you just created and click Open.



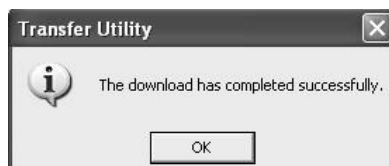
5. Under Select destination terminal, expand the Ethernet driver.
6. Browse for and select your PanelView Plus terminal.
7. Click Download to download the runtime file to the PanelView Plus terminal.



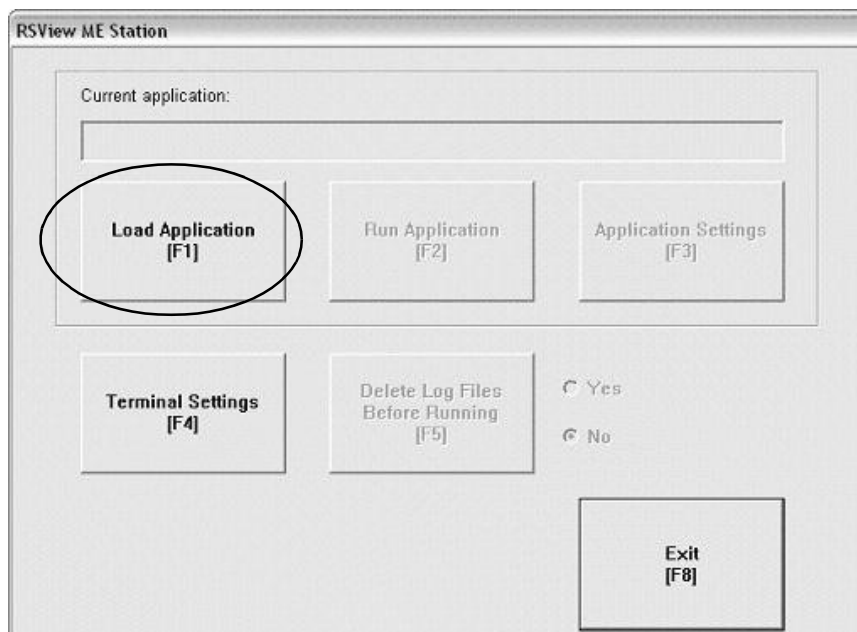
A progress bar shows the status of the download.



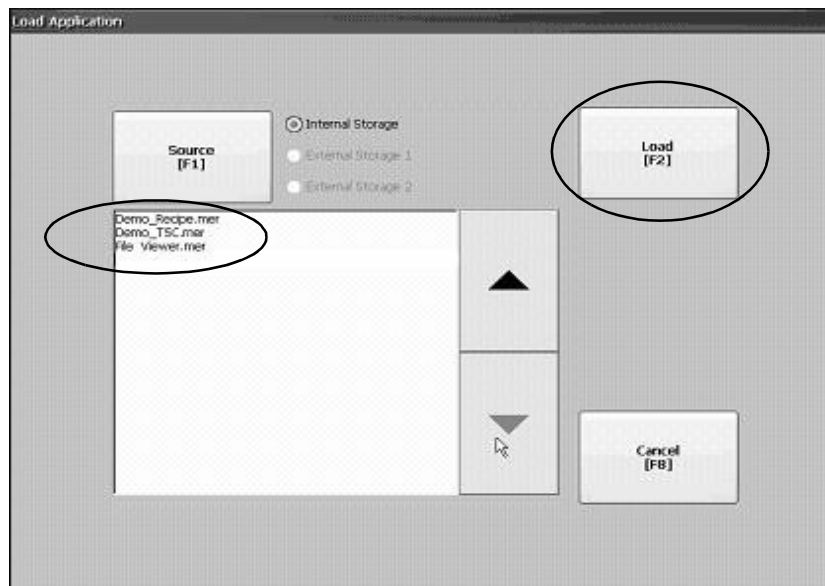
8. Click OK when the download has completed successfully.



9. On the PanelView Plus terminal, load the application by pressing the Load Application button or pressing the [F1] function key.

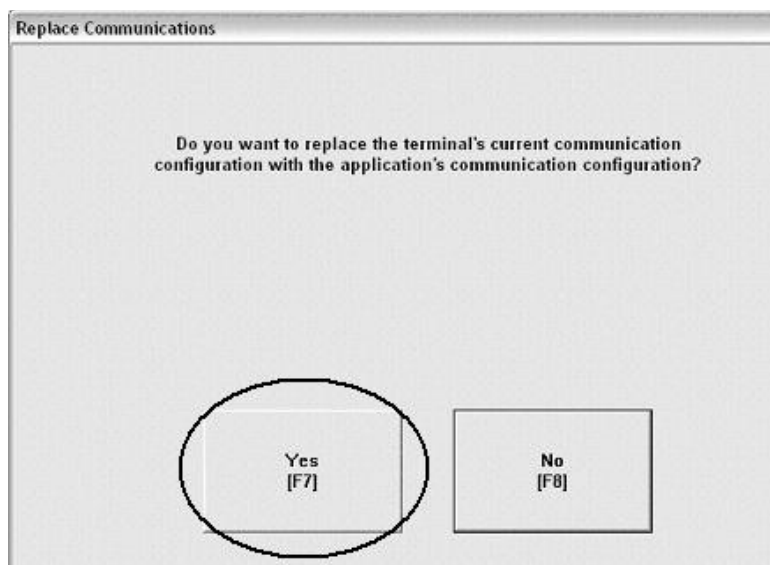


10. Select your runtime application.
 - a. Press the up or down cursor to select the application.
 - b. Press the Load button or the [F2] function key on terminal.



11. Press Yes or the [F7] function key on terminal to replace the communication settings in the terminal with those in your runtime application.

You are now ready to run the application on the terminal. Skip to page 120.



Download Application Using a CompactFlash Card

Follow these steps to load the runtime application to the PanelView Plus terminal using a CompactFlash card.

1. On your computer, copy the runtime application file to the runtime folder on a CompactFlash card supported by the PanelView Plus terminal.

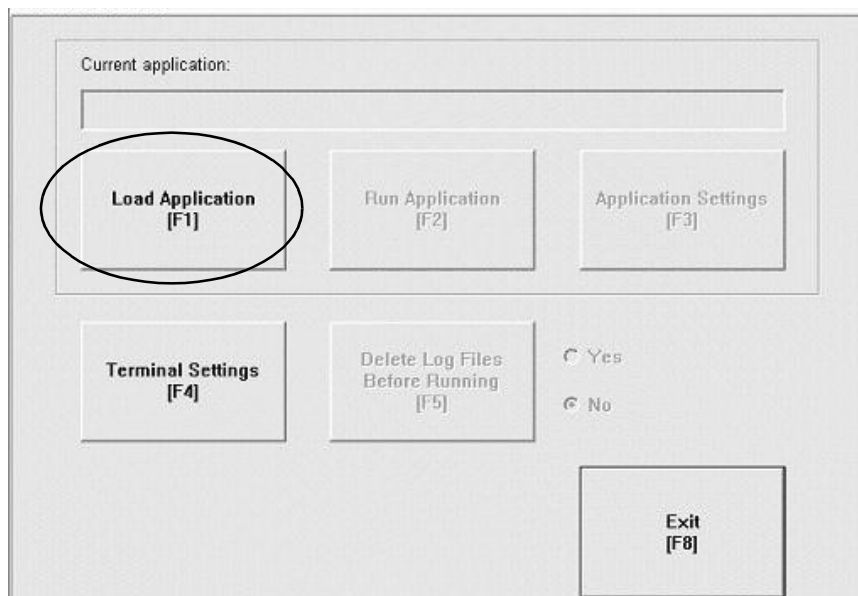
IMPORTANT

The root of the CompactFlash card must have the path 'RockwellSoftware\RSViewME\Runtime' or the application file will not be recognized at runtime.

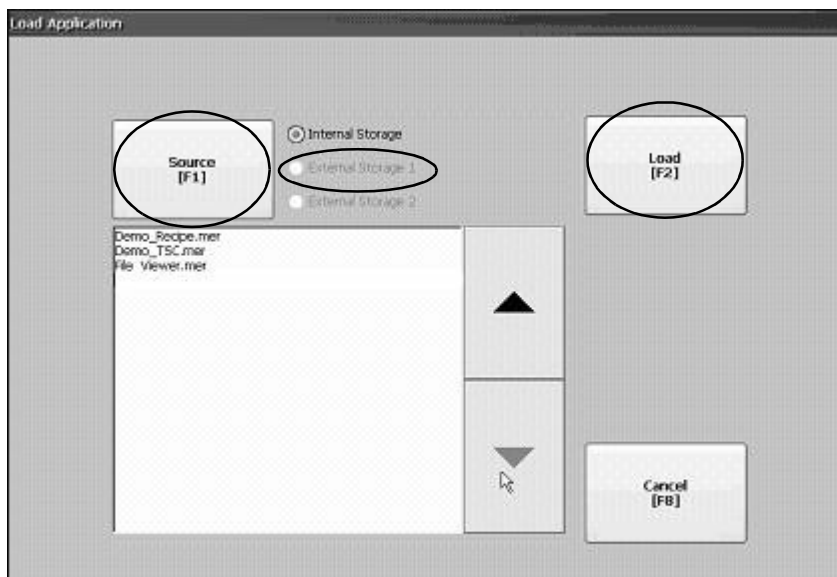
2. Turn off power to the terminal.
3. Load the CompactFlash card into the card slot of the PanelView Plus terminal.



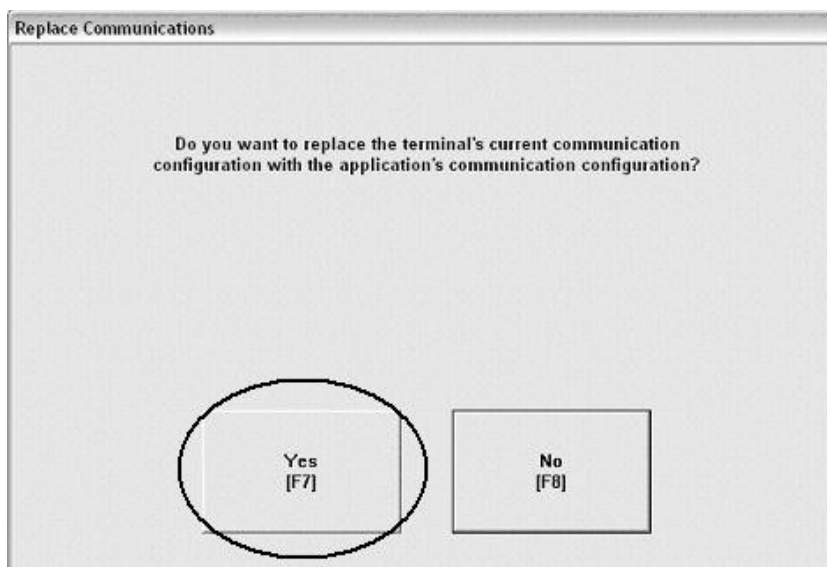
4. Turn on power to the PanelView Plus terminal.
5. On the configuration display, press Load Application button or press the [F1] function key on the terminal.



6. Press the Source button or [F1] on the terminal to select External Storage 1.
7. Select your runtime application.
 - a. Press the up or down cursor to select the application.
 - b. Press the Load button or [F2] function key on the terminal.



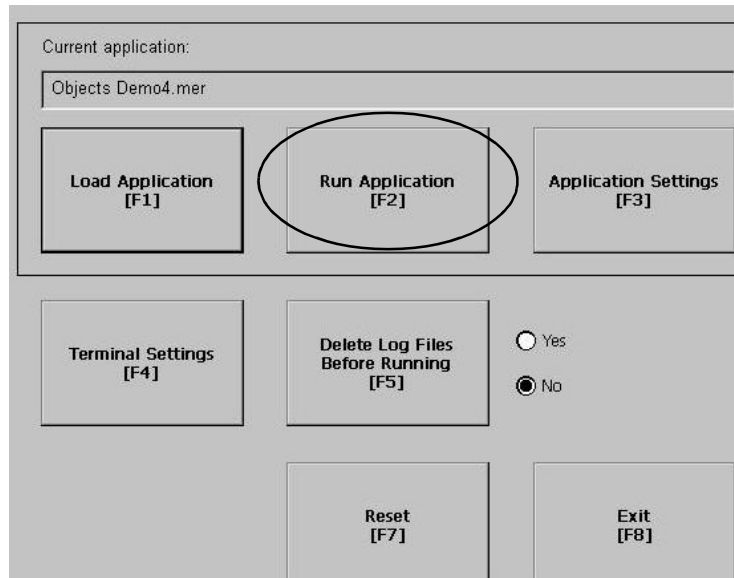
8. Press Yes or the [F7] function key on the terminal to replace the communication settings in the terminal with those in your runtime application.



Run the Application

You are now ready to validate the runtime application on the PanelView Plus terminal to make sure that it will not exceed the memory usage requirements of the terminal. The global connections you configured earlier will let you monitor memory performance of the terminal.

1. Press Run Application or the [F2] function key on the terminal to run the currently loaded application.



IMPORTANT

If your application is not communicating to the controller:

- Check all cable connections.
 - Verify that the Target tab in RSLinx Enterprise Communication Setup is configured correctly.
-

2. Cycle through all the runtime displays continuously.

IMPORTANT

Cycle through all displays three to five times to get an average of how much memory your application is consuming. Memory usage will increase somewhat because of data logging, alarms and other features that log to a file.

As you cycle through each display, tags are activated and cached into memory. If you receive out of memory errors or warnings, your application may be consuming too much memory. You can do one of two things.

- Modify your application to decrease memory usage.
- Move the application to a PC-based platform such as an industrial computer.

Measure and Improve Runtime Application Performance

Introduction

In this chapter, you will learn how to benchmark performance of your runtime application so that you can make improvements as needed.

Before You Begin

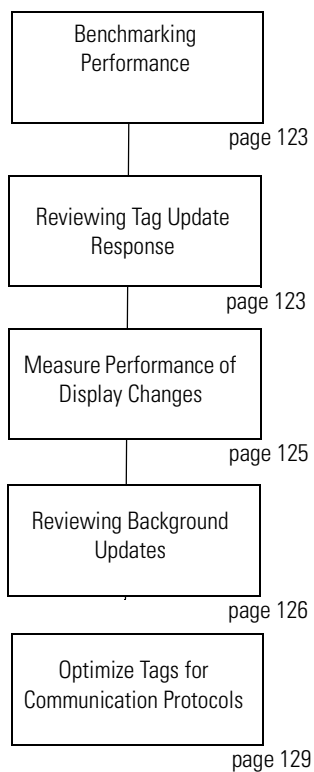
- Review migration considerations (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Optionally install the PanelView Plus terminal in the existing PanelView 1000e or 1400e panel cutout (Chapter 2).
- Import your PanelBuilder 1400e .pvc application into FactoryTalk View ME software (Chapter 3).
- Review the conversion log for your migrated application (Chapter 4).
- Review object and expression mapping (Chapter 5).
- Review unsupported features and common migration issues (Chapter 6).
- Correct, validate, and test the application (Chapter 7).
- Create, download, and run the application on a PanelView Plus terminal (Chapter 8).

What You Need

- A runtime application file downloaded and loaded in your PanelView Plus terminal.
- Your migrated application in FactoryTalk ME software with modifications based on unsupported features and workarounds for migration issues.

Follow These Steps

Follow this path to benchmark and improve the performance of your migrated application.



Benchmarking Performance

You are now ready to compare performance of your PanelBuilder 1400e application running on a PanelView 'e' terminal and the converted FactoryTalk View ME application running on a PanelView Plus terminal. The goal of this benchmarking is to identify objects or features, if any, that perform slower than your original application and increase that throughput.

You will perform the benchmarking by functional area so that you can improve performance one step at a time. Each function may also provide alternative methods to improve performance where needed.

IMPORTANT

Performance benchmarking between the terminal platforms is critical so that operators experience the same if not better performance on the new platform.

Reviewing Tag Update Response

This section compares tag update responses between PanelBuilder 1400e and FactoryTalk View ME software.

Scan Classes - PanelBuilder 1400E Software

PanelBuilder 1400e software uses scan classes to specify how often a tag value is updated. Scan classes use foreground or background scanning periods. Any tag with device as its data source is assigned to a scan class. At runtime, the PanelView 'e' terminal periodically updates tag information in its value table by scanning the PLC addresses.

Scan classes let you fine tune application performance by adjusting the foreground or background update times in a single location.

- A **foreground** period applies to tags used in the currently displayed application screen or global function. All tags used for read-only global control functions, such as the time and date from the programmable logic controller, and all tags of the current application screen are scanned at the foreground rate.
- A **background period** applies to tags used in application screens not currently displayed. This period determines how often the address is scanned. The valid range of values is 1... 86,400 seconds. Tags on other screens are scanned at the background rate to speed up screen changes.

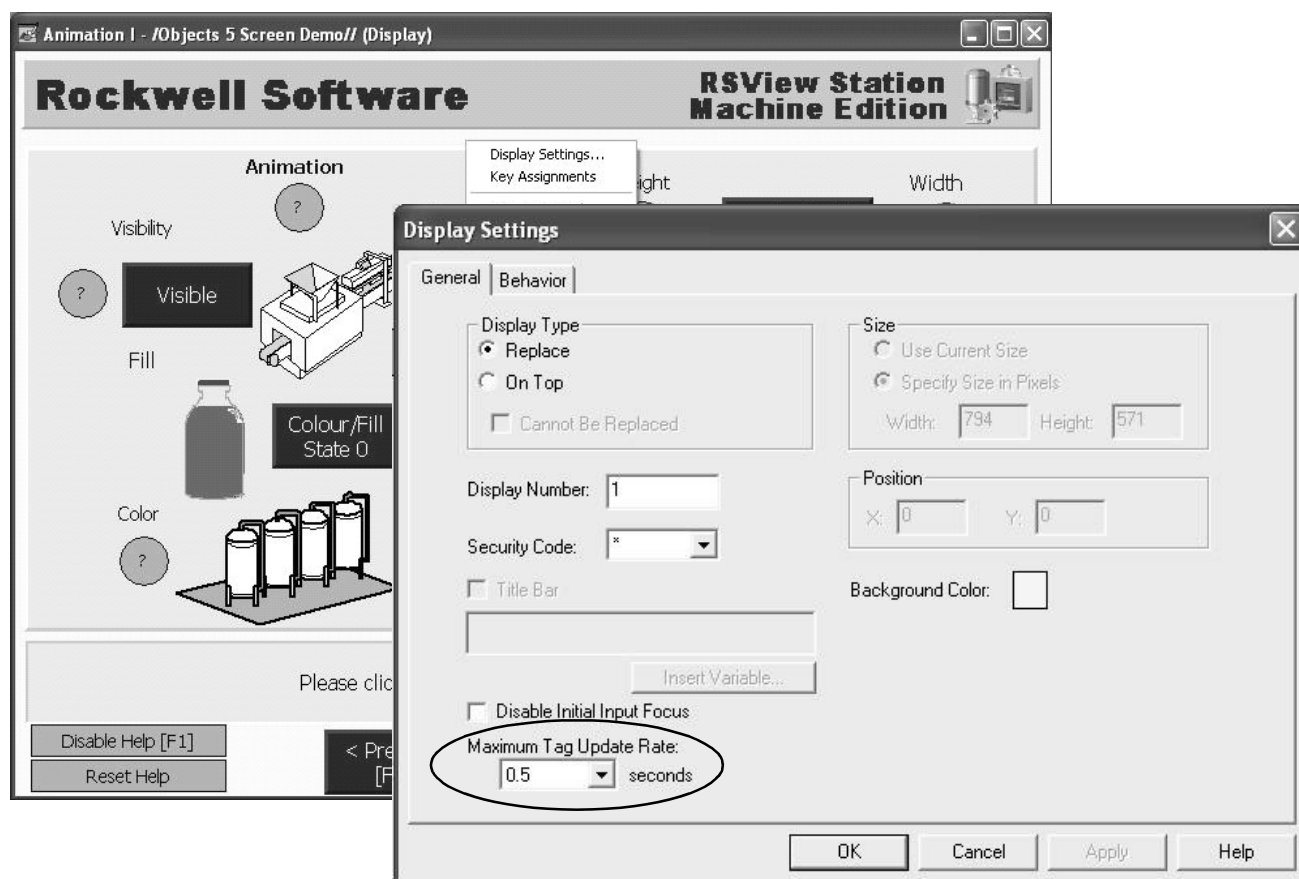
Tag Update Rate - FactoryTalk View ME Software

FactoryTalk View ME software does not use scan classes for tags. Instead, the tag update response is dependent on where the tag is used in the application. Each display or feature has a maximum tag update rate. This parameter specifies the maximum rate at which data servers will send data to the tags used in the display, including tags used in expressions and embedded variables.

The default tag update rate is 1.0 seconds. If the update rate is changed, the new rate will not take effect until the display is closed and re-opened.

At runtime, all tags are updated immediately when the display is opened, regardless of the update rate.

Maximum Tag Update Rate for Display



Measure Performance of Display Changes

During performance benchmarking, you may want to measure the time it takes for the application to change from one display to another. It is important that the operator experiences the same display feedback, if not better, on the PanelView Plus terminal.

If possible, place your PanelView 'e' terminal and the new PanelView Plus terminal side by side. Run the original PanelView 'e' application and the converted PanelView Plus application at the same time. You should be able to notice any performance issues when changing displays.

Follow these steps to measure the length of time it takes to change from one display to another in the application.

1. Load and run your converted application on the PanelView Plus terminal.
2. Use a stopwatch in the next steps to record the time it takes to change from one display to another display.
3. At any display, press the Display Change button and start recording the time.
4. Stop recording the time after all tag information is loaded on the next display.
5. Repeat steps 3 and 4 until you have recorded the times for all displays in the application.

IMPORTANT

Cycle through all displays at least twice. The first time you open a display it loads slower than subsequent displays because tag information is cached into memory after a display is opened.

6. If possible, repeat this procedure for the same application on the PanelView 'e' terminal.

In a FactoryTalk View ME application, each display can have a maximum of 1000 tag connections assigned. The more tag connections a display has, the longer it will take to load the display.

If performance is slower for some displays in the PanelView Plus application, you can:

- adjust the maximum tag update rate for these displays.
- reduce the number of tags used on these displays.

Reviewing Background Updates

Tags are continuously updated by the runtime application whether or not the operator is on a specific display. Tags update according to the maximum tag update rate for the associated feature.

The more familiar you are with these tags and features, the easier it is to update and fine tune your application.

TIP

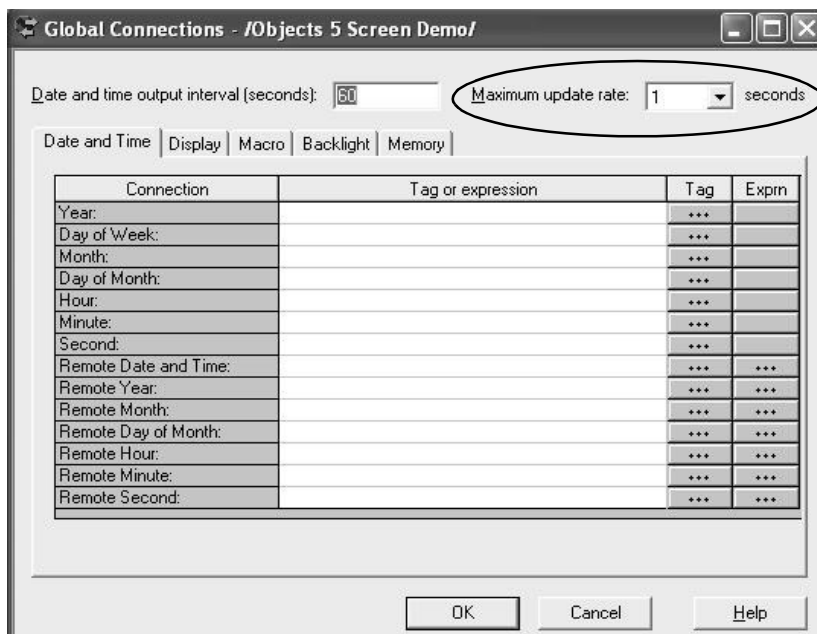
Set noncritical tags to a longer maximum update rate. Set critical tags to a lower rate so that time-sensitive information is always available to the operator.

Global Connections

The Global Connections editor provides a list of connections that you can assign to tags.

- Date and Time
- Display
- Macro
- Backlight
- Memory

These tags are continuously updated in the background by the application, regardless of what display is currently active. The tags update according to the setting of the maximum update rate parameter.



Alarms

The Alarm Setup editor lets you define triggers, messages, and advanced features for alarms. Any trigger tags or optional connections assigned within the editor update according to the maximum update rate. This parameter is on the Advanced tab.

Alarm Setup - /Objects 5 Screen Demo/

Triggers | Messages | **Advanced**

Display
Current alarms: [ALARM] ... Edit...

History
Size: 128

Time settings
Hold time (ms): 250
Maximum update rate (second): 0.5

Optional connections:

Name	Tag or expression	Tag	Exprn
Silence		***	
Remote Silence		***	***
Remote Ack All		***	***
Status Reset		***	
Remote Status Reset		***	***
Close Display		***	
Remote Close Display		***	***

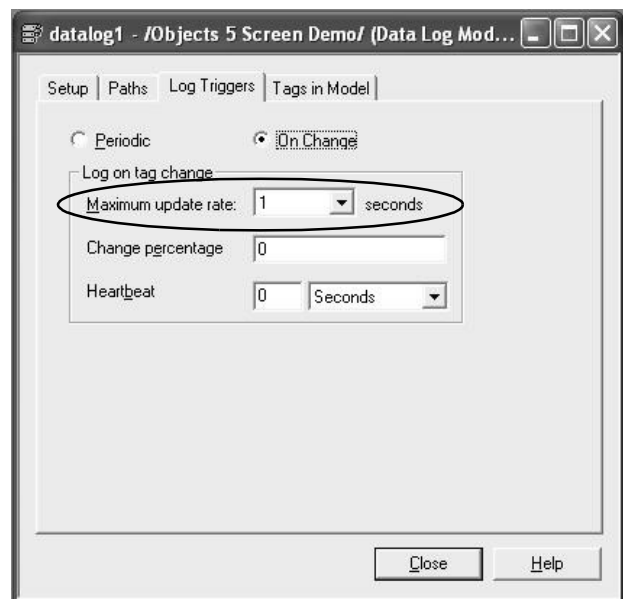
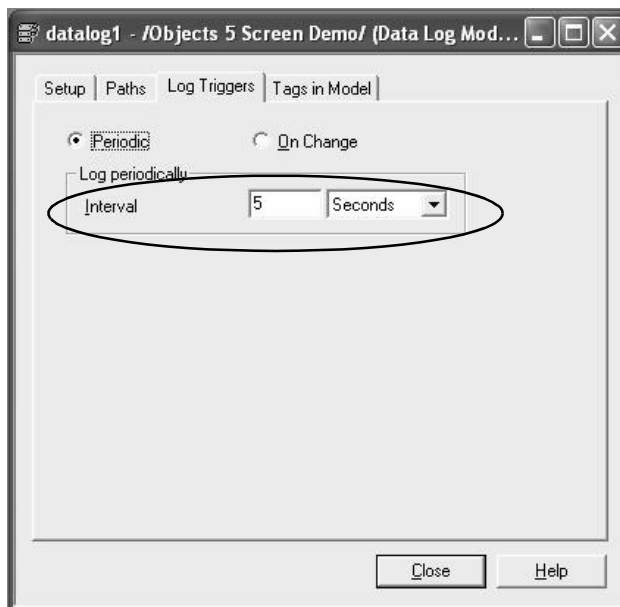
OK Cancel Help

Data Log Model

The Data Log Model editor lets you configure up to 100 analog or digital tags that are logged to a file.

On the Log Triggers tab, you can define these tags to receive Periodic or On Change tag updates.

- For the Periodic configuration, you define a logging interval in which the tags are periodically updated.
- For the On Change configuration, you define the maximum update rate for updating the tags.

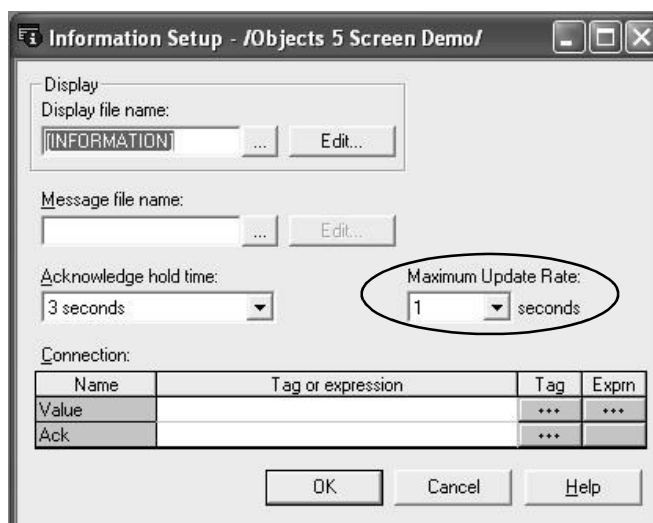


The On Change configuration also lets you define a Change Percentage and Heartbeat setting.

- **Change Percentage:** Logs tag values once a value has changed by a certain percentage. The percentage is based on the tag's minimum and maximum values as configured in the tag editor. Only tags that change by the specified percentage are logged.
- **Heartbeat:** Specifies a time interval on how often tag values are logged even if no change has occurred. The heartbeat verifies that the data in the log file is current.

Information Messages

The Information Message editor lets you specify information messages to display on a user defined display automatically. The tags assigned in this editor, update at the rate defined by the maximum update rate.



Optimize Tags for Communication Protocols

You can further improve performance of ControlNet, Remote I/O and DH+ applications by converting the application tags from HMI tags to one of these tag types:

- Alias (RIO network only)
- Direct reference tags.

The tag converter wizard (TCW) automatically converts tags in an application and creates new displays. Besides improving runtime performance, the utility also saves development time.

TIP

You can download The TCW utility from the Knowledgebase. See Required Files and Utilities on page 46 for details.

About the Tag Converter Wizard

The tag converter wizard (TCW) requires core information from an existing application to perform the conversion.:

- Exported HMI tag database
- Exported displays (xml format)
- Exported alarms (xml format)

When this pre-conversion information is available, you can run the wizard. The wizard examines the HMI tag database to determine which tags to convert to alias tags or direct reference tags.

IMPORTANT

HMI tags that use custom scale and offsets are not converted. Any alias tags with initial values assigned are not converted. You must manually set the custom scale, offsets, and initial values for these tags, for objects to operate correctly.

The HMI tags are substituted with the alias or device tags in the display and alarm xml files. When the conversion is done, a Convert_Log.txt file is generated. This file indicates all tag substitutions on a display-by-display basis. A new set of display and alarm xml files is created that you can import into your migrated application. The original display and alarm xml files are unaltered.

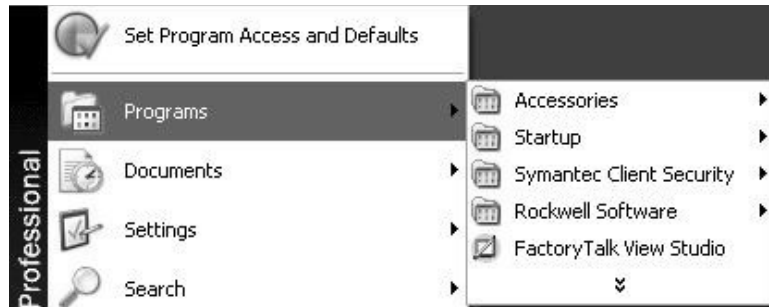
IMPORTANT

The tag converter wizard converts HMI tags to device tags. It does not convert device tags to HMI tags. Back up your application before starting the conversion. The conversion does alter you original displays when imported into your new application.

Export the HMI Tag Database

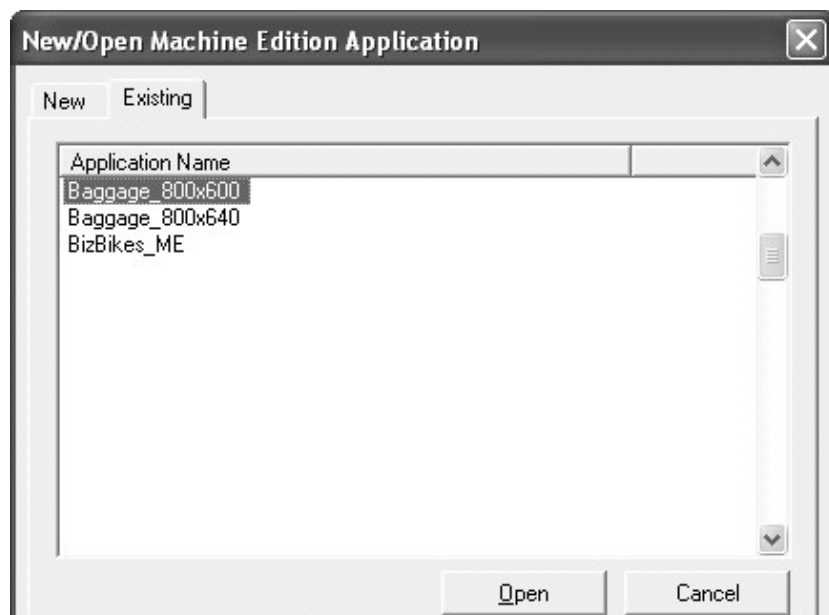
Follow these pre-conversion steps to export the HMI tag database in your migrated application.

1. Launch FactoryTalk View Studio software.

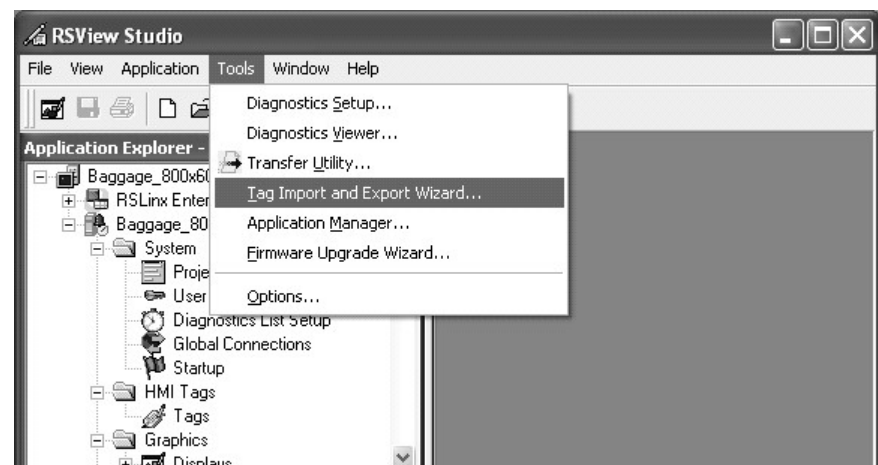


2. Select your ME application and click Open.

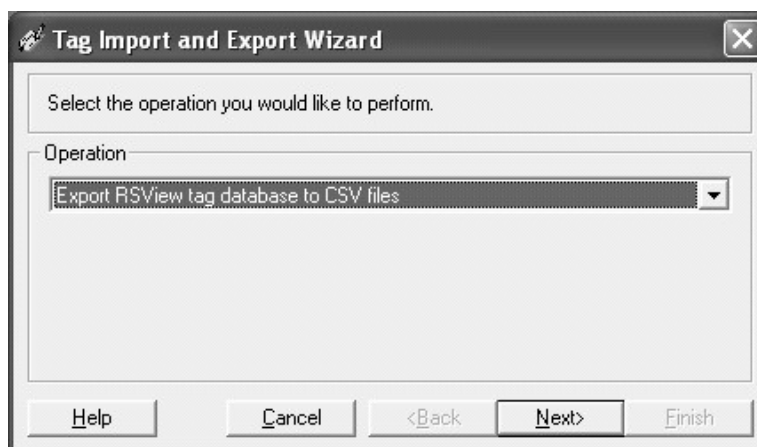
This example selects Baggage_800x600.



3. Select Tools>Tag Import and Export Wizard.

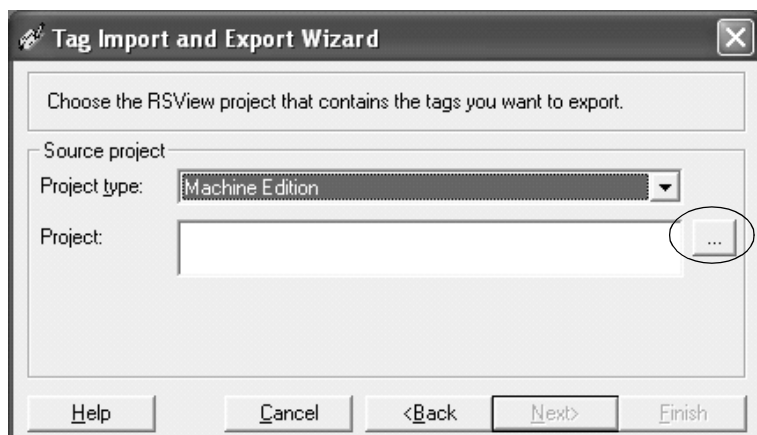


4. In the Operation field, select Export RSVIEW Tag Database to CSV files and click Next.



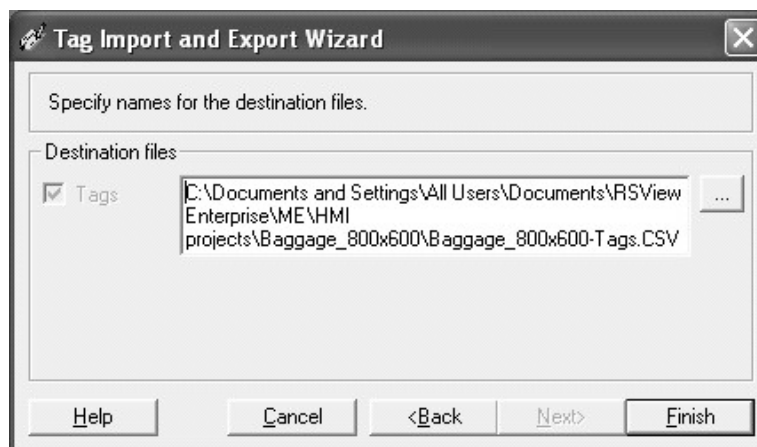
5. Click the ... button and browse to the project .med file and click Next.

This example uses
Baggage_800x600.med.



6. Accept the default name for the destination file.
7. Click Finish.

You have just successfully
exported the HMI tag
database.



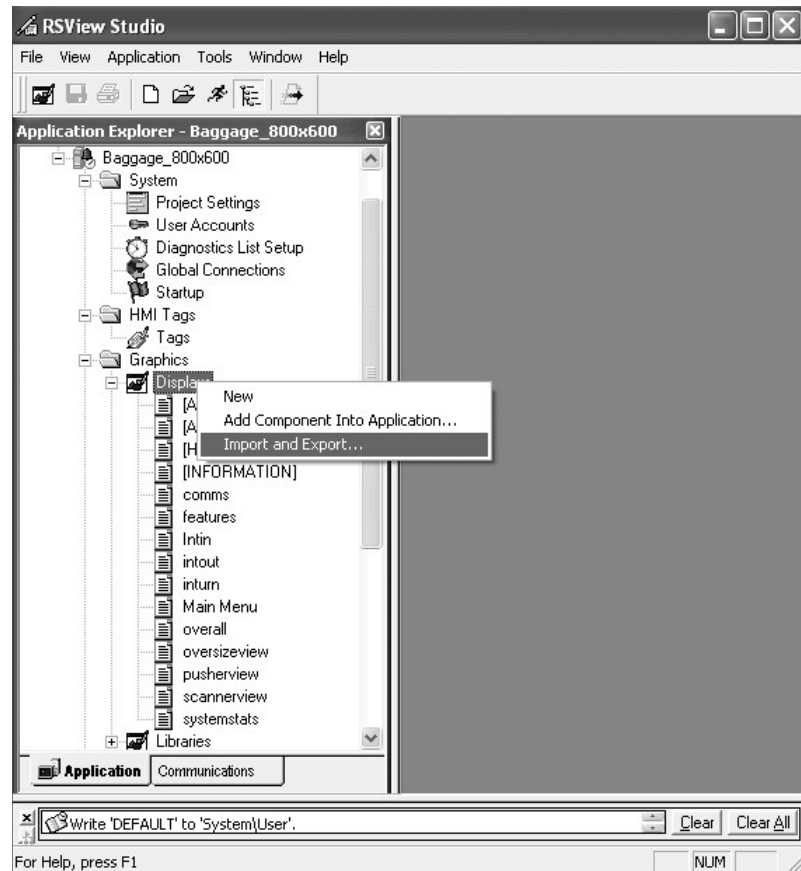
The default destination of the .csv file is:

C:\Documents and Settings\All Users\Documents\RSView
Enterprise\ME\HMI Projects\Project_Name\Project_Name-Tags.CSV

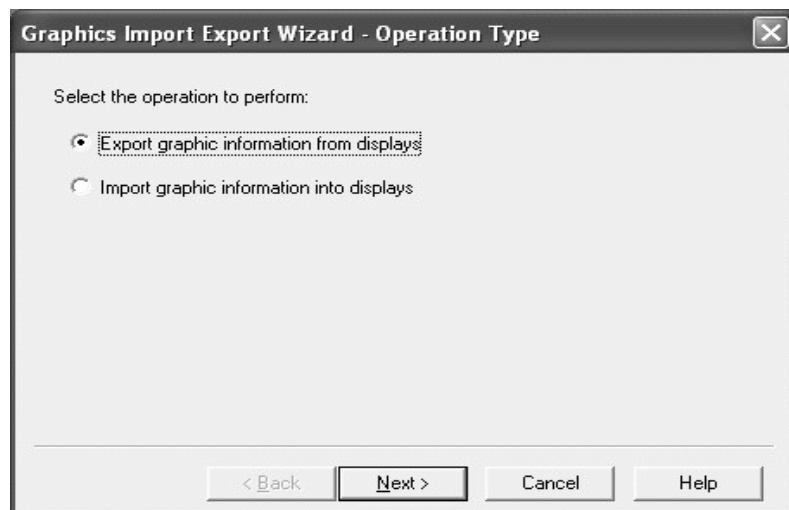
Export Graphic Displays to XML File

Follow these pre-conversion steps to export the graphics display in your converted application to an xml format.

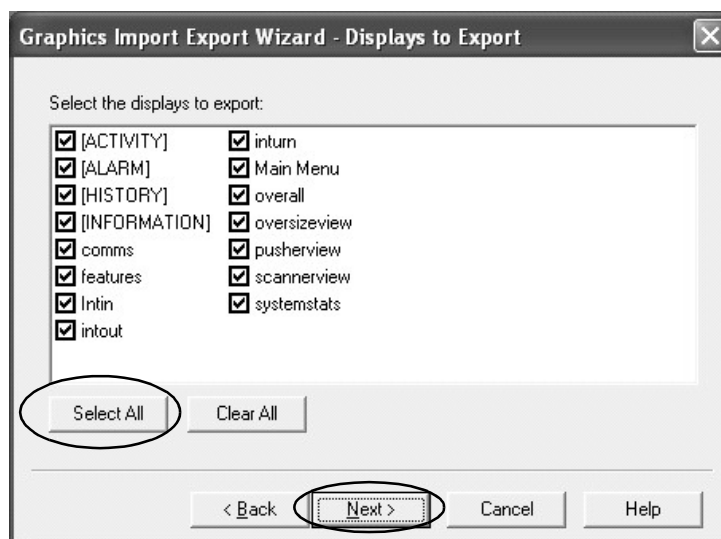
1. Navigate back to the open instance of FactoryTalk View Studio.
2. In the Application Explorer, right-click Displays and select Import and Export.



3. Select Export graphic information from display and click Next.



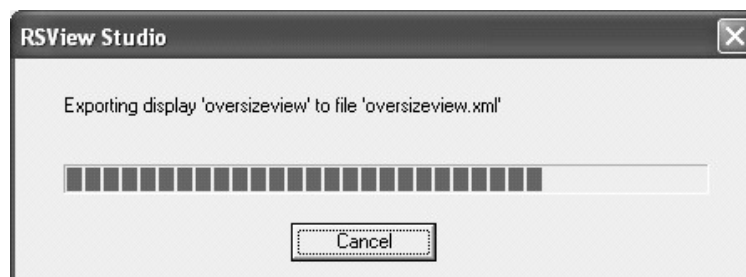
4. Click Select All, then Next.



5. Click the ... button.
6. Create a folder anywhere on your computer named Exported Displays.
7. Click Finish.

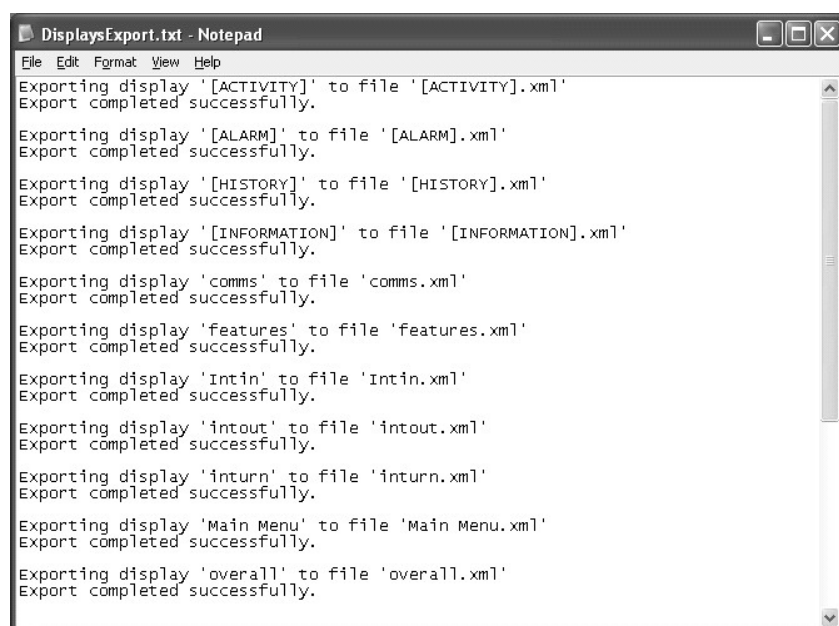


A dialog shows the name of each graphic display as it is exported to an .xml file.



8. Review the Display_Export.txt file for any errors generated during the export.

The displays have been successfully exported to the folder created in step 6.



```

DisplaysExport.txt - Notepad
File Edit Format View Help
Exporting display '[ACTIVITY]' to file '[ACTIVITY].xml'
Export completed successfully.

Exporting display '[ALARM]' to file '[ALARM].xml'
Export completed successfully.

Exporting display '[HISTORY]' to file '[HISTORY].xml'
Export completed successfully.

Exporting display '[INFORMATION]' to file '[INFORMATION].xml'
Export completed successfully.

Exporting display 'comms' to file 'comms.xml'
Export completed successfully.

Exporting display 'features' to file 'features.xml'
Export completed successfully.

Exporting display 'Intin' to file 'Intin.xml'
Export completed successfully.

Exporting display 'intout' to file 'intout.xml'
Export completed successfully.

Exporting display 'inturn' to file 'inturn.xml'
Export completed successfully.

Exporting display 'Main Menu' to file 'Main Menu.xml'
Export completed successfully.

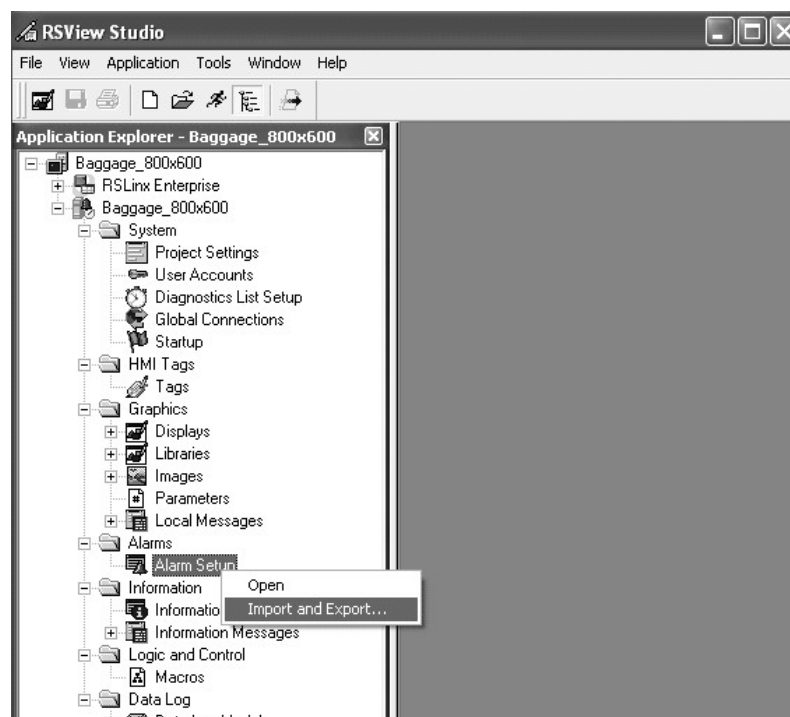
Exporting display 'overall' to file 'overall.xml'
Export completed successfully.

```

Export Alarms to XML File

Follow these pre-conversion steps to export alarms in your converted application to an xml format.

1. Navigate back to the open instance of FactoryTalk View Studio.
2. In the Application Explorer, right-click Alarms and select Import and Export.

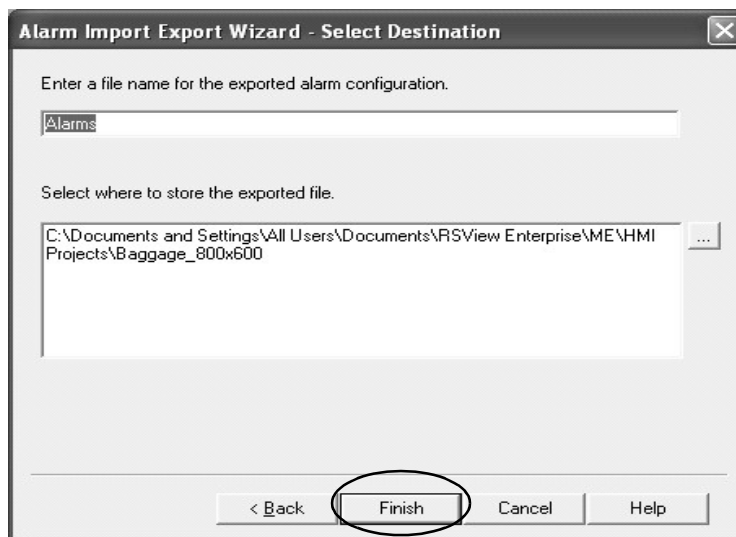


3. Select Export alarm configuration from application and click Next.



4. Accept the default file name Alarms and click Finish.

The alarms have been successfully exported to the alarms.xml file.



The default location for the alarm.xml file is:

C:\Documents and Settings\All Users\Documents\RSView Enterprise\ME\HMI Projects\Project_Name\Alarms.xml

Run the Tag Converter Wizard

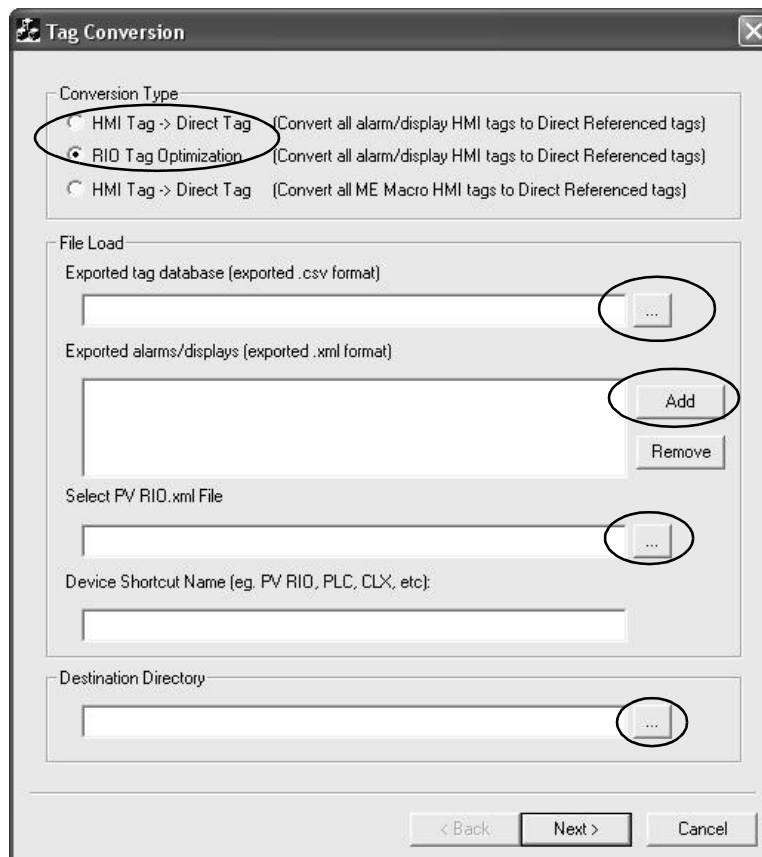
Now that you have completed the pre-conversion process, you are ready to run the tag converter wizard. The executable file is named TCW.exe.

1. Double-click the TCW.exe utility.
2. Select a Conversion Type.
 - a. Select RIO Tag Optimization if your application uses RIO communication.
 - b. Select HMI to Direct Tag if your application uses DH+ or ControlNet communication.

3. Click the ... button next to the Exported Tag Database field and load the exported tag database.

The file is located in the directory specified in step 6 on page 132.

4. Click the Add button next to Exported alarms/displays.

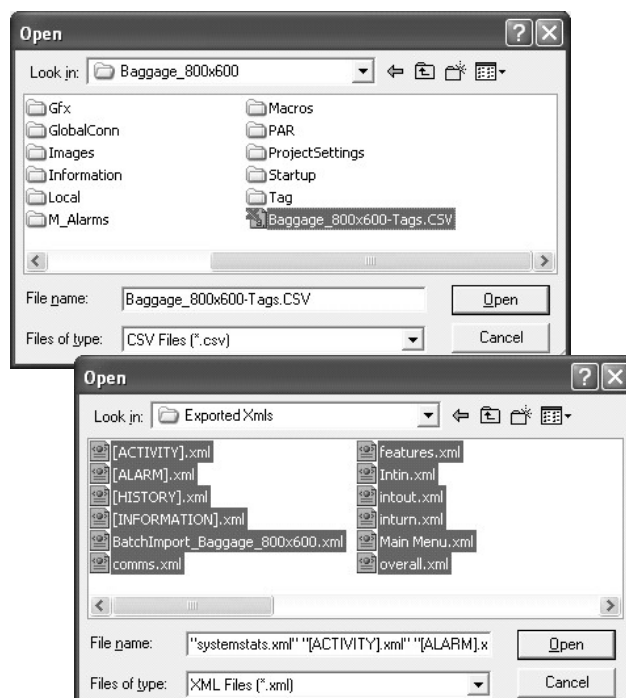


5. Load the exported alarms and display xml files.

The alarms file is located in the folder specified under step 4 on page 136.

The xml display files are located in the folder specified in step 6 on page 134.

Hold down the Shift key and select all displays to load all displays at once.



TIP

If your application uses DH+ or ControlNet communication, skip steps 6 and 7.

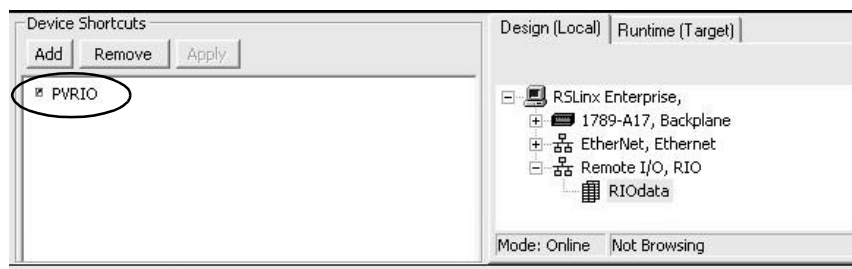
6. In the Select PV RIO.xml field, click the ... button to browse for the PVRIO.xml that was created with your migrated application.

This is the default location of the PVRIO.xml file.

C:\Documents and Settings\All Users\Documents\RSView Enterprise\ME\HMI Projects\Your_Migrated_Project\PVRIO>xml

7. In the Device Shortcut field, enter the device shortcut name that you defined in RSLink Enterprise Communication editor.

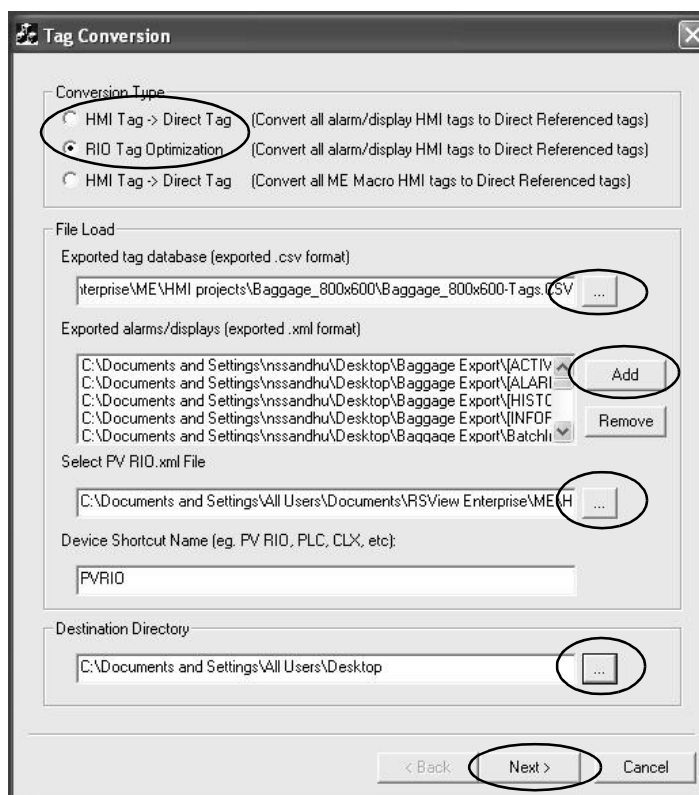
The shortcut name is in the left side of the editor.



8. In the Destination Directory field, click the ... button to specify any location for the new xml display files.

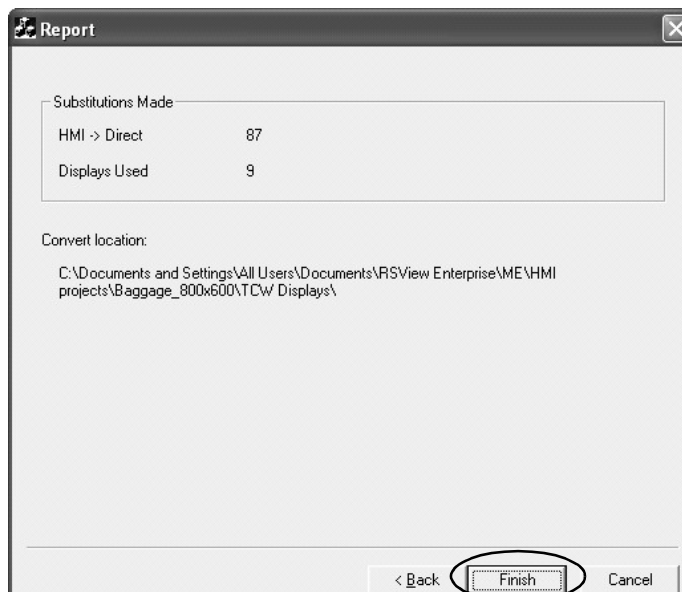
The example shown may look different depending the network protocol of your application.

9. Click Next to continue the conversion.



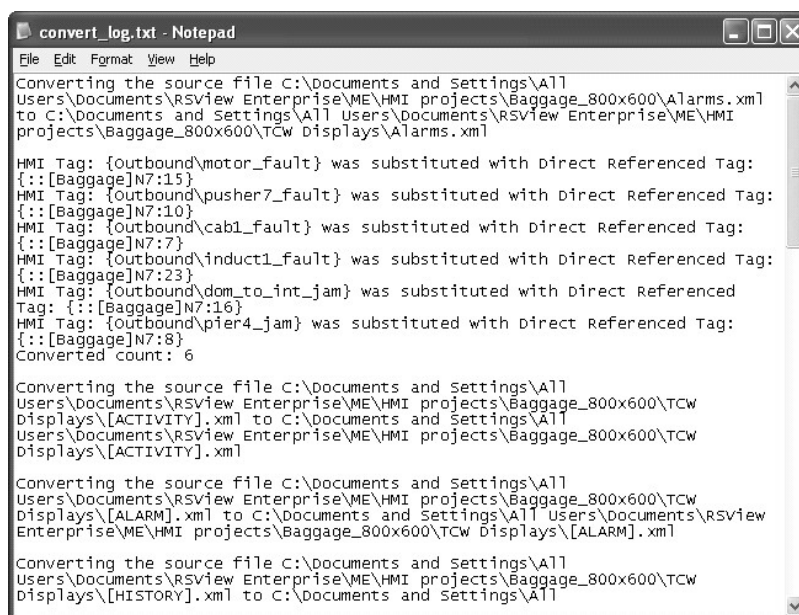
The Report dialog shows the number of tag and display substitutions made.

10. Click Finish.



A conversion log file Conversion_Log.txt is created and stored with the converted xml files.

The conversion process is complete. The utility has successfully converted all HMI device tags to alias or direct reference tags in all displays.



```

convert_log.txt - Notepad
File Edit Format View Help
Converting the source file C:\Documents and Settings\All
Users\Documents\RSView Enterprise\ME\HMI projects\Baggage_800x600\Alarms.xml
to C:\Documents and Settings\All Users\Documents\RSView Enterprise\ME\HMI
projects\Baggage_800x600\TCW Displays\Alarms.xml

HMI Tag: {outbound\motor_fault} was substituted with Direct Referenced Tag:
{::[Baggage]N7:15}
HMI Tag: {outbound\pusher7_fault} was substituted with Direct Referenced Tag:
{::[Baggage]N7:10}
HMI Tag: {outbound\cab1_fault} was substituted with Direct Referenced Tag:
{::[Baggage]N7:7}
HMI Tag: {outbound\induct1_fault} was substituted with Direct Referenced Tag:
{::[Baggage]N7:23}
HMI Tag: {outbound\dom_to_int_jam} was substituted with Direct Referenced
Tag: {::[Baggage]N7:16}
HMI Tag: {outbound\pier4_jam} was substituted with Direct Referenced Tag:
{::[Baggage]N7:8}
Converted count: 6

Converting the source file C:\Documents and Settings\All
Users\Documents\RSView Enterprise\ME\HMI projects\Baggage_800x600\TCW
Displays\ACTIVITY.xml to C:\Documents and Settings\All
Users\Documents\RSView Enterprise\ME\HMI projects\Baggage_800x600\TCW
Displays\ACTIVITY.xml

Converting the source file C:\Documents and Settings\All
Users\Documents\RSView Enterprise\ME\HMI projects\Baggage_800x600\TCW
Displays\ALARM.xml to C:\Documents and Settings\All Users\Documents\RSView
Enterprise\ME\HMI projects\Baggage_800x600\TCW Displays\ALARM.xml

Converting the source file C:\Documents and Settings\All
Users\Documents\RSView Enterprise\ME\HMI projects\Baggage_800x600\TCW
Displays\HISTORY.xml to C:\Documents and Settings\All
  
```

In addition to the conversion log file, the tag converter wizard generates a tag cross reference .csv file in the destination folder. This file cross references HMI tags to alias and direct reference tags.

When you open the .csv file in Excel, three columns show how the tags are linked.

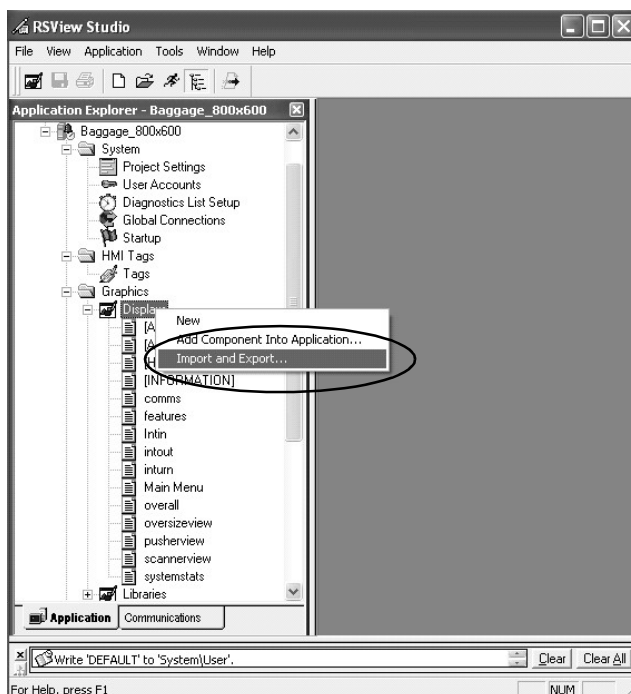
HMI Tag	Alias Tag	Direct Reference Tag
Tag1	MotorSart1	N7:0

Re-import the Display XML File

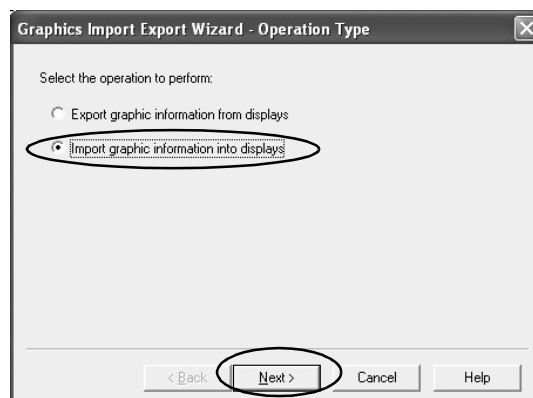
Now that you have converted all alarms and displays, you are ready to re-import the information into your application.

Follow these steps to re-import the xml display files to your application.

1. Navigate back to the open instance of FactoryTalk View Studio.
2. In the Application Explorer, right-click Displays and select Import and Export.



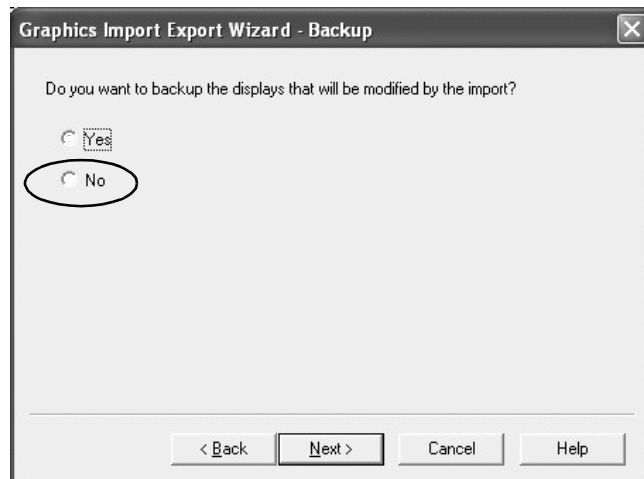
3. Select Import graphic information from display and click Next.



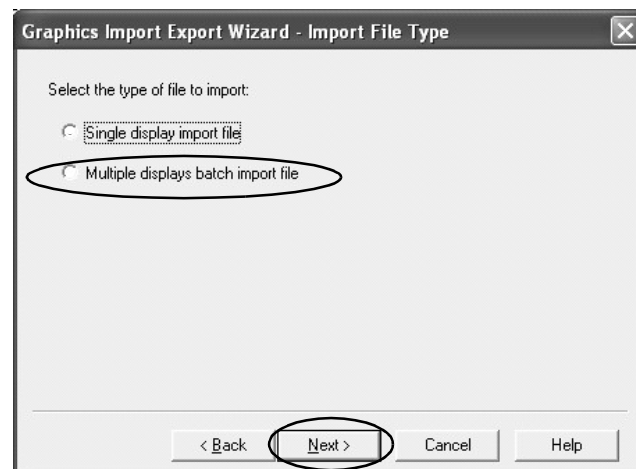
4. Select No to not backup the displays.

You did this when exporting graphic displays to xml format on page 133.

5. Click Next.



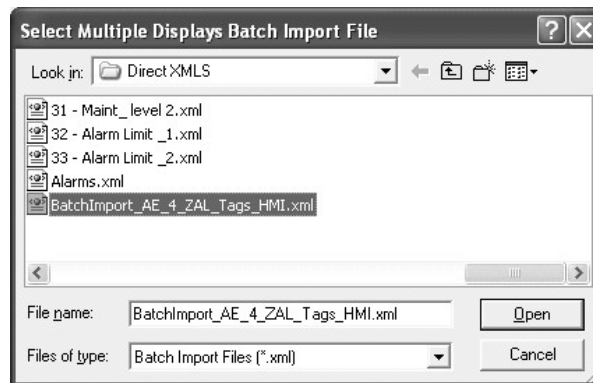
6. Select Multiple displays batch import file and click Next.



7. Click the ... button.



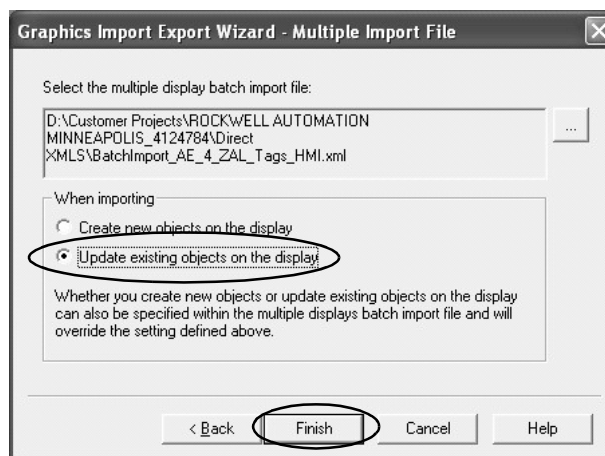
8. Select and open the BatchImport_Your_Project_Name.xml



IMPORTANT

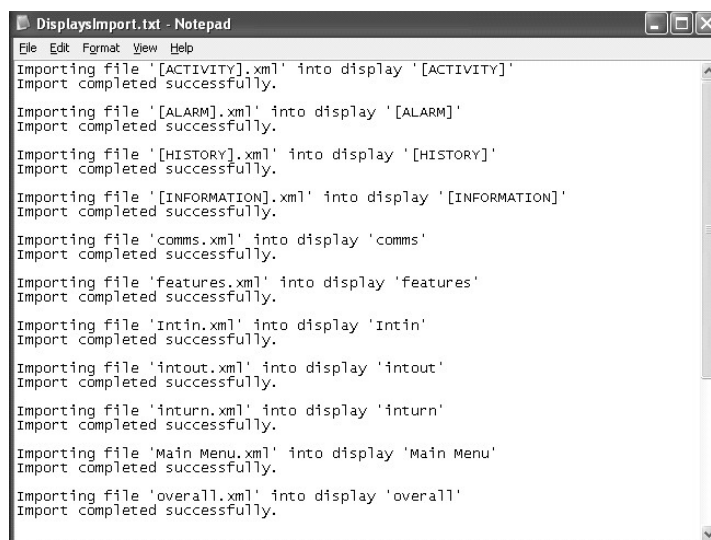
Manually copy the BatchImport_Your_Project_Name.xml file to the location of the new displays created by the TCW utility. Select the xml file from this folder so all new displays are imported, not the original, unmodified displays.

9. Select Update existing objects and
10. Click Finish.



11. Review the DisplaysImport.txt file for errors.

The new alias and direct reference tags have been successfully imported into the application.

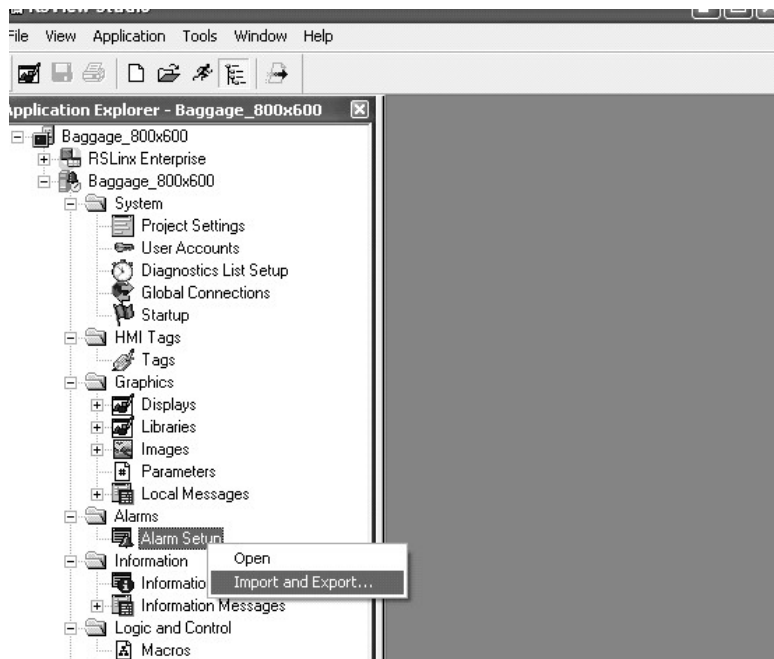


Re-import the Alarms XML File

Follow these steps to re-import the xml alarms file to your application.

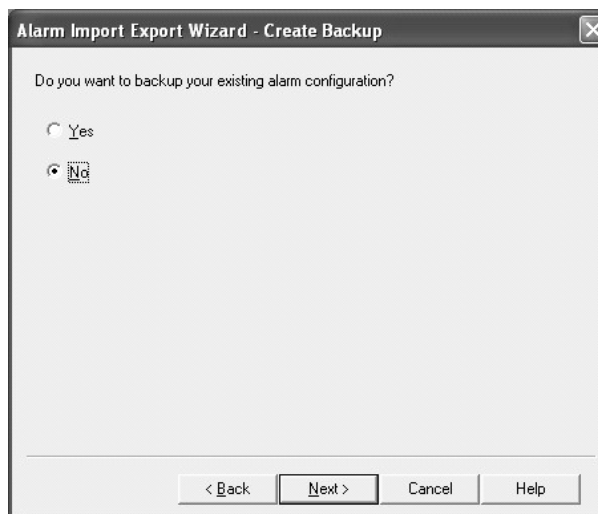
1. Navigate back to the open instance of FactoryTalk View Studio.

2. In the Application Explorer, right-click Alarms and select Import and Export



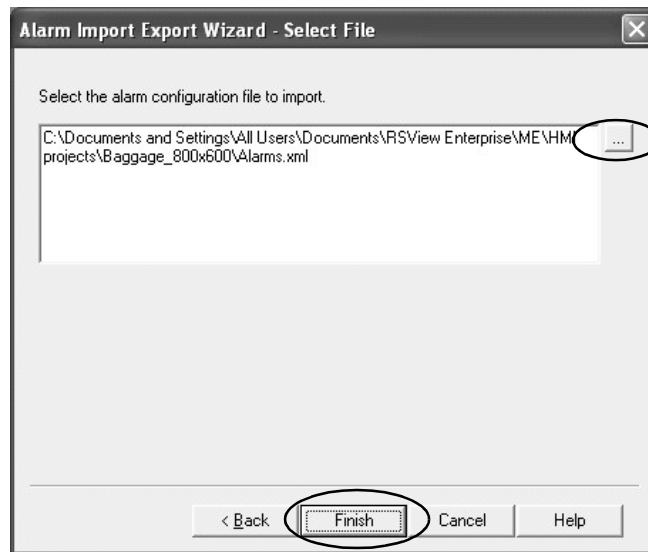
3. Select No to not backup the alarms.

4. Click Next.



5. Click the ... button to select the Alarms.xml file from created by the TCW utility.
6. Click Finish.

The project has been successfully updated with the new alarms.



You can now re-test your application for improved performance.

Advanced Object Editing

Introduction

Editing techniques can save you time when using FactoryTalk View Studio software. Use these techniques to reduce the migration effort when updating common properties between multiple graphic objects.

- Property panel
- Editing multiple objects
- Object explorer
- Tag substitution

Property Panel

The property panel is a powerful editing tool that you can use to perform quick edits and tag assignments by simply clicking on an graphic object. You can modify the property values of graphic objects and ActiveX controls, and assign tags and expressions to objects. Any edits you make in the property panel are applied immediately.

Follow these steps to open the property panel.

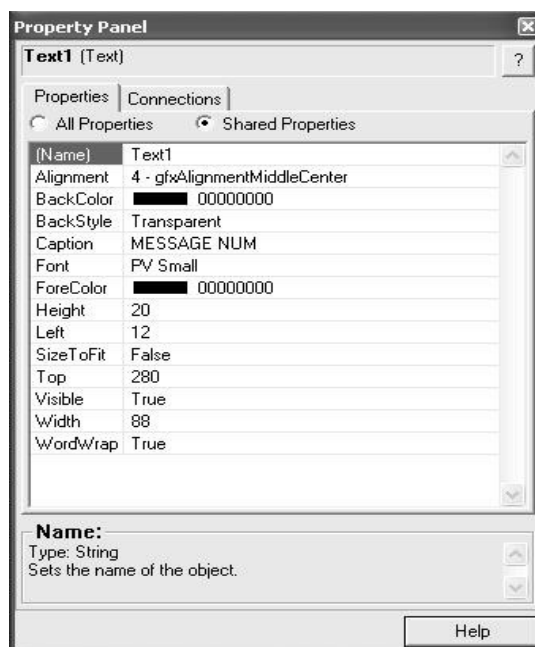
1. With a graphic display open, Select View>Property Panel.

The property panel will appear unavailable because you haven't selected an object.



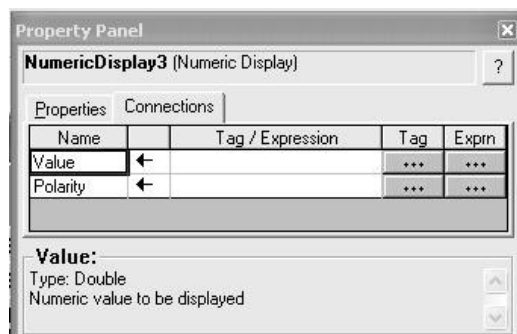
2. Select a graphic object on the display.

This example shows a text object selected. The property panel shows all properties that you can edit for the selected object.



3. Select the Connections tab to view and edit the tag connection properties for the selected object.

This example shows the Value and Polarity connections for a numeric display object.



Editing Multiple Objects

One of the most useful features of the property panel is that you can edit multiple graphic objects with common properties at the same time, rather than editing each object, one by one.

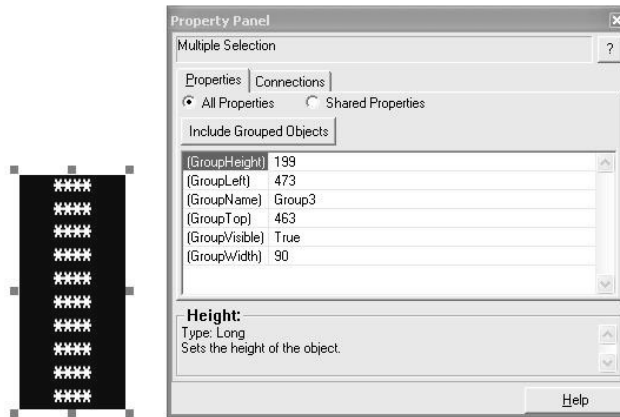
Chapter 6, Review Unsupported Features and Workarounds for Common Migration Issues, showed you how to create replacement multistate indicator, local message and numeric data display list objects in FactoryTalk View ME software. Creating those replacement graphic objects also required you to update properties to match the original PanelBuilder 1400 objects. These properties included captions, foreground/background colors, text size, number of states, and more.

Follow these steps to change a few properties for a group of ten multistate indicator objects.

1. Select a group of graphic objects you want to edit.

If your objects are not grouped, simply hold down the Ctrl key and click each object.

When a set of grouped objects are selected, the property panel shows only the grouped properties.



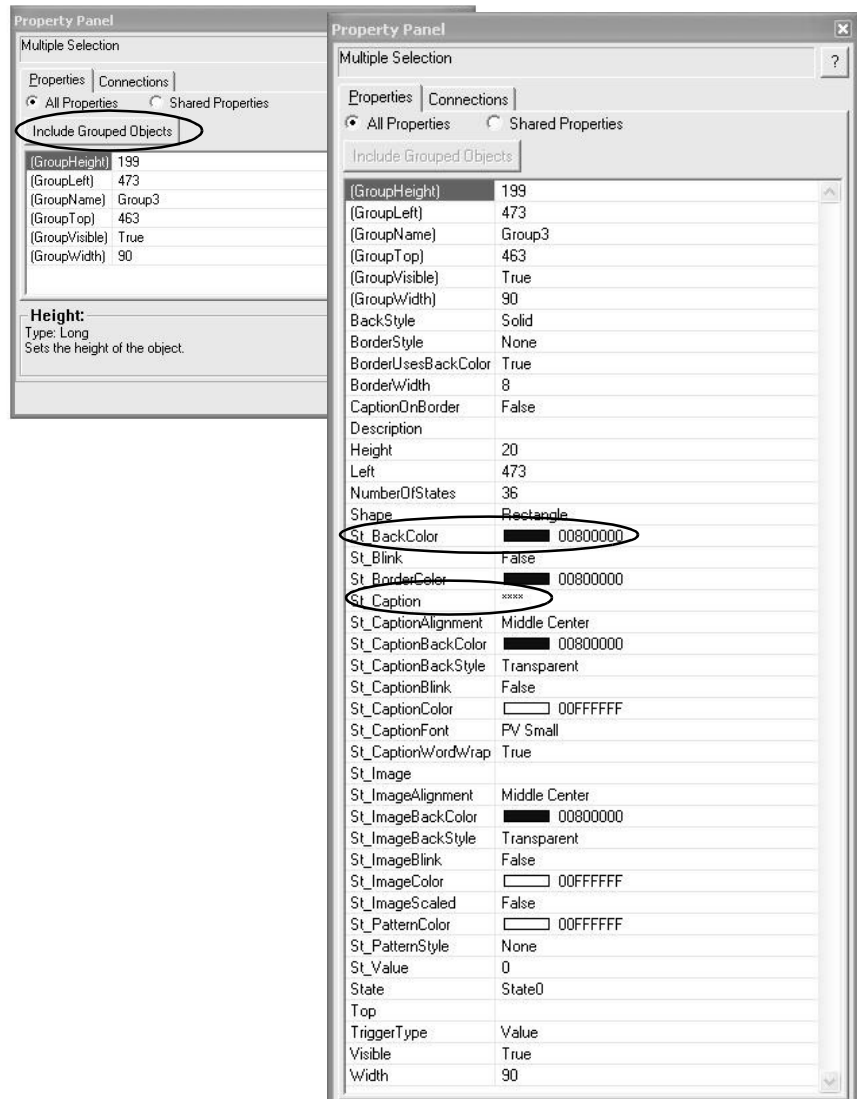
2. Click the Include Grouped Objects button on the property panel.

You will see all properties that can be edited for the objects in the group.

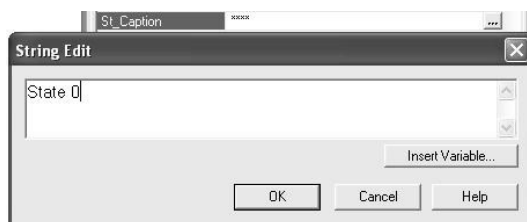
Clicking on any property provides a popup, drop-down menu, or other editing method.

In the next step, you will change the ST_Caption from **** to State 0 and the ST_BackColor to Green. These changes will then be applied to all selected objects for the state defined in the State property.

To change other states, simply change the State property to State1 and make the desired edits.



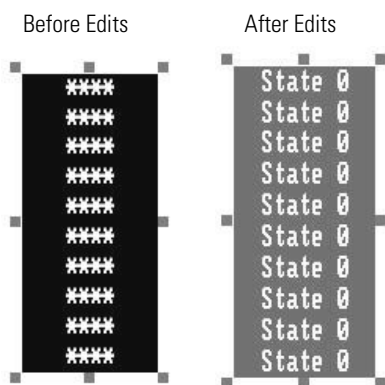
3. Click on the ... button next to St_0 Caption.
4. Type the new caption in the String Edit dialog and click OK.



5. Click the ... button in the St_BackColor field.
6. In the color palette that opens, click a new color.

The example shows the grouped objects before and after edits.

Depending on the object you are editing, the properties will differ. Help text at the bottom identifies what the property does.



TIP

You can apply this editing technique to cursor Llst objects, depending on the number of objects. This will save you time when updating your objects in FactoryTalk View ME software to match the original PanelBuilder 1400e object.

Object Explorer

The object explorer provides a tree-list of all objects in the selected display. You can select and highlight objects in this list.

Groups are listed as expandable items, with the + icon. To view the objects in a group, click the + icon or double-click the group name. The list expands to show the objects and groups within a group.

You can use the highlight settings to highlight specified objects on both the graphic display and object explorer. You can select objects by object type, by animation type, or by tag name.

For a display with many objects, object explorer provides an efficient way of locating and selecting graphic objects. If you want to edit specific objects, object explorer can highlight these objects for you. In conjunction with the property panel, you can:

- perform multiple edits instantly or
- double-click the object in object explorer to open the properties dialog and make edits to a single object.

Follow these steps to open object explorer.

1. With a graphic display open, Select View>Object Explorer.

Expand or collapse groups of objects by clicking the Expand or Collapse buttons.

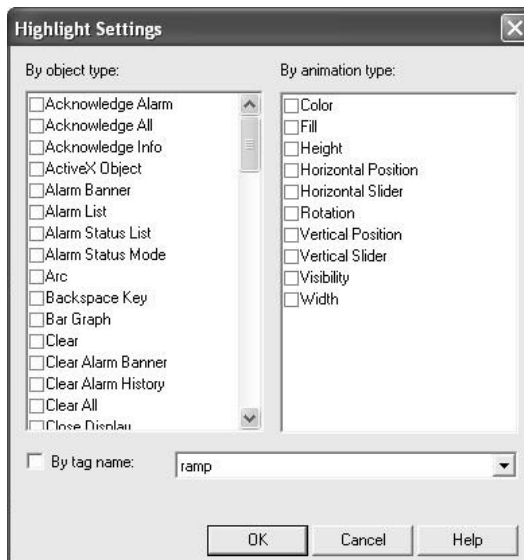
The objects that appear in the list will differ for each display.



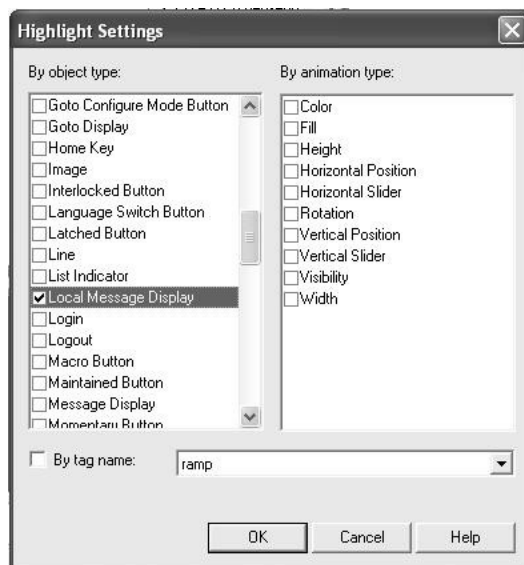
2. Click the Settings button to search for objects.

The Highlight Settings dialog lets you search for objects by Object Type, Animation Type, or Tag Name.

When selecting by tag name, the list shows all tags and expressions referenced by objects in the display, except tags with embedded variables.



3. Select Local Message Objects to search for all local message objects.



4. Click OK to return to the object explorer.



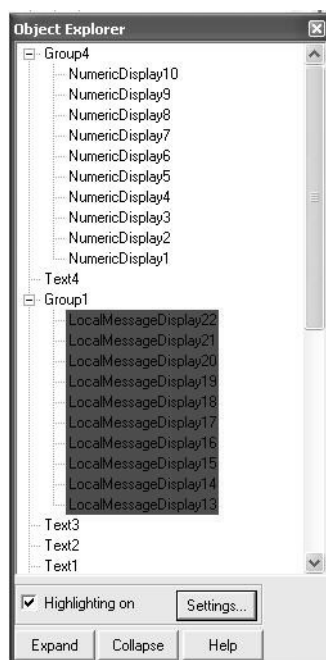
5. Check the Highlight on check box and click the Expand button.

The object explorer highlights all local message displays in red.

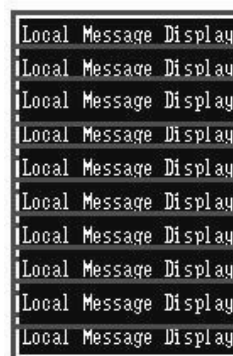
Local message objects on the display also appear red with a border.

If you have a display with a red background, the red highlights will not be visible.

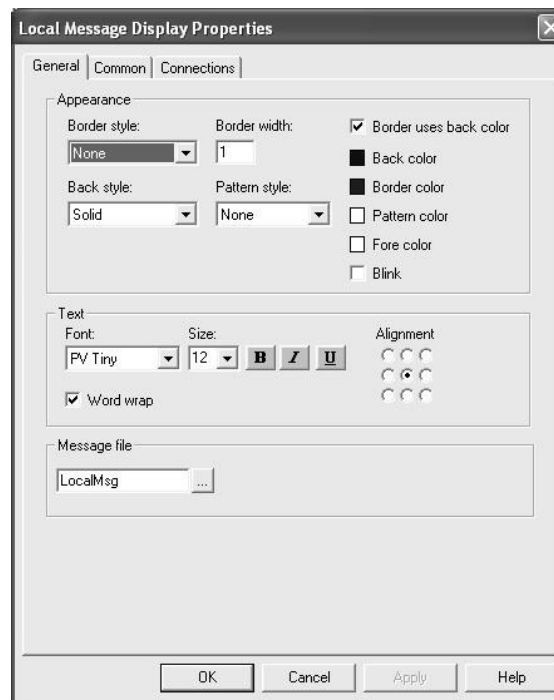
When you select an object in the object explorer, the highlight mode turns off. Simply, recheck the Highlight on box to turn the highlights back on.



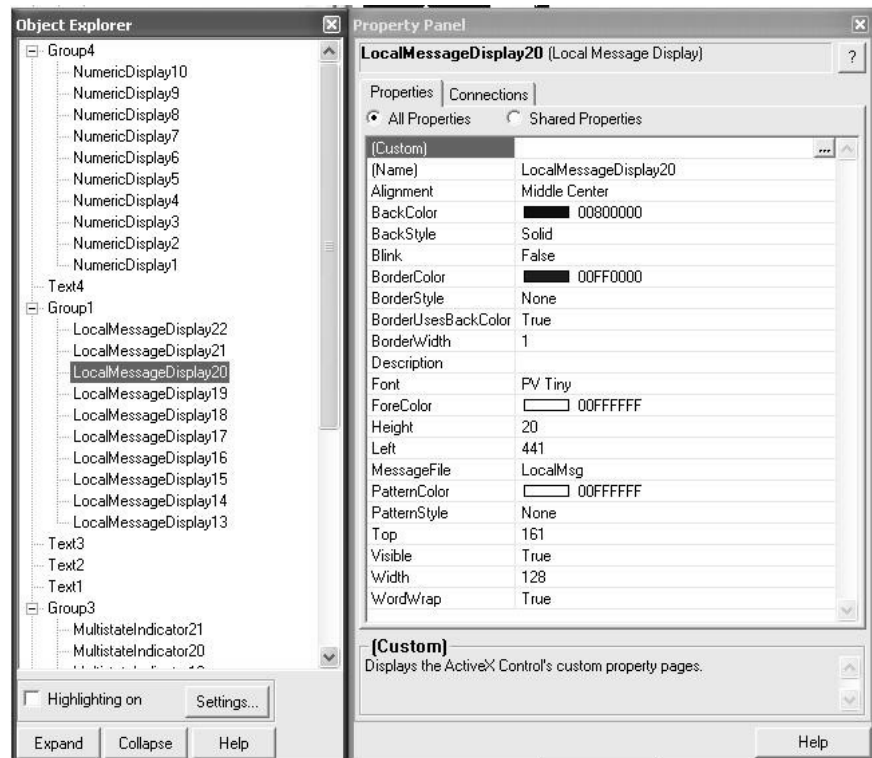
Display Object



6. Double-click an object in the object explorer to open the properties for the local message display.
7. Edit the properties and click OK.



If the property panel and object explorer are both open, click any object in object explorer. The property panel will update the display with the edit properties for the selected objects. You can make any updates from the property panel.



Tag Substitution

You can use tag substitution to replace tag names or character strings in all selected graphic objects on a display. Character strings include tag placeholders, expressions and parts of strings within expressions. When replacing tags, you can use an entire tag name, including folders, or you can replace a string of characters.

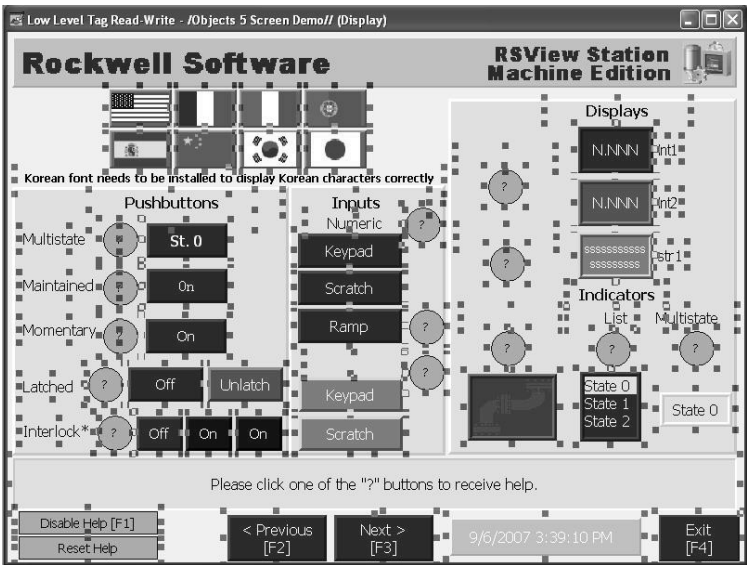
You cannot use wildcard characters when searching for or replacing tag names.

Tag substitution is useful when your graphic displays use a direct reference tag name or if an HMI Tag name is referenced throughout your application and needs to be updated.

Follow these steps to substitute a tag or character string.

- 1. Open the graphic display you want to update.
- 2. Press Ctrl-A to select all objects in the display.

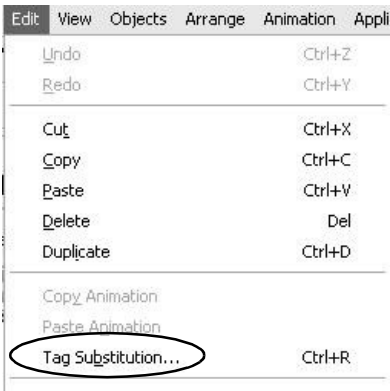
All objects on the display are highlighted. This example display is for illustration purposes only.



TIP

You must select all objects or the Tag Substitution dialog will only show tags of the selected objects.

- 3. Select Edit>Tag Substitution.



In the Tag Substitution editor, you can search on an existing name or a part of a tag name.

4. Type `mem` in the Search for box.
5. Type `tag` in the Replace with box.

Uncheck the Confirm Replacement option, if you don't want to confirm every replacement.

6. Click Replace.

The editor searches for each tag that contains the partial string `mem` and replaces the string with `tag`.

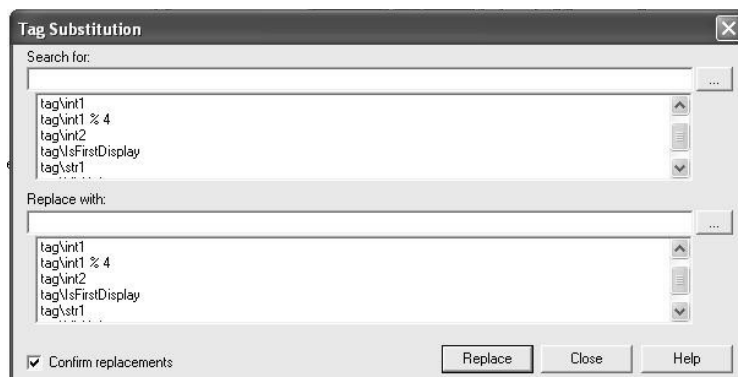
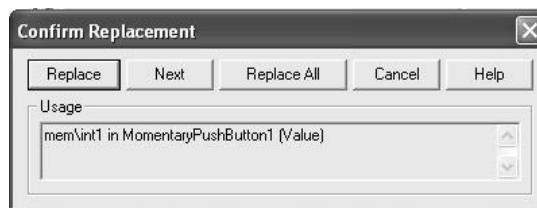
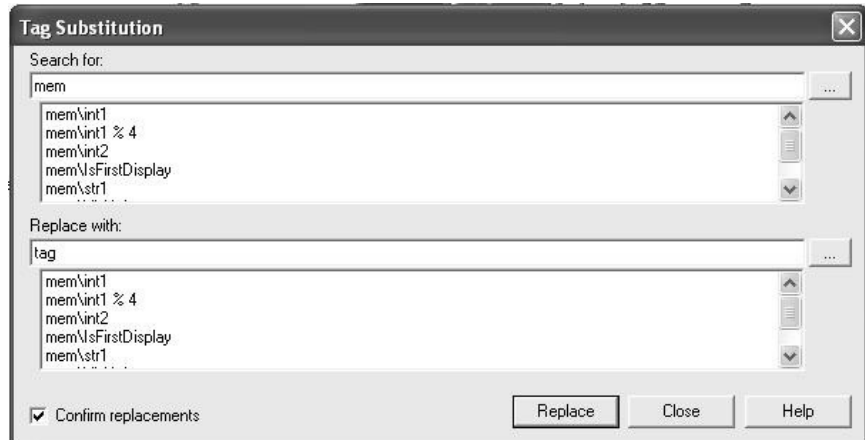
You are prompted to confirm each replacement.

7. Select Replace All to confirm the replacement of all tags at once.

You are notified when the substitution is complete.

8. Click OK.

9. Select `Edit>Tag Substitution` to verify that tags with the string `mem` were updated to `tag`.



You can use tag substitution on a display-by-display basis to verify that all tags or partial strings are updated correctly in the application.

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Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846