Allen-Bradley

PanelView Plus Terminals

400, 600, 700, 1000, 1250 1500

User Manual

Rockwell Automation

Important User Information

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

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.

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

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

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

Revision bars, as shown in the margin identify updated information. Changes for this version of the document include:

For	See Page
New conformally-coated display modules for the 700 and 1250 touch screen displays	22
New logic modules with ac power input	25
Updated bezel replacement catalog numbers	26
New 2-position and 3-position input power terminal blocks for logic modules supporting ac and dc power	28, 49
Updated wire type information for input power terminal blocks	50, 51, 53, 54
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Updated compatibility information for terminal components	104
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Chapter 7

Transfer Files

Chapter 8

Troubleshoot the System

Appendix A - Specifications

Appendix B - Compatible USB Devices

Appendix C - Available Fonts for Terminal Applications

Index

Objectives

This preface provides information on these topics.

- Intended audience
- Parts List
- Additional resources
- Software and firmware upgrades
- European Communities (EC) Directive Compliance

Parts List

The PanelView Plus terminals ship with these items.

- Power terminal block
- RSView Machine Edition runtime software (preloaded)
- Mounting levers for 400 and 600 terminals (quantity eight)
- Mounting clips for 700 to 1500 terminals (quantity four to eight)
- Installation instructions
- Panel cutout template

Intended Audience

Use this manual if you are responsible for installing, operating, or troubleshooting the PanelView Plus terminals.

No special knowledge is required to understand this manual or operate the terminal. However, you must understand the functions and operations of RSView Machine Edition applications that will run on the terminal. Consult the application designer for this information.

Equipment installers must be familiar with standard panel installation techniques.

Additional Resources

For additional information, refer to these publications, that you can download from:

http://literature.rockwellautomation.com

Related Publications

Publication	Pub. No.
ControlNet Communications for PanelView Plus and VersaView CE Terminals	2711P-UM003
Creating Modbus Applications for PanelView Plus and VersaView CE Terminals	2711P-UM002
Wiring and Grounding Applications for PanelView Plus and VersaView CE terminals	2711P-TD001

You may also want to refer to:

- online help for RSView Studio or RSLinx software.
- documentation for your logic controller or processor.

Software and Firmware Upgrades

To receive software updates (software serial number required) and firmware upgrades for your terminal:

- call your local Rockwell Automation sales office or distributor.
- call Rockwell Software at 1-440-646-7800 or fax 1-440-646-7801.
- access www.software.rockwell.com.

European Communities (EC) Directive Compliance

If this product has the CE mark, it is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

EMC Directive

This product is tested to meet the Council Directive 89/336/EC Electromagnetic Compatibility (EMC) by applying the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2 EMC - Generic Emission Standard, Part 2 - Industrial Environment
- EN 61000-6-2 EMC - Generic Immunity Standard, Part 2 - Industrial Environment

This product is intended for use in an industrial environment.

Low Voltage Directive

This product is tested to meet Council Directive 73/23/EEC Low Voltage, by applying the safety requirements of EN 61131-2 Programmable Controllers, Part 2 - Equipment Requirements and Tests. For specific information required by EN 61131-2, see the appropriate sections in this publication, as well as Industrial Automation Wiring and Grounding Guidelines For Noise Immunity, Allen-Bradley publication 1770-4.1.

Open-style devices must be provided with environmental and safety protection by proper mounting in enclosures designed for specific application conditions. See NEMA Standards publication 250 and IEC publication 529, as applicable, for explanations of the degrees of protection provided by different types of enclosure.

Overview

Chapter Objectives

This chapter gives an overview of the PanelView Plus terminals.

- Software support
- PanelView Plus 400 and 600 features
- PanelView Plus 700 to 1500 features
- Catalog number configuration
- Product components

Software Support

RSView Machine Edition runtime software is included with all PanelView Plus terminals. RSView Machine Edition software provides runtime and terminal configuration software for the PanelView Plus terminals and does not require activation.

RSView Studio software is used on a personal computer to create applications that run in the PanelView Plus terminals. This software is purchased separately.

PanelView Plus 400 and 600 Features

This section gives an overview of the PanelView Plus 400 and 600 terminals.

- Hardware features
- Base-configured units
- Communication modules
- Power supply, ac or dc
- Displays

Hardware Features

PanelView Plus Terminals

The PanelView Plus 400 and 600 terminals are operator interface devices with these features.

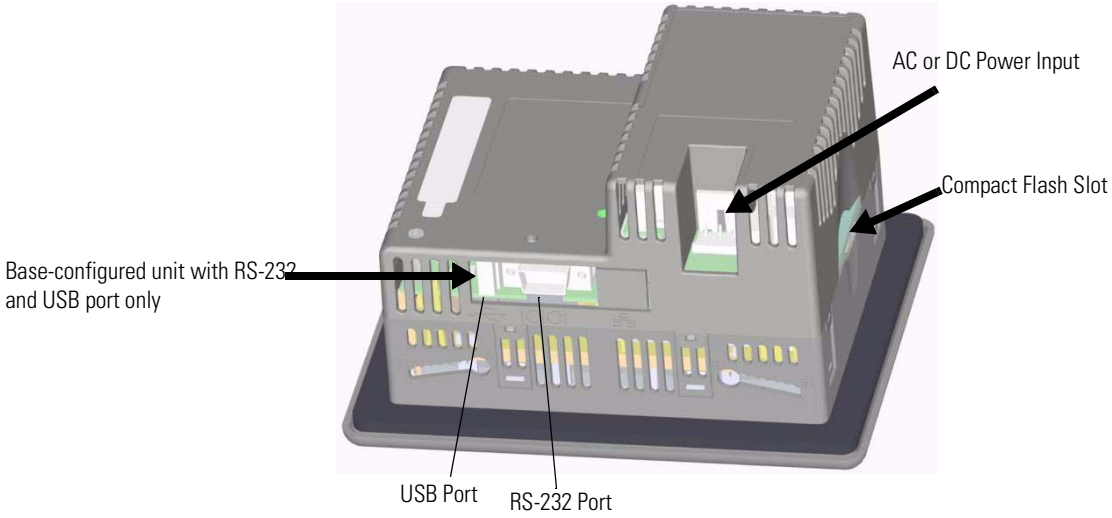
- PanelView Plus 400 terminals with:
  - grayscale graphic displays
  - keypad input support
- PanelView Plus 600 terminals with:
  - color or grayscale graphic displays
  - keypad, touch screen, or keypad and touch screen input
- Base-configured unit with:
  - RS-232 only **or**
  - RS-232, Ethernet and modular communications interface
- Communication modules provide add-on capability to base-configured units with modular communications interface
- Ac (85 through 264V ac) or dc (18 through 30V dc) power input
- Compact flash card slot supports Type I compact flash cards
- USB port for attaching mouse, keyboard, printer, bar code scanner, and other devices
- Same panel cutouts as the PanelView Standard 550 terminals

Base-configured Units

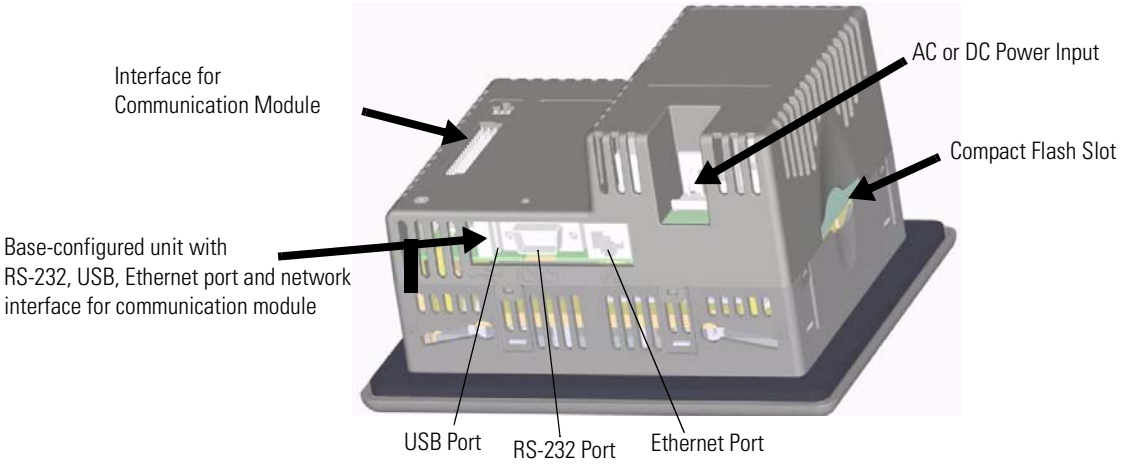
The base-configured unit of the 400 and 600 terminals is available in two versions.

- Base unit with RS-232 only and one USB port
- Base unit with RS-232, 10/100BaseT Ethernet with one USB port and a network interface for a communication module

Base Unit with RS-232 Only



Base Unit with RS-232, Ethernet, and Modular Communications Interface



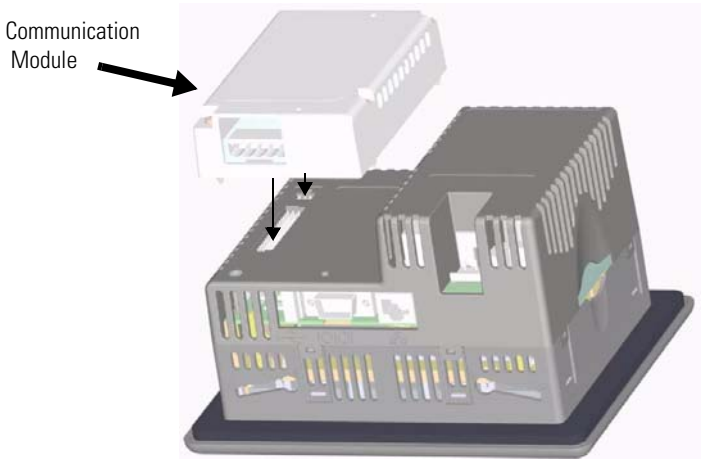
Communication Modules

You can attach a communication module with a network interface to the base-configured unit of the PanelView Plus terminal to increase your communication capability with these networks.

- DH-485
- DH+
- Remote I/O (single rack)
- Isolated RS-232
- DeviceNet
- ControlNet

The communication module installs easily on the back of the unit.

Communication Module



Power Options

The base-configured unit of the PanelView Plus 400 and 600 terminals is available with either ac (85 through 264V ac) or dc (18 through 30V dc) power input providing application flexibility.

Displays and Input Options

PanelView Plus 400 and 600 terminals are available with these display and operator input options.

- 400 terminals: 3.8 in. grayscale (320 x 240) graphics display with keypad
- 600 terminals: 5.5 in. color or grayscale (320 x 240) graphics display with keypad, touch screen, or keypad & touch support

Touch Screen

The PanelView Plus 600 terminals offer an analog resistive touch screen allowing for flexible touch area configuration.

600 Color or Grayscale Terminals with Touch Screen

IMPORTANT Use a plastic stylus device with a minimum tip radius of 1 mm (0.040 in.) to prevent damage to the touch screen.

Keypad or Keypad and Touch

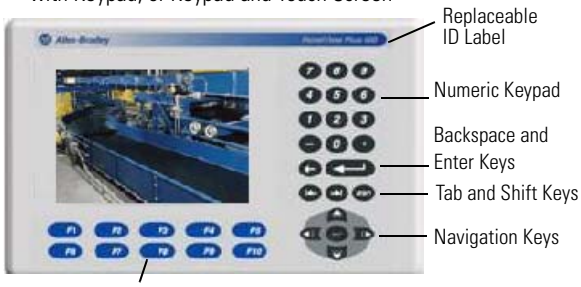
The keypad versions of the PanelView Plus 400 and 600 terminals are available with these options.

- 400 terminals: grayscale display with keypad input only
- 600 terminals: color or grayscale displays with either keypad, or keypad and touch input

Keypad or Keypad and Touch Display

400 Grayscale Terminal
with Keypad

600 Grayscale or Color Terminal
with Keypad, or Keypad and Touch Screen



Keys	Description
400 F1…F8 600 F1…F10	Programmable keys that initiate functions on terminal display. Replaceable legends are available for the 600 terminals allowing for custom function key labels.
ID Label	Allen-Bradley ID label. The ID label is replaceable allowing for custom product identification.
Numeric Keypad	0…9, ., -, Backspace, Enter, Left and Right Tab keys, Shift keys
Navigation Keys	Use the arrow keys for navigation. Use the Alt+arrow keys to activate home, end, page up, and page down functions.

PanelView Plus 700 to 1500 Features

This section gives an overview of the PanelView Plus 700, 1000, 1250, 1500 terminals.

- Hardware features
- Modular components
- Base-configured unit
- Communication modules
- Power supply, ac or dc
- Display modules

Hardware Features

PanelView Plus Terminals

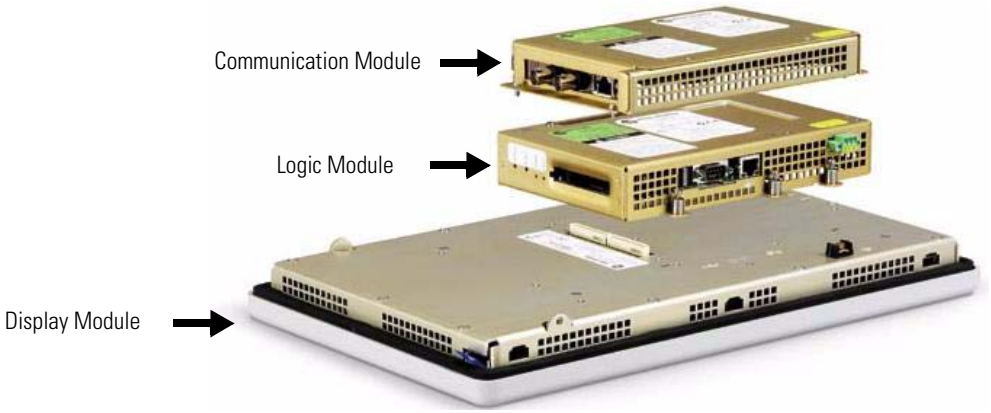
The PanelView Plus 700 to 1500 terminals are operator interface devices with these features.

- Graphic color display modules with keypad, touch screen, or keypad & touch screen support
- Analog resistive touch screen
- Field replaceable bezels
- Modular communications for easy add-on capability
- Memory expansion modules for field upgrades to 256 MB RAM and 512 MB Compact Flash
- Compact flash card slot supports Type I compact flash cards
- USB ports provide connections for keyboard/mouse/printer
- Ethernet and serial communications
- Same panel cutouts as the PanelView Standard and PanelView Enhanced terminals
- 24V dc (18 through 32V dc) or ac (85 through 264V ac) power input

Modular Components

The terminals use modular components allowing for flexible configuration, installation, and upgrades. You can order items as separate components or factory assembled per your configuration.

Modular Components



Base-configured Unit

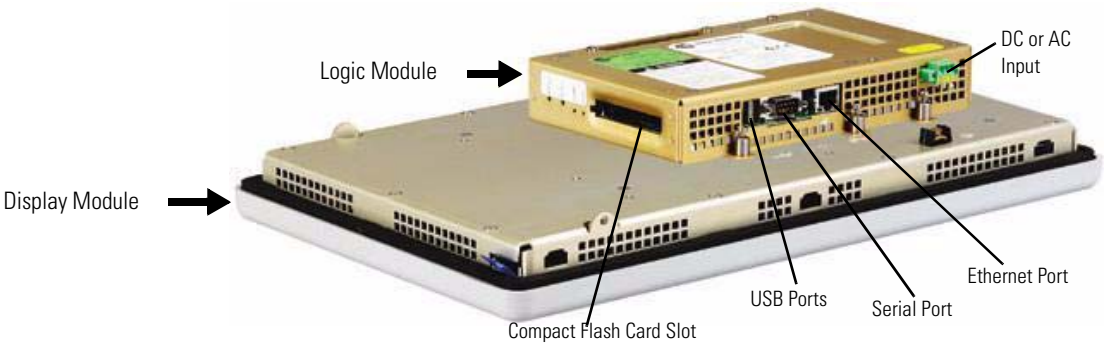
The base-configured unit of the terminal consists of:

- Display module (700, 1000, 1250, 1500) with keypad, touch, or keypad and touch input
- Logic module

The logic module contains:

- 24V dc input (18 through 32V dc) or ac input (85 through 264V ac)
- SDRAM and flash memory (various sizes)
- 10/100 BaseT Ethernet port
- Serial RS-232 port for file transfers, printing, and logic controller communications
- Two USB ports for attaching mouse, keyboard, or printer
- Compact flash card slot for Type I compact flash cards
- Battery-backed real-time clock

Base-configured Unit



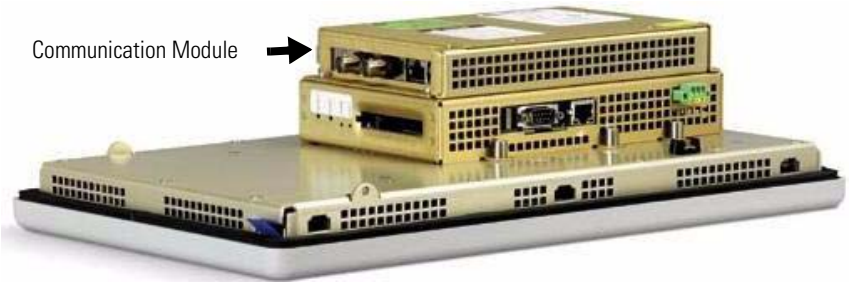
Communication Modules

You can attach a communication module with a network interface to the base-configured unit of the terminal to increase your communication capability with these networks.

- DH+/DH-485/Remote I/O
- DeviceNet
- ControlNet

The communication module installs easily on top of the logic module on the back of the unit.

Communication Module



Power Options

The base-configured units of the PanelView Plus terminals are available with either ac (85 through 264V ac) or dc (18 through 32V dc) power input providing applications flexibility.

Remote AC Power Supply

For dc applications using ac power, a remote ac-to-dc power supply, cat. no. 2711P-RSACDIN, is available for DIN-rail mounting.

Display Modules

The terminals offer a range of TFT color graphic displays with either keypad, touch screen, or keypad and touch support.

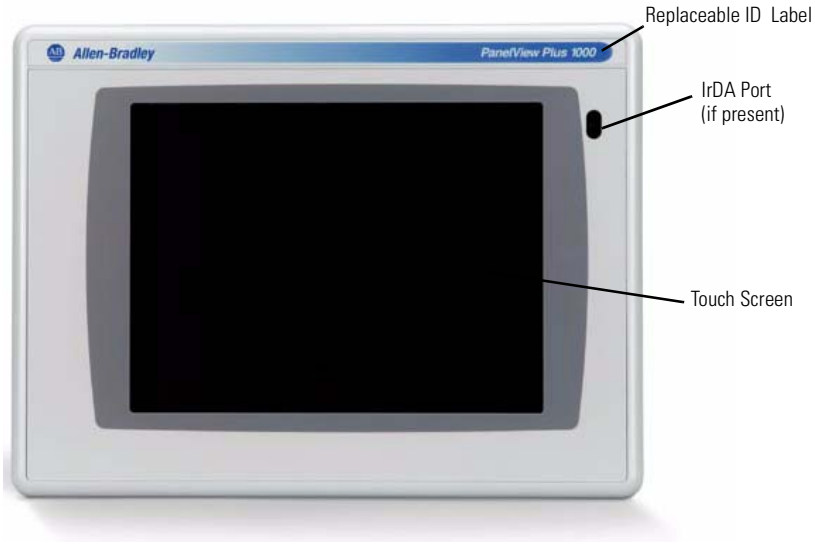
- 700 (6.5 in.)
- 1000 (10.4 in.)
- 1250 (12.1 in.)
- 1250 High-bright Touch (12.1 in.)
- 1500 (15 in.)

All displays have common features and firmware providing for easy migration to a larger display. Field-replaceable bezels are also available.

Touch Screen

All touch-screen displays are analog resistive and similar except for size.

1000 Touch Screen Display

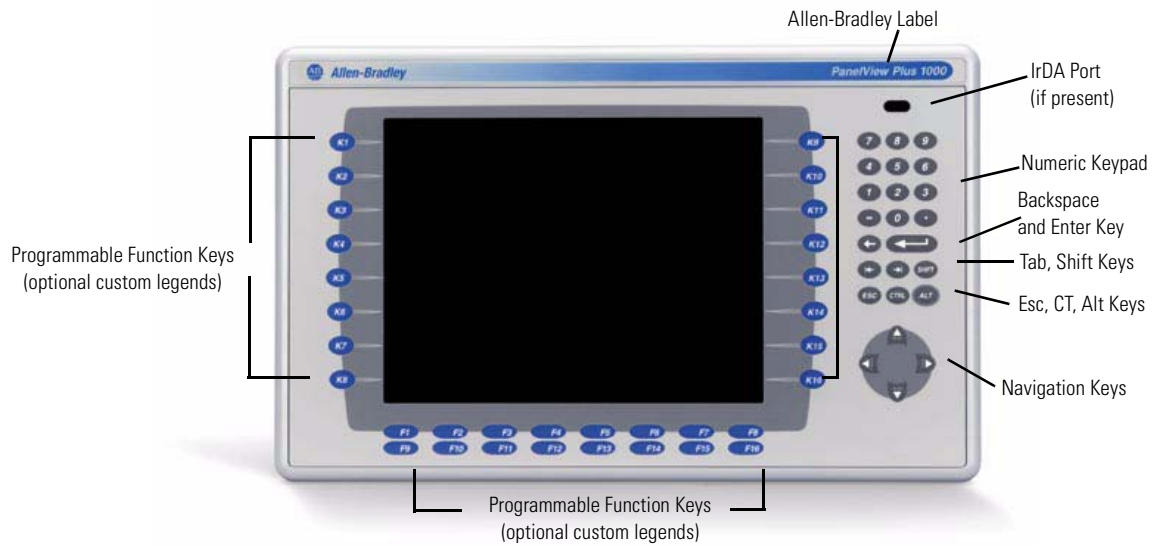


IMPORTANT Use a plastic stylus device with a minimum tip radius of 1 mm (0.040 in.) to prevent damage to the touch screen.

Keypad, or Keypad and Touch

All displays are similar except for size and the number of function keys available.

1000 Keypad or Keypad and Touch Display



The K*xx* and F*xx* function keys on the keypad terminals are programmable.

Function Keys

Feature	Description
Function Keys 700 (F1…F10, K1…K12) 1000 (F1…F16, K1…K16) 1250 (F1…F20, K1…K20) 1500 (F1…F20, K1…K20)	Programmable keys that initiate functions on terminal display. Replaceable legends are available for the terminals allowing for custom function key labels.
Label	Allen-Bradley or customer applied label.
Numeric Keypad	0…9, ., -, Backspace, Enter, Left and Right tab, Shift, Esc, Ctrl, Alt keys.
Navigation Keys	Use the arrow keys to move cursor in lists and select objects. Alt+arrow key activates home, end, page up, page down functions.

Catalog Number Configuration

The graphic shows the catalog number configuration for the terminals.

	Input Type	Display Size	Display Type	Communications[1]	Power	Memory Flash/RAM[2]
2711P-	**K** = Keypad	**4** = 3.8 in.	**C** = Color	**PanelView Plus 400 and 600 Terminals**	**A** = ac	**1**= 64 MB/64 MB
	T = Touch	**6** = 5.5 in.	**M**=Grayscale	**1** = Remote I/O (single rack), ENet, RS-232 & USB	**D** = dc	**2** = 128 MB/128 MB
	B = Key &Touch	**7** = 6.5 in.		**3** = DH-485, ENet, RS-232 & USB		
		10 = 10.4 in.		**5** = RS-232 & USB		
		12 = 12.1 in.		**8** = DH+, ENet, RS-232 & USB		
		15 = 15 in.		**10** = DNet, ENet, RS-232 & USB		
				15 = CNet, ENet, RS-232 & USB		
				20 = ENet, RS-232 & USB plus Communication Module Interface		
				PanelView Plus 700 to 1500 Terminals		
				4 = ENet, RS-232 & (2) USB		
				6 = DH+, DH-485, RIO, ENet, RS-232 & (2) USB		
				10 = DNet, ENet, RS-232 & (2) USB		
				15 = CNet, ENet, RS-232 & (2) USB		

(1) Not all combinations are available. For more information, refer to the Visualization Selection Guide, VIEW-SG001.

(2) Applies to PanelView Plus 700 to 1500 terminals only.

PanelView Plus Product Components

Components are available as separate catalog numbers for field installation or replacement.

Display Modules (700 to 1500 only)

Cat. No.	Description
2711P-RDK7C	700 Keypad Color Display
2711P-RDT7C	700 Touch Color Display
2711P-RDB7C	700 Keypad and Touch Color Display
2711P-RDT7CK	Conformally-coated 700 Touch Color Display
2711P-RDK10C	1000 Keypad Color Display
2711P-RDT10C	1000 Touch Color Display
2711P-RDB10C	1000 Keypad and Touch Color Display
2711P-RDK12C	1250 Keypad Color Display
2711P-RDT12C	1250 Touch Color Display
2711P-RDT12CK	Conformally-coated 1250 Touch Color Display
2711P-RDT12H	1250 Touch High-bright Color Display
2711P-RDB12C	1250 Keypad and Touch Color Display
2711P-RDK15C	1500 Keypad Color Display
2711P-RDT15C	1500 Touch Color Display
2711P-RDB15C	1500 Keypad and Touch Color Display

Logic Modules (700 to 1500 only)

Cat. No.	Description
2711P-RP	Logic Module without Flash/RAM memory, dc Input
2711P-RPA	Logic Module without Flash/RAM memory, ac Input
2711P-RP1	Logic Module with 64 MB Flash/64 MB RAM, dc Input
2711P-RP1A	Logic Module with 64 MB Flash/64 MB RAM, ac Input
2711P-RP2	Logic Module with 128 MB Flash/128 MB RAM, dc Input
2711P-RP2A	Logic Module with 128 MB Flash/128 MB RAM, ac Input
2711P-RP2K	Conformally-coated Logic Module with 128 MB Flash/128 MB RAM, dc Input
2711P-RP3	Logic Module with 256 MB Flash/256 MB RAM, dc Input
2711P-RP3A	Logic Module with 256 MB Flash/256 MB RAM, ac Input

Communication Modules

Terminal Type	Cat. No.	Description
400 and 600	2711P-RN1	Single-rack Remote I/O Communication Module
	2711P-RN3	DH-485 Communication Module
	2711P-RN8	DH+ Communication Module
	2711P-RN10C	DeviceNet Communication Module
	2711P-RN15C	ControlNet Communication Module
	2711P-RN22C	RS-232 Isolated Communication Module
700 to 1500	2711P-RN6	DH+/DH-485/Remote I/O Communication Module
	2711P-RN10H	DeviceNet Communication Module
	2711P-RN15S	ControlNet Communication Module

Internal Compact Flash Cards (700 to 1500 only)

Cat. No.	Description
2711P-RW1	64 MB Compact Flash with RSView Machine Edition
2711P-RW2	128 MB Compact Flash with RSView Machine Edition
2711P-RW3	256 MB Compact Flash with RSView Machine Edition

RAM Memory (700 to 1500 only)

Cat. No.	Description
2711P-RR64	64 MB SODIMM Memory
2711P-RR128	128 MB SODIMM Memory
2711P-RR256	256 MB SODIMM Memory

Compact Flash Cards (Blank)

Cat. No.	Description
2711P-RC2	128 MB Blank Compact Flash Card
2711P-RC3	256 MB Blank Compact Flash Card
2711P-RC4	512 MB Blank Compact Flash Card
2711P-RCH	Compact Flash to PCMCIA Adapter

Legend Kits

Cat. No.	Description
2711P-RFK6	Replacement Legend Strips for 600 Keypad Terminal
2711P-RFK7	Replacement Legend Strips for 700 Keypad Terminal
2711P-RFK10	Replacement Legend Strips for 1000 Keypad Terminal
2711P-RFK12	Replacement Legend Strips for 1250 Keypad Terminal
2711P-RFK15	Replacement Legend Strips for 1500 Keypad Terminal

Backlights (700 to 1500 only)

Cat. No.	Description
2711P-RL7C	Replacement Color Backlight for 700 Displays
2711P-RL10C	Replacement Color Backlight for 1000 Displays
2711P-RL12C	Replacement Color Backlight for 1250 Series A and B Displays
2711P-RL12C2	Replacement Color Backlight for 1250 Series C Displays
2711P-RL15C	Replacement Color Backlight for 1500 Series B Displays

Replacement Bezels

Cat. No.	Description
2711P-RBK7	Replacement Bezel for 700 Keypad Terminal
2711P-RBT7	Replacement Bezel for 700 Touch Terminal
2711P-RBB7	Replacement Bezel for 700 Keypad or Keypad/Touch Terminal
2711P-RBK10	Replacement Bezel for 1000 Keypad Terminal
2711P-RBT10	Replacement Bezel for 1000 Touch Terminal
2711P-RBB10	Replacement Bezel for 1000 Keypad or Keypad/Touch Terminal
2711P-RBK12	Replacement Bezel for 1250 Keypad Terminal
2711P-RBT12	Replacement Bezel for 1250 Touch Terminal
2711P-RBT12	Replacement Bezel for 1250 Touch High-bright Terminal
2711P-RBB12	Replacement Bezel for 1250 Keypad or Keypad/Touch Terminal
2711P-RBK15	Replacement Bezel for 1500 Keypad Terminal
2711P-RBT15	Replacement Bezel for 1500 Touch Terminal
2711P-RBB15	Replacement Bezel for 1500 Keypad or Keypad/Touch Terminal

Protective Antiglare Overlays

Cat. No.[1]	Description
2711P-RGK4	Antiglare Overlay for PanelView Plus 400 Keypad Terminal
2711P-RGK6	Antiglare Overlay for PanelView Plus 600 Keypad or Keypad/Touch Terminal
2711P-RGT6	Antiglare Overlay for PanelView Plus 600 Touch Terminal
2711P-RGK7	Antiglare Overlay for PanelView Plus 700 Keypad or Keypad/Touch Terminal
2711P-RGT7	Antiglare Overlay for PanelView Plus 700 Touch Terminal
2711P-RGK10	Antiglare Overlay for PanelView Plus 1000 Keypad or Keypad/Touch Terminal
2711P-RGT10	Antiglare Overlay for PanelView Plus 1000 Touch Terminal
2711-RGK12	Antiglare Overlay for PanelView Plus 1250 Keypad or Keypad/Touch Terminal
2711P-RGT12	Antiglare Overlay for PanelView Plus 1250 Touch and High-bright Touch Terminal
2711P-RGK15	Antiglare Overlay for PanelView Plus 1500 Keypad or Keypad/Touch Terminal
2711P-RGT15	Antiglare Overlay for PanelView Plus 1500 Touch Terminal

(1) All catalog numbers ship with a quantity of three overlays.

Adapter Plates

Cat. No.	Description
2711P-RAK4	Adapts a PanelView Plus 400 Keypad Terminal to a PanelView Standard 550 Keypad Cutout
2711P-RAK6	Adapts a PanelView Plus 600 Keypad Terminal to a PanelView Standard 600 Keypad Cutout
2711P-RAK7	Adapts a PanelView Plus 700 Keypad Terminal to a PanelView Standard 900 Keypad Cutout
2711P-RAT7	Adapts a PanelView Plus 700 Touch Terminal to a PanelView Standard 900 Touch Cutout
2711P-RAK10	Adapts a PanelView Plus 1000 Keypad Terminal to a PanelView 1000/1000E Keypad Cutout
2711P-RAT10	Adapts a PanelView Plus 1000 Touch Terminal to a PanelView 1000/1000E Touch Cutout
2711P-RAK12E	Adapts a PanelView Plus 1250 (or PV1000/1000E) Keypad Terminal to a PanelView 1200/1400E Keypad Cutout
2711P-RAT12E2	Adapts a PanelView Plus 1250 (or PV1000/1000E) Touch Terminal to a PanelView 1200E Touch Cutout
2711P-RAT12E	Adapts a PanelView Plus 1250 (or PV1000/1000E) Touch Terminal to a PanelView 1400E Touch Cutout
2711P-RAK12S	Adapts a PanelView Plus 1250 (or PV1000/1000E) Keypad Terminal to a PanelView Standard 1400 Keypad Cutout
2711P-RAT12S	Adapts a PanelView Plus 1250 (or PV1000/1000E) Touch Terminal to a PanelView Standard 1400 Touch Cutout
2711P-RAK15	Adapts a PanelView Plus 1500 Keypad or Keypad & Touch Terminal to a PanelView 1200E/1400E Keypad Terminal
2711P-RAT15	Adapts a PanelView Plus 1500 Touch Terminal to a PanelView 1400E Touch Cutout

Cables

Cat. No.	Description
2711-NC13	RS-232 Operating/Programming Cable (9-pin D-shell to 9-pin D-shell), 5 m (16.4 ft)
2711-NC14	RS-232 Operating/Programming Cable (9-pin D-shell to 9-pin D-shell), 10 m (32.7 ft)
2711-NC17	Remote RS-232 Serial Cable (9-pin D-shell to 9-pin D-shell)
2711-NC21	RS-232 Operating Cable (9-pin D-shell to 8-pin Mini DIN), 5 m (16.4 ft)
2711-NC22	RS-232 Operating Cable (9-pin D-shell to 8-pin Mini DIN), 10 m (32.7 ft)
1761-CBL-AS03	DH-485 Operating Cable (6-pin Phoenix to RJ45), 3 m (10 ft)
1761-CBL-AS09	DH-485 Operating Cable (6-pin Phoenix to RJ45), 9 m (30 ft)
1746-C10	DH-485 Network Interface Cable (SDL AMP to RJ45), 1.83 m (6 ft)
1746-C11	DH-485 Network Interface Cable (SDL AMP to RJ45), .3 m (1 ft.)
1784-CP14	DH-485 Network Interface Cable (5-pin Phoenix to RJ45)
2711P-CBL-EX04	Ethernet CAT5 Crossover Cable, Industrial Grade, 4.3 m (14 ft)
2711P-CBL-US02	USB to Serial Network Interface Cable
2711P-CBL-UU02	USB Host-to-Host Data Transfer Cable

Communication Adapters

Cat. No.	Description
2711P-CBL-UP02	USB to PS/2 Adapter
1761-NET-AIC	AIC+ Advanced Interface Converter
1747-AIC	DH-485 Isolated Link Coupler for use with DH-485 Communication Modules (2711P-RN3, 2711P-RN6)

Remote AC Power Supply (700 to 1500 only)

Cat. No.	Description
2711P-RSACDIN	DIN-rail Power Supply, ac-to-dc, 85…265V ac, 47…63 Hz

Miscellaneous

Cat. No.	Description
2711P-RVT12	Solar Visor for Outdoor High-bright 1250 Touch Screen Display Modules
2711P-RY2032	Replacement Battery for 700 to 1500 terminals
2711P-RTMC	Replacement Mounting Clips for 700 to 1500 terminals (Quantity of 8)
2711P-RTFC	Replacement Mounting Levers for 400 and 600 terminals (Quantity of 8)
2711P-RVAC	Replacement AC Power Terminal Block for 400 and 600 terminals
2711-TBDC	Replacement DC Power Terminal Block for 400 and 600 terminals
2711P-RTBDC3 (1)	3-position Terminal Block for dc Logic Modules (Series A to D)
2711P-RTBDC2 (1)	2-position Terminal Block for dc Logic Modules (Series E or later)
2711P-RTBAC3(1)	3-position Terminal Block for all ac Logic Modules

(1) Catalog numbers ship with a quantity of ten.

Firmware Upgrade Kits

Cat. No.	Description
2711P-RU310	PanelView Plus Media Kit includes Firmware Upgrade Wizard, 1 Firmware License, Certificate of Authenticity, End User License Agreement.
2711P-RUA310	PanelView Plus Advanced Media Kit includes the 2711P-RU310 Media Kit, PCMCIA to Compact Flash Adapter, and 32 MB Compact Flash Card.
2711P-RUL01	Firmware Upgrade License Kit with 1 PanelView Plus Firmware License. (1)
2711P-RUL05	Firmware Upgrade License Kit with 5 PanelView Plus Firmware Licenses. (1)
2711P-RUL10	Firmware Upgrade License Kit with 10 PanelView Plus Firmware Licenses.(1)
2711P-RUL25	Firmware Upgrade License Kit with 25 PanelView Plus Firmware Licenses. (1)
2711P-RUL50	Firmware Upgrade License Kit with 50 PanelView Plus Firmware Licenses. (1)

(1) Also includes Certificate of Authenticity, End User License Agreement, Installation Instructions.

Installation

Chapter Objectives

This chapter provides pre-installation information and procedures on how to install the terminals.

- Hazardous locations
- Environment
- Enclosures
- Outdoor installation (1250 high-bright display only, cat. no. 2711P-RDT12H)
- Required tools
- Clearances
- Panel cutout dimensions
- Mount the 400 or 600 terminal in a panel
- Mount the 700 to 1500 terminal in a panel
- Product dimensions

Hazardous Locations

This equipment is suitable for:

- Class I, Division 2, Groups A, B, C, D
- Class I, Zone 2, Group IIC
- Class II, Division 2, Groups F, G
- Class III
- (ordinary) nonhazardous locations

The following statement applies to use in hazardous locations.

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.

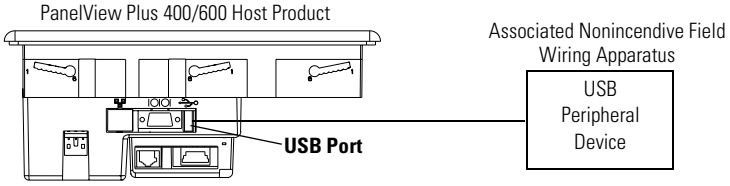
The dc powered terminals have a temperature code of T4 when operating in a 55 °C (131 °F) maximum ambient temperature. Do not install the terminals in environments where atmospheric gases have ignition temperatures **less** than 135 °C (275 °F).

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

USB Ports

The terminals contain universal serial bus (USB) ports that comply with hazardous location environments. The 400 and 600 terminals have one USB port; the 700 to 1500 terminals have two USB ports. This section details the field-wiring compliance requirements and is provided in accordance with the National Electrical Code, article 500.

USB Port Connection to USB Peripheral Device



The USB peripheral device must be rated for use in the hazardous location environment in which it is used and also comply with the circuit parameters in Table 2.2.

The circuit parameters in Table 2.1 define the maximum voltage and current of the USB ports on the terminal.

PanelView Plus USB Port Circuit Parameters

Parameter	Value	Parameter Definition
V_{oc}	5.25V dc	Open circuit voltage of the host USB port.
I_{sc}	1.68 A	Maximum output current of the host USB port.

The circuit parameters in Table 2.2 define the maximum voltage, current, capacitance, and inductance values for any peripheral device connected to a PanelView Plus USB port in a hazardous location environment.

Required Circuit Parameters for the USB Peripheral Device

Parameter	Value	Parameter Definition and Application Requirement
V_{max}	5.25V dc	Maximum applied voltage rating of the USB peripheral device. V_{max} shall be greater than or equal to V_{oc} in Table 2.1 ($V_{max} \geq V_{oc}$).
I_{max}	1.68 A	Maximum current to which the USB peripheral device can be subjected. I_{max} shall be greater than or equal to I_{sc} in Table 2.1 ($I_{max} \geq I_{sc}$).
C_a	10 µF	Maximum allowed capacitance of the USB peripheral device and its associated cable. The sum of C_{int} of the USB peripheral device and C_{cable} of the associated cable shall be less than or equal to C_a ($C_{int} + C_{cable} \leq C_a$).
L_a	15 µH	Maximum allowed inductance of the USB peripheral device and its associated cable. The sum of L_{int} of the USB peripheral device and L_{cable} of the associated cable shall be less than or equal to L_a ($L_{int} + L_{cable} \leq L_a$).

Application Information

Per the National Electrical Code, the circuit parameters of associated field-wired apparatus for use in hazardous locations shall be coordinated with the host product such that their combination remains nonincendive. The PanelView Plus terminal and the USB peripheral device shall be treated in this manner.

The circuit parameters of the PanelView Plus USB ports are given in Table 2.1. The USB peripheral device and its associated cabling shall have circuit parameters with the limits given in Table 2.2 for them to remain nonincendive when used with the PanelView Plus USB port. If cable compliance and inductance are not known, use the following values from UL 913:

C_{cable} = 60 pF/ft
L_{cable} = 0.20 µH/ft

Environmental Considerations

The terminals are suitable for use in an industrial environment when installed in accordance with these instructions. Specifically, this equipment is intended for use in clean, dry environments (Pollution Degree 2)(1) and with circuits not exceeding Over Voltage Category II(2) (IEC 60664-1).(3)

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

(1) Pollution Degree 2 is an environment where normally only nonconductive pollution occurs except that occasionally a temporary conductivity caused by condensation shall be expected.

(2) Over Voltage Category II is the load-level, section of the electrical distribution system. At this level, transient voltages are controlled and do not exceed the impulse voltage capability of the product's insulation.

(3) Pollution Degree 2 and Over Voltage Category II are International Electrotechnical Commissions (IEC) designations.

Enclosures

The terminals must be mounted in a panel or enclosure to protect the internal circuitry. The terminals meet IP54, IP65, and NEMA Type 12/13 and 4X (indoor) ratings only when mounted in a panel or enclosure with the equivalent rating. When the terminal is not mounted in a panel, it is not secure or safe for operation. You must comply with NEMA Type 4X (indoor) requirements for environmental specifications.

For more enclosure and certification information on the Outdoor high-bright display module, refer to publication 2711P-IN026.

Outdoor Installation (cat. no. 2711P-RDT12H only)

When using the high-bright display module outdoors, important considerations in maximizing the field life of the front bezel and display are:

- selecting the proper enclosure.
- orientation of the terminal.

Both 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 life can be extended by proper installation.

Ultraviolet radiation from the sun causes all plastics to fade or yellow and become brittle over time. Using an antiglare overlay, cat. no. 2711P-RGT12, will protect the front of the terminal from direct exposure to UV radiation and greatly increase its field life.

When installing the high-bright display module in an environment where the front of the terminal will be in direct sunlight during the hottest part of the day and the external ambient temperature can exceed 40 °C (104 °F), use the visor kit, cat. no. 2711P-RVT12. The visor reduces the solar load on the front of the display and helps to maintain internal 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.

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 assist you with enclosure selection and heating/cooling accessories to meet the temperature requirements of the installed equipment. See website 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).

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 to 10 minute delay.

Avoid placing the terminal on the south (north in the southern hemisphere) or west side of the 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 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 for securing power and RS-232 connections
- Torque wrench (lb-in) for tightening the mounting clips on the PanelView Plus 700 to 1500 terminals

Clearances

Allow adequate clearance 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 to 55 °C (32 to 131 °F).

Clearances

Clearance Area	400 and 600 Terminals	700 to 1500 Terminals
Top	51 mm (2 in.)	51 mm (2 in.)
Bottom	102 mm (4 in.)	51 mm (2 in.)
Side[1]	25 mm (1 in.)	25 mm (1 in.)
Back	None	25 mm (1 in.)

(1) Minimum side clearance for insertion of memory card and cable wiring is 102 mm (4 in.).

Cutout Dimensions

The table lists the panel cutout dimensions for each terminal. Use the full size template shipped with your terminal to mark the cutout dimensions.

Cutout Dimensions

PanelView Plus Terminals	Height mm (in.)	Width mm (in.)
400 Keypad	123 (4.86)	156 (6.15)
600 Keypad or Keypad and Touch	142 (5.61)	241 (9.50)
600 Touch	123 (4.86)	156 (6.15)
PanelView Plus 700 Keypad or Keypad and Touch	167 (6.57)	264 (10.39)
PanelView Plus 700 Touch	154 (6.08)	220 (8.67)
PanelView Plus 1000 Keypad or Keypad and Touch	224 (8.8)	375 (14.75)
PanelView Plus 1000 Touch	224 (8.8)	305 (12.00)
PanelView Plus 1250 Keypad or Keypad and Touch	257 (10.11)	390 (15.35)
PanelView Plus 1250 Touch / 1250 High-bright Touch	257 (10.11)	338 (13.29)
PanelView Plus 1500 Keypad or Keypad and Touch	305 (12.00)	419 (16.50)
PanelView Plus 1500 Touch	305 (12.00)	391 (15.40)

Mount the 400 or 600 Terminal in a Panel

Mounting levers secure the terminal to the panel. The number of levers you use (4 or 6) varies by terminal type.

ATTENTION

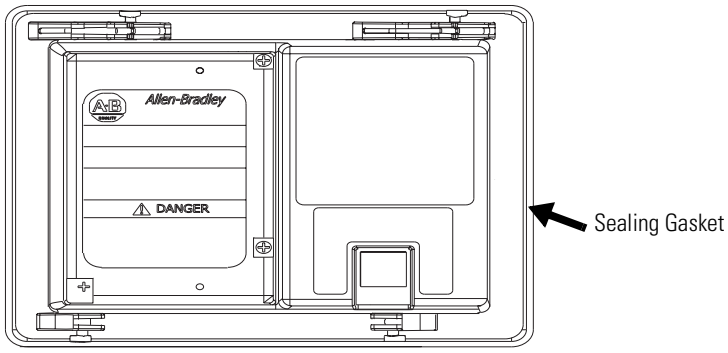
- Disconnect all electrical power from the panel before making the panel cutout.
- Make sure the area around the panel cutout is clear.
- Take precautions so metal cuttings do not enter any components already installed in the panel.
- Failure to follow these warnings may result in personal injury or damage to panel components.

To mount the terminal in a panel:

1. Cut an opening in the panel using the panel cutout shipped with the terminal.
2. If a Communication Module is ordered separately, attach the module to the base unit before panel installation.

   Refer to the instructions shipped with module.
3. Make sure the terminal sealing gasket is properly positioned on the terminal.

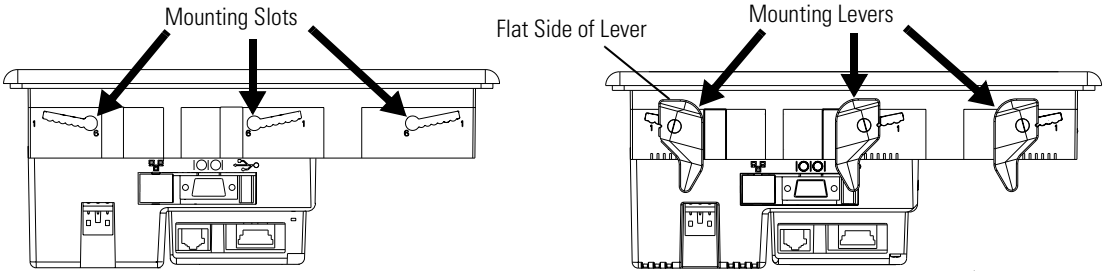
This gasket forms a compression-type seal. Do not use sealing compounds.



4. Install legend strips before installing the terminal if you are using keypad legend strips on a 600 keypad terminal.
   Be careful not to pinch legend strip during installation.

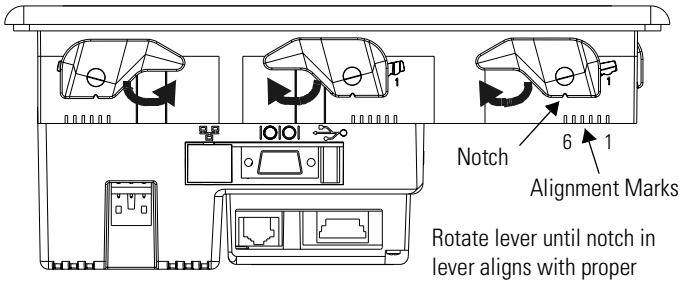
5. Place the terminal in the panel cutout.
   If installing terminal in existing 550 panel cutout, align terminal with center of cutout for best gasket sealing.

6. Insert all mounting levers into the mounting slots on the terminal.
   Slide each lever until flat side of lever touches the surface of the panel.

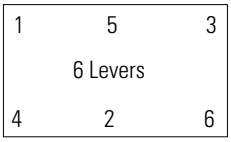


7. When all levers are in place, slide each lever an additional notch or two until you hear a click.
8. Rotate each lever in direction indicated until it is in the final latch position.

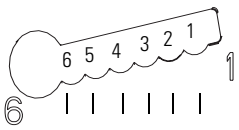
Follow the latching sequence for the optimum terminal fit.



Rotate lever until notch in lever aligns with proper alignment mark on terminal.



Use this table as a guide to provide an adequate gasket seal between the terminal and the panel.

	Lever Position	Panel Thickness Range	Typical Gauge
 Terminal Markings or Alignment	1	0.15…2.01 mm (0.060…0.079 in.)	16
	2	2.03…2.64 mm (0.08…0.104 in.)	14
	3	2.67…3.15 mm (0.105…0.124 in.)	12
	4	3.17…3.66 mm (0.125…0.144 in.)	10
	5	3.68…4.16 mm (0.145…0.164 in.)	8/9
	6	4.19…4.75 mm (0.165…0.187 in.)	7

ATTENTION

Follow instructions above to provide a proper seal and to prevent potential damage to the product. Allen-Bradley assumes no responsibility for water or chemical damage to the terminal or other equipment within the enclosure because of improper installation.

Mount the 700 to 1500 Terminal in a Panel

Mounting clips secure the terminal to the panel. The number of clips you use (4, 6, or 8) varies by terminal type.

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.

To mount the terminal in a panel:

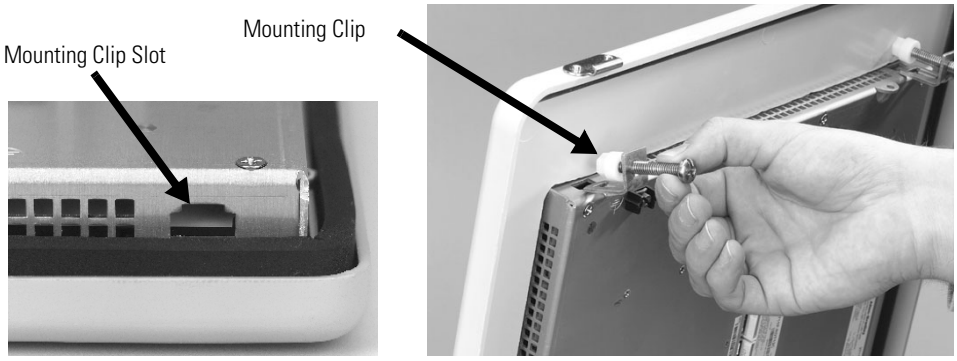
1. Cut an opening in the panel using the panel cutout shipped with the terminal.

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.

3. Install the legend strips before installing the terminal if you are using keypad legend strips on keypad terminals.
   Be careful not to pinch the legend strip during installation.

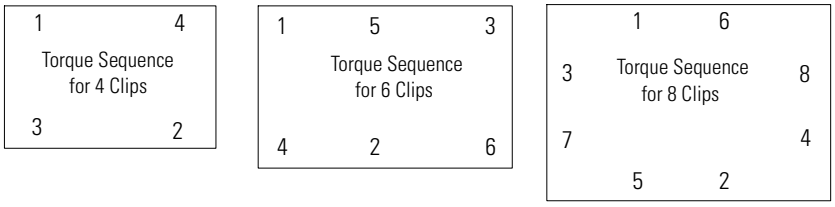
4. Place the terminal in the panel cutout.

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



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

7. Tighten the mounting clips screws to a torque of 0.90 to 1.1 Nm (8 to 10 lb-in) using the specified sequence, making sure not to over-tighten.



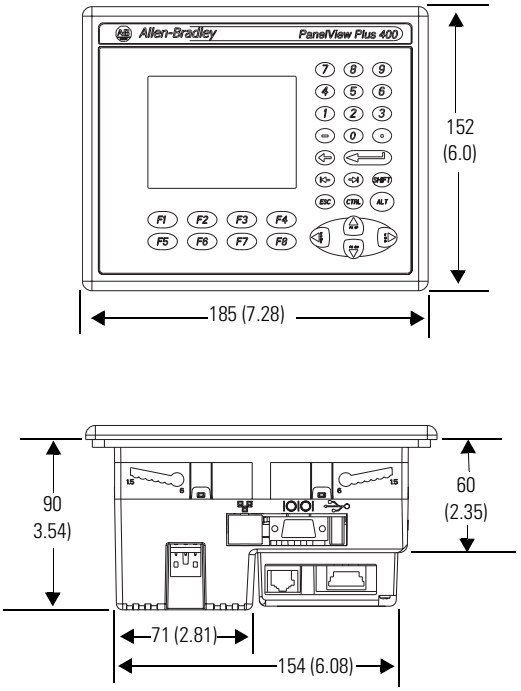
ATTENTION

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.

Product Dimensions

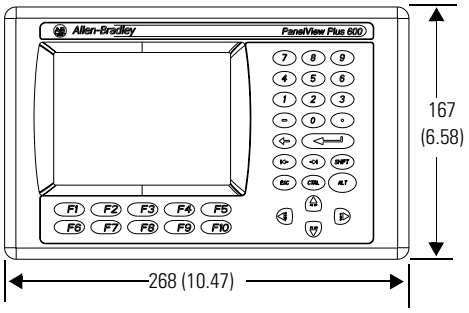
Product dimensions for each terminal are in mm (in.).

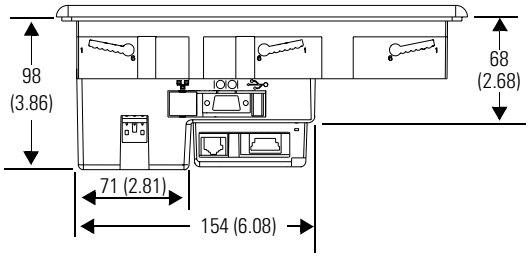
PanelView Plus 400 Dimensions



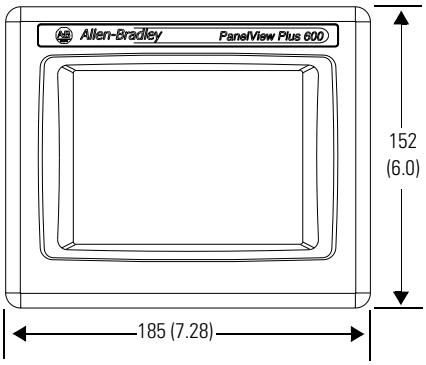
PanelView Plus 600 Dimensions

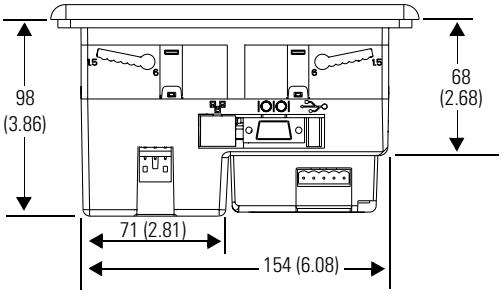
600 Keypad or Keypad and Touch Terminal





600 Touch Terminal



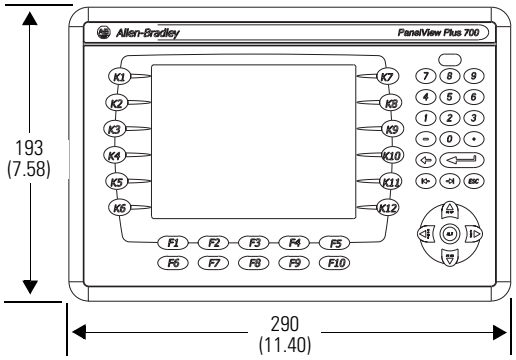


The depth dimensions are shown for:

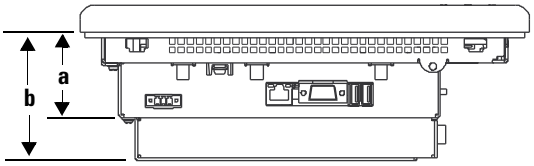
- Base-configured unit (display module and logic module)
- Base-configured unit with communication module

PanelView Plus 700 Dimensions

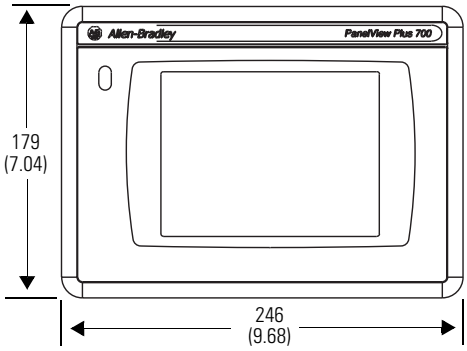
700 Keypad or Keypad and Touch Terminal



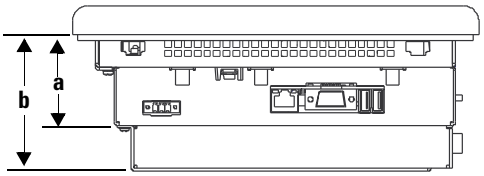
a 55 (2.18) Display to Logic Module
b 83 (3.27) Display to Communication Module



700 Touch Screen Terminal



a 55 (2.18) Display to Logic Module
b 83 (3.27) Display to Communication Module

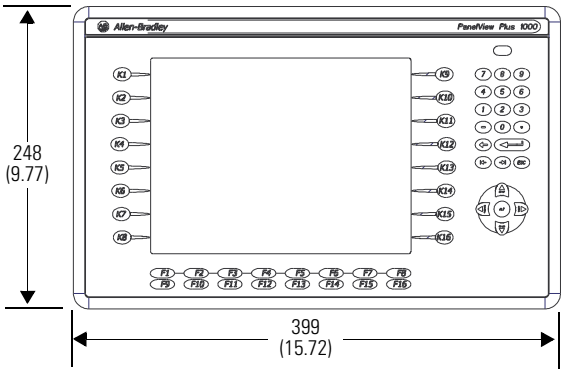


The depth dimensions are shown for:

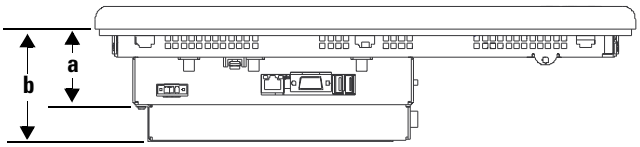
- Base-configured unit (display module and logic module)
- Base-configured unit with communication module

PanelView Plus 1000 Dimensions

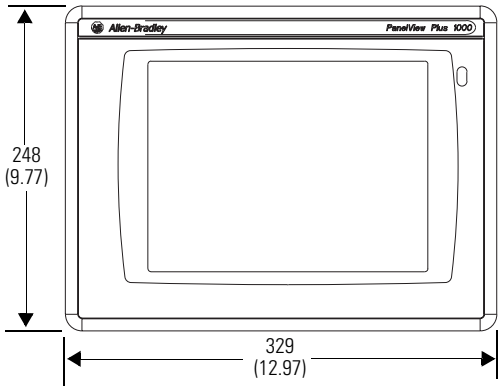
1000 Keypad or Keypad and Touch Terminal



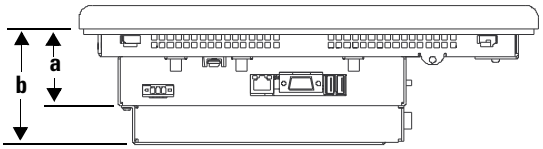
a 55 (2.18) Display to Logic Module
b 83 (3.27) Display to Communication Module



1000 Touch Screen Terminal



a 55 (2.18) Display to Logic Module
b 83 (3.27) Display to Communication Module

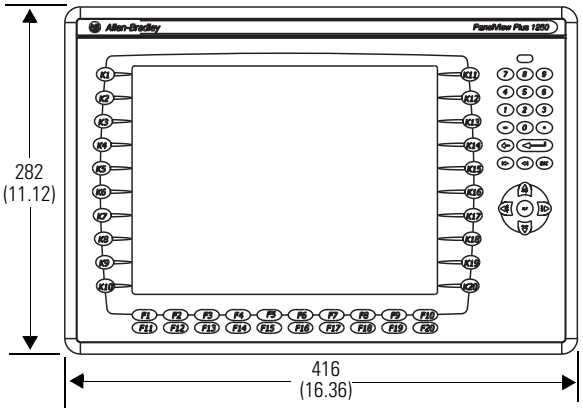


The depth dimensions are shown for:

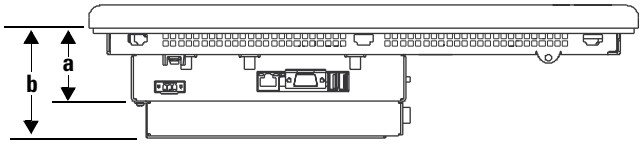
- Base-configured unit (display module and logic module)
- Base-configured unit with communication module

PanelView Plus 1250 Dimensions

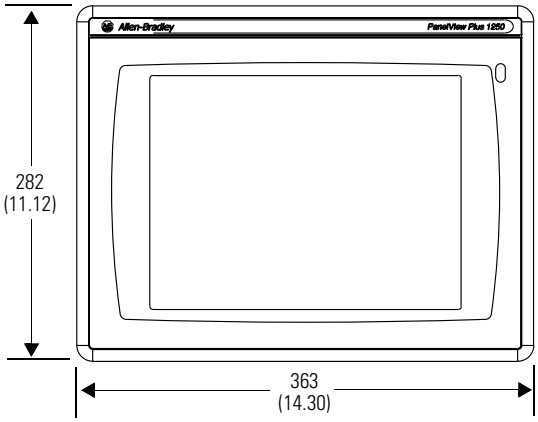
1250 Keypad or Keypad and Touch Terminal



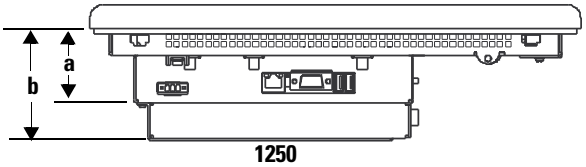
a 55 (2.18) Display to Logic Module
b 83 (3.27) Display to Communication Module



1250 Touch Screen Terminal

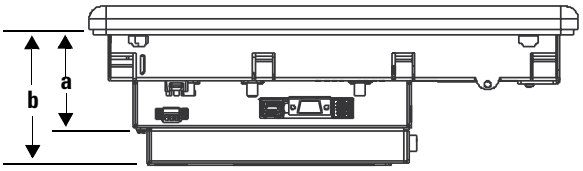


a 55 (2.18) Display to Logic Module
b 83 (3.27) Display to Communication Module



1250

a 74 (2.90) Display to Logic Module
b 101 (3.99) Display to Communication Module



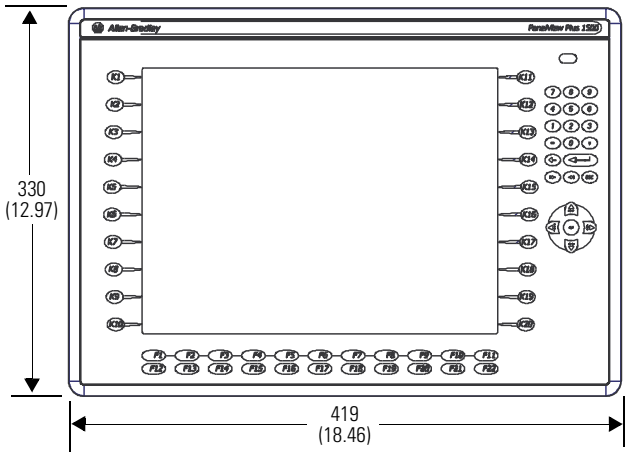
1250 High-bright

The depth dimensions are shown for:

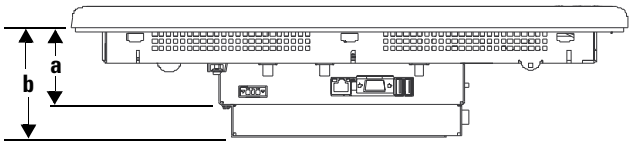
- Base-configured unit (display module and logic module)
- Base-configured unit with communication module

PanelView Plus 1500 Dimensions

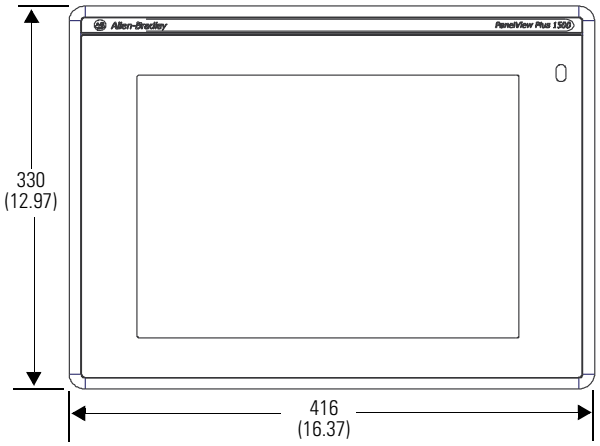
1500 Keypad or Keypad and Touch Terminal



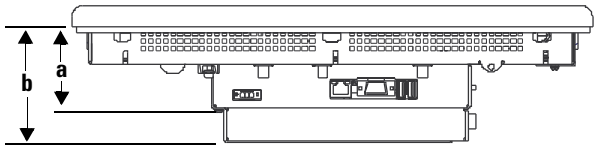
a 65 (2.55) Display to Logic Module
b 93 (3.65) Display to Communication Module



1500 Touch Screen Terminal



a 65 (2.55) Display to Logic Module
b 93 (3.65) Display to Communication Module



Connect Power

Chapter Objectives

This chapter covers wiring and safety guidelines, and provides procedures to:

- remove and install the power terminal block.
- connect dc power.
- connect ac power.
- reset the terminal.

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:

- 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.

For additional information on terminal wiring and grounding applications, refer to publication 2711P-TD001. You can locate this publication in the literature library at this website

http://literature.rockwellautomation.com

Remove and Install the Power Terminal Block

You can remove and reinstall the power terminal block for ease of installation, wiring, and maintenance. The terminals ship with the power block installed.

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.

ATTENTION

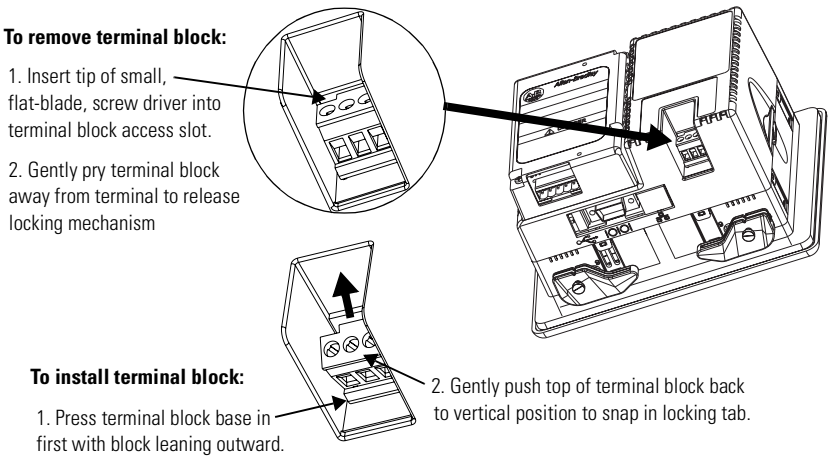
Disconnect all power before installing or replacing components. Failure to disconnect power may result in electrical shock and/or damage to the terminal.

Remove and Install the Terminal Block for 400 and 600 Terminals

ATTENTION

The ac and dc terminal blocks are keyed and marked differently so be sure to follow markings. Do not force terminal blocks into connectors to prevent potential damage to terminal.

Remove and Install the Terminal Block for 400 and 600 Terminals

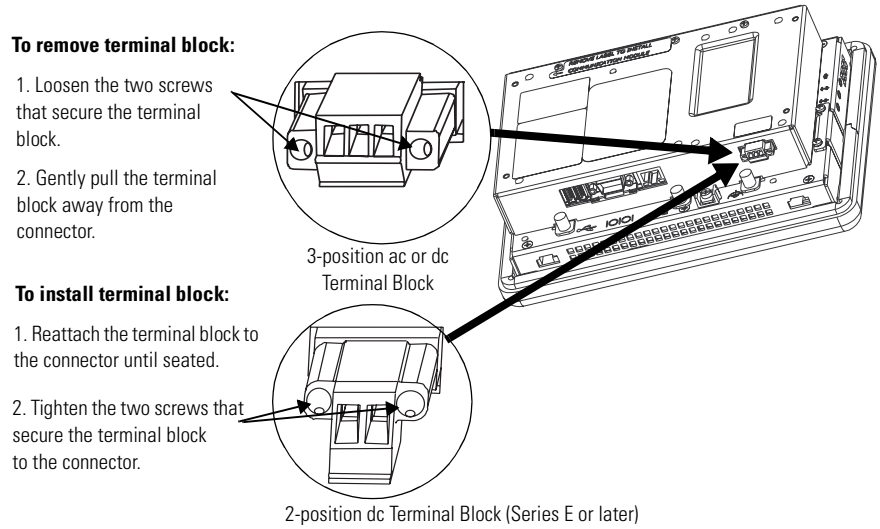


Remove and Install the Terminal Block for 700 to 1500 Terminals

PanelView Plus 700 to 1500 terminals operate on dc or ac power.

- Series A through D dc logic modules use a 3-position terminal block.
- Series E or later dc logic modules use a 2-position terminal block.
- All ac logic modules use a 3-position terminal block.

Remove and Install the Terminal Block for 700 to 1500 Terminals



DC Power Connections

PanelView Plus terminals with an integrated dc power supply have these power ratings

Power Ratings, dc

Power Type	Terminal	Input Range
dc	400 and 600	24V dc nom (18…30 V dc) 25 W max (1.0 A at 24V dc)
	700 to 1500	24V dc nom (18…32 V dc) 70 W max (2.9 A at 24V dc)

PanelView Plus terminals have an integrated, nonisolated, 24V dc power supply. The power supply is internally protected against reverse polarity of the dc+ and dc- connections. Connecting dc+ or dc- to the functional-earth terminal may damage the device.

The input power terminal block on the integrated power supply is removable and supports these wire sizes.

Wire Specifications for dc Input Terminal Block

Terminal	Wire Type		Dual-wire Gauge[1]	Single-wire Gauge	Terminal Screw Torque
400 and 600	Stranded or solid	Cu 90 °C (194 °F)	22…16 AWG	22…14 AWG	0.45…0.56 Nm (4…5 lb-in)
700 to 1500 logic module Series A to D					0.23…0.34 Nm (2…3 lb-in)
700 to 1500 logic module Series E and later					0.56 Nm (5 lb-in)

(1) Two-wire max. per terminal.

External Power Supply

Use a single, 24V dc power supply to power each PanelView Plus terminal, such as cat. no. 2711P-RSACDIN. Using a separate, isolated and ungrounded source to power each terminal prevents ground loop currents from damaging the terminals.

The output on the power supply must be isolated from the input and not connected to earth ground.

ATTENTION

Use a Class 2 or SELV supply as required by local wiring codes for your installation. The Class 2 and SELV power sources provide protection so that under normal and single-fault conditions, the voltage between conductors and between conductors and functional-earth or protective-earth does not exceed a safe value.

Functional-earth Connection

PanelView Plus dc terminals have a functional-earth terminal that you must connect to a low-impedance earth ground.

IMPORTANT The functional-earth 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.

- The 700 to 1500 dc terminals have the functional-earth ground connection on the rear of the display module.
- The 400 and 600 dc terminals have the functional-earth ground connection on the power input terminal block.

The functional-earth terminal wiring requires a minimum wire gauge.

Functional-earth wire specifications for dc Power

Terminal	Wire Type		Wire Gauge	Terminal Screw Torque
400 and 600	Stranded or solid	Cu 90 °C (194 °F)	14…12 AWG	0.45…0.56 Nm (4…5 lb-in)
700 to1500			14…10 AWG	1.13…1.36 Nm (10…12 lb-in)

On most PanelView Plus dc terminals, the functional-earth terminal is internally connected to the dc- terminal within the product.

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.

The PanelView terminals contain isolated and nonisolated communication ports.

Refer to Chapter 6 for information on Communication Port Isolation.

IMPORTANT For more information on wiring and grounding the terminals, refer to publication 2711P-TD001.

Connect dc Power

WARNING

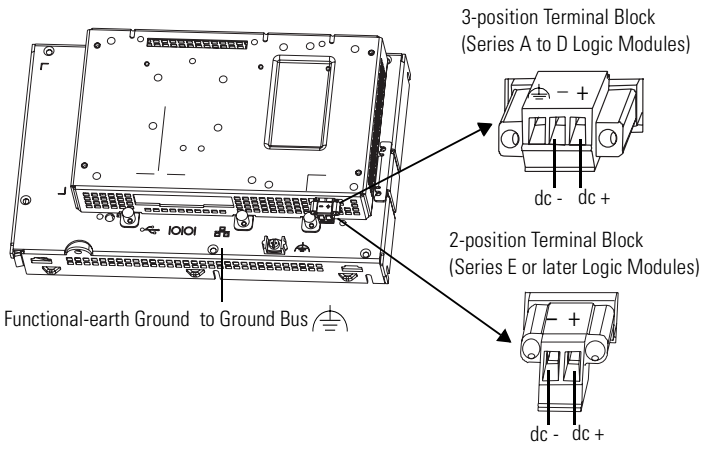
Explosion Hazard - Do not disconnect equipment unless power has been switched off and area is known to be nonhazardous.

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

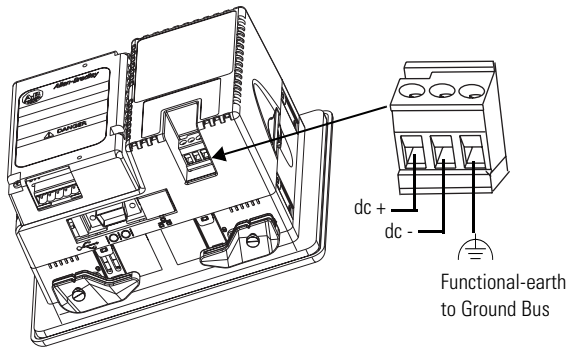
To connect the terminal to dc power:

1. Disconnect power to the terminal.
2. Secure the dc power wires to the terminal block screws.
   Follow the markings on terminal blocks and terminal for proper connections.
3. Secure the functional-earth ground wire to the appropriate terminal screw.
   - On the 400 and 600 terminals, secure the functional-earth ground wire to the functional-earth ground terminal screw on the input power terminal block.
   - On the 700 to 1500 terminals, secure the functional-earth ground wire to the functional-earth ground terminal screw at the bottom of the display.

700 to 1500 dc Terminals



400 and 600 dc Terminals



4. Apply 24V dc power to the terminal.

AC Power Connections

PanelView Plus terminals with an integrated ac power supply have these power ratings.

Power Rating, ac

Terminal	Voltage Range	Frequency	V A
400 and 600	85…264V ac	47…63 Hz	60V A max.
700 to 1500	85…264V ac	47…63 Hz	160V A max.

The input power terminal block on the integrated power supply is removable and supports these wire sizes.

Wire Specifications for ac Input Power Terminal Block

Terminal	Wire Type		Dual-wire Gauge(1)	Single-wire Gauge	Terminal Screw Torque
400 and 600	Stranded or solid	Cu 90 °C (194 °F)	22…16 AWG	22…14 AWG	0.45…0.56 Nm (4…5 lb-in)
700 to 1500			22…16 AWG	22…14 AWG	0.56 Nm (5 lb-in)

(1) Two-wire max. per terminal

Protective-earth Connection

PanelView Plus ac terminals have a protective-earth ground terminal that you must connect to a low-impedance earth ground.

ATTENTION

The protective-earth connection is required for both electrical safety and Electromagnetic Compliance (EMC) with the European Union (EU) EMC directive for CE-mark conformance.

The protective-earth ground connection is on the power input terminal block. The protective-earth terminal wiring requires a minimum wire gauge.

Protective-earth Wire Specifications for ac Power

Terminal	Wire Type		Wire Gauge	Terminal Screw Torque
400 and 600	Stranded or solid	Cu 90 °C (194 °F)	14…12 AWG	0.45…0.56 Nm (4…5 lb-in)
700 to 1500			14…12 AWG	0.56 Nm (5 lb-in)

Functional-earth Connection

The PanelView Plus 700 to 1500 ac terminals also have a functional-earth connection on the back of the display.

IMPORTANT On 700 to 1500 terminals, you must connect both protective-earth and functional-earth to ground.

The functional-earth terminal wiring requires a minimum wire gauge.

Functional-earth Wire Specifications for ac Power

Terminal	Wire Type		Wire Gauge	Terminal Screw Torque
700 to 1500	Stranded or solid	Cu 90 °C (194 °F)	14…10 AWG	1.13…1.36 Nm (10…12 lb-in)

ATTENTION

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

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 and/or damage to the terminal.

ATTENTION

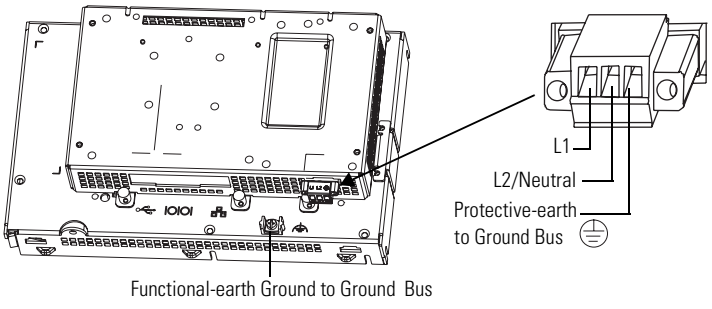
Improper wiring of the power terminals may result in voltage at the communication connector shells.

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

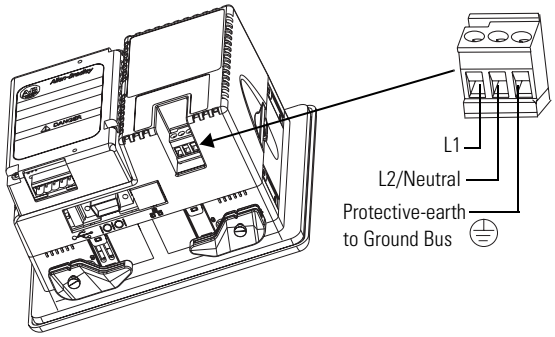
To connect the terminal to ac power:

1. Disconnect power to the terminal.
2. Secure the ac power wires to the terminal block screws.
   Follow the markings on terminal blocks and terminal for proper connections.
3. Secure the protective-earth ground wire to the protective-earth ground screw on the input terminal block.
4. On the 700 to 1500 terminals, also secure the functional-earth ground wire on the back of the display to ground bus.

700 to 1500 ac Terminals



400 and 600 ac Terminals

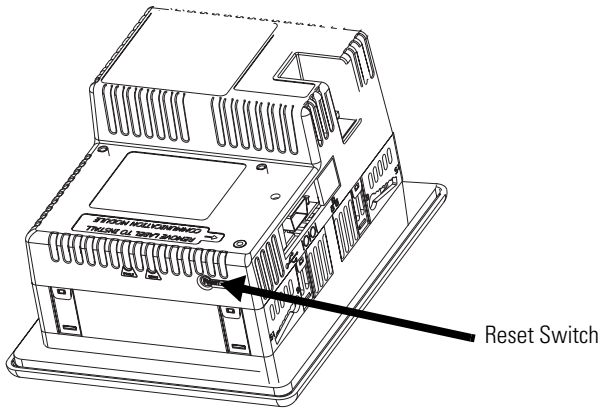


5. Apply ac power to the terminal.

Reset the Terminal

Reset the 400 and 600 Terminals

The 400 and 600 terminals have a Reset switch on the side of the terminal. Use the Reset switch to restart the terminal without having to disconnect and reapply power. When reset, the terminal performs a series of startup tests and runs RSView ME software. The loaded .MER application may also run depending on how the terminal is configured.



Press Reset with your finger or a nonconductive object.

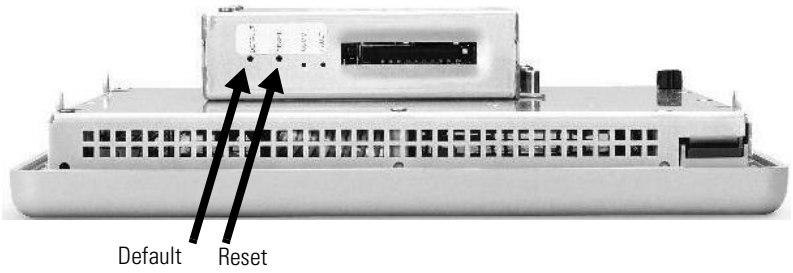
ATTENTION

Use a nonconductive object to press the RESET switch. Do not use a conducting object such as a paper clip or you may damage the terminal. Do not use the tip of a pencil; graphite may damage the terminal.

Reset the 700 to 1500 Terminals

The 700 to 1500 terminals have a Reset switch and a Default switch on the side of the logic module.

Default and Reset Switch



Reset

Use the Reset switch to restart the terminal without having to disconnect and reapply power. Insert a thin, nonconductive probe into the hole marked Reset and press the switch. The terminal performs a series of startup tests and runs RSView ME software. The loaded .MER application may also run depending on how the terminal is configured.

Default

Use the Default switch with the Reset switch to start the terminal in Safe mode. Safe mode is targeted for VersaView CE terminals that may run other programs in addition to RSView Machine Edition software. This is a diagnostics mode where the system is reduced to a known state that allows recovery from a software problem. Safe mode ignores all user changes to the system and avoids any problem that is due to interactions with end-user software or changes.

For more details on Safe mode, refer to Chapter 8.

1. Insert a thin, nonconductive probe into the hole marked Default and press the switch.

2. Insert the probe into the hole marked Reset and press the switch. The system will restart immediately into the Safe mode.

ATTENTION

Use a nonconductive object to press the Reset and Default switch. **Do not** use a conducting object such as a paper clip or you may damage the terminal. **Do not** use the tip of a pencil; graphite may damage the terminal.

Startup Sequence

After a reset, the terminal performs a series of startup tests and then either:

- runs the .MER application currently loaded in the terminal
- enters configuration mode

The action that occurs depends on what startup options are configured for your terminal.

Refer to Chapter 8 on Troubleshooting for a list of startup, status and error codes.

Configuration Mode

Chapter Objectives

This chapter shows how to use the configuration screens of your PanelView Plus terminal to:

- perform data entry and navigation.
- load an application.
- run an application.
- modify application settings.
- modify terminal settings.

Start Configuration Mode

When you reset or start up the terminal, you should automatically enter configuration mode. Your application will automatically run on startup if you configured this option under Terminal Settings>Startup Options.

If you are unable to enter configuration mode, refer to Chapter 8 on Troubleshooting.

To access configuration mode from a running application:

- Press the Goto Configuration Mode button.

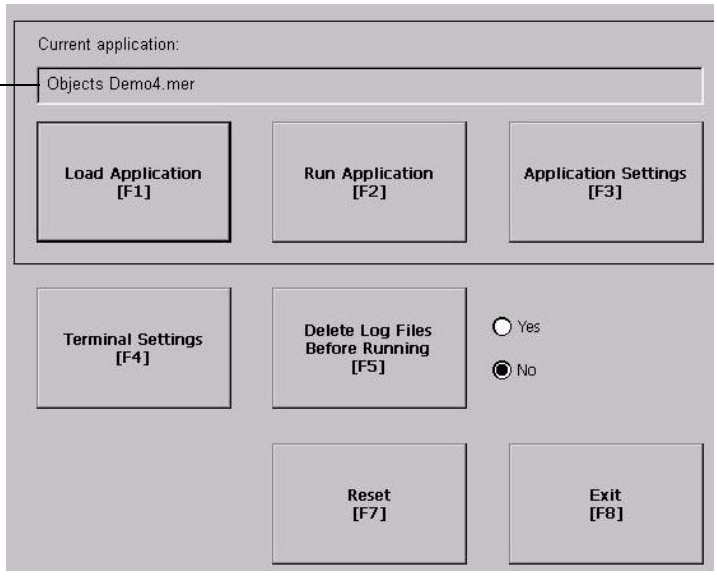
  This button is added to application screen in RSView Studio.

  The application stops running but is still loaded.

Name of application that is currently loaded. Only appears if application is loaded.

To activate buttons:

- on keypad terminals, select the corresponding function key [Fx]
- on touch screen terminals, tap the button with your finger or stylus.
- if a mouse is attached, make selections with the mouse.



RSView ME Station Main Screen Buttons

Main Screen Button	Description
Load Application (F1)	Opens another screen where you can select an application to load. Once loaded, the application name will appear under Current Application.
Run Application (F2)	Runs the .MER application displayed under Current Application. An application must be loaded before you can run it.
Application Settings (F3)	Opens a menu of application-specific configuration settings.
Terminal Settings (F4)	Opens a menu of options to configure non-application, specific terminal settings for the terminal.
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.
Reset (F7)	Resets the terminal. The action that occurs on startup depends on whether you defined shortcut paths in the Windows Startup folder.
Exit (F8)	Exits Configuration Mode.

Data Entry and Navigation

Configuration Mode uses screen buttons for data entry and navigation.

- On terminals with a touch screen, tap the button with your finger or stylus.
- On terminals with a keypad, select the function key listed on the button, or in some cases, the corresponding key on the keypad.

Besides operation specific buttons that are used to modify configuration data, most screens have a combination of these buttons.

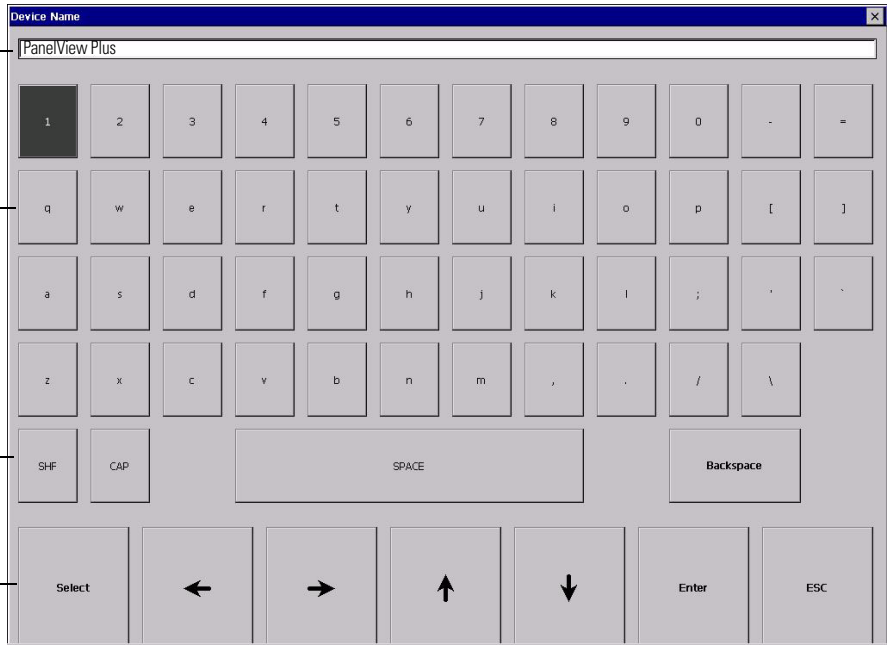
Screen Buttons

Screen Buttons	Description
Close [F8]	Returns to the previous screen.
OK [F7]	Accepts modified values and returns to previous screen.
Cancel [F8]	Cancels the current operation without saving any changes.
▲ ▼	Moves highlight up or down a list.
↵	Selects a highlighted screen or item from a list.

Input Panel

Many screens have buttons that access fields where you must enter/edit data. When you press the button or function key, the Input Panel opens ready for you to input data.

If the 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.



- on a touch terminal, tap the keys.
- on a keypad terminal, use the arrow keys on the keypad to select keys.
- If a mouse is attached, use the mouse to select keys.

Input Panel Control Functions

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 screen
ESC	Cancels the current operation and returns to the previous screen.

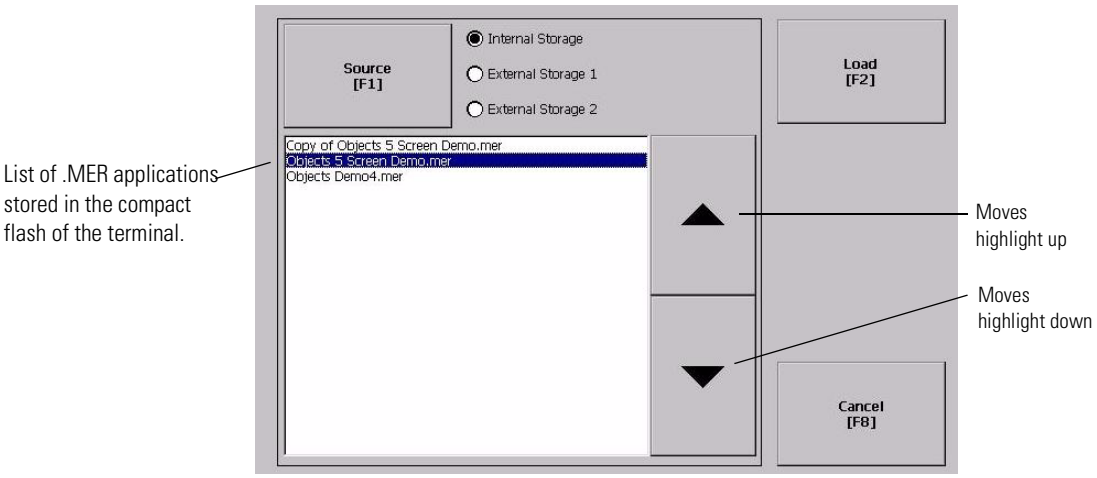
To enter characters in the Display Area:

1. Select a character on the Character Keyboard.
2. Press the Select button to copy the character to the Display Area.
3. When done entering all characters, press Enter.

You will return to the previous screen with the newly data entered.

Load an Application

To load an RSView ME .MER application, select the Load Application button on the main screen.



1. Select the Source button to select the storage location of the application file you want to load.
   - Internal Storage - the internal compact flash in the terminal.
   - External Storage 1 - the external compact flash card loaded in the card slot of the terminal.
   - External Storage 2 - for future use.

   TIP RSView ME software only recognizes files in the \RockwellSoftware\RSViewME\Runtime\ folder.

2. Select an .MER file from the list. Use the up and down cursor keys to select a file.

3. Select the Load button to load the application.

   You will be asked if you want to replace the terminals' current communication configuration with the application's communication configuration.

4. Select Yes or No.

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

The name of the currently loaded application will appear at the top of the main configuration mode screen.

Run an Application

To run the currently loaded application, select the Run Application button on the main Configuration Mode screen. You must load an application before it can run. Log files generated by the application may be deleted if this option was selected on the main screen or enabled as a Startup Option under Terminal Settings.

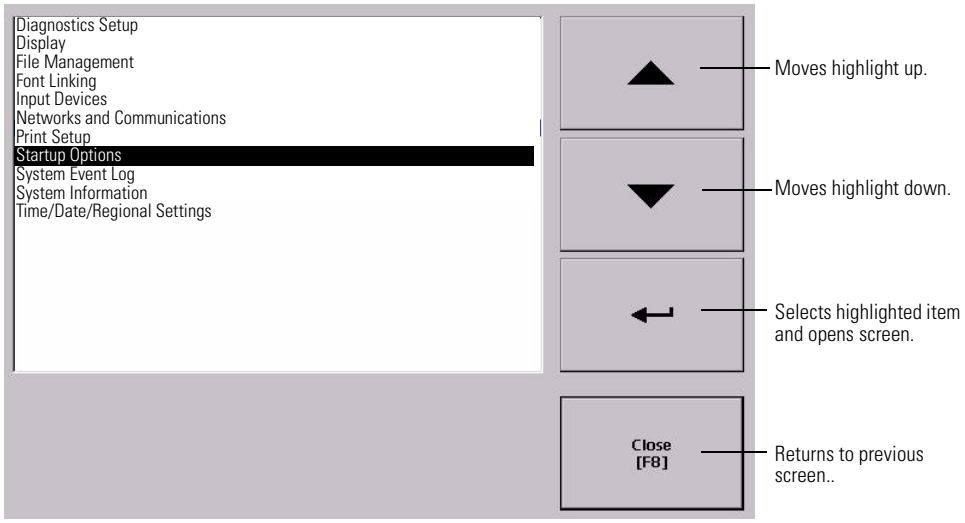
Application Settings

From the Application Settings screen, you can show device shortcuts defined for the loaded .MER application. For example, your .MER application might have SLC defined as a device shortcut name for the SLC 5/05 controller. Device shortcuts are read-only and cannot be edited.

Terminal Settings

From Terminal Settings, you can open screens to configure and modify non-application settings for the terminal.

- On a touch terminal, tap the button.
- On a keypad terminal, press the corresponding key on the keypad.



Terminal Setting Descriptions

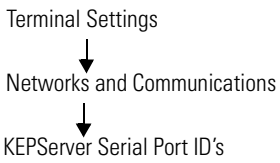
Terminal Setting	Description
Diagnostic	Forwards diagnostic messages form a remote log destination to a computer running diagnostics.
Display	Shows the temperature of the display, sets the intensity of the backlight, contrast of grayscale displays, and enables/disables the screen saver.
File Management	Copies or deletes application files or font files from a storage location.
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.
Networks and Communications	Configures network connections and communication settings specific to the application (DHPlus, DH485, Remote I/O, ControlNet, DeviceNet, Serial).
Print Setup	Configures settings for printing displays, alarm messages, and diagnostics messages generated by the application.

Terminal Setting	Description
Startup Options	Specifies whether the terminal starts up in configure or run mode. Also lets you enable/disable tests to run on the terminal at startup.
System Event Log	Displays a list of system events currently logged by the terminal.
System Information	Displays power, temperature, battery and memory details for the terminal. Also shows the firmware number for RSView ME and technical support information.
Time/Date/Regional Settings	Sets the date, time, language, and numeric format used by the terminal and applications.

Networks and Communications

From the Networks and Communications screen, you can access settings for:

- KEPServer Serial Port ID's
- Network Connections
- RSLinx Enterprise Communications



KEPServer Serial Port ID's

To access the KEPServer Serial Port ID's screen, you must have KEPServer Enterprise installed on your terminal. Otherwise, you will get an error message when accessing this screen. If you plan on using KEPServer Enterprise and serial communications, you must specify which COM port to use.

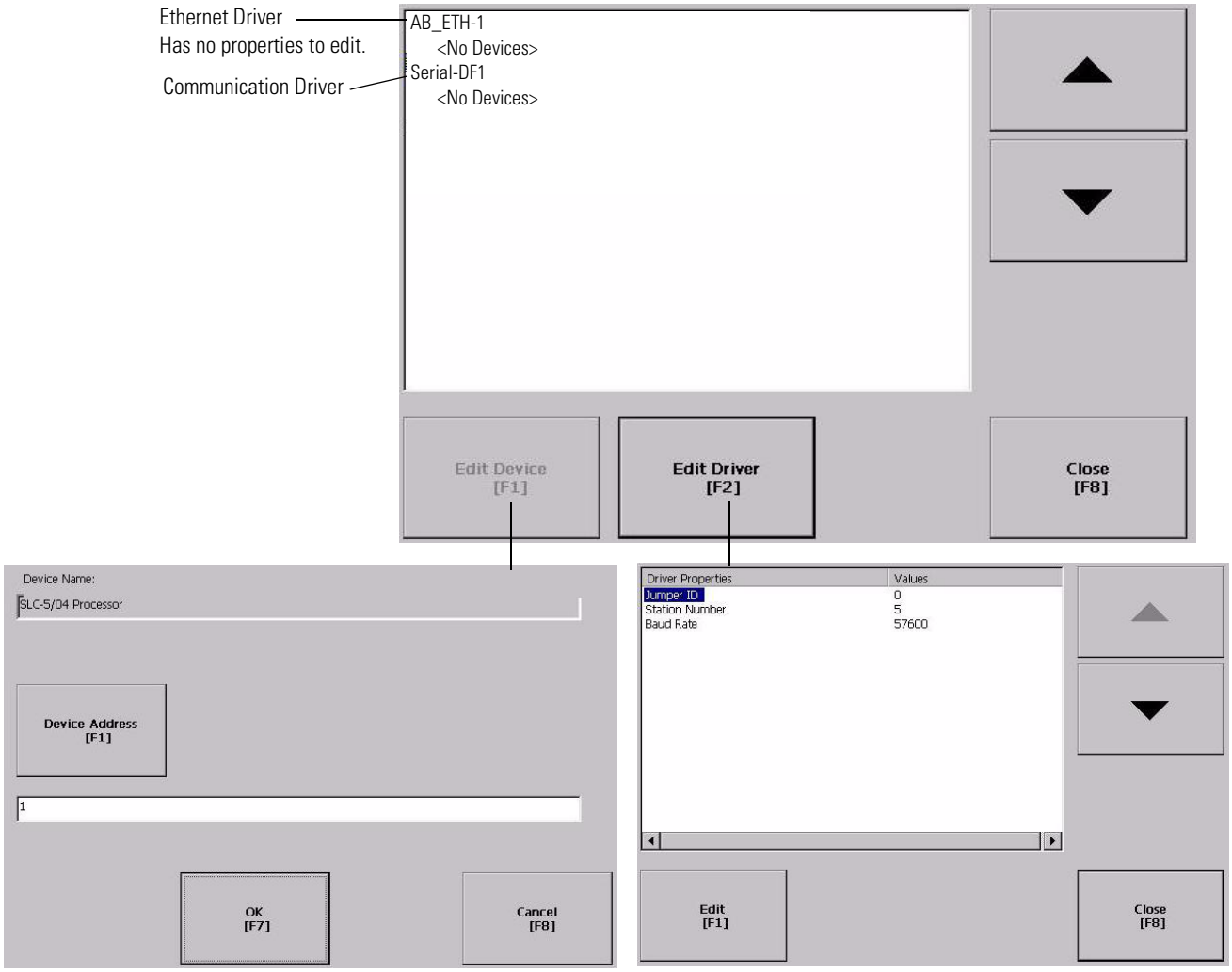
Terminal Settings
↓
Networks and Communications
↓
RSLinx Enterprise Communications

RSLinx Enterprise Communications

The RSLinx Enterprise Communications screen shows a tree view of installed communication cards and network configurations. You can:

- edit or view the driver settings for the communication protocol used by your .MER application.
- edit the device address of the controller on the network.

The procedure for editing these settings is the same regardless of the communication protocol. The only differences are the properties for each communication protocol and the device address of the logic controller. The properties for each communication protocol are defined immediately after this section.



To edit communication settings:

1. From the RSLinx Configuration Screen, select the communication card installed on your terminal.

2. Select the Driver Settings button.

   A properties screen opens showing the current communication settings for the driver.

3. To modify a setting, select the setting and then the Edit button. The Input Panel opens showing the current setting.

4. Using the Input Panel, modify the setting and then select the Enter button.

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

To edit the device address of the logic controller:

1. From the RSLinx Configuration screen, select a device node.

2. Select the Edit Device button.

   A screen opens showing the name of the device and its current node address.

3. To modify the device address, press the Device Address button. The Input Panel opens showing the current address.

4. Using the Input Panel, modify the address and then select the Enter button.

You return to the previous screen with the new address.

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

DHPlus Properties

The DHPlus Properties screen lets you view or modify settings for a terminal connected to a DHPlus network.

DHPlus Communication Settings

Field	Description	Valid Values
Jumper ID[1]	Identifies the communication card if multiple cards are installed on terminal.	0…3
Station Number	The unique address of the terminal on the DHPlus network.	0…77 (octal)
Baud Rate	The communication rate of the DHPlus network.	57,600 (default) 115,200 230,400

(1) For use with PanelView Plus 700 to 1500 terminals only.

DH485 Properties

The DH485 Properties screen lets you view or modify settings for a terminal connected to a DH-485 network.

DH485 Communication Settings

Field	Description	Valid Values
Jumper ID[1]	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.	9,600 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)

(1) For use with PanelView Plus 700 to 1500 terminals only.

Remote I/O Properties

The RIO Properties screen configures communication settings for the terminal on a Remote I/O link.

Remote I/O Communication Settings

Field	Description	Valid Values
Jumper ID[1]	Identifies the communication card if multiple cards are installed on terminal.	0…3
Baud Rate	The communication rate of the Remote I/O network.	57,600 (default) 115,200 230,400

(1) For use with PanelView Plus 700 to 1500 terminals only.

ControlNet Properties

The ControlNet Properties screen configures communication settings for the terminal on a ControlNet network.

ControlNet Communication Settings

Field	Description	Valid Values
Device ID	Unique address of the terminal on the ControlNet network.	1…99

DeviceNet Properties

The DeviceNet Properties screen configures communication settings for the terminal on a ControlNet network.

DeviceNet Communication Settings

Field	Description	Valid Values
MacID	Unique address of the terminal on the DeviceNet network.	0…63
Baud Rate	The communication rate at which the DeviceNet driver communicates.	125K (default) 250K 500K

Serial Properties

The Serial Properties screen configures settings for serial communications (using the RS-232 serial port) on the terminal.

Serial Communication Settings

Field	Description	Valid Values
Device	The serial device your terminal is connected to.	PLC_CH0 KF2 SLC_CH0 KF3 KFC KFC15 AC_CH0
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. The parity is automatically configured if Use Auto Config is set to Yes.	None, Odd, Even
Stop Bits	Number of stop bits used.	1 or 2
Ack Timeout	Ack/Poll timeout value in milliseconds.	20…60,000 ms
Max Retries	Maximum number of retries before the serial driver fails.	0…255

Field	Description	Valid Values
Station	Station number based on a specific device.	PLC_CH0 0…77 (octal) KF2 0…77 (octal) SLC_CH0 0…31 KF3 0…31 KFC 1…99 KFC15 1…99 AC_CH0 0…255
Baud Rate	Data rate at which serial driver communicates. The communication rate is automatically configured if Use Auto Config is set to Yes.	110 300 600 1200 4800 9600 19,200 38,400 115,200
Use Auto Config	Automatically or manually configures the baud rate, parity, and error checking parameters.	Yes (auto configure) No (manual configure)
Com Port	Communication port used on the terminal.	1 (COM1) 2 (COM2)

Terminal Settings
↓
Networks and Communications
↓
Network Connections

Network Connections

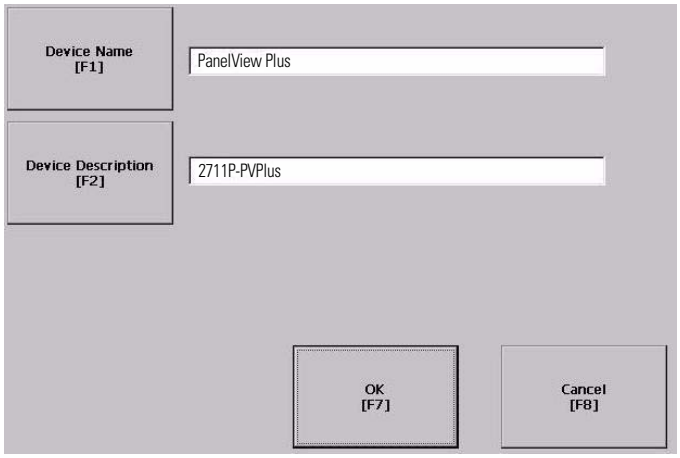
The Network Connections screen lets you configure these items for the terminal.

- Device Name
- Network Adapters
- Network Identification

Terminal Settings
↓
Networks and Communications
↓
Network Connections
↓
Device Name

Device Name

The Device Name screen identifies the terminal to other computers on the network.



Device Name Properties

Field	Description	Valid Values
Device Name[1]	Name that identifies the terminal to other computers on the network.	1 to 15 characters A leading character in the range a…z or A…Z. Remaining characters in the range a…z, A…Z, 0…9, or - (hyphen).
Device Description	Provides a description of the terminal.	50 characters max.

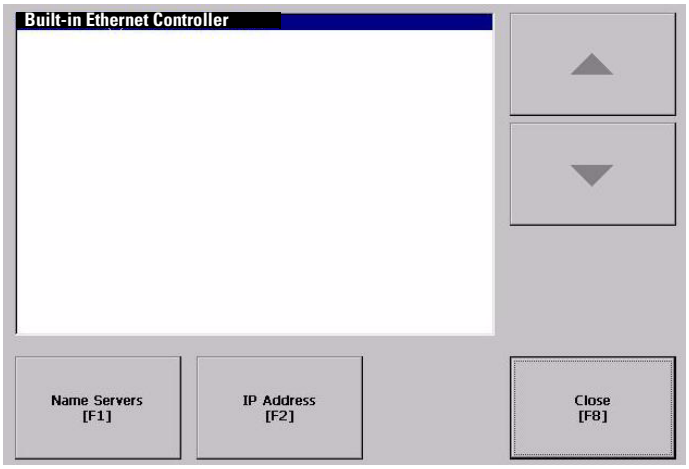
(1) Check with your network administrator to determine a valid device name.

Terminal Settings
↓
Networks and Communications
↓
Network Connections
↓
Network Adapters

Network Adapters

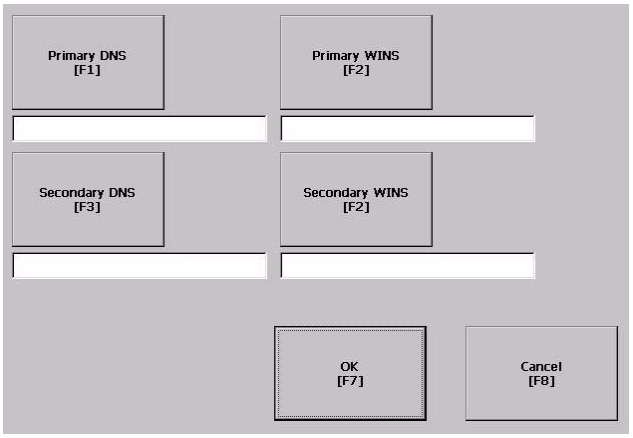
The Network Adapters screen configures driver settings for all network adapters installed on the terminal. The only network adapter on the terminal is the (IntelR) Fast Ethernet Controller.

Press the Name Servers button or IP Address button to access driver settings.



Name Servers

Defines Name Server addresses for the Network Adapter. These addresses are automatically assigned if DHCP is enabled for the network adapter.

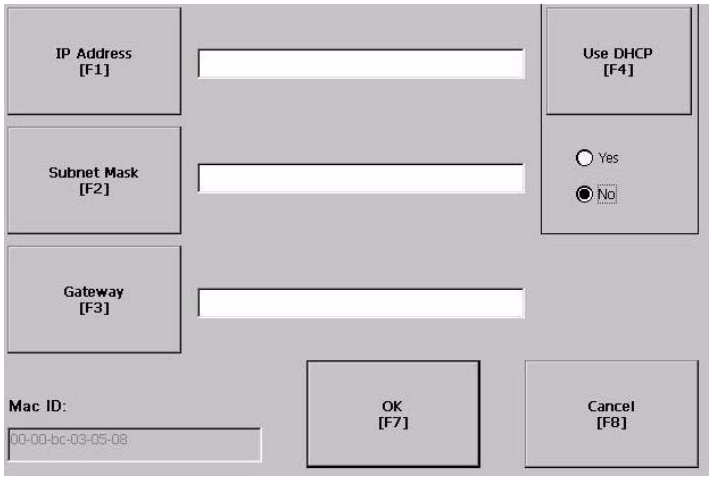


Name Server Addresses

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

IP Address

The IP Address screen identifies the IP address of the selected network adapter. If the network the terminal is connected to does not automatically assign an IP address, you can assign the address in this screen.



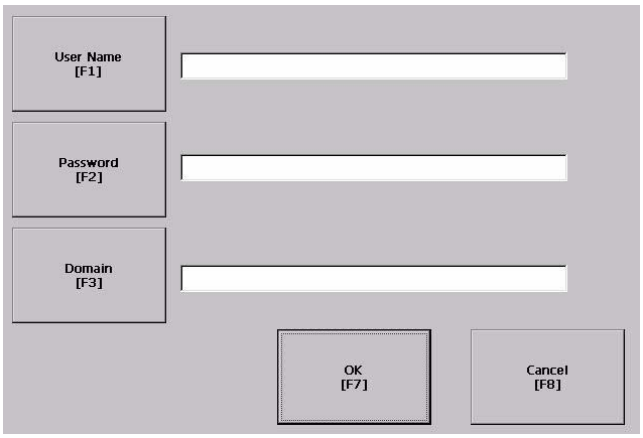
IP Address Properties

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.	

Terminal Settings
↓
Networks and Communications
↓
Network Connections
↓
Network Identification

Network Identification

The Network Identification screen configures settings that enable the terminal to gain access to network resources. You can enter a user name, password, and domain provided by your network administrator.



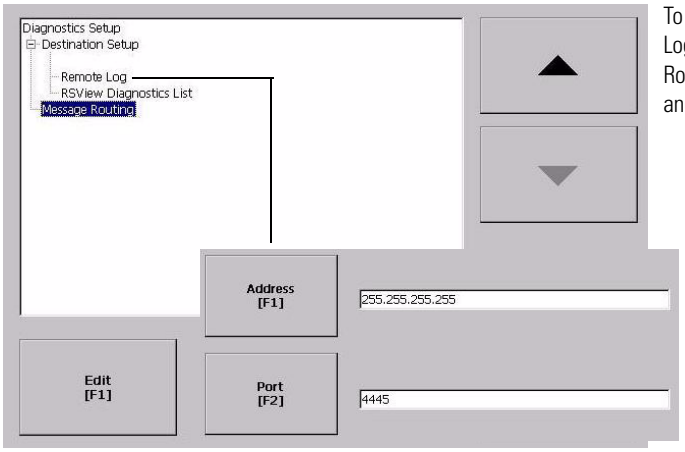
Network Identification

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.

Diagnostic Setup

Terminal Settings
↓
Diagnostic Setup

The Diagnostic Setup screen configures diagnostics for the current computer. The screen shows a tree view of possible diagnostic nodes.



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

The Remote Log Destination forwards messages that it receives to a Windows 2000/XP computer running diagnostics. The location is determined by the IP address and port number.

Remote Log Destination

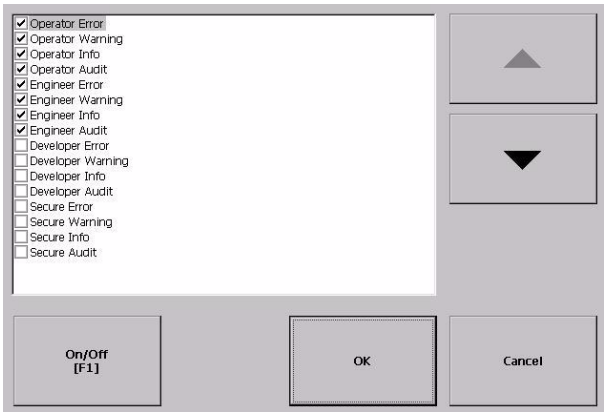
Field	Description	Valid Values
Address	Address of the remote Windows 2000/XP computer.	xxx.xxx.xxx.xxx
Port	The port used to communicate with the remote Windows 2000/XP computer.	4445 (default)

Message Routing

The Message Routing screen lets you access these screens.

- Remote Log
- RSView Diagnostics List

Each one of the above screens shows a list of messages that can be sent to that destination. The list shows the On/Off 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.



File Management

The File Management screen lets you access screens to:

- delete files.
- copy files.

Terminal Settings
↓
File Management
↓
Delete Files

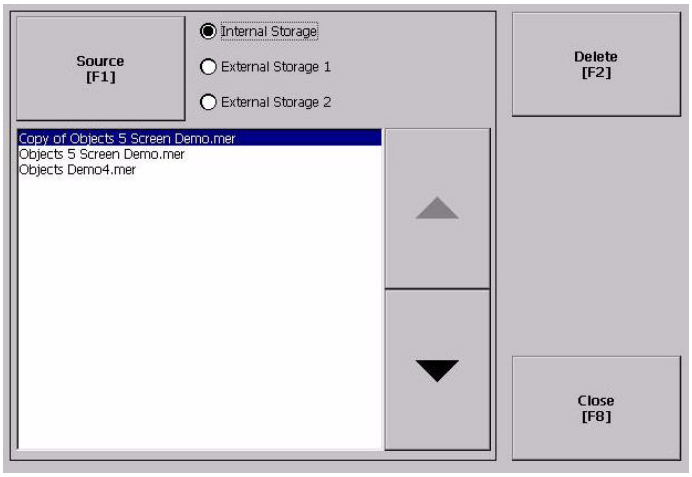
Delete Files

From the Delete Files screen you can select these options.

- Delete Applications - deletes an .MER application file from a storage location.
- Delete Fonts - deletes a font file from a storage location.
- Delete Log Files - deletes any data log files, alarm history files and alarm status files in the System Default location on the terminal.

Delete Application or Font Files

The process for deleting an application file or a font file is the same.



1. Select the Source button to select the storage location of the application or font file that you want to delete.
   - Internal Storage - the internal compact flash in the terminal.
   - External Storage 1 - the external compact flash card loaded in the card slot of the terminal.
   - External Storage 2 - for future use.
2. Select a file from the list.
3. Select the Delete button.
4. When asked if you want to delete the selected application or font file from the storage location, select Yes or No.

Delete Log Files

Select this option to delete any data log files, alarm history files, and alarm status files in the System Default location on the terminal. You will be asked to confirm the operation.

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

Select Yes or No. Any log files not located in the System Default location will not be deleted.

Terminal Settings
↓
File Management
↓
Copy Files

Copy Files

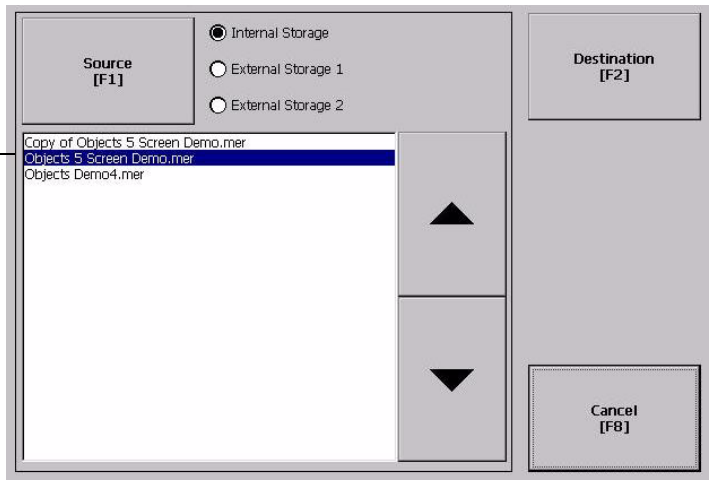
From the Copy Files screen, you can select these options.

- Copy Applications - copies an .MER application file from one storage location to another.
- Copy Fonts - copies a font file from one storage location to another.

Copy Applications or Fonts

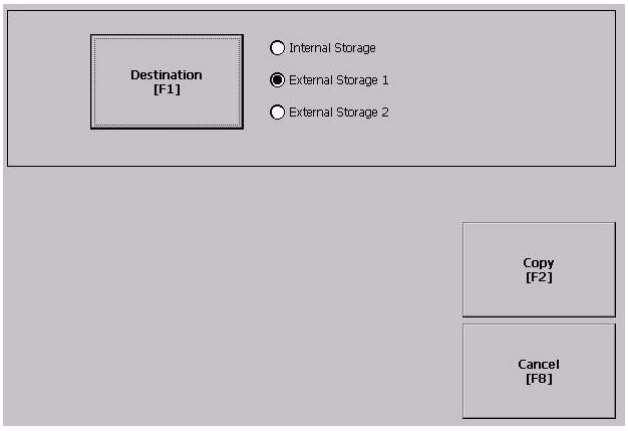
The process for copying an application file or a font file is the same.

List of files stored in compact flash of terminal.



1. Select the Source button to select the location of the application or font file that you want to copy.
   - Internal Storage - the internal compact flash in the terminal.
   - External Storage 1 - the external compact flash card loaded in the card slot of the terminal.
   - External Storage 2 - for future use.

2. Select the Destination button on the same screen to open the this screen.



3. Select the Destination button to select the storage location where you want to copy the application or font file to.
   - Internal Storage - the internal compact flash in the terminal.
   - External Storage 1 - the external compact flash card loaded in the card slot of the terminal.
   - External Storage 2 - for future use.
4. Select the Copy button to copy the selected application or font file to the selected destination.

   If the file exists, you will receive a warning and will be asked if you want to overwrite the existing application.
5. Select Yes or No.

TIP RSView ME software looks for .MER files in the \RockwellSoftware\RSViewME\Runtime folder and font files in the \RockwellSoftware\RSViewME\Fonts\ folder.

Display

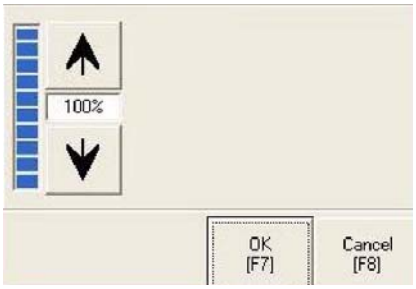
The Display screen lets you open these screens.

- Display Contrast
- Display Intensity
- Display Temperature
- Screen Saver
- Cursor

Terminal Settings
↓
Display
↓
Display Contrast

Display Contrast

The Display Contrast screen lets you view and modify the current contrast setting of the PanelView Plus 400 and 600 grayscale displays. The numeric display shows the current contrast level as a percentage. The change is not permanent until you select OK.

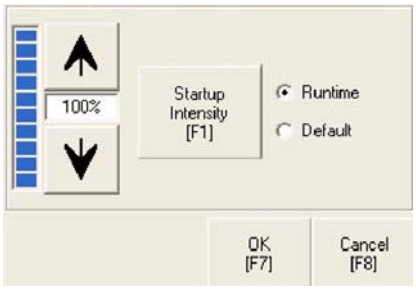


TIP Displays are shipped with the contrast level set at 50%, which is the optimum setting.

Terminal Settings
↓
Display
↓
Display Intensity

Display Intensity

The Display Intensity screen lets you view or modify the current intensity of the backlight. The default intensity is 100%. When you change the intensity, the terminal temporarily changes to that intensity. The change is not permanent until you select OK.



The Startup Intensity button toggles between Runtime and Default. If Runtime is selected, the terminal startup screens will use the runtime intensity setting selected on the above screen. If Default is selected, the terminal startup screens will use the terminal default setting, which is near 100%.

Terminal Settings
↓
Display
↓
Display Temperature

Display Temperature

The Display Temperature screen shows the current temperature of the display.

The 600 -1500 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 or above 60 °C. For proper backlight operation, the terminal monitors low and high temperature conditions.

- If the internal temperature of the product is below 10 °C, the backlight is set to overdrive or the full-rated current setting for at least five minutes.
- If the internal temperature is at or above 60 °C, the backlight is set to underdrive; 40% or less of full brightness. This reduces heat generation from the backlight.

Temperature monitoring begins when the terminal powers on, or when the backlight turns on, for example, exiting screen saver mode. The temperature control only affects 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.

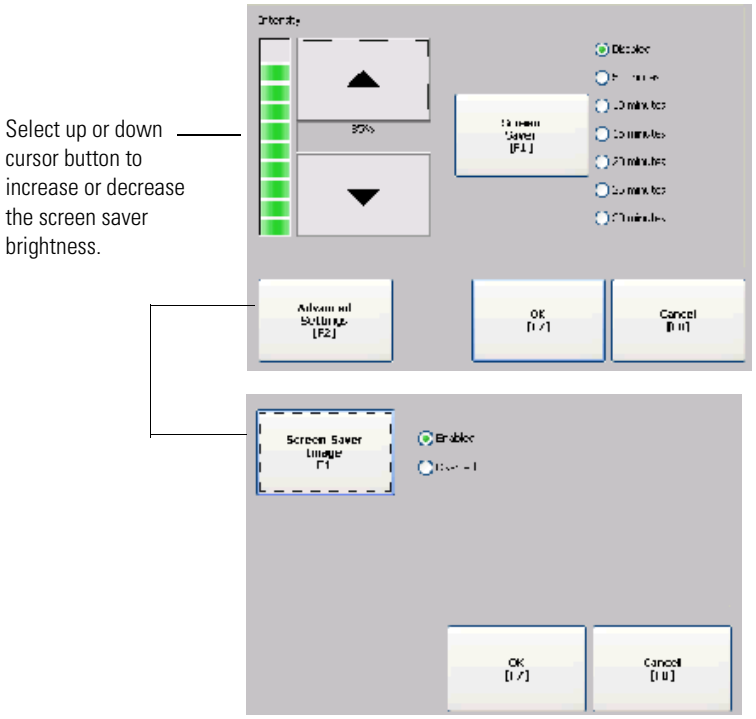
TIP The CCFL backlight temperature control takes precedence over the application Backlight Settings.

Terminal Settings
↓
Display
↓
Screen Saver

Screen Saver

The Screen Saver screen lets you:

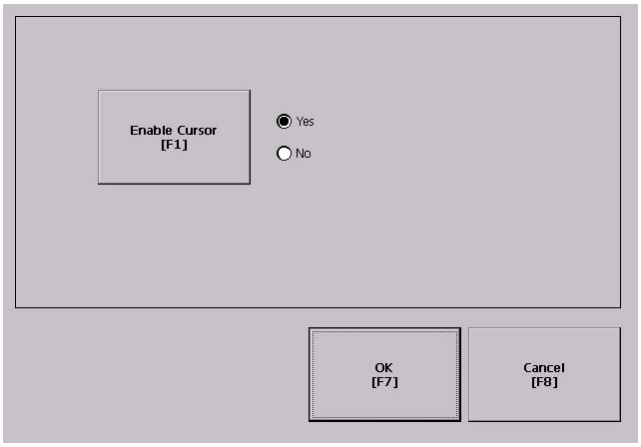
- disable the screen saver.
- enable the screen saver after the selected idle time.
- adjust the brightness intensity of the screen saver.
- enable/disable the screen saver bitmap.



Terminal Settings
↓
Display
↓
Cursor

Cursor

The Cursor screen enables/disables the on-screen cursor.

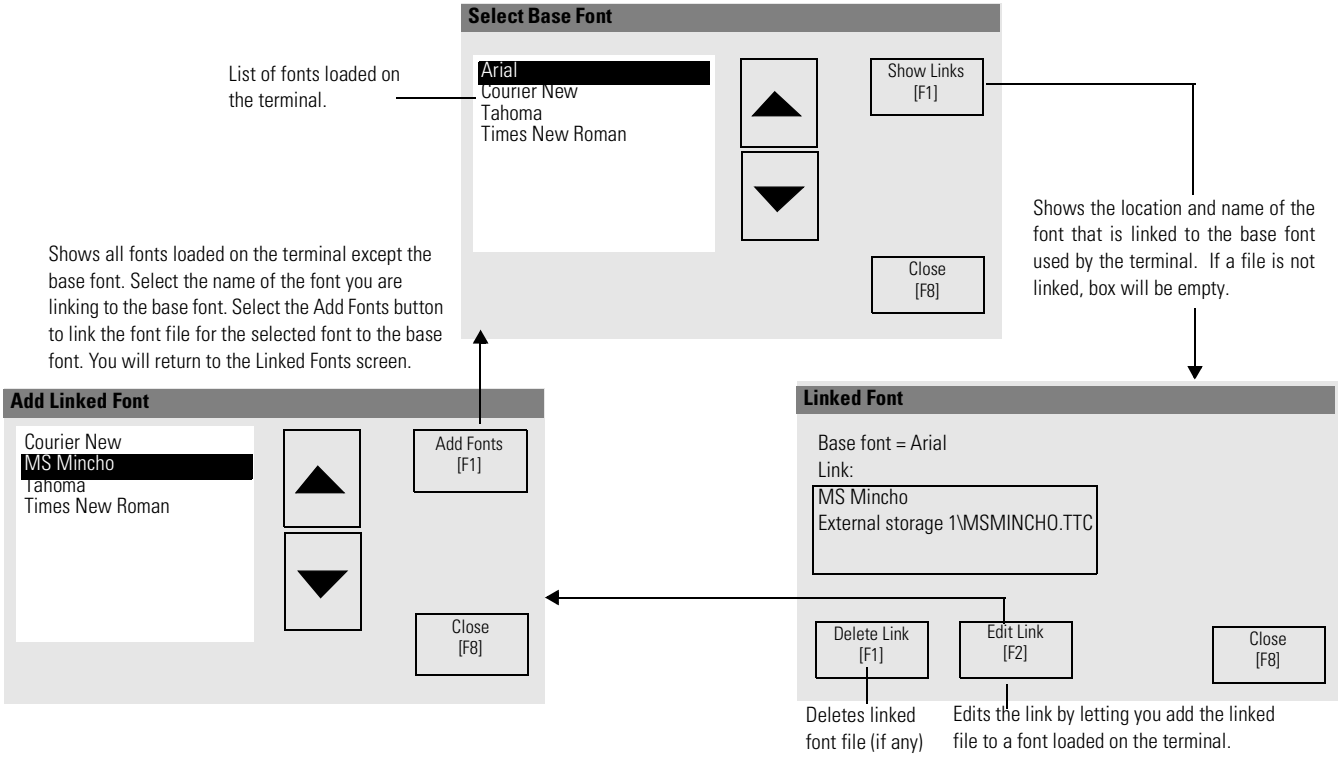


Font Linking

Terminal Settings
↓
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 Appendix C.



Input Devices

The Input Devices screen lets you access screens to view and modify settings for these input devices.

- Keyboard
- Keypad
- Mouse
- Touch Screen

Keyboard and Keypad Setup

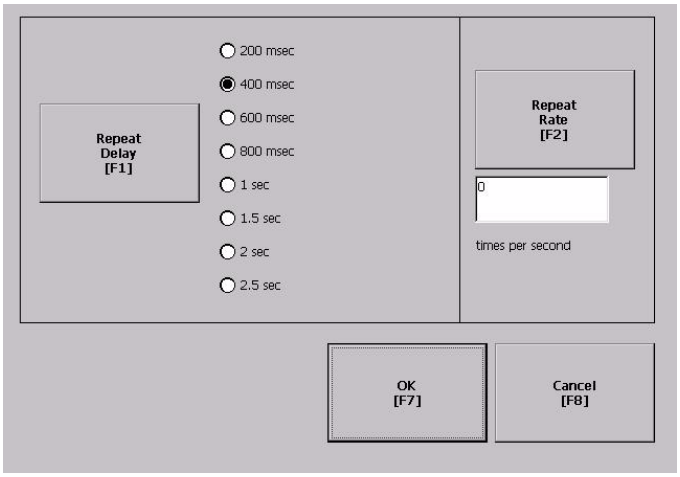
Terminal Settings
↓
Input Devices
↓
Keyboard or Keypad

The Keyboard and Keypad screen opens these screens.

- Key Repeat Settings
- Keypad Settings

Key Repeat Settings for Attached Keyboard or Terminal Keypad

The Key Repeat Settings configures settings for keys on the terminal **or** keys an attached keyboard.

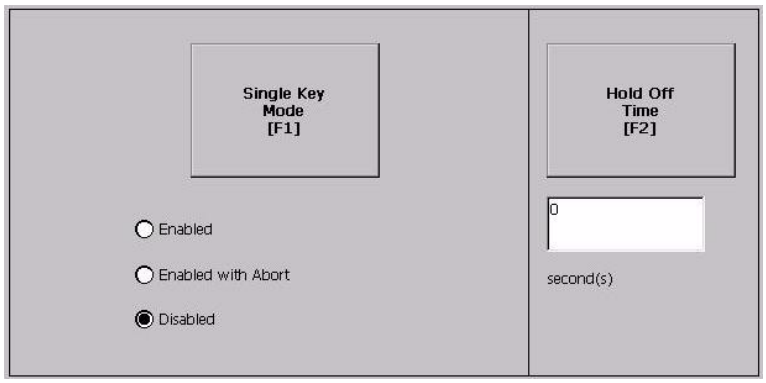


Key Repeat Rate and Delay Settings

Field	Description	Valid Values
Repeat Rate	The number of times a key is repeated per second when you hold down a key.	Keypad: 0, 2…30 Keyboard: Device dependent 0, 2…30 is typical
Repeat Delay	The amount of time that elapses before a key is repeated.	200 ms 400 ms 600 ms 1 s 1.5 s 2 s 2.5 s Values are device dependent. An unsupported value appears dimmed.

Key Settings for Terminal Keypad

The Keypad Settings screen enables/disables Single Key Mode option, that is used to restrict multiple or simultaneous key presses.



Keypad Settings

Field	Description	Valid Values
Single Key Mode	Enables or disables Single Key mode. If enabled, any programmable key that is pressed inhibits all keys until the programmable key is pressed again. This includes the Alt, Ctrl, Shift keys. If enabled with abort, any secondary key press will terminate the initial key press immediately. If disabled, there are no restrictions on key presses.	Enabled Enabled with Abort Disabled (default)
Hold Off Time	The length of time to ignore multiple presses of the same key.	400 ms (default)

IMPORTANT The keypad cannot produce Home, End, Page Up or Page Down when Single Key mode is enabled.

Terminal Settings
↓
Input Devices
↓
Touch Screen

Touch Screen

The Touch Screen lets you access these screens.

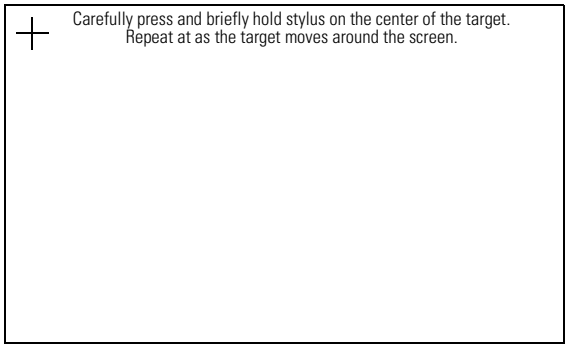
- Calibration
- Cursor
- Double-tap Sensitivity

Touch-screen Calibration

IMPORTANT Use a plastic stylus device with a minimum tip radius of 1 mm (0.040 in) to prevent damage to the touch screen.

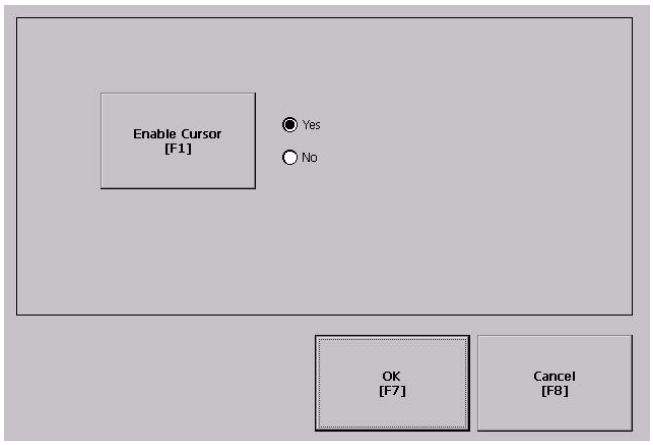
This screen calibrates the touch screen of the terminal. Touch the center of the target (+) each of the 4 times it appears. When the calibration is complete, you will see the message:

Tap the screen to register saved data. Wait for 30 seconds to cancel saved data and keep the current settings.



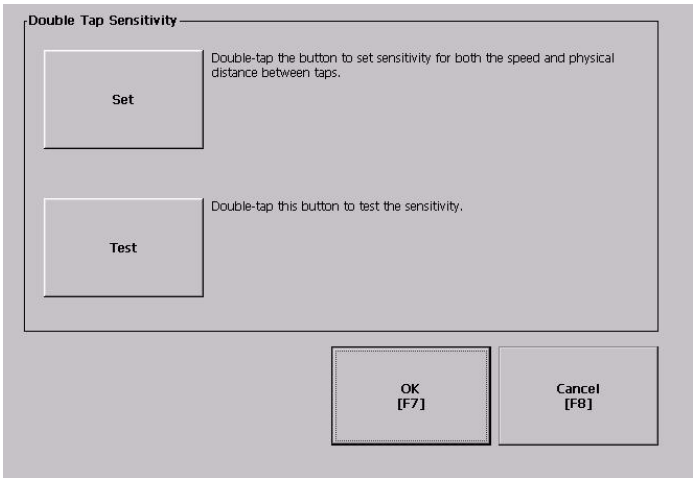
Cursor

This screen enables or disables the cursor on touch-screen terminals. Disabling the touch-screen cursor will not disable the mouse.



Double-tap Sensitivity

This screen lets you set and test the sensitivity for both speed and physical distance between touch-screen presses.



- The Set button sets the sensitivity of touch-screen presses.
- The Test button tests 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.

Terminal Settings
↓
Input Devices
↓
Mouse

Mouse

The Mouse screen sets and tests the sensitivity for both speed and physical distance between mouse clicks. This process is identical to that for setting Double-tap sensitivity for the touch screen.

Print Setup

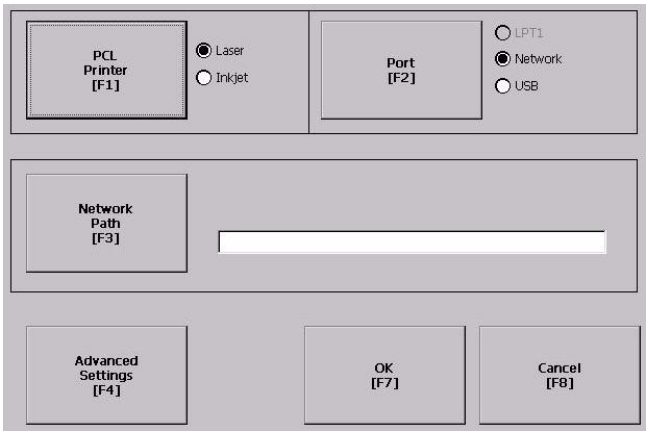
The Print Setup screen lets you access screens to configure print options for:

- displays.
- alarms.
- diagnostic messages.

Terminal Settings
↓
Print Setup

Display, Alarm, and Diagnostic Print Setup

The general setup for printing displays, alarm messages, and diagnostics messages from an RSView .MER application is the same. The Advanced Settings for each function are different.



Print Setup Properties

Field	Description	Valid Values
PCL Printer	Type of printer to use.	Laser (default) Inkjet
Port	Port to use for printing displays, alarm messages, and diagnostic messages.	Network (default) USB
Network Path	Network path of printer to use if the Port selection is Network.	519 characters max.
Advanced Settings	Press this button to open additional settings.	

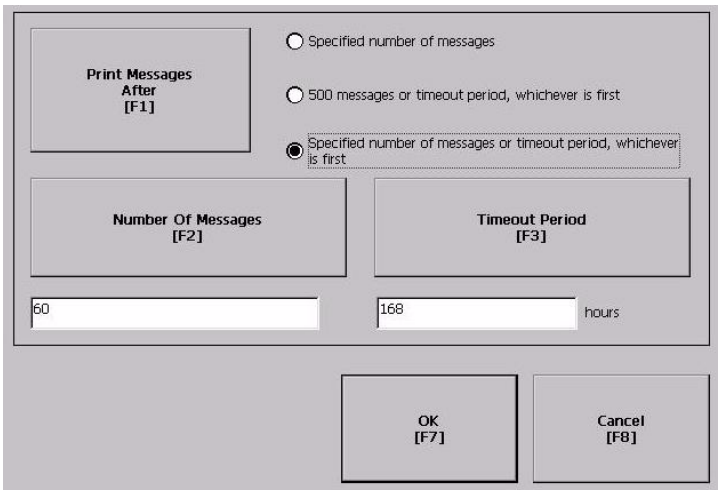
Advanced Settings for Display Print Setup

Select the Advanced Settings button to:

- change the print orientation (portrait or landscape).
- enable or disable Draft mode.

Advanced Settings for Diagnostic Messages and Alarm Messages

This screen configures when to print diagnostic or alarm messages that are sent to the Network or USB port.



To configure how messages are queued for printing, select the Print Messages After button and set one of these options.

- Specified number of messages

  Prints messages after 60 are queued or another specified value. The default is 60 (about one full page of messages.)

- 500 messages or timeout period, whichever is first

  Prints after 500 messages are queued or a specific time period has elapsed, whichever comes first. The default time period is 168 hours (7 days). You can specify another value. For example, if 350 messages are in the queue and 7 days have elapsed, the 350 messages will print.

- Specified number of messages or timeout period, whichever is first

  Prints after a specified number of messages are queued or a specific time period has elapsed, whichever comes first.

  The default number of messages to queue is 60. The default timeout period is 168 hours (7 days). You can change both values. For example, the number of messages is set to 75 and the timeout period is set to 48 hours (2 days). If the queue has 75 messages after only 24 hours, these messages will print. If there are only 15 messages in the queue at 48 hours, the 15 messages will not print until the time period has elapsed.

Startup Options

The Startup Options screen accesses these screens.

- RSView ME Station Startup
- Startup Tests

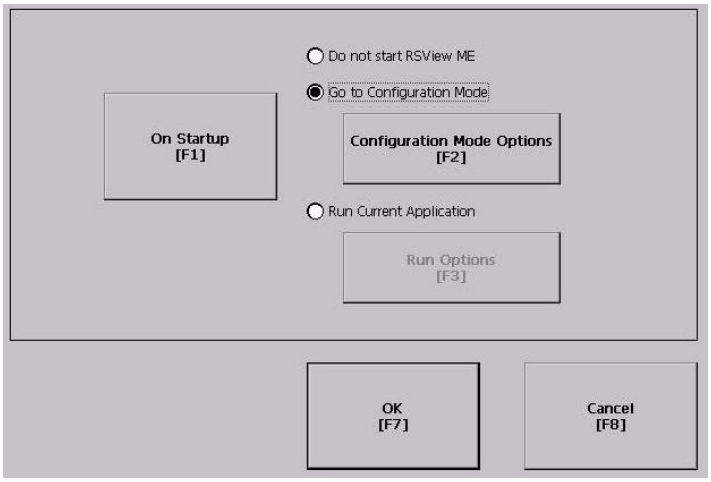
Terminal Settings
↓
Startup Options
↓
RSView ME Station Startup

RSView ME Station Startup

The RSView Machine Station Startup screen specifies what action the terminal takes on startup.

- Do not start RSView ME Station.
- Go to Configuration Mode.
- Run the Current Application.

  This option is available only if an application is loaded.



RSView ME Station will start up based on shortcuts in the Windows Startup folder and whether an application is loaded.

Select the On Startup button to switch between Do not start RSView ME, Go to Configuration Mode, or Run the Current Application. Select the button under the last two options to configure specific settings for each mode.

Configuration Mode

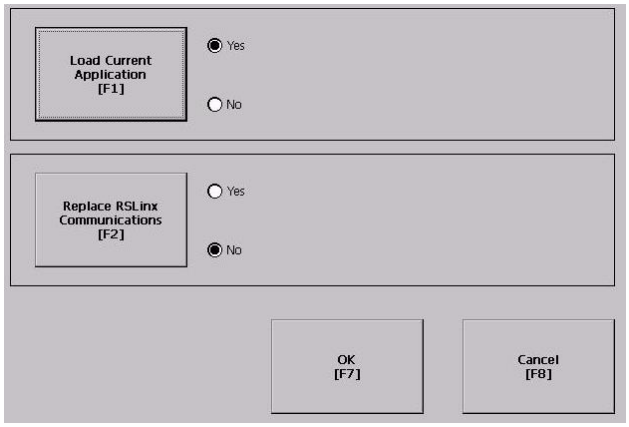
The Configuration Mode Options screen specifies whether the terminal will start in configuration mode:

- with the current application loaded.
- with the communication configuration of the current application or the terminal's RSLinx communication configuration.

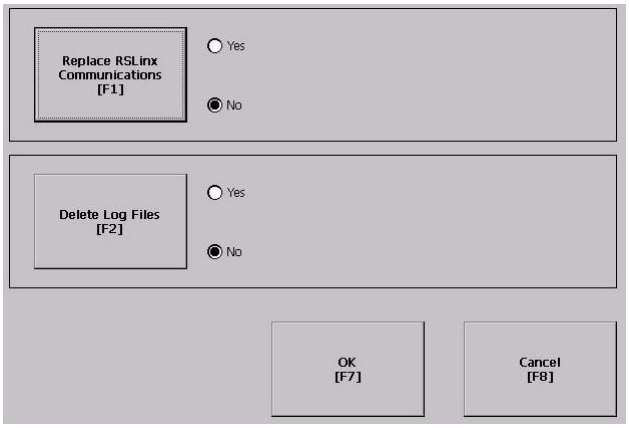
  If you select Yes to replace the terminal's communication configuration with that of the application, any changes made to the device addresses or driver properties in the RSLinx Communications screen will be lost.

These options are available only if an application is loaded in the terminal. If an application is not loaded, both options are disabled and set to No.

Configuration Mode



Run Options



Run Options

The Run Options screen specifies whether to:

- replace the terminal's communication (RSLinx) settings with application settings when the application is run.

  If you select Yes, any changes to the device addresses or driver properties in the RSLinx Communications screen will be lost when the terminal boots up.
- delete the log files (data, alarm history, alarm status) generated by the terminal from the System Default location before running the application.

Terminal Settings
↓
Startup Options
↓
Startup Tests

Startup Tests

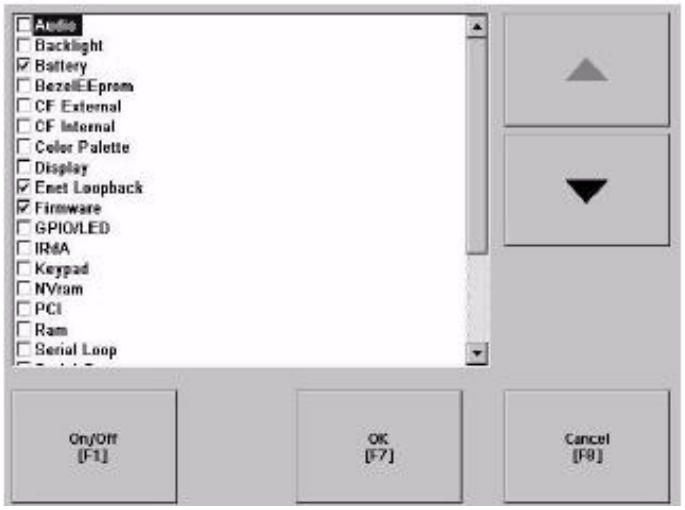
The terminal can run extended tests on startup. The Startup Tests screen provides access to these screens.

- Startup Tests Settings
- Repeat Count

IMPORTANT Startup Tests apply only to PanelView Plus 700 to 1500 terminals.

Select Tests

The Select Tests screen shows a list of each test that can be performed on the terminal at startup and its current On/Off status. You can turn any test in the list on or off by selecting the On/Off button. The terminal will only run tests with a checked box.

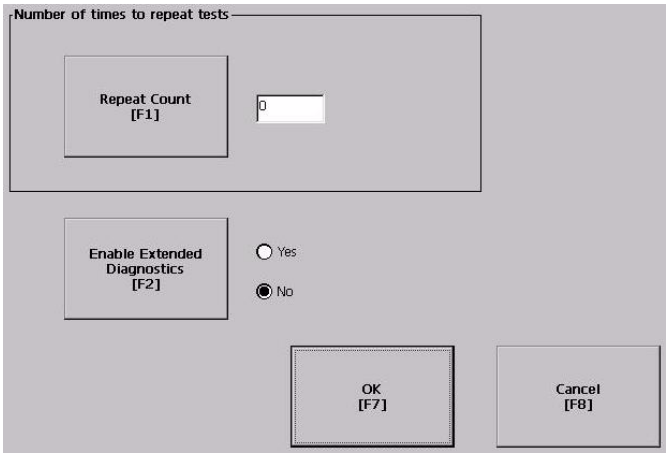


Startup Tests Settings

From the Startup Tests Settings screen, you can:

- enable extended diagnostics to run on the terminal at startup.
- disable extended diagnostics at startup.
- specify how many times to repeat the selected tests that are run on the terminal during startup.

The Repeat Count field shows the current value. You can enter a value in the range of 0…128.



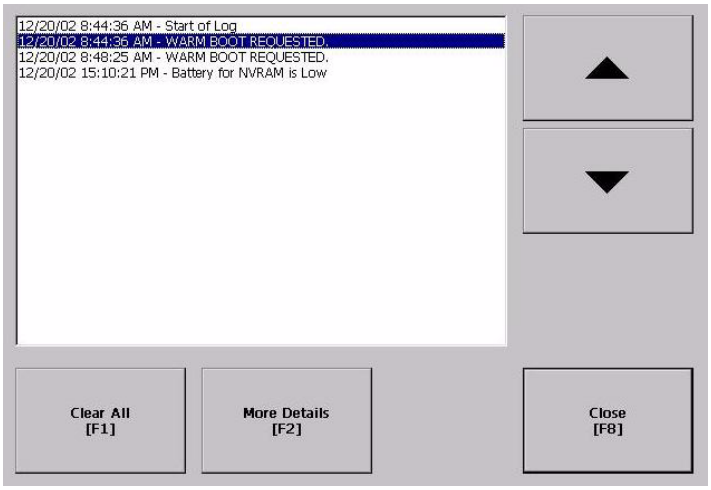
IMPORTANT Enabling Extended Diagnostics and setting a high Repeat Count will increase the time it takes the terminal to reboot.

The tests will run each time you reset or cycle power to the terminal until you disable Extended Diagnostics. Setting a low repeat count will also decrease the startup time.

System Event Log

The System Event Log screen displays a list of system events currently logged by the terminal.

Terminal Settings
↓
System Event Log



- To display System Event Log Details for a specific event, select an event and then select the More Details button.
- To clear all System Event Logs, press the Clear All button.

System Information

The System Information screen lets you access these screens.

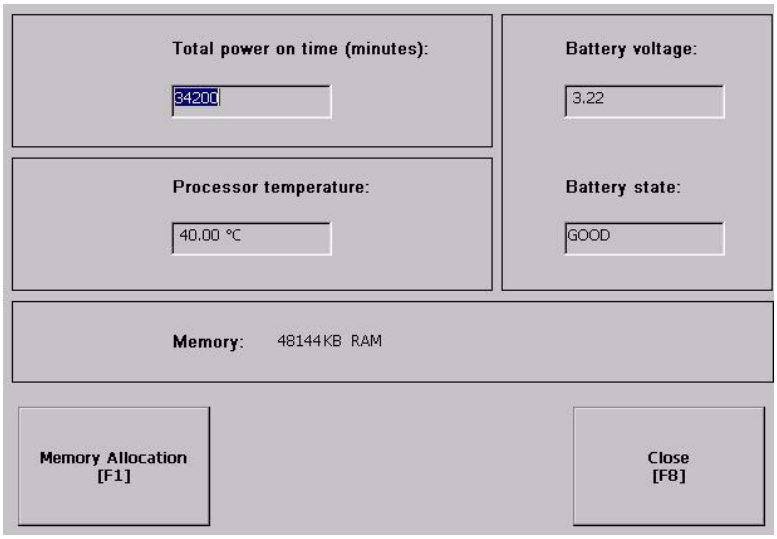
- RSView ME Station information
- Terminal Information

Terminal Settings
↓
System Information
↓
Terminal Information

Terminal Information

The Terminal Information screen displays these details for the terminal.

- Total power on time
- Processor temperature
- Battery voltage and battery state
- Amount of memory on terminal



All fields are read only except for memory allocation. To access details on Memory Allocation, select the Memory Allocation button.

Battery State

Battery State	400 and 600	700 to 1500
Good	Good battery condition	Good battery condition
Failing	Does not have a replaceable battery. Replace terminal.	Low battery. Replace battery.
Bad	N/A	Battery is missing or bad. Replace battery.

Battery Voltage

For PanelView Plus 400 and 600 terminals, the Battery Voltage field indicates the battery state only.

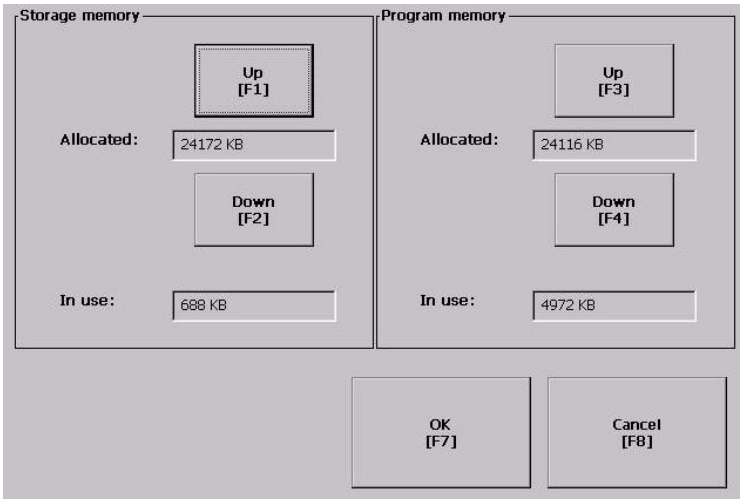
Processor Temperature

For the 400 and 600 terminals, the Processor Temperature shows the temperature of the display.

Memory Allocation

The Memory Allocation screen displays the:

- amount of allocated storage or program memory.
- amount of storage or program memory currently in use.



You can modify the allocation of storage or program memory. Press the Up or Down button to increase/decrease the memory allocation. Each button press changes the allocation by a value of four. If you change the allocation for one type of memory, the other is automatically updated accordingly.

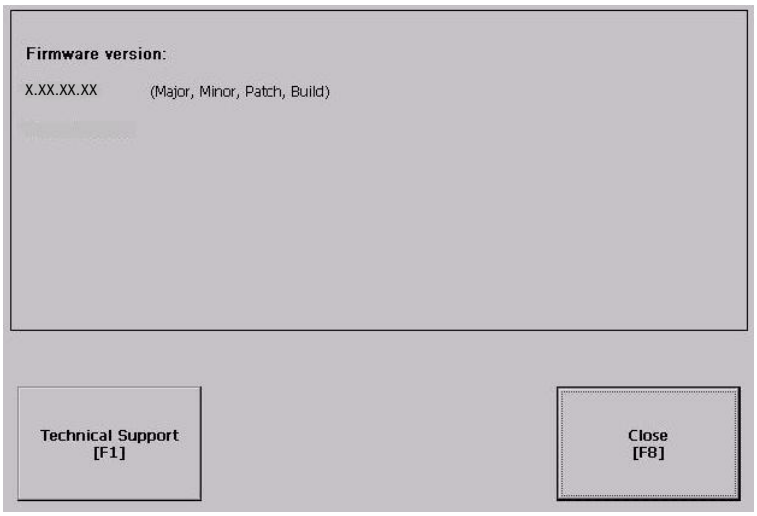
TIP These settings are not retained after a power cycle. Values return to the default settings.

Terminal Settings
↓
System Information
↓
About RSView ME Station

RSView ME Station Information

The About RSView ME Station screen provides access to:

- RSView ME Station firmware number.
- Rockwell Technical Support information.



Time/Date/Regional Settings

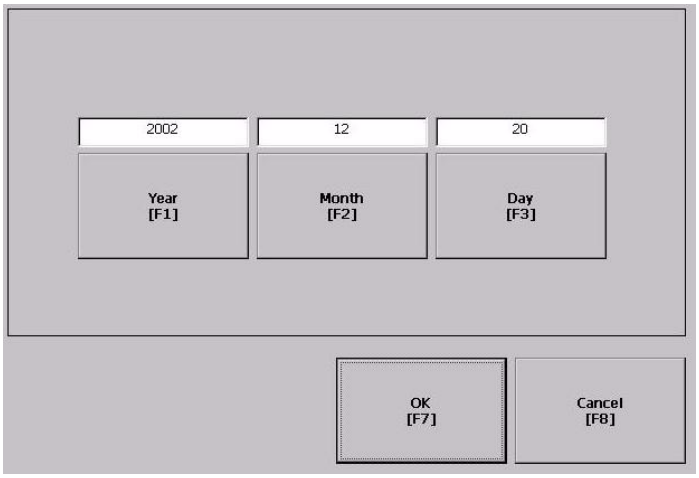
The Time/Date/Regional Settings screen lets you access these screens.

- Date
- Regional settings
- Time
- Time zone

Terminal Settings
↓
Time/Date/Regional Settings
↓
Date

Date

The Date screen shows and configures the current date in separate Year, Month, and Day fields.



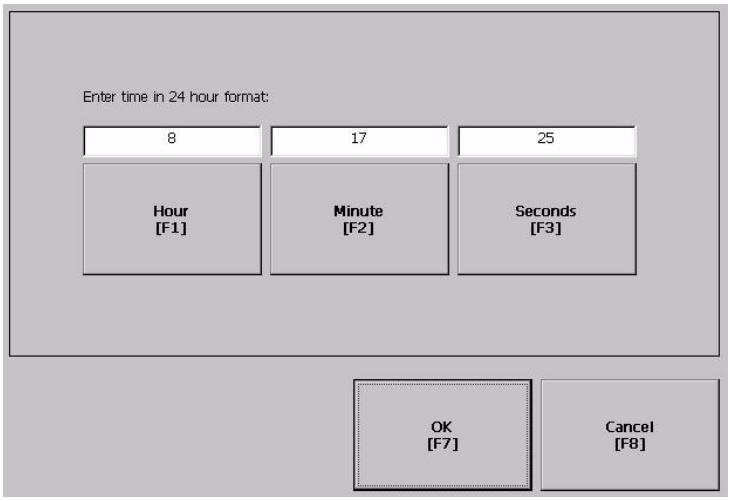
Date Settings

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 based on the month.	0…31

Terminal Settings
↓
Time/Date/Regional Settings
↓
Time

Time

The Time screen shows and configures the current time in 24-hour format in separate Hour, Minute, and Second fields.



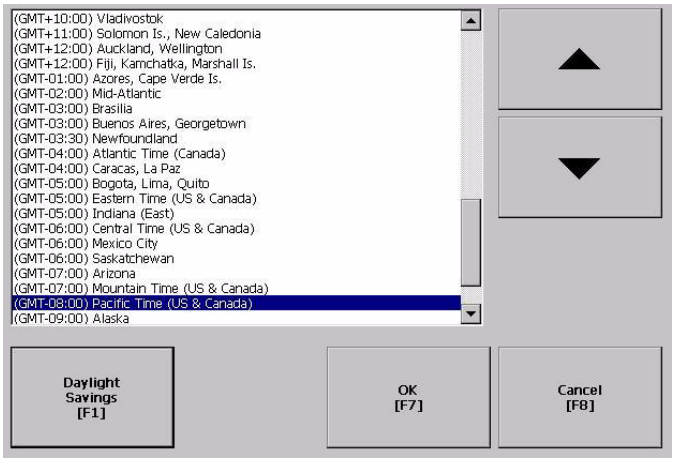
Time Settings

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

Terminal Settings
↓
Time/Date/Regional Settings
↓
Time Zone

Time Zone

The Time Zone screen shows 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.



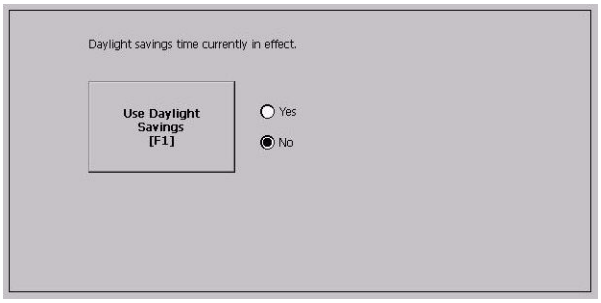
Time Zones

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 select the Daylight Savings button.

Daylight Savings

The Daylight Savings screen configures whether daylight savings time is in effect for the current time zone. Daylight Savings is set to Yes for all time zones except for Japanese, which does support daylight savings. Daylight savings changes are not permanently applied until you close the Time Zone screen.



Terminal Settings
↓
Time/Date/Regional Settings
↓
Regional Settings

Regional Settings

The Regional Settings screen lets you access these screens.

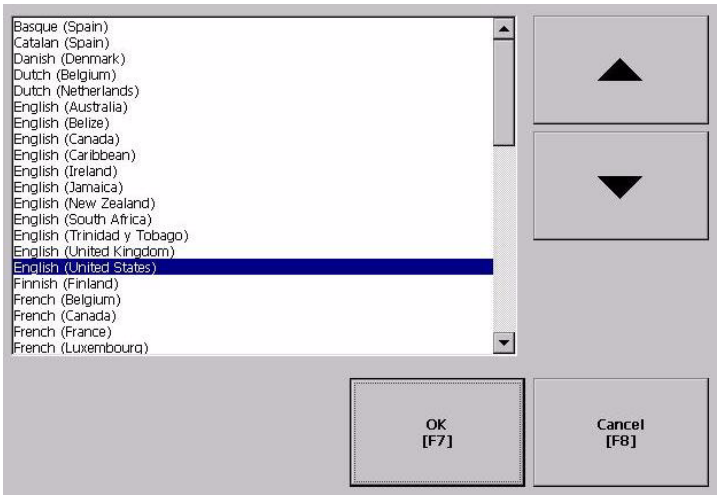
- Language
- Numeric Format
- Long Date Format
- Short Date Format
- Time Format

The current language is shown at the bottom of the Regional Settings screen.

Terminal Settings
↓
Time/Date/Regional Settings
↓
Regional Settings
↓
Language

Language

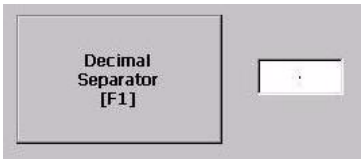
The Language screen lets you select a language that is installed on the terminal. Languages are installed as a part of the operating system.



Terminal Settings
↓
Time/Date/Regional Settings
↓
Regional Settings
↓
Numeric Format

Numeric Format screen

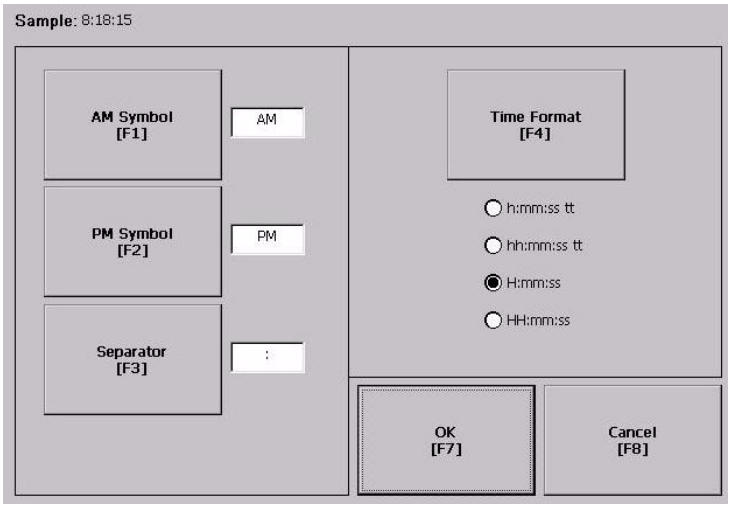
The Numeric Format screen lets you modify the decimal separator used by the current language. The default decimal separator is a period. The field will accept a separator up to three characters.



Terminal Settings
↓
Time/Date/Regional Settings
↓
Regional Settings
↓
Time Format

Time Format

The Time Format screen configures the time format for the current language. A sample of the current time is shown using the currently selected format.



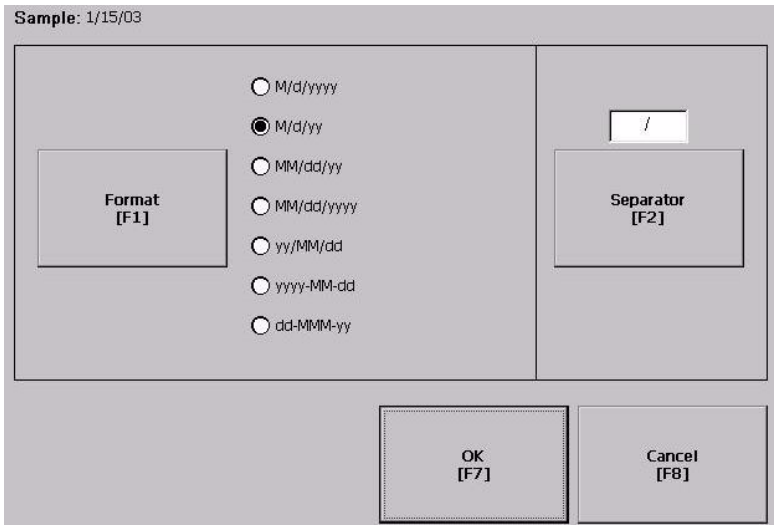
Time Format

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.

Terminal Settings
↓
Time/Date/Regional Settings
↓
Regional Settings
↓
Short Date Format

Short Date Format

The Short Date Format screen configures the short date format used by the current language. A sample of the current date is shown using the currently selected short date format.



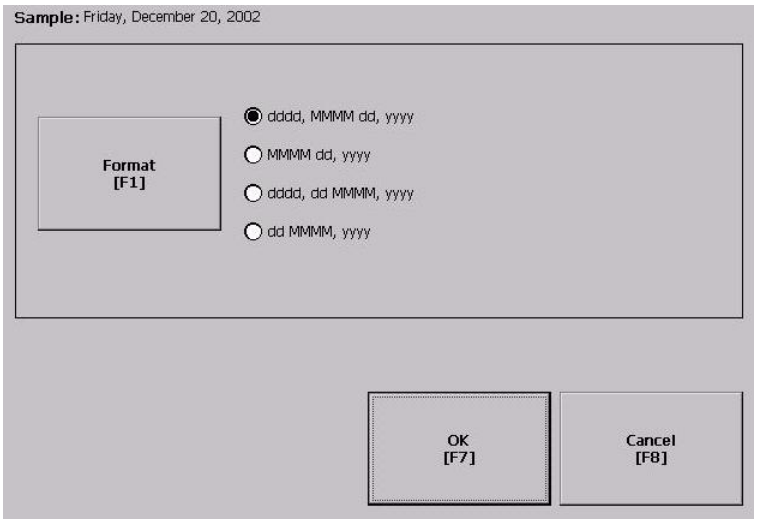
Short Date Format

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	1/2/2003 1/2/03 01/02/03 01/02/2003 03/01/02 2003-01-02 02-Jan-03
Separator	Characters separator for fields in time format. The default separator is either - or / depending on short date format.	- or / (default) 3 character max.

Terminal Settings
↓
Time/Date/Regional Settings
↓
Regional Settings
↓
Long Date Format

Long Date Format

The Long Date Format screen configures the long date format used by the current language. A sample of the current date is shown using the currently selected long date format.



Long Date Format

Field	Short Date Formats	Example
Format	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	Monday, January 01, 2003
	MMMM dd, yyyy MMMM is name of month dd is two-digit day of month with leading zero yyyy is four-digit year	January 01, 2003
	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	Monday, 01 January, 2003
	dd MMMM, yyyy dd is two-digit day of month with leading zero MMMM is name of month yyyy is four-digit year	01 January, 2003

Install and Replace Components

Chapter Objectives

This chapter shows how to install, replace, or upgrade various components of the PanelView Plus terminals.

- Logic module
- RAM and internal compact flash
- Communication module
- Display module
- Battery
- Display module bezel
- Backlight
- Product ID label
- Keypad legend inserts
- External compact flash card

Required Tools

The following 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.

WARNING

Disconnect all power from the terminal before installing or replacing any components. Failure to disconnect power may result in electrical shock and/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.

Compatibility of Terminal Components

700 to 1500 Terminals Only

When assembling components of a terminal or replacing the internal compact flash in a logic module, the components must be compatible.

To verify compatibility of the internal compact flash with the logic module, you must know what version of RSView ME is running on the terminal.

1. Locate the green label on the back of the logic module to determine the revision level of your terminal.
   - Rev B: Contains RSView ME software, version 3.0
   - Rev C: Contains RSView ME software, version 3.10
   - Rev D, E: Contains RSView ME software, version 3.20
   - Rev F: Contains RSView ME software, version 4.0
2. Determine the series of the internal compact flash and logic module.

The table matches the correct series of the internal compact flash card with the correct series of the logic module for the terminals. The logic module is available with or without memory installed.

Component Compatibility for PanelView Plus Terminals

Terminal Revision	Logic Module 2711P-RPx Compatibility	Internal Compact Flash 2711P-RW1, 2, 3	RSView ME Software Version
Rev B [1]	**Series A**: 2711P-RPx/A	**Series B**: 2711P-RWx/B	3.0
Rev C	**Series B**: 2711P-RPx/B	**Series C**: 2711P-RWx/C	3.10
		Series D: 2711P-RWx/D **Series E:** 2711P-RWx/E	3.20
		Series F: 2711P-RWx/F	4.0
Rev D	**Series C**: 2711P-RPx/C **Series D**: 2711P-RPx/D	**Series D**: 2711P-RWx/D **Series E**: 2711P-RWx/E	3.20
		Series F: 2711P-RWx/F	4.0
Rev E	**Series D**: 2711P-RPx/D **Series E**: 2711P-RPx/E	**Series D**: 2711P-RWx/D **Series E**: 2711P-RWx/E	3.20
		Series F: 2711P-RWx/F	4.0
Rev F	**Series D**: 2711P-RPxH/D **Series E**: 2711P-RPxH/E	**Series D**: 2711P-RWx/D **Series E**: 2711P-RWx/E	3.20
		Series F: 2711P-RWx/F	4.0

[1] When upgrading RSView ME software, version 3.0 to 3.10 or later, the Firmware Upgrade Kit is required.

RSView ME terminals are compatible with .MER applications that are the same version or a previous version. For example, RSView ME 3.20 terminals can run .MER applications for RSView ME software, versions 3.0, 3.10, and 3.20.

Install RAM or Internal Compact Flash

700 to 1500 Terminals Only

The logic module is available with or without RAM/internal compact flash installed. If RAM and internal compact flash are ordered as separate components, you must install the memory before attaching the logic module to the display module.

To install/replace RAM or internal compact flash:

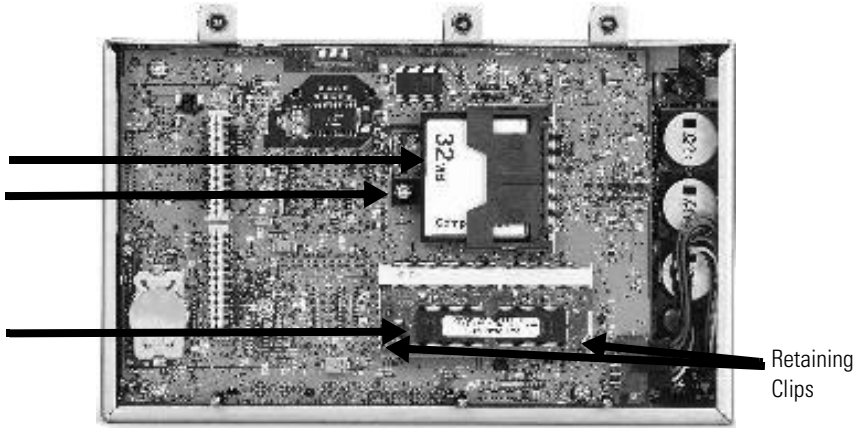
1. Remove power from the terminal.
2. Place the terminal, display side down, on a flat stable surface.
3. Loosen the six captive screws that secure the logic module.
4. Carefully lift the logic module away from the terminal and turn over to expose the circuit board.

ATTENTION

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

Skip Steps 5 to 6 if not replacing RAM.

5. Locate the RAM module on the circuit board, pull the metal retaining clips away from the module, and slide out the RAM module.



6. Insert the new RAM module at a 45° angle and snap down.

Skip Steps 7 to 11 if not replacing internal compact flash.

7. Unscrew and remove the retaining clip that secures the internal compact flash card.
8. Pull out the internal compact flash card.
9. Insert the new internal compact flash card.
10. Reattach the retaining clip.
11. Attach the logic module by aligning the two connectors on the bottom of module with the connectors on the display module.
12. Push down on the logic module until firmly seated.
13. Tighten the six captive screws that secure the logic module to a torque of 0.68 Nm (6 to 8 lb-in).

Install or Replace the Logic Module

700 to 1500 Terminals Only

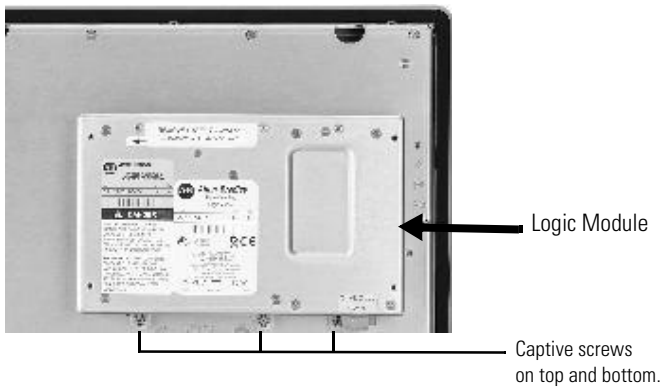
This section shows how to install and replace the logic module. If the display module and logic module are ordered as separate components, attach the logic module to the display module before panel installation.

The logic module is available with or without RAM and internal compact flash installed. If ordered as separate components, you must install the memory before attaching the logic module to the display module.

To install a logic module:

1. Disconnect power from the terminal.
2. Set the terminal, display side down, on a clean, flat, stable surface to prevent scratches, if the terminal is removed from panel.
3. Position the logic module over the back of the display module until the two connectors on the bottom of the logic module align with the connectors on the display module.

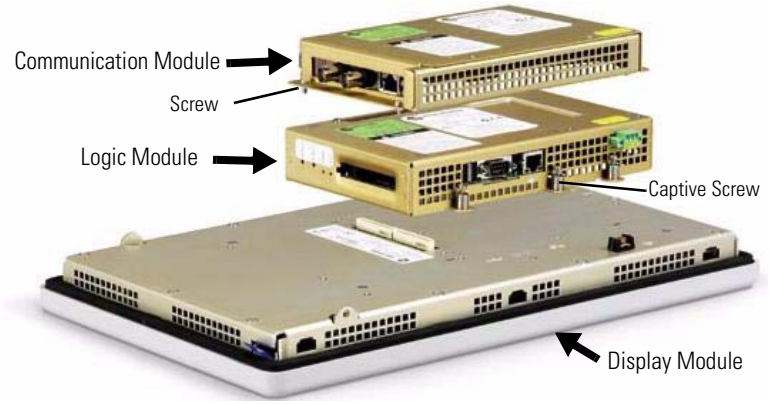
4. Push down on the logic module until firmly seated.
5. Tighten the six captive screws that secure the logic module to the display module to a torque of 0.68 Nm (6 to 8 lb-in).



Before replacing the logic module, you must remove the communication module, if attached. You will also need to remove the Internal RAM and compact flash from the logic module to reuse in the new logic module.

To replace the logic module:

1. Disconnect power from the terminal.
2. Disconnect all power and communication cables.
3. Set the terminal, display side down, on a clean, flat, stable surface to prevent scratches, if the terminal is removed from panel.
4. Remove the four screws that attach the communication module (if attached) to the logic module and arefully lift the communication module away from the logic module.



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

ATTENTION

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

7. If reusing the memory in the new logic module:
   - Remove the RAM and internal compact flash from the logic module.
   - Insert the RAM and internal compact flash in the new logic module.
8. Install the new logic module.
9. Attach the communication module, if necessary.

Install or Replace a Communication Module

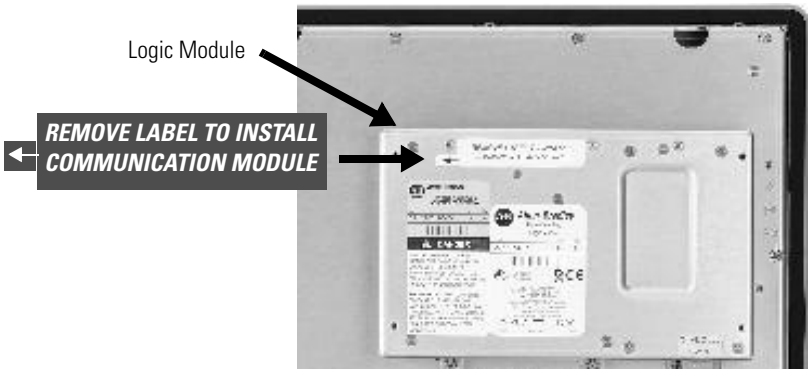
This section shows how to install and replace a communication module. The communication module installs over the logic module. The communication modules are available as separate catalog numbers for specific communication protocols. The installation is the same for all modules regardless of the communication type.

Install/Replace Communication Module on 700 to 1500 Terminals

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

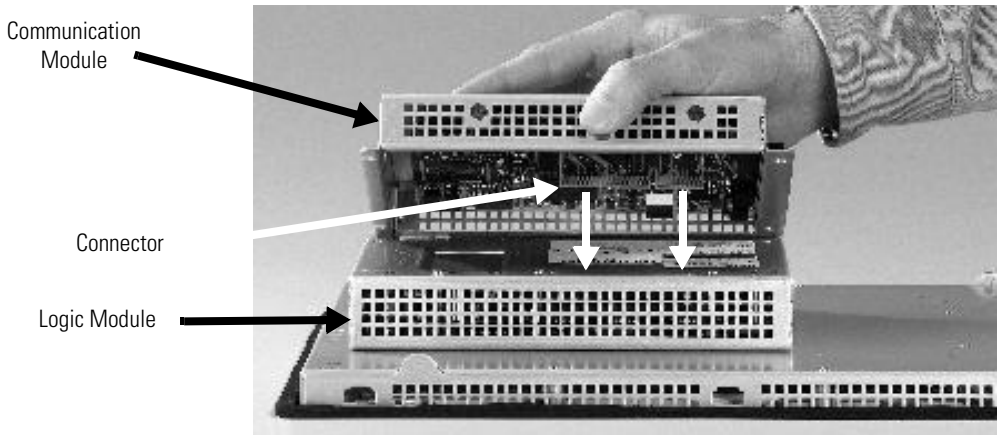
To install a communication module:

1. Disconnect power from the terminal.
2. Set the terminal, display side down, on a clean, flat, stable surface to prevent scratches if the terminal is removed from panel.
3. Remove the label covering the communication module connector on the logic module.

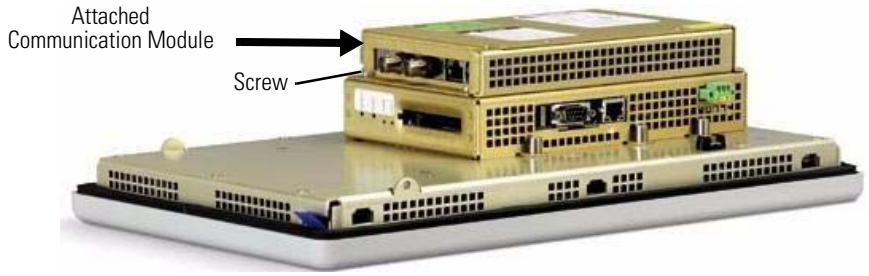


4. Position the communication module over the logic module so that the connectors on bottom of module align with connectors on the logic module.

To prevent ESD between the modules, allow the communication module to touch the logic module before making connection.



5. Push down on the communication module until the connectors are firmly seated.
6. Tighten the four screws that secure the communication module to the logic module to a torque of 0.68 Nm (6 to 8 lb-in).



To replace a communication module:

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

WARNING

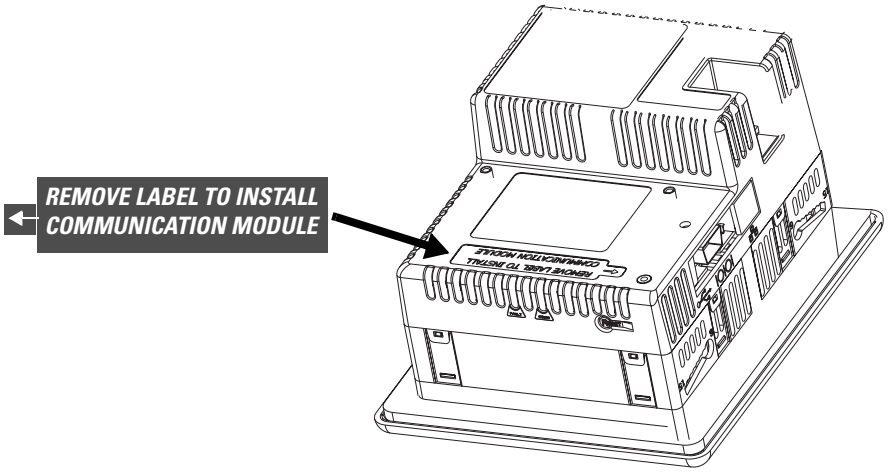
Do not connect or disconnect any communication cable with power applied to this device or any device on the network. An electrical arc could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

3. Remove the four screws that secure the communication module to the logic module.
4. Carefully lift the communication module away from the logic module and set aside.
5. Install the new communication module.

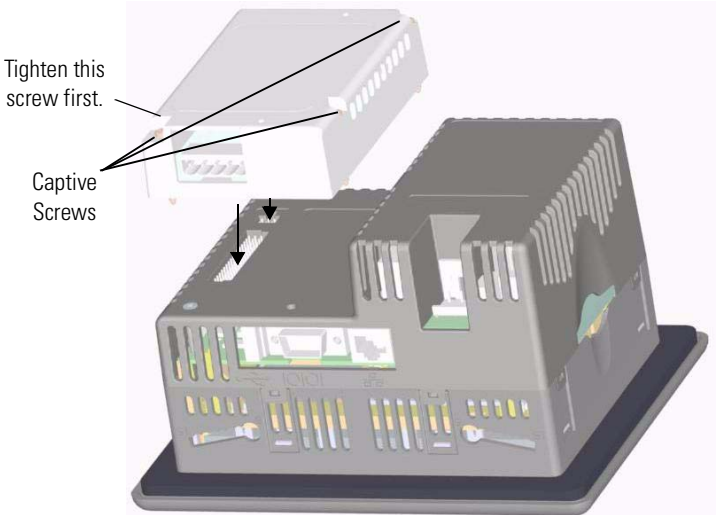
Install or Replace Communication Module on 400/600 Terminals

To install a communication module:

1. Disconnect power from the terminal.
2. Set the terminal, display side down, on a clean, flat, stable surface.
3. Remove the label covering the connectors on the base unit of the terminal.



4. Position the communication module over back of the terminal so that the connector on bottom of communication module align with the connector on the base unit.



5. Push down on the communication module until the connector is firmly seated.
6. Tighten the three captive screws that secure the module to the terminal, starting with the bottom, left screw on the module. Tighten screws to a torque of 0.34 to 0.45 Nm (3 to 4 lb-in).

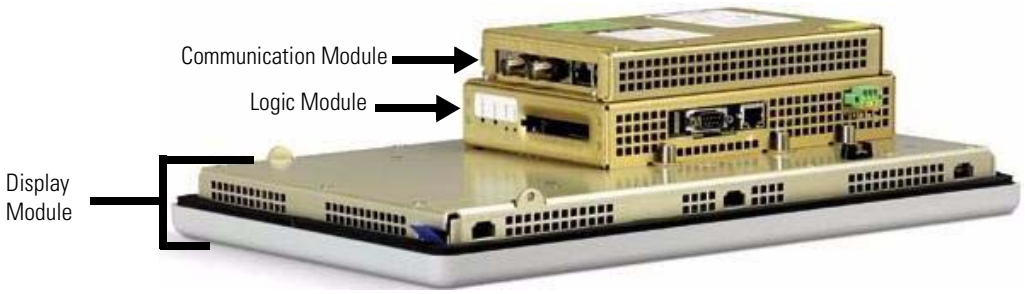
To replace a Communication module:

1. Disconnect power from the terminal.
2. Disconnect the communication cables from the module.
3. Loosen the three screws that secure the communication module to the terminal.
4. Carefully lift the communication module away from the terminal and set aside.
5. Install the new communication module.

Replace the Display Module

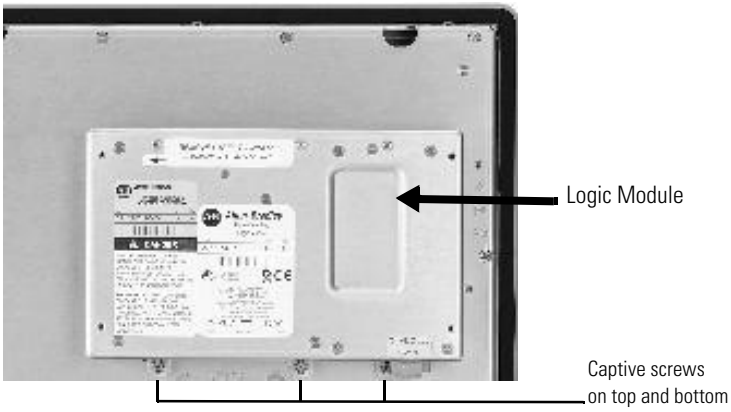
700 to 1500 Terminals Only

This section shows how to replace the display module. It is necessary to remove the communication module from the logic module to perform this operation.



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 six captive screws that attach the logic module to the display module.



5. Carefully lift the logic module from the terminal.
6. Set the display module aside.

7. Position the new 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 six captive screws that secure the logic module to the display module to a torque of 0.68 Nm (6 to 8 lb-in).

10. Attach the communication module (if necessary) and tighten the four screws to a torque of 0.68 Nm (6 to 8 lb-in).

Replace the Battery
700 to 1500 Terminals Only

A lithium battery is used by the real-time clock and static RAM; it is not used for application backup or retention. The clock module has a life expectancy of two years without power.

WARNING

When you connect or disconnect the battery an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed and the area is nonhazardous before proceeding. Replace the battery only with the indicated catalog number.

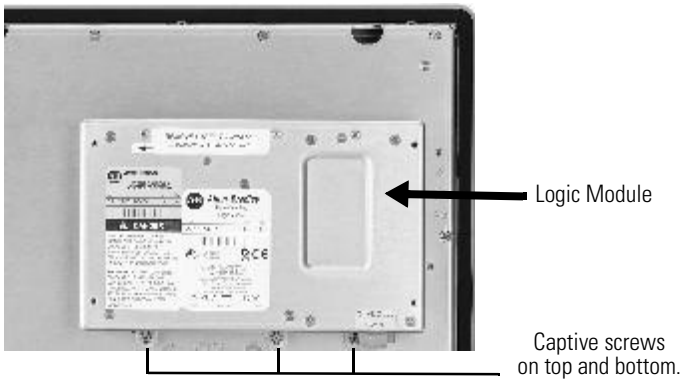
For Safety information on the handling of lithium batteries, including handling and disposal of leaking batteries, see Guidelines for Handling Lithium Batteries, publication AG 5-4.

Do not dispose of battery in a fire or incinerator. Dispose of used batteries in accordance with local regulations.

Store batteries in a cool, dry environment. We recommend 25 °C with 40…60% relative humidity. You may store batteries for up to 30 days between -45 to 85 °C (-49…185 °F), such as during transportation. To avoid possible leakage, do not store batteries above 60 °C (140 °F)for more than 30 days.

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 six captive screws that attach the logic module to the display module.

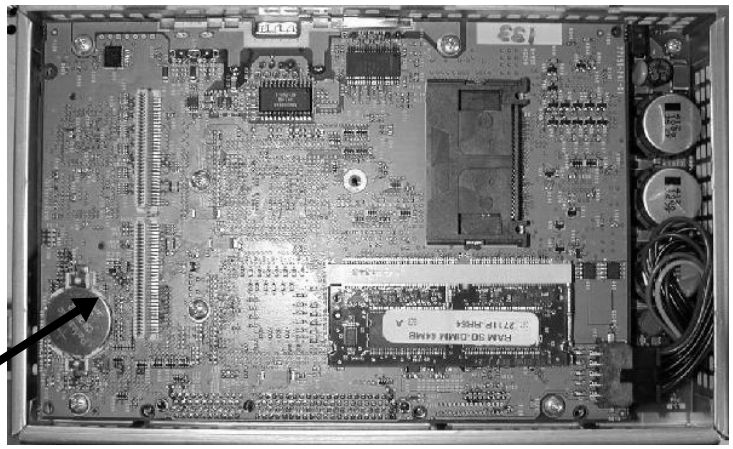


5. Carefully lift the logic module away from the terminal and flip over to expose the circuit board.

ATTENTION

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

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.
9. Attach the logic module by aligning the two connectors on the bottom of the module with the connectors on the terminal.

10. Push down on the logic module until firmly seated.
11. Tighten the six captive screws that secure the logic module to a torque of 0.68 Nm (6 to 8 lb-in).
12. Attach the communication module (if necessary) and tighten the four screws to a torque of 0.68 Nm (6 to 8 lb-in).

Replace the Bezel

700 to 1500 Terminals Only

Remove the Display Module Bezel

It is not necessary to remove the logic module or communication module before removing the bezel, except for the PanelView Plus 700.

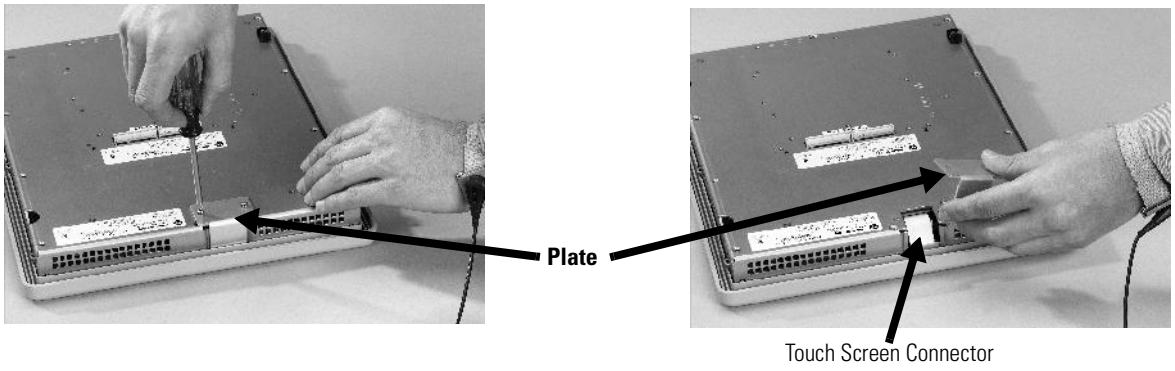
To replace the display module bezel:

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

ATTENTION

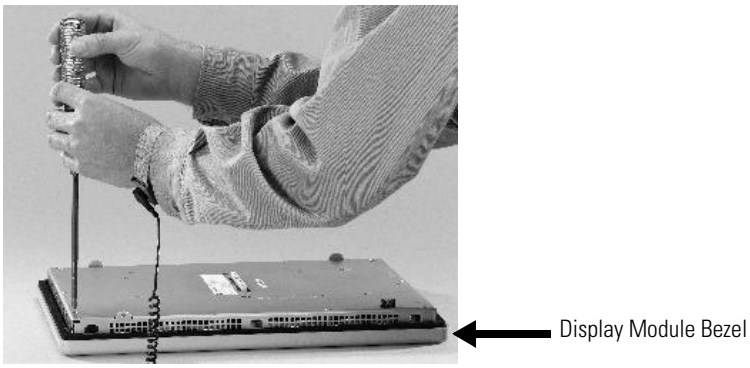
Wear a properly grounded ESD wristband before touching any of the electronic components in the logic module.

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.

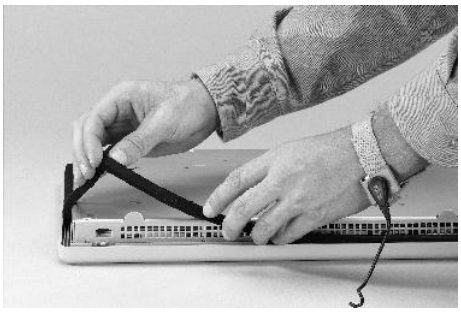


5. Remove the screws from the back of the display module.

   The number of screws varies for each terminal type.

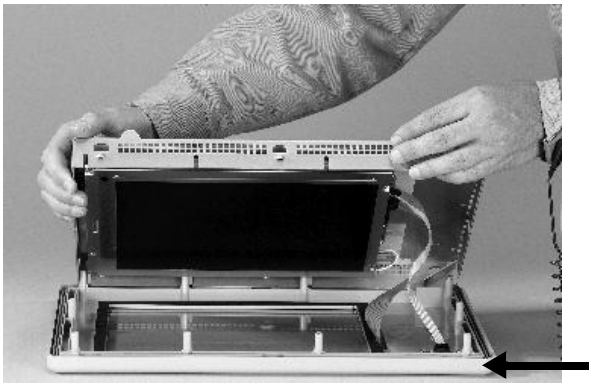


6. Remove the sealing gasket.



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 all connectors (maximum of three).

   The number of connectors varies by model.
   - IrDa connector (if present)
   - Function key connector
   - Touch screen connector

9. Set the bezel aside.

Replace the Display Module Bezel

To replace the display module bezel:

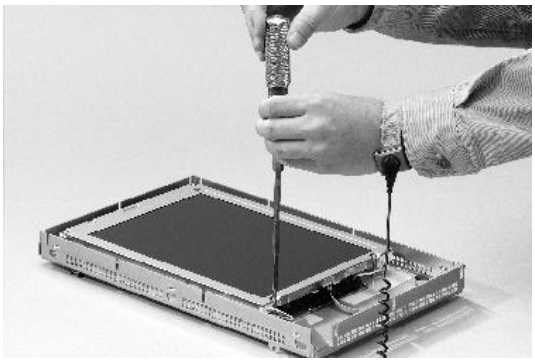
1. Make sure the bezel is free of lint and marks before attaching.
2. Attach the connectors.
   The number of connectors varies by model.
   - IrDa connector (if present)
   - Function key connector
   - Touch screen connector
3. Place the back of the display module over the bezel.
   Be careful not 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 to 1.58 Nm (12 to 14 lb-in).
7. On touch screen terminals, reattach the small metal plate to the back of the display module using two screws and torque to 0.68 Nm (6 to 8 lb-in).

Replace the Backlight
700 to 1500 Terminals Only

This section shows how to replace the backlight for the 700, 1000, 1250, and 1500 terminals. The 1250 high-bright terminals do not have a replaceable backlight.

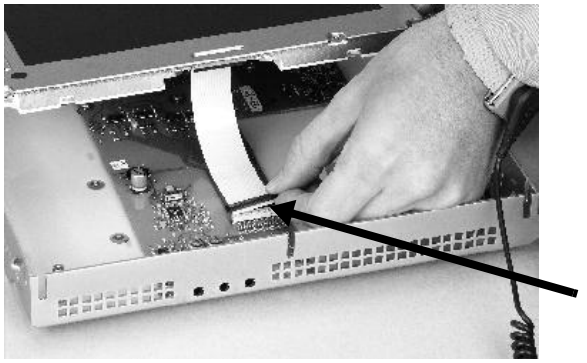
To replace the backlight:

1. Disconnect power from the terminal.
2. Remove the display module bezel.
3. Remove the four screws that secure the LCD Display.



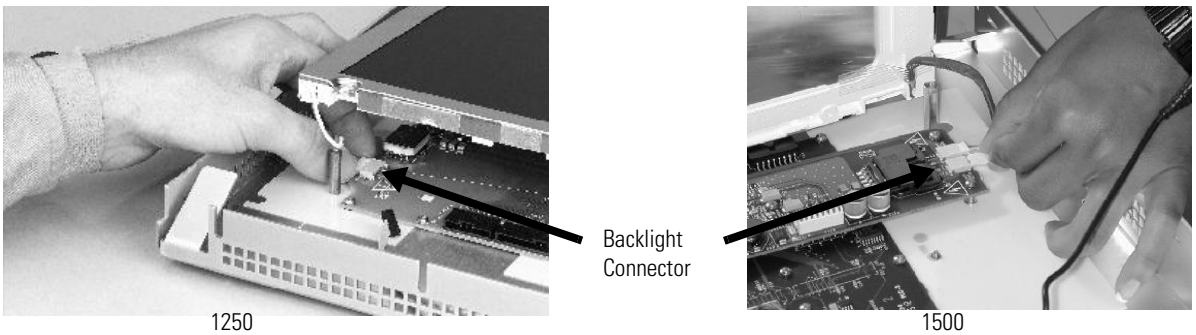
4. Lift the LCD display and detach the display connector from the circuit board.

   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.

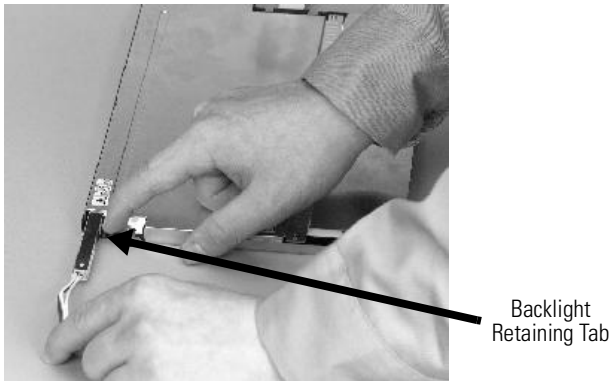


1250 1500

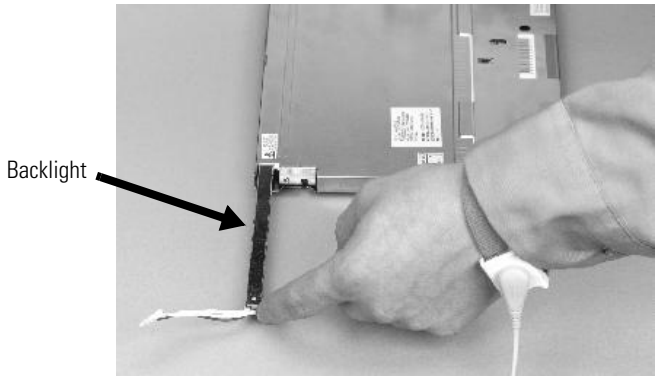
For PanelView Plus 700 and 1000

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

6. Press the retaining tab that secures the backlight and then pull out the backlight.



7. Insert the new backlight.



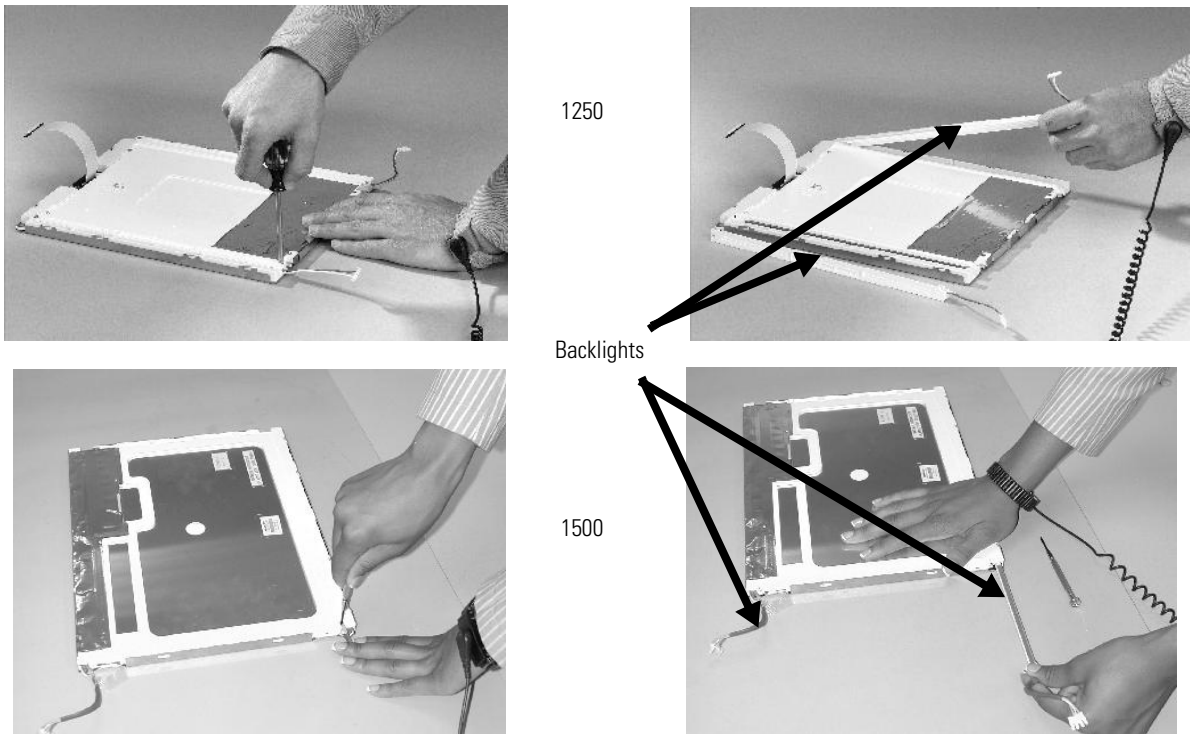
For PanelView Plus 1250 and 1500

- The 1250 Series A and B displays have two backlights and use cat. no. 2711P-RL12C backlight replacement.
- The 1250 Series C displays have only one backlight and use cat. no. 2711P-RL12C2 backlight replacement.
- The 1500 Series B displays have four backlights and use cat. no. 2711P-RL15C backlight replacement.

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

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

- The two backlights for the 1250 Series A and B displays 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 and then remove the backlights.



9. Insert the new backlights and secure with the same screws.

Torque the screws to 0.117 Nm (1.04 lb-in).

10. Reattach the LCD display connector to the circuit board.

11. Reattach the backlight connector to the circuit board.

12. Secure the LCD display by attaching the four screws and tighten to the specified torque.

Screw Size	Torque
#4	0.68 Nm (6 to 8 lb-in)

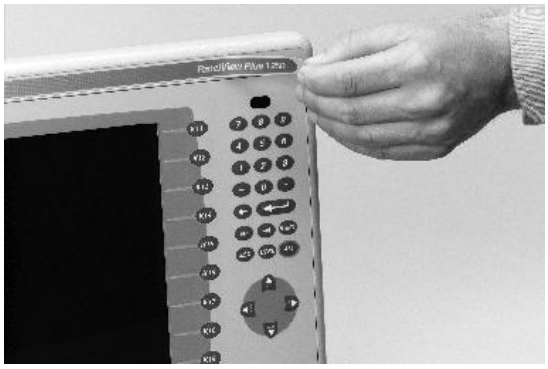
13. Replace the display module bezel.

Remove the Product ID Label

If you ordered a terminal with a label, you can remove the label and attach your own label.

To remove the product ID 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 Allen-Bradley label was located.

Replace the Keypad Legend Inserts

This section shows how to replace the legend inserts in the keypad terminals. The legend strips are available as separate catalog numbers for each keypad terminal, except for the PanelView Plus 400 terminal, which does not support replaceable legend strips. One side of the legend strips have the default key legends and the other side is blank for creating custom legends.

Replace the Keypad Legend Inserts on the 600 Terminal

The legend inserts for function keys F1…F10 are accessible from the back on the unit and can be replaced with the terminal mounted in the enclosure.

To replace the F1…F10 function key legends:

1. From the rear of the unit, pull the legend strips out from the slots on the lower side of the terminal.
2. Slide the new insert into the same slot until only the end tab is visible.

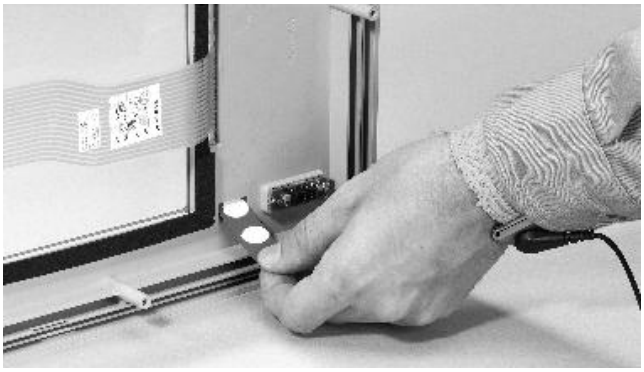
600 Terminal

Replace the Keypad Legend Inserts on the 700 to 1500 Terminals

The F1-F*xx* and K1-K*xx* legend inserts on the PanelView Plus 700 to 1500 terminals are accessible when the display module bezel is removed.

To replace the F1-F*xx* or K1-K*xx* function key legends:

1. Remove power from the terminal.
2. Remove the display module bezel.
3. Pull the legend inserts out from the slots on the bezel.



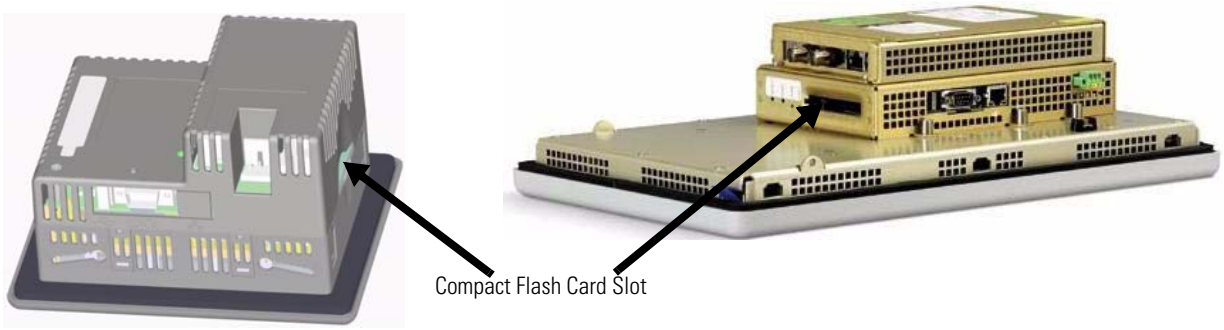
4. Slide the new legend strips into the same slots until only the end tab is visible.
5. Replace the display module bezel.

Use an External Compact Flash Card

All of the terminals have a compact flash card slot that supports Type I compact flash cards. These cards are available in different memory sizes.

The orientation of the card slot on the 700 to 1500 terminals varies depending on the series of the logic module.

Compact Flash Card Slot

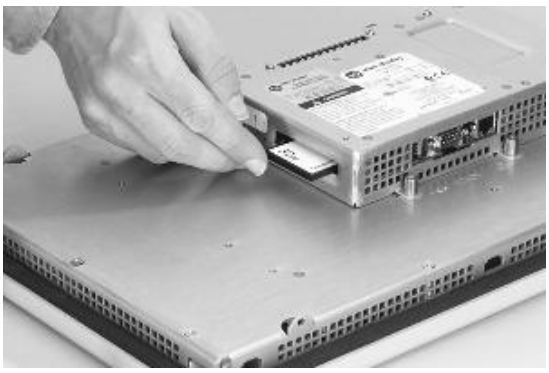


Insert a Compact Flash Card

Insert the card in the compact flash card slot of the terminal until firmly seated.

400 and 600 Terminals

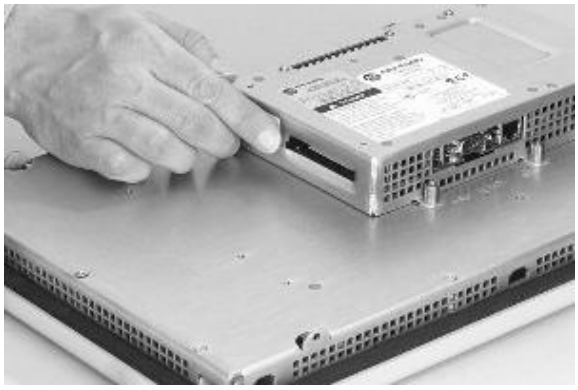
700 to 1500 Terminals



Remove a Compact Flash Card

Press the Eject button on the logic module. When the button pops out, press it again to release the card. The location of the button varies depending on the series of the logic module.

The PanelView Plus 400 and 600 terminals do not have an eject button. Simply secure edge of card with fingers and pull card away from slot.



Terminal Connections

Chapter Objectives

This chapter provides network and device connections for the terminals.

- Wiring and safety guidelines
- Logic controller cable charts
- Communication port isolation
- USB ports
- Serial connections on base unit
- Ethernet (onboard communications)
- DH485/DH+/RIO communications module
- ControlNet communications module
- DeviceNet communications module

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.

- 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.

Logic Controller Cable Charts

The charts provide a summary of terminal connections to controllers and network interface modules.

Runtime Communication Cables - To Controller

PanelView Plus Terminals to SLC Controllers

		Cables: PanelView Plus to SLC Controllers				
Protocol	**PanelView Plus 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 (any)	RS-232 (DF1) Comm Port (9-pin) PanelView Plus 400 to 1500 2711P-RN22C	N/A	2711-NC13 (16ft/5m) 2711-NC14 (32ft/10m) 2706-NC13 (10ft/3m)	N/A	N/A	N/A
DH-485 (any)	RS-232 (DH-485) Comm Port (9-pin) PanelView Plus 400 to 1500 2711P-RN22C	Use AIC+ Module (1761-NET-AIC) Connect to Port 1 or 2	2711-NC13 (16ft/5m) 2711-NC14 (32ft/10m) 2706-NC13 (10ft/3m)	Use AIC+ Module (1761-NET-AIC) Connect to Port 1 or 2	N/A	N/A
	DH-485 Communication Port PanelView Plus 400 and 600 2711P-xxx3xx, 2711P-RN3	1747-C10 (6ft/2m) 1747-C11 (0.3m/1ft) 1747-C20 (20ft/6m)	Use AIC+ Module (1761-NET-AIC) Connect to Port 3	1747-C10 (6ft/2m) 1747-C11 (0.3m/1ft) 1747-C20 (20ft/6m)	N/A	N/A
	DH-485 Communication Port PanelView Plus 700 to 1500 2711P-xxx6xx, 2711P-RN6	1761-CBL-AS03 (10ft/3m) 1761-CBL-AS09 (30ft/9m)	Use AIC+ Module (1761-NET-AIC) Connect to Port 3	1761-CBL-AS03 (10ft/3m) 1761-CBL-AS09 (30ft/9m)	N/A	N/A
ControlNet xxx15xx	ControlNet Communication Port PanelView Plus 400 and 600 2711P-RN15C PanelView Plus 700 to 1500 2711P-xxx15xx, 2711P-RN15S	N/A	1747-KFC15A or 1747-SCRNR/A Module with ControlNet cable			
DeviceNet xxx10xx	DeviceNet Communication Port PanelView Plus 400 and 600 2711P-RN10C PanelView Plus 700 to 1500 2711P-RN10H	N/A	Use 1747-SDN Module with DeviceNet Cable			
EtherNet/IP (any except xxx5xx)	EtherNet/IP Comm Port PanelView Plus 400 to 1500 (except 2711P-xxx5xx)	N/A	Use 1761-NET-ENI Module with Ethernet Cable	N/A	N/A	2711P-CBL-EX04 Ethernet Crossover Cable [1]
Remote I/O xxx1xx xxx6xx	Remote I/O Communication Port PanelView Plus 400 to 1500 2711P-xxx1xx, -xxx6xx, 2711P-RN1, 2711P-RN6	SLC 5/02 only use 1747-SN with shielded twinaxial cable (1770-CD)	Use 1747-SN Module with shielded twinaxial cable (1770-CD)			
DH+ xxx6xx xxx8xx	DH+ Communication Port PanelView Plus 400 to 1500 2711P-xxx6xx, -xxx8xx, 2711P-RN6, 2711P-RN8	N/A	N/A	N/A	Shielded twin axial cable (1770-CD)	N/A

(1) PanelView Plus EtherNet/IP direction connection to SLC 5/05 requires hub or crossover cable listed.

PanelView Plus Terminals to PLC-5 and MicroLogix Controllers

		Cables: PanelView Plus to PLC-5 and MicroLogix Controllers		
Protocol	**PanelView Plus Comm Port**	**PLC-5, PLC-5C, PLC-5E CH0 (25-pin RS-232) (DF1)**	**MicroLogix 1500LRP CH1 (9-pin RS-232) (DF1 or DH-485)**	**MicroLogix 1000, 1200, 1500LSP CH0 (8-pin Mini DIN) (DF1 or DH-485)**
DF1 (any)	RS-232 (DF1) Comm Port (9-pin) PanelView Plus 400 to 1500 2711P-RN22C	2711-NC13 (16ft/5m) 2711-NC14 (32ft/10m) 2706-NC13 (10ft/3m) (9-to-25 pin adapter required)	2711-NC13 (16ft/5m) 2711-NC14 (32ft/10m) 2706-NC13 (10ft/3m)	2711-NC21 (16ft/5m) 2711-NC22 (49ft/15m) (null modem not required) (1)
DH-485 (any)	RS-232 (DH-485) Comm Port (9-pin) PanelView Plus 400 to 1500 2711P-RN22C	N/A	2711-NC13 (16ft/5m) 2711-NC14 (32ft/10m) 2706-NC13 (10ft/3m)	2711-NC21 (16ft/5m) 2711-NC22 (49ft/15m) (null modem not required) (1)
	DH-485 Communication Port PanelView Plus 400 to 1500 2711P-xxx3xx, -xxx6xx, 2711P-RN3, 2711P-RN6	N/A	N/A	Use AIC+ Module (1761-NET-AIC) Connect to Port 3
ControlNet xxx15xx	ControlNet Communication Port PanelView Plus 400 and 600 2711P-RN15C PanelView Plus 400 to 1500 2711P-xxx15xx, 2711P-RN15S	To PLC-5C with ControlNet cable	N/A	N/A
DeviceNet	DeviceNet Communication Port PanelView Plus 400 and 600 2711P-RN10C PanelView Plus 700 to 1500 2711P-RN10H	Use 1771-SDN Module with DeviceNet Cable	N/A	N/A
EtherNet/IP (any except xx5xx)	EtherNet/IP Comm Port PanelView Plus 400 to 1500 (except 2711P-xxx5xx)	To PLC-5E with Ethernet cable	Use 1761-NET-ENI Module with Ethernet cable	
Remote I/O xxx1xx xxx6xx	Remote I/O Communication Port PanelView Plus 400 to 1500 2711P-xxx1xx, -xxx6xx, 2711P-RN1, 2711P-RN6	Shielded twinaxial cable (1770-CD)	N/A	N/A
DH+ xxx6xx xxx8xx	DH+ Communication Port PanelView Plus 400 to 1500 2711P-xxx6xx, -xxx8xx, 2711P-RN6, 2711P-RN8	Shielded twinaxial cable (1770-CD)	N/A	N/A

(1) AIC+ Module recommended for isolation purposes when PanelView and controller are not on same power supply.

PanelView Plus Terminals to Logix Controllers

		Cables: PanelView Plus to Logix Controllers		
Protocol	**PanelView Plus Comm Port**	**ControlLogix CH0 (9-pin RS-232) (DF1)**	**CompactLogix CH0 (9-pin RS-232) (DF1 or DH-485)**	**FlexLogix CH0 (9-pin RS-232) (DF1)**
DF1 (any)	RS-232 (DF1) Comm Port (9-pin) PanelView Plus 400 to 1500 2711P-RN22C	2711-NC13 (16ft/5m) 2711-NC14 (32ft/10m) 2706-NC13 (10ft/3m)		
DH-485 (any)	RS-232 (DH-485) Comm Port (9-pin) PanelView Plus 400 to 1500 2711P-RN22C	N/A	2711-NC13 (16ft/5m) 2711-NC14 (32ft/10m) 2706-NC13 (10ft/3m)	
	DH-485 Communication Port PanelView Plus 400 -1500 2711P-xxx3xx, -xxx6xx, 2711P-RN3, 2711P-RN6	N/A	Use AIC+ Module (1761-NET-AIC) Connect to Port 3	N/A
ControlNet xxx15xx	ControlNet Communication Port PanelView Plus 400 and 600 2711P-RN15C PanelView Plus 700 to 1500 2711P-xxx15xx, 2711P-RN15S	Use 1756-CNB Module with ControlNet cable	1769-L35C with ControlNet cable	Use 1788-CNC or 1788-CNF Card with ControlNet cable
DeviceNet	DeviceNet Communication Port PanelView Plus 400 and 600 2711P-RN10C PanelView Plus 700 to 1500 2711P-RN10H	Use 1756-DNB Module with DeviceNet Cable	Use 1769-SDN Module with DeviceNet Cable	Use 1788-DNBO Module with DeviceNet Cable
EtherNet/IP (any except xx5xx)	EtherNet/IP Comm Port PanelView Plus 400 to 1500 (except 2711P-xxx5xx)	Use 1756-ENET or 1756-ENBT Module with Ethernet cable	To 1769-L35E with Ethernet cable	Use 1788-ENBT Module with EtherNet cable
Remote I/O xxx1xx xxx6xx	Remote I/O Communication Port PanelView Plus 400 to 1500 2711P-xxx1xx, -xxx6xx, 2711P-RN1, 2711P-RN6	Use 1756-DHRIO Module with shielded twinaxial cable (1770-CD)	N/A	N/A
DH+ xxx6xx xxx8xx	DH+ Communication Port PanelView Plus 400 to 1500 2711P-xxx6xx, -xxx8xx, 2711P-RN6, 2711P-RN8	Use 1756-DHRIO Module with shielded twinaxial cable (1770-CD)	N/A	N/A

PanelView Plus Terminals to Communication Adapters

		Cables: PanelView Plus to Communication Adapters				
			1761-NET-AIC			
Protocol	**PanelView Plus Comm Port**	**1747-AIC**	**Port 1 (9-pin)**	**Port 2 8-pin Mini DIN()**	**Port 3 (DH485)**	**1761-NETDNI or 1771-NET-ENI**
DF1 (any)	RS-232 Comm Port (9-pin) PanelView Plus 400 to 1500 2711P-RN22C	N/A	2711-NC13 (16ft/5m) 2711-NC14 (32ft/10m) 2706-NC13 (10ft/3m)	2711-NC21 (16ft/5m) 2711-NC22 (49ft/15m)	N/A	1761-CBL-AP00 (5m) 1761-CBL-PM02 (2m) 2711-CBL-PM05 (5m) 2711-CBL-PM10 (10m)
DH-485 (any)	RS-232 Comm Port (9-pin) PanelView Plus 400 to 1500 2711P-RN22C	N/A	2711-NC13 (16ft/5m) 2711-NC14 (32ft/10m) 2706-NC13 (10ft/3m)	2711-NC21 (16ft/5m) 2711-NC22 (49ft/15m)	N/A	
	DH-485 Communication Port PanelView Plus 400 and 600 2711P-xxx3xx, 2711P-RN3	1747-C10 (6ft/2m) 1747-C11 (0.3m/1ft) 1747-C20 (20ft/6m)	N/A		1761-CBL-AS03 (10ft/3m) 1761-CBL-AS09 (30ft/9m) to single AIC+	N/A
	DH-485 Communication Port PanelView Plus 700 to 1500 2711P-xxx6xx, 2711P-RN6	Direct connection to single AIC with Belden 9842 cable(1)	N/A		Direct connection to single AIC+ with Belden 9842 cable(1)	N/A

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

Communication Port Isolation

The PanelView Plus and VersaView CE terminals contain integral and modular (externally attached) communication ports. Some of these ports contain electrical isolation depending on the catalog number of the terminal or communication module.

Integral Communication Port Isolation

Communication Port	400 and 600 Terminal	700 to 1500 Terminal
RS-232	Non-isolated	Isolated
USB	Non-isolated	Non-isolated
Ethernet	Isolated	Isolated

400 and 600 Modular Communication Port Isolation

Communication Port	Module	Isolation
RS-232	2711P-RN22C	Isolated
DH-485	2711P-RN3	Non-isolated
DH+	2711P-RN8	Isolated
Remote I/O	2711P-RN1	Isolated
DeviceNet	2711P-RN10C	Isolated
ControlNet	2711P-RN15C	Isolated (1)

(1) NAP port is nonisolated.

700 to 1500 Modular Communication Port Isolation

Communication Port	Module	Isolation
DH-485	2711P-RN6	Isolated
DH+	2711P-RN6	Isolated
Remote I/O	2711P-RN6	Isolated
DeviceNet	2711P-RN10H	Isolated
ControlNet	2711P-RN15S	Isolated

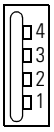
USB Ports

The 700 to 1500 terminals have two USB ports. The 400 and 600 terminals have one USB port. The terminals support standard USB keyboard and mouse devices (HID devices) with native device drivers. They also support some USB printers that have Printer Control Language (PCL) capabilities. A vendor specific Windows CE driver is required for all other USB devices.

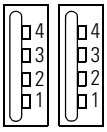
See Appendix B for a list of compatible USB devices.

Plug the USB device into either one of the two USB ports on the 700 to 1500 terminals.

400 and 600 USB Port



700 to 1500 USB Ports



USB Connector Pinout

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

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.

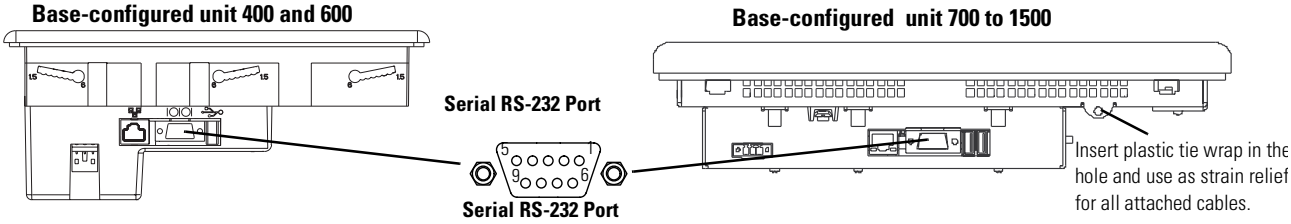
Serial Connections

The base-configured unit of all terminals has a multi-purpose serial RS-232 port that supports:

- DH-485 communications through a serial connection.
- DF1 full duplex communications with controllers using direct connections or modem connections.
- third-party point-to-point communications.
- application uploads/downloads.
- printing.

The serial port on the base-configured unit of the terminal is a 9-pin, male, RS-232 connector. The table shows the pinout descriptions for this port and how these pins map to the serial ports on the controllers.

Serial Port



Serial Port Connector Pinout

PanelView Plus RS-232 Port 9-pin DCE		SLC 9-pin	PLC 25-pin	MicroLogix/ DNI 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			

The maximum cable length for serial communications is:

- 15.24 m (50 ft) at 19,200 baud
- 152 m (500 ft) at 9,600 baud

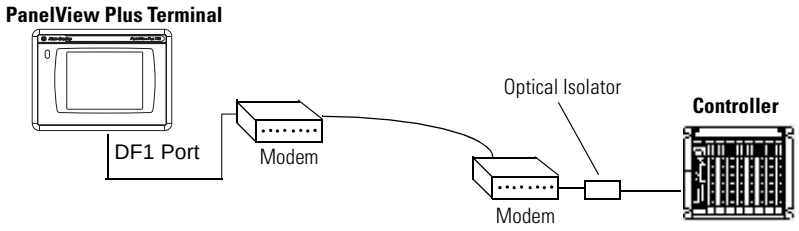
WARNING

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

Modem Connection



Construct a Null Modem Cable

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

Null Modem Pinout

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

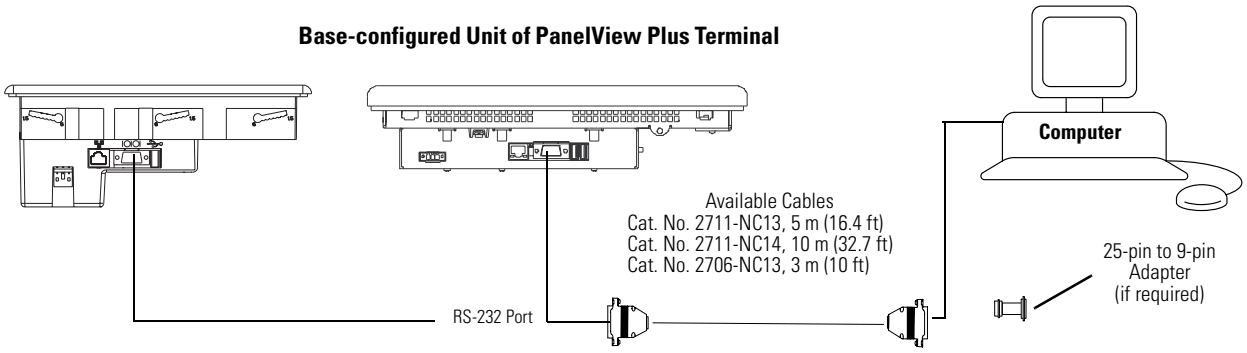
PanelView Plus 9-pin	25-pin	
-	1	FG
3	3	RD
2	2	TD
7	5	CTS
8	4	RTS
5	7	SG
6	20	DTR
4	6	DSR

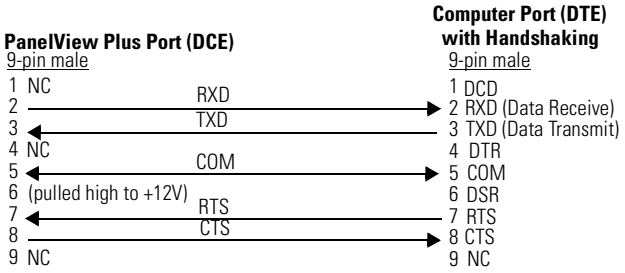
Computer Connections

The RS-232 serial port on the base-configured unit of the terminals supports:

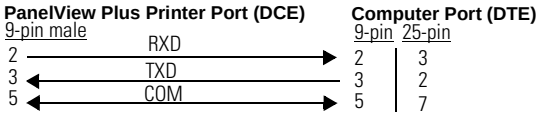
- application uploads/downloads using a direct connection.
- printing.

Computer or Printer Connection





Upload/Download Cable without Hardware Handshaking



Ethernet Connections

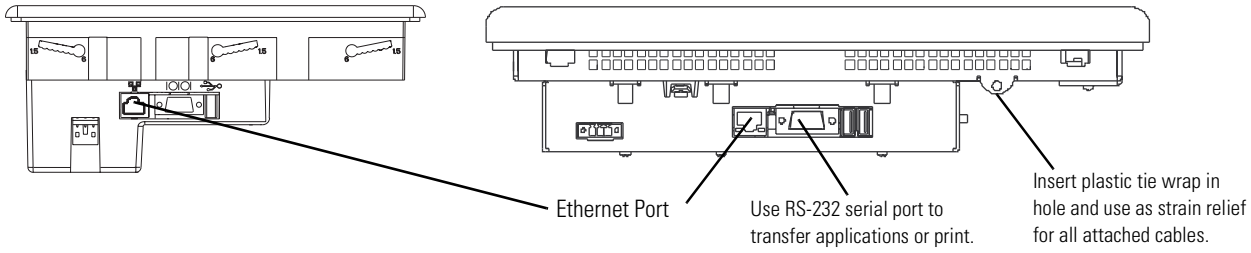
The base-configured unit of the 700 to 1500 terminals and the network based unit of the 400 and 600 terminals have an Ethernet port that supports:

- EtherNet/IP communications.
- third-party Ethernet communications.
- network connections.
- application uploads/downloads.
- printing.

Ethernet Connector

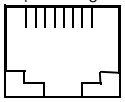
The base-configured unit of the terminals has an RJ45, 10/100 Base-T connector for EtherNet/IP or Ethernet TCP/IP network communications.

Ethernet Port



The table shows the connector pinouts.

Ethernet Connector Pinout

Pin	Pin	Pin Name
Looking into RJ45 Connector 	1	TD+
	2	TD-
	3	RD+
	4	NC
	5	NC
	6	RD-
	7	NC
	8	NC
	Shield Connection	Chassis Gnd

Use point-to-point, 10/100 Base-T cables with cross over pin-outs (such as 2711P-CBL-EX04) when connecting the Ethernet port on the terminal directly to a logic controller's Ethernet port or a computer 10/100 Base-T port. Use standard Ethernet cables when connecting to a switch or hub.

Cables

The PanelView Plus terminals require category 5 shielded twisted-pair cables with RJ45 connectors. The shielded cable helps to maintain industrial noise immunity levels. The maximum cable length between the terminal's Ethernet port and a 10/100 Base-T port on an Ethernet hub (without repeaters or fiber) is 100 m (328 ft). In industrial applications, keep the cable length to a minimum.

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.

Note: 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+/Remote I/O Module

Terminals with a DH-485/DH+/Remote I/O communication module support communication with these networks.

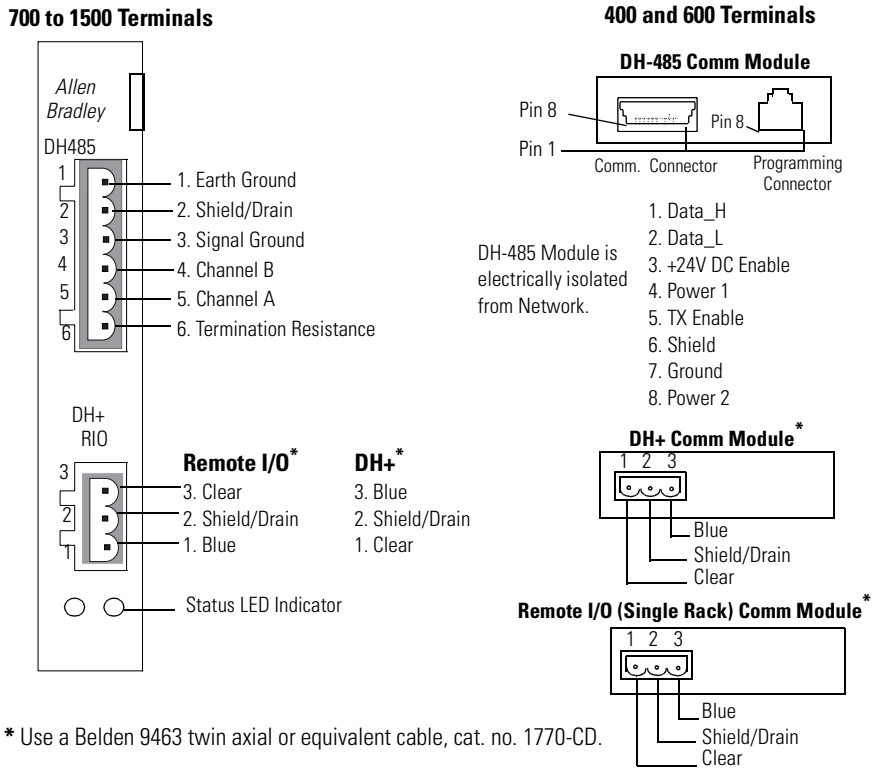
- DH+ networks
- DH-485 networks
- Remote I/O networks

You can communicate with only one network at one time.

The 700 to 1500 terminals support all protocols on one module. The 400 and 600 terminals require a separate module for each protocol. The DH+, DH-485 and Remote I/O connections are different between the modules for the 400 and 600 and 700 to 1500 terminals.

Module Connections

IMPORTANT See your controller documentation for appropriate controller connections.



***** Use a Belden 9463 twin axial or equivalent cable, cat. no. 1770-CD.

DH+ Status Indicator

Condition	Indication
Off	Channel is not online.
Blinking green	Device is only node on the network.
Solid green	Device is online and receiving token.
Blinking red	Duplicate node.
Solid red	Failed selftest.

DH-485 Status Indicator

Condition	Indication
Off	Channel is not online.
Blinking green	Device is only node on the network.
Solid green	Device is online and receiving token.
Blinking red	Parity error.
Solid red	Failed selftest.

Remote I/O Scanner Mode Status Indicator

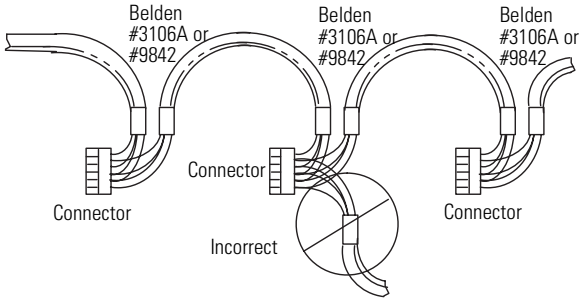
Condition	Indication
Off	Channel is not online.
Blinking green	At least one but not all adapters in the scanlist are not responding.
Solid green	All adapters in the scanlist are responding.
Blinking red	None of the adapters in the scanlist are responding.
Solid red	Failed selftest.

DH-485 Network Port Wiring (700 to 1500 only)

Use these instructions for wiring Belden cable. If you are using standard Allen-Bradley cables, see the Logic Controller Cable Charts.

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

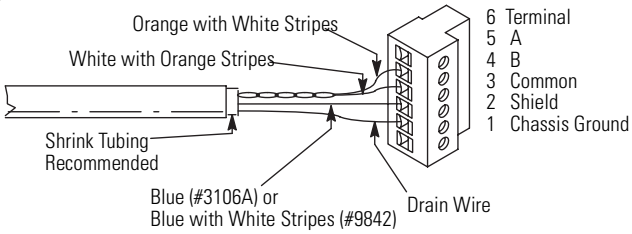
RS-485 Connector to the Communication Cable



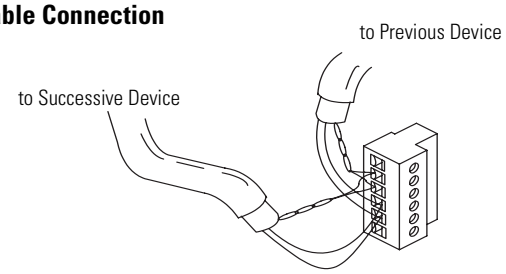
Attach the connector to the Belden #3106A or #9842 Cable as shown.

Single and Multiple Cable Connections

Single Cable Connection



Multiple Cable Connection



The table shows connections for Belden #3106A.

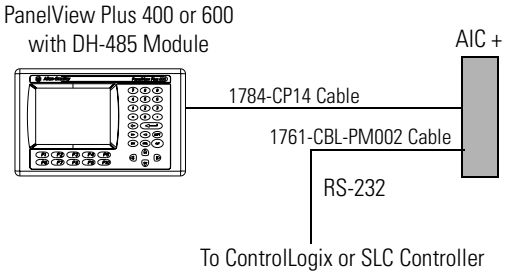
Belden 3106A Wire Connections

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-485 Connections (400 and 600 only)

This section shows connections between a 400 and 600 terminal with a DH-485 communication module and an SLC or ControlLogix controller through the AIC+ module.

DH-485 Connections



DH+ Network Connections

Use the Belden 9463 twin axial or equivalent cable (cat. no. 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

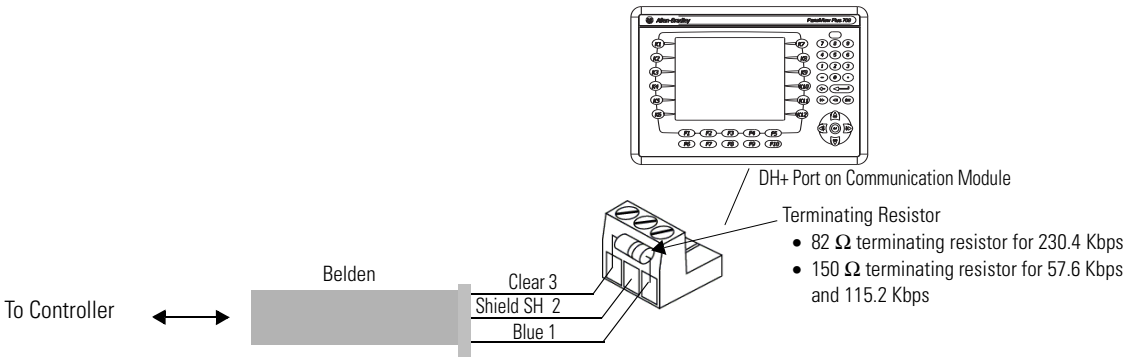
Follow these guidelines when installing DH+ communication links:

- do not exceed these cable lengths:
  - trunk line-cable length: 3,048 m (10,000 ft).
  - drop-cable length: 30.4 m (100 ft).

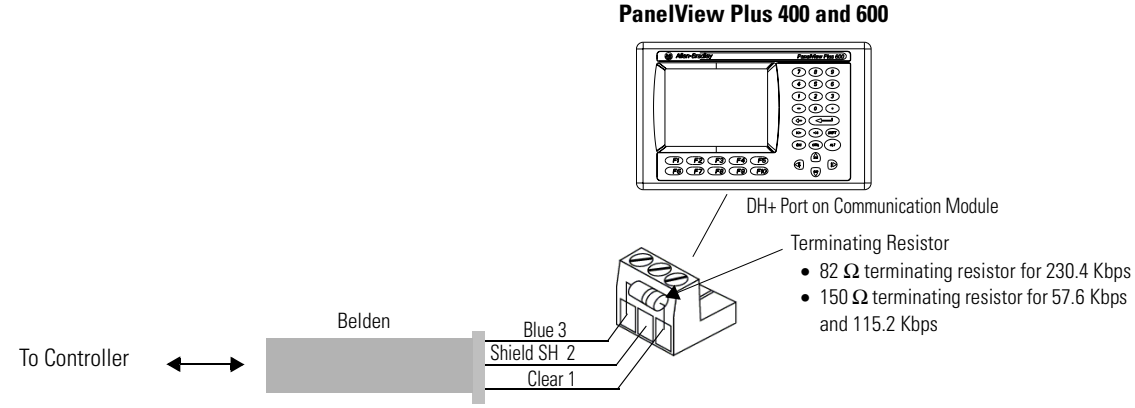
  The maximum cable length is determined by baud rate.
- do not connect more than 64 stations on a single DH+ link

DH+ Network Connections

PanelView Plus 700 to 1500



PanelView Plus 400 and 600



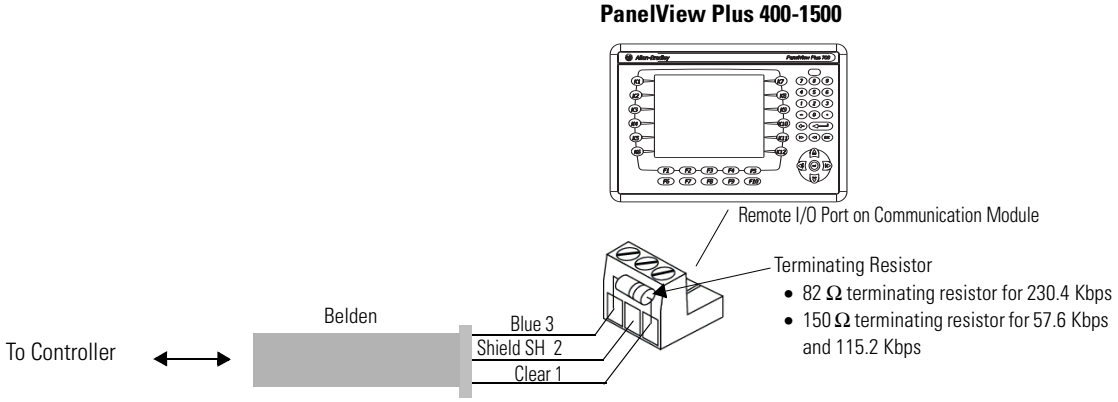
Remote I/O Connections

Use the Belden 9463 twin axial or equivalent cable (cat. no. 1770-CD), to connect a terminal to a Remote I/O scanner. The maximum cable length (link distance) is determined by the baud rate.

- 2,800 m (10,000 ft) for 57.6 Kbps
- 1,400 m (5,000 ft) for 115.2 Kbps
- 700 m (2,500 ft) for 230.4 Kbps

See Programmable Controller Wiring and Grounding Guidelines, publication 1770-4.1. The user manual for the I/O scanner module also provides cabling information.

Remote I/O Connections



ControlNet Module

Terminals with a ControlNet communication module support communications and the transfer of applications between devices on a ControlNet network.

Related Information

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

- ControlNet System Overview, publication 1786-2.9
- ControlNet System Planning and Installation Manual, publication 1786-6.2.1
- ControlNet Cable System Component List, publication AG-2.2
- ControlNet Communications for PanelView Plus and VersaView CE Terminals, publication 2711P-UM003

The Rockwell Automation website http:\\rockwellautomation.com provides information and product descriptions of ControlNet products. Under the Products and Services heading, select Communications.

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 terminal with a ControlNet Module communicates with a PLC-5C (PCCC commands) or a ControlLogix processor (CIP protocol) using Unscheduled messaging. The following controllers are supported:

- ControlLogix using 1756-CNB module
- PLC-5/20C, -5/40C, -5/60C, -5/80C

Minimum Requirements

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

ControlNet Unscheduled Communications

Software/Firmware	PanelView Plus 700 to 1500	PanelView Plus 400 or 600
RSView Studio	Version 3.10 or later	Version 4.0 or later
RSView Machine Edition Runtime	Version 3.10 or later	Version 4.0 or later
ControlNet Module Firmware	2711P-RN15S, Series A, Rev A (firmware version 2.07 or later) (1)	2711P-RN15C, Series B, Rev A or later

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

ControlNet Scheduled Communications

Requirements	PanelView Plus 700 to 1500	PanelView Plus 400 or 600
RSView Studio	Version 3.20 or later	Version 4.0 or later
RSView Machine Edition Runtime	Version 3.20.04 or later	Version 4.0 or later
RSNetWorx for ControlNet	Version 5.11 or later	Version 6.0 or later
RSLogix 5000	v13.0 or later	Version 15.0 or later
ControlNet Module Firmware	2711P-RN15S, Series A, Rev C (firmware version 3.08 or later) (1)	2711P-RN15C, Series B, Rev A or later

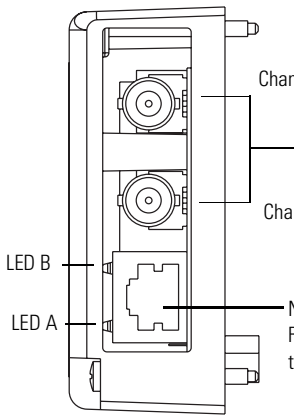
(1) This applies to terminals that are ordered as preconfigured units with the ControlNet module.

WARNING

The ControlNet Communications Module (2711P-RN15S) will not run with RSView ME firmware version 3.20.04 or earlier. All ControlNet Modules with version 3.07 firmware must be upgraded to version 3.08 or later; otherwise, outputs may turn on an indeterminate state.

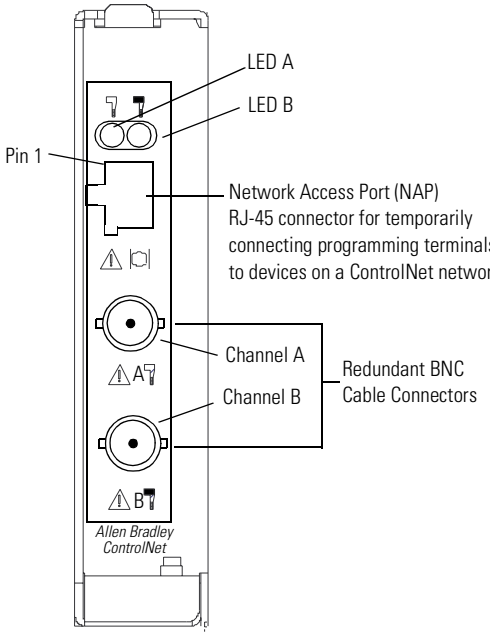
ControlNet Connections

2711P-RN15C ControlNet Module for 400 and 600 Terminals



Pin	NAP Signal
1	Signal Common
2	No Connection
3	TX_H
4	TX_L
5	RX_L
6	RX_H
7	No Connection
8	Signal Common
Shell	Earth Ground

2711P-RN15S ControlNet Module for 700 to 1500 Terminals



Pin	NAP Signal
1	Signal Common
2	No Connection
3	TX_H
4	TX_L
5	RX_L
6	RX_H
7	No Connection
8	Signal Common
Shell	Earth Ground

ATTENTION

Do not connect more than one ControlNet network to the Communications 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 Cable System Planning and Installation manual, publication 1786-6.2.1 for descriptions of ControlNet components. For information on purchasing these items, refer to the Allen-Bradley ControlNet Cable System Component List, publication AG-2.2.

ControlNet NAP and Redundant Cables

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

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

Connect the Module to the Network

You can connect the ControlNet Module:

- directly to a ControlNet network, which requires a tap.
- 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.

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.

DeviceNet Module

Terminals with a DeviceNet communication module support communication and the transfer of applications between devices on a DeviceNet network.

Related Information

For more information on DeviceNet products, refer to these publications.

- DeviceNet Selection Guide, publication DNET-SG001
- DeviceNet Media Design Installation Guide, publication DNET-UM072
- DeviceNet Tips & Tricks, publication DNET-BR003

The Rockwell Automation website http:\\rockwellautomation.com provides information and product descriptions of DeviceNet products. Under the Products and Services heading, select Communications.

DeviceNet Protocol

The terminals support DeviceNet Scheduled I/O only. This protocol allows direct connection of field devices such as lights, drives, and valves. It also provides a control architecture that supports multiple processors. The DeviceNet network is a trunk/drop or bus-based network that supports up to 64 nodes and operates at 125, 250, or 500 Kbps.

Compatible DeviceNet Controllers

A terminal with a DeviceNet module communicates with an SLC-500 and PLC-5 (PCCC commands), or a ControlLogix processor (CIP protocol) using Unscheduled messaging. Supported controllers include:

- ControlLogix using 1756-DNB module
- PLC-5 with a 1771-SDN module
- SLC 5/03 - SLC/505 with a 1747-SDN module

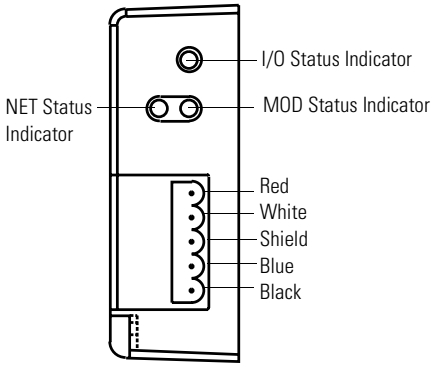
Minimum Requirements

Software and Firmware Requirements for DeviceNet Communications

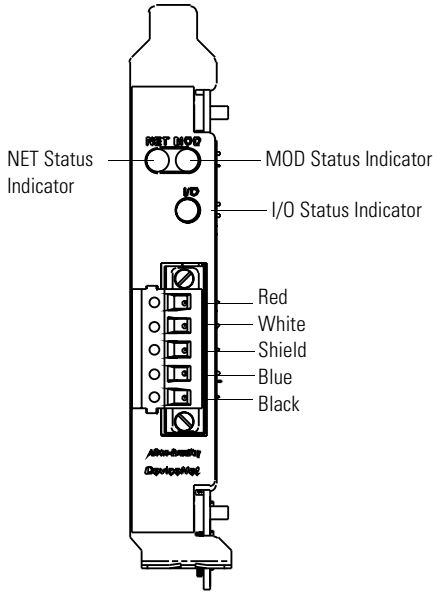
Software/Firmware	PanelView Plus 700 to 1500	PanelView Plus 400 and 600
RSView Studio	Version 4.0 or later	Version 4.0 or later
RSView Machine Edition Runtime	Version 4.0 or later	Version 4.0 or later
DeviceNet Module	2711P-RN10H	2711P-RN10C

DeviceNet Connections

2711P-RN10C DeviceNet Module for 400 and 600 Terminals



2711P-RN10H DeviceNet Module for 700 to 1500 Terminals



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.

DeviceNet I/O Status Indicator

This bicolor (green/red) LED provides information on the states of inputs and/or outputs.

DeviceNet I/O Status Indicator

Condition	Status	Indication
Off	Outputs active	All outputs are active.
	Inputs active	All inputs are active.
Green	Outputs active	One or more outputs are active and under control, and no outputs are faulted.
	Inputs active	One or more inputs are active and producing data, and no inputs are faulted.
Flashing green(1)	Outputs idle	One or more outputs are idle, and no outputs are active or faulted.
Flashing red (1)	Outputs faulted	One or more outputs are faulted, and may be in the fault state.
	Inputs faulted	One or more inputs are faulted, and may be in the fault state.
Red	Outputs forced off	One or more outputs are forced off (may be an unrecoverable fault).
	Input unrecoverable fault	One or more inputs has an unrecoverable fault.

(1) The flash rate of the LED is approximately 1 flash per second. The LED should be on for approximately 0.5 seconds and off for approximately 0.5 seconds.

DeviceNet Module (MOD) Status Indicator

This bicolor (green/red) LED provides device status. It indicates whether or not the device has power and is operating properly.

DeviceNet I/O Status Indicator

Condition	Status	Indication
Off	No power	No power applied to device.
Green	Device operational	Device is operating in a normal condition.
Flashing green[1]	Device in standby (device needs commissioning)	Device needs commissioning due to configuration missing, incomplete, or incorrect.
Flashing red [1]	Recoverable fault	For example, the device's scan list configuration does match the actual network configuration.
Red	Unrecoverable fault	Device has an unrecoverable fault. Cycle power to your computer. If the problem persists, the device may need to be replaced.
	Device self testing	Device is in self test. Refer to the DeviceNet Specification, Volume II, Identity Object.

[1] The flash rate of the LED is approximately 1 flash per second. The LED should be on for approximately 0.5 seconds and off for approximately 0.5 seconds.

DeviceNet Network (NET) Status Indicator

This bicolor (green/red) LED indicates the status of the communication link.

DeviceNet Network (NET) Status Indicator

Condition	Status	Indication
Off	Not powered	Device is not online.
	Not online	The device has not completed the Dup_MAC_ID test yet.
		The device may not be powered; look at the Module Status LED.
Flashing green[1]	Online	Device is online, but has no connections in the established state.
	Not connected	The device has passed the Dup_MAC_ID test, is online, but has no established connections to other nodes.
Green	Link okay, online, connected	The device is online and has connections in the established state.
Flashing red [1]	Connection timeout	One or more I/O connections are in the timed-out state.
Red	Critical link failure	Failed communication device. The device has detected an error that has rendered it incapable of communicating on the network (Duplicate MAC ID or Bus-off). Check network integrity and baud rate of all devices. Then cycle power to the card by shutting down and cycling power to your computer.

[1] The flash rate of the LED is approximately 1 flash per second. The LED should be on for approximately 0.5 seconds and off for approximately 0.5 seconds.

ATTENTION

Extensive use of Change-of-State connections, particularly with rapidly changing data, can adversely impact the available DeviceNet network bandwidth. If the network bandwith becomes consumed, some devices may only be able to communicate intermittently. This can result in timeout errors and possible loss of data. If timeouts occur, consider changing the connection type for some of the Change-of-State connections to Cyclic or Polled.

Transfer Files

Chapter Objectives

This chapter covers information on how to:

- transfer applications using a compact flash card or from a computer.
- upgrade terminal firmware.

Transfer Files with a Compact Flash Card

The PanelView Plus terminal lets you copy or load files using a compact flash card from RSView ME.

To copy files in RSView ME using a compact flash card, see page 76.

Transfer Files from a Computer

For details on transferring .MER applications from a computer to the PanelView Plus terminal, refer to RSView Studio help or documentation.

Upgrade Firmware

The Firmware Upgrade Wizard (FUW) lets you upgrade firmware in the PanelView Plus terminal. Using the FUW, you can:

- create a firmware upgrade card (compact flash card) that you then load in the card slot of the terminal to upgrade firmware.
- upgrade firmware in a terminal that is connected to your desktop computer using a Serial, Ethernet, or Network connection via RSLinx Enterprise software (for supported protocols).

The FUW is available in RSView Studio software or with the Firmware Upgrade Kit.

Prepare Terminal for Firmware Upgrade

Before starting the Firmware Upgrade Wizard (FUW), follow these steps to prepare the terminal for a successful upgrade.

1. Backup all .MER files on the terminal to an external storage card or network.
2. Delete all applications on the terminal.
3. Record any Ethernet communication settings, such as IP address, subnet masks, and gateways by selecting Terminal Settings>Network and Communications>Network Connections>Network Adapters>IP Address.
4. Disable the Auto-start feature on the terminal by selecting Startup Options>RSView ME Station Startup and select Go to Configuration Mode.
5. Reset the terminal.

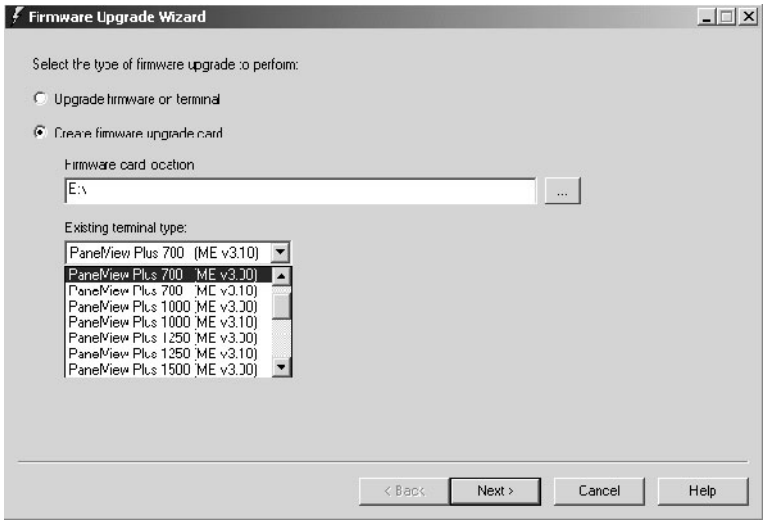
Upgrade Firmware with a Compact Flash Card

This section shows how to upgrade the firmware in the terminal using a compact flash card. This is a two step-process. First, you create a firmware upgrade card with the necessary firmware files. Second, you load this card in the target terminal to upgrade the firmware.

Create Firmware Upgrade Card

1. Start the Firmware Upgrade Wizard by selecting Start>Rockwell Software>RSView Enterprise>Firmware Upgrade Wizard.

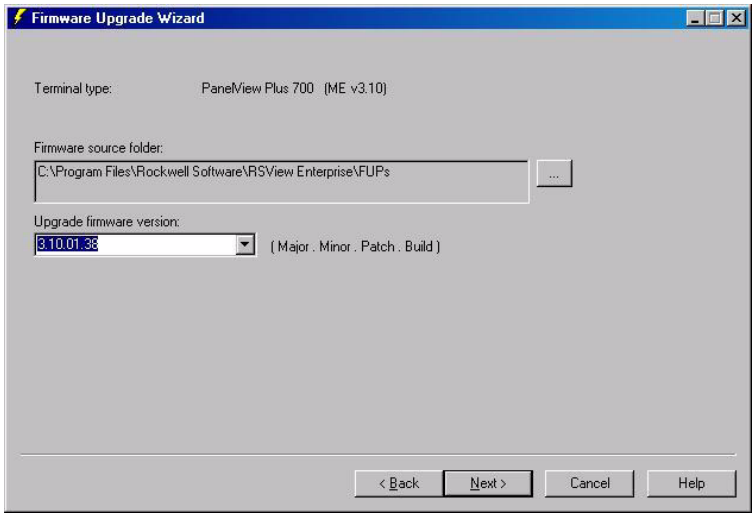
2. Select Create firmware upgrade card.
   - In the Firmware card location text box, select the destination for the compact flash files (folder on the hard drive or physical location of the compact flash card, for example, E:\).
   - From the Existing terminal list, select the type of terminal you are upgrading, then press Next.



3. From the Firmware source folder list, select the location of the firmware files.

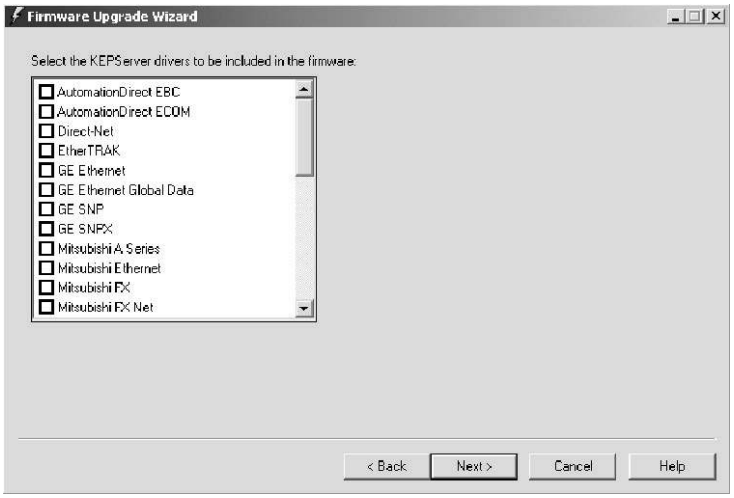
   The default location is C:\Program Files\Rockwell Software\RSView Enterprise\FUPs.

4. From the Upgrade firmware version list, select the version of the firmware you want to upgrade to, then press Next.



5. Select the appropriate KEPServer drivers and press Next.

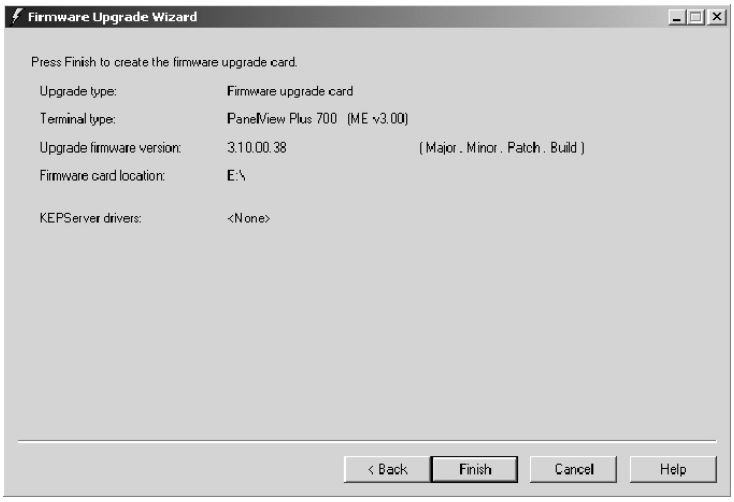
   If no KEPServer drivers are needed, just press Next.



TIP If the selected FUP file does not support the KEPServer drivers, this dialog will not appear.

6. Select Finish to copy the firmware source files to the location specified in step 2.

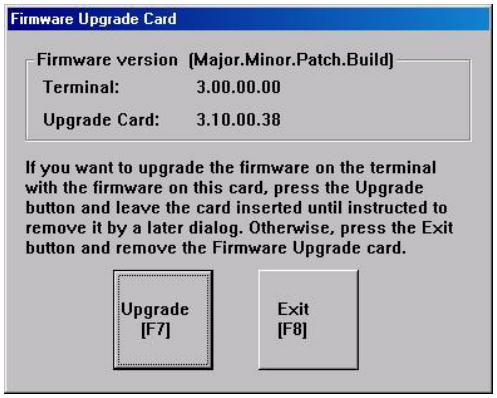
TIP If the files were created in a separate folder on a local hard drive, copy the files to the root directory of the compact flash card.



Upgrade Firmware in Terminal with Firmware Upgrade Card

1. Insert the compact flash card into the card slot of a powered terminal.

   A dialog appears indicating the firmware upgrade is about to occur.



2. Press Upgrade to begin the firmware upgrade.

IMPORTANT Do not remove the compact flash card while the upgrade is in process.

If other terminals exist on the same Ethernet network, the following error may display:

'Error registering name on network (may be duplicate). Change in system Control Panel and try again.'

Ignore this error. It will be corrected during the upgrade. Press **OK** to acknowledge error and wait for terminal to reset.

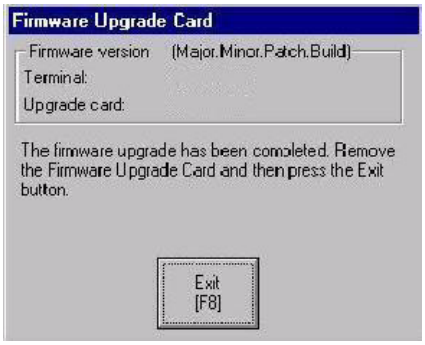
TIP If a USB mouse is available, you can acknowledge this error by selecting OK.

3. On touch or touch/screen terminals, you must calibrate the touch screen by selecting pointers in all four corners of the screen and pressing the middle of the screen when prompted.

   Ignore the following message if it appears. It means RSView ME is being installed. Do not touch the two buttons that appear with this message.
   'Machine edition may be corrupted. Do you want to download firmware?'

4. Remove the card and press F8 or Exit to reset the terminal.

   When the upgrade is complete, a dialog appears requesting you to remove the compact flash card from the card slot.



   Communication settings are cleared when the terminal is upgraded. If Ethernet communications is used, reconfigure the Ethernet communication settings using the values recorded when preparing the terminal.

5. Replace the .MER files that you backed up before starting the upgrade or download a new .MER file to the terminal.

6. Load the .MER file and run the project.

TIP You can configure your application to start automatically on power cycle under Startup Options.

Upgrade Firmware with a Network (Ethernet) Connection

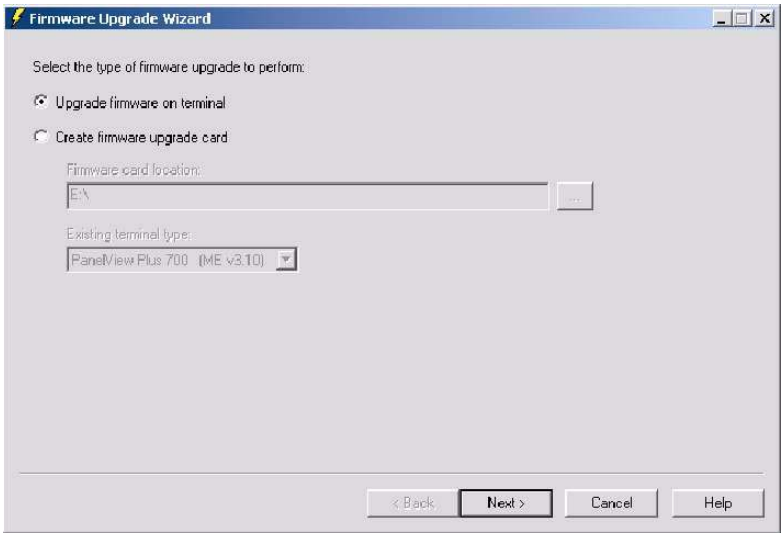
You can upgrade the firmware in a terminal that is connected to a desktop computer using a Serial, Ethernet or Network with RSLinx Enterprise software connection.

- **Serial connection** requires a RAS connection to be set up on computer. During the RAS setup, you select the COM port.
- **Ethernet connection** requires that you enter the terminal's IP Address.
- **Network connection** requires RSLinx Enterprise software where you select the terminal on an existing network.

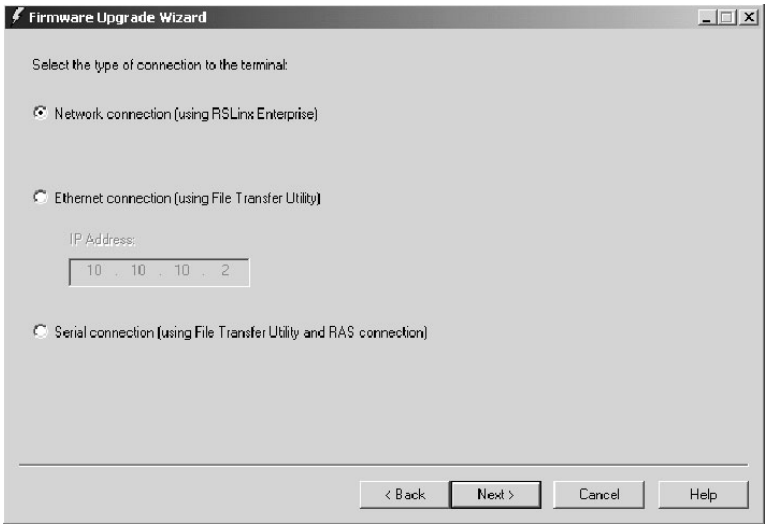
Both the Serial and Ethernet connection requires the File Transfer Utility running on the terminal.

This section shows how to upgrade firmware in a terminal using a Network connection via Ethernet communications.

1. Start the Firmware Upgrade Wizard by selecting Start>Rockwell Software>RSView Enterprise>Firmware Upgrade Wizard.



2. Select Upgrade firmware on terminal and press OK.

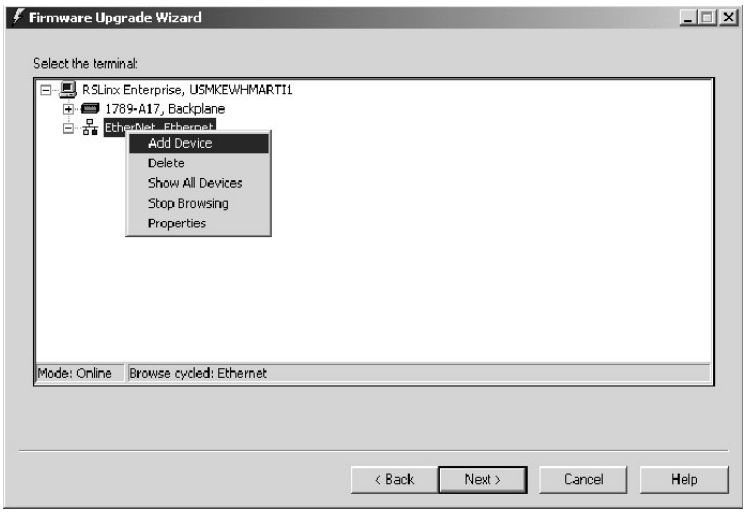


3. Select Network connection and press Next.

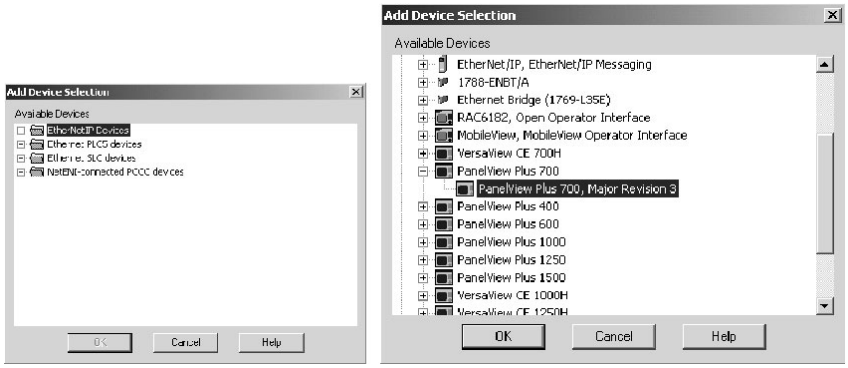
   Use the Ethernet and Serial connections only if the firmware upgrade is unsuccessful.

4. Locate the terminal on your Ethernet network via its IP address.

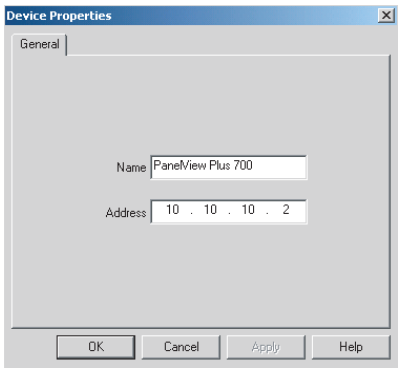
   Skip to Step 6 if you found the terminal. If you do not see the terminal, right click on the Ethernet driver and add the device to the browse tree.



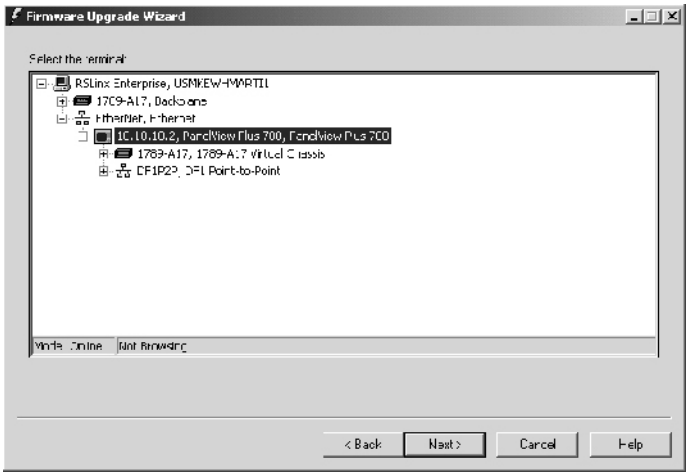
5. Double-click EthernetIP Devices and select the appropriate terminal and press OK.



6. Enter the IP address for the terminal and press OK.



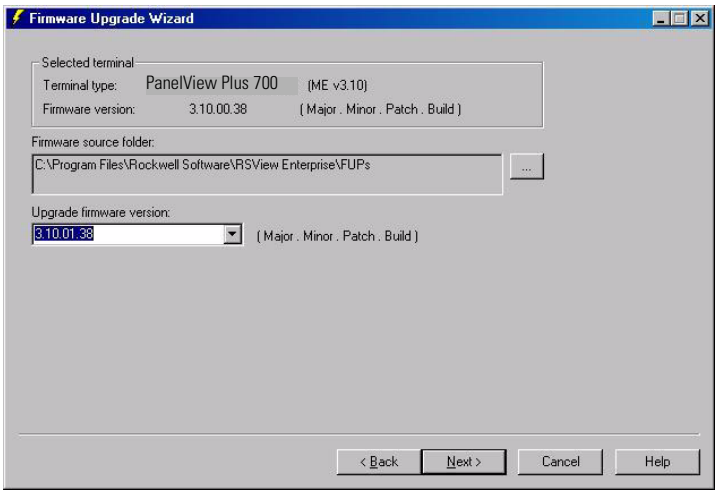
7. Select the terminal to be upgraded and press OK.



8. From the Firmware source folder text box, select the location of the firmware files.

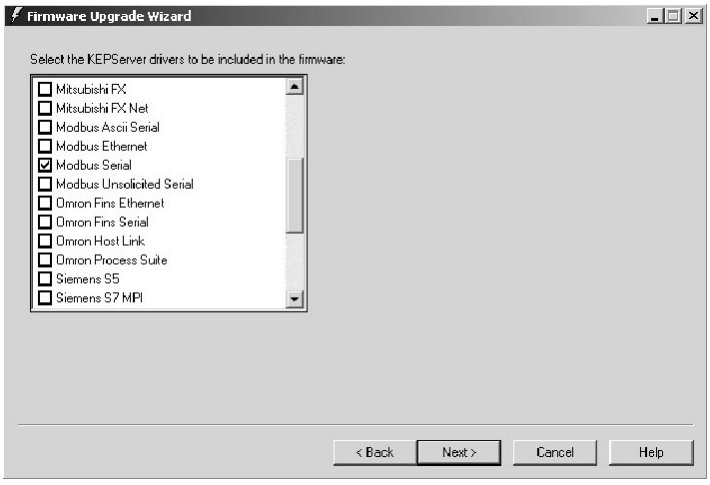
   The default location is C:\Program Files\Rockwell Software\RSView Enterprise\FUPs.

9. From the Upgrade firmware version list, select the version of the firmware you want to upgrade to, then select Next.



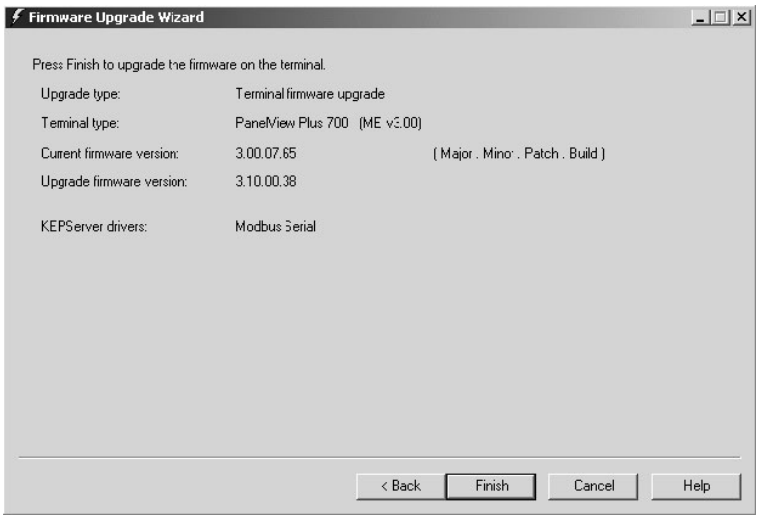
10. Select the appropriate KEPServer drivers and select Next.

    If no KEPServer drivers are needed, just select Next.



TIP If the selected FUP file does not support the KEPServer drivers, this dialog will not appear.

11. Press Finish to start the upgrade.

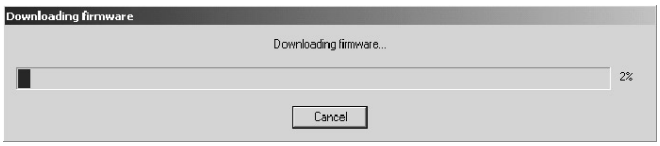


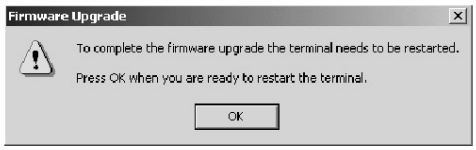
12. Press Yes to continue the upgrade process.

If the terminal was properly prepared for the upgrade, no applications should be running.

Firmware files are downloaded to the terminal. This may take several minutes to 15 minutes.

13. When the download is complete, press OK to reset the terminal.





If other terminals exist on the same Ethernet network, the following error may display:

'Error registering name on network (may be duplicate). Change in system Control Panel and try again.'

Ignore this error. It will be corrected during the upgrade. Press OK to acknowledge error and wait for terminal to reset.

TIP If a USB mouse is available, you can acknowledge the error by selecting OK.

14. On touch or touch/screen terminals, you must calibrate the touch screen by selecting pointers in all four corners of the screen and pressing the middle of the screen when prompted.

Ignore the following message if it appears. It means RSView ME is being installed. Do not touch the two buttons that appear with the message.

'Machine edition may be corrupted. Do you want to download firmware?'

Communication settings are cleared when the terminal is upgraded. If Ethernet communications is used, reconfigure the Ethernet communication settings using the values recorded when preparing the terminal.

15. Replace the .MER files that you backed up before starting the upgrade or download the new .MER files to the terminal.

16. Load the .MER file and run the project.

TIP You can configure your application to start automatically on power cycle under Startup Options.

Troubleshoot the System

Chapter Objectives

This chapter provides information on how to isolate and correct common operating problems with system components.

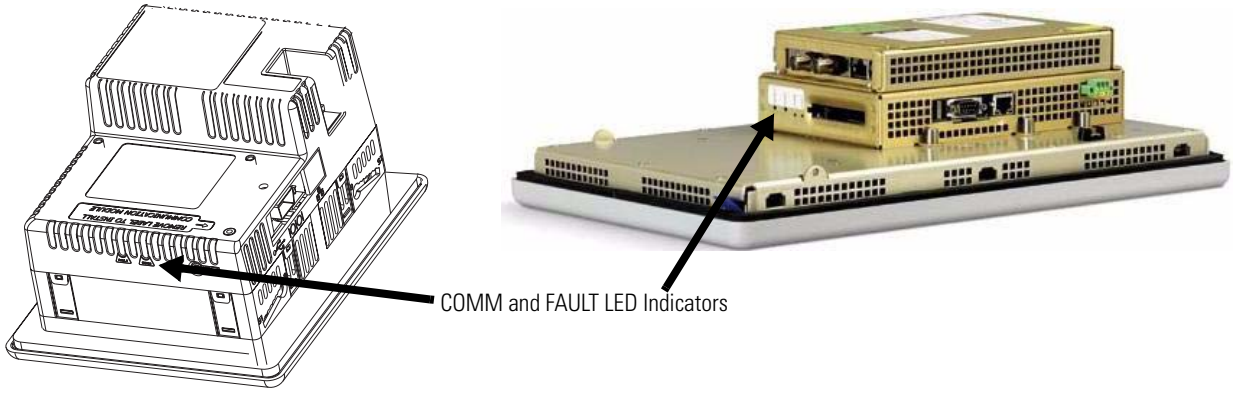
- LED indicators
- Isolate the problem
- Check components (display, touch screen, keypad, attached keyboard or mouse)
- Ethernet connection
- Advanced diagnostics
- Startup error messages
- Startup information messages
- Startup sequence
- System identification errors
- Startup
- Enter configuration mode
- Restart in safe mode
- Clean the display window

LED Indicators

The terminals have two LED indicators to isolate operating problems:

- COMM indicator (green) for communications
- FAULT indicator (red) for hardware faults

LED Indicators



Isolate the Problem

This section provides a list of general troubleshooting steps to follow when trying to isolate problems.

- **Check for adequate power**. An under-powered unit could result in unpredictable behavior.
  - The 400/600 dc powered terminals require 24V dc at 1.0 A.
  - The 400/600 ac powered terminals require 85 to 264V ac.
  - The 700 to 1500 dc powered terminals require 24V dc at 2.9 A.
  - The ac Power Supply (2711P-RSACDIN) for 700 to 1500 terminals meets Class 2/SELV requirements.
- **Check LED indicators on the terminal at startup**. Is power on? Is the unit attempting to start? The red LED indicator should be Off, except for a few brief flashes, and the green LED indicator should be On. If the LED indicators remain Off on the 700 to 1500 terminals, the power supply or logic module has failed. Check the power cable. Replace the logic module if the power is within range; if not, replace the power supply. If the LED indicators remain off on the 400/600 terminals, check the power cable.

  If the terminal cycles power and stops during startup, the state of the LED indicators will indicate an error.

After a successful startup, both LED indicators are off and controlled by the application running on the terminal.

Blinking Red LED Indicates a Recoverable Error

Red LED	Green LED	Indication
Blinking	Off	Last firmware download failed. Reload firmware using Firmware Upgrade Wizard (FUW) utility.
Blinking	Blinking	EBC boot loader firmware failed or is missing. Reload firmware using Firmware Upgrade Wizard (FUW) utility.
Blinking	On	Windows CE OS firmware failed or is missing. Reload firmware using Firmware Upgrade Wizard (FUW) utility.

Solid Red LED Indicates a Nonrecoverable, Fatal Error

Red LED	Green LED	Indication
On	Off	Fatal hardware error occurred. Replace logic module (700 to 1500) or the terminal (400 and 600).
On	Blinking	Fatal hardware error occurred in Display. Replace the display module (700 to 1500) or the terminal (400 and 600).

- **Check the messages at startup for errors**. Record any error message and refer to the Startup Error Message table.
- **Check the voltages and temperatures (700 to 1500 only)**. From Configuration Mode, open Terminal Settings>System Information>Terminal Information.
  - Battery Voltage for 700 to 1500 terminals should be at least 2.75V dc. Replace the battery if less than 2.75V dc.
  - Display Temperatures should be less than 55 °C (131 °F). The CPU temperature should be less than 95 °C.

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

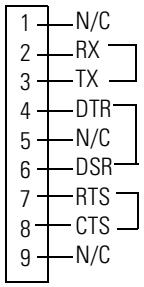
- **Check the System Event Log for errors or unexpected reboots.** From Configuration Mode, open Terminal Settings>System Event Log.
- **Use Extended Diagnostics on 700 to 1500 terminals only to perform more extensive hardware testing at startup**. From Configuration Mode, open Terminal Settings>Startup Tests>Select Tests.

  Select one or more of the tests you want to run. Enable extended diagnostics and set the iteration or repeat count.

  Restart the terminal. The Serial Port test requires a loopback connector with these connections.

Loopback Connector

DB9 Connector (female)



Extended Diagnostics are performed at every startup until disabled. A failure will momentarily halt startup and display an error message.

Check Components

This section provides tips on how to isolate problems with individual components of the terminal, including the display, touch screen, keypad, attached keyboard or mouse.

Display

This section provides tips on how to isolate problems with the display.

- **Check the brightness setting of the Display**. Is the display brightness dim or unreadable?

  From Configuration Mode, open Terminal Settings>Display Intensity.

- **Check the contrast setting of Display for 400 and 600 grayscale displays.** From Configuration Mode, open Terminal Settings>Display Contrast.
- **Check the Screen Saver settings**. Is the backlight turning off or dimming the display unexpectedly.

  From Configuration Mode, open Terminal Settings>Display>Screen Saver.

- **Check the LED indicators**. Do they flash during startup? Is power on and is the unit attempting to start?
- **Check the Display temperature (700 to 1500 only).** The display intensity will decrease to 40% if its temperature (or the temperature within the enclosure) is too high to reduce damage to the display. This can be checked using the RSView ME Events log.
- **Check the startup messages**. Is the Display operating at all and do the startup messages appear? Record any error message and refer to the Startup Error Messages table.
- **Replace the display module if all other attempts do not resolve problem (700 to 1500 only)**. If replacing the display module corrects the problem, then the Display was not functioning properly.

Touch Screen

This section provides tips on how to isolate problems with the Touch Screen.

- **Check the catalog number of the unit**. Verify that your terminal has a touch screen by looking at the label on the terminal.
- **Perform a calibration of the touch screen**. From Configuration Mode, open Terminal Settings>Input Devices>Touch Screen>Calibration. Follow the directions.

  The calibration requires four user screen touches. When the touches do not converge to a satisfactory calibration, you are asked repeatedly for additional screen touches and the calibration process never terminates. A touch screen that does not calibrate is not present or not functioning properly. Replace the display module (700 to 1500) or the terminal (400 and 600).
- **Check the Cursor Enable setting for the touch screen**. Is the cursor visible? From Configuration Mode, open Terminal Settings>Input Devices>Touch Screen>Cursor.
- **Check the pointer input by attaching a USB mouse**. 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 problem.
- **Does touching or dragging on the screen appear to work?** If yes, even if incorrectly, the touch screen is present and working but requires calibration.
- **Replace the bezel or display module if all other attempts do not resolve the problem (700 to 1500 only)**. If replacing the display module or bezel corrects the problem, then the touch screen was not functioning properly.

Keypad

This section provides tips on how to isolate problems with the keypad:

- **Check the Multi-Key/Hold-Off settings**. From Configuration Mode, open Terminal Settings>Keypad>Keypad Settings.

  Is the Hold-Off Delay longer than expected, or are multiple key presses inhibited by Multi-Key Lockout? Check all configurable settings.
  Home, End, Page Up or Page Down are not supported when Multi-Key Lockout is enabled.
- **Check key input by attaching a USB keyboard**. If the keyboard works, but the keypad does not, then the keypad driver or keypad is not working. If both the keypad and keyboard are not working, then the problem may be the application.
- **Replace the display module if all other attempts do not resolve problem**. If replacing the display module corrects the problem, then the keypad was not functioning properly.

Mouse

This section provides tips on how to isolate problems with an attached mouse.

- **Check the Cursor Enable setting**. Is the cursor visible? From Configuration mode, open Terminal Settings>Input Devices>Touch Screen>Cursor. Also check mouse settings.
- **Check the USB cable and connection**. Detach and then reattach the mouse. Cycle power to the terminal.
- **Is the mouse a USB composite device?** If the mouse is a keyboard/mouse composite device, then try a standalone USB mouse.
- **Replace the USB mouse**. Try a different model or manufacturer.

  See Appendix B for a list of compatible mouse devices.

  You can also check the Knowledgebase at the http://support.rockwellautomation.com site for a list of USB devices that are compatible with the terminal.

  If attaching a new mouse resolves the problem, then the old mouse was not working or noncompliant.

Keyboard

This section provides tips on how to isolate problems with the keyboard.

- **Check for enabled Alt-Ctrl keys.** From Configuration Mode, open Terminal Settings>Input Devices>Keyboard>Keyboard Settings.

  Are the keys enabled as expected? Check all configurable settings in Keyboard Properties.
- **If the keypad is present, check input using the keypad**. If the keypad works, but the keyboard does not, then the keyboard driver or keyboard is probably not working. If both the keypad and the keyboard are not working, then it is probably an application problem.
- **Check the USB cable and connector**. Detach and re-attach the keyboard. Verify a good connection. Cycle power to the terminal.
- **Is the keyboard a USB composite device?** If the keyboard is a keyboard/mouse composite device, then try a stand-alone USB keyboard.
- **Replace the USB keyboard**. Try a different model or manufacturer

  See Appendix B for a list of compatible keyboards.

  You can also check the Knowledgebase at the http://support.rockwellautomation.com site for a list of USB devices that are compatible with the terminal.

  If a new keyboard resolves the problem, then the old keyboard was probably non-compliant.

Ethernet Connnection

This section provides tips on how to isolate Ethernet problems.

- **Check the LED indicators at the Ethernet connector**. The green LED indicates a communications link and should be ON. The amber LED indicates data activity and should be flashing. Verify that there is a connection to the hub?
- **Check the cable connections and quality of cable.** Check for good connections and things such as quality, crimping, hub connection, and uplink ports.
- **Check the IP Address of the Built-in Ethernet Controller**. From Configuration Mode, select Terminal Settings>Networks and Communications>Network Connections>Network Adapters.

  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 Communications 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. From Configuration Mode, open Terminal Settings>Communications and Networks>Network Connections>Device Name.
- **Contact your Network Administrator to check peer or server settings**. The other side of the Ethernet connection may also be a problem.

Advanced Diagnostics

- Take advantage of alternate connectivity - mouse versus touch screen, keyboard versus keypad, serial communications, and alternate Ethernet connections.
- Know useful keyboard shortcuts so that you can navigate around the system without a mouse or touch screen.
- From Configuration mode, select Terminal Settings>System Event Log to check the event log. Look for error conditions or reasons for unexpected reboots.
- Check the configuration settings in Configuration mode for incorrect settings.
- Most importantly, general troubleshooting thoroughness means getting answers to questions such as:
  - Does the failure always happen? Is it repeatable?
  - Does the failure happen at bootup or some other time? Is there a set of actions that reveal the problem?
  - Does the failure occur on just one terminal or on multiple machines? If more than one machine, what do they have in common? If not all machines, then what is different between machines that fail and those that don't?
  - What appears on the screen, the LED indicators?
  - Lastly, and most importantly; did everything work until recently? If so, what changed?

Startup Error Messages

When an error occurs, the terminal displays the error number with a text message. The word ERROR! appears under this line in different languages.

Displayed Message
ERROR! FEHLER! ERREUR! ERRORE!

Startup Error Messages

Error #	Displayed Message	Description	Recommended Corrective Action
1	RAM Test	RAM Test failure	Reset the terminal. 400 and 600: If error persists, replace the terminal. 700 to 1500: If error persists, reseat the SO-DIMM RAM module. If error still persists, replace the logic module.
14 (1)	RAM Header Check	OS firmware that is downloading is not compatible with hardware.	Check that you are using the correct version and type of firmware upgrade. Reset the terminal and upgrade with the correct firmware version.
20 (1)	Transfer Image	Programming the downloaded OS firmware into flash failed.	Reset the terminal and attempt the firmware upgrade again. If error persists, replace the terminal.
23	Download Task (1)	OS firmware that is downloading to the terminal is too large.	Check that you are using the correct version and type of firmware upgrade. Reset the terminal and upgrade with the correct firmware version.
	Internal CF (2)	Error programming the new OS firmware to internal compact flash.	Reload the firmware. If error persists, replace the internal compact flash. If error still persists, replace the logic module.
24	CRC Check	Checksum of the OS firmware failed.	Reload the firmware. 400 and 600: If error persists, replace the terminal. 700 to 1500: If error persists, replace the internal compact flash card. If error still persists, replace the logic module.
25 (1)	Invalid Prod Family	OS firmware that is downloading is not compatible with terminal.	Check that you are using the correct version and type of firmware upgrade. Reset the terminal and upgrade with the correct firmware version.
27 (1)	Decompress System	Error decompressing the OS firmware from flash to RAM.	Reload the firmware. If error persists, replace the terminal.
30	Watchdog Test	Watchdog test failure	Reload the firmware. 400 and 600: If error persists, replace the terminal. 700 to 1500: If error persists, replace the logic module.
31	Stuck Key	Function key failure	Check that nothing is pressed against a key. Reset the terminal without key presses. If error persists, replace display module.
31.5 (2)	Stuck Touch	Touch screen failure	Check that nothing is pressed against the touch screen. Reset the terminal without touch screen presses. If error persists, replace the display module.
32 (2)	Battery Test	Battery failure	Replace the battery. If error persists, replace the logic module.
33.5 (2)	NVRAM Access	Nonvolatile memory failure	Upgrade the system firmware to revision 3.10.03 or later.
3a (1)	Stuck Touch	Touch screen failure	Check that nothing is pressed against the touch screen. Reset the terminal without touch screen presses. If error persists, replace the terminal.
40	EXE Check	System OS firmware is missing or corrupt.	Reload the firmware. 400 and 600: If error persists, replace the terminal. 700 to 1500: If error persists, replace the internal compact flash card. If error still persists, replace the logic module.
50 (2)	External CF	Error loading the OS firmware from the external compact flash card.	Reload the firmware. If error persists, replace the external compact flash card and attempt the firmware upgrade again.

(1) The error number and message displays only on the 400 and 600 terminals.

(2) The error number and message displays only on the 700 to 1500 terminals.

Startup Information Messages

Startup messages display in a specific sequence on the terminal screen during startup and typically display for a few seconds. These messages indicate the startup sequence of the terminal but do not require that you perform any action.

Startup Information Messages

Message #	Displayed Message	Description
37 (1)	Video Initialized	Configures and initializes the graphics video system.
30	Watchdog Test	Tests the watchdog circuitry to verify system integrity.
1	RAM Test	Tests the RAM memory.
31 (1)	Stuck Key	Checks the integrity of the function key hardware.
31.5 (1)	Stuck Touch	Checks the integrity of the touch screen hardware.
32 (1)	Battery Test	Checks the integrity of the battery hardware.
2.5 (1)	Registry Search	Locates and loads the most recent, valid registry. Multiple copies of the registry are maintained. If power is lost during a registry update, a valid registry is available the next time power is applied to the terminal.
2	Image Search	Checks for new OS firmware upgrade on the external compact flash card and the serial port.
11 (2)	Downloading Image	Downloads a new OS firmware upgrade to internal RAM. Message may remain on screen for several minutes.
50 (1)	External CF	Transfers a new OS firmware upgrade from the external compact flash card to the terminal. Message may display for several minutes.
20 (2)	Transfer Image	Programs the OS firmware just downloaded into RAM. Message may remain on screen for several minutes.
23 (1)	Internal CF	Programs the OS firmware just downloaded into the internal flash memory. Message may display for several minutes.
24	CRC Check	Checks the integrity of the OS firmware.
27 (2)	Decompress System	Decompresses the compressed OS firmware into RAM.
28	Starting System	Launches the operating system (OS).
29	System Check ###	Checks internal file system integrity (### is percent progress indicator).
29.1	System Check	Disables internal file system integrity check. Contact technical support.

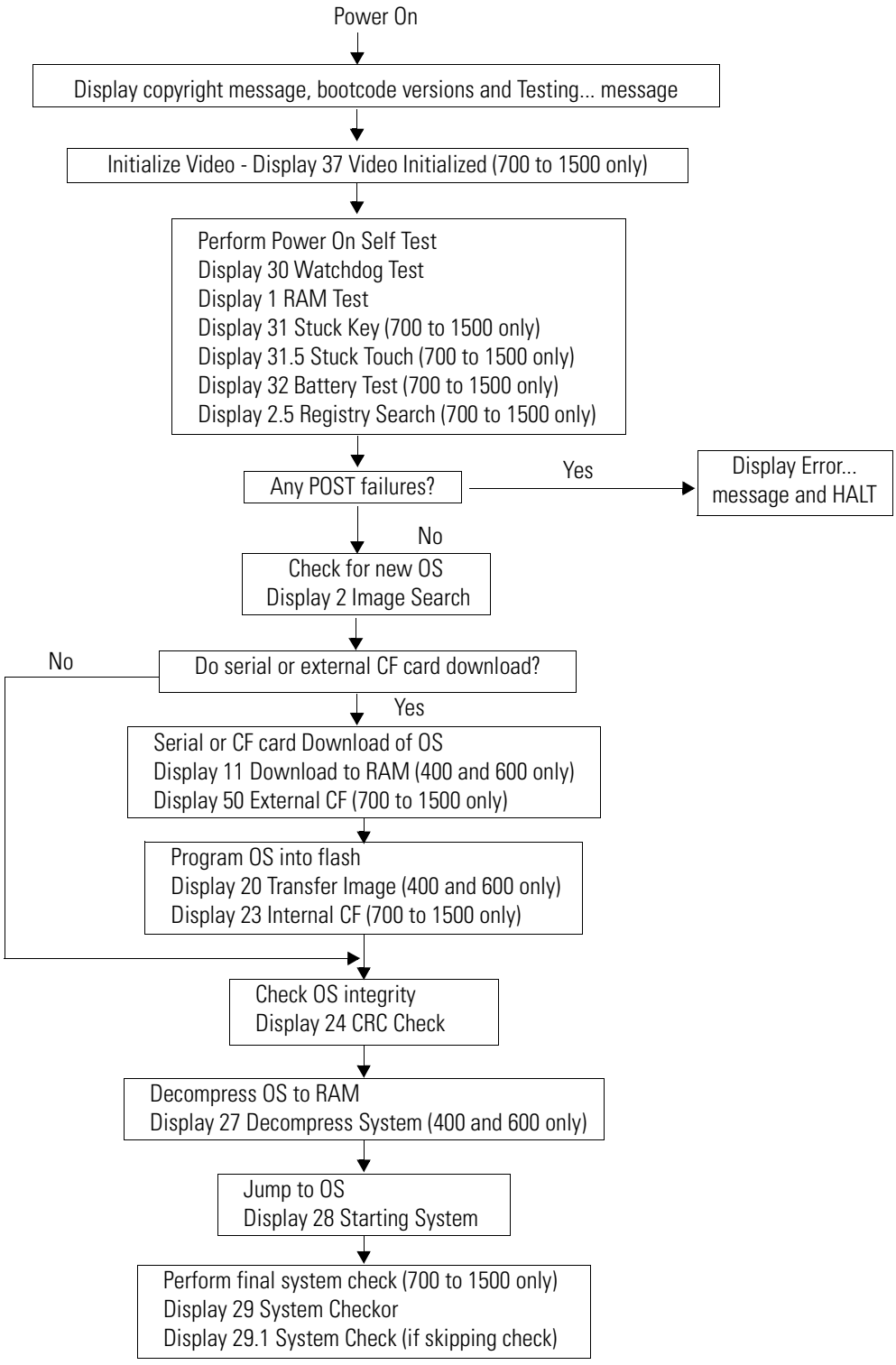
(1) The status number and message displays only on the 700 to 1500 terminals.

(2) The status number and message displays only on the 400 and 600 terminals.

Startup Sequence

This flow chart provides a sequence of startup operations for the terminal and shows system information messages that are displayed on the terminal.

Flowchart of Startup Sequence

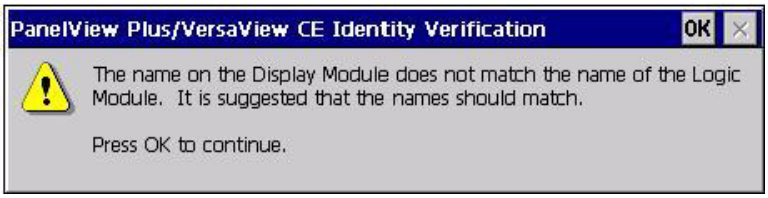


System Identification Errors

700 to 1500 only

The error messages in this section appear on startup if incorrect or invalid components are used with the 700 to 1500 terminals.

- This dialog appears if a VersaView CE logic module is attached to a PanelView display module or a PanelView Plus logic module is attached to a VersaView CE display module. We recommend that you use a VersaView CE display module with a VersaView CE logic module and a PanelView Plus display module with a PanelView Plus logic module. This is a warning letting you continue to operate.



- This dialog appears if the PanelView Plus logic module contains a 6189-RW*x* internal compact flash card for the VersaView CE terminal.

After pressing OK, you will be asked to power off the terminal and insert a valid 2711P-RW*x* internal compact flash card for the PanelView Plus terminal.

- This dialog appears if the VersaView CE logic module contains a 2711P-RW*x* internal compact flash card for the PanelView Plus terminal.

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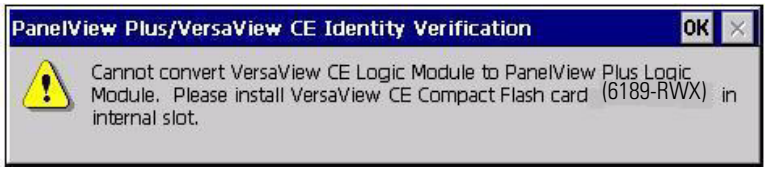
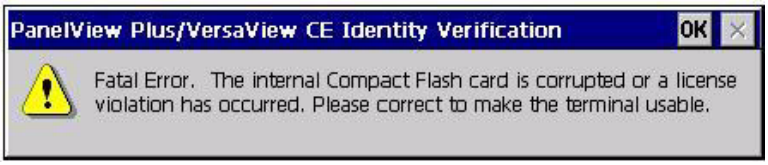


After pressing OK, you will be asked to power off the terminal and insert a valid 6189-RW*x* internal compact flash card for the VersaView CE terminal.

- This dialog appears if the internal compact flash in the PanelView Plus logic module is corrupt. This is a fatal error.



After pressing OK, you will be asked to power off the terminal and insert a valid 2711P-RW*x* internal compact flash card.

Startup

If the terminal is configured to enter configuration mode at startup and does not, then reload the firmware. See Chapter 7.

If the application does not start, there may be a problem with the .MER RSView Machine Edition file. Check for a startup screen and compatible version.

Enter Configuration Mode

To access configuration mode, your RSView .MER application must contain a screen with a Goto Configure mode button. When the terminal is running the application, you can press this button to access configuration mode.

Restart in Safe Mode

700 to 1500 only

The Safe mode restart option is targeted for VersaView CE terminals that may have additional software application programs loaded.

When you restart the PanelView Plus terminal in Safe mode:

1. The default operating system registry is loaded.
2. The operating system boots but RSView Machine Edition software is not started.
3. The operating system displays the 'ME may be corrupt' diagnostic screen.

   Disregard this message. RSView Machine Edition software is not corrupt; it has not been loaded on this boot cycle.
4. The next time you reset or power up the terminal, the system will start normally and run RSView Machine Edition software.

TIP Safe mode indicates that the terminal passes all startup self tests and can successfully launch the operating system. Safe mode is not a diagnostic function for the RSView Machine Edition application.

Clean the Display Window

ATTENTION

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

To clean the display window:

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

Remove Paint and Grease

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

Use a protective antiglare overlay for easier cleaning of display window.

Specifications

Electrical

Attribute	Value
400 and 600 Input Voltage, dc Power Consumption, dc 700 to 1500 Input Voltage, dc Power Consumption, dc	 24V dc nom (18…30V dc) 25 W max. (1.0 A at 24V dc) 24V dc nom (18…32V dc) 70 W max. (2.9 A at 24V dc)
400 and 600 Input Voltage, ac Line Frequency Power Consumption, ac 700 to 1500 Input Voltage, ac Line Frequency Power Consumption, ac Remote Power 700 to 1500 (2711P-RSAC) Input Voltage, ac Line Frequency Power Consumption, ac	 85…264V ac 47…63 Hz 60V A max. 85…264V ac 47…63 Hz 160V A max. 85…264V ac 47…63 Hz 120V A max.
PCI Slot Max. Available Power dc Supply ac Supply	 11 W 5 W

Environmental

Attribute	Value
Operating Temperature	0…55 °C (32…131 °F)
Storage Temperature	-25…70 °C (-13…158 °F)
Heat Dissipation 400 and 600 700 to 1500	 85 BTU/hr 240 BTU/hr
Relative Humidity	5…95% without condensation
Altitude, Operating	2000 m (6561 ft)
Shock, Operating	15 g at 11 ms
Shock, Nonoperating	30 g at 11 ms
Vibration	10…57 Hz, 0.012 pk-pk displacement 57…500 Hz, 2 g pk acceleration
Enclosure Ratings	NEMA Type 12, 13, 4X (Indoor use only), IP54, IP65

Display

Attribute	Value
Display Type 400 and 600 Monochrome 600 to 1500 Color	 Monochrome Passive Matrix, Film Compensated Super-twist Nematic (FSTN) Color Active Matrix TFT Thin-film Transistor with LCD Liquid Crystal Display
Display Size, Diagonal 400 600 700 1000 1250 and 1250 High-bright 1500	 3.8 in. 5.5 in. 6.5 in. 10.4 in. 12.1 in. 15.0 in.
Display Area (WxH) 400 600 700 1000 1250 and 1250 High-bright 1500	 78 x 59 mm (3.07 x 2.32 in.) 111 x 84 mm (4.37 x 3.30 in.) 132 x 99 mm (5.20 x 3.90 in.) 211 x 158 mm (8.31 x 6.22 in.) 246 x 184 mm (9.69 x 7.25 in.) 304 x 228 mm (11.98 x 8.98 in.)
Resolution 400 600 700 1000 1250 and 1250 High-bright 1500	 320 x 240 320 x 240 640 x 480 640 x 480 800 x 600 1024 x 768
Luminance 700 to 1500 1250 High-bright	 300 cd/m^2 (Nits) 1000 cd/m^2 (Nits)
Backlight 400 600 to 1500 1250 High-bright	 LED CCFL 50,000 hours life, min. Backlight not replaceable
Touch Screen Touch Technology 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

(1) number of function keys varies by terminal size.

Mechanical

Attribute	Value
Weight , Approx., HxWxD (for base unit without modules)	
400 Keypad[1]	562 g (1.24 lb)
600 Keypad or Keypad and Touch[1]	930 g (2.05 lb)
600 Touch[1]	789 g (1.74 lb)
700 Keypad or Keypad and Touch	1.9 kg (4.2 lb)
700 Touch	1.7 kg (3.8 lb)
1000 Keypad or Keypad and Touch	2.9 kg (6.3 lb)
1000 Touch	2.6 kg (5.7 lb)
1250 Keypad or Keypad and Touch	3.4 kg (7.6 lb)
1250 Touch and 1250 High-bright Touch	3.2 kg (7.1 lb)
1500 Keypad or Keypad and Touch	4.6 kg (10.0 lb)
1500 Touch	4.2 kg (9.3 lb)
Dimensions, Approx. HxWxD (for base unit without communication module)	
400 Keypad	152 x 185 x 90 mm (6.0 x 7.28 x 3.54 in.)
600 Keypad or Keypad and Touch	167 x 266 x 98 mm (6.58 x 10.47 x 3.86 in.)
600 Touch	152 x 185 x 98 mm (6.0 x 7.28 x 3.86 in.)
700 Keypad or Keypad and Touch	193 x 290 x 55 mm (7.58 x 11.40 x 2.18 in.)
700 Touch	179 x 246 x 55 mm (7.04 x 9.68 x 2.18 in.)
1000 Keypad or Keypad and Touch	248 x 399 x 55 mm (9.77 x 15.72 x 2.18 in.)
1000 Touch	248 x 329 x 55 mm (9.77 x 12.97 x 2.18 in.)
1250 Keypad or Keypad and Touch	282 x 416 x 55 mm (11.12 x 16.36 x 2.18 in.)
1250 Touch	282 x 363 x 55 mm (11.12 x 14.30 x 2.18 in.)
1250 Touch High-bright	282 x 363 x 74 mm (11.12 x 14.30 x 2.90 in.)
1500 Keypad or Keypad and Touch	330 x 469 x 65 mm (12.97 x 18.46 x 2.55 in)
1500 Touch	330 x 416 x 65 mm (12.97 x 16.37 x 2.55 in)

(1) Add approximately 95 g (0.21 lb) for communication module.

General

Attribute	Value
Battery Life 400 and 600 700 to 1500	 5 years min. at 25 °C (77 °F) 4 years min. at 25 °C (77 °F)
Clock	Battery-backed, +/-2 minutes per month
LED Indicators	COMM (Green), Fault (Red)
Application Flash Memory 400 and 600, Series A 400 and 600, Series B or later 700 to 1500 Logic Modules, Series A to D 700 to 1500 Logic Modules, Series E or later 2711P-RW1 2711P-RW2 2711P-RW3	 5 MB 10 MB 12 MB 26 MB 72 MB 195 MB
External Compact Flash Storage	512 MB max.

Agency Certifications

UL Listed Industrial Control Equipment UL Listed Industrial Control Equipment for use in Canada UL Listed Industrial Control Equipment for use in: • Class I, Div 2, Group A, B, C, D • Class I, Zone 2, Group IIC (1) • Class II, Div 2 Groups F, G • Class III Hazardous Locations
CE marked for all applicable directives
C-Tick

(1) Applies only to the 1250 high-bright display module.

Compatible USB Devices

The following table provides a list of compatible USB devices that can be used on the USB ports of the terminals.

Compatible USB Devices

Device	Vendor	Model	PanelView Plus 700 to 1500	PanelView Plus 400 and 600
USB Keyboard	Rockwell Automation	Cat. No. 6189-KBDEPU1U	Yes	Yes
	Ortek	MCK-600USB	Yes	Yes
	Dell	RT7D10	Yes	Yes
USB Keyboard/Mouse	Rockwell Automation	Cat. No. 6189-KBDEPC1U	Yes	No
USB Mouse	Logitec	Optical Mouse - M-BJ58	Yes	Yes
	Microsoft	Intellimouse D58-00026	Yes	Yes
	Atek	USB Mouse	Yes	No
	VersaView (Rockwell Automation)	USB Mouse	Yes	Yes
USB Hub	Belkin	USB 4-Port Hub - ESU021	Yes	Yes

Available Fonts for Terminal Applications

The following fonts are pre-installed on PanelViewPlus/VersaView CE terminals:

- True Type fonts (scalable)
  - Tahoma.ttf (proportional)
  - Courier.ttf (fixed width)
  - Arial.ttf (proportional)
- 23 fonts of various sizes migrated from PanelView Standard and PanelView e terminals (various sizes)

To simplify the creation and downloading of .mer application files on these devices, use the above list of fonts when developing screens in RSView Studio software.

Additional fonts are available in RSView Studio software when developing application screens.

- If the font used to develop screens is not available on the target device, the closest font is selected.
- If bold or italics is used, and a separate bold or italics font is unavailable, then the target operating system will use an algorithm to produce these affects.

In either case, the device screens will look different than they do in RSView Studio software.

Download Fonts to Terminal

To use additional fonts on a PanelView Plus/VersaView CE device, copy any of the font files on the VersaView CE Accessories CD or the RSView Machine Edition Fonts CD to the following directory on the computer where RSView Studio software is installed:

c:\Documents and Settings\All Users\Documents\RSView Enterprise\ME\Runtime

You can now use the File Transfer Utility in RSView Studio software to download the font files to the target device:

1. Select Tools>Transfer Utility.
2. Select Source File>True Type Fonts.
3. Select a font file to download to the device and press the Download button.

VersaView CE Accessories CD

The following True Type fonts are included on the VersaView CE Accessories CD:

- Times New Roman.ttf
- Symbol.ttf
- Wingdings.ttf

This CD is not supplied with PanelView Plus terminals.

RSView Machine Edition Fonts CD

Additional fonts are available on a CD, titled RSView Machine Edition Fonts. This CD is available from your local distributor.

For additional information, refer to the Rockwell Automation Knowledgebase at http://support.rockwellautomation.com. Select Knowledgebase under Online Tools and then enter Tech Note ID A66647102.

Available Fonts

Fonts	File Name	Size (Bytes)
Arial		
Arial (Subset 1_30)	arial_1_30.ttf	153,720
Arial Black	arialk.ttf	117,028
Arial Bold	arialbd.ttf	288,496
Arial Bold Italic	arialbi.ttf	226,748
Arial Italic	ariali.ttf	207,808
Comic Sans MS		
Comic Sans MS	comic.ttf	126,364
Comic Sans MS Bold	comicbd.ttf	111,476
Courier New		
Courier New (Subset 1_30)	cour_1_30.ttf	162,460
Courier New Bold	courbd.ttf	312,920
Courier New Bold Italic	courbi.ttf	236,148
Courier New Italic	couri.ttf	245,032
Georgia		
Georgia	georgia.ttf	149,628
Georgia Bold	georgiab.ttf	141,032
Georgia Bold Italic	georgiaz.ttf	159,736
Georgia Italic	georgiai.ttf	157,388
Impact	impact.ttf	136,076
Kino	kino.ttf	28,872
MSLogo	mslogo.ttf	2,500
Symbol	symbol.ttf	69,464
Tahoma		
Tahoma (Subset 1_07)	tahoma_1_07.ttf	123,980
Tahoma Bold	tahomabd.ttf	295,432
Times New Roman		
Times New Roman (Subset 1_30)	times_1_30.ttf	184,976
Times New Roman Bold	timesbd.ttf	334,944
Times New Roman Bold Italic	timesbi.ttf	239,692
Times New Roman Italic	timesi.ttf	248,368

Fonts	File Name	Size (Bytes)
Trebuchet MS		
Trebuchet MS	trebuc.ttf	69,688
Trebuchet MS Bold	trebucbd.ttf	66,444
Trebuchet MS Bold Italic	trebucbi.ttf	66,348
Trebuchet MS Italic	trebucit.ttf	72,560
Verdana		
Verdana	verdana.ttf	149,752
Verdana Bold	verdanab.ttf	137,616
Verdana Bold Italic	verdanaz.ttf	154,800
Verdana Italic	verdanai.ttf	155,076
Webdings	webdings.ttf	118,752
Wingding	wingding.ttf	81,000
Chinese (Simplified) Locale Specific Support		
Simsun & NSimSun		
Simsun & NSimSun	simsun.ttc	10,500,400
Simsun & NSimSun (Subset 2_50)	simsun_2_50.ttc	3,051,024
Simsun & NSimSun (Subset 2_60)	simsun_2_60.ttc	3,578,692
Simsun & NSimSun (Subset 2_70)	simsun_2_70.ttc	6,975,948
Simsun & NSimSun (Subset 2_80)	simsun_2_80.ttc	8,116,188
Simsun & NSimSun (Subset 2_90)	simsun_2_90.ttc	9,066,640
SC_Song	sunfon.ttf	4,686,044
Chinese (Traditional) Locale Specific Support		
MingLiU & PMingLiU (Choose 1)		
MingLiU & PMingLiU	mingliu.ttc	8,822,400
MingLiU & PMingLiU (Subset 2_70)	mingliu_2_70.ttc	4,786,488
MingLiU & PMingLiU (Subset 2_80)	mingliu_2_80.ttc	5,772,700
MingLiU & PMingLiU (Subset 2_90)	mingliu_2_90.ttc	7,354,808
MSMing	msming.ttf	3,172,552
Japanese Locale Specific Support		
MS Gothic		
MS Gothic & P Gothic & UI Gothic	msgothic.ttc	8,272,028
MS Gothic & P Gothic & UI Gothic (Subset 1_50)	msgothic_1_50.ttc	4,456,536
MS Gothic & P Gothic & UI Gothic (Subset 1_60)	msgothic_1_60.ttc	6,057,400
MS Gothic & P Gothic & UI Gothic (Subset 1_70)	msgothic_1_70.ttc	3,795,500
MS Gothic & P Gothic & UI Gothic (Subset 1_80)	msgothic_1_80.ttc	5,438,776
MS Gothic & P Gothic & UI Gothic (Subset 1_90)	msgothic_1_90.ttc	6,408,352
MS Gothic & P Gothic (Subset 30)	msgothic30.ttc	4,197,524
MS Gothic & P Gothic (Subset 30_1_19)	msgothic30_1_19.ttc	3,304,056

Fonts	File Name	Size (Bytes)
Korean Locale Specific Support		
GL_CE	gl_ce.ttf	4,130,084
Gulim & GulimChe (Choose 1)		
Gulim & GulimChe (Subset 1_30)	gulim_1_30.ttc	3,010,268
Gulim & GulimChe (Subset 1_40)	gulim_1_40.ttc	4,683,896
Gulim & GulimChe (Subset 1_50)	gulim_1_50.ttc	7,128,756
Gulim & GulimChe (Subset 1_60)	gulim_1_60.ttc	9,360,100

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Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At http://support.rockwellautomation.com, 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://support.rockwellautomation.com.

Installation Assistance

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

United States	1.440.646.3223 Monday – Friday, 8am – 5pm EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

New Product Satisfaction Return

Rockwell 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, it may need to be returned.

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

www.rockwellautomation.com

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