User Manual

Allen-Bradley

PanelView Plus 6 Terminals
700, 1000, 1250, 1500

Catalog Numbers 2711P-Kxxxx8, 2711P-Txxxx8, 2711P-Bxxxx8, 2711P-Kxxxx9, 2711P-Txxxx9, 2711P-Bxxxx9

Allen-Bradley • Rockwell Software

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://www.rockwellautomation.com/literature/) describes some important differences between solid-state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid-state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

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

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

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

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

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

	WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.
	ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence
	SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.
	BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product.

Allen-Bradley, CompactLogix, ControlLogix, FactoryTalk View Machine Edition, FactoryTalk View Studio, FactoryTalk ViewPoint, PLC-5, PanelView, DH+, RSNetWorx for ControlNet, RSLogix 5000, NetLinx, Rockwell Software, Rockwell Automation, RSLinx, RSLinx Enterprise, and TechConnect are trademarks of Rockwell Automation, Inc.

Trademarks not belonging to Rockwell Automation are property of their respective companies.

Table of Contents

Preface

Objectives 9
Intended Audience 9
Additional Resources 9
Firmware Upgrades 9

Chapter 1

Overview

Chapter Objectives 11
Windows CE Operating System 12
Open Versus Closed System 12
Startup Options 13
Desktop Access 13
Software Support 13
Modular Components 14
Configured Terminals 15
Display Modules 16
Catalog Number Explanation 17
Terminal Selections 17
Module Selections 19
Accessories 20

Chapter 2

Install Terminal

Chapter Objectives 23
Environment and Enclosure Information 23
North American Hazardous Location Approval 24
  USB Ports 25
Outdoor Installation for High-bright Displays 26
  Using an Antiglare Overlay 27
  Using a Solar Visor 27
  Selecting an Enclosure 27
  Backlight Considerations 27
  Orientation of the Terminal 27
Required Tools 28
Clearances 28
Panel Cutout Dimensions 28
Product Dimensions 29
Mount the Terminal in a Panel 30

Chapter 3

Connect Power

Chapter Objectives 33
Wiring and Safety Guidelines 33
Remove and Install the Power Terminal Block 34

DC Power Connections 35
External Power Supply 35
Earth/Ground Connection 35
Connect DC Power 36
AC Power Connections 37
Protective Earth and Functional Earth Connection 37
Connect AC Power 38
Initial Startup 39
Reset the Terminal 40

Chapter 4

Configuration Mode

Chapter Objectives 41
Access Configuration Mode 41
Input Panel 43
Terminal Settings 44
Load and Run Application 46
Startup Options 47
Enter Configuration Mode on Startup 48
Run the Loaded Application on Startup 49
Desktop Access 50
Enable Desktop Access 50
Disable Desktop Access 51
Set a Desktop Password 52
Reset the Desktop Password 53
Communication Setup 54
Configure KEPServer Serial Port ID's 54
Configure RSLinx Communication Properties 54
Configure a Device Address 56
Ethernet Network Connections 56
Set the Ethernet IP Address for the Terminal 56
Set the Ethernet Link Speed 58
Define Name Server Addresses 58
View or Change Terminal Device Name 59
Authorize Terminal to Access Network Resources 60
File Management 60
Delete Application File or Font File 60
Delete Log Files 61
Copy Application File or Font File 62
Display Settings 63
Adjust the Display Intensity 63
View the Display Temperature 63
Configure the Screen Saver 64
Enable or Disable the Screen Cursor 64

Input Device Settings 65
Configure Keyboard or Keypad Settings 65
Set the Sensitivity of the Mouse 65
Change the Popup for String Entry 66
Calibrate a Touch Screen 66
Set Double-tap Sensitivity for a Touch Screen 67
Configure Print Options 68
Check Integrity of Application Files 70
Configure Diagnostics 71
View and Clear the System Event Log 72
System Information 73
View Terminal Information 73
Display FactoryTalk View ME Station Information 75
Enable or Disable the Alarm Display 75
Time and Date Settings 76
Change the Date for Terminal Operations 76
Change the Time for Terminal Operations 76
Change the Time Zone for Terminal Operations 77
Regional Settings 78
Select a Language 78
Change the Decimal Separator for Numeric Formats 78
Change the Time Format for a Language 79
Change the Short Date Format for a Language 80
Change the Long Date Format for a Language 81
Font Linking 82

Chapter 5

Windows CE Operating System

Chapter Objectives 83
Windows CE 6.0 Standard Features 83
Shell and User Interface Support 83
Application Support 84
Scripting Support 84
Network Support 84
Server Support 85
Windows CE 6.0 with
Extended Features 85
Windows Control Panel 86
Hardware Monitor 87
Processes 87
System Event Log 87
Monitors 88
Keypad Properties 89
Repeat Tab 89

Touch Properties 89
Calibration 89
Double-Tap 89
Display Properties 90
Desktop Background 90
Backlight Intensity 90
Screen Saver 91
Cursor 91
Network Servers 92
System Information 92
General Information 92
Startup Options 93
Device Name 94
Printer Support 95
Automatic Printer Installation 95
Manual Printer Installation 97
Task Bar 97
Windows Explorer 97
PDF Reader 98
Command Prompt Parameters 99

Chapter 6

Install and Replace Components

Chapter Objectives 101
Required Tools 101
Precautions 101
Install or Replace the Logic Module 102
Install or Replace a Communication Module 103
Replace the Display Module 105
Replace the Bezel 106
Remove the Display Module Bezel 106
Replace the Display Module Bezel 108
Replace the Battery 109
Replace the Backlight 111
Remove the Product ID Label 114
Replace the Keypad Legend Inserts 114
Load an SD Card or USB Flash Drive 115
Clean the Display 116

Chapter 7

Terminal Connections

Chapter Objectives 117
Wiring and Safety Guidelines 117
Connections to Controllers 118
Communication Port Isolation 119
USB Ports 120

Serial Connections 121
Modem Connection 122
Construct a Null Modem Cable 122
Computer Connections 123
Ethernet Connections 124
Ethernet Connector 124
Ethernet Cable 125
Security Considerations 125
DH-485/DH+ Communication Module 126
Status Indicators 126
DH-485 Network Port Wiring 127
DH+ Network Connections 128
ControlNet Module 129
Additional Resources 129
ControlNet Protocol 129
Compatible ControlNet Controllers 129
Software and Firmware Requirements 130
ControlNet Module Connectors 131
NAP and Redundant Cables 131
Module Connection to ControlNet Network 132

Chapter 8

Firmware Upgrades

Chapter Objectives 133
Terminal Firmware 133
Download Firmware Files 134
Firmware Upgrade Wizard 134
Upgrading Terminal Firmware from a Storage Device 135
Create a Firmware Upgrade Card 135
Upgrade Terminal Firmware Using Firmware Upgrade Card 137
Upgrade Terminal Firmware over the Network 138

Chapter 9

Troubleshoot the System

Chapter Objectives 141
Status Indicators 141
Isolate the Anomaly 142
Check for Adequate Power 142
Check Indicators at Startup 142
Check the Start-up Messages and Codes 143
Check Voltages and Temperatures 143
Check the System Event Log 143
Start-up Messages and Codes 144
Check Terminal Components 146
Ethernet Connection 148
Application Does Not Run 149
Configuration Mode Access 149

File System Errors 149
Advanced Diagnostics 150
Access Maintenance Operations 151

Specifications

Appendix A

Technical Specifications 155
Environmental Specifications 157
Certifications 157

Fonts Resident on Terminal

Appendix B

True Type Fonts 159

Virtual Key Codes

Appendix C

Key Definitions 161

Index

Objectives

This preface provides information on these topics:

- Intended audience
- Additional resources
- Firmware upgrades

Intended Audience

Use this manual if you are responsible for installing, operating, or troubleshooting the PanelView Plus 6 terminals. This manual does not give procedures for creating applications that run on terminals.

Equipment installers must be familiar with standard panel installation techniques.

Additional Resources

These documents contain additional information concerning related Rockwell Automation products.

Resource	Description
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, http://www.ab.com	Provides declarations of conformity, certificates, and other certification details.

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

Firmware Upgrades

For the latest firmware upgrades and other downloads for your PanelView Plus 6 terminal, go to http://www.rockwellautomation.com/support and select Firmware Updates under Downloads.

Notes:

Overview

Chapter Objectives

This chapter provides an overview of the PanelView Plus 6 terminals.

Topic	Page
Windows CE Operating System	12
Open Versus Closed System	12
Desktop Access	13
Software Support	13
Modular Components	14
Configured Terminals	15
Display Modules	16
Catalog Number Explanation	17
Terminal Selections	17
Module Selections	19
Accessories	20

PanelView Plus 6 terminals are operator interface devices that run HMI machine-level applications in an industrial environment. They are used to monitor, control, or display information graphically, allowing operators to quickly understand the status of their application.

This platform is programmed using common development software providing multi-language support, and integrates into systems with Rockwell Automation controllers including the preferred Logix controllers.

Modular components are usable across the entire PanelView Plus 6 platform:

- Display modules range in size from 6.5 to 15-inches with either key, touch, or combination key/touch input
- Windows CE logic module runs an open or closed desktop environment and offers optional, extended features and file viewers
- Optional communication modules for network communication

Windows CE Operating System

All PanelView Plus 6 terminals run the Windows CE operating system (OS), providing the foundational OS elements for the majority of user needs.

For users with more complex application requirements, PanelView Plus 6 terminals are available with optional, extended features, and file viewers.

Table 1 - Operating System Features

Standard Features	Cat. No. 2711P-*xxxx*8 2711P-RP8*x*	Cat. No. 2711P-*xxxx*9 2711P-RP9*x*
FTP server	•	•
VNC Client/server	•	•
ActiveX controls	•	•
Third-party device support	•	•
PDF reader	•	•
Optional Extended Features		
Web browser - Internet Explorer	—	•
Remote desktop connection	—	•
Media player	—	•
Microsoft Office file viewers		
• PowerPoint	—	•
• Excel	—	•
• Word	—	•
WordPad text editor	—	•

Open Versus Closed System

All PanelView Plus 6 terminals can be configured to run an open or closed desktop environment:

- An open system launches the Windows Explorer shell on startup and appears with the Windows CE desktop and control panel. The system is configurable via the control panel and supports Windows operations.
- A closed system launches a FactoryTalk View Machine Edition application on startup and does not allow access to the Windows CE desktop.

All terminals are initially shipped as closed systems restricting access to the desktop. The first time you start the system, the terminal launches FactoryTalk View ME Station Configuration mode. At this point, you can change the start-up option and allow desktop access.

Startup Options

You can configure your terminal to perform one of three actions at startup:

- Launch a FactoryTalk View Machine Edition HMI application
- Launch the FactoryTalk View Machine Edition Configuration mode of the terminal where you load and run applications, configure startup options and terminal settings, and enable or disable desktop access.
- Launch the Windows Explorer desktop shell. The system is configurable via the control panel and supports Windows operations.

The factory default state and the startup option following a firmware upgrade is to launch the FactoryTalk View ME Station Configuration mode of the terminal. Refer to Startup Options on page 47 for information on how to change the startup option.

Desktop Access

Any of the terminals can be configured to allow or restrict desktop access. From the desktop, you can perform system and control panel operations, or run third-party applications. Terminals with optional, extended features can additionally run viewers, media players, and launch the web browser. You can even allow access temporarily to perform specific tasks, then disable desktop access to prevent unauthorized changes.

TIP All terminals are initially shipped with desktop access disabled.

Refer to Desktop Access on page 50 for details on how to modify desktop access.

IMPORTANT Allowing desktop access does not change the feature set of your terminal. For example, If you have a PanelView Plus 6 terminal without extended features, opening the desktop will not give you access to them.

Software Support

All PanelView Plus 6 terminals support the same HMI software.

Table 2 - PanelView Plus 6 Software Support

Software	Description	Version
FactoryTalk Machine Edition Station	Runtime environment for FactoryTalk View Machine Edition .mer applications. Machine Edition Station is preloaded on each PanelView Plus 6 terminal and does not require FactoryTalk View activation.	6.0 or later
FactoryTalk View Studio for Machine Edition	Configuration software for developing and testing HMI applications that run on PanelView Plus 6 terminals preloaded with FactoryTalk View Machine Edition Station.	6.0 or later
FactoryTalk ViewPoint	Add-on capability provided with FactoryTalk View Studio software. • This web-based, thin-client solution allows manufacturers or casual users to monitor or download changes to a running Machine Edition application from remote locations via an Internet browser. • A single license is embedded with each PanelView Plus 6 terminal supporting a single client connection to terminal. No additional software is required.	1.2 or later
Windows CE 6.0 operating system	All PanelView Plus 6 terminals and logic modules support the Windows CE 6.0 operating system with or without optional, extended features.	6.0 R3

Modular Components

The terminals consist of three modular components: display module, logic module, and optional communication module. These components allow for flexible configuration, installation, and upgrades. You can order a factory-assembled unit with a single catalog number or separate components for field installation.

Figure 1 - Modular Components

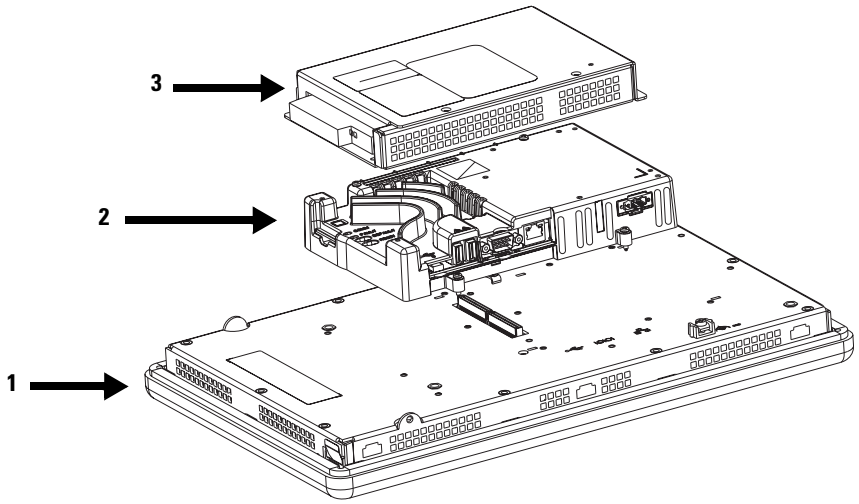


Table 3 - Modular Component Descriptions

Item	Terminal Component	Description	Options for Environmental Conditions
1	Display module	Flat panel, color graphic display in four sizes with keypad, touch-screen, or combination keypad/ touch-screen input. • 700 (6.5 in.) • 1000 (10.4 in.) • 1250 (12.1 in.) • 1500 (15 in.)	Display modules are also available with these characteristics. • Marine-certified • Conformal-coated • High-bright display for outdoor use • Built-in antiglare overlay
2	Logic module	The logic modules has these hardware features. • Power input, AC or DC • RS-232 serial port • Ethernet port • 2 USB 2.0 host ports, 1 high-speed device port • Network interface for optional communication module • 512 MB nonvolatile flash and 512 MB RAM • Secure Digital (SD) card slot • Battery-backed real-time clock • Status indicators • Reset switches • Single PCI slot	Logic modules are also available in a conformal-coated option.
3	Communication module	Optional module for communication with these networks. • DH+/DH-485 • ControlNet scheduled and unscheduled	Communication modules are also available with these characteristics. • Marine-certified • Conformal-coated

Configured Terminals

A configured terminal, ordered as a single-catalog number, has a display module and logic module.

An optional DH+/DH-485 or ControlNet communication module can be added later for additional network capabilities.

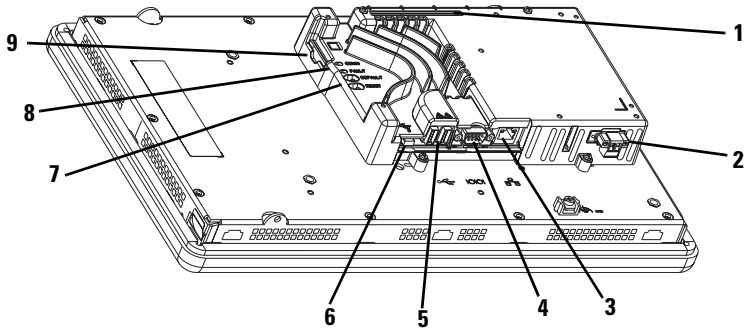


Table 4 - Logic Module Features

Item	Feature
1	Network interface connector for optional communication module
2	AC or DC power input[1] • Isolated 18…32V DC • 85…264V AC
3	10/100 BaseT, Auto MDI/MDI-X, Ethernet port for logic controller communication
4	Serial RS-232 port for file transfers, printing, and logic controller communication
5	2 USB host ports for attaching USB devices including mouse, keyboard, printer, and flash drives that are hot-swappable
6	1 USB device port for connecting a host personal computer
7	Reset switches
8	Status indicators
9	Secure Digital (SD) card slot that is hot-swappable and supports cat. no. 1784-SD*x* SD cards.

(1) For DC applications using AC power, an external, remote AC-to-DC power supply, cat. no. 2711P-RSACDIN, is available for DIN-rail mounting.

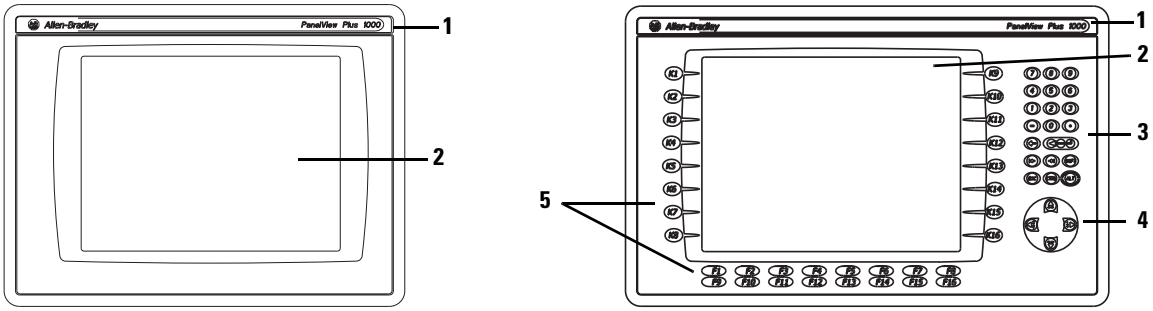
Display Modules

All 700 to 1500 display modules have TFT color, graphic displays with either keypad, touch screen, or combination keypad/touch-screen input. Common features and firmware provide for easy migration to a larger display:

- Eight-wire resistive touch screens are extremely accurate for operator interfaces. When a point on the touch screen is pressed, the layers connect and change the electrical current, which is then registered and processed.
- All keypad or combination keypad/touch-screen displays are similar except for the number of functions keys.

To meet the requirements of specific environmental conditions, high-bright displays, marine-certified displays, and conformal-coated displays are also available. Plus, you can order field replaceable bezels.

Figure 2 - Display Modules



IMPORTANT The keypad is designed for finger or gloved finger operation. The touch screen may be operated with a finger, gloved finger, or plastic stylus device with a minimum tip radius of 1.3 mm (0.051 in.). Using any other object or tool may damage the keypad or touch screen.

Table 5 - Display Features

Item	Feature	Description
1	Replaceable ID Label	Allen-Bradley label that can be replaced with custom label.
2	Display	Analog resistive touch screen applies to touch-screen or combination keypad/touch-screen terminals.
3	Numeric keypad	0…9, –, Backspace, Enter, Left and Right tab, Shift, Esc, Ctrl, Alt keys.
4	Navigation keys	Use the arrow keys to move the cursor in lists and select objects. Alt+arrow key activates home, end, page up, and page down functions.
5	Function keys 700 F1 …F10, K1…K12 1000 F1 …F16, K1…K16 1250 F1 …F20, K1…K20 1500 F1 …F20, K1…K20	Keys that initiate functions on the terminal display. Replaceable legends are available to customize the function key labels.

Catalog Number Explanation

This is the catalog number explanation for configured units of the PanelView Plus 6 terminals.

	Input Type	Display Size	Display Type	Communication (1)	Power	Operating System	Special Option
2711P-	**K** = Keypad	**7** = 6.5 in.	**C** = Color	**4** = Ethernet, RS-232 & (2) USB	**A** = AC	**8**= Windows CE 6.0 operating system	**K** = Conformal-Coated
	T = Touch	**10** = 10.4 in.			**D** = DC	**9** = Windows CE 6.0 operating system with extended features	
	B = Keypad/Touch	**12** = 12.1 in.					
		15 = 15 in.					

(1) Optional communication modules are available as separate catalog numbers.

Terminal Selections

The PanelView Plus 6 configured terminals have logic modules with or without extended features and file viewers. Communication modules are ordered as separate catalog numbers.

Table 6 - PanelView Plus 6 Terminals

Cat. Nos.			Display		Communication		Input Power	Nonvolatile Flash/ RAM Memory(2)
Keypad	**Touch**	**Keypad/Touch**	**Size**	**Type**	**RS-232**	**Ethernet**		
700 Model								
2711P-K7C4D8	2711P-T7C4D8	2711P-B7C4D8	6.5-in.	Color	•	•	DC	512 MB/512 MB
–	2711P-T7C4D8K(1)	–			•	•	DC	512 MB/512 MB
2711P-K7C4A8	2711P-T7C4A8	2711P-B7C4A8			•	•	AC	512 MB/512 MB
1000 Model								
2711P-K10C4D8	2711P-T10C4D8	2711P-B10C4D8	10.4-in	Color	•	•	DC	512 MB/512 MB
2711P-K10C4A8	2711P-T10C4A8	2711P-B10C4A8			•	•	AC	512 MB/512 MB
1250 Model								
2711P-K12C4D8	2711P-T12C4D8	2711P-B12C4D8	12.1-in	Color	•	•	DC	512 MB/512 MB
–	2711P-T12C4D8K(1)	–			•	•	DC	512 MB/512 MB
2711P-K12C4A8	2711P-T12C4A8	2711P-B12C4A8			•	•	AC	512 MB/512 MB
1500 Model								
2711P-K15C4D8	2711P-T15C4D8	2711P-B15C4D8	15-in.	Color	•	•	DC	512 MB/512 MB
2711P-K15C4A8	2711P-T15C4A8	2711P-B15C4A8			•	•	AC	512 MB/512 MB

(1) Conformal-coated terminal.

(2) The logic module supports FactoryTalk View Machine Edition software, version 6.0 or later, FactoryTalk ViewPoint software version 1.2 or later, and the Windows CE 6.0 operating system.

Table 7 - PanelView Plus 6 Terminals with Extended Features

Cat. Nos.			Display		Communication		Input Power	Nonvolatile Flash/ RAM Memory(1)
Keypad	Touch	Keypad/Touch	Size	Type	RS-232	Ethernet		
700 Model								
2711P-K7C4D9	2711P-T7C4D9	2711P-B7C4D9	6.5-in.	Color	•	•	DC	512 MB/512 MB
2711P-K7C4A9	2711P-T7C4A9	2711P-B7C4A9			•	•	AC	512 MB/512 MB
1000 Model								
2711P-K10C4D9	2711P-T10C4D9	2711P-B10C4D9	10.4-in	Color	•	•	DC	512 MB/512 MB
2711P-K10C4A9	2711P-T10C4A9	2711P-B10C4A9			•	•	AC	512 MB/512 MB
1250 Model								
2711P-K12C4D9	2711P-T12C4D9	2711P-B12C4D9	12.1-in	Color	•	•	DC	512 MB/512 MB
2711P-K12C4A9	2711P-T12C4A9	2711P-B12C4A9			•	•	AC	512 MB/512 MB
1500 Model								
2711P-K15C4D9	2711P-T15C4D9	2711P-B15C4D9	15-in.	Color	•	•	DC	512 MB/512 MB
2711P-K15C4A9	2711P-T15C4A9	2711P-B15C4A9			•	•	AC	512 MB/512 MB

(1) The logic module supports FactoryTalk View Machine Edition software, version 6.0 or later, FactoryTalk ViewPoint software version 1.2 or later, and the Windows CE 6.0 operating system with extended features and file viewers.

Module Selections

Display modules, logic modules, and communication modules can be ordered as separate components for field installation.

Table 8 - Display Modules

Cat. No.	Input Type	Display	Marine Certified	Conformal Coated	Built-in Antiglare Overlay
700 Model					
2711P-RDK7C	Keypad	7-in. color			
2711P-RDK7CK	Keypad			•	
2711P-RDT7C	Touch				
2711P-RDT7CK	Touch			•	
2711P-RDT7CM	Touch		•		
2711P-RDB7C	Keypad/Touch				
2711P-RDB7CK	Keypad/Touch			•	
2711P-RDB7CM	Keypad/Touch		•		
1000 Model					
2711P-RDK10C	Keypad	10-4 in. color			
2711P-RDT10C	Touch				
2711P-RDT10CM	Touch		•		
2711P-RDB10C	Keypad/Touch				
2711P-RDB10CM	Keypad/Touch		•		
1250 Model					
2711P-RDK12C	Keypad	12.1-in. color			
2711P-RDK12CK	Keypad			•	
2711P-RDT12C	Touch				
2711P-RDT12CK	Touch			•	
2711P-RDT12H(1)	Keypad/Touch				
2711P-RDT12AG	Touch				•
2711P-RDB12C	Keypad/Touch				
2711P-RDB12CK	Keypad/Touch			•	
1500 Model					
2711P-RDK15C	Keypad	15-in. color			
2711P-RDT15C	Touch				
2711P-RDT15AG	Touch				
2711P-RDB15C	Keypad/Touch				•

(1) H at end of cat. no. refers to 1250 High-bright display module.

Table 9 - Logic Modules

Cat. No.	Power Input	Nonvolatile Flash/ RAM Memory	Communication	Conformal Coated	Included Software
Without Extended Features					
2711P-RP8A	AC	512 MB/512 MB	• Ethernet • RS-232 • Network interface for communication module		• Windows CE 6.0 operating system • FactoryTalk View Machine Edition runtime, version 6.0 or later • FactoryTalk ViewPoint software, version 1.2 or later
2711P-RP8D	DC	512 MB/512 MB			
2711P-RP8DK	DC	512 MB/512 MB		•	
With Extended Features					
2711P-RP9A	AC	512 MB/512 MB	• Ethernet • RS-232 • Network interface communication module		• Windows CE 6.0 operating system with extended features and file viewers • FactoryTalk View Machine Edition runtime, version 6.0 or later • FactoryTalk ViewPoint software, version 1.2 or later
2711P-RP9D	DC	512 MB/512 MB			
2711P-RP9DK	DC	512 MB/512 MB		•	

Table 10 - Communication Modules

Cat. No	Communication			Conformal Coated	Marine Certified
	DH+	DH-485	ControlNet (1)		
2711P-RN6	•	•			
2711P-RN6K	•	•		•	
2711P-RN15S			•		•
2711P-RN15SK			•	•	

(1) Scheduled and unscheduled communication.

Accessories

Tables 11...20 list accessories for the PanelView Plus 6 terminals.

Table 11 - Secure Digital (SD) Cards

Cat. No.	Description
1784-SD1	1 GB Secure Digital (SD) card
1784-SD2	2 GB Secure Digital (SD) card
2711C-RCSD	USB to SD adapter for secure digital card (SD)

Table 12 - Function Key Legend Inserts

Cat. No.	Terminal Model(1)	Includes
2711P-RFK7	700	Blank legend inserts and software
2711P-RFK10	1000	
2711P-RFK12	1250	
22711P-RFK15	1500	

(1) Applies to keypad and keypad/touch-screen terminals.

Table 13 - Backlight Replacements

Cat. No.	Terminal Model	Series	Number of Backlights
2711P-RL7C	700	A and B	1
2711P-RL7C2		C and D	1
2711P-RL10C	1000	A	1
2711P-RL10C2		B and C	1
2711P-RL12C	1250	A and B	2
2711P-RL12C2		C	1
2711P-RL15C	1500	B	2

Table 14 - Antiglare Overlays

Cat. No.(1)	Terminal Model	Operator Input		
		Keypad	Touch	Key/Touch
2711P-RGK7	700	•		•
2711P-RGT7			•	
2711P-RGK10	1000	•		•
2711P-RGT10			•	
2711P-RGK12	1250	•		•
2711P-RGT12			•	
2711P-RGK15	1500	•		•
2711P-RGT15			•	

(1) Three overlays are shipped with each catalog number.

Table 15 - Solar Visor

Cat. No,	Description
2711P-RVT12	Solar visor for 1250 high-bright display module, cat. no. 2711P-RDT12H

Table 16 - Mounting Hardware

Cat. No,	Description	Quantity
2711P-RTMC	Mounting clips	8

Table 17 - Programming Cable

Cat. No.	Description	Length
2711C-CBL-UU02	USB host to USB device programming cable	2 m (6.5 ft)

Table 18 - Power Supply and Power Terminal Blocks

Cat. No,	Description	Quantity
2711P-RSACDIN	DIN-rail power supply, AC-to-DC, 85…265V AC, 47…63 Hz	1

Table 18 - Power Supply and Power Terminal Blocks

Cat. No,	Description	Quantity
2711P-RY2032	Replacement battery	1
2711P-RTBAC3	AC power terminal block	10
2711P-RTBDC2	2-pin DC power terminal block	10

Table 19 - Bezel Replacements

Cat. No.	Terminal Model	Operator Input		
		Keypad	Touch	Key/Touch
2711P-RBK7	700	•		
2711P-RBT7			•	
2711P-RBB7				•
2711P-RBK10	1000	•		
2711P-RBT10			•	
2711P-RBB10				•
2711P-RBK12	1250	•		
2711P-RBT12			•	
2711P-RBT12H(1)			•	
2711P-RBB12				•
2711P-RBK15	1500	•		
2711P-RBT15			•	
2711P-RBB15				•

(1) Applies to the cat. no. 2711P-RDT12H 1250 high-bright display module.

Table 20 - Adapter Plates

Cat. No,	Adapts This PanelView Plus 6 Terminal	To This Terminal Cutout
2711P-RAK7	700 keypad or keypad/touch	PanelView Standard 900 keypad
2711P-RAT7	700 touch	PanelView Plus 900 touch
2711P-RAK10	1000 keypad or keypad/touch	PanelView 1000/1000e keypad
2711P-RAT10	1000 touch	PanelView 1000/1000e touch
2711P-RAK15	1500 keypad or keypad/touch	PanelView 1200e/1400e keypad
2711P-RAT15	1500 touch	PanelView 1200e/1400e touch
2711P-RAK12E	1250 keypad(1)	PanelView 1200/1400e keypad
2711P-RAT12E2	1250 touch(2)	PanelView 1200 touch
2711P-RAT12E	1250 touch(2)	PanelView 1200e/1400e touch
2711P-RAK12S	1250 keypad(1) or keypad/touch	PanelView Standard 1400 keypad
2711P-RAT12S	1250 touch(2)	PanelView Standard 1400 touch

(1) Applies also to PanelView 1000/1000e keypad or keypad/touch terminals.
(2) Applies also to PanelView 1000/1000e touch terminals.

Install Terminal

Chapter Objectives

This chapter provides details on how to install your terminal in a panel.

Topic	Page
Environment and Enclosure Information	23
North American Hazardous Location Approval	24
Outdoor Installation for High-bright Displays	26
Required Tools	28
Clearances	28
Panel Cutout Dimensions	28
Product Dimensions	29
Mount the Terminal in a Panel	30

Environment and Enclosure Information

ATTENTION: This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC 60664-1), at altitudes up to 2000 m (6561 ft) without derating.

The terminals are intended for use with programmable logic controllers. Terminals that are AC powered must be connected to the secondary of an isolating transformer.

This equipment is considered Group 1, Class A industrial equipment according to IEC CISPR 11. Without appropriate precautions, there may be difficulties ensuring electromagnetic compatibility in residential and other environments due to conducted or radiated disturbances.

Korean Radio Wave Suitability Registration - When so marked this equipment is registered for Electromagnetic Conformity Registration as business equipment (A), not home equipment. Sellers or users are required to take caution in this regard.

This equipment is supplied as open-type equipment. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present and appropriately designed to prevent personal injury resulting from accessibility to live parts. The interior of the enclosure must be accessible only by the use of a tool. The terminals meet specified NEMA Type and IEC ratings only when mounted in a panel or enclosure with the equivalent rating. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

In addition to this publication, see:

- Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1, for additional installation requirements.
- NEMA Standards 250 and IEC 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosure.

North American Hazardous Location Approval

The following information applies when operating this equipment in hazardous locations.	**Informations sur l'utilisation de cet équipement en environnements dangereux.**
When marked, these products are suitable for use in "Class I, Division 2, Groups A, B, C, D"; Class I, Zone 2, Group IIC, Class II, Division II, Groups F, G; Class III hazardous locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest "T" number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.	Les produits marqués "CL I, DIV 2, GP A, B, C, D" ne conviennent qu'à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.
WARNING: EXPLOSION HAZARD - • Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous. • Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. • Substitution of components may impair suitability for Class I, Division 2. • Peripheral equipment must be suitable for the location in which it is used. • The battery or real-time clock module in this product must only be changed in an area known to be nonhazardous. • All wiring must be in accordance with Class I, Division 2, Class II, Division 2, or Class III, Division 2 wiring methods of Articles 501, 502 or 503, as appropriate, of the National Electrical Code and/or in accordance with Section 18-1J2 of the Canadian Electrical Code, and in accordance with the authority having jurisdiction.	**AVERTISSEMENT: RISQUE D'EXPLOSION –** • Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement. • Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit. • La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2. • S'assurer que l'environnement est classé non dangereux avant de changer les piles.

DC-powered terminals have a temperature code of T4 when operating in a 55 °C (131 °F) maximum ambient temperature. Do not install terminals in environments where atmospheric gases have ignition temperatures less than 135 °C (275 °F).

The AC-powered terminals have a temperature code of T3 when operating in a 55 °C (131 °F) maximum ambient temperature. Do not install terminals in environments where atmospheric gases have ignition temperatures less then 200 °C (392 °F).

USB Ports

The terminals contain USB host ports that comply with hazardous location environments. Field wiring compliance requirements are provided in compliance with the National Electrical Code, Article 500.

Figure 3 - PanelView Plus 6 Terminals Control Drawing

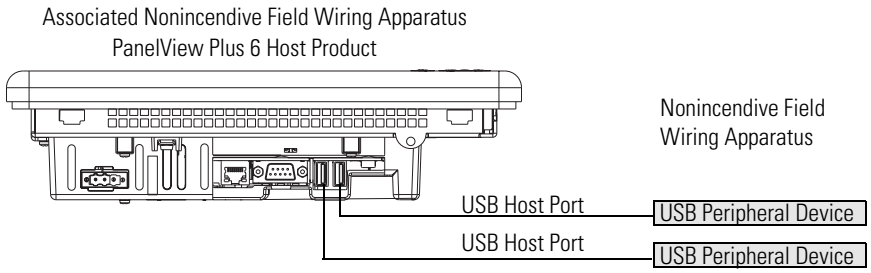


Table 21 - PanelView Plus 6 USB Port Circuit Parameters

V_{oc}	I_{sc}	C_a		L_a	
		Groups A and B	Groups C and D	Groups A and B	Groups C and D
5.25V DC	1.68 A	10 µF	10 µF	15 µH	15 µH

Selected nonincendive field wiring apparatus must have nonincendive circuit parameters conforming with Table 22.

Table 22 - Required Circuit Parameters for the USB Peripheral Device

V_{max}	≥	V_{oc}
I_{max}	≥	I_{sc}
$C_i + C_{cable}$	≤	C_a
$L_i + L_{cable}$	£	L_a

Application Information

Per the National Electrical Code, the circuit parameters of nonincendive field wiring apparatus for use in hazardous locations shall be coordinated with the associated nonincendive field wiring apparatus such that their combination remains nonincendive. The PanelView Plus 6 terminals and the USB peripheral devices shall be treated in this manner.

The circuit parameters of the PanelView Plus 6 USB ports are given in Table 21 on page 25. The USB peripheral device and its associated cabling shall have circuit parameters with the limits given in Table 22 on page 25 for them to remain nonincendive when used with the PanelView Plus 6 USB port. If cable capacitance and inductance are not known, the following values from ANSI/ISA-RP 12.06.01-2003 may be used:

C_{cable} = 197 µF/m (60 µF/ft)
L_{cable} = 0.7 µH/m (0.20 µH/ft)

Nonincendive field wiring must be wired and separated in accordance with 501.10(B)(3) of the National Electrical Code (NEC) ANSI/NFPA 70 or other local codes as applicable.

This associated nonincendive field wiring apparatus has not been evaluated for use in combination with another associated nonincendive field wiring apparatus.

Table 23 - Symbol Definitions

V_{oc}	Open circuit voltage of the host USB port.
I_{sc}	Maximum output current of the host USB port.
V_{max}	Maximum applied voltage rating of the USB peripheral device. V_{max} shall be greater than or equal to V_{oc} in Table 1 ($V_{max} \geq V_{oc}$).
I_{max}	Maximum current to which the USB peripheral device can be subjected. I_{max} shall be greater than or equal to I_{sc} in Table 1 ($I_{max} \geq I_{sc}$).
C_i	Maximum internal capacitance of the USB peripheral device.
C_a	Maximum allowed capacitance of the USB peripheral device and its associated cable. The sum of C_i of the USB peripheral device and C_{cable} of the associated cable shall be less than or equal to C_a ($C_i + C_{cable} \leq C_a$).
L_i	Maximum internal inductance of the USB peripheral device.
L_a	Maximum allowed inductance of the USB peripheral device and its associated cable. The sum of L_i of the USB peripheral device and L_{cable} of the associated cable shall be less than or equal to L_a ($L_i + L_{cable} \leq L_a$).

Outdoor Installation for High-bright Displays

When using a high-bright display module outdoors, catalog number 2711P-RDT12H, there are important considerations in maximizing the field-life of the front bezel and display:

- Using an antiglare overlay and visor
- Selecting the proper enclosure
- Using the proper orientation of the terminal

Ultraviolet and infrared radiation can reduce the field life of any electronic device. While the materials used in the terminal bezels provide long field life, that field life can be extended by proper installation.

IMPORTANT The high-bright display module is compatible only with DC-powered logic modules, catalog numbers 2711P-RP8D, 2711P-RP8DK, 2711P-RP9D, 2711P-RP9DK. It cannot be used with AC-powered logic modules.

Using an Antiglare Overlay

Ultraviolet (UV) radiation from the sun causes all plastics to fade or yellow, and become brittle over time. Using an antiglare overlay, catalog number 2711P-RGT12, will protect the front of the terminal from direct exposure to UV radiation and increase its field life.

Using a Solar Visor

If the high-bright display module will be in direct sunlight during the hottest part of the day and the external ambient temperature exceeds 40 °C (104 °F), use the visor kit, catalog number 2711P-RVT12. The visor reduces the solar load on the front of the display and helps to maintain temperatures within specification.

The high-bright display module has a built-in temperature sensor that automatically reduces the backlight intensity if the temperature inside the cabinet exceeds 55 °C (131 °F). This reduces the risk of damage to the display.

Selecting an Enclosure

The paint, color, size, and power dissipated by the internal components of an enclosure affect the temperature rise inside the cabinet. Hoffman, a Rockwell Automation Encompass Partner, has information to help you select an enclosure, and heating/cooling accessories to meet the temperature requirements of the installed equipment. See http://www.hoffmanonline.com.

Stirring fans or active cooling may be required in high altitude and high ambient temperature locations to keep the internal enclosure temperature below 55 °C (131 °F). Use a heater in installations where the ambient temperature is below 0 °C (32 °F).

Backlight Considerations

The backlight of the high-bright display generates a significant amount of heat when set to full intensity. To minimize the amount of heat generated and extend the life of the backlight, decrease the display intensity by using the screen saver with a 5...10 minute delay.

Orientation of the Terminal

If outside, avoid placing the terminal on the south (north in the southern hemisphere) or west side of cabinet, if possible. This will reduce the heat rise due to solar loading during the hottest part of the day.

Mount the terminal vertically to minimize the solar loading on the display. Do not mount the terminal in a sloped enclosure if it will be exposed to direct sunlight.

Required Tools

These tools are required for panel installation:

- Panel cutout tools
- Small, slotted screwdriver
- Torque wrench for tightening the terminal mounting clips

Clearances

Allow adequate spacing around the terminal, inside the enclosure, for adequate ventilation. Consider heat produced by other devices in the enclosure. The ambient temperature around the terminals must be between 0...55 °C (32...131 °F).

These minimum clearances are required for ventilation:

- Top clearance: 51 mm (2 in.)
- Bottom clearance: 102 mm (4 in.)
- Side clearances: 25 mm (1 in.)
- Back clearance: 25 mm (1 in.)

Minimum side clearance for inserting an SD card is 102 mm (4 in.).

Panel Cutout Dimensions

Use the full size template shipped with your terminal to mark the cutout dimensions.

Terminal Type	Height, mm (in.)	Width, mm (in.)
700 Keypad or Keypad and Touch	167 (6.57)	264 (10.39)
700 Touch	154 (6.08)	220 (8.67)
1000 Keypad or Keypad and Touch	224 (8.8)	375 (14.75)
1000 Touch	224 (8.8)	305 (12.00)
1250 Keypad or Keypad and Touch	257 (10.11)	390 (15.35)
1250 Touch(1)	257 (10.11)	338 (13.29)
1500 Keypad or Keypad and Touch	305 (12.00)	419 (16.50)
1500 Touch	305 (12.00)	391 (15.40)

(1) Also applies to High-bright display module, cat. no. 2711P-RDT12H also.

Product Dimensions

The table provides product dimensions for the terminals. The 1000 keypad and keypad/touch terminals are shown for illustrative purposes. All other terminal sizes look similar.

Figure 4 - PanelView Plus 6 Terminal Dimensions - Model 1000

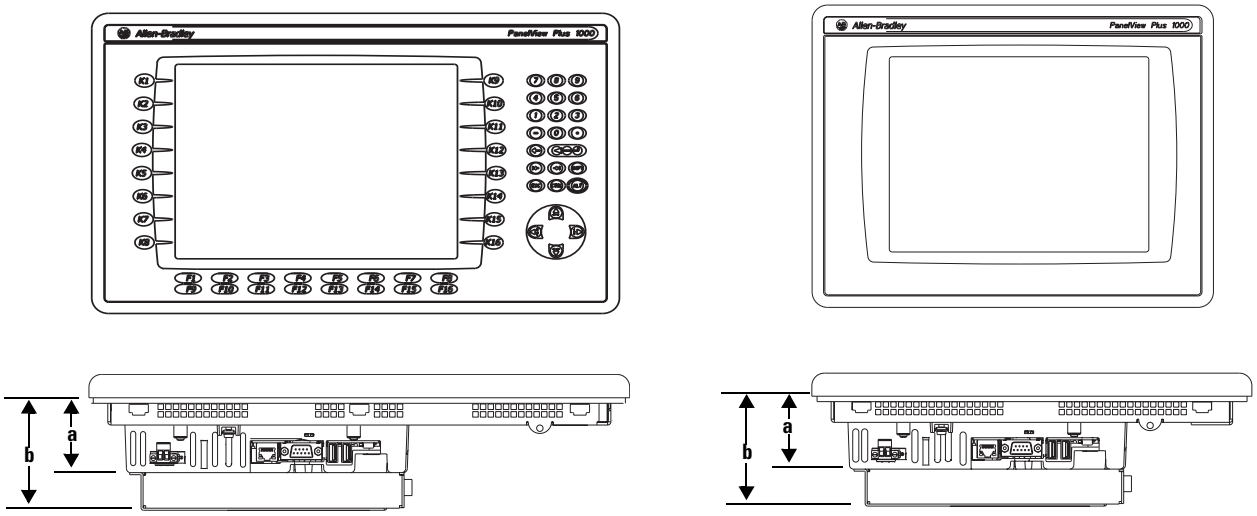


Table 24 - PanelView Plus 6 Terminal Dimensions

Terminal Model	Width	Height	Depth a Display to Logic Module	Depth b Display to Comm Module
700 Keypad or Keypad/Touch	290 mm 11.40 in.	193 mm 7.58 in.	55 mm 2.18 in.	83 mm 3.27 in.
700 Touch	246 mm 9.68 in.	179 mm 7.04 in.	55 mm 2.18 in.	83 mm 3.27 in.
1000 Keypad or Keypad/Touch	399 mm 15.72 in.	248 mm 9.77 in.	55 mm 2.18 in.	83 mm 3.27 in.
1000 Touch	329 mm 12.97 in.	248 mm 9.77 in.	55 mm 2.18 in.	83 mm 3.27 in.
1250 Keypad or Keypad/Touch	416 mm 16.36 in.	282 mm 11.12 in.	55 mm 2.18 in.	83 mm 3.27 in.
1250 Touch	363 mm 14.30 in.	282 mm 11.12 in.	55 mm 2.18 in.	83 mm 3.27 in.
1250 High-bright Touch	363 mm 14.30 in.	282 mm 11.12 in.	74 mm 2.9 in.	101 mm 3.99 in.
1500 Keypad or Keypad/Touch	469 mm 18.46 in.	330 mm 12.97 in.	65 mm 2.55 in.	93 mm 3.65 in.
1500 Touch	416 mm 16.37 in.	330 mm 12.97 in.	65 mm 2.55 in.	93 mm 3.65 in.

Mount the Terminal in a Panel

Mounting clips secure the terminal to the panel. The number of clips you use varies by terminal size.

ATTENTION: Disconnect all electrical power from the panel before making the panel cutout.

Make sure the area around the panel cutout is clear.

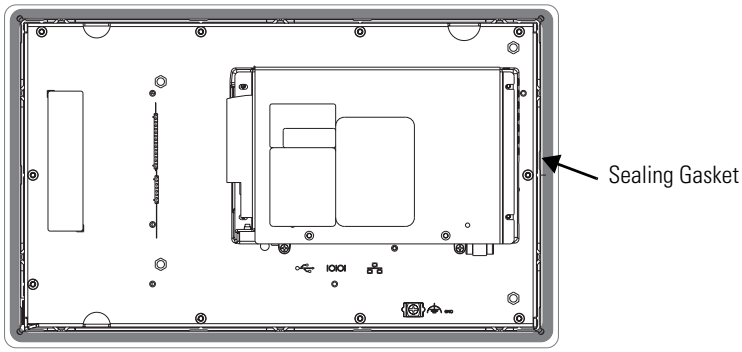
Take precautions so metal cuttings do not enter any components already installed in the panel.

Failure to follow these warnings may result in personal injury or damage to panel components.

Follow these steps to mount the terminal in a panel.

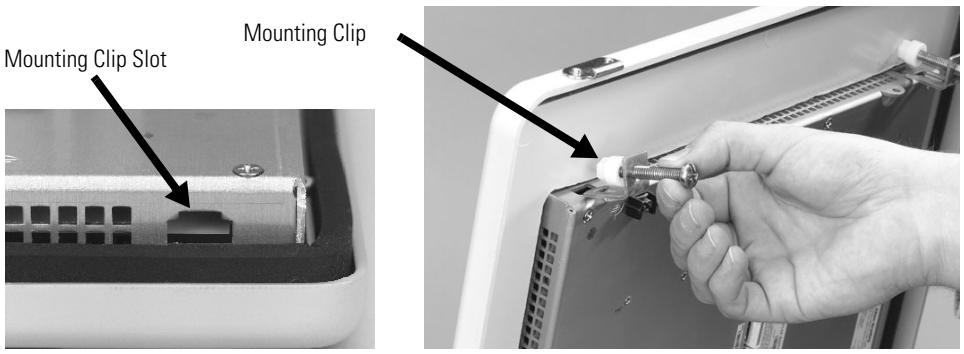
1. Cut an opening in the panel by using the panel cutout template shipped with the terminal.
2. Make sure the terminal sealing gasket is properly positioned on the terminal.

   This gasket forms a compression type seal. Do not use sealing compounds.



   Be careful not to pinch the legend strip during installation.

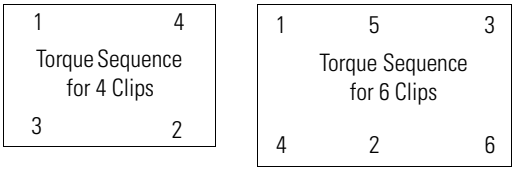
3. Place the terminal in the panel cutout.

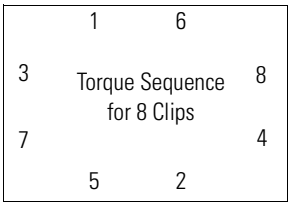


4. Slide the ends of the mounting clips into the slots on the terminal.

5. Tighten the mounting clip screws by hand until the gasket seal contacts the mounting surface uniformly.

6. Tighten the mounting clips screws to a torque of 0.90...1.1 N•m (8...10 lb•in) by using the specified sequence, making sure not to overtighten.





ATTENTION: Tighten the mounting clips to the specified torque to provide a proper seal and to prevent damage to the product. Allen-Bradley assumes no responsibility for water or chemical damage to the product or other equipment within the enclosure because of improper installation.

Notes:

Connect Power

Chapter Objectives

This chapter covers wiring and safety guidelines, and procedures for connecting power.

Topic	Page
Wiring and Safety Guidelines	33
Remove and Install the Power Terminal Block	34
DC Power Connections	35
AC Power Connections	37
Initial Startup	39
Reset the Terminal	40

Wiring and Safety Guidelines

Use publication NFPA 70E, Electrical Safety Requirements for Employee Workplaces, IEC 60364 Electrical Installations in Buildings, or other applicable wiring safety requirements for the country of installation when wiring the devices. In addition to the NFPA guidelines, here are some other guidelines to follow:

- Connect the device and other similar electronic equipment to its own branch circuit.
- Protect the input power by a fuse or circuit breaker rated at no more than 15 A.
- Route incoming power to the device by a separate path from the communication lines.
- Cross power and communication lines at right angles if they must cross. Communication lines can be installed in the same conduit as low-level DC I/O lines (less than 10V).
- Shield and ground cables appropriately to avoid electromagnetic interference (EMI).
  Grounding minimizes noise from EMI and is a safety measure in electrical installations.

For more information on grounding recommendations, refer to the National Electrical Code published by the National Fire Protection Association.

Remove and Install the Power Terminal Block

The terminals are shipped with a power terminal block installed. You can remove the terminal block for ease of installation, wiring, and maintenance:

- Logic modules with a DC power input use a two-position terminal block.
- Logic modules with an AC power input use a three-position terminal block.

WARNING: Explosion Hazard

Substitution of components may impair suitability for hazardous locations.

Do not disconnect equipment unless power has been switched off and area is known to be nonhazardous.

Do not connect or disconnect components unless power has been switched off.

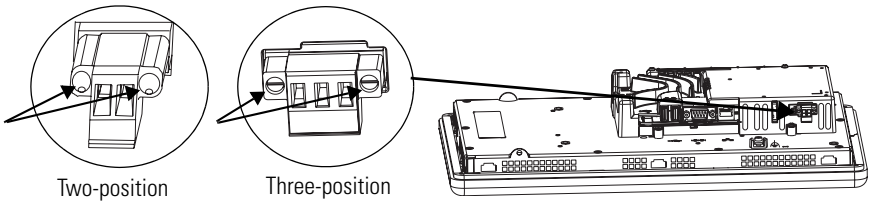
All wiring must comply with N.E.C. articles 501, 502, 503, and/or C.E.C. section 18-1J2 as appropriate.

Peripheral equipment must be suitable for the location in which it is used.

SHOCK HAZARD: Disconnect all power before installing or replacing components. Failure to disconnect power may result in electrical shock or damage to the terminal.

Follow these steps to remove the terminal block.

1. Loosen the two screws that secure the terminal block.
2. Gently pull the terminal block away from the connector.



Follow these steps to install the terminal block.

1. Reattach the terminal block to the connector until seated.
2. Tighten the two screws that secure the terminal block to the connector.

DC Power Connections

DC-powered PanelView Plus 6 devices have an integrated, isolated 24V DC power supply with these power ratings:

- 24V DC nominal (18...32V DC)
- 70 W maximum (2.9 A at 24V DC)

The power supply is internally protected against reverse polarity of the DC+ and DC- connections. Connecting DC+ or DC- to the earth/ground terminal may damage the device.

The input power terminal block supports these wire sizes.

Table 25 - Wire Specifications for DC Input Power Terminal Block

Wire Type		Dual-wire Gauge(1)	Single-wire Gauge	Terminal Screw Torque
Stranded or solid	Cu 90 °C (194 °F)	0.3…1.3 mm^2 22…16 AWG	0.3…2.1 mm^2 (22…14 AWG)	0.56 N•m (5 lb•in)

(1) Two-wire max per terminal.

External Power Supply

Use a SELV or PELV 24V DC power supply, such as catalog number 2711P-RSACDIN, to power PanelView Plus 6 terminals with a DC power input.

The terminals may be powered by the same power source as other equipment, by a DC power bus.

ATTENTION: Use a SELV or PELV supply as required by local wiring codes for your installation. The SELV and PELV power sources provide protection so that under normal and single fault conditions, the voltage between conductors and earth ground does not exceed a safe value.

Earth/Ground Connection

PanelView Plus 6 devices with a DC power input have an earth/ground terminal that you must connect to a low-impedance earth/ground. The earth/ground connection is on the rear of the display module.

IMPORTANT The earth/ground connection to ground is mandatory. This connection is required for noise immunity, reliability, and Electromagnetic Compliance (EMC) with the European Union (EU) EMC directive for CE-mark conformance. This connection is required for safety by Underwriters Laboratory.

The earth/ground terminal requires a minimum wire gauge.

Table 26 - Earth/Ground Wire Specifications for DC Power

Symbol	Wire Type		Wire Gauge	Terminal Screw Torque
GND	Stranded or solid	Cu 90 °C (194 °F)	2.1…5.3 mm^2 (14…10 AWG)	1.13…1.36 N•m (10…12 lb•in)

ATTENTION: Damage or malfunction can occur when a voltage potential exists between two separate ground points. Make sure the terminal does not serve as a conductive path between ground points at different potentials

All of the communication ports on the supported communication modules and the terminal itself are isolated, with the exception of the USB ports.

Connect DC Power

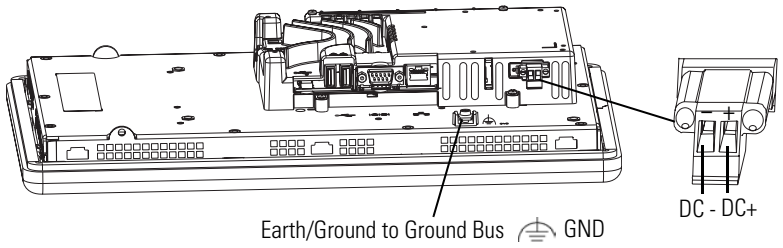
WARNING: Explosion Hazard
Do not disconnect equipment unless power has been switched off and area is known to be nonhazardous.

Disconnect all power before installing or replacing components. Failure to disconnect power may result in electrical shock or damage to the terminal.

Follow these steps to connect the terminal to DC power.

1. Verify that the terminal is not connected to a power source.
2. Secure the DC power wires to the terminal block.

   Follow the markings on the terminal blocks and the terminal for proper connections.
3. Secure the earth/ground wire to the earth/ground terminal screw at the bottom of the display.



4. Apply power to the terminal.

AC Power Connections

PanelView Plus 6 devices with an integrated AC power supply have these power ratings:

- 85...264V AC (47...63 Hz)
- 160 VA max

The input power terminal block supports these wire sizes.

Table 27 - Wire Specifications for AC Input Power Terminal Block

Wire Type		Dual-wire Gauge(1)	Single-wire Gauge	Terminal Screw Torque
Stranded or solid	Cu 90 °C (194 °F)	0.3…1.3 mm^2 22…16 AWG	0.3…2.1 mm (22…14 AWG)	0.56 N•m (5 lb•in)

(1) Two-wire max per terminal.

Protective Earth and Functional Earth Connection

PanelView Plus 6 devices with an AC power input have both a protective earth and functional earth terminal that you must connect to a low-impedance earth ground:

- Protective earth terminal is on the power input terminal block.
- Functional earth connection is on the back of the display.

ATTENTION: The functional earth and protective earth connections to ground are mandatory. The functional earth ground connection is required for electromagnetic compliance (EMC) with the EU (European Union) EMC directive for CE-mark conformance. The protective earth ground connection is required for safety and regulatory compliance.

IMPORTANT On PanelView Plus 6 devices with an AC power input, you must connect both protective earth and functional earth to ground.

The protective earth and functional earth terminals require a minimum wire gauge.

Table 28 - Functional Earth and Protective Earth Wire Specifications for AC Power

Connection		Wire Type		Wire Gauge	Terminal Screw Torque
Protective earth	⏚	Stranded or solid	Cu 90 °C (194 °F)	2.1…3.3 mm^2 (14…12 AWG)	0.56 N•m (5 lb•in)
Functional earth	GND	Stranded or solid	Cu 90 °C (194 °F)	2.1…5.3 mm^2 (14…10 AWG)	1.13…1.36 N•m (10…12 lb•in)

Connect AC Power

WARNING: Explosion Hazard
Do not disconnect equipment unless power has been switched off and area is known to be nonhazardous.

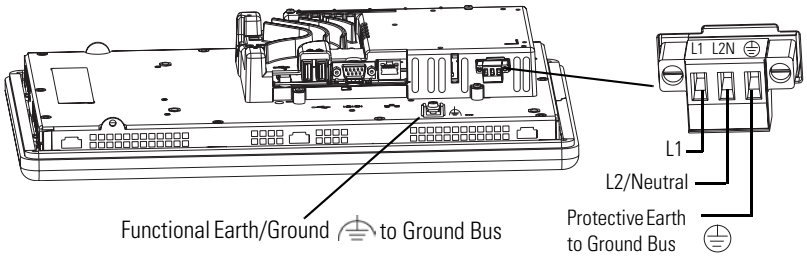
Disconnect all power before installing or replacing components. Failure to disconnect power may result in electrical shock or damage to the terminal.

ATTENTION: Improper wiring of the power terminals may result in voltage at the communication connector shells.

Do not apply power to the terminal until all wiring connections have been made. Failure to do so may result in electrical shock.

Follow these steps to connect the terminal to AC power.

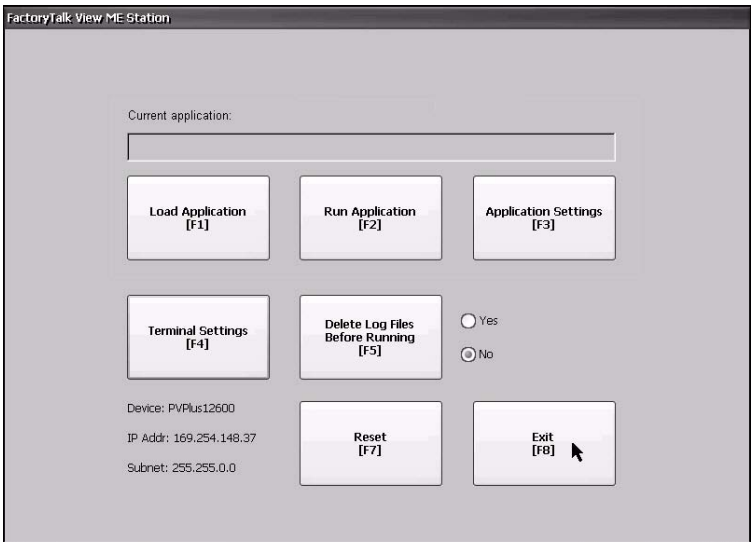
1. Verify that the terminal is not connected to a power source.
2. Secure the AC power wires to the terminal block.
   Follow the markings on the terminal block and terminal for proper connections.
3. Secure the protective earth/ground wire to the marked position of the power input terminal block.
4. Secure the functional earth/ground wire to the functional earth terminal screw on the back of the display to ground bus.



5. Apply power to the terminal.

Initial Startup

The first time you start the system, the terminal goes through its power-up sequence and launches FactoryTalk View ME Station, the Configuration mode of the terminal.



You can change the action the terminal takes on startup by choosing Terminal Settings>Startup Options. You can do one of the following:

- Launch FactoryTalk Machine Edition and run an HMI application that is configured to run at startup.
- Launch FactoryTalk View Machine Edition and run the configuration options for the terminal (default, shown above).
- Launch the Windows Explorer desktop.

All PanelView Plus 6 terminals can also be configured to allow desktop access. Terminals are initially shipped with desktop access disabled. To allow or restrict desktop access, choose Terminal Settings>Desktop Access.

For more information on changing the start-up option and restricting or allowing desktop access, refer to Chapter 4 - Configuration Mode.

Reset the Terminal

Use the reset switch on the back of the terminal to restart the terminal without having to disconnect and reapply power. After a reset, the terminal performs a series of startup tests and then takes one of these actions:

- Launches FactoryTalk Machine Edition and runs an HMI application that is configured to run at startup.
- Launches FactoryTalk Machine Edition and runs configuration options for the terminal.
- Launches the Windows Explorer desktop shell.

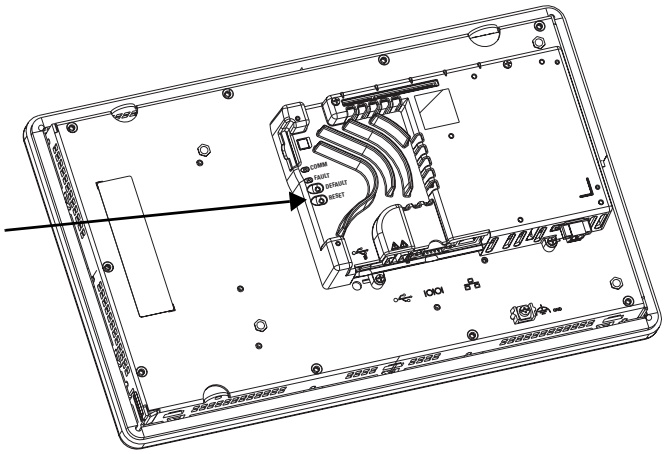
The action that occurs depends on the startup options configured for your terminal. Refer to Startup Options on page 47 for details.

Refer to Start-up Messages and Codes on page 144 for a list of startup information and error messages.

To reset the terminal, insert a thin, nonconductive probe into the hole marked reset and press the switch.

ATTENTION: Use a nonconductive object to press the reset switch. Don't use a conducting object such as a paper clip. This may damage the terminal. Don't use the tip of a pencil; graphite may damage the terminal.

Figure 5 - Reset Switch



Configuration Mode

Chapter Objectives

This chapter shows how to use FactoryTalk View ME Station on your terminal to load and run applications, configure startup options, access the Windows Explorer desktop, configure communication, and perform other terminal operations.

Topic	Page	Topic	Page
Access Configuration Mode	41	Configure Print Options	68
Terminal Settings	44	Check Integrity of Application Files	70
Load and Run Application	46	Configure Diagnostics	71
Startup Options	47	View and Clear the System Event Log	72
Desktop Access	50	System Information	73
Communication Setup	54	Enable or Disable the Alarm Display	75
Ethernet Network Connections	56	Time and Date Settings	76
File Management	60	Regional Settings	78
Display Settings	63	Font Linking	82
Input Device Settings	65		

Access Configuration Mode

The terminals use onboard software, FactoryTalk View ME Station, to perform and configure terminal operations. When you reset the terminal, one of these actions occur, depending on the configured startup option:

- FactoryTalk View ME Station is launched, which is the Configuration mode of the terminal (closed system). This is the initial default.
- The Windows Explorer desktop is launched (open system).
- FactoryTalk View Machine Edition .mer application is set to run (closed system).

From Windows Explorer desktop, you can access the Configuration mode of the terminal by double-clicking the FactoryTalk View ME Station icon on the desktop.

IMPORTANT To access Configuration mode from a running application, press the Goto Configuration Mode button. This button is added to application screens in FactoryTalk View Studio software during application development. The application stops running but is still loaded.

Figure 6 - FactoryTalk View ME Station Configuration Mode Dialog Box

Name of application that is currently loaded. Appears only if application is loaded.

Displays network information every 60 seconds. If the network is shutdown the IP address and subnet mask appear as 0.0.0.0.

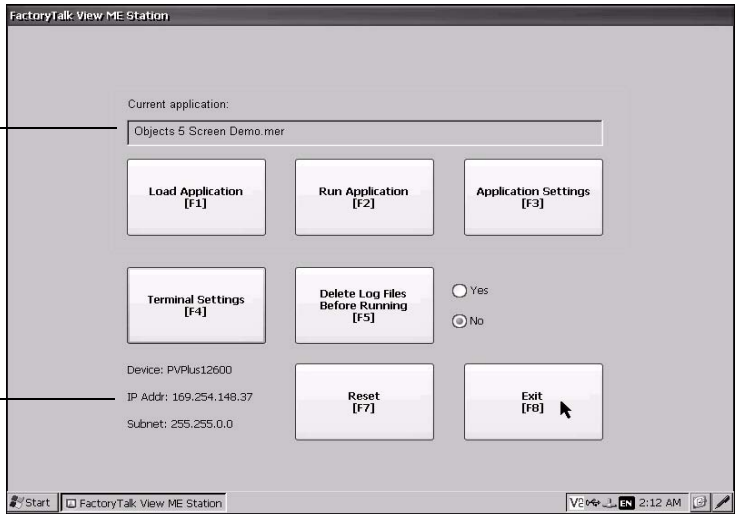


Table 29 - Configuration Mode Operations

Terminal Operation	Description
Load Application (F1)	Opens a dialog where you select an application to load. The loaded application name appears under Current application.
Run Application (F2)	Runs the loaded .mer application displayed under Current application. You must load an application before running it.
Application Settings (F3)	Opens a menu of application-specific configuration settings, such as device shortcuts defined for the loaded .mer application. Device shortcuts are read-only and cannot be edited. For example, your .MER application might have CLX defined as a device shortcut name for a ControlLogix controller.
Terminal Settings (F4)	Opens a menu of options to configure non-application, terminal settings for the PanelView Plus 6 device.
Delete Log Files Before Running (F5)	Toggles between Yes and No. If you select Yes, all data log files, alarm history and alarm status file will be deleted before the application is run. If you select No, log files are not deleted first. Deleting log files is a way to reclaim memory in the terminal.
Reset (F7)	Resets the terminal. • On open Windows CE terminals, the desktop is launched. • On closed Windows CE terminals, the action on startup depends on configured startup options.
Exit (F8)	Exits Configuration mode. If desktop access is allowed, you can access the desktop.

Navigation Buttons

Many FactoryTalk View ME Station dialog boxes have data entry and navigation buttons:

- On touch-screen terminals, tap the button with your finger or stylus.
- On keypad terminals, select the function key listed on the button.
- If a mouse is attached, click a button.

Table 30 - Navigation Buttons

Button	Description	Button	Description
Close [F8]	Returns to the previous dialog. Pressing this button from the Configuration mode dialog will access the desktop, if allowed.	▲ ▼	Moves highlight up or down a list.
OK [F7] Cancel [F8]	Accepts changes and returns to previous dialog or cancels the operation without saving changes.	↵	Selects a highlighted function or item from a list.

Input Panel

When you press a button or function key on a data entry field, the input panel opens. This is where you enter or edit data:

- If a field is restricted to a numeric value, only the 0...9 keys will be enabled.
- If the value is an IP address, the 0...9 and decimal point keys will be enabled. All other buttons will be disabled.

Figure 7 - Input Panel

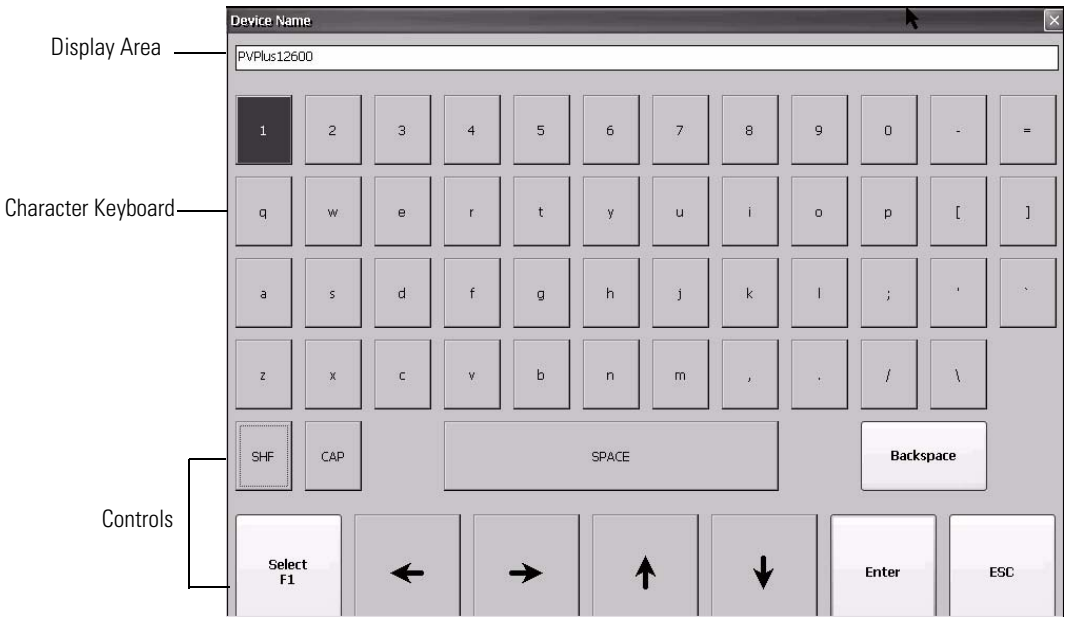


Table 31 - Input Panel Controls

Input Panel Controls	Function
SHF	Switches keys between their shifted and unshifted state. The initial default is shifted.
CAPS	Switches keys between lowercase and uppercase characters. The initial default is lowercase.
SPACE	Enters a space between characters in the Display Area.
Backspace	Deletes the previous character (to the left of the cursor) in the Display Area.
Select	Selects a character and enters it in the Display Area.
Right, Left, Up, Down Arrow Keys	Selects the character to the right, left, above or below the currently selected character.
Enter	Accepts the entered characters and returns to the previous dialog.
ESC	Cancels the current operation and returns to the previous dialog.

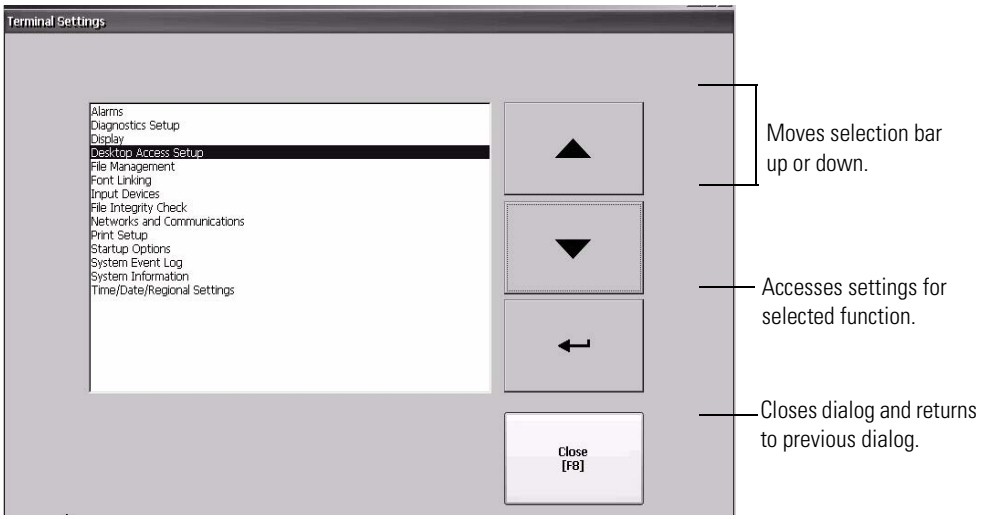
Follow these steps to enter characters in the display area.

1. Select a character on the character keyboard.
   - On a touch-screen terminal, tap or press a key.
   - On a keypad terminal, use the arrow keys on the keypad to select a key.
   - If a mouse is attached, click a key.
2. Press the Select button to copy the character to the display area.
3. Press Enter when done to exit the input panel.

Terminal Settings

You can modify settings on the terminal that are not specific to the application.

1. Select Terminal Settings from the FactoryTalk View ME Station Configuration mode dialog.

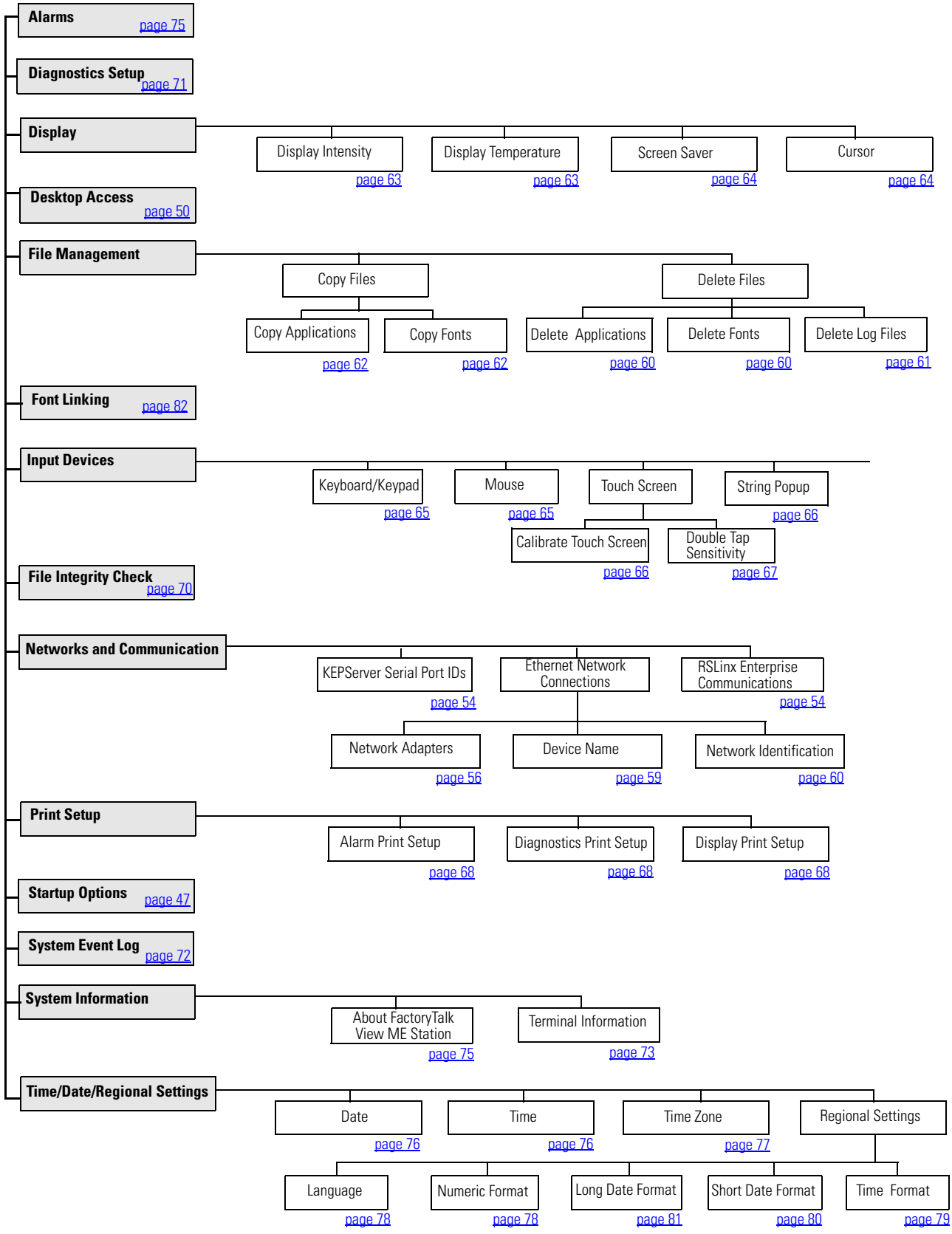


2. Select a function by using the up and down cursor buttons.
   - On touch-screen terminals, press the button.
   - On keypad terminals, press the key on the keypad or the corresponding terminal function key.
3. Press the Enter key to access selected function.

Table 32 - Terminal Settings

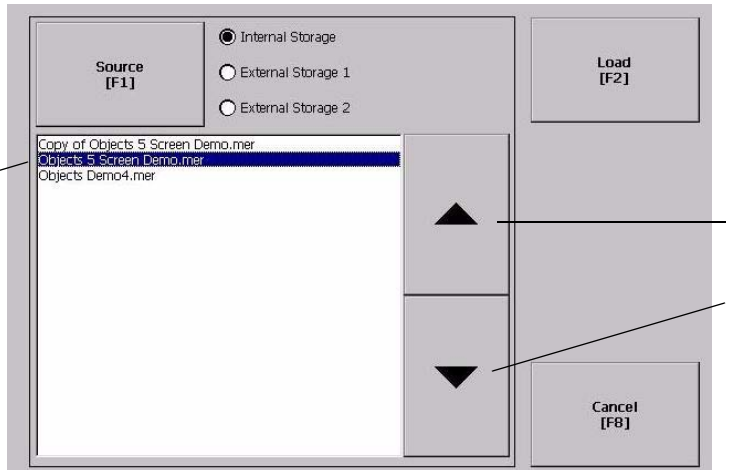
Terminal Settings	Description
Alarms	Specifies whether to close the alarm display on the terminal when the newest alarm is acknowledged by an operator. By default, the alarm display is closed.
Diagnostics Setup	Forwards diagnostic messages form a remote log destination to a computer running diagnostics.
Display	Sets the intensity of the backlight, shows the temperature of the displays, configures the screen saver, and enables the touch-screen cursor.
Desktop Access Setup	Specifies whether the desktop can be accessed with or without a password, and lets you set/reset the password.
File Management	Copies or deletes application files and font files from the terminal by using an SD card or a USB flash drive. You can also delete all FactoryTalk View ME Station log files.
Font Linking	Links a font file to a base font loaded on the terminal.
Input Devices	Configures settings for the keypad, touch screen, or attached keyboard and mouse, including touch-screen calibration. Also lets you choose between a pop-up character input or pop-up keyboard for string input.
File Integrity Check	Checks the integrity of the .mer application file and runtime files by logging details to a file integrity check log. You can view and clear this log at any time.
Networks and Communications	Configures Ethernet settings and communication settings for serial, DHPlus, DH-485, and ControlNet applications.
Print Setup	Configures settings for printing displays, alarm messages, and diagnostics messages generated by the application.
Startup Options	Specifies whether the terminal launches the desktop, Configuration mode, or runs an application on startup.
System Event Log	Displays system events logged by the terminal and lets you clear events from the log.
System Information	Displays power, temperature, battery and memory details for the terminal. Also shows the firmware number for FactoryTalk View ME software and technical support information.
Time/Date/Regional Settings	Sets the date, time, language, and numeric format used by the terminal and applications.

Figure 8 - Terminal Settings Menu Structure



Load and Run Application

Before running a FactoryTalk View Machine Edition .mer application, you must first load the application. You can load an .mer application from internal flash memory in the terminal, an SD card, or a USB flash drive.



Follows these steps to load and run an application.

1. Press the Load Application from the Configuration mode dialog.
2. Press the Source button to select the location of the file you want to load.
   - Internal Storage - internal flash memory of the terminal.
   - External Storage 1 - SD card loaded in the card slot of the terminal.
   - External Storage 2 - USB flash drive connected to a USB host port.

   TIP FactoryTalk View ME Station recognizes only Machine Edition files in the My Device\Application Data\Rockwell Software\RSViewME\Runtime\ folder.
3. Select an .mer file from the list by using the up and down cursor keys.
4. Press the Load button to load the selected application.

   You will be asked if you want to replace the terminal's communication configuration with the configuration in the application.
5. Select Yes or No.

   If you select Yes, any changes to the device addresses or driver properties in the RSLinx Communications dialog will be lost.

   The name of the currently loaded application will appear at the top of the main Configuration mode dialog.
6. Press the Run button on the Configuration mode dialog to run the loaded application.

   TIP Log files are generated by the application. To delete the log files before running an application, select the Delete Log Files Before Running button on the Configuration Mode dialog. You can reclaim memory in the terminal by deleting log files.

   TIP Refer to Load and Run Application on page 46 to set the application to automatically run on startup or a terminal reset.

Startup Options

You can specify what action the terminal takes on startup or a reset.

This Start-up Option	Performs This Action	Typical System
Do not start FactoryTalk View ME Station	Launches the Windows Explorer desktop on startup.	Open
Go to Configuration Mode	Launches FactoryTalk View ME Station Configuration mode on startup. This is the initial, factory default setting.	Closed
Run Current Application	Runs the FactoryTalk View ME application loaded in the terminal on startup.	Closed

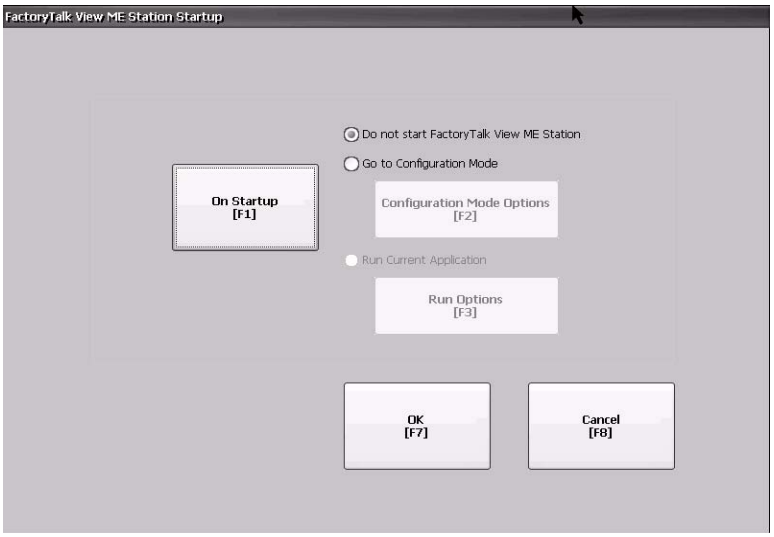
IMPORTANT When desktop access is restricted, the startup option must be set to Run Current Application or Go to Configuration Mode (default). Refer to page 51 for details on how to disable desktop access.

Disable FactoryTalk View ME Station Software on Startup

FactoryTalk View ME Station is typically disabled on startup for terminals with extended features, allowing the desktop to launch. The desktop can also be launched from FactoryTalk View ME Station by pressing the Exit button on the Configuration mode dialog.

Follow these steps to disable FactoryTalk View ME Station on startup so that the desktop can launch.

1. Select Terminal Settings>Startup Options.



2. Press the On Startup button until 'Do not start FactoryTalk View ME' is selected.

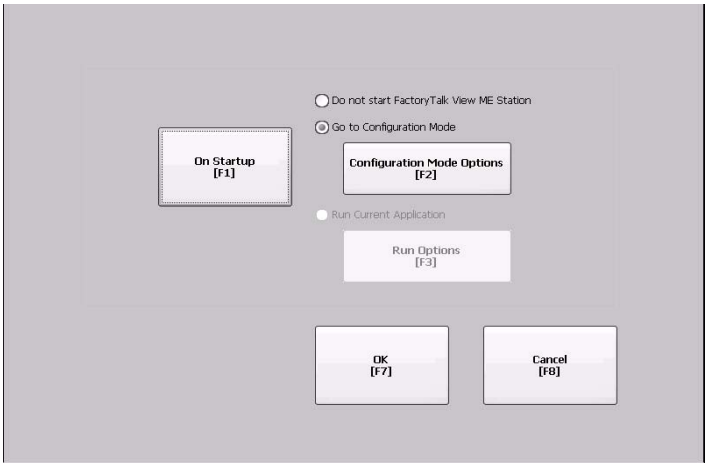
   TIP When disabling FactoryTalk View ME Station, desktop access must be set to allow or your will receive a warning. Refer to Enable Desktop Access on page 50 for details.

3. Press OK.

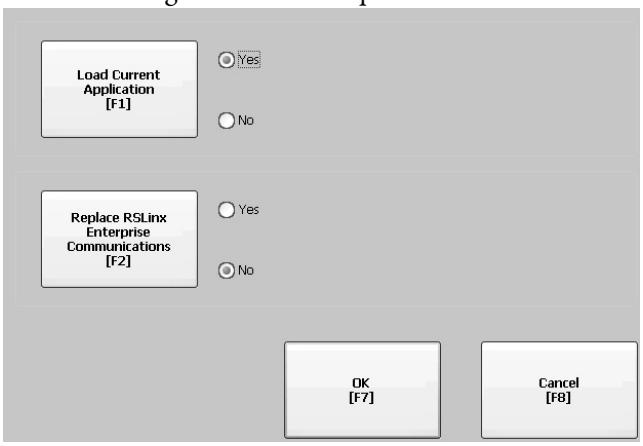
Enter Configuration Mode on Startup

Follow these steps to automatically launch the FactoryTalk View ME Station Configuration mode dialog on startup.

1. Choose Terminal Settings>Startup Options.
2. Press the On Startup button to select Go to Configuration Mode.



3. Press the Configuration Mode Options button.

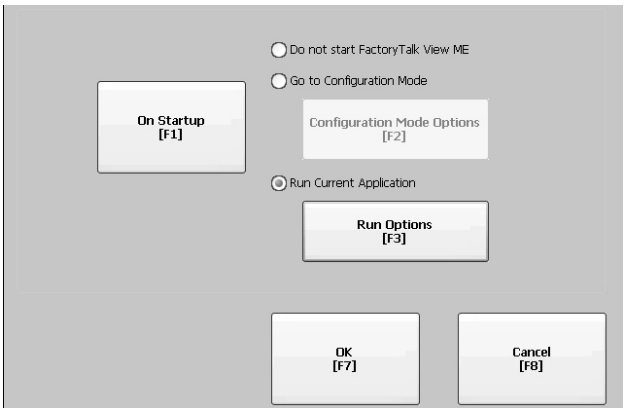


4. Press the Load Current Application button to specify whether you want to load the current application on startup.
5. Press the Replace RSLinx Communications button to specify whether to use the communication configuration of the current application or that of the terminal on startup.
   - Select No to use the RSLinx configuration of the terminal.
   - Select Yes to use the configuration of the application. The terminal configuration is replaced with the application settings. Any changes to device addresses or driver properties in RSLinx communication will be lost.
6. Press OK to return to the previous dialog.
7. Press OK to return to Terminal Settings.

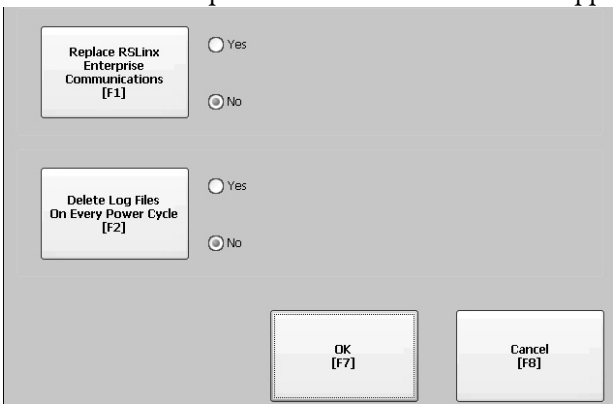
Run the Loaded Application on Startup

Follow these steps to run the FactoryTalk View .mer application currently loaded in the terminal on startup. This is typical when running a closed system.

1. Select Terminal Settings>Startup Options.



2. Press the On Startup button to select Run Current Application.



   If an application is not loaded, the options are disabled.

3. Press the Replace RSLinx Communications button to specify what configuration settings to use when running the application.
   - Select No to use the RSLinx configuration of the terminal.
   - Select Yes to use the configuration of the application. The terminal configuration is replaced with the application settings. Any changes to device addresses or driver properties in RSLinx communication will be lost.
4. Press the Delete Log Files On Every Power Cycle button to specify what action to take with the log files on startup.
   - Select Yes to delete all log files (data, alarm history, alarm status) generated by the terminal before running application. The files are deleted from the system default location.
   - Select No to retain all log files.
5. Press OK twice to return to Terminal Settings.

Desktop Access

You can allow or restrict access to the Windows desktop on all PanelView Plus 6 terminals. From the desktop, you can perform system and control panel operations, or run third-party applications. Terminals with extended features can additionally run viewers, media players, and launch the web browser. You can even allow access temporarily to perform specific tasks, then disable desktop access to prevent unauthorized changes.

Typically, a terminal does not allow desktop access unless it has extended features.

TIP All terminals are shipped from factory with desktop access disabled.

With restricted access, the only way to access the desktop is to first enter a password. The terminals are shipped from the factory with a default password and challenge question that we recommend you change.

- Default password = password (case sensitive)
- Default challenge question = What is the opposite of lock?
- Default challenge answer = unlock (case sensitive)

When desktop access is set to allow, you can access the desktop by pressing the Exit button from FactoryTalk View ME Station, Configuration mode.

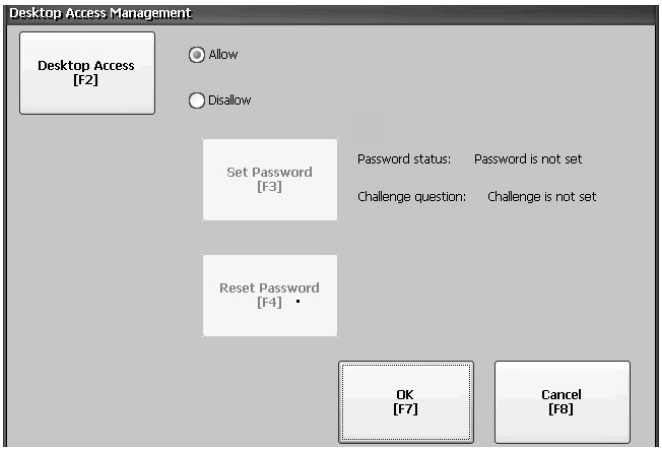
Enable Desktop Access

Follow these steps to enable desktop access.

1. Select Terminal Settings>Desktop Access Setup.
2. Press the Desktop Access button to select Allow.

   The Enter Password dialog box appears.

   TIP Each time you change access from disallow to allow, you are required to enter a password. The initial default password is 'password'.
3. Press the Password button to enter the password and press Enter.
4. Press Enter again to return to Desktop Access Management.



Notice that the password has been cleared.

5. Press OK to exit Desktop Access Management, then Close to exit Terminal Settings.
6. Press Exit from FactoryTalk View ME Station to access the desktop.

   With desktop access set to allow, you will not be required to enter a password.

Disable Desktop Access

To restrict desktop access, the FactoryTalk View ME Station startup option must be set to one of these options:

- Go to Configuration Mode (this is the default)
- Run Current Application

See page 46 for details on how to change the startup option.

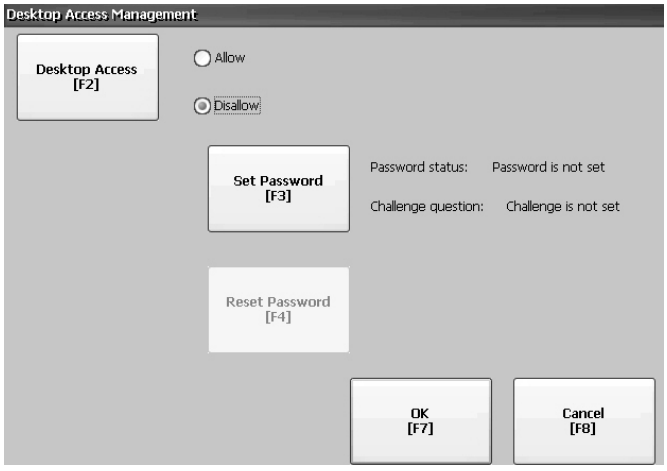
You will also be required to enter a password and challenge question:

- The password is required to access the desktop from FactoryTalk View ME Station when pressing the Exit button.
- The challenge question and response will be required to change the password with the Reset Password function.

Follow these steps to disable desktop access.

1. Select Terminal Settings>Desktop Access Setup.
2. Press the Desktop Access button to select Disallow.

   The Set Password button is enabled.



TIP If you did not appropriately change the startup option, you will get an error.

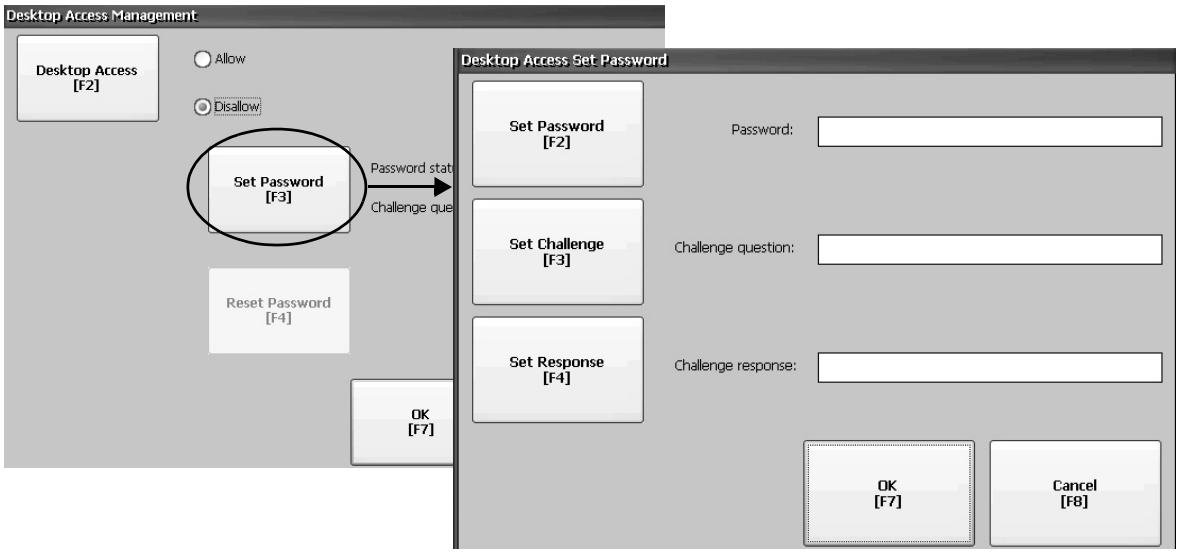
3. Refer to Set a Desktop Password on page 52 to set a password and challenge question.
   You must set a password and challenge question when disabling desktop access or you will get an error message.

Set a Desktop Password

IMPORTANT If you disallow or restrict access to the desktop, you will be required to set a password along with a challenge question.

Follow these steps to set a new password.

1. Press the Set Password button from Desktop Access Management.



2. Press the Set Password button and enter an 8...20 character password, then press Enter.

   TIP You would have to correctly enter this password before accessing the desktop.

3. Press the Set Challenge button and enter a question that you would have to correctly respond to before changing the password with the Reset Password button.
4. Press the Set Response button to enter the response to the challenge question, then press Enter.
5. Press OK.

   The Desktop Access Management dialog will show that a password and challenge question are set.

6. Press OK to return to Terminal Settings.

IMPORTANT Secure your password and challenge question for future use. To clear and reset the password, you must correctly respond to the challenge question. If you forget the response, the only way to clear the password is to restore the factory default settings on the terminal.

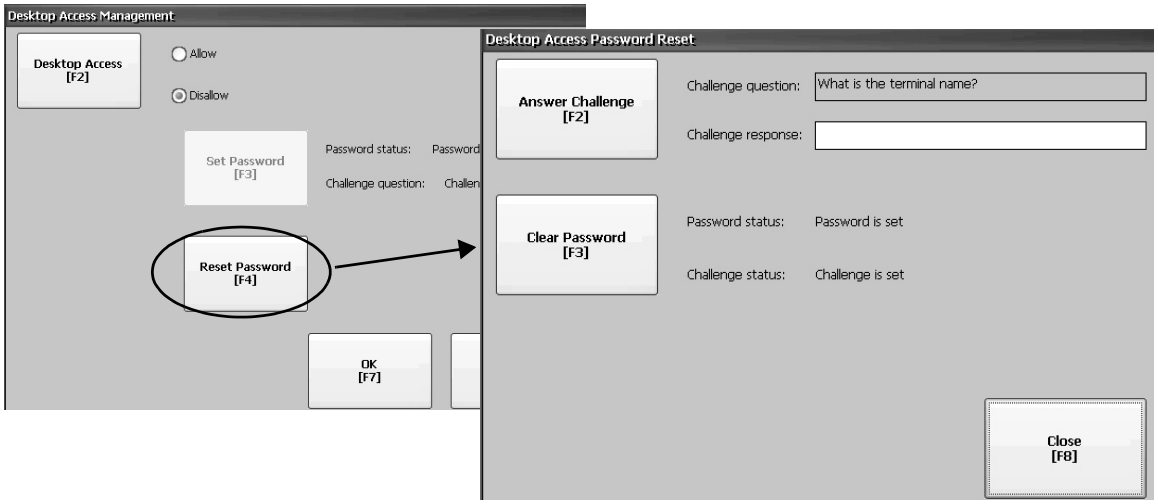
Reset the Desktop Password

To clear the current password and reset a new password, you must first correctly respond to the current challenge question. If you cannot remember the response, you will have to restore the terminal to its factory default settings. Refer to Access Maintenance Operations on page 151 for details.

IMPORTANT You can clear and reset the password and challenge question if access to the desktop is restricted or set to disallow.

Follow these steps to reset a desktop access password.

1. Press the Reset Password button from Desktop Access Management.



2. Press the Answer Challenge button and enter the correct response to the current challenge question.
3. Press the Clear Password button to clear the current password and challenge question.

   The dialog indicates the password and challenge information is cleared.

   Password status: Password is not set
   Challenge status: Challenge is not set
4. Press the Close button.
5. Follow the Set a Desktop Password procedure on page 52 to set a new password and challenge question.

Communication Setup

You configure communication for your application and controller by using RSLinx Enterprise software:

- Access KEPServer Serial Port ID's.
- Edit the driver settings for the protocol used by your .mer application.
- Edit the device address of the controller on the network.

Configure KEPServer Serial Port ID's

To access KEPServer serial communication, you must have KEPServer Enterprise installed on your terminal. If you plan on using KEPServer Enterprise and serial communication, you must specify which COM port to use.

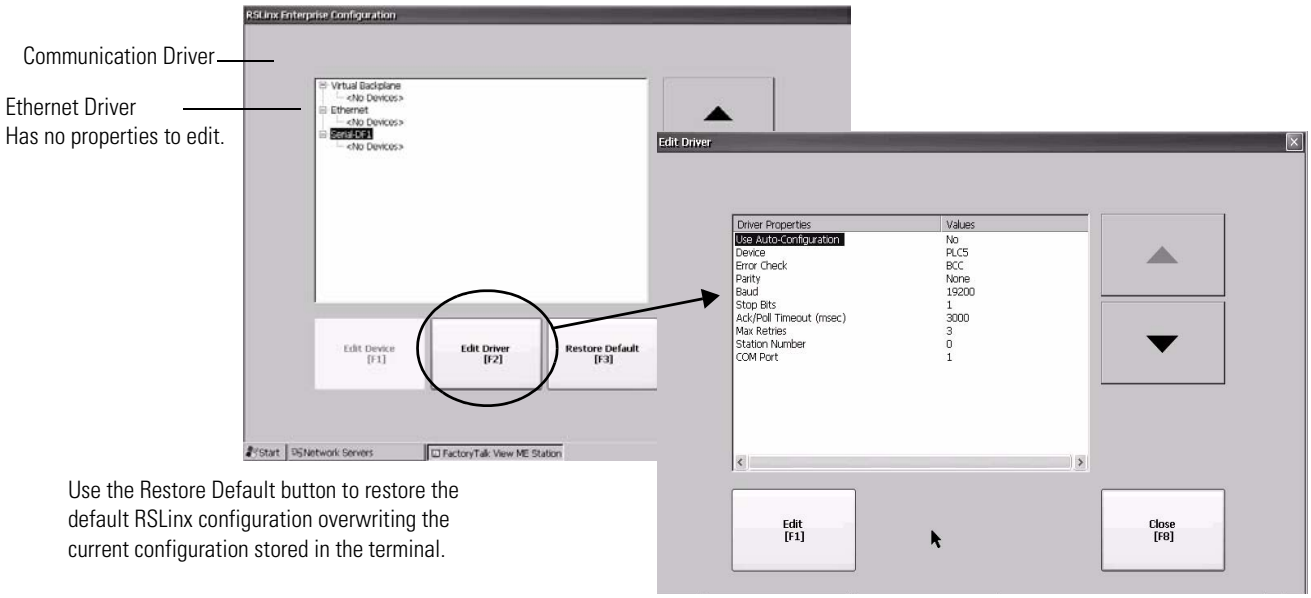
To access the KEPServer Serial Port ID dialog, select Terminal Settings>Networks and Communications>KEPServer Serial Port ID's. If KEPServer Enterprise is not installed, you will get an error message.

Configure RSLinx Communication Properties

Follow these steps to configure driver settings for the communication protocol used by your application.

1. Select Terminal Settings>Networks and Communications>RSLinx Enterprise Communications.

   You will see a tree view of installed cards and network configurations.



Use the Restore Default button to restore the default RSLinx configuration overwriting the current configuration stored in the terminal.

2. Select a communication card installed on your terminal.
3. Press the Edit Driver button to view the current driver properties.
4. Select a property to modify, then press the Edit button.
5. Modify the setting, then press the Enter button.

   You return to the previous dialog with the newly entered data.

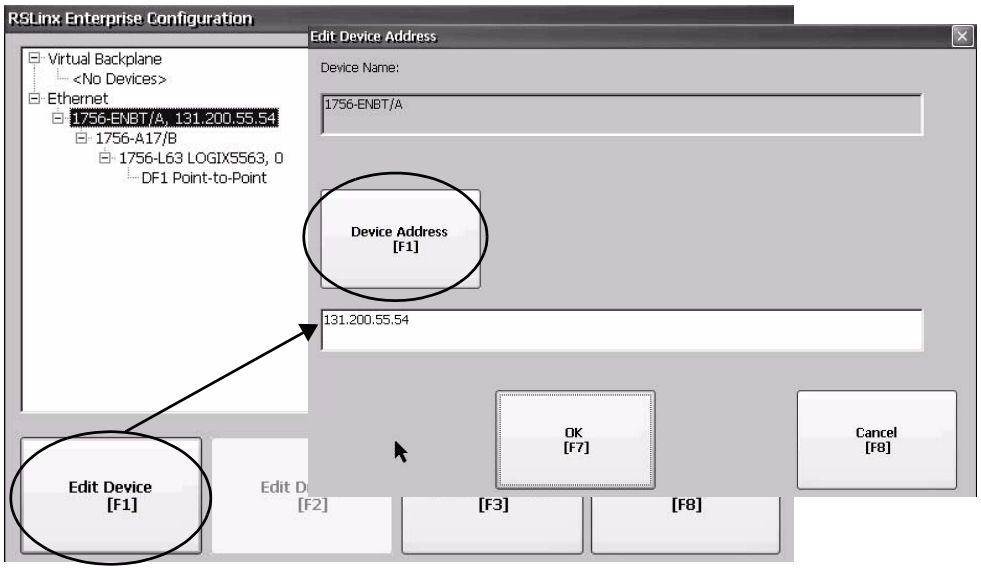
Table 33 - Communication Driver Properties

Field	Description	Valid Values
Serial Properties		
Use Auto Config	Automatically or manually configures the baud rate, parity, and error checking parameters.	Yes (auto configure) No (manual configure)
Device	The serial device terminal is connected to.	PLC-5, SLC, MicroLogix, Logix Platform
Error Check	Type of error checking used. Error checking is automatically configured if Use Auto Config is set to Yes.	BCC, CRC
Parity	Type of parity used. Parity is automatically configured if Use Auto Config is set to Yes.	None, Odd, Even
Baud Rate	Data rate at which serial driver communicates. The baud rate is automatically configured if Use Auto Config is set to Yes.	110, 300, 600, 1200, 4800, 9600, 19200, 38400, 57600, 115200
Stop Bits	Number of stop bits used.	1 or 2
Ack/Poll Timeout	Ack/Poll timeout value in ms.	20…60,000 ms
Max Retries	Number of retries before serial driver fails.	0…10
Station Number	Station number based on a specific device.	0…254
COM Port	Communication port used on the terminal.	1…4
DHPlus Properties		
Jumper ID	Identifies the communication card if multiple cards are installed on terminal.	0…3
Station Number	The unique address of terminal on the DHPlus network.	0…77 (octal)
Baud Rate	The communication rate of the DHPlus network.	57,600 (default) 115,200 230,400
DH-485 Properties		
Jumper ID	Identifies the communication card if multiple cards are installed on terminal.	0…3
Station Number	The unique station number of the terminal on the DH-485 network.	0…31 (decimal)
Baud Rate	The communication rate of the DH-485 network.	9600 19,200
MaxStationNumber	The maximum station number on the DH-485 network. The value must be greater than or equal to the Station Number.	0…31 (decimal)
ControlNet Properties		
Device ID	Unique address of the PanelView Plus 6 terminal on the ControlNet network.	1…99

Configure a Device Address

Follow these steps to edit the address of a device such as a logic controller.

1. From the RSLinx Configuration dialog, select a device node.
2. Press the Edit Device button to view the device name and current address.



3. Press the Device Address button to modify the address.

   The input panel opens with the current address.
4. Use the Input Panel to modify the address and then press the Enter button.

   You return to the previous dialog with the new address.
5. Press OK.

IMPORTANT Modified settings do not take effect until the terminal is restarted.

Ethernet Network Connections

The terminal has a built-in Ethernet driver. You can configure this Ethernet information for your terminal:

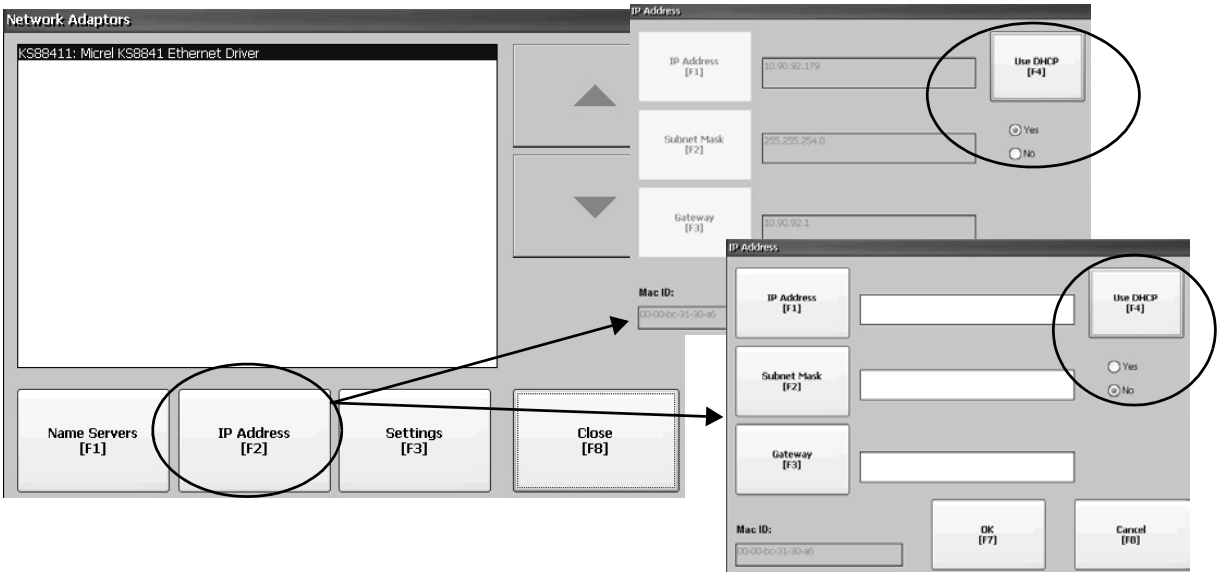
- IP address of terminal on network including link speed
- Device name to identify terminal on network
- Username and password to access network resources

Set the Ethernet IP Address for the Terminal

Some networks automatically assign IP addresses to Ethernet devices if DHCP is enabled. If DHCP is not enabled, you can manually enter an IP address for your terminal.

Follow these steps to view or enter the IP address of your terminal.

1. Select Terminal Settings>Networks and Communications>Network Connections>Network Adapters.



2. Press the IP Address button to view or modify the IP address.
3. Press the DHCP button to enable or disable DHCP assignment of addresses.
   - If DHCP is enabled or set to Yes, IP address are automatically assigned.
   - If DHCP is disabled, you can manually enter IP address. Press the IP address, Subnet Mask, and Gateway buttons to enter IP formatted addresses.
4. Press OK when done.

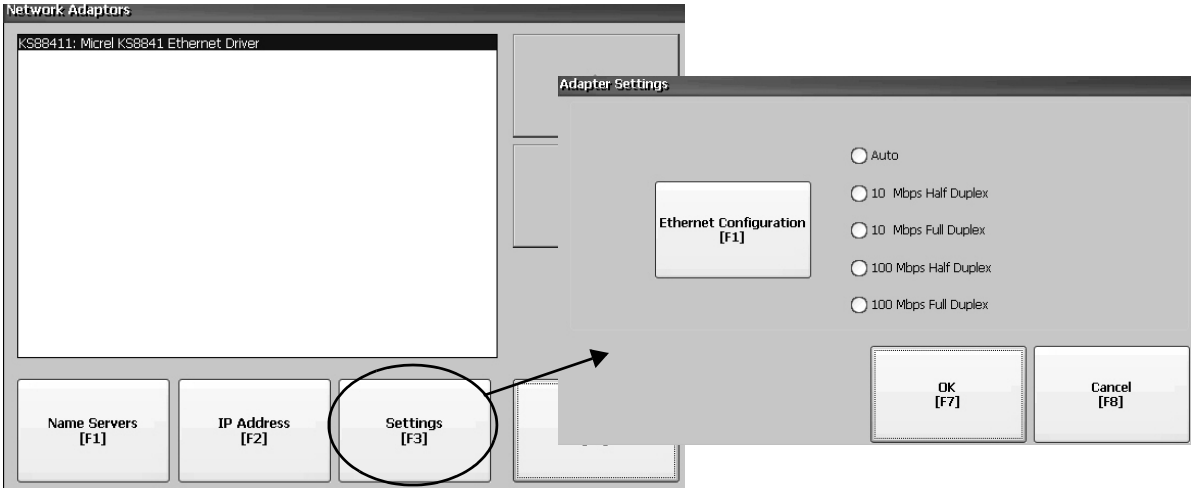
   You may be prompted to reset the device from the FactoryTalk View Station Configuration mode dialog.
5. Press Close.

Field	Description	Valid Values
Use DHCP	Enables or disables Dynamic Host Configuration Protocol (DHCP) settings. DHCP automatically allocates network devices and configurations to newly attached devices on the network. • If DHCP is set to Yes, the terminal is automatically assigned an IP address, Subnet Mask, and Gateway. The fields are disabled. • If DHCP is set to No, you can enter the IP address, Subnet Mask, and Gateway address.	Yes (default) No
IP Address	A unique address identifying the terminal on the Ethernet network.	xxx.xxx.xxx.xxx 000.000.000.000 (default) • Range of values for the first set of decimal numbers is 1…255 unless all fields are set to 000. • The range of values for the last three sets of decimal numbers is 0…255.
Subnet Mask	Address must be identical to the server subnet mask.	xxx.xxx.xxx.xxx
Gateway	Optional Gateway address.	xxx.xxx.xxx.xxx
Mac ID	Read-only field.	

Set the Ethernet Link Speed

You can set the speed and duplex setting of the Ethernet link.

1. Select Terminal Settings>Networks and Communications>Network Connections>Network Adapters.

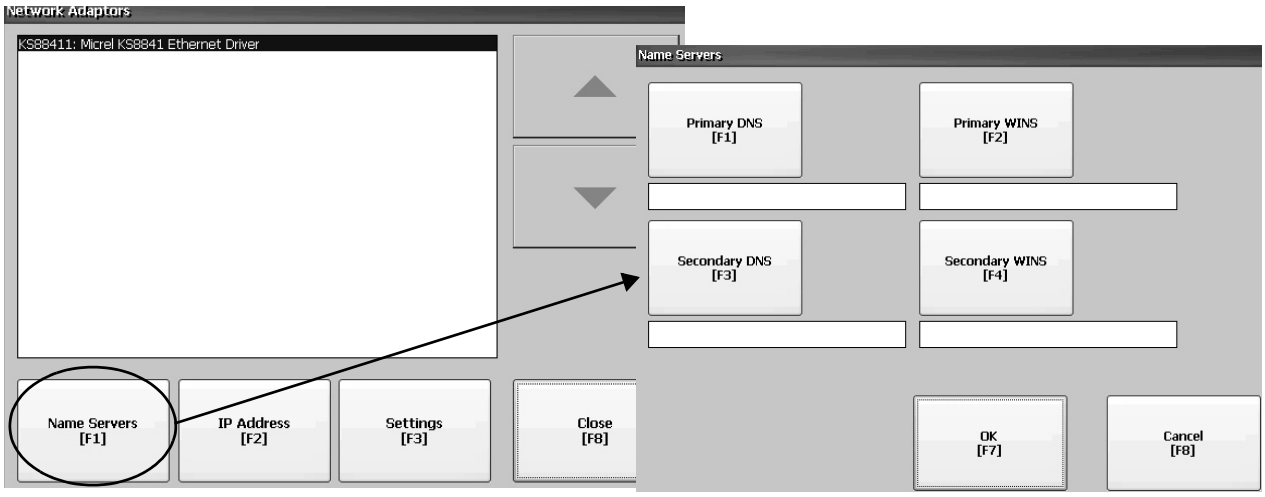


2. Press the Settings button to view or modify the Ethernet link settings.
3. Press the Ethernet Configuration button to select an Ethernet link option for your Ethernet connection.

   The default setting of Auto will automatically sense the link option and speed based on the terminal connection to a network.

Define Name Server Addresses

You can define name server addresses for the EtherNet/IP network adapter. These addresses are automatically assigned if DHCP is enabled for the adapter.



Follow these steps to define a name server address.

1. Select Terminal Settings>Networks and Communications>Network Connections>Network Adapters.
2. Press a button to enter a name server address.

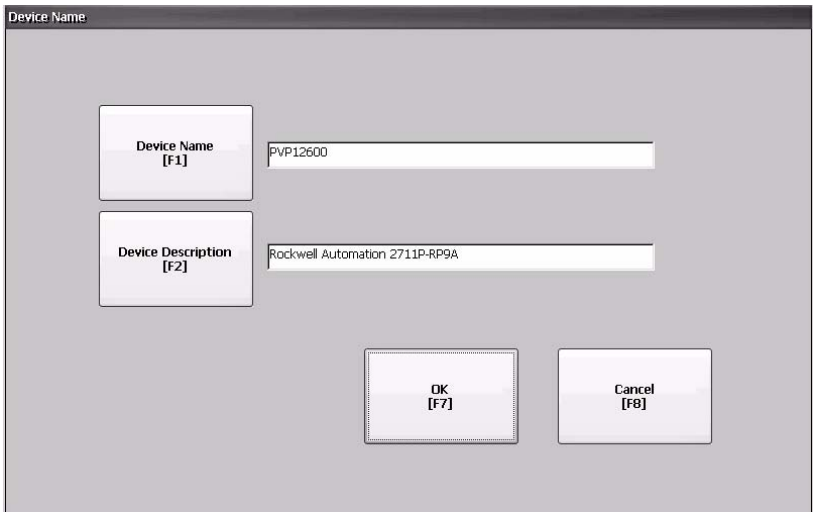
Field	Description	Valid Values
Primary DNS	The address of the primary DNS resolver.	xxx.xxx.xxx.xxx
Secondary DNS	The address of the secondary DNS resolver.	xxx.xxx.xxx.xxx
Primary WINS	The address of the primary WINS resolver.	xxx.xxx.xxx.xxx
Secondary WINS	The address of the secondary WINS resolver.	xxx.xxx.xxx.xxx

3. Press OK when done.

View or Change Terminal Device Name

Each terminal has a default device name and description that is used to identify the terminal on the network. You can view or modify this information.

1. Select Terminal Settings>Networks and Communications>Network Connections>Device Name.



2. Press the Device Name button to enter or edit the device name.
3. Press the Device Description button to enter a description for the device.

Field	Description	Valid Values
Device Name (1)	Unique name that identifies the terminal to other computers on the network.	1…15 characters • A leading character in the range of a through z or A through Z. • Remaining characters in the range of a through z, A through Z, 0…9, or - (hyphen)
Device Description	Provides a description of the terminal. The default is the logic module catalog number.	50 characters max

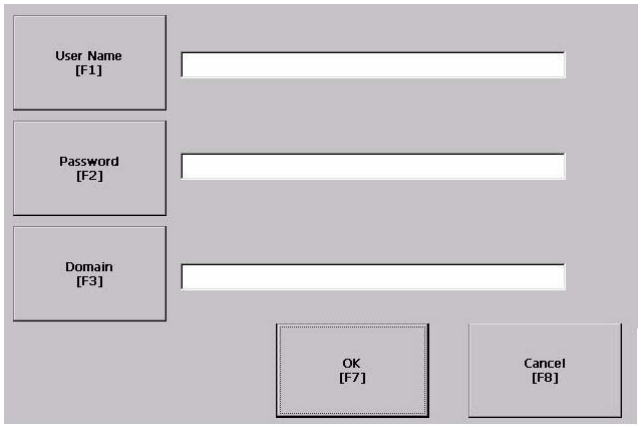
(1) Check with your network administrator to determine a valid device name.

4. Press OK.

Authorize Terminal to Access Network Resources

The terminal can access network resources with proper identification. A user name, password, and domain must be provided by your network administrator.

1. Select Terminal Settings>Network and Communications>Network Connections>Network Identification.



2. Press the user name, password and domain buttons and enter the information provided by your network administrator.

Field	Description	Valid Values
User Name	Identifies the user to the network.	70 characters max
Password	Characters that gain access to network along with the user name.	No character limitation
Domain Name	Provided by network administrator.	15 characters max

3. Press OK when done.

File Management

The terminal supports operations for managing files that are stored on the terminal:

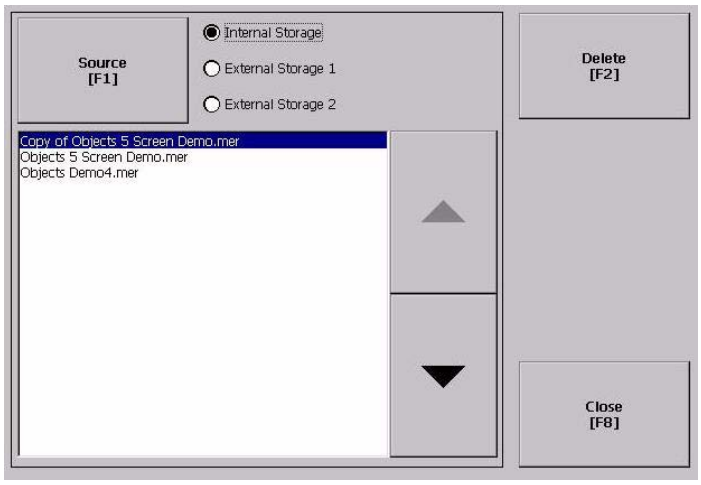
- Deleting application .mer files, font files, or generated log files
- Copying application files or font files between storage locations

Delete Application File or Font File

You can delete FactoryTalk View ME .mer files or font files that reside in the internal flash memory of the terminal, a loaded USB flash drive, or a loaded SD card. The procedure for deleting an application file or a font file is the same.

1. Select Terminal Settings>File Management>Delete Files>Delete Applications or Delete Fonts.

2. Press the Source button to choose the storage location of the application or font file you want to delete.
   - Internal Storage - internal flash memory of the terminal
   - External Storage 1 - SD card loaded in the card slot of the terminal
   - External Storage 2 - USB flash drive connected to a USB host port



3. Select a file from the list.
4. Press the Delete button.
5. Select Yes or No when asked if you want to delete the selected application or font file from the storage location.

Delete Log Files

You can delete generated log files, alarm history files, and alarm status files from the System Default location on the terminal.

1. Select Terminal Settings>File Management>Delete Files>Delete Log Files.

   You are asked to confirm the deletion of the files.

   Do you want to delete all of the FactoryTalk View ME Station Log Files?

2. Select Yes or No.

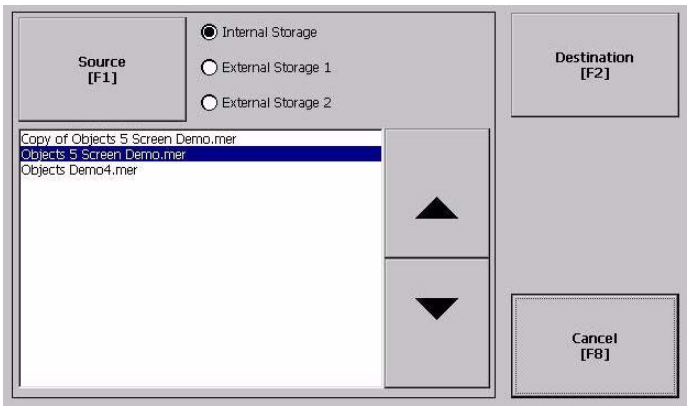
   Log files not located in the System Default location will not be deleted.

Copy Application File or Font File

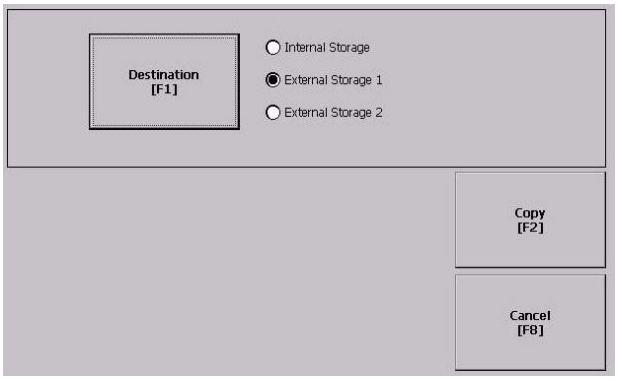
You can copy Factory Talk View application .mer files or font files from one storage location to another in the terminal. The procedure for copying an application file or a font file between storage locations is the same.

1. Select Terminal Settings>File Management>Copy Files>Copy Applications or Copy Fonts.

List of files stored in flash memory of terminal.



2. Press the Source button to choose the location of the file you want to copy.
   - Internal Storage - internal flash memory of the terminal
   - External Storage 1 - SD card loaded in the card slot of the terminal
   - External Storage 2 - USB flash drive connected to a USB host port
3. Select a file from the storage location.
4. Press the Destination button on the same dialog.



5. Press the Destination button to choose the location to copy the file. The destination must be different than the source location.
6. Press the Copy button to copy the selected file to the destination. If the file exists, you will be asked if you want to overwrite the file.
7. Select Yes or No.

TIP FactoryTalk View ME Station software looks for .mer files in the My Device\Application Data\Rockwell Software\RSViewME\Runtime\ folder and font files in the \Rockwell Software\RSViewME\Fonts\ folder.

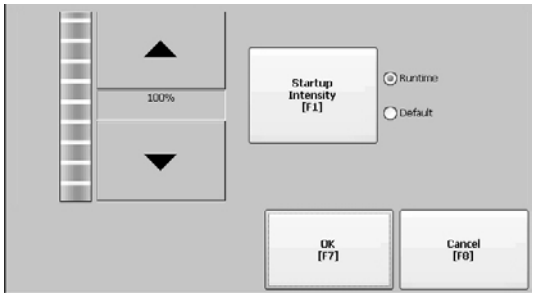
Display Settings

For the terminal display, you can adjust its intensity, view its temperature, configure the screen saver, or enable/disable the screen cursor.

Adjust the Display Intensity

You can modify the intensity of the terminal backlight. You can use the default intensity of 100% or you can change the intensity for runtime operations.

1. Select Terminal Settings>Display>Display Intensity.



2. Press the Startup Intensity button to switch between the Default intensity and the Runtime intensity.
   - If you choose Runtime, the startup screens use the runtime intensity.
   - If you choose Default, the startup screens use the default setting, 100%
3. Increase or decrease the intensity for runtime operations, by pressing the up or down arrow keys.
4. Press OK when done to save the intensity changes.

View the Display Temperature

To view the current temperature of the display, select Terminal Settings>Display>Display Temperature.

The terminals have a cold-cathode fluorescent lamp (CCFL) backlight. This backlight requires temperature control when the internal temperature of the product is below 10 °C (50 °F) or above 60 °C (140 °F). The terminal monitors low and high temperature conditions. If the internal temperature is the following:

- Below 10 °C (50 °F), the backlight is set to overdrive or the full-rated current setting for at least five minutes.
- Above 60 °C (50 °F), the backlight is set to underdrive; 40% or less of full brightness. This reduces heat generation from the backlight.

Temperature monitoring begins when the backlight turns on at startup or when the screen saver is deactivated. The temperature control affects only display intensity; it does not restrict the use or operation of the terminal.

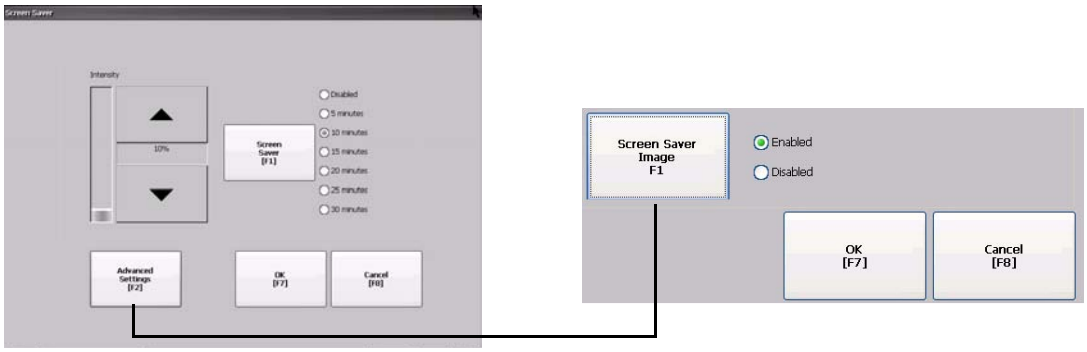
When a low or high temperature condition is detected, an error is sent to the system event log. If the temperature control is not functioning, a noncritical error is sent to the system event log but the terminal continues to operate normally.

TIP The CCFL backlight temperature control takes precedence over the application backlight settings.

Configure the Screen Saver

The screen saver on the terminal activates after an idle period using a specific intensity. The default idle timeout is 10 minutes. You can adjust the idle timeout and intensity level for the screen saver, disable the screen saver, and enable or disable the screen saver bitmap.

1. Select Terminal Settings>Display>Screen Saver.

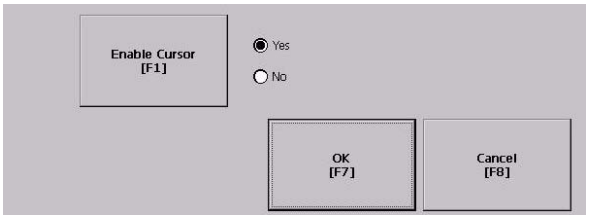


2. Press the Screen Saver button to select an idle timeout for activating the screen saver.
   To disable the screen saver, select the Disabled option.
3. Increase or decrease the brightness intensity of the screen saver by pressing the up and down cursor buttons.
4. Press the Advanced Settings button to access the bitmap option.
   - Select the Screen Saver Image button to enable or disable the screen saver bitmap.
   - Press OK to return to the previous.
5. Press OK to exit and return to the terminal settings.

Enable or Disable the Screen Cursor

The terminal has a screen cursor that you can enable or disable.

1. Select Terminal Settings>Display>Cursor.



2. Press the Enable Cursor button to enable or disable the cursor.
3. Press OK to exit and return to Terminal Settings.

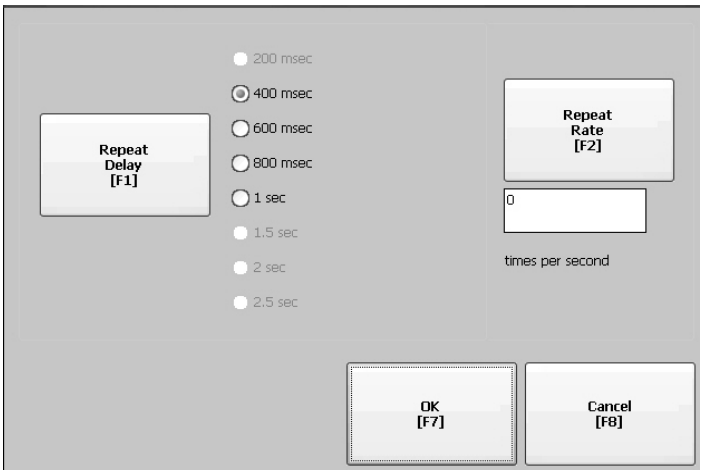
Input Device Settings

You can adjust the settings for input devices used by the terminal including the keypad, attached keyboard, mouse, touch screen, and string entry popup.

Configure Keyboard or Keypad Settings

You can adjust settings for keys on an attached keyboard or the terminal keypad.

1. Select Terminal Settings>Input Devices>Keyboard/Keypad.



2. Press the Repeat Rate button to specify the number of times a key is repeated per second when you hold a key down.
   Valid values for the keypad are 0 and 2...30. The keyboard is device dependent but typical values are the same.
3. Press the Repeat Delay button to select the amount of time that elapses per second before a key is repeated.
   Values are device dependent. Unsupported values are dimmed.
4. Press OK when done.

Set the Sensitivity of the Mouse

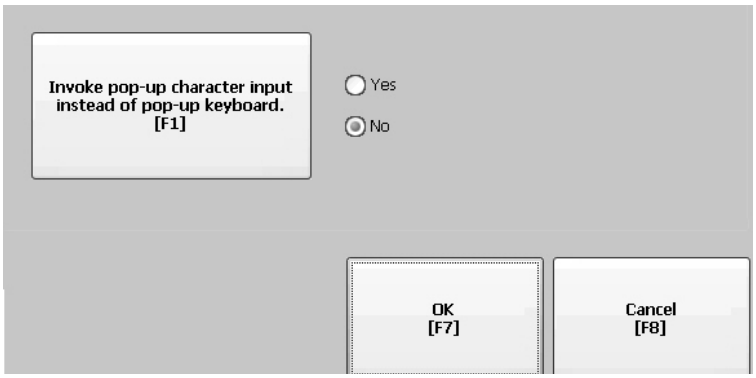
You can set and test the sensitivity for both the speed and physical distance between mouse clicks. The process is identical to setting the double-tap sensitivity for the touch screen. See page 67.

To set the mouse sensitivity, select Terminal Settings>Input Devices>Mouse.

Change the Popup for String Entry

You can specify whether to use the standard input panel for data entry or a string popup. The popup keyboard is the default.

1. Select Terminal Settings>Input Devices>Keypad>String Popup.



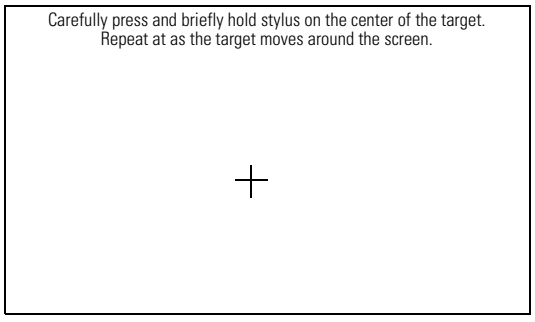
2. Press the Invoke pop-up character input instead of popup keyboard button to select the preferred input method for string entry.
3. Press OK.

Calibrate a Touch Screen

Follow these steps to calibrate the touch screen.

IMPORTANT Use a plastic stylus device with a minimum tip radius of 1.3 mm (0.051 in.) to prevent damage to the touch screen.

1. Select Terminal Settings>Input Devices>Touch Screen>Calibration.



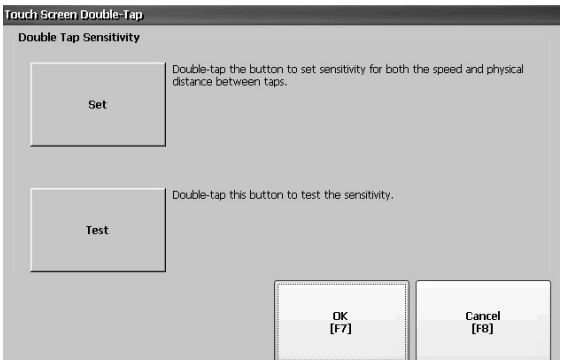
2. Follow the instructions on the screen.
   When the calibration is complete, you will see a message that indicates new calibration settings have been measured.

On Touch screens	• Tap the screen to register saved data. • Wait for 30 seconds to cancel saved data and keep the current settings.
On Keypad terminals	• Press the Enter key to accept new settings • Press the Esc key to keep old settings.

Set Double-tap Sensitivity for a Touch Screen

You can set and test the sensitivity for both the speed and physical distance between touch-screen presses. The process is identical to setting the double-tap sensitivity for the mouse.

1. Select Terminal Settings>Input Devices>Touch Screen>Double Tap Sensitivity.



2. Double-tap the Set button to set the sensitivity of touch-screen presses.
3. Double-tap the Test button to test the sensitivity of touch-screen presses. If you double-tap the test button with the time set using the Set button, the Test button will reverse its foreground and background colors.
4. Press OK when done.

Configure Print Options

You can configure settings for printing displays, alarm messages, or diagnostic messages from FactoryTalk View ME .mer applications. The general setup for printing displays and messages is the same, however, the advanced settings are different.

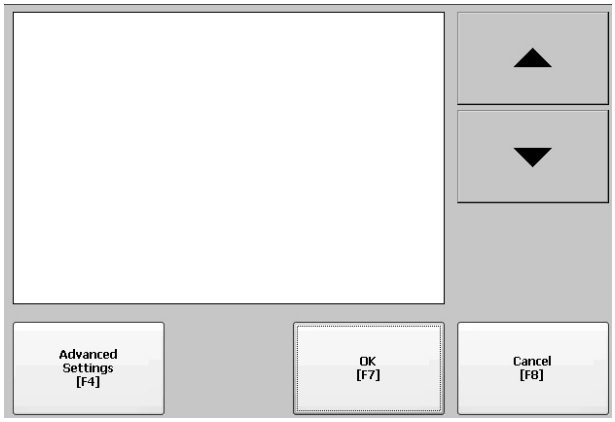
PanelView Plus 6 terminals are shipped with support for a large selection of Canon, Epson, Hewlett-Packard, and Brother Printers. Printer installation will attempt to use USB Plug-and-Play capabilities to the extent that known printers are mapped automatically to the appropriate driver. The printing solution allows applications and users to select, manage, and share printers without knowing the underlying details of the printer. Printers that do not configure automatically to the appropriate driver can be installed manually.

Follow these steps to access the print setup.

1. Select a Terminal Settings>Print Setup> option.
   - Alarm Print Setup
   - Diagnostic Setup
   - Display Print Setup

   Print Setup displays installed printers that are available to the FactoryTalk View Machine Edition application.

   The terminals are not shipped with pre-configured printers so initially the dialog appears empty. The appearance of the dialog will depend on what printers you install.



2. Select an installed printer.

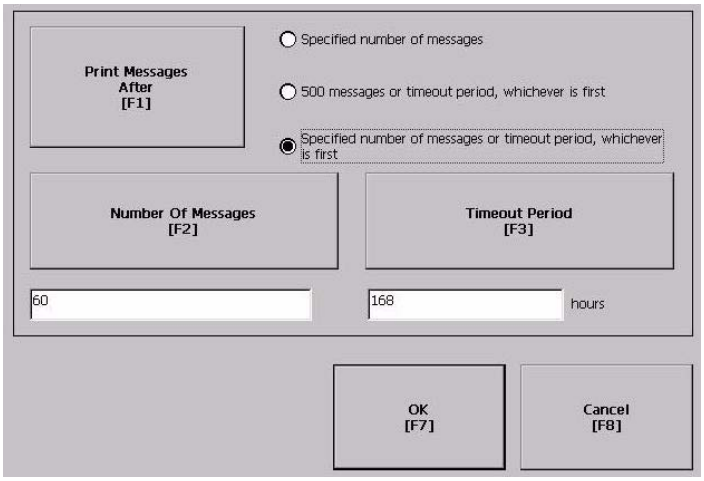
   TIP A failed attempt to automatically install a printer will be reported in the system event log.

   A printer that does not install automatically can be installed manually by using the control panel in Windows Explorer.

3. Press the Advanced button to access additional settings.

- The advanced settings for printing displays determine:
  - Print orientation (portrait or landscape).
  - Draft mode (enable or disable).
  - Color (yes or no).

- Advanced settings for printing diagnostic and alarm messages determines when to print messages sent to the network or USB port.



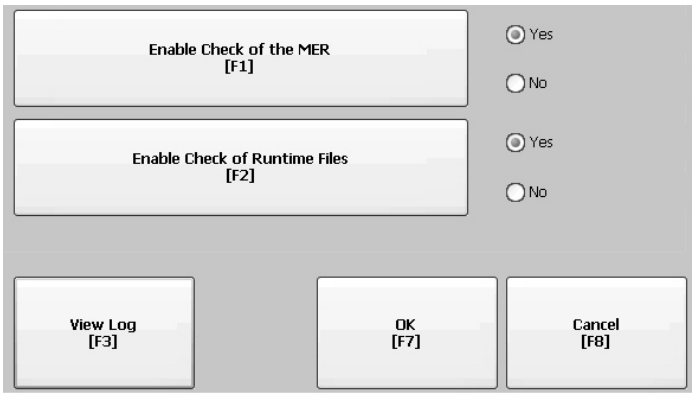
Print Messages After	Default Value	Example
Specified number of messages	60 messages	When the queue has 60 messages, the messages are printed regardless of how long they have been in the queue. You can change the number of messages.
500 messages or timeout period, whichever is first	168 hours (7 days)	If the queue has 350 messages after 168 hours, the 350 messages are printed. You can change the timeout period.
Specified number of messages or timeout period, whichever is first.	60 messages 168 hours (7 days)	If the queue has 60 messages after 24 hours, then the 60 messages are printed. You can change the number of messages and the timeout period. For example, the number of messages is set to 75 and the timeout period is set to 48 hours. •If the queue has 75 messages after 24 hours, then the 75 messages are printed before the set timeout of 48 hours. •If the queue has 15 messages after 48 hours, the 15 messages are printed after the set timeout period.

4. Press OK when done.
5. Press OK to return to Terminal Settings.

Check Integrity of Application Files

It is recommended that you periodically check the integrity of the FactoryTalk View .mer application file that is currently loaded in the terminal and the runtime files. All errors, warnings, and information messages generated by these files are logged to a file. You can periodically view the log and clear all items from the log.

1. Select Terminal Settings>File Integrity Check.

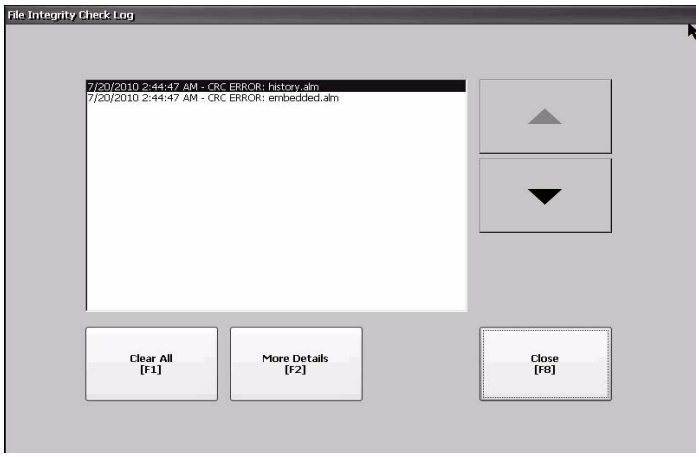


2. Press either of the Enable buttons to enable or disable file integrity checks.
   - Enable Check of the MER
   - Enable Check of the Runtime Files

   By default, integrity checks are automatically performed on the application .mer file and runtime files. If you disable either of these functions, the files will not be checked nor will the log file be updated.
3. Press OK to save changes.

Follow these steps to view the file integrity check log.

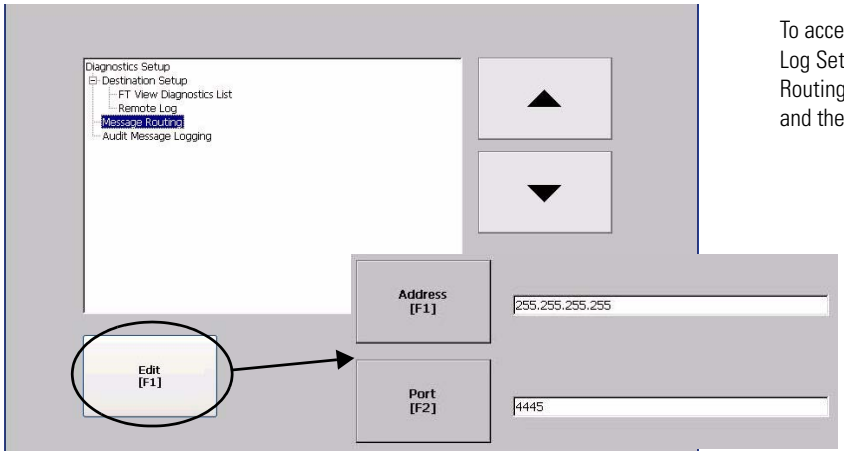
1. Press the View Log button from the File Integrity Check dialog.



2. Select an event and press the More Details button to display details for a specific file check event.
3. Press the Clear All button to clear all details from the log.
4. Press Close to return to previous dialog.

Configure Diagnostics

You can configure diagnostics for the current computer. To access diagnostics, select Terminal Settings>Diagnostic Setup from the Configuration Mode main dialog. You will see a tree view of diagnostic nodes.



To access the Remote Log Setup or Message Routing, select the node and then the Edit button.

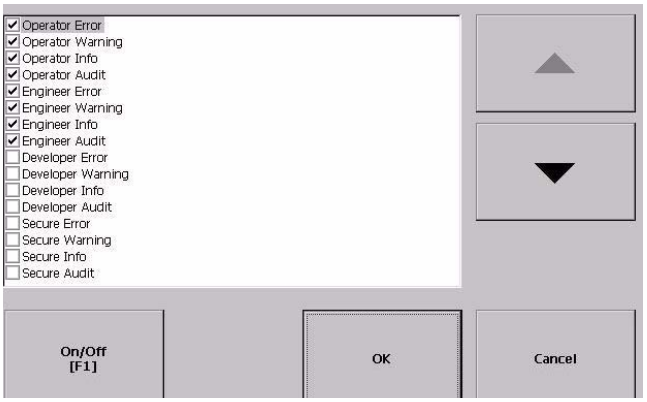
The Remote Log Destination forwards received messages to a Windows computer running diagnostics. The location is determined by the IP address and port number.

Field	Description	Valid Values
Address	Address of the remote Windows computer.	xxx.xxx.xxx.xxx
Port	The port used to communicate with the remote Windows computer.	4445 (default)

The Message Routing dialog lets you access these dialogs:

- Remote Log
- FactoryTalk View Diagnostics List

Each dialog shows a list of messages that can be sent to that destination. The list shows the status of each message type. Use the On/Off button to turn a message type on or off. A message type is enabled if it has a checked box.

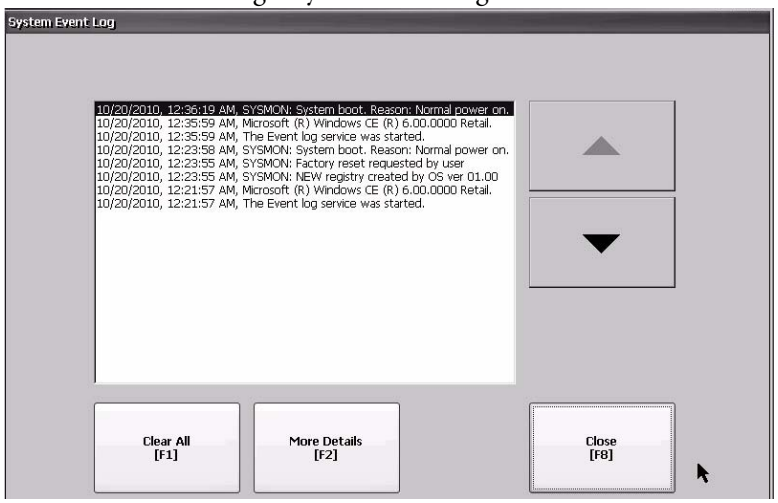


The Audit Message Logging dialog lets you log messages as Audit or Information when the Edit button is pressed.

View and Clear the System Event Log

The System Event Log dialog displays a list of warnings, errors, and events logged by the terminal. The log provides a time stamp of when each event occurred and text describing the event. If the event log is full when a new event occurs, the oldest entry is removed to accommodate the new event.

1. Select Terminal Settings>System Event Log.



2. Select an event and press the More Details button to display log details for that event.
3. Press the Clear All button to clear all system event logs.
4. Press Close.

System Information

From Configuration mode, you can view terminal information and firmware revision information for software installed on a terminal. This information may be useful during troubleshooting.

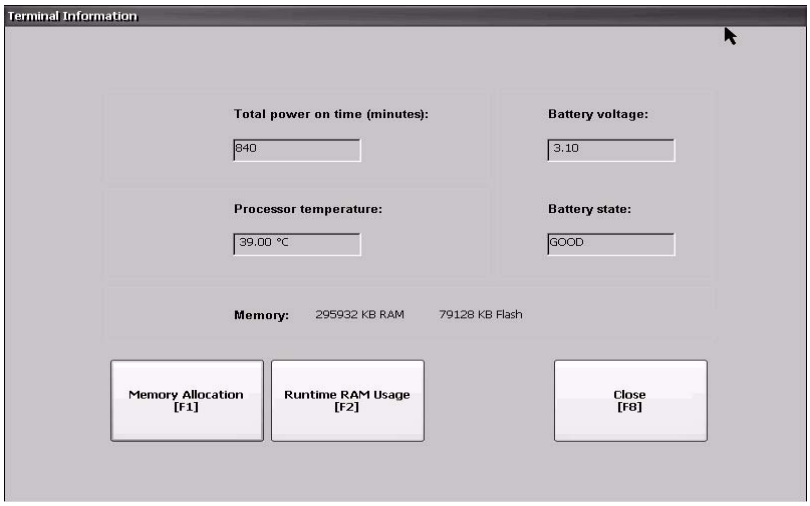
View Terminal Information

The read-only information is provided for the terminal:

- Total power on time in minutes
- Processor temperature
- Battery voltage and battery state
- Memory allocated and used on terminal
- RAM memory used during runtime

Follow these steps to display terminal information.

1. Select Terminal Settings>System Information>Terminal Information.

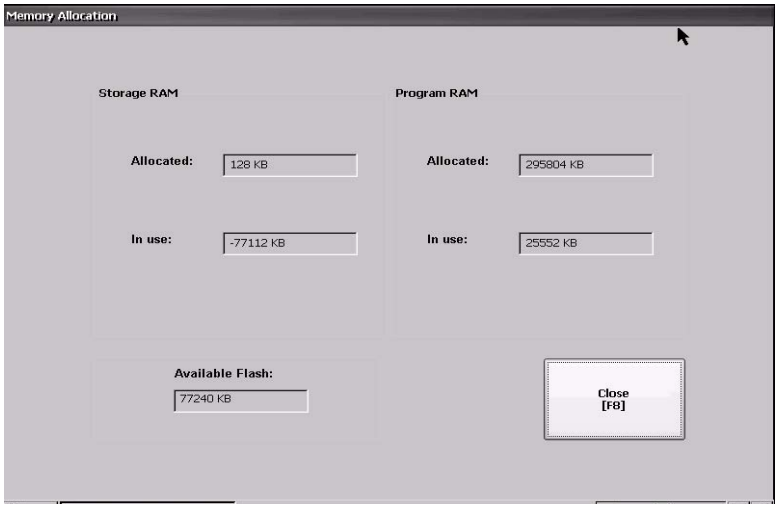


All fields are read-only:

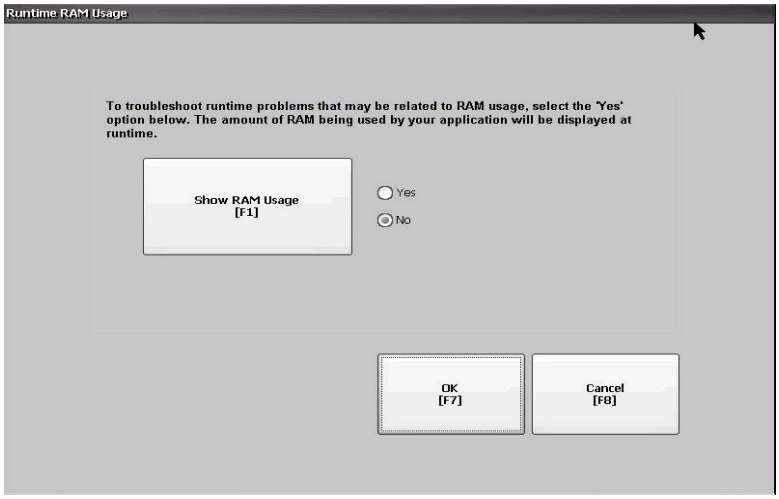
- The CPU temperature should be less than 95 °C (203 °F).
- The battery voltage must be at least 2.75V DC.

Battery State	Description
Good	Good battery condition.
Failing	Low battery. Replace the battery.
Bad	Battery is missing or bad. Replace the battery.

2. Press the Memory Allocation button to view the following.
   - Amount of allocated storage or program memory
   - Amount of storage or program memory in use
   - Amount of available flash memory



3. Press Close to return to previous dialog.
4. Press the Runtime RAM Usage button to troubleshoot runtime anomalies by showing the amount of RAM used by your application at runtime.

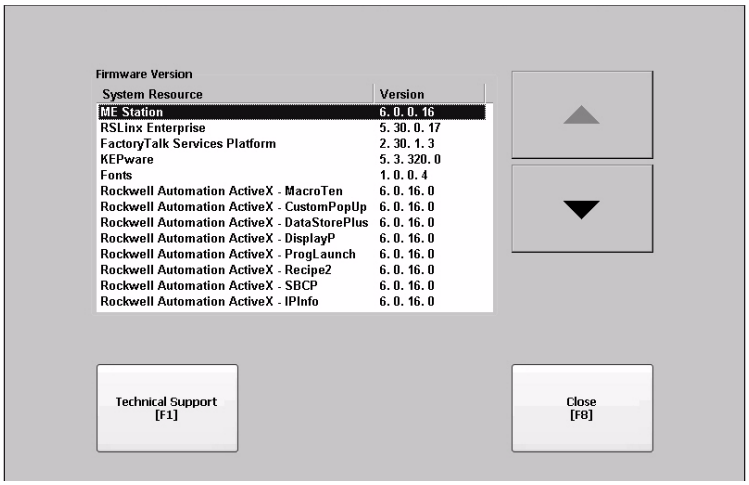


5. Press OK to return to previous dialog.
6. Press Close until you return to terminal settings.

Display FactoryTalk View ME Station Information

You can display the firmware and version information for installed system components on your terminal and technical support information.

1. Select Terminal Settings>System Information>About FactoryTalk View ME Station.

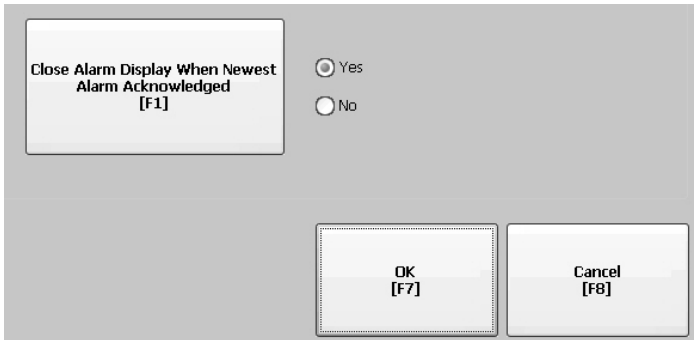


2. Press the Technical Support button to display the support phone number and website for your terminal .
3. Press Close until you return to terminal settings.

Enable or Disable the Alarm Display

Each new alarm that occurs on the terminal is displayed in the alarm display or banner. When the newest alarm is acknowledged by the operator, you can choose to close the alarm display or leave it open. By default the alarm display is closed.

1. Select Terminal Settings>Alarms.



2. Press Yes or No.
   - Yes, the default option, closes the alarm display each time the operator acknowledges the newest alarm.
   - No leaves the alarm display open after the operator acknowledges the newest alarm.
3. Press OK.

Time and Date Settings

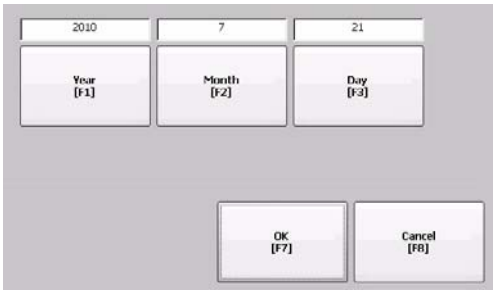
You can change the date, time, time zone, and regional settings for terminal operations.

Change the Date for Terminal Operations

Follow these steps to adjust the date for terminal operations.

1. Select Terminal Settings>Time/Date/Regional Settings>Date.

   The current date appears in the Year, Month, and Day fields.



2. Press the Year, Month, and Day buttons to change the values.

Field	Description	Valid Values
Year	The current year in a four-digit format.	1980…2099
Month	The current month.	1…12
Day	The current day. The day of the month is validated.	0…31

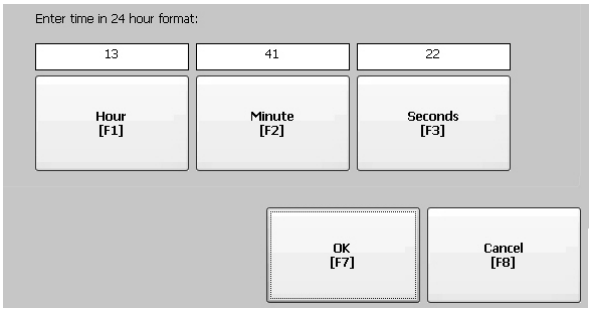
3. Press OK when done.

Change the Time for Terminal Operations

Follow these steps to adjust the time for terminal operations.

1. Select Terminal Settings>Time/Date/Regional Settings>Time.

   The current time appears in 24-hour format in separate Hour, Minute, and Second fields.



2. Press the Hour, Minute, and Seconds buttons to change the values.

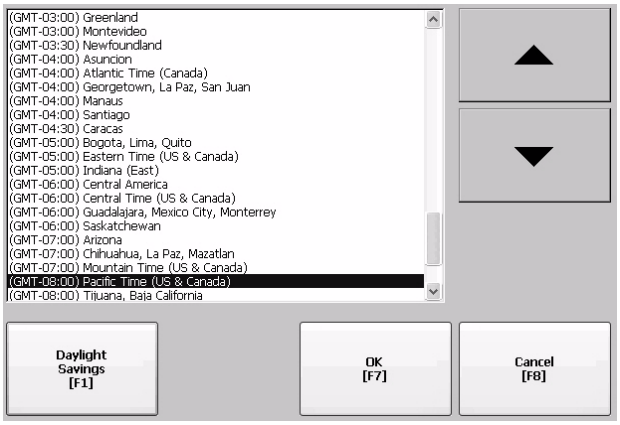
Field	Description	Valid Values
Hour	The current hour in 24-hour format.	0…23
Minute	The current minute in 24-hour format.	0…59
Seconds	The current second in 24-hour format.	0…59

3. Press OK when done.

Change the Time Zone for Terminal Operations

You can view or modify the current time zone that is installed on the terminal. Time zones are installed as a part of the operating system. Changing the time zone adjusts the current time and date to match the new time zone.

1. Select Terminal Settings>Time/Date/Regional Settings>Time Zone.



2. Press the up and down cursor buttons to select a time zone.

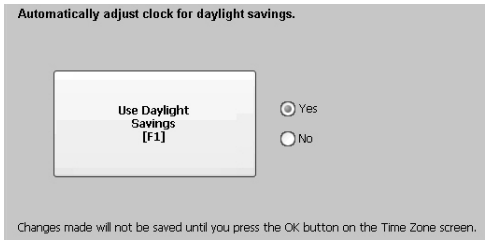
Language	Default Time Zone
English	(GMT -05:00) Eastern Time (US and Canada)
French	(GMT +01:00) Brussels, Copenhagen, Madrid, Paris
German	(GMT +01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
Japanese	(GMT +09:00) Osaka, Sapporo, Tokyo

   If the selected time zone supports Daylight Savings, you can press the Daylight Savings button.

3. Press the Daylight Savings button to enable or disable daylight savings for the selected time zone.

   Daylight Savings is set to Yes for all time zones except for Japanese, which does not support daylight savings. Daylight savings changes are not permanently applied until you close the Time Zone dialog.

4. Press the Use Daylight Savings Button to select Yes or No.



5. Press Close when done.
6. Press OK to return to previous dialog box.

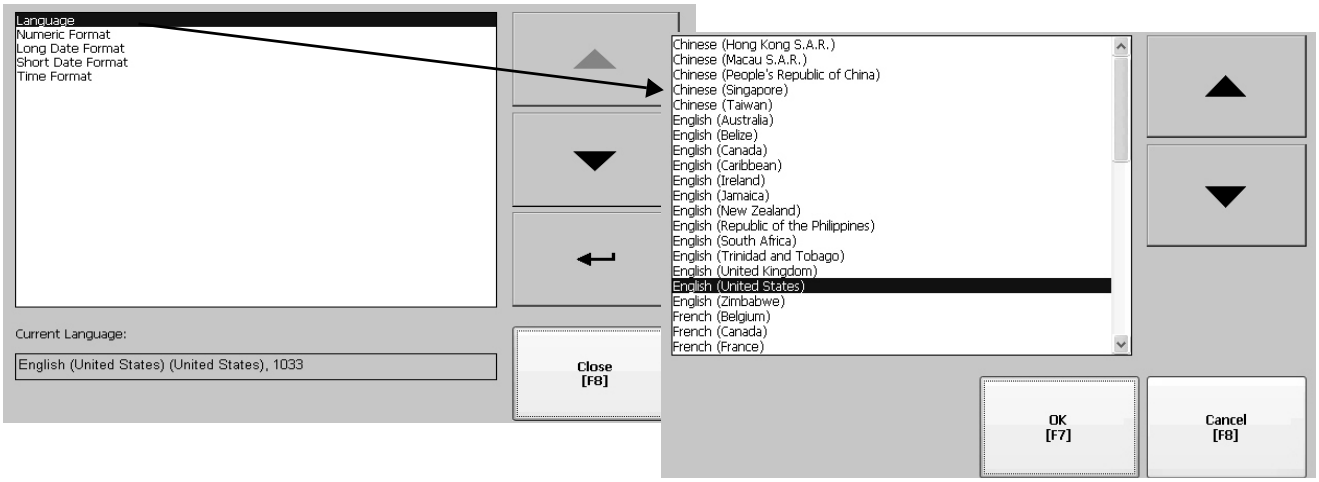
Regional Settings

You can adjust regional settings for a specific language installed on the terminal, including the date, time and numeric formats. Regional settings are accessed by choosing Terminal Settings>Time/Date/Regional Settings>Regional Settings. The current language is shown at the bottom of the Regional Settings dialog.

Select a Language

Before you can modify regional settings for a language, you need to select a language installed on the terminal. Languages are installed as a part of the operating system.

1. Select Terminal Settings>Time/Date/Regional Settings>Regional Settings>Language.

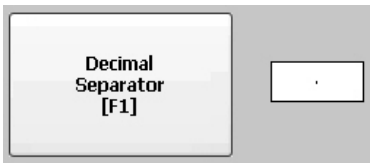


2. Select a language by pressing the up and down cursor keys.
3. Press OK.
   The selected language shows at the bottom of the Regional Settings dialog.

Change the Decimal Separator for Numeric Formats

You can change the decimal separator used in numerics for the current language. The default decimal separator is a period.

1. Select Terminal Settings>Time/Date/Regional Settings>Regional Settings>Numeric Format.

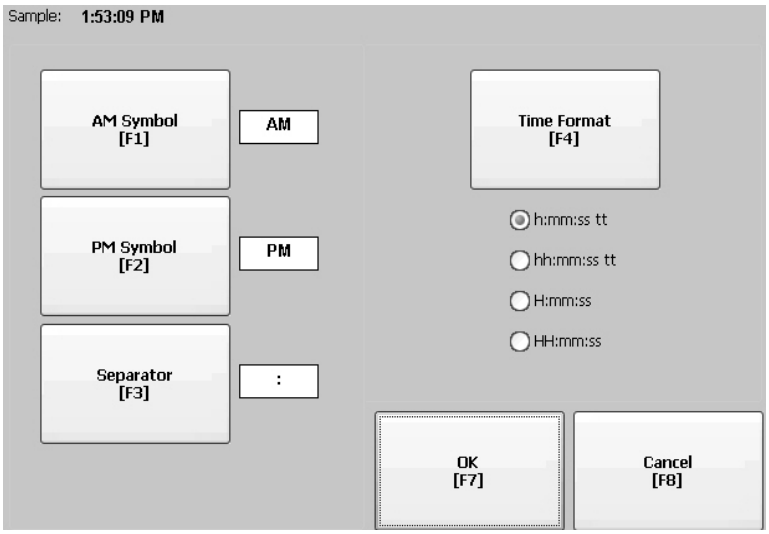


   The field shows the default decimal separator. The field will accept a separator up to three characters.
2. Enter up to three characters for the new separator, then press OK.

Change the Time Format for a Language

Follow these steps to change the time format for the selected language.

1. Select Terminal Settings>Time/Date/Regional Settings>Regional Settings>Time Format.



The current time is shown using the currently selected format.

2. Press the appropriate buttons to adjust the formats.

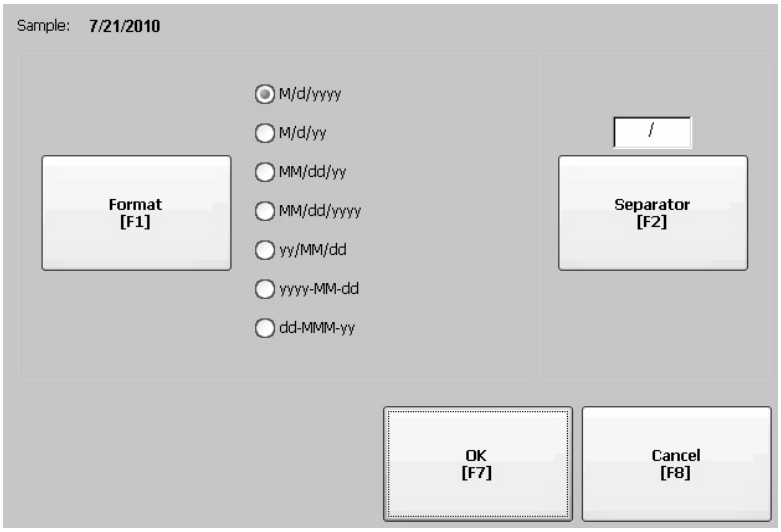
Field	Description	Example
Time Format	h:mm:ss tt (default) h = hour, no leading zero tt = AM or PM symbol	7:23:02 AM or 1:13:31 PM 11:43:59 AM
	hh:mm:ss tt hh = hour with leading zero tt = AM or PM symbol	07:23:02 AM or 01:13:31 PM 11:43:59 PM
	H:mm:ss H = hour in 24-hour format, no leading zero	7:03:42 or 1:13:32 23:43:59
	HH:mm:ss HH = hour in 24-hour format with leading zero	07:03:42 or 01:13:22 23:43:59
AM Symbol	Characters to indicate AM. If the time format is set to h:mm:ss tt or hh:mm:ss tt, you can modify the AM symbol.	AM (default) 12 character max
PM Symbol	Characters to indicate PM. If the time format is set to h:mm:ss tt or hh:mm:ss tt, you can modify the PM symbol.	PM (default) 12 character max
Separator	Characters that separate fields in time format.	: (default) 3 character max

3. Press OK.

Change the Short Date Format for a Language

Follow these steps to change the short date format for the selected language.

1. Select Terminal Settings>Time/Date/Regional Settings>Regional Settings>Short Date Format.



The current date is shown in the selected, short date format.

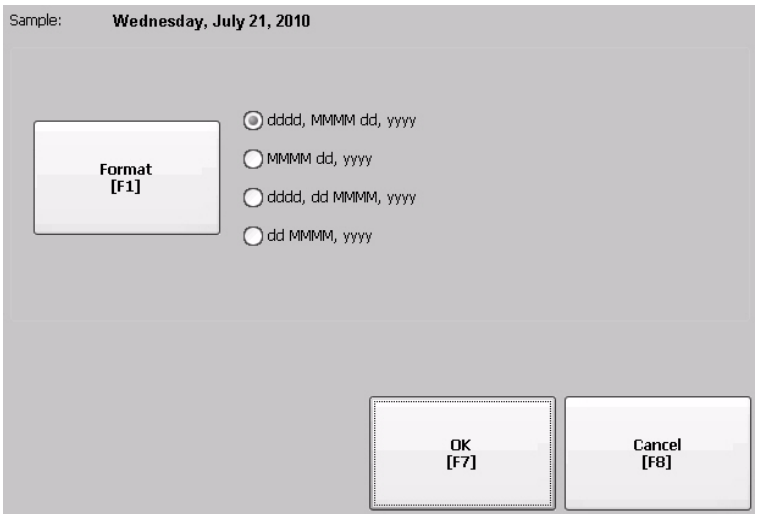
Field	Short Date Formats	Example
Format	M/d/yyyy (default) M/d/yy MM/dd/yy MM/dd/yyyy yy/MM/dd yyyy-MM-dd dd-MMM-yy	9/2/2010 9/2/10 09/02/10 09/02/2010 10/09/02 2010-09-02 02-Sep-10
Separator	Character separator for fields in time format. The default separator is either - or / depending on short date format.	- or / (default) 3 character max

2. Press the Format button to select an available format.
3. Press the Separator button to change the field separator for the date elements.
4. Press OK when done.

Change the Long Date Format for a Language

Follow these steps to change the long date format used by the selected language.

1. Select Terminal Settings>Time/Date/Regional Settings>Regional Settings>Long Date Format.



   The current date is shown in the selected long date format.

2. Press the Long Date Format button to select a date format.

Long Date Formats	Example
dddd, MMMM, dd, yyyy (default) dddd is name of week day MMMM is name of month dd is two-digit day of month with leading zero yyyy is four-digit year	Wednesday, September 01, 2010
MMMM dd, yyyy MMMM is name of month dd is two-digit day of month with leading zero yyyy is four-digit year	September 01, 2010
dddd, dd MMMM, yyyy dddd is name of week day dd is two-digit day of month with leading zero MMMM is name of month yyyy is four-digit year	Wednesday, 01 September, 2010
dd MMMM, yyyy dd is two-digit day of month with leading zero MMMM is name of month yyyy is four-digit year	01 September, 2010

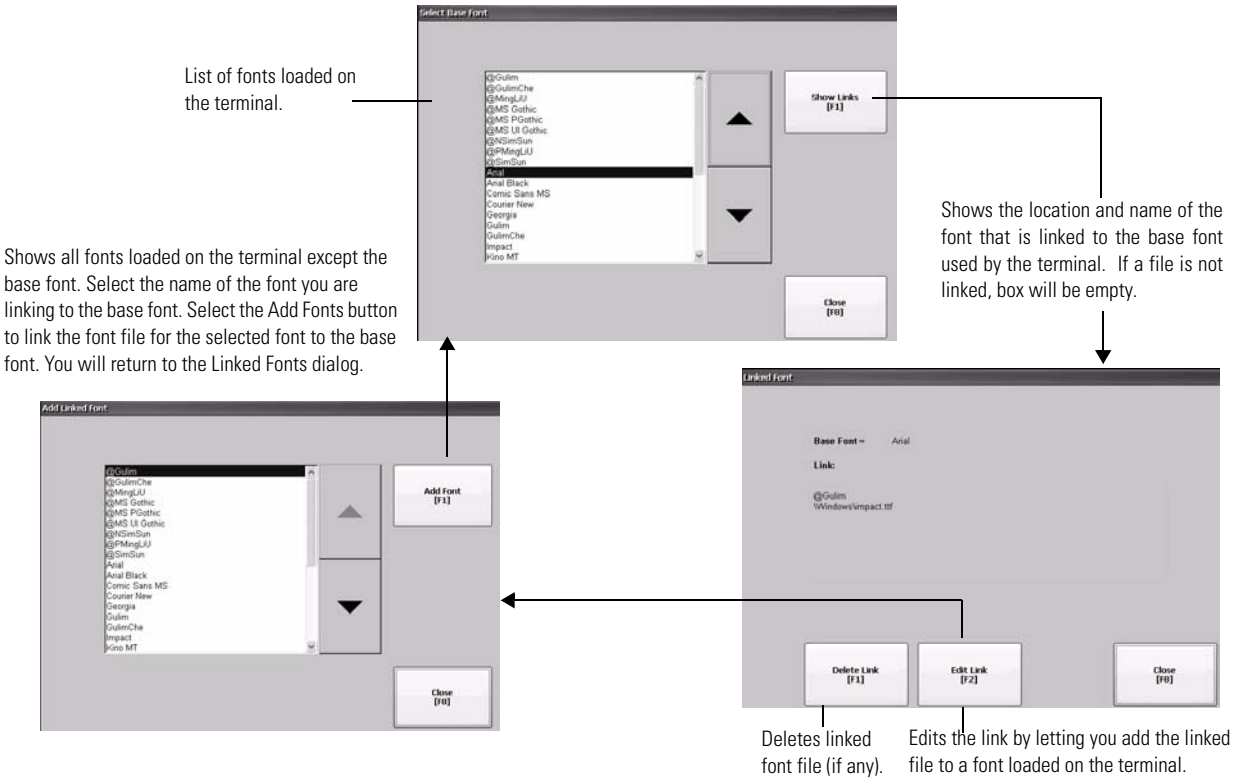
3. Press OK when done.

Font Linking

Font linking lets you run a translated application on the terminal by linking a font file to the base font (for example, linking a Chinese font file to the base font Arial).

For more details on preinstalled terminal fonts and additional fonts available for downloading, see Fonts Resident on Terminal on page 159.

Select Terminal Settings>Font Linking to access this function.



Windows CE Operating System

Chapter Objectives

All PanelView Plus 6 terminals run the Windows CE 6.0 operating system (OS) providing the foundational OS elements for the majority of user needs. PanelView Plus 6 terminals with extended features provide an additional level of support for users with more complex application requirements.

Topic	Page
Windows CE 6.0 Standard Features	83
Windows CE 6.0 with Extended Features	85
Windows Control Panel	86
Hardware Monitor	87
Keypad Properties	89
Touch Properties	89
Display Properties	90
Network Servers	92
System Information	92
Printer Support	95
Windows Explorer	97
PDF Reader	98

Windows CE 6.0 Standard Features

All PanelView Plus 6 platforms support standard features provided by the Windows CE 6.0 operating system.

Shell and User Interface Support

The Windows CE 6.0 operating system provides shell and user interface support features:

- Command shell
- Command processor
- Console window
- Windows Explorer shell
- Mouse and touch screen support
- Common dialog
- Control panel applets
- Network user interface
- Software input panel

- PDF reader
- VNC server and client viewer

TIP The platform distributes a VNC client, vncviewer.exe, that can be deployed to a personal computer. You can use this VNC client to connect, view, and control the VNC server on the Windows CE platform.

TIP The Windows Explorer shell supports right-click functionality. A touch screen press held for one second or longer will produce a right-click.

Application Support

The Windows CE 6.0 operating system (OS) provides application support in both the OS and the Software Development Kit (SDK):

- .Net Compact Framework, version 3.5
- C++ libraries and runtimes
- Component services DCOM/COM/OLE
- Message queueing MSMQ
- MSXML, version 3.0
- MFC for devices, version 8.0
- ATL
- ActiveSync
- CAB file installer/uninstaller
- Toolhelp API
- Error reporting (generator, transfer driver, control panel)

Scripting Support

The Windows CE 6.0 operating system supports these scripting features:

- Batch/command (BAT and CMD files)
- JScript
- VBScript

Network Support

The Windows CE 6.0 operating system supports these network features:

- Winsock support
- Network utilities - ipconfig, ping, route
- Network Driver Architecture (NDIS)
- Windows Networking API/Redirector
- Wired Local Area Network, 802.3, 802.5

Server Support

This table lists servers supported by the Windows CE 6.0 operating system.

Table 34 - Windows CE 6.0 Server Support

Server Support	Default State	Description
Web server	Enabled	The web server delivers content, such as Web pages, using the HTTP protocol over the Web. FactoryTalk View Machine Edition software provides the ability to enable/disable the web server on all platforms. A platform connected to an Ethernet network will respond when an external client attempts to access the platform with a browser.
FTP server	Enabled	File Transfer Protocol (FTP) is a standard network protocol used to exchange and manipulate files over a TCP/IP-based network.
UPnP server	Enabled	Universal Plug and Play (UPnP) is a set of networking protocols that allows devices to install and connect seamlessly to a network.
File Server	Enabled	A network protocol that allows shared access to files, printers, serial ports, and miscellaneous communication between computers on a network.
VNC server(1)	Disabled	Virtual Network Computing (VNC) is a graphical desktop sharing system used to remotely control another computer. It transmits keyboard/mouse events from one computer to another, over a network.
ViewPoint	Enabled	A web-server based application that allows remote user access via a web browser to the FactoryTalk View Machine Edition HMI application that is running on the terminal. ViewPoint software is a Rockwell Automation product.

(1) The terminal distributes the VNC client in its file system at \Windows\CeVncViewer.exe.

Windows CE 6.0 with Extended Features

PanelView Plus 6 terminals and logic modules with extended features, catalog numbers, 2711P-RP9*x* and 2711P-*xxxx*9, provide additional operating system components.

Table 35 - Operating System with Extended Features

Icon	Software	Icon	Software
	Microsoft Internet Explorer 6 web browser with Silverlight 2		Microsoft Office 2007 PowerPoint file viewer
	Adobe Flash Lite 3.1 ActiveX plug-in for Internet Explorer 6		Microsoft Office 2007 Word file viewer
	Microsoft Remote Desktop Connection		Microsoft Office 2007 Excel file viewer
	Microsoft media player 6.4 and 7.0 OCX		Westtek JETCET PDF viewer
	Microsoft WordPad text editor		Standard Software Development Kit (SDK) for Windows Embedded CE

Windows Control Panel

The Windows control panel is the primary desktop interface for configuring a PanelView Plus 6 terminal. You can set system-wide properties, such as network configuration, screen saver configuration, and touch screen calibration.

Table 36 lists the control panel applets. The language of the control panel applets is based on the language set for the operating system. English is the default.

TIP Some control panel operations are also performed from the Terminal Settings in FactoryTalk View ME Station.

You can access the control panel in several ways:

- Choose Settings>Control Panel from the Start menu.
- Open My Device on the desktop, then open the Control Panel.

Table 36 - Control Panel Applets

Name	Description
Accessibility	Adjusts your terminals settings for vision, hearing, and mobility
Certificates	Manages digital certificates for establishing trust and secure communication.
Date and Time	Sets the time, date, and time zone.
Dialing	Sets dialing patterns and location settings.
Display	Changes the desktop appearance such as backlight, screen saver, and other settings.
Error Reporting	Enables and configures software error reporting.
Hardware Monitor	Displays voltage and temperature information, and the system event log.
Input Panel	Configures the soft keyboard.
Internet Options(1)	Configures Internet Explorer settings.
Keyboard	Configures an external USB keyboard.
Keypad	Configures the keypad on the terminal display.
Mouse	Sets the USB mouse double-click properties.
Network and Dial-up Connections	Creates and configures direct, dial-up, VPN, and Ethernet connections.
Network Servers	Enables and disables services and servers.
Owner	Sets owner identification and security for device and remote network.
Password	Sets password and enables password protection for startup and Screen Saver mode.
PC Connection	Selects a connection between the device and a personal computer.
Printers	Adds and configures local and network printers.
Regional Settings	Selects the locale and sets the format of numbers, time, date, and currency.
Remove Programs	Uninstalls applications.
Storage Manager	Reports information on storage devices. Scans, partitions, defragments, and mounts volumes.
System	Provides general system information. Sets and reports a device name and memory allocation/ usage.
Terminal Server Clients(1)	Displays terminal services client access licenses for devices that connect to a terminal server.
Touch	Sets touch-screen properties, cursor, and calibrates touch screen.
Volume & Sound	Adjusts volume and sound properties for events, applications, and key clicks.

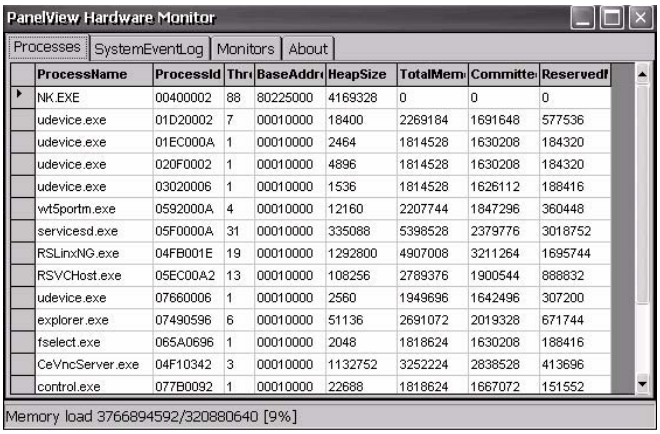
(1) Applies only to PanelView Plus 6 terminals with extended features and file viewers.

Hardware Monitor

The PanelView Hardware Monitor applet provides status and troubleshooting information for the terminals including processes, system event log details, and monitoring of battery voltages, temperatures, and system usage, for example, CPU and memory loading.

Processes

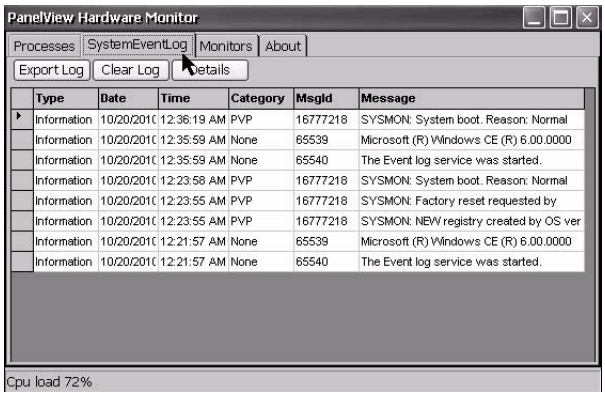
The Processes tab of the Hardware Monitor applet shows all processes currently running on the PanelView Plus 6 terminal and memory usage of each process.



ProcessName	ProcessId	Thr	BaseAddr	HeapSize	TotalMem	Committe	Reserved
NK.EXE	00400002	88	80225000	4169328	0	0	0
udevice.exe	01D20002	7	00010000	18400	2269184	1691648	577536
udevice.exe	01EC000A	1	00010000	2464	1814528	1630208	184320
udevice.exe	020F0002	1	00010000	4896	1814528	1630208	184320
udevice.exe	03020006	1	00010000	1536	1814528	1626112	188416
wt5portm.exe	0592000A	4	00010000	12160	2207744	1847296	360448
servicesd.exe	05F0000A	31	00010000	335088	5398528	2379776	3018752
RSLinxNG.exe	04FB001E	19	00010000	1292800	4907008	3211264	1695744
RSVCHost.exe	05EC00A2	13	00010000	108256	2789376	1900544	888832
udevice.exe	07660006	1	00010000	2560	1949696	1642496	307200
explorer.exe	07490596	6	00010000	51136	2691072	2019328	671744
fselect.exe	065A0696	1	00010000	2048	1818624	1630208	188416
CeVncServer.exe	04F10342	3	00010000	1132752	3252224	2838528	413696
control.exe	077B0092	1	00010000	22688	1818624	1667072	151552

System Event Log

The System Event Log tab of the PanelView Hardware Monitor applet displays warnings, errors, and events logged by the terminal.



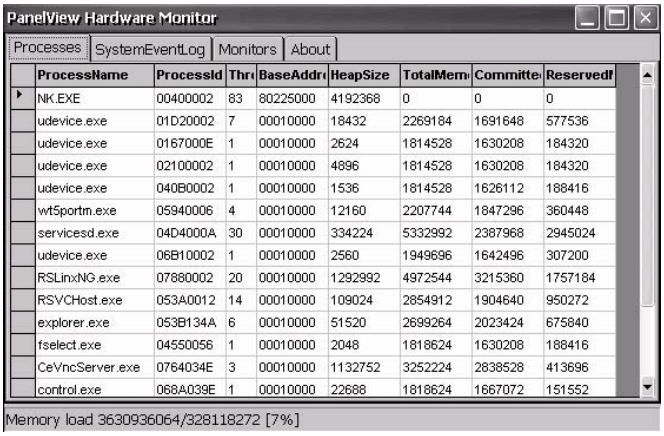
Type	Date	Time	Category	MsgId	Message
Information	10/20/201(	12:36:19 AM	PVP	16777218	SYSMON: System boot. Reason: Normal
Information	10/20/201(	12:35:59 AM	None	65539	Microsoft (R) Windows CE (R) 6.00.0000
Information	10/20/201(	12:35:59 AM	None	65540	The Event log service was started.
Information	10/20/201(	12:23:58 AM	PVP	16777218	SYSMON: System boot. Reason: Normal
Information	10/20/201(	12:23:55 AM	PVP	16777218	SYSMON: Factory reset requested by
Information	10/20/201(	12:23:55 AM	PVP	16777218	SYSMON: NEW registry created by OS ver
Information	10/20/201(	12:21:57 AM	None	65539	Microsoft (R) Windows CE (R) 6.00.0000
Information	10/20/201(	12:21:57 AM	None	65540	The Event log service was started.

The log provides a date and time stamp of when each event occurred and text describing the event. If the event log is full when a new event occurs, the oldest entry is removed to accommodate the new event:

- The Export Log button lets you export the event log to a CSV file (*.csv) in the \Windows folder with the default file name, SystemLog.csv.
- The Clear Log button lets you clear all events from the log.
- The Details button lets you view more details for a selected event.

Monitors

The Monitors tab of the PanelView Hardware Monitor applet provides continuous temperature, voltage, and load information for the terminal.



Battery Voltage

The Monitors tab provides a visual status and voltage reading of the battery for the real-time clock. The actual battery voltage is updated at powerup and then every hour.

Table 37 - Battery Conditions

Condition	Logic Module Battery
Depleted	Less than 2.0V indicates a dead battery or no power.
Low	2.0…2.74V
Normal	2.75V or higher

Temperatures

The Monitors tab provides a visual status and current temperature of the terminal display and logic module CPU. The temperature is updated every 10 seconds.

Table 38 - Temperature Conditions

Condition	Logic Module CPU	Display
Low	–	10 °C (50 °F) or lower
Normal	25…94 °C (77…201 °F)	11…59 °C (52…138 °F)
High	95 °C (203 °F) and higher	60 °C (140 °F) and higher

Keypad Properties

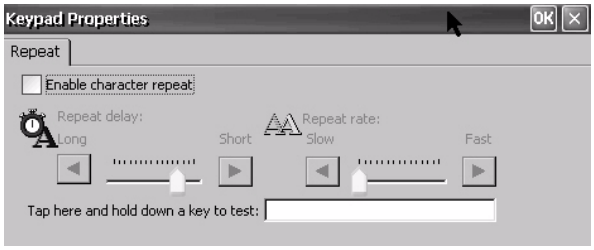
The Keypad Properties applet lets you adjust settings for the membrane keypad of your terminal.

Repeat Tab

The Repeat tab on the Keypad Properties applet enables and disables the character repeat behavior of keys on the keypad.

TIP Use the Keyboard applet to manage properties of a USB keyboard.

When character repeat is enabled, you can set the repeat delay and repeat rate of keys. Verify changes to the repeat rate and delay settings by pressing a key in the test edit box.



Touch Properties

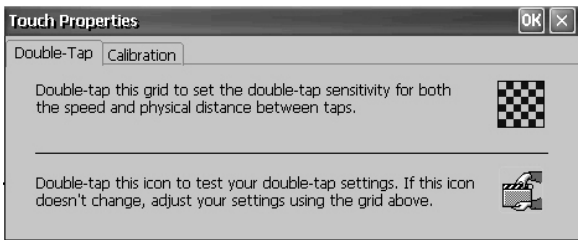
The Touch Properties applet is accessible only on devices with a touch screen. It lets you calibrate the touch screen and set the sensitivity of touch screen taps.

Calibration

The Calibration tab lets you recalibrate the touch screen if your device is not responding appropriately to taps. Follow the dialog instructions to recalibrate.

Double-Tap

The Double-Tap tab on the Touch Properties dialog lets you set and test the double-tap sensitivity of the touch screen taps.

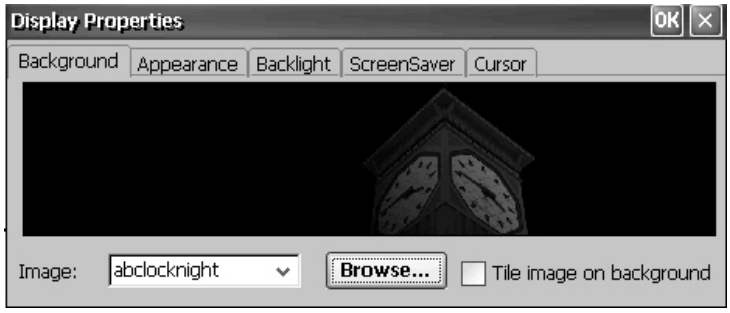


Display Properties

The Display Properties applet provides tabs to control the desktop background image and appearance, the brightness of the backlight, and screen saver settings.

Desktop Background

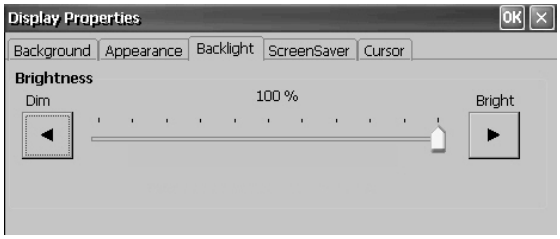
The Background tab of the Display Properties applet controls the background bitmap used by the desktop. The default bitmap is stored in the \Windows folder.



You can choose another image button from the pull-down menu or browse the system for a bitmap image. An option is also available to tile the image.

Backlight Intensity

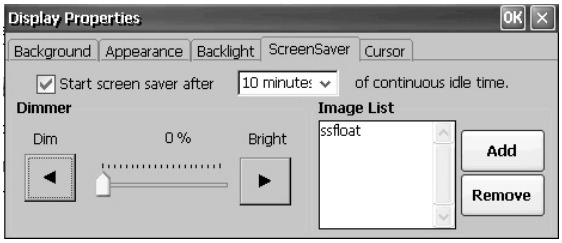
The Backlight tab of the Display Properties applet lets you set the brightness level of the display between 1...100%. At 1%, the display is minimally visible.



TIP When the backlight is in Overdrive mode, the backlight brightness level cannot be adjusted.

Screen Saver

The screen saver extends the lifetime of the display by dimming the backlight when the terminal is idle. The screen saver will activate and display a moving bitmap at a reduced brightness level after a continuous idle time. When the screen saver is deactivated, the display brightness returns to its normal brightness level.



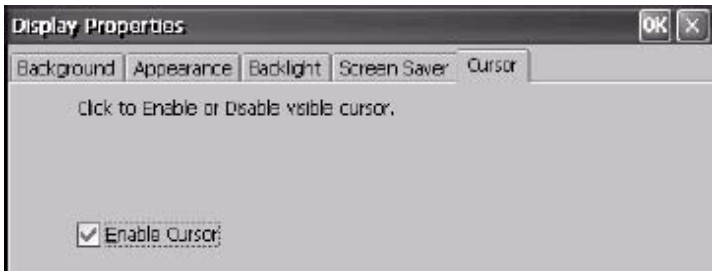
The Screen Saver tab on the Display Properties applet lets you perform these operations:

- Enable the screen saver using a specified idle timeout. The default idle time is 10 minutes.

  When the screen saver is activated, the dimmer controls the backlight intensity level. You set the brightness level of the dimmer in the range 0...100%. The default dimmer intensity is 10%. At 0%, the backlight is off and the display is dark.
- Browse the system for a bitmap to be displayed by the screen saver at a nonzero brightness level. The default screen saver is SSFloat.bmp. Use the Add or Remove buttons to change the screen saver bitmap. The system recognizes bitmaps stored in the \Windows folder.
- Disable the screen saver by clearing the Start screen saver checkbox.

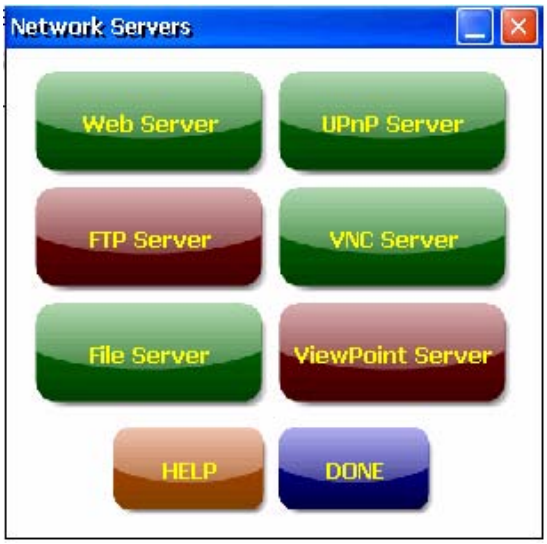
Cursor

The Cursor tab of the Display Properties applet lets you enable or disable the visible cursor that you see on the display. The cursor is visible by default.



Network Servers

The Network Server applet shows servers that are supported by the terminal and lets you enable (start) or disable (stop) each server.



The buttons are color coded:

- Green indicates the server is currently running and will be automatically started at system startup.
- Red indicates the server is not currently running.
- Gray indicates the server is not available on platform.

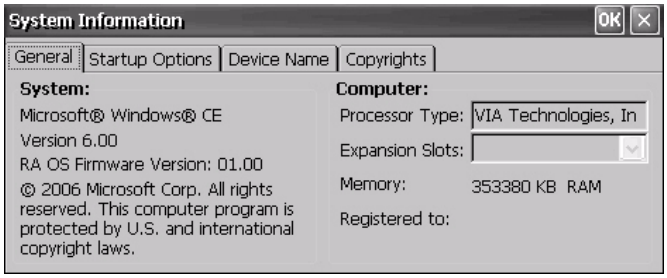
To enable or disable a server, simply press the corresponding button. The button changes color accordingly.

System Information

The System Information applet provides tabs to let you view and set system-wide properties for your terminal.

General Information

The General tab of the System Information dialog shows the current version of the Windows CE operating system, the processor type, and the RAM memory on terminal.



Startup Options

The Startup Options tab of the System Information dialog lets you show or hide battery warnings at startup, show or hide watchdog errors at startup, and launch the platform as either an open or closed system.

Battery Warnings

If the battery is low, missing, or dead, a warning will display each time the terminal starts up.

TIP

- The terminal can be operated without a battery if there is no requirement for the time and date to be accurate.
- When replacing the battery, you can verify the accuracy of the system date and time from the desktop control panel or the terminal settings in FactoryTalk View ME Station.

You have three options on how to handle the battery warning.

Battery Warning Startup Option	Description
Always show at startup (continue with startup)	Shows the battery warning at startup with the FactoryTalk View ME Station running behind it. This is the default option.
Always show at startup (halt startup)	Shows the battery warning at startup but halts the startup or boot process until you press OK.
Never show at startup	Hides the battery warning at startup.

Open or Closed Shell

At startup, you can run the terminal platform as either open or closed.

Shell Option	Description
Open system	Launches the Windows CE desktop at startup.
Closed system (default)	Launches FactoryTalk View ME Station at startup.

TIP You can also allow or restrict access to the Windows CE desktop within FactoryTalk View ME Station by choosing Terminal Settings>Desktop Access Setup. Refer to Desktop Access on page 50.

Watchdog Errors

You can show or hide watchdog errors at startup.

Shell Option	Description
Always show watchdog errors at startup	Shows the fatal watchdog error (error 02) at startup and halts the normal boot process. The system launches the maintenance window with the watchdog error displayed. You can continue booting from this window. Refer to Access Maintenance Operations on page 151 for details. The error is logged to the System Event log.
Never show watchdog errors at startup	Hides the errors at startup and logs the error to the system event log.

Device Name

The Device Name tab of the System Information dialog lets you identify your terminal to other devices on the network by providing a device name and description.

TIP Make sure the device name is unique. Duplicate names will conflict and cause network problems.

Printer Support

The PanelView Plus 6 platform supports selected USB printers such as Canon, Epson, Hewlett-Packard, and Brother. Automatic printer installation using plug-and-play capabilities is supported as well as manual installation if a suitable printer driver is available. You can connect a printer to either USB host port on the terminal.

For more information on supported printers, go to the knowledgebase at http://www.rockwellautomation.com/support/ and search for ID 111636 in the Search Answers box.

Printers are configured and managed from the Printers applet in the desktop control panel. A wizard is supported for each printer type.

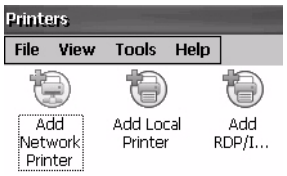


Table 39 - Support for Printers

Printer Type	Description
Local USB	You can connect a JETSET supported printer to a USB host port. The printer attached to the USB host port can be shared by a remote terminal when configured as a network printer on the remote terminal.
Network	The terminal supports a remote printer connected to the network via the Ethernet port. The printer can be addressed by its device name or IP address.
RDP /ICA	A local printer can be made available to a Windows server application that is running in an RDP (Remote Desktop Protocol) session on the terminal. (1)

(1) Applies only to PanelView Plus 6 terminals with extended features.

After configuring a printer, you can access it from desktop applications and from FactoryTalk View ME Station in the Terminal Settings>Print Setup dialog. Applications can also select and share printers.

Automatic Printer Installation

Follow these steps to install a plug-and-play printer from the Windows desktop. For manual printer installation, refer to page 97.

TIP The procedure illustrates automatic plug-and-play installation for the Hewlett Packard HP deskjet 5650 printer.

1. Connect the printer to one of the USB host ports on the terminal.
2. Plug the power cord of the printer into an outlet and turn the printer on.

   Windows detects your plug-and-play printer and, in many cases, installs it without requiring you to make any selections.

   The printer is ready to print.

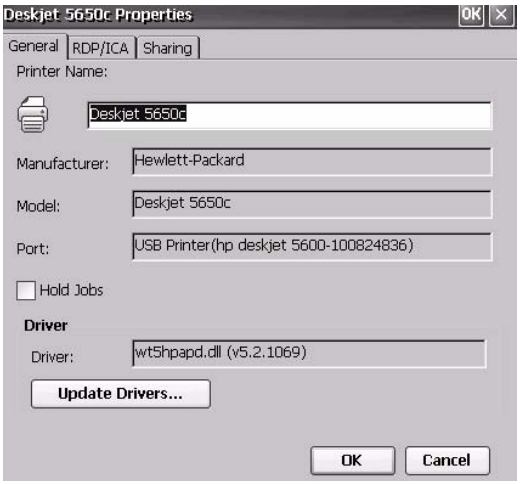
IMPORTANT If automatic plug-and-play installation is not supported for a printer, this error is logged to the System Event log in the Hardware Monitor.

'JETCET PRINT was unable to auto-configure printer. To manually configure printer, go to the Printers folder from the Control Panel.'

3. Verify printer installation from the desktop control panel by opening the Printers applet.

   You should see an icon for the Deskjet 5650C printer. The check mark indicates this is as the default printer.

4. From the File menu, choose Properties to view the properties of the printer.



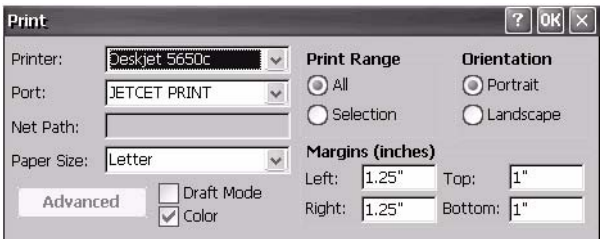
   Printer configuration includes the printer name, manufacturer and model, printer driver, and port-specific parameters.

TIP

- New printer configurations are retained through a power cycle.
- Printers setup through the desktop control panel are also available within FactoryTalk View ME Station when you choose Terminal Settings>Print Setup.

5. Right-click the printer and print a test page to verify installation.

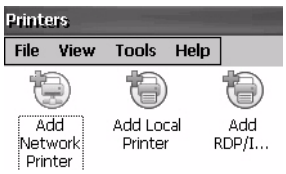
When printing from an application such as WordPad, a Print dialog will open where you can adjust print settings as needed.



Manual Printer Installation

Follow these steps to manually set up a supported printer.

1. Connect the printer to the USB port.
2. Plug the power cord of the printer into an outlet and turn the printer on.
3. From the desktop control panel, open the Printers applet.
4. Select Add Local Printer.



5. Follow the Add Local Printer Wizard instructions to configure the printer.
   - Verify the connected printer appears on the USB printer port.
   - Select the manufacture and model of the JETCET printer.
   - Accept the default printer name or enter another.
   - Print a test page to verify the installed printer.
   - Specify whether you want the printer to be shared on the network.

Task Bar

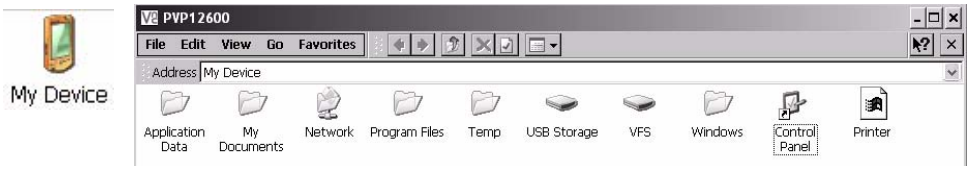
You can turn the task bar on or off in the open Windows CE shell by choosing Start>Settings>Taskbar, then checking or clearing the Auto Hide check box.

On touch screen terminals, touching the bottom of the display will recover the task bar when in Auto Hide mode.

Windows Explorer

From the desktop, you can access Windows Explorer in several ways:

- Open the My Device icon on the desktop.
- Choose Start>Programs>Window Explorer.



Besides the typical system folders, a few folders contain items that are specific to the PanelView Plus 6 platforms.

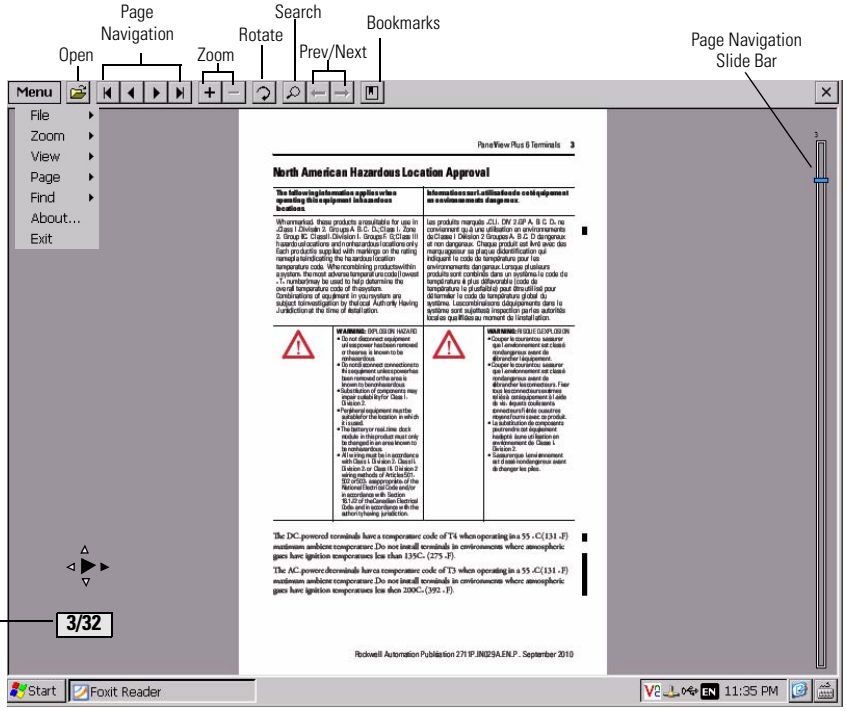
Folder	Content
Application Data	Contains FactoryTalk View Machine Edition application files. Path: \Application Data\Rockwell Software\RSViewME
VFS (Virtual File System)	Provides firmware version information for the terminal. Path: \VFS\Platform Firmware

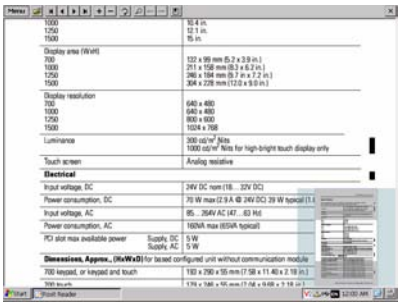
PDF Reader

A PDF reader is available on all PanelView Plus 6 terminals and provides typical PDF view and search functions. You can run this reader from the Windows desktop or from a command prompt.

When viewing a PDF document, you can initiate functions from the menu or toolbar. Bookmarks created in the original PDF appear in the Bookmark dialog.

Figure 9 - PDF Reader Workspace





Magnified view of page with minimap. You can touch the gray areas on the minimap to view another area of page at the same zoom level.

TIP If a keyboard is attached, you can use the Page Up and Page Down keys for page navigation. On keypad terminals, hold down the Alt key while pressing the up and down cursor keys.

Some viewing functions can be initiated on touch-screen terminals by touching or dragging.

Table 40 - Touch screen operations

To	Do This	Indicator
Zoom In or Out	Tap the screen once to zoom in. Tap the screen again to zoom out. If Menu>View>Minimap is chosen, a miniview of the page appears in lower right of workspace. You can tap the gray areas to change view.	
Navigate pages	• Drag your stylus or finger to the right or left to view next and previous pages. An indicator shows the direction your are dragging. A box shows the current page/total page count. • Drag up or down the screen to activate the page navigation bar on the right. Move slide bar up or down to navigate pages.	 3/32 See page navigation bar in figure 9.
Rotate	Drag in a circular, clockwise or counterclockwise direction to rotate the page.	

Command Prompt Parameters

You can run the PDF reader from the Windows Command Prompt by entering Start>Programs>Command Prompt and executing the command parameters in Table 41.

Command Prompt Syntax

Foxitreader "file_path/file-name.pdf" *parameter parameter_ value*

- Enter the file path and file name in double quotes and use a forward slash in the file path, and to separate the file path from the file name.
- Use spaces to separate the parameter from the file name and optional parameter value.

Command Prompt Example

Foxitreader "windows/desktop/example.pdf" -p 4

This command prompt opens example.pdf in Foxit Reader at page 4.

Table 41 - Command Prompt Parameters

Parameter	Parameter Function	Example	Description
-p	Go to page	Foxitreader "file_path/file.pdf" -p 2	Opens the PDF file to page 2.
-zw	Fit width	Foxitreader "file_path/file.pdf" -zw	Opens the PDF file and fits the view to the page width.
-zp	Fit page	Foxitreader "file.pdf"-zp	Opens the PDF file and shows the full page.
-z	Zoom to	Foxitreader "file.pdf"-z 150	Opens the PDF file and zooms to 150%.
Multiple parameters	Enter empty spaces between parameters and parameter values	Foxitreader "file_path/file.pdf" -p 2 -zw	Opens the PDF file to page 2 and fits the view the page width
-b	Go to bookmark	Foxitreader "file_path/file.pdf" -b "Bookmark1"	Opens the PDF file to the location specified within Bookmark1
-d	Go to named destination	Foxitreader "file_path/file.pdf" -b "Destination1"	Opens the PDF file to the location specified within Destination 1.
-g	Disable the File>Open command on the Menu and the Open folder button.	Foxitreader "file_path/file.pdf" -g	Opens the PDF file and dims the Menu, File>Open command the Open button.

Notes:

Install and Replace Components

Chapter Objectives

This chapter shows provides topics on how to install or replace components of the PanelView Plus 6 terminals.

Topic	Page
Install or Replace the Logic Module	102
Install or Replace a Communication Module	103
Replace the Display Module	105
Replace the Bezel	106
Replace the Battery	109
Replace the Backlight	111
Remove the Product ID Label	114
Load an SD Card or USB Flash Drive	115
Clean the Display	116

Required Tools

These tools are required to install and replace components:

- #00, #1, and #2 Phillips screwdriver
- Electrostatic Discharge (ESD) wristband

Precautions

Before installing or replacing any components, disconnect power from the terminal. During installation, take care not to touch any of the exposed electronic components.

SHOCK HAZARD: Disconnect all power from the terminal before installing or replacing any components. Failure to disconnect power may result in electrical shock or damage to the terminal.

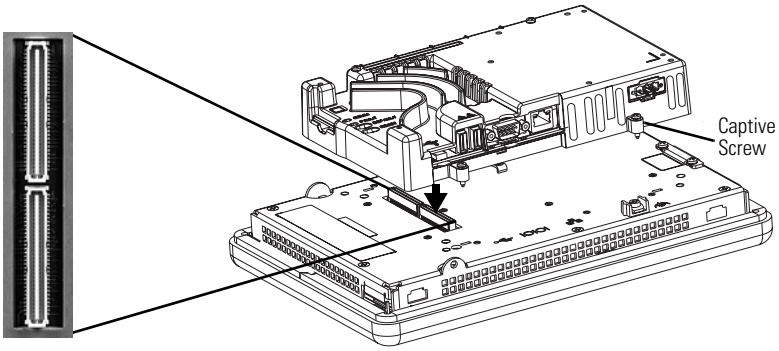
ATTENTION: Be careful when touching any of the exposed electronic components to prevent damage from electrostatic discharge (ESD).

Work in a static free environment and wear a properly grounded ESD wristband.

Install or Replace the Logic Module

If the display module and logic module are ordered as separate components, attach the logic module to the display module before panel installation.

1. Make sure power is disconnected power from the terminal.
2. Set the display module display-side down on a clean, flat, stable surface.
3. Position the logic over the back of the display module, aligning the logic module connector with the connectors on the display module.



4. Push down on the logic module until it is firmly seated.
5. Tighten the four captive screws that secure the logic module to the display module and torque to 0.58 N•m (5...7 lb•in).

Before replacing a logic module, you must first remove the communication module, if attached.

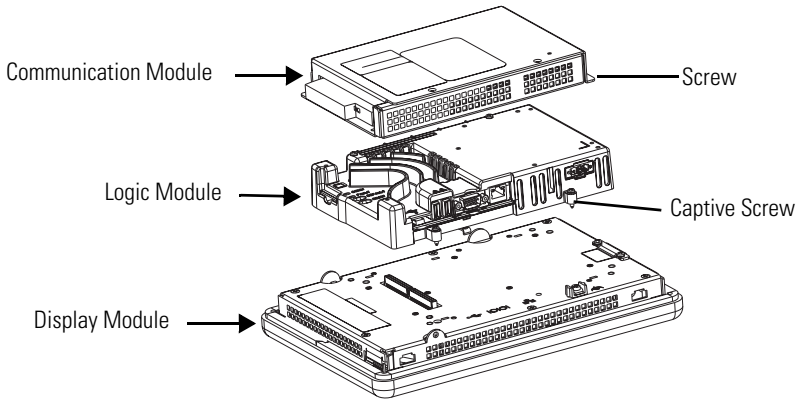
Follow these steps to replace a logic module.

1. Disconnect power from the terminal.
2. Disconnect all power and communication cables.

WARNING: Do not connect or disconnect any communication cable with power applied to this device or any device on a network. An electrical arc could cause an explosion in hazardous location installations. Be sure power is removed or the area is known to be nonhazardous before proceeding.

3. Set the display module display-side down on a clean, flat, stable surface.

4. Remove the four screws that secure the communication module, if attached, to the logic module and set the communication module aside.



5. Loosen the four captive screws that secure the logic module to the display module.
6. Carefully lift the logic module from the back of the display.

ATTENTION: Wear a properly grounded ESD wristband before touching any of the electronic components in the logic module.

7. Install the new logic module and torque the four captive screws to 0.58 N•m (5...7 lb•in)
8. Install, the communication module, if necessary, and torque the four screws to 0.58 N•m (5...7 lb•in).

Install or Replace a Communication Module

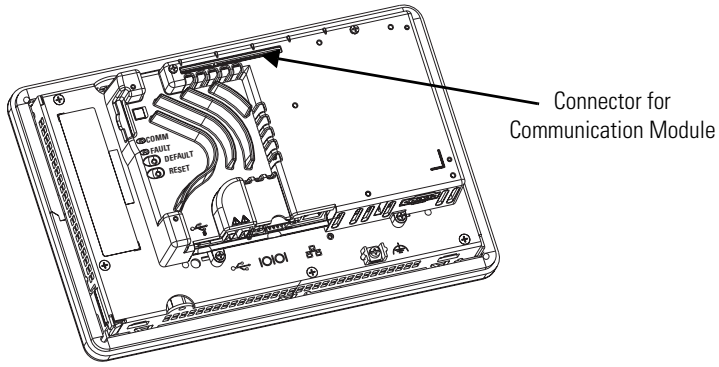
The communication module installs over the logic module. Communication modules are available as separate catalog numbers for field installation.

TIP The logic module must be attached to the display module before you attach the communication module.

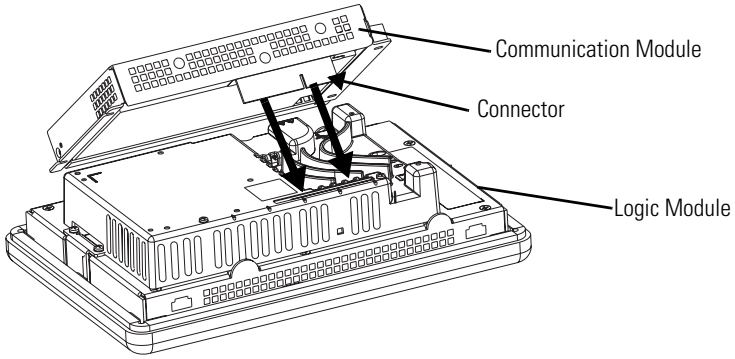
Follow these steps to install a communication module.

1. Disconnect power from the terminal.

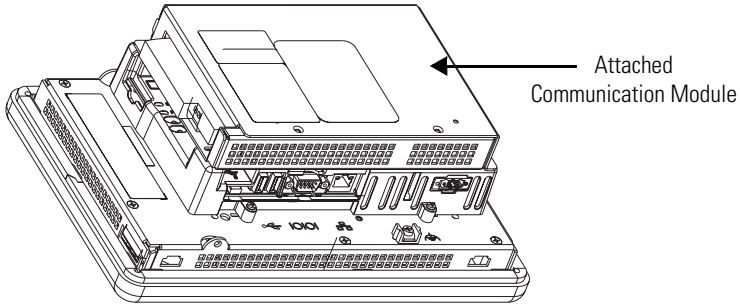
2. If the display module is removed from the panel, set the terminal, display-side down, on a clean, flat, stable surface.



3. Position the communication module over the logic module so that the connector on the bottom of the module aligns with the connector on the logic module.
4. To prevent ESD between the modules, allow the communication module to touch the logic module before making the connection.



5. Push down on the communication module until the connectors are seated.
6. Tighten the four screws that secure the communication module to the logic module to a torque of 0.58 N•m (5...7 lb•in).



Follow these steps to replace a communication module.

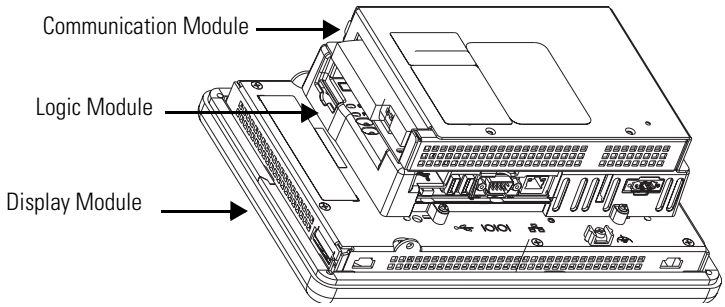
1. Disconnect power from the terminal.
2. Disconnect communication cables from the module.

> **WARNING:** Do not connect or disconnect any communication cable with power applied to this device or any device on a network. An electrical arc could cause an explosion in hazardous location installations. Be sure power is removed or the area is known to be nonhazardous before proceeding.

3. Remove the four screws that secure the communication module.
4. Carefully lift the communication module away from the logic module.
5. Install the new communication module by following steps 4...6 in Install or Replace a Communication Module on page 103.

Replace the Display Module

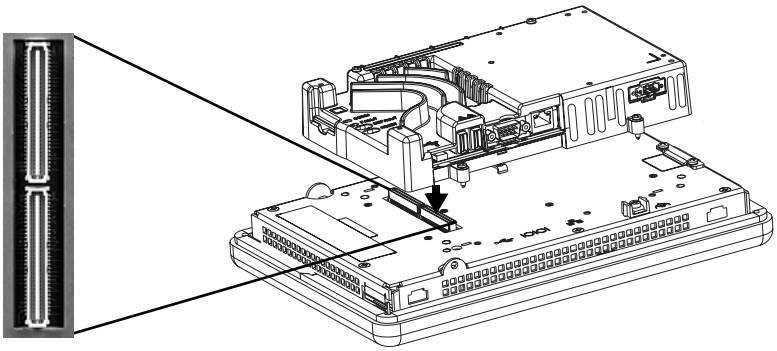
Follow these steps to replace the display module.



Follow these steps to replace the display module.

1. Disconnect power from the terminal.
2. Remove the terminal from the panel.
3. Detach the communication module, if attached, from the logic module by removing the four screws.
4. Loosen the four captive screws that attach the logic module to the display module.
5. Carefully lift the logic module from the display module.
6. Set the display module aside.

7. Position the logic module over the new display module so that the connectors align.



8. Push down on the logic module until firmly seated.
9. Tighten the four captive secures that secure the logic module to the display module and torque to 0.58 N•m (5...7 lb•in).
10. Attach the communication module, if necessary, and torque the four screws to 0.58 N•m (5...7 lb•in).

Replace the Bezel

It is not necessary to remove the logic module or communication module before removing the bezel, except on the 700 terminal.

Remove the Display Module Bezel

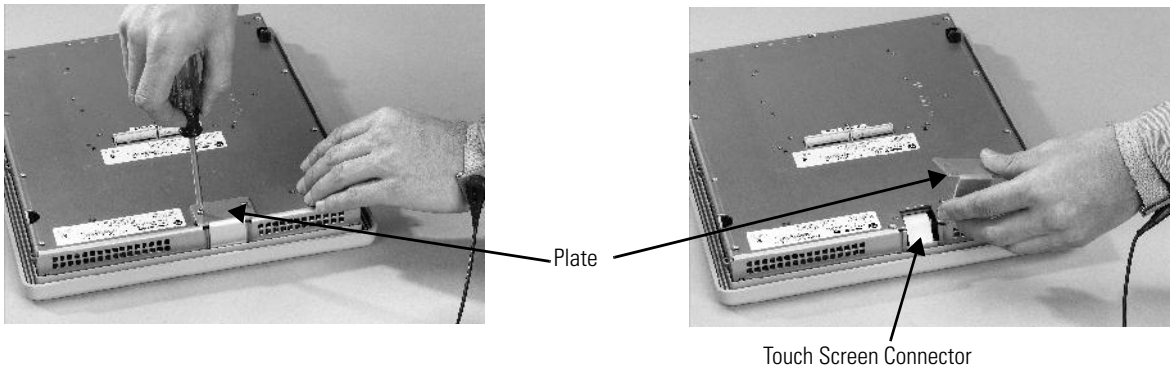
Follow these steps to remove the display module bezel.

1. Disconnect power from the terminal.
2. Set the terminal, display side down, on a flat stable surface.

ATTENTION: Wear a properly grounded ESD wristband before touching any of the electronic components in the logic module.

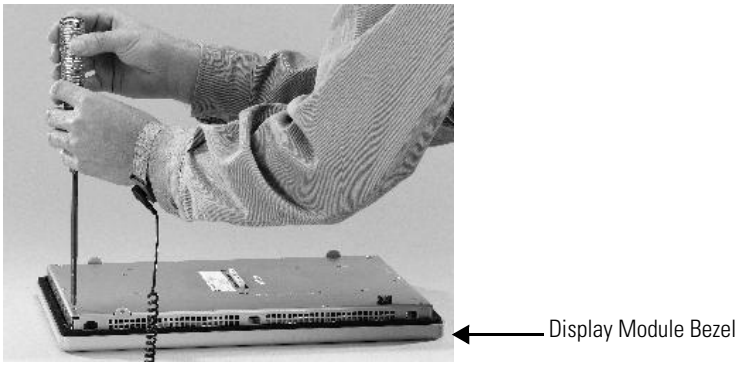
3. On touch-screen only terminals, remove the two screws that secure the small metal plate to the back of the display module.

4. Disconnect the touch screen connector.

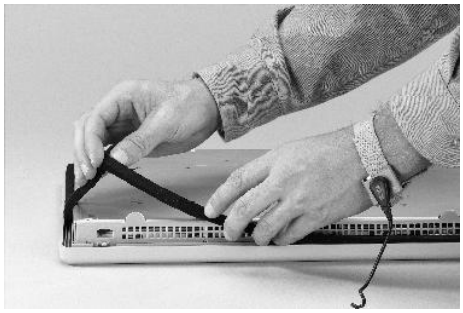


5. Remove the screws from the back of the display module.

   The number of screws varies for each terminal type.



6. Remove the sealing gasket.



7. Lift the back of the display module away from the bezel.

   Work on a clean, flat, stable surface to protect the display from debris, scratches and damage.

8. Detach the connectors.
   - Function key connector
   - Touch screen connector (touch-screen or keypad/touch terminals only)
9. Set the bezel aside.

Replace the Display Module Bezel

Follow these steps to replace the display module bezel.

1. Make sure the bezel is free of lint and marks before attaching.
2. Attach the connectors.
   - Function key connector
   - Touch screen connector (touch-screen or keypad/touch terminals only)
3. Place the back of the display module over the bezel.

   Be careful not to pinch any of the cables. Allow the touch screen connector to extend out of the access opening.
4. Attach the touch screen connector.
5. Replace the sealing gasket.
6. Attach the screws that secure the display module to the bezel and tighten to a torque of 1.35...1.58 N•m (12...14 lb•in).
7. On touch-screen terminals, reattach the small metal plate to the back of the display module and torque the two screws to 0.58 N•m (5...7 lb•in).

Replace the Battery

The terminals have a lithium battery that is used by the real-time clock. It is not used for backup or retention.

ATTENTION: To avoid voiding your product warranty, use only the Rockwell Automation approved battery. Use of another battery may present a risk of fire or explosion.

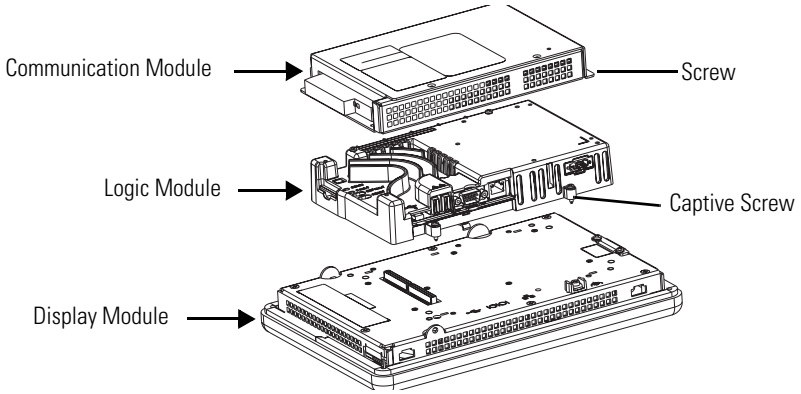
SHOCK HAZARD: Failure to follow proper safety precautions could result in severe electrical shock or damage to the terminal.

WARNING: There is a danger of explosion if the lithium battery or real-time clock module in this product is incorrectly replaced. Replace the battery only with the indicated type. Do not replace the battery or real-time clock module unless power has been removed or the area is known to be nonhazardous.

Do not dispose of the lithium battery or real-time clock module in a fire or incinerator. Dispose of used batteries in accordance with local regulations. For safety information on the handling of lithium batteries, including handling and disposal of leaking batteries, see Guidelines for Handling Lithium Batteries, publication AG 5-4.

Follow these steps to replace the battery.

1. Disconnect power from the terminal.
2. Place the terminal, display side down, on a flat stable surface.
3. Detach the communication module, if attached, from the logic module by removing the four screws.
4. Loosen the four captive screws that attach the logic module to the display module.



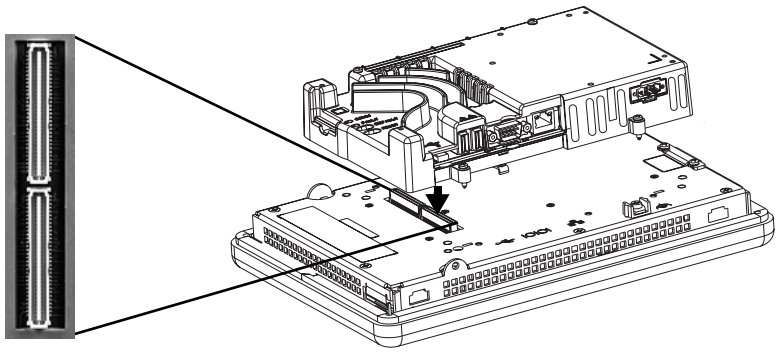
5. Carefully lift the logic module away from the terminal and turn over to expose the circuit board.

6. Locate the battery on the circuit board.
7. Remove the battery by lifting up the side of the battery.
8. Insert the new battery.

IMPORTANT• Use only replacement battery, catalog number 2711P-RY2032 ,or an equivalent CR2032 lithium coin cell battery.

- The battery may be removed for up to 15 seconds without losing the clock and calendar data.

9. Reattach the logic module by aligning the two connectors on the bottom of the logic module with the connectors on the back of the display module.



10. Push down on the logic module until it is firmly seated.
11. Tighten the four captive screws that secure the logic module to a torque of 0.58 N•m (5...7 lb•in).
12. Reattach the communication module, if necessary, and tighten the four screws to a torque of 0.58 N•m (5...7 lb•in).

This product contains a hermetically sealed lithium battery which may need to be replaced during the life of the product.

At the end of its life, the battery contained in this product should be collected separately from any unsorted municipal waste.

The collection and recycling of batteries helps protect the environment and contributes to the conservation of natural resources as valuable materials are recovered.

Replace the Backlight

All of the display modules have replaceable backlights except for the 1250 high-bright displays.

Table 42 - Backlight Replacements

Use Cat. No.	For Display	Series	# of Backlights
2711P-RL7C	700	A and B	1
2711P-RL7C2		C and D	1
2711P-RL10C	1000	A	1
2711P-RL10C2		B and C	1
2711P-RL12C	1250	A and B	2
2711P-RL12C2		C	1
2711P-RL15C	1500	B	2

IMPORTANT Disposal: The backlights for these products contain mercury. Dispose of per applicable laws.

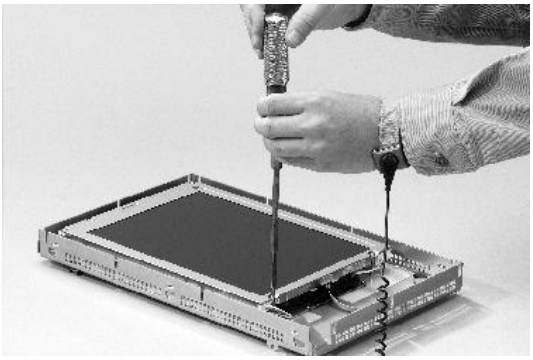
Follow these steps to replace the backlight.

1. Disconnect power from the terminal.
2. Remove the display module bezel.

   IMPORTANT The 700 series C display is not secured by screws and is retained only by a bracket. Use care not to drop the display once the bezel is removed.

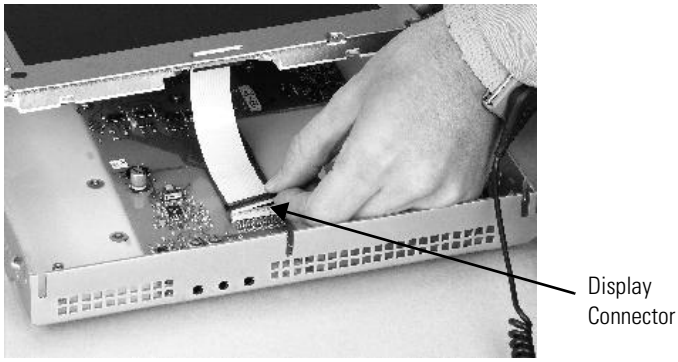
3. Remove the four screws that secure the LCD display.

   For 700 displays, remove the four screws that secure the display bracket.

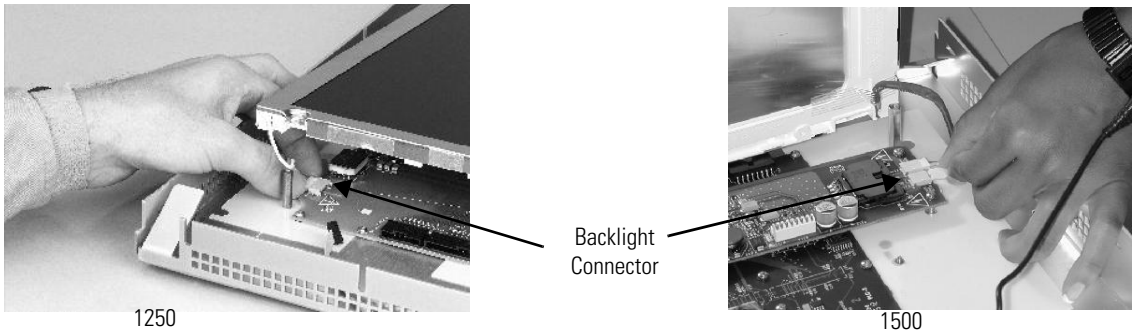


4. Lift the LCD display and detach the display connector from the circuit board.

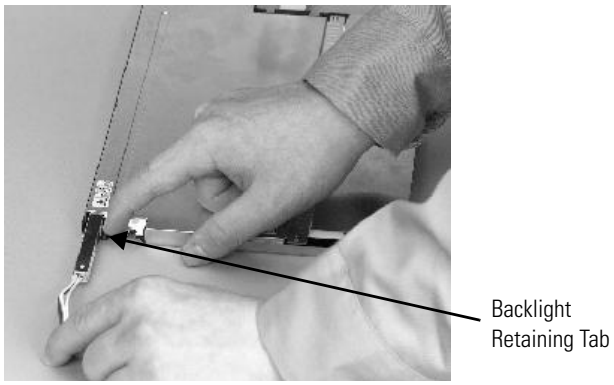
   The circuit board layout may vary for each terminal model. The location of the connector varies by model.



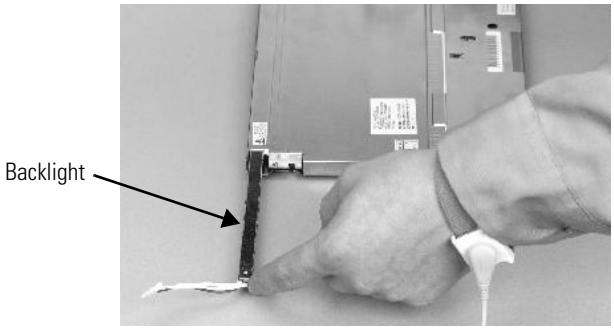
5. Detach the backlight connectors from the circuit board.
   - The 1250 has one or two backlight connectors depending on the series of the display.
   - The 1500 has four backlight connectors.



6. Follow these steps for the 700 and 1000 displays.
   a. Press the retaining tab that secures the backlight, then pull out the backlight.



b. Insert the new backlight.

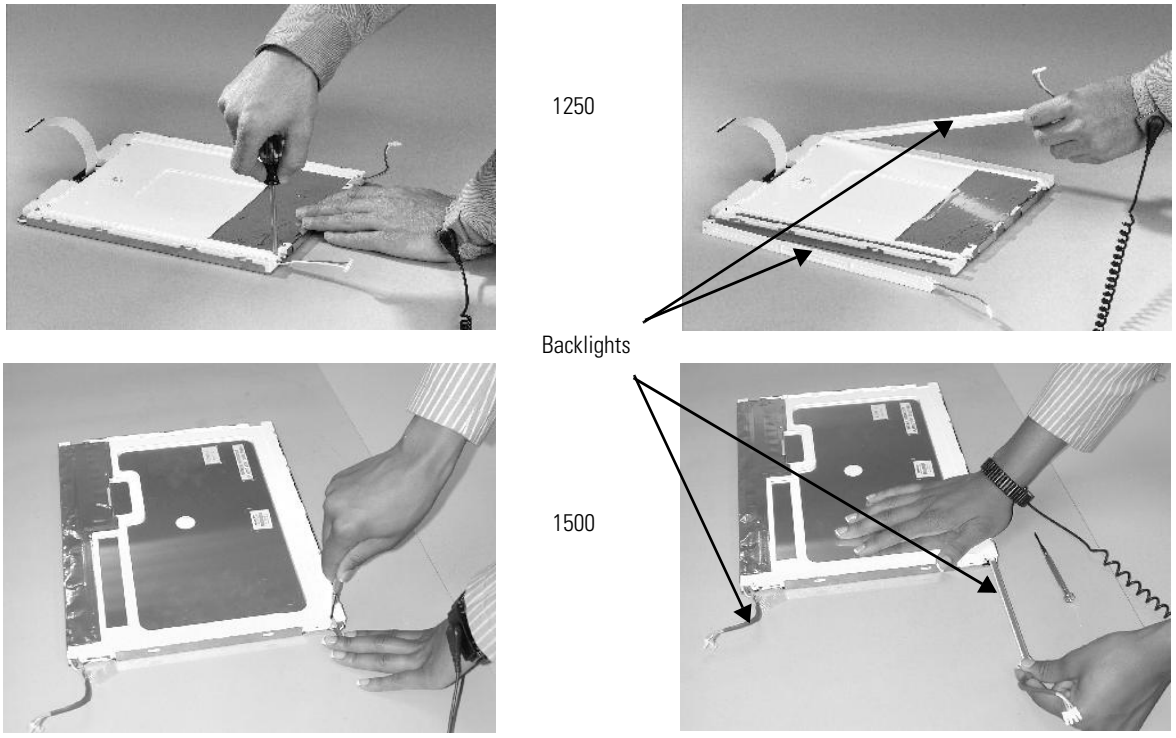


7. Follow these steps for the 1250 and 1500 displays.

   a. Remove the screws that secure the backlights and remove the backlights.

      For the 1250 series A and B displays, the two backlights are each secured with two screws. The single backlight for the 1250 series C displays is secured with one screw.

      For the 1500 series B displays, remove the tape, then remove the backlights.



   b. Insert the new backlights then secure each with the same screws from the previous step, and torque to 0.117 N•m (1.04 lb•in).

8. Attach the LCD display connector to the circuit board.

   Refer to step 4.

9. Attach the backlight connector to the circuit board.

   Refer to step 5.

10. Secure the LCD display.
    a. Attach the display bracket then secure the display in the bracket for the 700 series C display.
    b. Attach the four screws for all other displays.

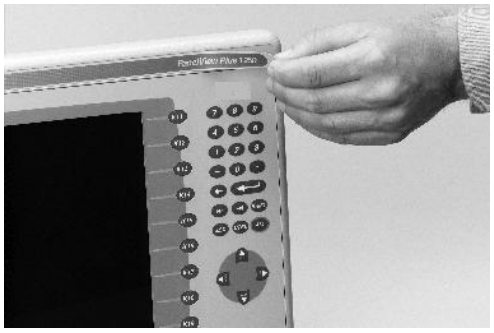
    Tighten the screws and torque to 0.58 N•m (5...7 lb•in).

11. Replace the display module bezel.

Remove the Product ID Label

You can remove the label on your terminal and attach your own label.

1. Remove the Allen-Bradley label using your fingers or a tweezers.



2. Clean area with damp cloth and isopropyl alcohol.
3. Remove adhesive backing of OEM label and affix over area where label was located.

Replace the Keypad Legend Inserts

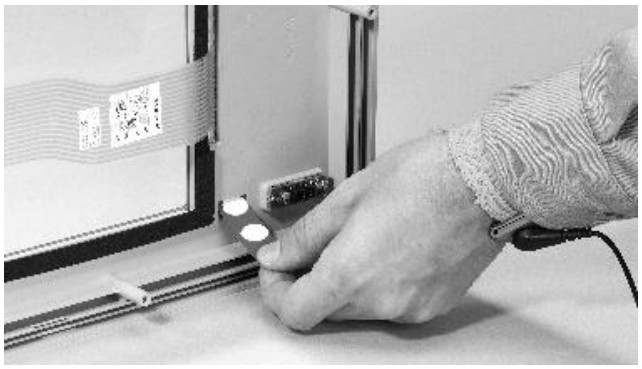
Legend strips are available as separate catalog numbers for keypad terminals. One side of the legend strips have default key legends; the other side is blank for creating custom legends.

The F1-F*xx* and K1-K*xx* legend inserts are accessible when the display module bezel is removed.

Follow these steps to replace the key legend inserts.

1. Remove power from the terminal.
2. Remove the display module bezel.

3. Pull the legend inserts out from the slots on the bezel.



4. Slide the new legend strips into the same slots until only the end tab is visible.
5. Replace the display module bezel.

Load an SD Card or USB Flash Drive

All logic modules have an SD (secure digital) card slot and two USB host ports for external storage:

- The SD card slot supports catalog number 1784-SD*x* cards.
- The USB host ports support USB flash drives.

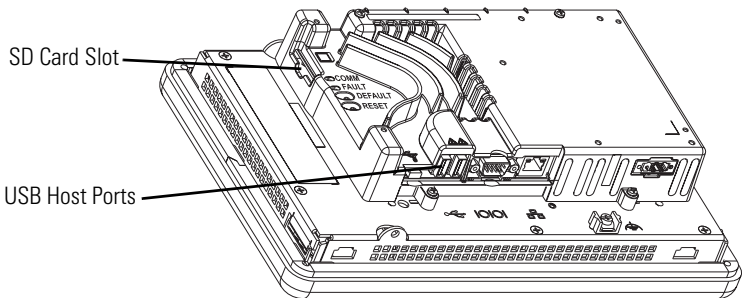
Both the SD card and USB flash drives are hot-swappable; they can be loaded and unloaded while the terminal is powered on and running.

TIP
- SD card volumes are named Storage Card2, Storage Card3, ...
- USB flash drive volumes are named USB Storage2, USB Storage3, ...

SD card and USB flash drive partitions are managed by the Storage Manager in the control panel. Alternatively, they can be partitioned on a personal computer running a Windows operating system.

TIP SD card volume names and physical characteristics are consistent with the CompactFlash card used by other PanelView Plus products. Applications on these CompactFlash cards will easily migrate to the SD card used by the PanelView Plus 6 terminals.

To load an SD card or USB flash drive, insert the media in the appropriate slot on the logic module until firmly seated.



To remove the SD card, press on the card to release it, then pull it out. To remove a USB flash drive, gently pull it from the port.

Clean the Display

Use a protection antiglare overlay for easier cleaning of the display screen.

ATTENTION: Use of abrasive cleaners or solvents may damage the display. Do not scrub or use brushes.

Follow these steps to clean the display screen.

1. Disconnect power from the terminal.
2. Use a clean sponge or soft cloth with mild soap or detergent to clean the display.
3. Dry the display with a chamois or moist cellulose sponge to avoid water spots.

Remove fresh paint splashes and grease before drying by rubbing lightly with isopropyl alcohol (70% concentration). Then wash the display using mild soap or detergent. Rinse with clean water.

Terminal Connections

Chapter Objectives

This chapter provides topics on network and device connections.

Topic	Page
Wiring and Safety Guidelines	117
Connections to Controllers	118
Communication Port Isolation	119
USB Ports	120
Serial Connections	121
Ethernet Connections	124
DH-485/DH+ Communication Module	126
ControlNet Module	129

Wiring and Safety Guidelines

Use publication NFPA 70E, Electrical Safety Requirements for Employee Workplaces, IEC 60364 Electrical Installations in Buildings or other applicable wiring safety requirements for the country of installation when wiring the devices. In addition to the NFPA, these are other guidelines to follow:

- Route communication cables to terminal by a separate path from incoming power.

IMPORTANT Do not run signal wiring and power wiring in the same conduit.

- Cross power and communication lines at right angles if they must cross.
- Communication lines can be installed in the same conduit as low-level DC I/O lines (less than 10V).
- Shield and ground cables appropriately to avoid electromagnetic interference (EMI).
  Grounding minimizes noise from EMI and is a safety measure in electrical installations.

For more information on grounding recommendations, refer to the National Electrical Code published by the National Fire Protection.

Connections to Controllers

The tables provide a summary of PanelView Plus 6 connections to controllers and interface modules for runtime communication.

Table 43 - Runtime Communication Cables: PanelView Plus 6 Terminals to SLC Controllers

Protocol	PanelView Plus 6 Comm Port	SLC 500, 5/01, 5/02 CH1 RJ45 (DH-485)	SLC 5/03, 5/04, 5/05 CH0 (9-pin RS-232) (DF1 or DH-485)	SLC 5/03 CH1 (RJ45) (DH-485)	SLC 5/04 CH1 (DH+)	SLC 5/05 CH1 (ENET)
DF1	RS-232 (DF1) port (9-pin)	—	2711-NC13 (5 m/16 ft) 2711-NC14 (10 m/32 ft)	—	—	—
DH-485	RS-232 (DH-485) port (9-pin)	Use AIC+ module (1761-NET-AIC) to connect to port 1 or 2	2711-NC13 (5 m/16 ft) 2711-NC14 (10 m/32 ft)	Use AIC+ module (1761-NET-AIC) to connect to port 1 or 2	—	—
	DH-485 port Requires 2711P-RN6, 2711P-RN6K	1761-CBL-AS03 (3 m/10 ft) 1761-CBL-AS09 (9 m/30 ft)	Use AIC+ module (1761-NET-AIC) to connect to port 3	1761-CBL-AS03 (3 m/10 ft) 1761-CBL-AS09 (9 m/30 ft)	—	—
ControlNet	ControlNet port Requires 2711P-RN15S, 2711P-RN15SK	—	—	—	—	—
EtherNet/IP	EtherNet/IP port	—	Use 1761-NET-ENI module with Ethernet cable	—	—	1585J-M type cable or 2711P-CBL-EX04 (4 m/14 ft) (1)
DH+	DH+ port Requires 2711P-RN6, 2711P-RN6K	—	—	—	Shielded twinaxial cable (1770-CD)	—

(1) EtherNet/IP direct connection from the terminal to an SLC 5/05 controller requires an Ethernet switch or the 2711P-CBL-EX04 crossover cable.

Table 44 - Runtime Communication Cables: PanelView Plus 6 Terminals to PLC-5 and MicroLogix Controllers

Protocol	PanelView Plus 6 Comm Port	PLC-5, PLC-5C, PLC-5E CH0 (25-pin RS-232) (DF1)	MicroLogix 1400, 1500LRP CH1/CH2 (9-pin RS-232) (DF1 or DH-485)	MicroLogix 1000, 1100, 1200, 1400, 1500LSP CH0 (8-pin Mini DIN) (DF1 or DH-485)	MicroLogix 1100, 1400 Ethernet
DF1	RS-232 (DF1) port (9-pin)	2711-NC13 (5 m/16 ft) 2711-NC14 (10 m/32 ft) (9-to-25 pin adapter required)	2711-NC13 (5 m/16 ft) 2711-NC14 (10 m/32 ft)	2711-NC21 (5 m/16 ft) 2711-NC22 (15 m/49 ft) (2)	—
DH-485	RS-232 (DH-485) port (9-pin)	—	2711-NC13 (5 m/16 ft) 2711-NC14 (10 m/32 ft)	2711-NC21 (5 m/16 ft) 2711-NC22 (15 m/49 ft)	—
	DH-485 port Requires 2711P-RN6, 2711P-RN6K	—	—	Use AIC+ module (1761-NET-AIC) to connect to port 3	—
ControlNet	ControlNet port Requires 2711P-RN15S, 2711P-RN15SK	To PLC-5C with ControlNet cable	—	—	—
EtherNet/IP	EtherNet/IP port	To PLC-5E with 1585J-M type cable or 2711P- CBL-EX04 (4 m/14 ft) (1)	Use 1761-NET-ENI module with Ethernet cable		1585J-M type cable or 2711P- CBL-EX04 (4 m/14 ft) (2)
DH+	DH+ port Requires 2711P-RN6, 2711P-RN6K	Shielded twinaxial cable (1770-CD)	—	—	—

(1) For a direct connection between the terminal and the controller use the 2711P-CBL-EX04 crossover cable.
(2) The AIC+ module is recommended for isolation purposes when the terminal and controller are not on same power supply.

Table 45 - Runtime Communication Cables: PanelView Plus 6 Terminals to Logix Controllers

Protocol	PanelView Plus 6 Comm Port	ControlLogix CH0 (9-pin RS-232) (DF1)	CompactLogix CH0 (9-pin RS-232) (DF1 or DH-485)
DF1	RS-232 (DF1) port (9-pin)	2711-NC13 (5 m/16 ft) 2711-NC14 (10 m/32 ft) 2706-NC13 (3 m/10 ft)	2711-NC13 (5 m/16 ft) 2711-NC14 (10 m/32 ft) 2706-NC13 (3 m/10 ft)
DH-485	RS-232 (DH-485) port (9-pin)	—	2711-NC13 (5 m/16 ft) 2711-NC14 (10 m/32 ft) 2706-NC13 (3 m/10 ft)
	DH-485 port Requires 2711P-RN6, 2711P-RN6K	—	Use AIC+ module (1761-NET-AIC) Connect to Port 3
ControlNet	ControlNet port Requires 2711P-RN15S, 2711P-RN15SK	Use 1756-CNB module with ControlNet cable	1769-L35CR, 1769-L32C, 1768-CNB, or 1768-CNBR with ControlNet cable
EtherNet/IP	EtherNet/IP port	Use 1756-EN2T or 1756-ENBT module with 1585J-M type cable or 2711P- CBL-EX04 (4 m/14 ft)(1)	To 1769-L35E, 1769-L23E, 1769-L32E, or 1768-ENBT module with 1585J-M type cable or 2711P- CBL-EX04 (4 m/14 ft) (1)
DH+	DH+ port Requires 2711P-RN6, 2711P-RN6K	Use 1756-DHRIO module with shielded twinaxial cable (1770-CD)	—

(1) For a direct connection between the terminal and controller, use the 2711P-CBL-EX04 crossover cable.

Table 46 - Runtime Communication Cables: PanelView Plus 6 Terminals to Interface Modules

Protocol	PanelView Plus 6 Comm Port	1747-AIC	1761-NET-AIC			1771-NET-ENI
			Port 1 (9-pin)	Port 2 (8-pin Mini DIN)	Port 3 (DH-485)	Port 2 (8-pin Mini DIN)
DF1	RS-232 port (9-pin)	—	2711-NC13 (5 m/16 ft) 2711-NC14 (10 m/32 ft)	2711-NC21 (5 m/16 ft) 2711-NC22 (15 m/49 ft) Null modem required	—	1761-CBL-AP00 (5 m) 1761-CBL-PM02 (2 m) 2711-CBL-PM05 (5 m) 2711-CBL-PM10 (10 m)
DH-485	RS-232 port (9-pin)	—	2711-NC13 (5 m/16 ft) 2711-NC14 (10 m/32 ft)	2711-NC21 (5 m/16 ft) 2711-NC22 (15 m/49 ft) Null modem required	—	
	DH-485 port Requires 2711P-RN6, 2711P-RN6K	Direct connection to single AIC with Belden 9842 cable(1)	—	—	Direct connection to single AIC+ with Belden 9842 cable (1)	—

(1) Use serial port on the PanelView Plus 6 terminal with an AIC+ module for a DH-485 network solution.

Communication Port Isolation

The PanelView Plus 6 terminals contain integral and modular (externally attached) communication ports. Most of these ports contain electrical isolation.

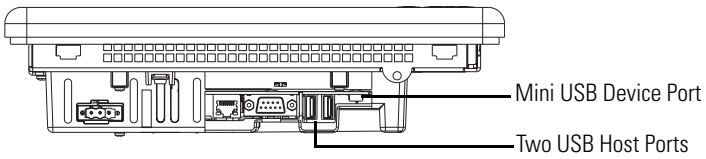
Table 47 - Communication Port Isolation

Integral Communication Port	Isolation	External Communication Module Port	Isolation
RS-232	Isolated	DH-485, Cat. no. 2711P-RN6	Isolated
USB	Nonisolated	DH+, Cat. no. 2711P-RN6	Isolated
Ethernet	Isolated	ControlNet, Cat. no. 2711P-RN15S, 2711P-RN15SK	Isolated

USB Ports

The terminals have two USB 2.0 host ports and one mini USB 2.0 device port.

Figure 10 - USB Ports



The mini USB (type B) device port supports a connection to a host computer using TCP/IP communication and the USB function RNDIS client driver.

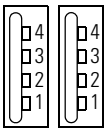
The two USB (type A) host ports support connections to:

- USB keyboard and mouse devices, HID devices, with native device drivers
- Removable, hot-swappable, USB flash drives for external storage
- USB supported printers
- Other USB devices such as modems, cameras, and bar code readers

A vendor specific Windows CE driver is required for all other USB devices. For a list of compatible USB devices, go to the knowledgebase at the Rockwell Automation technical support site and search for ID 115072.
http://www.rockwellautomation.com/support

Plug a USB device into either one of the two USB host ports on the logic module.

Table 48 - USB Connector Pinout

	Pin	Signal
	1	USBVCC
	2	USBD-
	3	USBD+
	4	USB-GND

IMPORTANT The USB host and device ports are not to be used for runtime operations.

WARNING: Do not connect or disconnect the communication cable with power applied to the terminal, or the serial device on the other end of the cable. An electrical arc could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

WARNING: USB devices not powered by the USB port must be within the same enclosure and connected to a ground system common with the terminal, or the USB devices must be used with a USB hub that provides galvanic isolation.

If a USB hub is connected to the terminal, an externally powered USB hub is recommended. Before attaching devices to a USB hub, check that the power adapter is connected and powered on.

Serial Connections

The logic module of the terminals has a serial RS-232 port that supports these connections:

- DH-485 communication through a serial connection
- DF1 full-duplex communication with controllers using direct connections or modem connections
- Third-party point-to-point communication
- Application uploads and downloads

The serial port is a 9-pin, male, RS-232 connector. Table 49 shows the pinout descriptions for this port and how these pins map to the serial ports on the controllers.

The maximum cable length for serial communication is 15.24 m (50 ft).

Figure 11 - RS-232 Serial Port

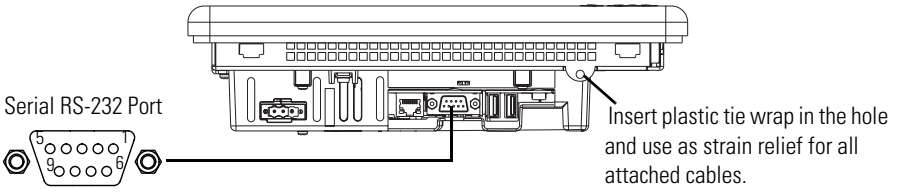


Table 49 - RS-232 Serial Port Connector Pinout

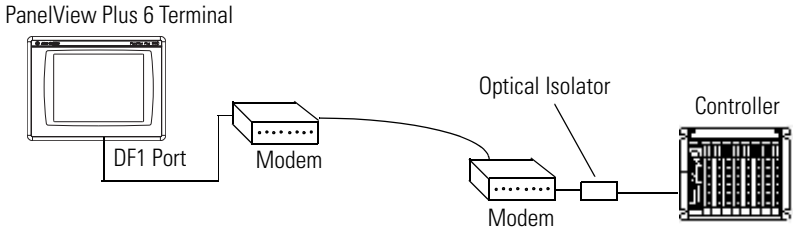
PanelView Plus RS-232 Port 9-pin DCE		SLC or Logix 9-pin	PLC 25-pin	MicroLogix/ ENI 8-pin DIN
1				
2	RXD →	2	3	4
3	← TXD	3	2	7
4	← DTR	4	20	
5	↔ COM	5	7	2
6	DSR →	6	6	
7	← RTS	7	4	
8	CTS →	8	5	
9				
Connector Shell	Chassis Gnd			

WARNING: Do not connect or disconnect the communication cable with power applied to the terminal, or the serial device on the other end of the cable. An electrical arc could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

Modem Connection

Wire or radio modem communication is possible between the terminal and controller. Each modem must support full duplex communication. Refer to your modem user manual for details on settings and configuration.

Figure 12 - Modem Connection



Construct a Null Modem Cable

To construct a null modem cable, refer to this pinout.

Table 50 - Null Modem Pinout

Pin Description	PanelView Plus 9-pin	9-pin Modem	PanelView Plus 9-pin	25-pin Modem	Pin Symbol
FG (Frame Ground)	-	-	-	1	FG
TD (Transmit Data)	3	2	3	3	RD
RD (Receive Data)	2	3	2	2	TD
RTS (Request to Send)	7	8	7	5	CTS
CTS (Clear to Send)	8	7	8	4	RTS
SG (Signal Ground)	5	5	5	7	SG
DSR (Data Set Ready)	6	4	6	20	DTR
DTR (Data Terminal Ready)	4	6	4	6	DSR

Computer Connections

The RS-232 serial port of the logic module supports application uploads and downloads between the terminal and a computer using a direct connection.

Figure 13 - Serial Port Connection to Computer

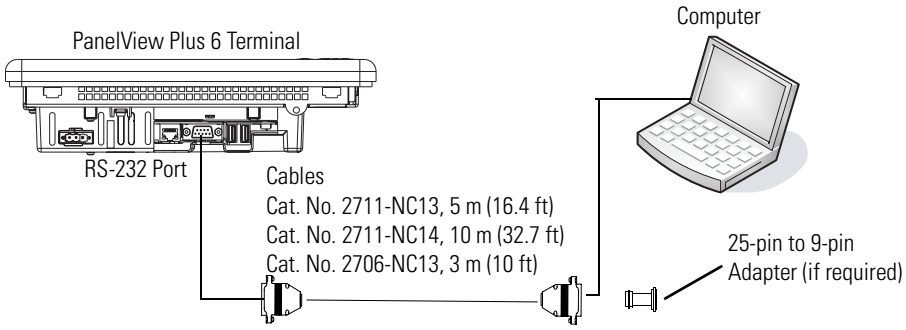


Table 51 - Upload/Download Cable with Handshaking

PanelView Plus Port (DCE)		Computer Port (DTE) with Handshaking	
9-pin male		**9-pin male**	
1 NC		1	DCD
2	RXD →	2	RXD (Data Receive)
3	← TXD	3	TXD (Data Transmit)
4 NC		4	
5	↔ COM	5	COM
6 (pulled high to +12V)	DSR →	6	DSR
7	← RTS	7	RTS
8	CTS →	8	CTS
9 NC		9	NC

Table 52 - Upload/Download Cable without Hardware Handshaking

PanelView Plus Port (DCE)		Computer Port (DTE)	
9-pin male		**9-pin**	**25-pin**
2	RXD →	2	3
3	← TXD	3	2
5	↔ COM	5	7

Ethernet Connections

The Ethernet port on the logic module that supports these connections:

- EtherNet/IP communication
- Third-party Ethernet communication
- Auto MDI/MDIX connections
- Network connections
- Application uploads/downloads
- Printing

Ethernet Connector

The base-configured unit of the terminals has an RJ45, 10/100 Base-T connector for EtherNet/IP or Ethernet TCP/IP network communication.

Figure 14 - Ethernet Connector

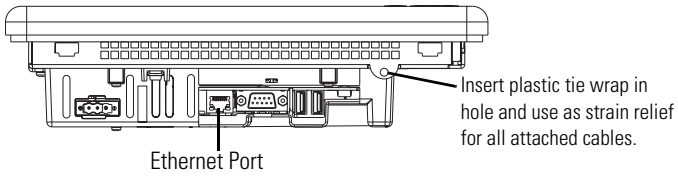


Table 53 - Ethernet Connector Pinout

Connector	Pin	Pin Name
Looking into RJ45 Connector 1 8 Green LED Yellow LED	1	TD+
	2	TD-
	3	RD+
	4	NC
	5	NC
	6	RD-
	7	NC
	8	NC
	Shield Connection	No direct connection (AC coupled to chassis GND)

The Ethernet connector has two indicators that provide the status of activity.

Table 54 - Ethernet Status Indicators

Indicator	LED Color	Description
Link Integrity	Yellow	Asserted when a link is present.
Activity LED	Green	Pulsed active when receive or transmit activity is present.

Ethernet Cable

Use Belden 7921A shielded CAT5E cable according to TIA 568-B.1 and RJ45 connector according to IEC 60603-7 for compliance with Marine emission limits and the European Union 89/336/EEC EMC Directive.

The maximum length of the Ethernet cable between the logic module's Ethernet port and a 10/100 Base-T port on an Ethernet hub (without repeaters or fiber) is 100 m (328 ft).

WARNING: Do not connect or disconnect any communication cable with power applied to this device or any device on the network. An electrical arc could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

Security Considerations

IGMP (Internet Group Management Protocol) is used for IPv4 multicast. A multicast is communication between a single sender and multiple receivers on a network. IGMP is used to exchange membership status data between IPv4 routers that support multicasting and members of multicast groups. A router is an intermediary device on a communication network that expedites message delivery by finding the most efficient route for a message packet within a network, or by routing packets from one subnetwork to another. A sub-network is a separate part of an organization's network identified through IP addressing.

PanelView Plus terminals provide level 2 (full) support for IPv4 multicasting (IGMP version 2) as described in RFC 1112 and RFC 2236.

SNMP (Simple Network Management Protocol) is used for internal network management and is not supported.

Ports 137 and 138 are normally open to support the NetBIOS protocol used by Windows CE.NET similar to other Microsoft and IBM network operating systems.

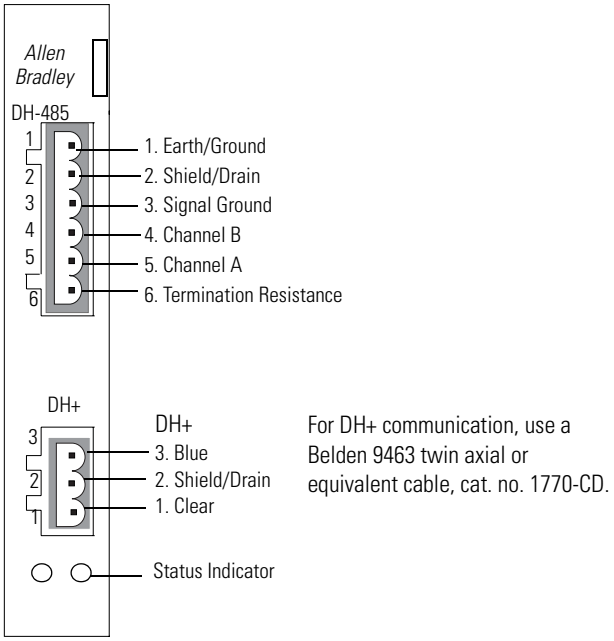
DH-485/DH+ Communication Module

Terminals with a catalog number 2711P-RN6 or 2711P-RN6K communication module support communication with these networks:

- DH+ networks
- DH-485 networks

The communication module has a separate port for each communication protocol. You can communicate with only one network at one time.

Figure 15 - DH-485/DH+ Communication Module Connectors



IMPORTANT See your controller documentation for appropriate controller connections.

Status Indicators

The module has indicators that show the status of the DH-485 or DH+ network connection.

Table 55 - DH-485 and DH+ Status Indicators

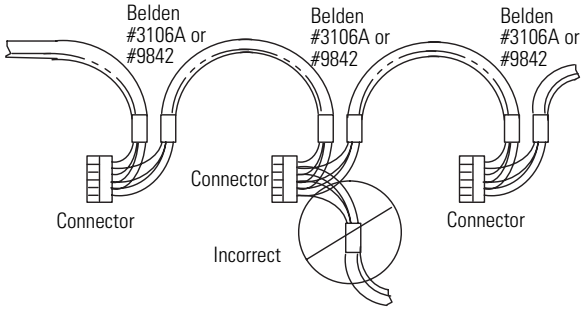
Indicator State	Description
Off	Channel is not online.
Blinking green	Device is only node on the network.
Solid green	Device is online and receiving token.
Blinking red	DH-485: Duplicate node. DH+: Parity error.
Solid red	Failed selftest.

DH-485 Network Port Wiring

Refer to the figures to attach the RS-485 connector to a Belden 3106A or 9842 cable. Refer to Connections to Controllers on page 118 if you are using standard Allen-Bradley cables.

IMPORTANT A daisy-chained network is recommended. We do not recommend a hybrid star/daisy chain networks as shown.

Figure 16 - Daisy-chain Connection



Attach the connector to a Belden 3106A or 9842 cable as shown Figure 17 or Figure 18.

Figure 17 - Single Cable Connection

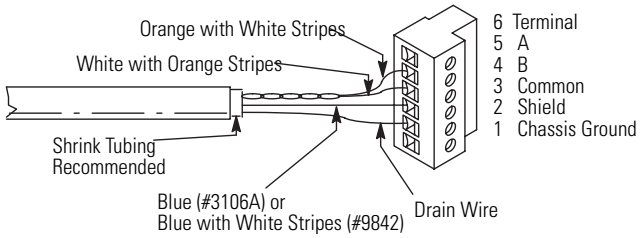


Figure 18 - Multiple Cable Connection

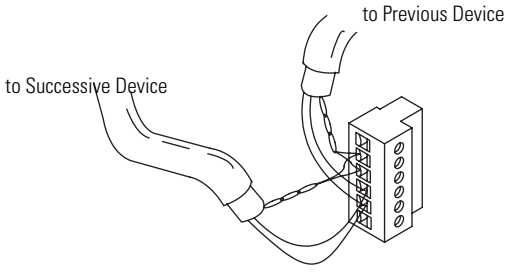


Table 56 - Belden 3106A Wire Connections

For this Wire/Pair	Connect this Wire	To this Terminal
Shield/Drain	Non-jacketed	Terminal 2 - Shield
Blue	Blue	Terminal 3 - (Common)
White/Orange	White with Orange Stripe	Terminal 4 - (Data B)
	Orange with White Stripe	Terminal 5 - (Data A)

DH+ Network Connections

Use a Belden 9463 twin-axial or equivalent cable, catalog number 1770-CD, to connect a terminal to a DH+ link.

You can connect a DH+ link in two ways:

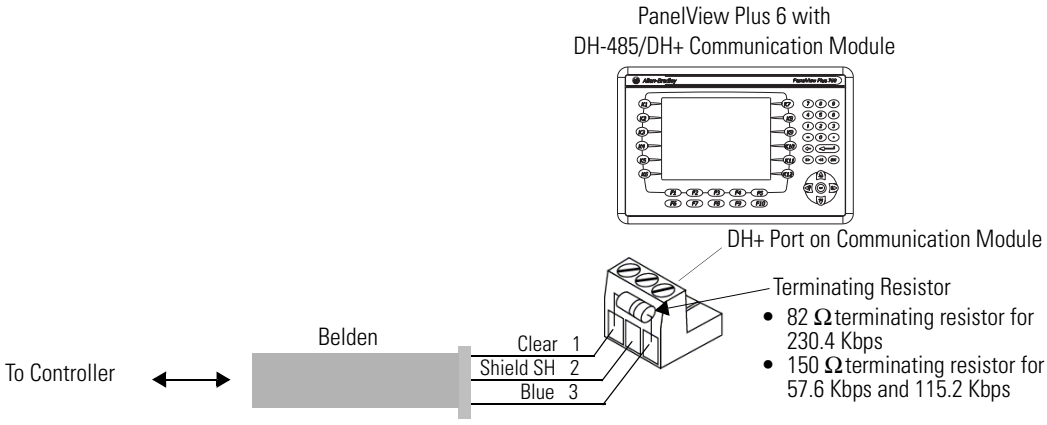
- **Trunk line/drop line** - from the drop line to the connector screw terminals on the DH+ connectors of the processor.
- **Daisy chain** - to the connector screw terminals on the DH+ connectors on the processor.

Follow these guidelines when installing DH+ communication links:

- Do not exceed these cable lengths:
  - Trunk line-cable length: 3,048 m (10,000 ft)
  - Drop-cable length: 30.4 m (100 ft)

  The maximum cable length is determined by the baud rate.
- Do not connect more than 64 stations on a single DH+ link.

Figure 19 - Terminal Connection to DH+ Link



ControlNet Module

Terminals with a catalog number 2711P-RN15S or 2711P-RN15SK communication module support ControlNet communication and the transfer of applications between devices on a ControlNet network.

Additional Resources

For more information on ControlNet products, refer to these publications:

- NetLinx Selection Guide, publication NETS-SG001
- ControlNet Coax Media Planning and Installation Guide, publication CNET-IN002

The Rockwell Automation website http://www.rockwellautomation.com provides information and product descriptions of ControlNet products.

ControlNet Protocol

The terminals support Unscheduled and Scheduled messaging, Scheduled I/O, and redundant cabling with PLC-5C and ControlLogix controllers.

The ControlNet architecture supports multiple processors and up to 99 nodes (via taps) anywhere along the trunk cable of the network. There is no minimum tap separation and you can access the ControlNet network from every node (including adapters).

Compatible ControlNet Controllers

A PanelView Plus 6 terminal with a ControlNet module communicates with a PLC-5C or ControlLogix controller using Unscheduled messaging:

- PLC-5C (PCCC commands)
- ControlLogix processor (CIP protocol)

These controllers are supported:

- ControlLogix with a 1756-CNB ControlNet module
- PLC-5/20C, PLC-5/40C, PLC-5/60C, PLC-5/80C

Software and Firmware Requirements

The software and firmware must be installed on the development computer and the PanelView Plus 6 terminal to configure and communicate with an Allen-Bradley controller on a ControlNet network.

Table 57 - ControlNet Unscheduled Communication

Software/Firmware	Version/Revision Requirements
FactoryTalk View Studio	Version 6.0 or later
FactoryTalk View Machine Edition Runtime	Version 6.0 or later
ControlNet module firmware	2711P-RN15S, Series A, Rev A (firmware revision 2.07 or later) (1)

(1) This applies to terminals that are ordered as pre-configured units with the ControlNet module.

Table 58 - ControlNet Scheduled Communication

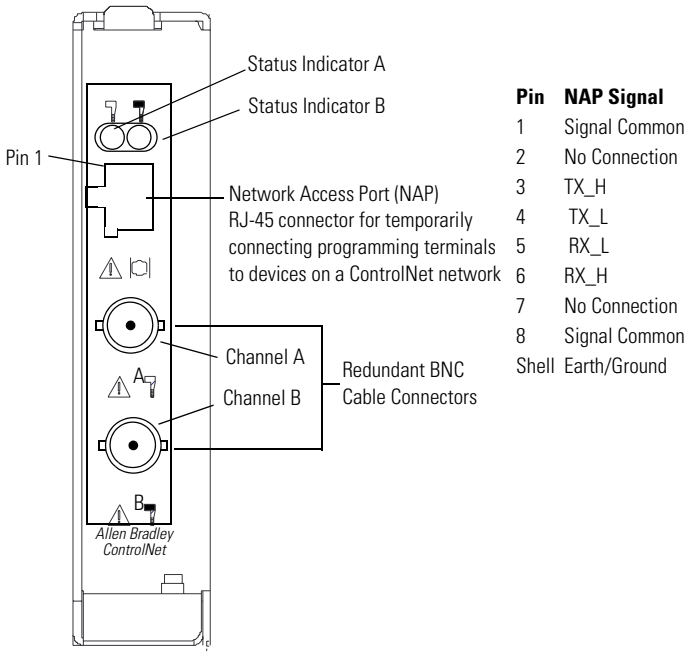
Requirements	Version Requirements
FactoryTalk View Studio	Version 6.0 or later
FactoryTalk View Machine Edition Runtime	Version 6.0 or later
RSNetWorx for ControlNet	Version 5.11 or later
RSLogix 5000	Version 18.0 or later
ControlNet module firmware	2711P-RN15S, Series A, Rev C (firmware revision 3.08 or later) (1)

(1) This applies to terminals that are ordered as preconfigured units with the ControlNet module.

WARNING: The ControlNet communication module, cat. no. 2711P-RN15S or 2711P-RN15SK, will not run with FactoryTalk View ME firmware revision 3.20.04 or earlier. All ControlNet modules with revision 3.07 firmware must be upgraded to revision 3.08 or later; otherwise, outputs may turn on an indeterminate state.

ControlNet Module Connectors

Figure 20 - Cat. No. 2711P-RN15S or 2711P-RN15SK Communication Module



ATTENTION: Do not connect more than one ControlNet network to the communication module. If you attempt to connect a second network to the module, your communication system will operate erratically.

NAP and Redundant Cables

Refer to the ControlNet Coax Media Planning and Installation Guide, publication CNET-IN002, for descriptions of ControlNet components.

Table 59 - ControlNet NAP and Redundant Cables

Item	Cat. No.
RG-6 quad-shield	1786-RG6
Coax repeater	1786-RPT, 1786-RPTD
Coax taps	1786-TPR, 1786-TPS, 1786-TPYR, 1786-TPYS
Network access cable	1786-CP
Coax tool kit	1786-CTK
Segment terminators	1786-XT
BNC connectors	1786-BNC, 1786-BNCJ, 1786-BNCP, 1786-BNCJ1

IMPORTANT Do not connect to a network using both the redundant cable BNC connector and the Network Access Port (NAP).

Module Connection to ControlNet Network

You can make these connections with the ControlNet communication module:

- Connect directly to a ControlNet network, which requires a tap.
- Connect to a device already connected to the ControlNet network.

WARNING: When used in a Class I, Division 2, hazardous location, this equipment must be mounted in a suitable enclosure with proper wiring that complies with the governing electrical codes.

WARNING: Do not connect or disconnect any communication cable with power applied to this device or any device on the network. An electrical arc could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

Firmware Upgrades

Chapter Objectives

This chapter provides topics on how to upgrade firmware in a terminal.

Topic	Page
Terminal Firmware	133
Download Firmware Files	134
Firmware Upgrade Wizard	134
Upgrading Terminal Firmware from a Storage Device	135
Upgrade Terminal Firmware over the Network	138

Terminal Firmware

Firmware components are packaged as execute-in-place (XIP) regions in a single System Code (SC) .img file. When the SC .img file is copied to the Virtual File System (VFS) on the terminal, the terminal's XIP regions are updated and the terminal restarts automatically. These firmware components are affected during an upgrade:

- FactoryTalk View Machine Edition Station
- Communication protocols and drivers including Kepware drivers
- Windows fonts
- Windows CE Pro components
- FactoryTalk components
- User extensions

A firmware upgrade does not affect these terminal components or settings:

- Windows registry
- File system including the FactoryTalk View Machine Edition application loaded in the terminal
- Network parameters including the network device name, DHCP-enabled and static IP addressing, speed, and duplex setting
- Display settings
- Screen saver configuration
- Touch-screen calibration

Download Firmware Files

Before upgrading your terminal firmware, you need to download the appropriate firmware installation package, for example, PVP700-1500_60000.exe, from the Rockwell Automation customer website. This installation package contains:

- Firmware Upgrade Package (FUP) contains an autorun executable and the new firmware files.
- Firmware Upgrade Wizard (FUW), version 6.0 , is used to upgrade the terminal firmware using the contents of the FUP.

Both the FUP and FUW are copied to a specified location on your computer during the download.

Follow these steps to download firmware installation files to your computer.

1. Go to http://www.rockwellautomation.com/support and select Firmware Updates under Downloads.
2. Select the 'FactoryTalk View ME* (formerly RSView ME)' link.
3. Locate the new FUP.

   TIP The FUP name is ME_PVP6xX_06.00.000.fup, where 06.00.000 refers to the ME version and will change with each release. The 6000 in the installation package name, PVP700-1500_60000.exe, represents the ME version.

4. Download the upgrade file (.exe) to a temporary folder on the same drive as the FactoryTalk View Machine Edition (ME).
5. Run the upgrade file (.exe) installation procedure.
   - The FUW is installed in the FactoryTalk View ME folder.
   - The firmware upgrade package (.fup) file is installed into the folder specified during the installation procedure.

You are now ready to run the FUW to upgrade terminal firmware from a USB flash drive or SD card or by using a network connection.

Firmware Upgrade Wizard

The Firmware Upgrade Wizard (FUW) is used to upgrade the terminal firmware. Two methods are provided for upgrading the firmware:

- Create a firmware upgrade card with the contents of the FUP file that you can then load in the terminal to upgrade the firmware.

  The firmware upgrade card can be a USB flash drive or an SD card, catalog number 1784-SD*x*.
- Upgrade firmware in a terminal connected to a computer over a direct network connection. The network connection requires a computer running RSLinx Enterprise software, version 5.0 or later. In the RSLinx Enterprise software, you select the terminal you want to upgrade.

You can run the FUW from within FactoryTalk View Studio software or from the Programs menu on your computer:

- Choose Tools>Firmware Upgrade Wizard in FactoryTalk View Studio.
- Choose Start>Programs>Rockwell Software>FactoryTalk View>Tools>ME Firmware Upgrade Wizard.

Upgrading Terminal Firmware from a Storage Device

Upgrading firmware from a storage device is a two-step process. First, you create a firmware upgrade card with the required firmware files. Secondly, you load the card in the target terminal to upgrade the firmware.

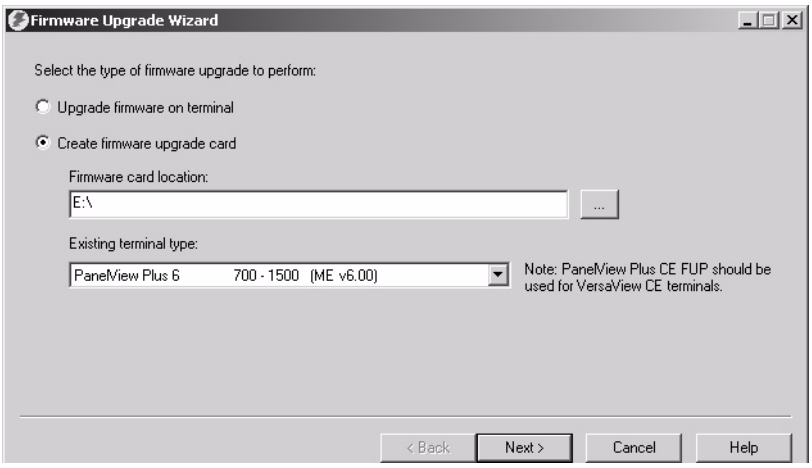
The firmware upgrade card can be a USB flash drive or an SD card.

Create a Firmware Upgrade Card

Follow these steps to copy firmware files to a USB flash drive or SD card.

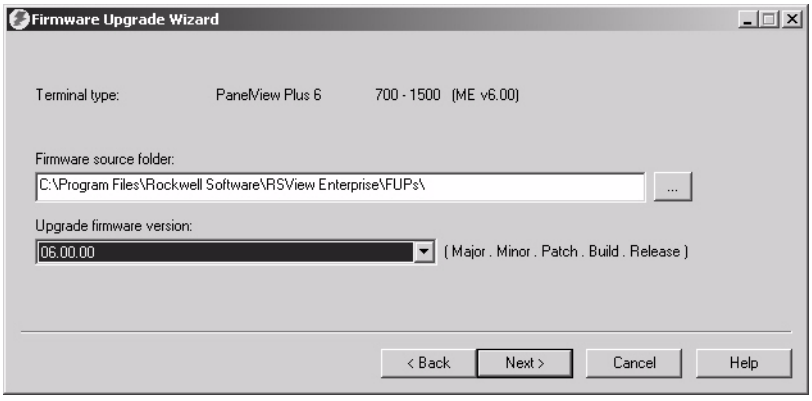
1. Insert either a USB flash drive or an SD card into the appropriate slot on your computer.
2. Run the Firmware Upgrade Wizard.
   - Choose Tools>Firmware Upgrade Wizard in FactoryTalk View Studio.
   - Choose Start>Programs>Rockwell Software>FactoryTalk View>Tools>ME Firmware Upgrade Wizard.
3. Follow these steps from the initial Firmware Upgrade Wizard dialog box.
   a. Select Create firmware upgrade card.
   b. Select the location of the firmware card by browsing to the root directory of the storage card loaded in your computer for example E:\.

      The firmware files will be copied to this location. You can also specify a folder on the hard drive.
   c. From the Existing terminal type pull-down list, choose a version 6.0, PanelView Plus terminal.
   d. Click Next.

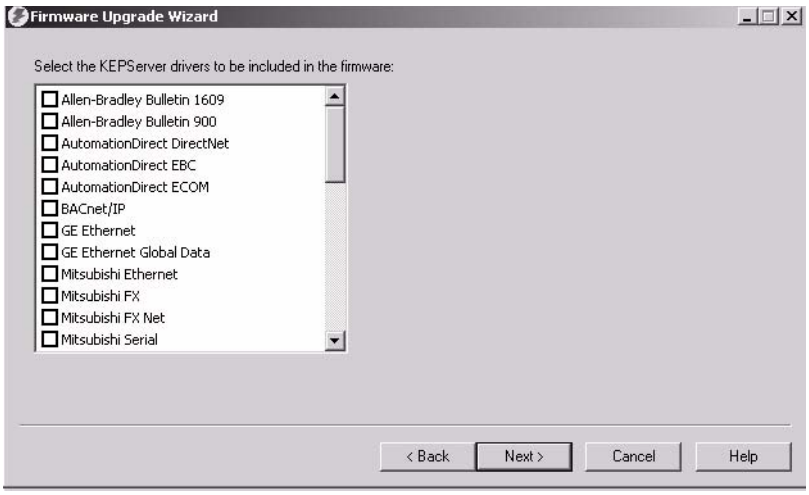


4. Follow these steps from this dialog box.
   a. Browse to the location of the firmware source files on your computer, where the FUP was installed.
   b. Choose the firmware revision for the upgrade.
   c. Click Next.

      It may take several seconds for the next dialog to appear while the FUP is being retrieved.



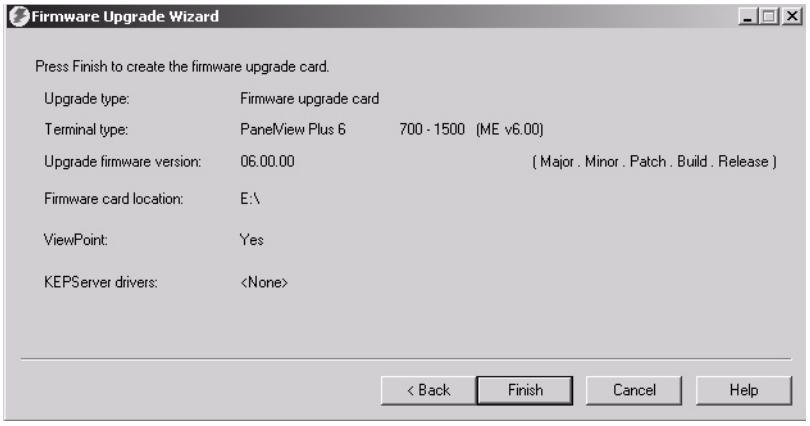
5. From this dialog, optionally select the KEPServer drivers you want installed on your terminal, then click Next.



The final dialog summarizes your choices for creating the firmware upgrade card.

6. Click Finish to copy the firmware files to the firmware upgrade card.

   A progress bar will automatically update as files are copied to the USB flash drive or SD card.



7. Click OK when the firmware upgrade completes successfully.

TIP If the firmware files were copied to a location on the hard drive, copy the files to the root directory of the USB flash drive or SD card.

8. Remove the USB flash drive or SD card from your computer.
9. Proceed to the next section to use this firmware upgrade card to upgrade the terminal firmware.

Upgrade Terminal Firmware Using Firmware Upgrade Card

Follows these steps to transfer firmware files from the USB flash drive or SD card to the terminal. This is the firmware upgrade card you just created.

IMPORTANT
- Do not remove or accidently disconnect the USB flash drive or SD card while a firmware upgrade is in process. This could corrupt the firmware and make the terminal unstable.
- Do not power off the terminal during a firmware upgrade.
- USB hubs can produce unexpected behavior and are not recommended.

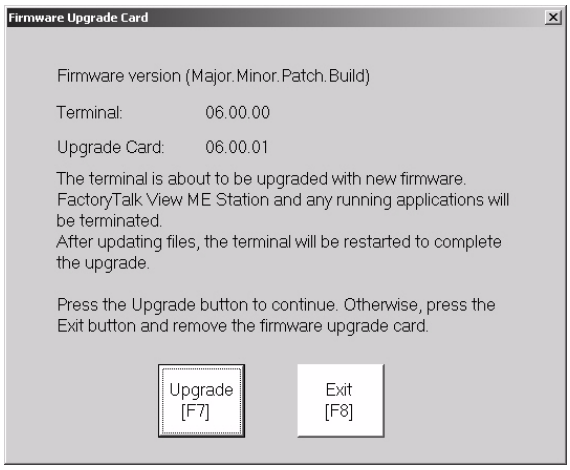
1. Insert the USB flash drive or SD card into the appropriate slot on your terminal.

   The firmware upgrade automatically starts and displays this dialog.

2. Press the Upgrade button or [F7] on the terminal to start the firmware upgrade.

   The terminal restarts and displays a progress bar during the upgrade.

   When the upgrade is complete, the terminal will restart, executing the new firmware.



3. Remove the USB flash drive or SD card from the terminal.

IMPORTANT If the firmware upgrade fails because of a power loss or the firmware upgrade card is inadvertently removed, you can restore the terminal to the factory default firmware. Refer to Access Maintenance Operations on page 151 for details on how to restore the factory default settings.

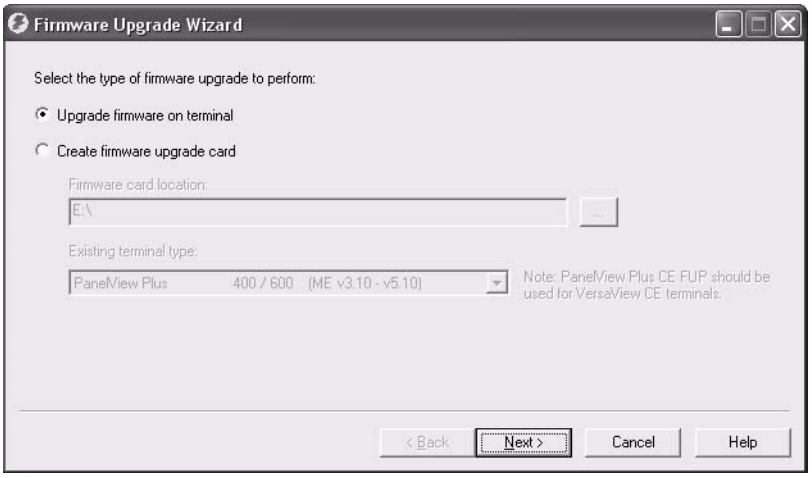
Upgrade Terminal Firmware over the Network

You can upgrade firmware in a terminal connected to a computer over a direct network connection. The network connection requires a computer running the Firmware Upgrade Wizard (FUW) and RSLinx Enterprise software, version 5.0 or later.

RSLinx Enterprise software is required so that you can select the terminal on the network.

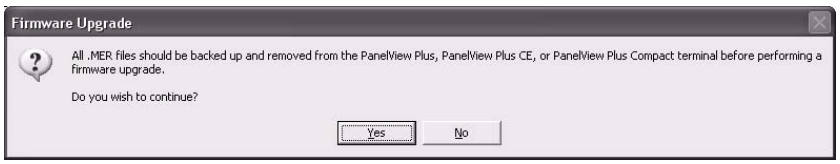
Follow these steps to copy firmware files to the terminal over a network using RSLinx Enterprise software and Ethernet communication.

1. Run the Firmware Upgrade Wizard.
   - Choose Tools>Firmware Upgrade Wizard in FactoryTalk View Studio.
   - Choose Start>Programs>Rockwell Software>FactoryTalk View>Tools>ME Firmware Upgrade Wizard.
2. Select Upgrade firmware on terminal and click Next.



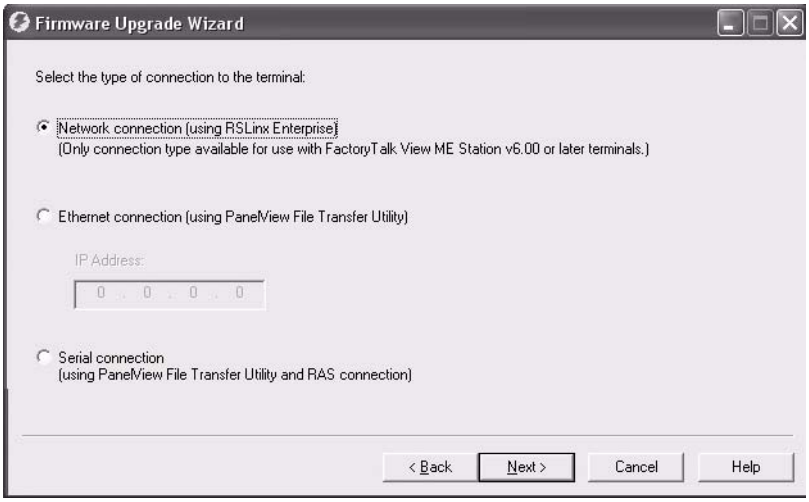
3. Click Yes to continue.

   It is not necessary to back up files on PanelView Plus 6 terminals.

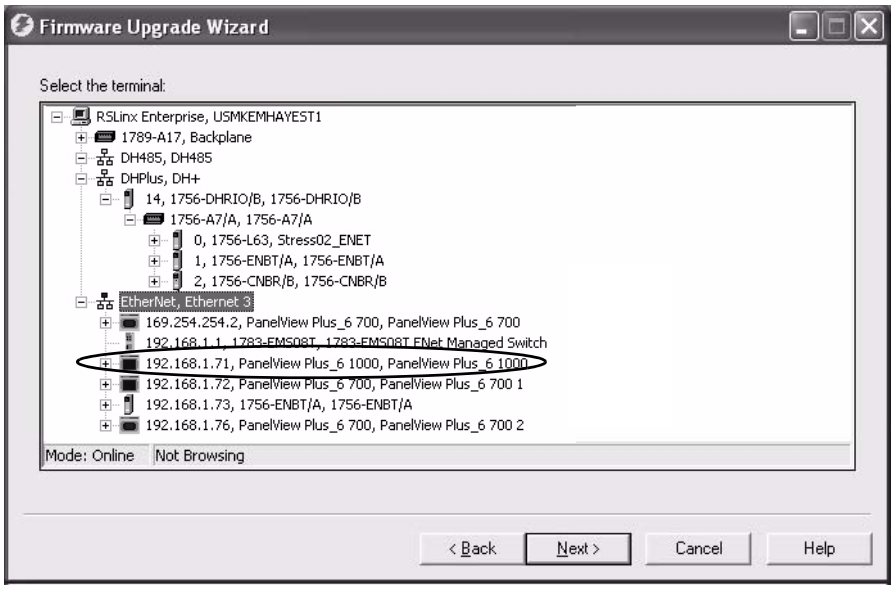


4. Select Network Connection (using RSLinx Enterprise) and click Next.

   This is the only valid selection for PanelView Plus 6 terminals.



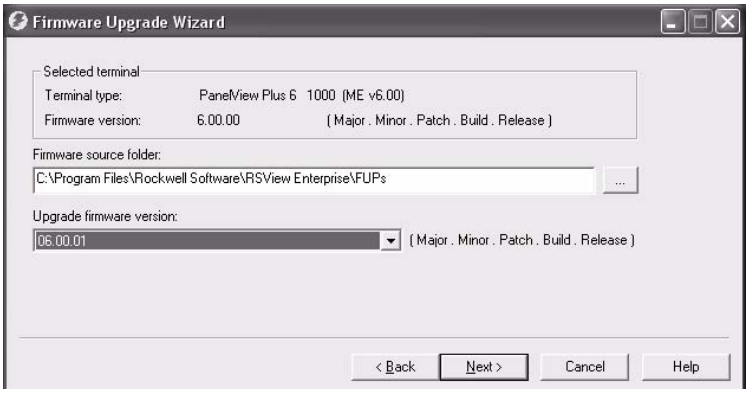
5. Navigate to and select the terminal to receive the firmware update, then click Next.



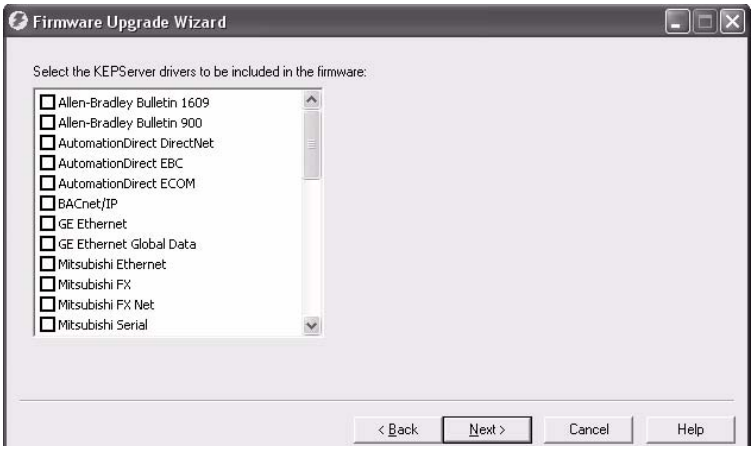
6. Follow these steps from this dialog box.
   a. Browse to the location of the firmware source files on your computer, where the FUP was installed.

      The default location is shown.
   b. Choose the version of the upgrade firmware from the pull-down list.
   c. Click Next.

      It may take several seconds for the next dialog to appear while the FUP is being retrieved.

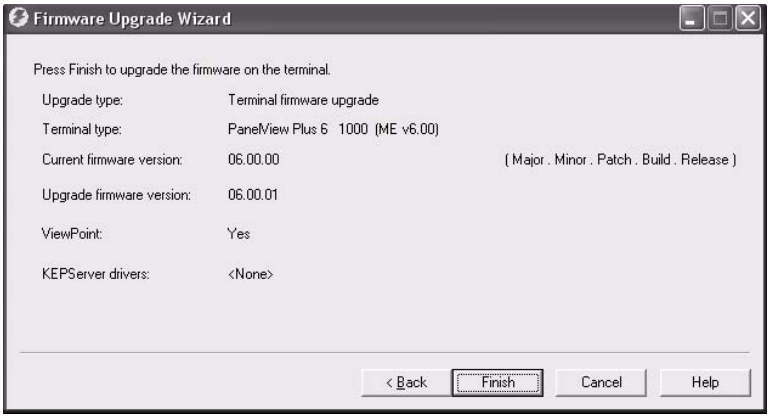


7. From this dialog, optionally select the KEPServer drivers you want installed on your terminal, then click Next.



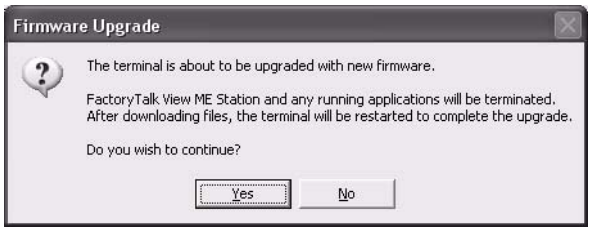
The final dialog summarizes your choices for upgrading the terminal firmware.

8. Click Finish to update the firmware in the terminal.



9. Click Yes to continue with the update.

   A progress bar will automatically update as firmware files are copied to the terminal.



10. Click OK when the firmware upgrade is complete.

    The terminal will restart, executing the new firmware.

IMPORTANT If the firmware upgrade fails because of a power loss or some other reason, you can restore the terminal to the factory default firmware. Refer to Access Maintenance Operations on page 151 for details on how to restore the factory default settings.

Troubleshoot the System

Chapter Objectives

This chapter provides information on how to isolate and correct common operating anomalies.

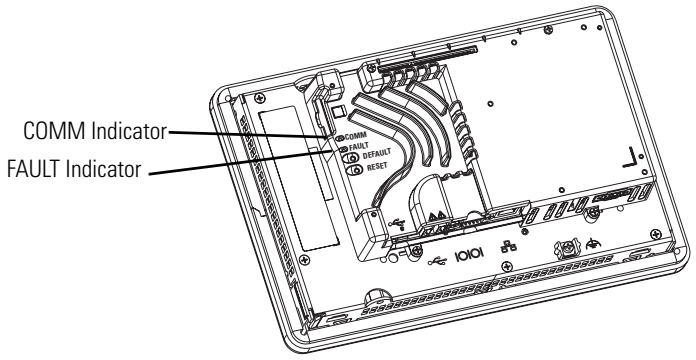
Topic	Page
Status Indicators	141
Isolate the Anomaly	142
Start-up Messages and Codes	144
Check Terminal Components	146
Application Does Not Run	149
Configuration Mode Access	149
File System Errors	149
Advanced Diagnostics	150
Access Maintenance Operations	151

Status Indicators

The terminals have two status indicators to isolate operating anomalies:.

- COMM indicator (green) for communication
- FAULT indicator (red) for hardware and firmware faults

Figure 21 - Status Indicators



Isolate the Anomaly

This section provides general troubleshooting information to assist you when trying to isolate anomalies.

Check for Adequate Power

A terminal that does not receive adequate power could result in unpredictable behavior. Refer to Appendix A, Specifications, for power requirements.

Check Indicators at Startup

When the terminal starts, the fault and comm indicators flash on and off, then the comm indicator flashes to signal progress during startup. When startup is complete, the comm indicator remains on, and is controlled by the communication driver or application. The comm indicator typically flashes when communication is active.

If the indicators remain off, the power supply or logic module has failed. Check the power cable:

- If the power is not within range, replace the power supply.
- If the power is within range, replace the logic module.

The table shows indicator states if the terminal powers on and stops during startup.

Table 60 - Indicator States if Terminal Stops During Startup

Fault (Red) Indicator	Comm (Green) Indicator	Description
Blinking	Off	Recoverable firmware error. Last firmware download failed. Reload the firmware using the Firmware Upgrade Wizard (FUW).
On	Off	Non-recoverable hardware fault with logic module. Replace the logic module.
	Blinking	Non-recoverable hardware fault with display module. Replace the display module.

Check the Start-up Messages and Codes

Refer to Start-up Messages and Codes on page 144 for a list of message states and error codes that may appear on the splash screen during startup.

Check Voltages and Temperatures

Check the battery voltage, processor temperature, and display temperature:

- Battery voltage must be at least 2.75V DC. Replace the battery if the voltage is less than 2.75V DC.
- CPU (processor) temperature should be less than 95 °C (203 °F).
- Display temperatures should be less than 55 °C (131 °F).

From FactoryTalk View ME Station, do the following:

- Check the CPU temperature and battery voltage by selecting Terminal Settings>System Information>Terminal Information.
- Check the display temperature by selecting Terminal Settings>Display> Display Temperature.

From the desktop control panel, do the following:

- Open the Hardware Monitor applet and select the Monitors tab.

  This tab shows the battery voltage, processor temperature, and display temperature.

If the CPU and display temperatures are higher, check for obstructed airflow in the chassis and attempt to moderate the ambient temperatures within the enclosure and surroundings.

Check the System Event Log

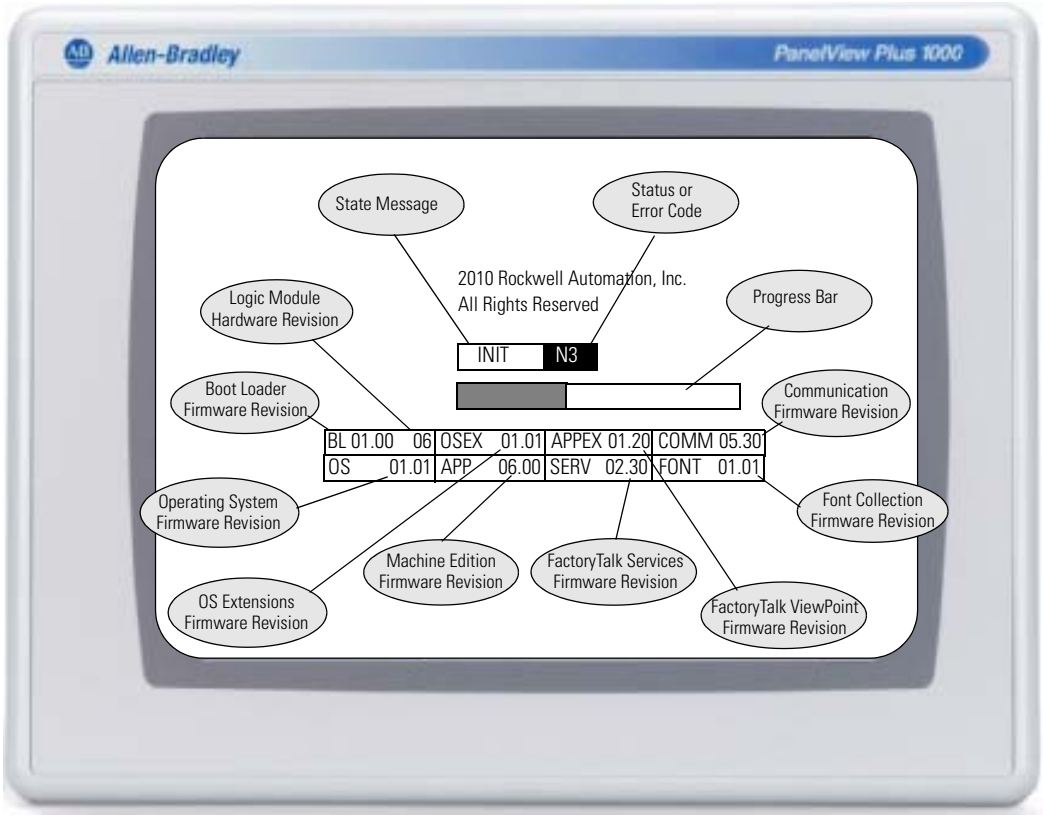
Check the system event log for errors or unexpected behaviors:

- From FactoryTalk View ME Station, select Terminal Settings>System Event Log.
- From the control panel, open the Hardware Monitor applet and select the System Event Log tab.

Start-up Messages and Codes

The splash screen reports actions and status conditions that occur during startup. This includes firmware and hardware revision information.

Figure 22 - Splash Screen



This table lists messages associated with each state and the corresponding status or error codes.

Table 61 - Start-up Messages and Codes

State Message Description	State Message	Code	Recommended Action
Common Start-up Messages			
Boot loader attempting PC connection via USB device	AutoTest	0A	Messages during this phase of startup are for information.
Boot loader loads firmware image into RAM	AutoTest	E6	
Boot loader jumps to operating system	AutoTest	FF	
Operating system starts up	Boot	G0	
Operating system registration and initialization	Init	H1 - JA	
Machine Edition registration and initialization	Init	K1 - MA	
Machine Edition load and execute	Init	ME	

Table 61 - Start-up Messages and Codes

State Message Description	State Message	Code	Recommended Action
Firmware Installation and Loading			
Load firmware image into RAM	Update	1E	Messages during firmware installation and loading are for information.
Write firmware image to storage	Update	A5	
Load factory-default firmware image into RAM	Restore	E6	
Write factory-default firmware image to storage	Restore	A5	
Restore factory-default configuration data	Restore	DC	
Firmware validation (CRC/format) failure	Fatal	1E	A fatal error during firmware installation or loading is usually recoverable by doing one of the following: • Reset terminal from maintence menu • Restore factory defaults from maintenance menu • Re-install firmware Refer to Access Maintenance Operations on page 151 for details on resetting terminal and restoring factory defaults.
Firmware update failure	Fatal	0F	
Firmware write to storage failure	Fatal	A5	
Firmware stored image verification failure	Fatal	D2	
Invalid or missing OS firmware image	Fatal	FF	
Power on Self-test (POST) Failures			
Failed RAM	Fatal	03	A fatal error during POST is usually due to failed hardware: • For failed RAM, replace the logic module. • For stuck key, stuck touch, and failed backlight, replace the display module.
Stuck key	Fatal	31	
Stuck touch	Fatal	3A	
Failed backlight	Fatal	3B	
Watch Dog			
Watch dog reset	Fatal	02	A watch dog reset is usually a momentary loss of control due to a software failure. Monitor this error for recurrence and remedial action.

Check Terminal Components

This section provides tips on how to isolate anomalies with the display, touch screen, keypad, attached keyboard, or mouse. If you are unable to resolve the anomaly, replace the display.

Table 62 - Resolve Anomalies with Display

Symptom	Recommended Action (1)
The display is dim or unreadable.	Check the brightness setting: • In FactoryTalk View ME Station, select Terminal Settings>Display>Display Intensity. • From the desktop control panel, open the Display applet and select the Backlight tab.
The backlight is turning off or dimming the display unexpectedly.	Check the screen saver settings: • In FactoryTalk View ME Station, select Terminal Settings>Display>Screen Saver. • From the desktop control panel, open the Display applet and select the Screen Saver tab.
A startup error appears during startup.	Record the message and check the startup error messages table.

(1) If you are unable to resolve the anomaly, replace the display.

Table 63 - Resolve Anomalies with Touch Screen

Symptom	Recommended Action (1)
The touch screen is not operating correctly.	Calibrate the touch screen: • In FactoryTalk View ME Station, select Terminal Settings>Input Devices>Touch Screen>Calibration. • From the desktop control panel, open the Touch applet and select the Calibration tab. The calibration requires five screen touches. When the touches do not converge to a satisfactory calibration, you are asked repeatedly for additional screen touches. The process continues until a valid calibration is performed. A touch screen that does not calibrate is not present or not functioning properly. Replace the touch-screen display module.
The display may not have a touch screen.	Check the catalog number of the unit. Verify that your display is a touch screen by looking at the label on the terminal.
The screen cursor is not visible.	Verify that the cursor is enabled: • In FactoryTalk View ME Station, select Terminal Settings>Display>Cursor. • From the desktop control panel, open the Display applet and select the Cursor tab.
The touch screen does not accept touch input.	Attach a USB mouse to check whether the anomaly is with the touch screen or the application: • If the mouse works, but the touch screen does not, then the touch driver or touch screen is not functioning properly. • If both the mouse and the touch screen are not working, then it is an application anomaly.
Touch input and dragging is inaccurate. The touch screen is present and working but requires calibration.	Calibrate the touch screen: • In FactoryTalk View ME Station, select Terminal Settings>Input Devices>Touch Screen>Calibration. • From the desktop control panel, open the Touch applet and select the Calibration tab.

(1) If you are unable to resolve the anomaly, replace the display module or bezel.

Table 64 - Resolve Anomalies with Mouse

Symptom	Recommended Action
The mouse is not operating correctly.	Check the USB cable and connection. Detach and then reattach the mouse. Cycle power to the terminal.
The screen cursor may not be visible or the mouse settings may need adjusting.	Check if the screen cursor is disabled: • In FactoryTalk View ME Station, select Terminal Settings>Display>Cursor. • From the desktop control panel, open the Display applet and select the Cursor tab. Check the mouse setting: • In FactoryTalk View ME Station, select Terminal Settings>Input Devices>Mouse. • From the desktop control panel, open the Mouse applet.
The mouse is a keyboard/mouse USB composite device.	Attach a standalone USB mouse.
The USB mouse may not be working or noncompliant.	Replace the USB mouse. Try a different model or manufacturer. If attaching a new mouse resolves the anomaly, then the old mouse was not working or is noncompliant. For a list of compatible USB devices, go to the knowledgebase at the Rockwell Automation technical support site http://www.rockwellautomation.com/support and search for ID 115072.

Table 65 - Resolve Anomalies with Keyboard

Symptom	Recommended Action
The keyboard does not work.	Check the USB cable and connector. Detach and reattach the keyboard. Verify a good connection. Cycle power to the terminal.
The keyboard is not accepting key input.	Check the key input using the keypad: • If the keypad works, but the keyboard does not, then the keyboard driver or keyboard is not working. • If both the keypad and keyboard are not working, then the issue is probably an application failure. Issues with keyboard input may be the fault of the application.the application: • Press a key outside the application such as an edit box in the shell. If the keypad works outside the application, then the application is at fault. • Press Ctrl+Esc simultaneously to open the Start menu, cursor to run, type numbers and viewable characters into the Run dialog.
The keyboard is a keyboard/mouse USB composite device.	Attach a standalone USB keyboard.
The USB keyboard may not be a compliant device.	Replace the USB keyboard. Try a different model or manufacturer. If a new keyboard resolves the issue, then the old keyboard was probably noncompliant. For a list of compatible USB devices, go to the knowledgebase at the Rockwell Automation technical support site http://www.rockwellautomation.com/support and search for ID 115072.

Ethernet Connection

This table provides tips on how to isolate Ethernet anomalies.

Table 66 - Resolve Ethernet Anomalies

Action	Description
Check the status indicators at the Ethernet connection	• Green indicates a communication link and should be on. • Amber indicates data activity and should be flashing. • Verify that there is a connection to the Ethernet hub/switch.
Check cable connections and quality of cable	Check for: • Cable crimping • Ethernet hub/switch connection • Uplink ports
Check the IP Address of the Built-in Ethernet Controller	• From FactoryTalk View ME Station, select Terminal Settings>Networks and Communications>Network Connections>Network Adapters. • From the desktop control panel, open the Network and Dial-up Connections control panel applet. If DHCP is enabled, the device expects a valid IP address to be acquired within a several seconds after startup. The TCP/IP protocol automatically assigns 169.254.nnn.nnn when it fails to acquire an IP address from the server. In general, an IP address that begins with 169 will not support a network connection. A bad Ethernet connection and the absence of a valid IP address are typically reported in a Communication error message box with the Winsock critical error 10065 - No route to host.
Check for conflicting IP addresses	If DHCP is not enabled, make sure the IP address you specify is not in conflict with the address of another device on the network.
Check the device name of the terminal	Do not allow devices on the network with same host name. • In FactoryTalk View ME Station, select Terminal Settings>Communications and Networks>Network Connections>Device Name. • From the desktop control panel, open the System applet and select the Device Name tab.
Contact your Network Administrator to check peer or server settings	The other side of the Ethernet connection may be an issue.
Check the requirements of network applications	Network applications may have specific requirements such as Proxy Settings for Internet Explorer and Ethernet Configuration for ActiveSync.
Check multi-homed devices	Multi-homed devices, more than one Ethernet node, can cause confusion and ambiguity. Keep the network connections as simple as possible.
From the desktop, use the network tools Ping.exe and Ipconfig.exe to diagnose issues with IP addresses and host devices.	These network utilities are diagnostic tools. • Ping is an Internet utility used to determine whether a particular IP address is reachable online by sending out a packet and waiting for a response. Ping is used to test and debug a network as well as see if a user or server is online. • IPconfig is a Windows command line utility that manages the IP address assigned to the machine it is running in. It displays the computer's currently assigned IP, subnet mask and default gateway addresses.

Application Does Not Run

If a terminal application does not run, there may be an issue with the FactoryTalk View Machine Edition (ME) application. Verify that a startup screen was configured and that the runtime file is a compatible version.

If the terminal application does not run at startup, try to run the application manually. If the application runs manually, then the operating system may be starting up with an invalid shortcut path. Check the shortcuts in the Windows startup folder.

\Windows\StartUp

Check the syntax of each shortcut path in the Startup folder and verify that a valid target application exists.

Check that the application is not missing components or required DLLs. Remove and reload the application.

Configuration Mode Access

To access Configuration mode while an application is running, your FactoryTalk View ME application must contain a screen with a Goto Configure Mode button. When the application is running, you can press this button to access Configuration mode.

If a running application does not contain a Goto Configure Mode button, you can access Configuration mode during startup by entering Safe Mode from the general Maintenance screens. Refer to page 151 for details.

TIP If the terminal is configured to enter Configuration mode at startup and does not, then reload the firmware.

File System Errors

File system errors are rare and can usually be corrected. The internal file system is transaction-safe and is significantly more reliable than the FAT file system that supports the external, removable, USB and SD storage devices. Always stop applications before removing power so that data is cleanly flushed out to the file system and the file system is brought to an orderly stop.

Do not remove the external USB or SD storage devices while writing to the device is underway. Although the FactoryTalk View Machine Edition (ME) application runs from RAM, functions such as data logging, event logging, and historical trending, write to flash memory and should be stopped before removing power.

Advanced Diagnostics

Ping and ipconfig are valuable tools for network debugging along with some knowledge of IP and the Winsock error codes:

- Try to ping the destination host.
- Check the destination address.
- Check whether you have a router configured in your network system (your WinSock implementation).
- Use the tracert command at the command prompt on the desktop to try and determine where the failure occurs along the route between your host and the destination host.
- Some utility programs can be developed using the software development kit (SDK).
- Take advantage of alternate connectivity - mouse versus touch screen, keyboard versus keypad, serial communication, and alternate Ethernet connections.
- Examine the folder \Windows\DumpFiles for crash logs when suspecting an application or operating system crash.

  The crash dump file is viewable offline, on a workstation, using common Windows development or debugging tools, for example, Visual Studio or WinDBG. At a minimum, the information in the crash dump file will reveal the date and time of the exception, the exception type, the name of the offending process and the register state, including the program counter.
- Store Autorun.exe utilities on an SD card that can be easily run by inserting the card in the SD card slot of the terminal.
- Know useful keyboard shortcuts so that you can navigate around the system without a mouse or touch screen.
- Check the system event log in the Hardware Monitor control panel application or under Terminal Settings>System Event Log in FactoryTalk View ME Station. Look for error conditions or reasons that might cause unexpected behaviors or restarts.
- Check the configuration settings in the desktop control panel applications or in FactoryTalk View ME Station.

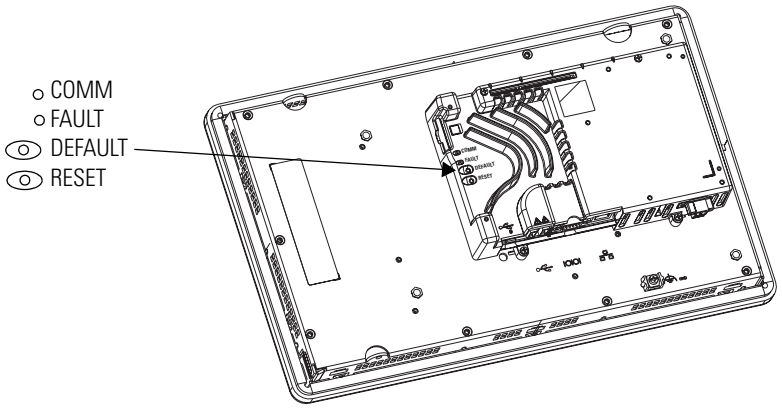
Access Maintenance Operations

The terminal typically launches the Windows desktop or a FactoryTalk View ME application on startup. You can also start the system in Maintenance mode for diagnostic and repair purposes.

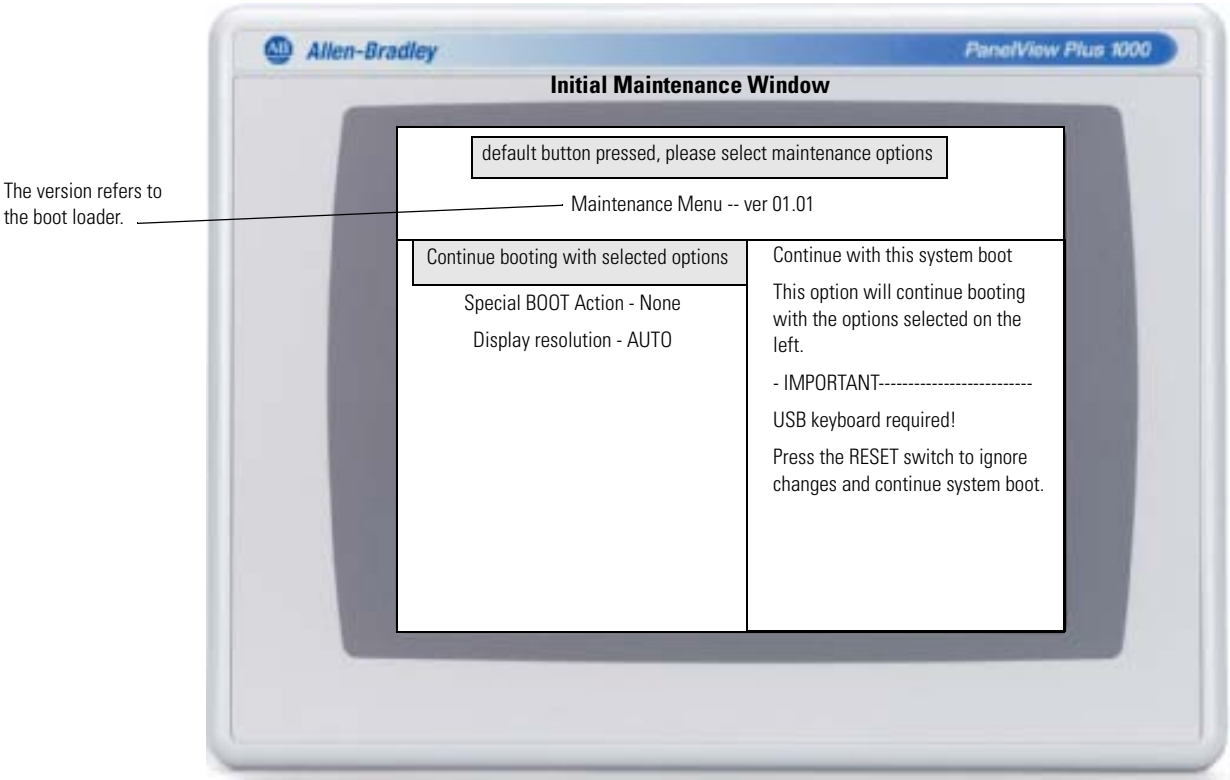
Follow these steps to access Maintenance actions at startup.

TIP All terminals require an attached USB keyboard to navigate in Maintenance mode.

1. Insert a thin, nonconductive probe into the hole marked Default on the back of the logic module and press the switch.



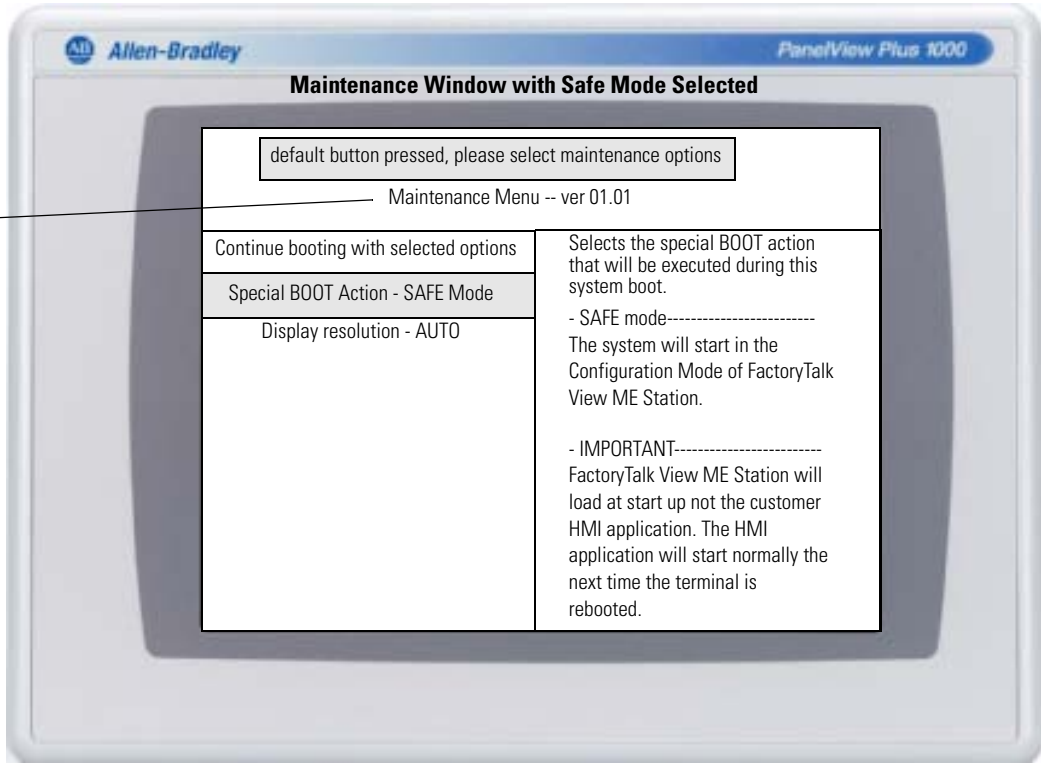
The terminal restarts in Maintenance mode with the display brightness set to 100%. Refer to Table 67 for a description of maintenance operations.



TIP Use the keys at the bottom of window to make selections.

2. Press the up and down arrow keys on the keypad or attached keyboard to move up and down the list or maintenance options:
   - Continue booting with selection option.
   - Special Boot Action
   - Display Resolution
3. With an option selected, press the right or left arrow keys to cycle through the available operations or settings.

   The result of each action is explained on the right.



The version refers to the boot loader.

4. Follow these steps, when done making selections:
   a. Press the up arrow to return to 'Select Continue booting with selected options'.
   b. Press the Enter key to continue booting.

Table 67 - Maintenance Startup Operations

Operation	Description
None	Exits Maintenance mode and continues with a normal restart.
Safe mode	Starts the system in Safe operating mode. This is a diagnostic mode with reduced functionality allowing for recovery from a software anomaly. In Safe mode, you can repair offending applications or changes that caused the anomaly. **Important:** FactoryTalk View ME Station will not run the HMI .mer application on startup if one is loaded, but will instead enter Configuration mode. The HMI application will run the next time the system is reset.
Restore factory defaults	Restores all storage media on the terminal to its initial factory default state, including firmware, registry, file system, and configuration data. Typically, this option is used to recover from a failed firmware upgrade. **Important:** All storage media is returned to its original state when purchased. All user-installed, firmware updates are removed.
Reset terminal	Restores all user-accessible storage and configuration data on the terminal to its default state. The current firmware version is retained. **Important:** All storage media is returned to its original state when purchased except for the firmware. The latest FactoryTalk View ME image is retained. All user data changes or additions are lost.
Display resolution	Sets the startup, display resolution. If the system can't detect the resolution, you can choose the appropriate resolution by terminal model. • Auto - auto detects the display resolution. • VGA - sets the resolution to 640x480x16 for the 700 and 1000 terminals. • SVGA - sets the resolution to 800 x 600 x 16 for the 1250 terminals. • XVGA - sets the resolution to 1024 x 768 x 16 for the 1500 terminal.

Perform the maintenance operations in this order to diagnose and repair operating problems with your terminal.

1. Safe mode - stops an application from starting automatically.
2. Reset terminal - removes user-installed applications, user-configuration changes, and user-accessible data.
3. Restore factory defaults - returns the terminal to its original, out-of-box state.

Notes:

Specifications

Technical Specifications

Table 68 - Technical Specifications - 2711P-K*xxxx*8, 2711P-T*xxxx*8, 2711P-B*xxxx*8, 2711P-K*xxxx*9, 2711P-T*xxxx*9, 2711P-B*xxxx*9

Attribute	2711P-K*xxxx*8, 2711P-T*xxxx*8, 2711P-B*xxxx*8, 2711P-K*xxxx*9, 2711P-T*xxxx*9, 2711P-B*xxxx*9
Operating system	Microsoft Windows CE 6.0 R3
CPU	x86 - 1.0 GHz
Display type	Color active matrix, thin film transistor (TFT), liquid crystal display (LCD)
Display size 700 1000 1250 1500	 6.5 in. 10. 4 in. 12.1 in. 15 in.
Display area (WxH) 700 1000 1250 and 1250 high-bright 1500	 132 x 99 mm (5.2 x 3.9 in.) 211 x 158 mm (8.3 x 6.2 in.) 246 x 184 mm (9.7 x 7.2 in.) 304 x 228 mm (12.0 x 9.0 in.)
Resolution 700 1000 1250 and 1250 high-bright display 1500	 640 x 480, 18-bit color graphics 640 x 480, 18-bit color graphics 800 x 600, 18-bit color graphics 1024 x 768, 18-bit color graphics
Luminance, typical 700 to 1500 1250 high-bright	 300 cd/m^2 Nits 1000 cd/m^2 Nits
Backlight 700 to 1500 1250 high-bright	 CCFL 50,000 hours life, min Backlight not replaceable
Touch screen Actuation rating Operating force	Analog resistive 1 million presses 10…110 g
Keypad function keys (1) Actuation rating Operating force	Function keys, numeric and navigation 1 million presses 340 g
Real-time clock	Battery-backed, +/-2 minutes per month Battery life is 4 years min at 25 °C (77 °F)
Memory	512 MB nonvolatile flash, 512 MB RAM
Secure digital (SD) card	1 GB or 2 GB, cat. no. 1784-SD1 or 1784-SD2
Status indicators	COMM (green), Fault (red)

Table 68 - Technical Specifications - 2711P-K*xxxx*8, 2711P-T*xxxx*8, 2711P-B*xxxx*8, 2711P-K*xxxx*9, 2711P-T*xxxx*9, 2711P-B*xxxx*9

Attribute	2711P-K*xxxx*8, 2711P-T*xxxx*8, 2711P-B*xxxx*8, 2711P-K*xxxx*9, 2711P-T*xxxx*9, 2711P-B*xxxx*9
Electrical	
Input voltage, DC	24V DC nom (18…32V DC)
Power consumption, DC	70 W max (2.9 A at 24V DC) 39 W typical (1.6A @ 24V DC)
Input voltage, AC	85…264V AC
Line frequency	47…63 Hz
Power consumption, AC	160 VA max, 65 VA typical
External power supply, cat. no. 2711P-RSACDIN Input voltage, AC Line frequency Power consumption, AC	 85…264V AC 47…63 Hz 120 VA max
PCI slot, max power	DC supply: 5 W AC supply: 5 W
Weight, approx. for base-configured unit without communication module	
700 keypad or keypad/touch 700 touch	1.8 kg (4.1 lb) 1.7 kg (3.7 lb)
1000 keypad or keypad/touch 1000 touch	2.8 kg (6.2 lb) 2.5 kg (5.6 lb)
1250 keypad or keypad/touch 1250 touch	3.4 kg (7.5 lb) 3.2 kg (7.0 lb)
1500 keypad or keypad/touch 1500 touch	4.5 kg (9.9 lb) 4.2 kg (9.2 lb)
Dimensions, approx., (HxWxD) for base-configured unit without communication module	
700 keypad or keypad/touch 700 touch	193 x 290 x 55 mm (7.58 x 11.40 x 2.18 in.) 179 x 246 x 55 mm (7.04 x 9.68 x 2.18 in.)
1000 keypad or keypad/touch 1000 touch	248 x 399 x 55 mm (9.77 x 15.72 x 2.18 in.) 248 x 329 x 55 mm (9.77 x 12.97 x 2.18 in.)
1250 keypad or keypad/touch 1250 touch 1250 high-bright touch	282 x 416 x 55 mm (11.12 x 16.36 x 2.18 in.) 282 x 363 x 55 mm (11.12 x 14.30 x 2.18 in.) 282 x 363 x 74 mm (11.12 x 14.30 x 2.90 in.)
1500 keypad or keypad/touch 1500 touch	330 x 469 x 65 mm (12.97 x 18.46 x 2.55 in.) 330 x 416 x 65 mm (12.97 x 16.37 x 2.55 in.)

(1) Number of function keys varies by terminal size.

Environmental Specifications

Table 69 - Environmental Specifications - 2711P-K*xxxx*8, 2711P-T*xxxx*8, 2711P-B*xxxx*8, 2711P-K*xxxx*9, 2711P-T*xxxx*9, 2711P-B*xxxx*9

Attribute	2711P-K*xxxx*8, 2711P-T*xxxx*8, 2711P-B*xxxx*8, 2711P-K*xxxx*9, 2711P-T*xxxx*9, 2711P-B*xxxx*9
Temperature, operating	0…55 °C (32…131 °F)
Temperature, nonprotein	-25…70 °C (-13…158 °F)
Heat dissipation	240 BTU/hr.
Relative humidity	5…95% without condensation
Vibration	10…57 Hz, 0.012 PC-PC displacement 57…500 Hz, 2 g PC acceleration
Shock, operating	15 g at 11 ms
Shock, nonprotein	30 g at 11 ms
Enclosure ratings	NEMA Type 12, 13, 4X (Indoor use only), and IEC IP54, IP65
Airborne contaminants	For PVP/POP-CE conformal-coated PCBA level products: ANSI/ISA S71.04 - 1985 Severity Level G3 EN60654-4:1998 Class 3

Certifications

Table 70 - Certifications - 2711P-K*xxxx*8, 2711P-T*xxxx*8, 2711P-B*xxxx*8, 2711P-K*xxxx*9, 2711P-T*xxxx*9, 2711P-B*xxxx*9

Certification(1)	2711P-K*xxxx*8, 2711P-T*xxxx*8, 2711P-B*xxxx*8, 2711P-K*xxxx*9, 2711P-T*xxxx*9, 2711P-B*xxxx*9
c-UL-us	UL Listed Industrial Control Equipment, certified for use in US and Canada. See File E10314. UL Listed Industrial Control Equipment for use in: • Class I, Div 2, Group A, B, C, D • Class I, Zone 2, Group IIC (3) • Class II, Div 2 Groups F, G • Class III Hazardous Locations
CE (EMC)	European Union 2004/108/EC EMC Directive, compliant with: • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions
CE (LVD)	European Union 2006/95/EC Low Voltage Directive, compliant with: • EN 61131-2; Programmable Controllers
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Marine (2)	Products identified with the suffix M in the catalog number are certified to the requirements of one or more marine societies. For additional marine-certified components, refer to the Product Certification link below this table.

(1) When marked. See the Product Certification link on http://www.ab.com for declarations of conformity, certificates, and other certification details.

(2) The 700 and 1000 display modules are marked as marine certified.

(3) Applies only to the 1250 high-bright display module.

Notes:

Fonts Resident on Terminal

True Type Fonts

The table lists true type fonts that are pre-installed on the terminals. The default system font is Tahoma.

TIP The Arial Unicode MS font contains almost 50,000 characters and provides default language support for many non-Latin languages and scripts including Arabic, Hebrew, Vietnamese, Thai, Hindi (Devanagari), and other Indic languages. The font also includes Chinese, Japanese, and Korean (CJK) support.

You can load additional fonts on the system by copying the font files to the \Windows\Fonts folder on the terminal. To access this folder, select the My Device icon on the desktop or choose Start>Programs>Windows Explorer.

Table 71 - True Type Fonts

True Type Fonts	File Name
Arial Unicode MS version 1.01	**arialuni.ttf**
Latin Fonts	
Arial	
Arial (Subset 1_30)	arial_1_30.ttf
Arial Black	arialk.ttf
Arial Bold	arialbd.ttf
Arial Bold Italic	arialbi.ttf
Arial Italic	ariali.ttf
Comic Sans MS	
Comic Sans MS	comic.ttf
Comic Sans MS Bold	comicbd.ttf
Courier New	
Courier New (Subset 1_30)	cour_1_30.ttf
Courier New Bold	courbd.ttf
Courier New Bold Italic	courbi.ttf
Courier New Italic	couri.ttf
Georgia	
Georgia	georgia.ttf
Georgia Bold	georgiab.ttf
Georgia Bold Italic	georgiaz.ttf
Georgia Italic	georgiai.ttf
Impact	impact.ttf
Kino	kino.ttf
Microsoft Logo	mslogo.ttf

Table 71 - True Type Fonts

True Type Fonts	File Name
Symbol	symbol.ttf
Tahoma	
Tahoma (Subset 1_07)	tahoma_1_07.ttf
Tahoma Bold	tahomabd.ttf
Times New Roman	
Times New Roman (Subset 1_30)	times_1_30.ttf
Times New Roman Bold	timesbd.ttf
Times New Roman Bold Italic	timesbi.ttf
Times New Roman Italic	timesi.ttf
Trebuchet MS	
Trebuchet MS	trebuc.ttf
Trebuchet MS Bold	trebucbd.ttf
Trebuchet MS Bold Italic	trebucbi.ttf
Trebuchet MS Italic	trebucit.ttf
Verdana	
Verdana	verdana.ttf
Verdana Bold	verdanab.ttf
Verdana Bold Italic	verdanaz.ttf
Verdana Italic	verdanai.ttf
Webdings	webdings.ttf
Wingding	wingding.ttf
PanelView Fonts	
PV 12 x 24, PV 12 x 8	PV12x24.tff, PV12x8.ttf
PV 16 x 24	
PV 18 x 16, PV 18 x 8	
PV 24 x 32	
PV 32 x 40, PV 32 x 64	
PV 4 x 6	
PV 6 x 16, PV 6 x 24, PV 6 x 8, PV 6 x 9	
PV 8 x 16, PV 8 x 20, PV 8 x 24	
PV Double High	PVdouble_high.ttf
PV Double Wide	PVdouble_wide.ttf
PV Extra Large	PVextra_large.ttf
PV Large	PVlarge.ttf
PV Small	PVsmall.ttf
PV Tiny	PVtiny.ttf
PV Very Tiny	PVvery_tiny.ttf
East Asian Fonts	
Gulim version 2.21 - Korean	gulim.ttc
MS Gothic version 2.30 - Japanese	gulim.ttc

Virtual Key Codes

Key Definitions

The tables in this appendix show the Windows virtual key codes for the function keys and the keypad keys on the terminals.

Table 72 - Function Key Virtual Key Codes

Win CE Standard (Winuser.h)			OEM Specific (SDKuser.h)		
Function Key	**Virtual Key Code**	**Hex**	**Function Key**	**Virtual Key Code**	**Hex**
F1	VK_F1	0x70	K1	PVP_VK_K1	0xC1
F2	VK_F2	0x71	K2	PVP_VK_K2	0xC2
F3	VK_F3	0x72	K3	PVP_VK_K3	0xC3
F4	VK_F4	0x73	K4	PVP_VK_K4	0xC4
F5	VK_F5	0x74	K5	PVP_VK_K5	0xC5
F6	VK_F6	0x75	K6	PVP_VK_K6	0xC6
F7	VK_F7	0x76	K7	PVP_VK_K7	0xC7
F8	VK_F8	0x77	K8	PVP_VK_K8	0xC8
F9	VK_F9	0x78	K9	PVP_VK_K9	0xC9
F10	VK_F10	0x79	K10	PVP_VK_K10	0xCA
F11	VK_F11	0x7A	K11	PVP_VK_K11	0xCB
F12	VK_F12	0x7B	K12	PVP_VK_K12	0xCC
F13	VK_F13	0x7C	K13	PVP_VK_K13	0xCD
F14	VK_F14	0x7D	K14	PVP_VK_K14	0xCE
F15	VK_F15	0x7E	K15	PVP_VK_K15	0xCF
F16	VK_F16	0x7F	K16	PVP_VK_K16	0xD0
F17	VK_F17	0x80	K17	PVP_VK_K17	0xD1
F18	VK_F18	0x81	K18	PVP_VK_K18	0xD2
F19	VK_F19	0x82	K19	PVP_VK_K19	0xD3
F20	VK_F20	0x83	K20	PVP_VK_K20	0xD4

Table 73 - Keypad Virtual Key Codes

Win CE Standard (Winuser.h)		
Function Key	**Virtual Key Code**	**Hex**
Numbers 0…9	VK_0…VK_9	0x30…0x39
Minus sign (-)	VK_Hyphen	0xBD
Decimal point (.)	VK_Period	0xBE
Backspace	VK_Back	0x08
Enter	VK_Return	0x0D
Previous	Terminal specific	0xD5
Next	VK_Tab	0x09
Shift	VK_Shift	0x10
Esc	VK_Escape	0x1B
Ctrl	VK_Control	0x11
Alt	VK_Menu	0x12
Left Arrow	VK_Left	0x25
Up Arrow	VK_Up	0x26
Right Arrow	VK_Right	0x27
Down Arrow	VK_Down	0x28

A

AC power
connection 38
functional earth ground 37
protective earth 37
accessories
adapter plates 22
antiglare overlays 21
backlights 21
bezel replacements 22
communication modules 20
display modules 19
function key legend inserts 20
logic modules 20
mounting hardware 21
power supply and terminal blocks 21
SD cards 20
solar visor 21
adapter plates 22
alarm display, enable or disable 75
antiglare overlays 21, 27
application
checking integrity 70
loading .MER 46
running 46
troubleshooting 149

B

backlight 21
brightness 63, 90
battery
replacement 109
warning on startup 93
battery voltage 73
control panel 88
FactoryTalk View ME 73
bezel replacement 22, 106

C

cables 118
catalog numbers
accessories 20
communication modules 20
configured terminals 17
display modules 19
logic modules 20
CCFL backlight control 63
clearances 28
closed system 12, 94
communication
controller address 56
ControlNet 129
DH+/DH485 module 126
DH485 127
DHPlus 128
Ethernet 124
KEPServer 54
RSLinx Enterprise 54
serial 121
communication module 14, 20
installation 102
replacement 103
configuration mode
accessing 41
loading application 46
running application 46
terminal settings 44
configured terminals 15
catalog numbers 17
PanelView Plus 6 17
PanelView Plus 6 with extended features 17
control panel 86
battery voltage 88
battery warning 93
cursor 91
desktop access 94
desktop background 90
display brightness 90
display temperature 88
keyboard and keypad settings 89
network servers 92
open versus closed system 94
print set up 95
processor temperature 88
running processes 87
screen saver 91
startup options 93
system event log 87
touch screen calibration 89
ControlNet
cables 131
compatible controllers 129
ControlNet protocol 129
overview 129
Software Requirments 130
copying files
applications 62
font files 62
cursor
control panel 91
FactoryTalk View ME 64

D

date and time 76
DC power
connection 36
earth ground 35
external power supply 35
default switch 151
deleting files
applications 60
font files 60
log files 60
desktop access
control panel 94
disable 51
enable 50
factory default state 13
open versus closed 12

reset password 52
set password 52
device name 59
DH485
network connections 126
port connectors 126
status indicators 126
DHPlus
network connections 128
port connectors 126
status indicators 126
diagnostics
in FactoryTalk View ME 71
dimensions
panel cutout 28
product 29
display brightness
control panel 90
FactoryTalk View ME 63
display module 14, 16, 19
cleaning 115
display settings
configuration mode 63
control panel 90
FactoryTalk View ME 63
resolution 151
display temperature
control panel 88
FactoryTalk View ME 63

E

earth ground
DC power 35
enable desktop acess 50
environment and enclosure information 23
error messages 144
Ethernet
connector pinout 124
DHCP 57
IP address 56
link speed 58
name server addresses 58
port 15
status indicators 124
troubleshooting 148
extended features 12, 85
external power supply 35

F

factory defaults 151
FactoryTalk View Machine Edition Station 13
FactoryTalk View ME 54, 73, 75
alarm display enable or disable 75
battery voltage 73
check file integrity 70
configuration mode 41
cursor 64
diagnostics 70
display settings 63
display temperature 63
Ethernet settings 56
font linking 82
input devices 65
input panel 43
IP address 56
keyboard or keypad settings 65
loading application 46
print options 68
processor temperature 73
regional settings 78-81
running application 46
screen saver 64
startup options 47
string entry 65
system event log 72
system information 75
terminal device name 59
terminal settings 44
time and date operations 75
touch screen calibration 66
transferring files 60
FactoryTalk View Studio for ME 13
FactoryTalk ViewPoint 13
file server 85
file viewers 13, 85
firmware revisions 75
control panel 92
FactoryTalk View ME 75
firmware upgrades
firmware upgrade wizard 134
over network 138
using storage device 135
firmware versions 75
fonts 159
linking 82
ftp servers 85
function keys
function key legend inserts 20
virtual key code mapping 161

H

hazardous location 24
high-bright displays
antiglare overlay 27
installation 26
solar visor 27

I

IGMP Protocol 125
input devices
control panel 89
FactoryTalk View ME 65
mouse 65, 67
input panel 43

installation
backlight 111
battery 109
bezel 106
clearances 28
environment and enclosure 23
hazardous location 24
high-bright displays 26
keypad legend inserts 114
mounting 30
panel cutouts 28
product dimensions 29
product label 114
SD card 115
Internet Group Management Protocol (IGMP) 125

K

KEPServer 54
keyboard
troubleshooting 147
keyboard and keypad settings
control panel 89
FactoryTalk View ME 65
keypad input 16

L

languages 78
loading application 46
logic module 14, 15, 20
replacement 102
logs
application files 70
runtime files 70
system event log 72, 87, 143

M

maintenance operations
default switch 151
factory defaults 151
resolution 151
safe mode 151
marine-certified components 16, 19, 20
memory usage 73
control panel 88
FactoryTalk View ME 73
modular components 14
communication module 14
display module 14
logic module 14
mounting 30
hardware 21
mouse 65, 67
troubleshooting 147

N

NAP 131
network servers 85, 92

O

open system 12, 94
open versus closed system 12, 94
operating system 83
extended features 12
without extended features 12

P

panel cutout dimensions 28
password
destkop access 52
reset password 52
set password 52
PDF reader 98
pdf reader 13, 85
power connections
AC power 37
DC power 35
reset 40
terminal block 34
wiring guidelines 33
power supply and terminal blocks 21, 34
print setup
control panel 95
for alarms 68
for diagnostic messages 68
for displays 68
processor temperature 73
control panel 88
FactoryTalk View ME 73
product dimensions 29
protective earth
AC power 37

R

regional settings
FactoryTalk View ME 78-81
reset switch 15
reset terminal from maintenance window 153
restore factory defaults 151
RSLinx communication settings 54
run loaded application 46
runtime cables 118

S

screen saver
control panel 91
FactoryTalk View ME 64

SD card
installation 115
serial communication
connections 121
DF1 121
DH485 121
null modem cable 122
ports 121, 124
printing 121
transferring applications 121
using a modem 122
servers
file server 85
ftp server 85
UPnP server 85
ViewPoint 85
VNC server 85
web server 85
Simple Network Management Protocol (SNMP) 125
SNMP Protocol 125
software support
FactoryTalk View ME Station 13
FactoryTalk View Studio for ME software 13
FactoryTalk ViewPoint software 13
Windows CE operating system 13
solar visor 21
specifications 155
certifications 157
environmental 157
technical 155
startup
anomalies 149
error messages 144
startup options 13, 40
control panel 93
disable configuration mode 47
disable FactoryTalk View ME Station 47
FactoryTalk View ME 47
run configuration mode 47, 48
run loaded application 49
status indicators 15, 124, 141
storage media 115, 120
string entry 65
system event log 143
control panel 87
FactoryTalk View ME 72
system information
control panel 92
FactoryTalk View ME 75

T

task bar 97
temperature
display 88
logic module 88
processor 73
terminal settings 44
date 76
diagnostics 71
long date format 81
short date format 80
system event log 72
time 76
time format 79
time zone 77
time and date operations
FactoryTalk View ME 75
touch screen 16
touch screen calibration
control panel 89
FactoryTalk View ME 66
transferring files 62
troubleshooting 141
accessing configuration mode 149
advanced 150
change display resolution 151
Ethernet connection 148
general 142
keyboard 147
maintenance operations 151
mouse 147
power check 142
restore factory defaults 151
start in safe mode 151
start-up error messages 144
status indicators 141

U

UPnP server 85
USB
device port 14, 120
device ports 15
host ports 14, 15, 25, 120
USB ports 120
connector pinouts 120
device 15
host 15
insallation 25
load USB flash drive 115

V

VNC server 84, 85
voltage
battery 73, 88

W

watchdog errors on startup 94
web server 85
Windows CE operating system 13, 83
with extended features 12
without extended features 12
Windows Explorer 97
wiring and safety guidelines 33, 117

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products.
At http://www.rockwellautomation.com/support/, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration, and troubleshooting, we offer TechConnect support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit http://www.rockwellautomation.com/support/.

Installation Assistance

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

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

New Product Satisfaction Return

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

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

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete this form, publication RA-DU002, available at http://www.rockwellautomation.com/literature/.

Rockwell Otomasyon Ticaret A.Ş., Kar Plaza İş Merkezi E Blok Kat:6 34752 İçerenköy, İstanbul, Tel: +90 (216) 5698400

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204 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

Publication 2711P-UM006A-EN-P - November 2010
Copyright © 2010 Rockwell Automation, Inc. All rights reserved. Printed in the U.S.A.