PanelView 5510 Terminals

Catalog Numbers: 2715P-BxCD, 2715P-BxCD-B, 2715P-BxCD-K, 2715P-CxWD, 2715P-CxWD-B, 2715P-TxCD, 2715P-TxCD-B, 2715P-TxCD-BSK, 2715P-TxCD-K, 2715P-TxWD, 2715P-TxWD-B, 2715P-TxWD-BSK, 2715P-TxWD-K

Allen-Bradley
by ROCKWELL AUTOMATION

User Manual

Original Instructions

Important User Information

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

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

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

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

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

WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.

ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.

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

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

SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.

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

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

The following icon may appear in the text of this document.

Identifies information that is useful and can help to make a process easier to do or easier to understand.

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About This Publication

This manual describes how to install, configure, operate, and troubleshoot the PanelView™ 5510 terminals. This manual does not provide procedures on how to create applications that run on the terminals, or control logic that runs in the controller.

Other tasks that you must do include:

- Configure the Ethernet settings and update the firmware of the terminal.

IMPORTANT	You must configure the Ethernet settings and update the firmware before you can download a View Designer project and use the terminal. See Initial Startup on page 40.

- Create a project by using the Studio 5000 View Designer® application.
- Create logic for the controller using the Studio 5000 Logix Designer® application.

Download Firmware, AOP, EDS, and Other Files

Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes from the Product Compatibility and Download Center at rok.auto/pcdc.

Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

Topic	Page
Corrected PanelView 5510 Panel Cutout Dimensions	27

Package Contents

The PanelView 5510 terminals ship with these items.

Item	Description	
Hardware	Mounting levers for panel installation Removable DC power terminal block	
Documentation	Resistive Touch Resistive Touch and Keypad	PanelView 5510 Terminals Product Information, publication 2715P-PC001 Cutout Templates for PanelView 5510 Terminals, publication 2715P-DS001
	Capacitive Touch	PanelView 5510 Capacitive Touch Terminals Product Information, publication 2715P-PC003 Cutout Templates for PanelView 5510 Capacitive Touch Terminals, publication, VIEW-DS006

Request Corresponding Source for Open Source Packages

The software that is included in this product contains copyrighted software that is licensed under one or more open-source licenses. Copies of those licenses are included with the software. Corresponding Source for open-source packages that are included in this product can be found at the websites that are identified in the product documentation.

You can also obtain complete Corresponding Source by contacting Rockwell Automation via our Contact form on the Rockwell Automation website: https://www.rockwellautomation.com/en-us/company/about-us/contact-us.html. Include 'Open Source' in the request text.

IMPORTANT	Do not modify the NVS file. The NVS file is used in firmware updates and a modified NVS file can cause the firmware update to fail.

Catalog Numbers

This publication is applicable to these currently available PanelView 5510 terminals.

PanelView 5510	2715P-B7CD, 2715P-B10CD, 2715P-B15CD, 2715P-T7CD, 2715P-T10CD, 2715P-T15CD, 2715P-T19CD, 2715P-T7WD, 2715P-T9WD, 2715P-T12WD
PanelView 5510 Conformal Coated	2715P-B7CD-K, 2715P-B10CD-K, 2715P-B15CD-K, 2715P-T7CD-K, 2715P-T10CD-K, 2715P-T15CD-K, 2715P-T19CD-K, 2715P-T7WD-K, 2715P-T9WD-K, 2715P-T12WD-K
PanelView 5510 Brandless	2715P-B7CD-B, 2715P-B10CD-B, 2715P-B15CD-B, 2715P-T7CD-B, 2715P-T10CD-B, 2715P-T15CD-B, 2715P-T19CD-B, 2715P-T7WD-B, 2715P-T9WD-B, 2715P-T12WD-B
PanelView 5510 Stainless Steel	2715P-T9WD-BSK, 2715P-T10CD-BSK, 2715P-T12WD-BSK, 2715P-T15CD-BSK
PanelView 5510 Capacitive Touch	2715P-C7WD, 2715P-C10WD, 2715P-C12WD, 2715P-C15WD, 2715P-C19WD, 2715P-C22WD, 2715P-C7WD-B, 2715P-C10WD-B, 2715P-C12WD-B, 2715P-C15WD-B, 2715P-C19WD-B, 2715P-C22WD-B

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation. You can view or download publications at rok.auto/literature.

Resource	Description
PanelView 5510 Terminals Technical Data, publication 2715P-TD001	Provides specifications and certifications for the PanelView 5510 terminal.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Guidelines for Handling Lithium Batteries Technical Data, publication AG-5.4	Provides guidelines to store, handle, install, and dispose of lithium batteries.
Industrial Ethernet Media Brochure, publication 1585-BR001	Provides general guidelines about Ethernet networking and connectivity.
EtherNet/IP Embedded Switch Technology Application Guide, publication ENET-AP005	How to install, configure, and maintain linear and Device Level Ring (DLR) networks that use Rockwell Automation EtherNet/IP™ devices with embedded switch technology.
ControlFLASH Firmware Upgrade Kit User Manual, publication 1756-UM105	Describes how to use the ControlFLASH™ software to upgrade device firmware.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-state Control, publication SGI-1.1	Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies incorporating solid-state components.
Product Certifications website, rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.
Technical Documentation Center, rok.auto/techdocs	Quickly access and download technical specifications, installation instructions, and user manuals.

Overview

About the PanelView 5510 Terminals

The PanelView™ 5510 terminals are operator interface devices that monitor and control devices that are attached to ControlLogix® 5570 or 5580 controllers or CompactLogix® 5370, 5380, or 5480 controllers over an EtherNet/IP™ network. Animated graphic and text displays provide a view into the operating state of a machine or process. Operators interact with the control system by using the touch screen or keypad of the terminal.

The PanelView 5510 terminals include these features and capabilities:

- Tightly integrated control and design environment allows information to be shared between the PanelView 5510 terminal and the Logix platforms
- The Studio 5000® environment provides one point of access for both View Designer and Logix Designer applications(1)
- Connection to up to four 4000 or 5580 controllers or CompactLogix 5370, 5380, or 5480 controllers with revision 27 firmware or later(2)
- Supports a maximum of 500 user-defined screens
- Supports a maximum of 4,000 Logix-based alarms per controller(1)
- Ethernet communication that supports Device Level Ring (DLR), linear, or star network topologies
- High-speed human machine interface (HMI) button control and easily configured navigation menu
- Automatic Diagnostics capability
- Conformal coating, indicated by a 'K' at the end of the catalog number, is available for all resistive touch terminals
- Brandless, meaning without the Allen-Bradley® logo and product identification on the front bezel, indicated by a "B" at the end of the catalog number, is available for all terminals
- Stainless-steel, DC-powered, brandless, conformal coated, resistive touch-only terminals, indicated by an "S" in the catalog number, are available in 9 in. widescreen, 10 in., 12 in. widescreen, and 15 in. sizes
- Capacitive touch terminals are available in 7 in., 10 in., 12 in., 15 in., 19 in., and 22 in. widescreen sizes

(1) PanelView 5510 firmware can support up to 4000 Logix-based alarms per controller if you use Studio 5000 View Designer application version 5 and Studio 5000 Logix Designer application version 32 or higher. Earlier versions of the Studio 5000 View Designer or Studio 5000 Logix Designer applications can support up to 1000 Logix-based alarms. For more information about the Logic-based alarms, see footnote 2.

(2) The PanelView 5510 terminal supports up to 4000 Logix tag-based alarms or up to 1000 Logix instruction-based alarms per controller.

Hardware Features

The PanelView 5510 terminals have fixed hardware configurations that provide a range of display sizes and operator input options.

Resistive Touch Terminal Hardware Features

Figure 1 - PanelView 5510 Resistive Touch Terminal Hardware Features

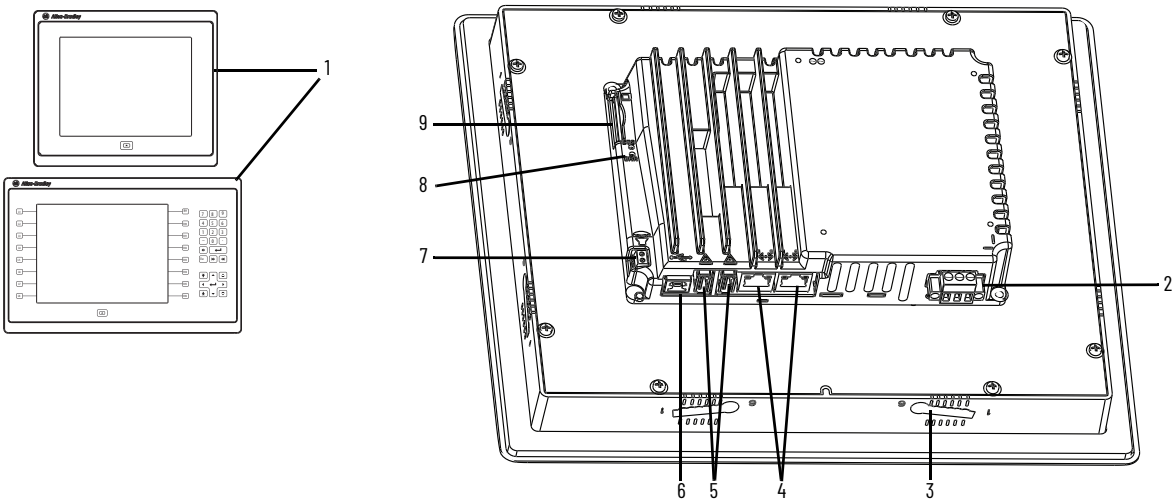


Table 1 - PanelView 5510 Resistive Touch Terminal Hardware Features

Item	Feature	Description
1	Display/Keypad	TFT color graphic displays with a resistive touch screen and navigation button in a range of display sizes. Some models also have a keypad and function keys, providing additional operator input options. • 6.5 in. touch or touch with keypad • 7 in. widescreen touch • 9 in. widescreen touch • 10.4 in. touch or touch with keypad • 12.1 in. widescreen touch • 15 in. touch or touch with keypad • 19 in. touch
2	Power	18...30V DC (isolated)
3	Mounting slot	The slots on the top, bottom, and sides of the terminal are used with mounting levers to mount the device to a panel or enclosure. The number of slots varies by terminal size.
4	Ethernet ports	Two 10/100Base-T, Auto MDI/MDIX, EtherNet/IP ports for controller communication that supports DLR network topology.
5	USB host ports	Two USB 2.0 high-speed (type A) host ports.
6	USB device port	One USB 2.0 high-speed (type B) device port to connect a host computer that is software-feature dependent.
7	Audio out	**IMPORTANT**: The audio out feature is not functional. The feature is expected to be available in a future software release.
8	Status indicators	Light-emitting diode indicators on the back of the unit provide status and fault conditions.
9	Secure Digital (SD) card slot	One slot that supports an SD™ or SDHC™ card that is recommended in Table 8 on page 17.

Capacitive Touch Terminal Hardware Features

Figure 2 - PanelView 5510 Capacitive Touch Terminal Hardware Features

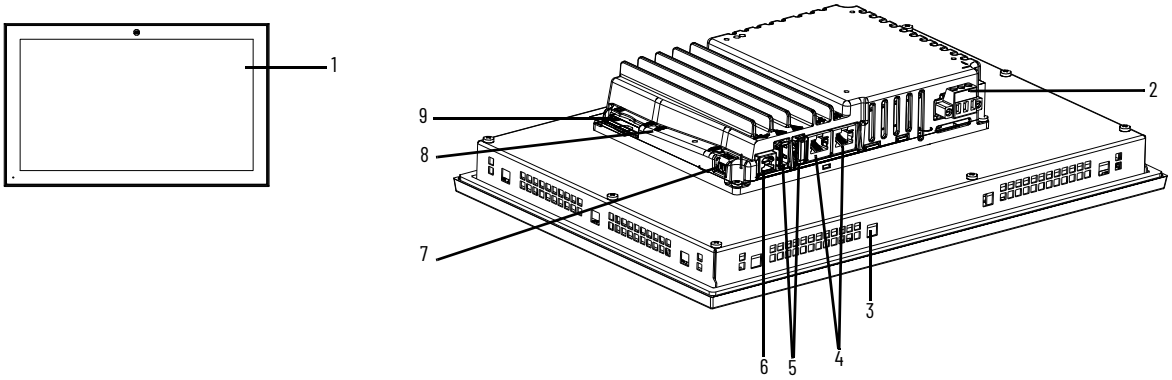


Table 2 - PanelView 5510 Capacitive Touch Terminal Hardware Features

Item	Feature	Description
1	Display	TFT color graphic displays with a capacitive touch screen in a range of display sizes. • 7 in. widescreen touch • 10.1 in. widescreen touch • 12.1 in. widescreen touch • 15.6 in. widescreen touch • 18.5 in. widescreen touch • 21.5 in. widescreen touch
2	Power	18...30V DC (isolated)
3	Mounting slot	The slots on the top, bottom, and sides of the terminal are used with mounting clips to mount the device to a panel or enclosure. The number of slots varies by terminal size.
4	Ethernet ports	Two 10/100Base-T, Auto MDI/MDIX, EtherNet/IP ports for controller communication that supports DLR network topology.
5	USB host ports	Two USB 2.0 high-speed (type A) host ports.
6	USB device port	One USB 2.0 high-speed (type B) device port to connect a host computer that is software-feature dependent.
7	Audio out	**IMPORTANT**: The audio out feature is not functional. The feature is expected to be available in a future software release.
8	Status indicators	Light-emitting diode indicators on the back of the unit provide status and fault conditions.
9	Secure Digital (SD) card slot	One slot that supports an SD™ or SDHC™ card that is recommended in Table 8 on page 17.

Operator Control

All PanelView 5510 terminals have a color display with a touch screen for operator control.

- Capacitive touch terminals offer high-level accuracy and enhanced optical quality. They are very durable, easy to clean, and resistant to scratches.
- Resistive touch terminals feature a navigation button and provide accurate input with excellent reliability for control in industrial applications.
- Keypad models are similar to resistive touch terminals, but also feature function keys to the left (L#) and right (R#) of the display. Larger models have more keys or a keypad in addition to the resistive touch screen and navigation button. The keypad is used during runtime to initiate actions, control navigation, and enter data.

ATTENTION:
The capacitive touch screen supports input from a finger, conductive stylus, or gloved hand for operation. The tip of the stylus must be made of soft rubber and have a minimum radius of 2.5 mm (0.098 in.). Gloves must be made of conductive material no thicker than 2 mm (0.079 in.), feature a conductive coating, or be knitted with conductive threads.

Keypads and resistive touch screens register input from a finger, gloved hand, or plastic stylus that has a minimum tip radius of 1.3 mm (0.051 in.).

Any other object or tool can damage the touch screens or keypad.

ATTENTION: Do not perform multiple operations simultaneously. Multiple simultaneous operations can result in unintended operation.
- Touch only one operating element on the screen with one finger at one time.
- Press only one key on the terminal at one time.

Figure 3 - PanelView 5510 Resistive Touch Terminal Operator Controls

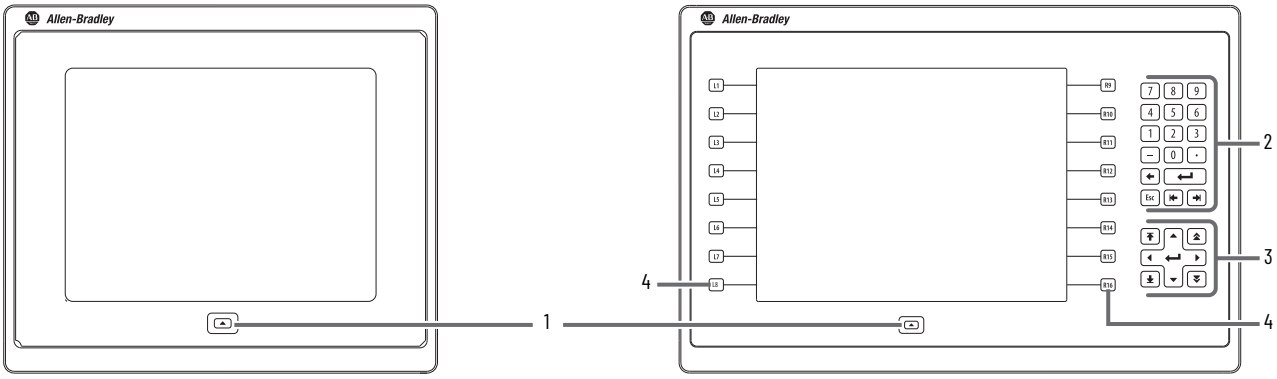


Table 3 - PanelView 5510 Resistive Touch Terminal Operator Controls

Item	Feature	Description
1	Navigation button	Opens the navigation menu at the bottom of a screen, displaying the contents of a project, allowing screen navigation and device configuration.
2	Numeric keypad	Contains numeric, decimal, minus, and these keys: • Backspace - deletes the character to the left of the insertion point. • Enter - inputs the currently highlighted key or enters a blank line if the insertion point is in the text box of the virtual keyboard. • Tab-left, Tab-right - selects the previous or next control or input element. • Esc - cancels or dismisses a dialog.
3	Navigation keys	• Arrow keys - select a key on the virtual keyboard that's above, below, left, or right of the selected key, or move a cursor that's in a text box. • Home/End - moves the insertion point to the beginning or end of a text or numeric entry field. • Page up/Page down - goes to the next or previous pages of a list.
4	Function keys • 6.5 in. terminal • 10.4 in. terminal • 15 in. terminal	Perform specific commands when configured for a screen or any of its graphic elements. • L1...L6 and R1...R6 • L1...L8 and R1...R8 • L1...L10 and R1...R10

All PanelView 5510 terminals also support a virtual keyboard and numeric keypad that opens on PanelView 5510 terminal screens during runtime and the use of a physical keyboard and mouse connected via USB ports.

Touch Gestures

PanelView 5510 terminals support touch gestures to interact with screen elements during runtime. Standard touch gestures include:

- **Tap** – Briefly touch the target on the HMI display with your fingertip.
- **Drag** – Move your fingertip over the target on the HMI display without contact loss.

For a list of actions you can perform by using touch gestures, see the View Designer help.

Studio 5000 Environment

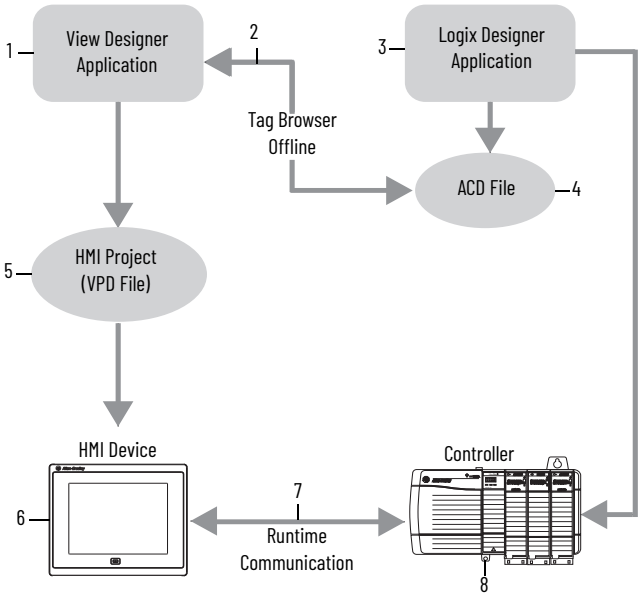
Use the Studio 5000 environment to create HMI applications for the PanelView 5510 terminal.

The Studio 5000 environment includes these applications:

- **View Designer** – you can create and design a project for a specific PanelView 5510 terminal and download the project to the terminal.

  You can create an application for any PanelView 5510 terminal and reuse that same application across the entire platform.
- **Logix Designer** – you can develop control logic for a CompactLogix or ControlLogix controller and download the logic to the controller.

Figure 4 - How Studio 5000 Applications Work Together



The table describes how the View Designer and Logix Designer applications work together to create an HMI runtime project.

Table 4 - Studio 5000 Applications and Tools

Item	Component	Description
1	View Designer application	A Studio 5000 application that is used to build HMI projects. Studio 5000 View Designer® projects are stored as VPD files that can be downloaded to the PanelView 5510 terminal.
2	Tag browser	A tool that is used to search for and select tags within a Studio 5000 Logix Designer® ACD project file. You can bind the tags to graphic element properties and properties of an HMI display. The Studio 5000 View Designer application uses the tag browser to read data from an ACD file.
3	Logix Designer application	A Studio 5000 application that is used to develop control logic for an industrial automation system. Studio 5000 Logix Designer application interfaces with controllers to read and write tag information. Studio 5000 Logix Designer projects are stored as ACD files that can be downloaded to the controller.
4	ACD file	An Automation Controller Database (ACD) file. An ACD file is a Logix Designer project file that contains the logic or code, including tags and data types, which runs within a controller.
5	HMI project (VPD file)	A View Project Database (VPD) file. A VPD project is a file that contains the operator interface application, including HMI displays, controller references, and information about the HMI device to run the application.
6	HMI device	A Human Machine Interface (HMI) device, such as the PanelView 5510 terminal, which runs the HMI project. At runtime, the HMI device communicates directly with the controller.
7	Runtime	The environment in which the runtime HMI project communicates with the controller. During runtime, the HMI device runs the downloaded project, exchanges data with the controller, animates displayed data, and responds to operator input.
8	Controller	A logic controller such as a ControlLogix or CompactLogix 5370 controller.

EtherNet/IP Communication

The PanelView 5510 terminals contain EtherNet/IP embedded switch technology. These terminals communicate with ControlLogix controllers over an Ethernet connection with Device Level Ring (DLR) or linear network topologies. Star technology is also supported when using switches.

The PanelView 5510 terminals can reside on EtherNet/IP networks that run integrated motion and CIP Sync™ applications without adverse performance. The terminal is not a consumer or producer of CIP Sync or motion packets.

Typical Configuration

Traditional DLR linear, and star network topologies are supported. See these topics for examples:

- Device Level Ring Network Topology on page 38
- Linear Network Topology on page 39
- Star Network Topology on page 39

Catalog Number Explanation

This table provides an explanation of the catalog numbers.

Bulletin	Input Type	Display Size	Display Type	Power	-	Special Option
	|	|	|	|	|	|
2715P-	**C** = Capacitive touch	**7** = 6.5 in.[1]	**C** = Color, standard aspect ratio	**D** = DC isolated	**-**	**B** = Without brand identity
	T = Resistive touch	**7** = 7 in.[1]	**W** = Color, wide aspect ratio			**S** = Stainless-steel
	B = Keypad with resistive touch	**9** = 9 in.				**K** = Conformal coating
		10 = 10.1 or 10.4 in.				
		12 = 12.1 in.				
		15 = 15 or 15.6 in.				
		19 = 18.5 or 19 in.				
		22 = 21.5 in.				

(1) For the display size/display type combination, 7C designates the 6.5 in. standard display model, and 7W designates the 7 in. widescreen display model.

Product Selection

This table provides product selection information.

Cat. No.			Display				Input Power	Ethernet	Memory	
Capacitive Touch	Resistive Touch	Key and Resistive Touch	Size	Type	Aspect Ratio	Pixels (W x H)		DLR	RAM	User[1]
–	2715P-T7CD 2715P-T7CD-B 2715P-T7CD-K	2715P-B7CD 2715P-B7CD-B 2715P-B7CD-K	6.5 in.	VGA TFT Color	4:3	640 x 480	DC	Yes	1 GB	1 GB
2715P-C7WD 2715P-C7WD-B	2715P-T7WD 2715P-T7WD-B 2715P-T7WD-K	–	7 in. widescreen	WVGA TFT Color	5:3	800 x 480				
–	2715P-T9WD 2715P-T9WD-B 2715P-T9WD-BSK 2715P-T9WD-K	–	9 in. widescreen							
2715P-C10WD 2715P-C10WD-B	–	–	10.1 in. widescreen	WXGA TFT Color	16:10	1280 x 800				
–	2715P-T10CD 2715P-T10CD-B 2715P-T10CD-K 2715P-T10CD-BSK	2715P-B10CD 2715P-B10CD-B 2715P-B10CD-K	10.4 in.	SVGA TFT Color	4:3	800 x 600				
2715P-C12WD 2715P-C12WD-B	2715P-T12WD 2715P-T12WD-B 2715P-T12WD-BSK 2715P-T12WD-K	–	12.1 in. widescreen	WXGA TFT Color	16:10	1280 x 800				
	2715P-T15CD 2715P-T15CD-B 2715P-T15CD-K 2715P-T15CD-BSK	2715P-B15CD 2715P-B15CD-B 2715P-B15CD-K	15 in.	XGA TFT Color	4:3	1024 x 768				
2715P-C15WD 2715P-C15WD-B	–	–	15.6 in. widescreen	HD TFT Color	16:9	1920 x 1080				
2715P-C19WD 2715P-C19WD-B	–	–	18.5 in. widescreen	HD TFT Color	16:9	1920 x 1080				
–	2715P-T19CD 2715P-T19CD-B 2715P-T19CD-K	–	19 in.	SXGA TFT Color	5:4	1280 x 1024				
2715P-C22WD 2715P-C22WD-B	–	–	21.5 in. widescreen	HD TFT Color	16:9	1920 x 1080				

(1) Nonvolatile memory that is available to store projects.

Accessories

These tables list accessories for the PanelView 5510 terminals.

Three overlays are shipped with each catalog number to help protect your PanelView terminal touch screen and keys from scratches, dust, fingerprints, and external damage from chemicals or abrasive materials.

Table 5 - Protective Overlays

Cat. No.	Display Size	Operator Input			
		Capacitive Touch	Resistive Touch	Key and Resistive Touch	Quantity
2711P-RGB7P	6.5 in.			•	3
2711P-RGT7SP			•		3
2711P-RGT7W	7 in. widescreen		•		3
2715P-C7WD		•			3
2711P-RGT9SP	9 in. widescreen		•		3
2715P-C10WD	10.1 in. widescreen	•			3
2711P-RGB10P	10.4 in.			•	3
2711P-RGT10SP			•		3
2715P-C12WD	12.1 in. widescreen	•			3
2711P-RGT12SP			•		3
2711P-RGB15P	15 in.			•	3
2711P-RGT15SP			•		3
2715P-C15WD	15.6 in. widescreen	•			3
2715P-C19WD	18.5 in. widescreen	•			3
2711P-RGT19P	19 in.		•		3
2715P-C22WD	21.5 in. widescreen	•			3

Table 6 - Power Supplies and Power Terminal Blocks

Cat. No.	Description	Quantity
1606-XLP95E	DIN rail power supply, 24...28V DC output voltage, 95 W	1
1606-XLP100E	DIN rail power supply, 24...28V DC output voltage, 100 W	1
2711P-RTBDSP	3-pin DC power terminal block (black with white labels for +, –, and GND)	10

Table 7 - Stainless-steel Terminal Gasket Kits

Cat. No.	Description(1)	PanelView 5510 Series	Quantity
2711P-RGST9WB	Hygienic gasket, blue, silicone, with ribs For 9 in. stainless-steel terminals	A	1
2711P-RGST12WB	Hygienic gasket, blue, silicone, with ribs For 12 in. stainless-steel terminals	A	1
2711P-RGST10	Hygienic gasket, blue, silicone, with ribs For 10 in. stainless-steel terminals	A	1
2711P-RGST15	Hygienic gasket, blue, silicone, with ribs For 15 in. stainless-steel terminals	A	1

(1) The gasket material is FDA approved according to FDA 21 CFR 177.2600.

SD and SD HC accessory cards in this table have been designed to meet industrial robustness and environmental requirements. Rockwell Automation recommends you use these accessory cards with the terminal to help reduce the chances of corruption. Studio 5000 View Designer software requires the following for SD cards that are inserted into the HMI device:

- 4 GB of free space
- An environmental rating for the PanelView 5000 environment
- A supported format of either FAT32 or ext3

Table 8 - Secure Digital (SD) Cards

Cat. No.	Description	Quantity
1784-SDHC8	8-GB SDHC card	1
1784-SDHC32	32-GB SDHC card	1

Table 9 - Mounting Hardware

Cat. No.	Description	Quantity
2711P-RMCP	Mounting levers (black)(1)	16
2711P-RTMC	Mounting clips for stainless-steel terminals(2)	8
2711P-RMCC	Mounting clips for capacitive touch terminals(3)	8

(1) Do not use gray mounting levers; they are not compatible with PanelView 5510 terminals.
(2) Catalog numbers 2715P-T9WD-BSK, 2715P-T10CD-BSK, 2715P-T12WD-BSK, or 2715P-T15CD-BSK.
NOTE: 2715P-T12WD-BSK requires 10 mounting clips and 2715P-T15CD-BSK requires 12 mounting clips. If you need more than eight clips, order two 2711P-RTMC mounting clip kits.
(3) Catalog numbers 2715P-C7WD, 2715P-C10WD, 2715P-C12WD, 2715P-C15WD, 2715P-C19WD, 2715P-C22WD.
NOTE: 2715P-C12WD requires 14 mounting clips, 2715P-C15WD and 2715P-C19WD require 20 mounting clips, and 2715P-C22WD requires 22 mounting clips. If you need more than 8 clips, order two or more 2711P-RMCC mounting clip kits in multiples of 8.

Ethernet Cables

See the Industrial Ethernet Media Brochure, publication 1585-BR001B, for recommended Ethernet cables and media solutions.

Notes:

Install the PanelView 5510 Terminal

ATTENTION: Do not use a PanelView™ 5510 terminal for emergency stops or other controls critical to the safety of personnel or equipment. Use separate hard-wired operator interface devices that do not depend on solid-state electronics.

Installation Precautions

Read and follow these precautions before you install the PanelView 5510 and PanelView 5510 stainless-steel terminal.

Environment and Enclosure Information

ATTENTION: This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC 60664-1), at altitudes up to 2000 m (6561 ft) without derating. The terminals are intended for use with programmable logic controllers.
This equipment is considered Group 1, Class A industrial equipment according to IEC CISPR 11. Without appropriate precautions, there can be difficulties with electromagnetic compatibility in residential and other environments due to conducted or radiated disturbances.

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

이 기기는 업무용 (A 급) 전자파적합기기로서 판 매자 또는 사용자는 이 점을 주의하시기 바 라 며 , 가정외의 지역에서 사용하는 것을 목적으 로 합니다 .

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

In addition to this publication, see the following:

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

Wiring and Safety Guidelines

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

- Connect the device and other similar electronic equipment to its own branch circuit.
- Protect the input power by a fuse or circuit breaker that is 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.

Outdoor Installation Recommendations

When you use a PanelView 5510 terminal outdoors, follow these recommendations to maximize the field life of the front bezel and display:

- Do not expose terminal to direct sunlight
- Add UV protection and/or shielding
- Manage terminal temperature
- Mount the terminal in an acceptable position
- Select a proper enclosure

Ultraviolet (UV) and infrared radiation can reduce the field life of any electronic terminal. While the materials used in the terminal bezels provide long field life, that life can be improved by proper installation and by following the suggested guidelines.

UV radiation from the sun causes all plastics to fade or yellow and become brittle over time. Avoid direct sunlight exposure, use a sacrificial antiglare overlay and/or use a shield to shade the terminal to help protect the front of the terminal from direct exposure to UV radiation and greatly increase its field life. See Protective Overlays on page 16 for a selection of appropriate protective overlay accessories. When you install a sun shield that closes over the display, the temperature between the sun shield and the display cannot exceed the maximum temperature of the display, which is 55 °C (131 °F). Adequately ventilate all sun shields to help prevent excess heat rise on the terminal display.

Use stirring fans or active cooling in high altitude and high ambient temperature locations to keep the internal enclosure temperature below 55 °C (131 °F).

Verify that the ambient temperature at which the product is operating does not fall below its minimum, rated 0 °C (32 °F).

Minimize the temperature differential between the inside of the terminal enclosure and the front panel to help reduce the potential for condensation and possible pressure variation between the inside and outside of the terminal.

If possible, avoid placing the terminal on the south (north in the southern hemisphere) or west side of the cabinet, which helps reduce the heat rise due to solar heating during the hottest part of the day.

Mount the terminal vertically to minimize solar heating on the display. Do not mount the terminal in a sloped enclosure if it exposes the terminal to direct sunlight. For more information, see Mounting Considerations on page 24.

To help protect the terminal from water and dust, mount it in a proper enclosure by following the instructions in the PanelView 5510 Terminals Product Information, publication 2715P-PC001. The terminals meet specified NEMA, UL Type, and IEC ratings only when properly mounted in a panel or enclosure with the equivalent rating. Other sections of this publication can contain additional information about specific enclosure type ratings that are required to comply with certain product safety certifications.

ATTENTION: Failure to follow the recommended installation practices for outdoor use can substantially reduce terminal life and void its warranty.

North American Hazardous Locations

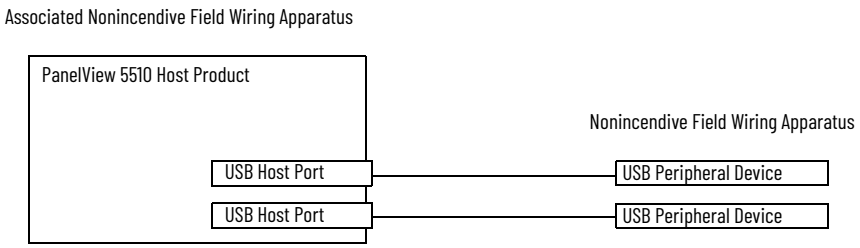
ATTENTION: The following information applies when operating this equipment in hazardous locations.	**ATTENTION: Informations sur l'utilisation de cet équipement en environnements dangereux.**
When marked, these products are suitable for use in "Class I, Division 2, Groups A, B, C, D; Class II, Division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

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

Required Circuit Port Parameters for USB Peripheral Devices

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

Figure 5 - PanelView 5510 Control Drawing



PanelView 5510 terminals provide two, separately powered USB host ports. Table 10 defines the circuit parameters of these USB host ports.

Table 10 - Circuit Parameters for USB Host Ports

Parameter	Value	Parameter Definition	
$V_{oc\,(USB)}$	5.25V DC	Open circuit voltage of each host USB port. The maximum applied voltage rating, $V_{max\,(peripheral)}$, of each USB peripheral device shall be greater than or equal to $V_{oc\,(USB)}$	$V_{max\,(peripheral)} \geq V_{oc\,(USB)}$ (as appropriate)
$I_{sc\,(USB)}$	1.68 A	Maximum output current of each host USB port. The maximum current, $I_{max\,(peripheral)}$, to which each USB peripheral device can be subjected, shall be greater than or equal to $I_{sc\,(USB)}$	$I_{max\,(peripheral)} \geq I_{sc\,(USB)}$
$C_{a\,(USB)}$	10 µF	This value is the maximum total capacitance that can be connected to each USB host port. The total capacitance of each USB peripheral device and its associated cable must not exceed the indicated value. The maximum total capacitance, $C_{i\,(peripheral)}$, and cable capacitance of each separate USB peripheral device shall be less that or equal to $C_{a\,(USB)}$	$C_{i\,(peripheral)} + C_{cable(USB)} \leq C_{a\,(USB)}$
$L_{a\,(USB)}$	15 µH	This value is the maximum total inductance that can be connected to each USB host port. The total inductance of each USB peripheral device and its associated cable must not exceed the indicated value. The maximum total inductance, $L_{i\,(peripheral)}$, and cable inductance of each separate USB peripheral device shall be less than or equal to $L_{a\,(USB)}$	$L_{i\,(peripheral)} + L_{cable} \leq L_{a\,(USB)}$

Application Information

Per the National Electrical Code, the circuit parameters of associated field-wiring apparatus for use in hazardous locations shall be coordinated with the host product such that their combination remains nonincendive. PanelView 5510 terminals and the USB peripheral devices shall be treated in this manner.

The USB peripheral devices and their associated cabling shall have circuit parameters with the limits that are given in Table 10 for them to remain nonincendive when used with the PanelView 5510 USB host ports.

If cable capacitance and inductance are not known, use the following values from ANSI/ISA-RP 12.06.01-2003:

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

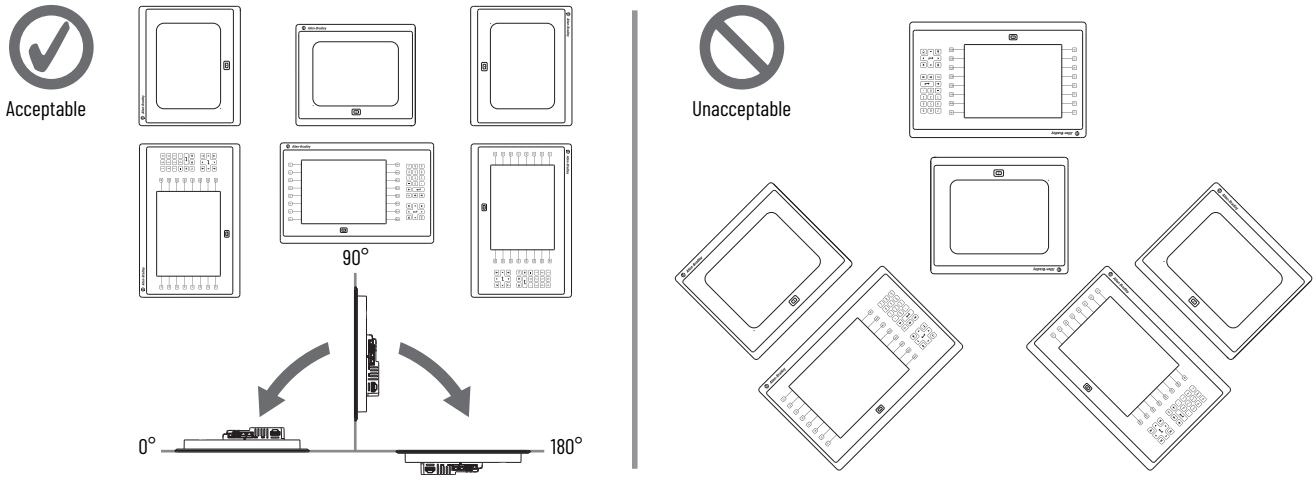
Nonincendive field wiring must be wired and separated in accordance with 501.10(B)(3) of the National Electrical Code (NEC) ANSI/NFPA 70 or other local codes as applicable. This associated nonincendive field wiring apparatus has not been evaluated for use in combination with another associated nonincendive field wiring apparatus.

Mounting Considerations

Consider the following when mounting the terminal:

- Mount the terminal at a height suitable for operators. You can mount the cabinet at a level other than the operator floor.
- Use appropriate light. Do not operate the terminal in direct sunlight.
- Terminals are rated to operate at various mounting positions as shown in Table 11.

Figure 6 - Acceptable and Unacceptable Mounting Positions



ATTENTION: Failure to follow these guidelines can result in personal injury or damage to the panel components.

Mounting Clearances

Plan for adequate space around the terminal, inside the enclosure, for ventilation and cables. Consider the heat from other devices in the enclosure. The ambient temperature around the terminal must be 0...55 °C (32...131 °F). When a terminal with a 15 in. display or larger is mounted at an angle of less than 45° or greater than 135°, the ambient temperature around the terminal must be 0...50 °C (32...122 °F).

Table 11 - Minimum Required Clearances

Terminal Area	Minimum Clearance
Top	51 mm (2 in.)
Bottom	102 mm (4 in.)
Side	25 mm (1 in.) 102 mm (4 in.) is required to insert and remove an SD™ or SDHC™ card, or cable on one side
Back	0 mm (0 in.)

Product Dimensions

This section provides dimensions for the PanelView 5510 terminals.

Figure 7 - PanelView 5510 Resistive Touch Terminal Dimensions (10.4 in. terminal is shown)

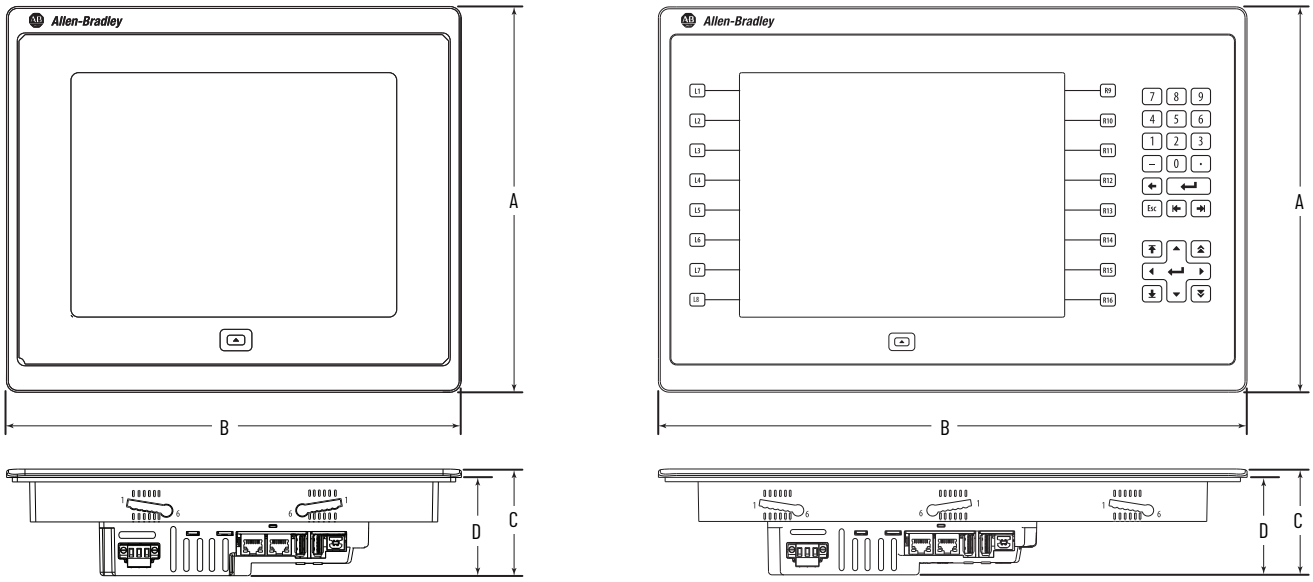


Table 12 - PanelView 5510 Resistive Touch Terminal Dimensions

Terminal Size	Input Type	Height (A)	Width (B)	Overall Depth (C)	Mounted Depth (D)[1]
6.5 in.	Keypad and touch	179 mm (7.05 in.)	285 mm (11.22 in.)	69.6 mm (2.74 in.)	63.6 mm (2.50 in.)
	Touch	170 mm (6.69 in.)	212 mm (8.35 in.)		
7 in.	Touch	178 mm (7.0 in.)	236 mm (9.3 in.)		
9 in.	Touch	190 mm (7.48 in.)	280 mm (11.02 in.)		
10.4 in.	Keypad and touch	252 mm (9.92 in.)	385 mm (15.16 in.)		
	Touch	252 mm (9.92 in.)	297 mm (11.69 in.)		
12.1 in.	Touch	246 mm (9.69 in.)	340 mm (13.39 in.)		
15 in.	Keypad and touch	329 mm (12.95 in.)	484 mm (19.06 in.)		
	Touch	318 mm (12.52 in.)	381 mm (15.00 in.)		
19 in.	Touch	411 mm (16.18 in.)	485 mm (19.09 in.)		

(1) When mounted in a panel, the front of the bezel extends less than 6.36 mm (0.25 in.) from the front of the panel.

Figure 8 - PanelView 5510 Capacitive Touch Terminal Dimensions (10.1 in. terminal is shown)

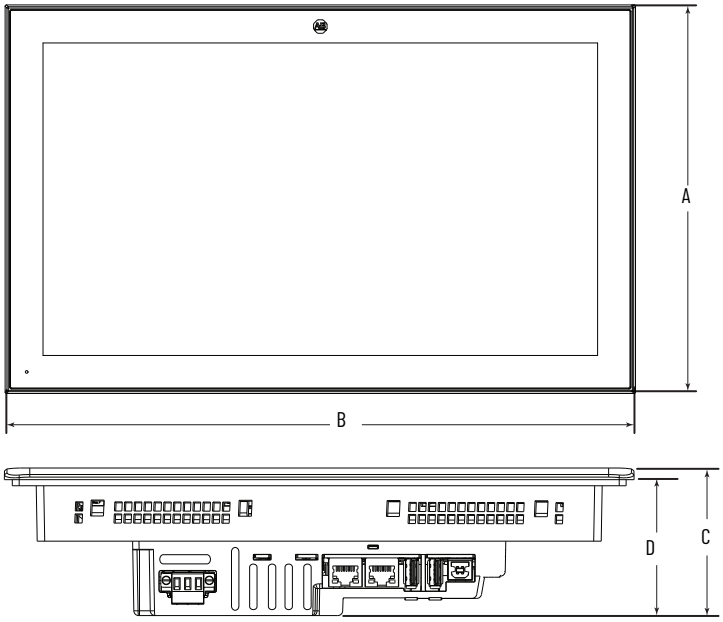


Table 13 - PanelView 5510 Capacitive Touch Terminal Dimensions

Terminal Size	Height (A)	Width (B)	Overall Depth (C)	Mounted Depth (D)[1]
7 in.	150.6 mm (6.14 in.)	207 mm (8.44 in.)	64.1 mm (2.52 in.)	58.1 mm (2.29 in.)
10.1 in.	187.9 mm (7.66 in.)	269.5 mm (11 in.)	63.9 mm (2.52 in.)	57.4 mm (2.26 in.)
12.1 in.	217 mm (8.85 in.)	315 mm (12.85 in.)	64.9 mm (2.56 in.)	57.4 mm (2.26 in.)
15.6 in.	251 mm (10.24 in.)	401.5 mm (16.38 in.)	64.9 mm (2.56 in.)	57.4 mm (2.26 in.)
18.5 in.	288 mm (11.75 in.)	467.2 mm (19.06 in.)	67.9 mm (2.67 in.)	57.4 mm (2.26 in.)
21.5 in.	325.6 mm (13.28 in.)	534.2 mm (21.80 in.)	67.9 mm (2.67 in.)	57.4 mm (2.26 in.)

(1) When mounted in a panel, the front of the bezel extends less than 10.6 mm (0.42 in.) from the front of the panel.

Prepare the Panel Cutout

The terminals are panel-mounted devices that mount in the door or wall of a NEMA, UL Type, or IP rated enclosure. To ensure installation with proper IP protection grade, the following conditions have to be satisfied:

- Enclosure panels for PanelView 5510 capacitive touch terminals must have a panel thickness range of 3...6 mm (0.11...0.24 in.) with a max deformation limit on the plane of 0.5 mm (0.01 in.).
- For a uniform gasket seal, the roughness of the panel surface must be ≤ 120 microns (Rz 120).
- Enclosure panels for PanelView 5510 stainless-steel, resistive touch terminals must have a panel thickness range of 1.5...4.8 mm (0.06...0.19 in.).
- Enclosure panels for all other PanelView 5510 resistive touch terminals must meet the panel thickness requirements in Table 15 on page 28.
- The material strength and stiffness of the panel must be sufficient to hold the terminal and maintain an appropriate seal against water and dust.
- The panel surface must be flat and free of imperfections to maintain an adequate seal and NEMA, UL Type, or IP ratings.

ATTENTION:
- Disconnect all electrical power from the panel before making the panel cutout.
- Make sure that the area around the panel cutout is clear and that the panel is clean of any debris, oil, or other chemicals.
- Ensure that metal cuttings don't enter components that are already installed in the panel and the edges of the cutout are free of burrs or sharp edges.
- Failure to follow these warnings can result in personal injury or damage to panel components.

Panel Cutout Dimensions

Use the template that is shipped with your terminal to mark the cutout dimensions. Use these dimensions as an additional reference.

Table 14 - PanelView 5510 Panel Cutout Dimensions

Terminal Size	Input Type	Height	Width
6.5 in.	Keypad and resistive touch	142 mm (5.59 in.)	237 mm (9.33 in.)
	Resistive touch		184 mm (7.24 in.)
7 in.	Capacitive touch	139.5 mm (5.49 in.)	196 mm (7.72 in.)
7 in.	Resistive touch	150 mm (5.9 in.)	210 mm (8.25 in.)
9 in.	Resistive touch	162 mm (6.38 in.)	252 mm (9.92 in.)
10.1 in.	Capacitive touch	174 mm (6.85 in.)	255.5 mm (10.06 in.)
10.4 in.	Keypad and resistive touch	224 mm (8.82 in.)	335 mm (13.19 in.)
	Resistive touch	224 mm (8.82 in.)	269 mm (10.59 in.)
12.1 in.	Capacitive touch	203 mm (7.99 in.)	301 mm (11.85 in.)
	Resistive touch	218 mm (8.58 in.)	312 mm (12.28 in.)
15 in.	Keypad and resistive touch	290 mm (11.42 in.)	418 mm (16.46 in.)
	Resistive touch	290 mm (11.42 in.)	353 mm (13.90 in.)
15.6 in.	Capacitive touch	237.5 mm (9.35 in.)	387.5 mm (15.26 in.)
18.5 in.	Capacitive touch	274 mm (10.79 in.)	453 mm (17.83 in.)
19 in.	Resistive touch	383 mm (15.08 in.)	457 mm (17.99 in.)
21.5 in.	Capacitive touch	311.5 mm (12.26 in.)	520 mm (20.47 in.)

Prepare the Terminal for Mounting

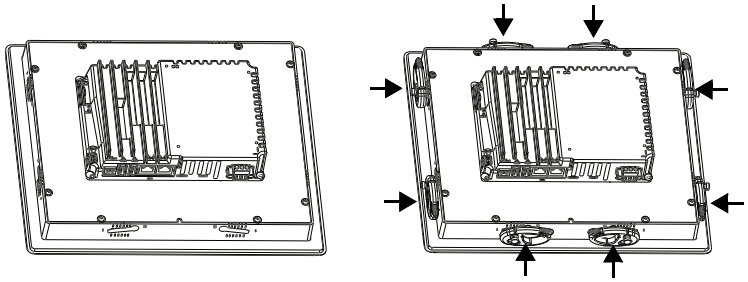
This section describes how to prepare your PanelView 5510 resistive touch terminal for mounting in a panel, using catalog number 2711P-RMCP mounting levers.

IMPORTANT	PanelView 5510 stainless-steel resistive touch terminals use catalog number 2711P-RTMC mounting clips. For instructions on how to install a PanelView 5510 stainless-steel terminal, see the PanelView 5510 Stainless Steel Terminals Product Information, publication 2715P-PC002.

IMPORTANT	PanelView 5510 capacitive touch terminals use catalog number 2711P-RMCC mounting clips. For instructions on how to install a PanelView 5510 capacitive touch terminal, see the PanelView 5510 Capacitive Touch Terminals Product Information, publication 2715P-PC003.

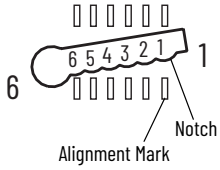
IMPORTANT	Catalog number 2711P-RMCP mounting levers (black) are used with PanelView 5510 resistive touch terminals. Gray mounting levers are not compatible with PanelView 5510 resistive touch terminals.

Mounting levers insert into the slots around the bezel to secure the terminal in the panel. The number of levers varies by terminal size.

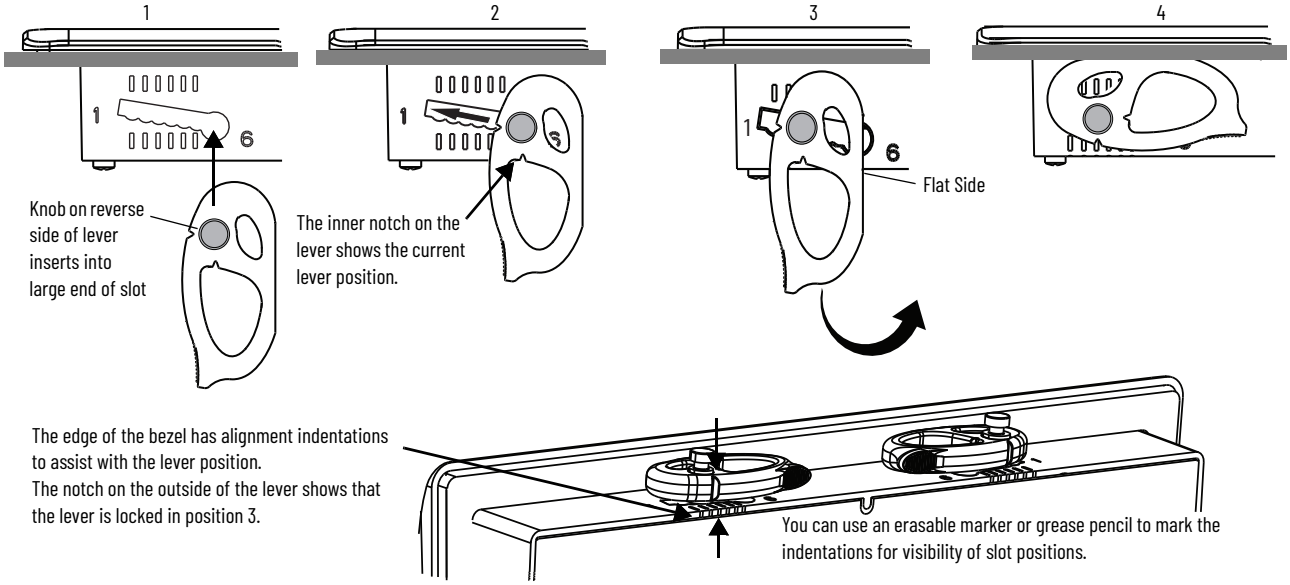


Each slot has six notches with alignment marks that are locking positions for a lever. The thickness of the panel in which you mount the terminal determines the locking position that is required to maintain a NEMA, UL Type, or IP seal.

Table 15 - Lever Locking Positions

Mounting Slot	Lever Lock Position	Panel Thickness Range	Typical Gauge
Orientation of Slot Varies 	1	1.50...2.01 mm (0.060...0.079 in.)	16
	2	2.03...2.64 mm (0.080...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...4.80 mm (0.165...0.188 in.)	7

Always orient a lever vertically before inserting it into a slot. This orientation is the only way to slide the lever knob within the slot for positioning. After sliding the lever to a specific notch, rotate the lever toward the panel to lock it in position. The flat side of the lever must come into contact with the panel.



Initially, you secure the terminal in the panel by sliding each lever to a position that is one or two notches greater than the final lock position. For example, if the final lock position is 3, slide each lever to position 4 or 5.

Follow the locking sequence and lever orientations for each terminal as shown in Mounting Lever Orientation and Lock Sequence on page 30.

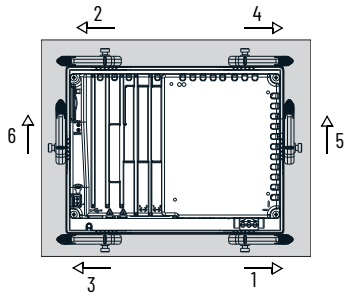
If the lock position is 6, slide the lever to the large end of the slot or insertion hole.

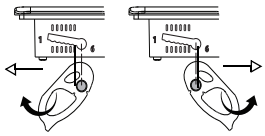
Then adjust each lever to its final lock position in the same sequence as shown in Mounting Lever Orientation and Lock Sequence on page 30.

IMPORTANT	This process equalizes the pressure of the levers against the panel at a gradual rate that reduces the probability of broken clamps.

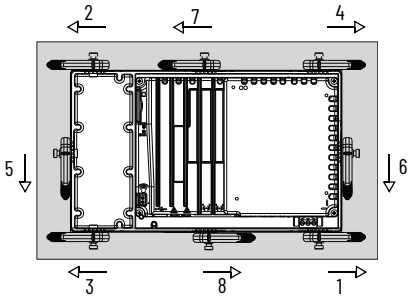
Figure 9 - Mounting Lever Orientation and Lock Sequence

6.5 in. Touch Only and 7 in. Touch Only - six Levers

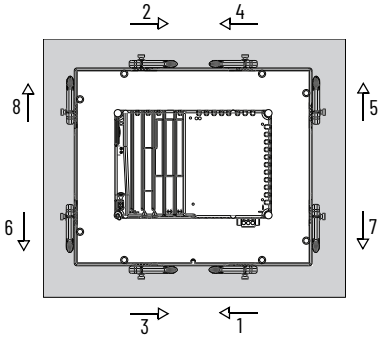




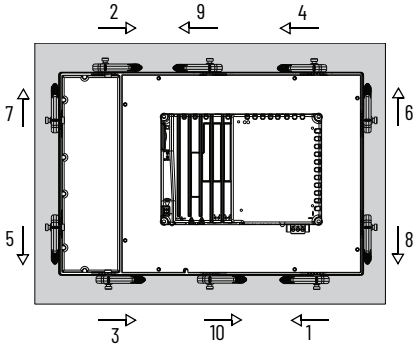
6.5 in. Keypad and Touch - eight Levers



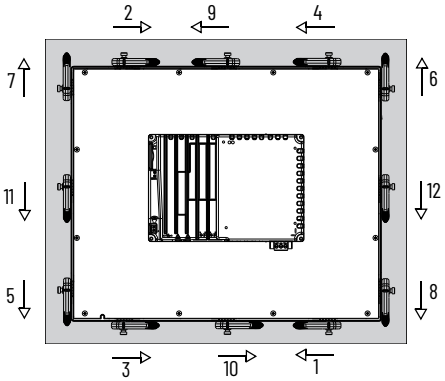
9 in. and 10.4 in. Touch Only - eight Levers



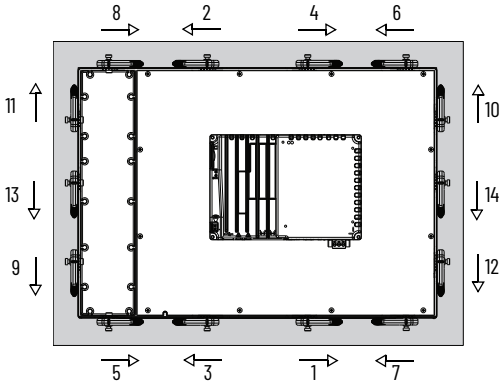
10.4 in. Keypad and Touch, 12.1-Touch Only - 10 Levers



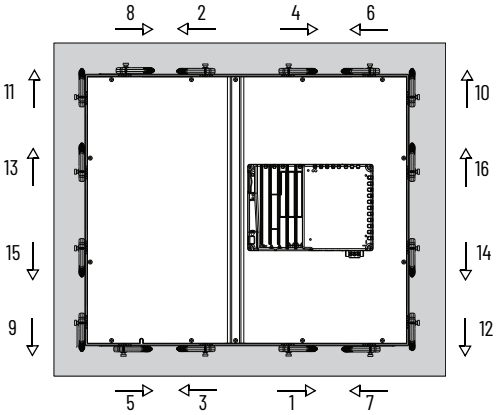
15 in. Touch Only- 12 Levers



15 in. Keypad and Touch - 14 Levers



19 in. Touch Only- 16 Levers



IMPORTANT

The mounting lever orientations that are shown are required to maintain NEMA, UL Type, and IP seals. If you require a NEMA, UL Type, or IP seal, do not use a mounting lever in another orientation than shown.

Mount the Terminal in a Panel

This section describes how to mount your PanelView 5510 resistive touch terminal in a panel, using catalog number 2711P-RMCP mounting levers.

IMPORTANT PanelView 5510 stainless-steel resistive touch terminals use catalog number 2711P-RTMC mounting clips.

For instructions on how to install a PanelView 5510 stainless-steel terminal, see the PanelView 5510 Stainless Steel Terminals Product Information, publication 2715P-PC002.

IMPORTANT PanelView 5510 capacitive touch terminals use catalog number 2711P-RMCC mounting clips.

For instructions on how to install a PanelView 5510 capacitive touch terminal, see the PanelView 5510 Capacitive Touch Terminals Product Information, publication 2715P-PC003.

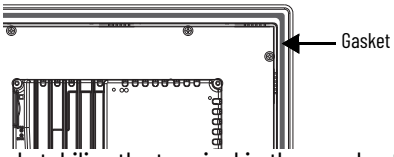
ATTENTION: Disconnect all electrical power from the panel before making the panel cutout.
Make sure that the area around the panel cutout is clear and that the panel is clean of any debris, oil, or other chemicals.

Ensure that metal cuttings don't enter components that are already installed in the panel and the edges of the cutout are free of burrs or sharp edges.

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

1. Use the cutout dimensions on page 27 to cut an opening in the panel.
2. Verify that the sealing gasket is present on the terminal.

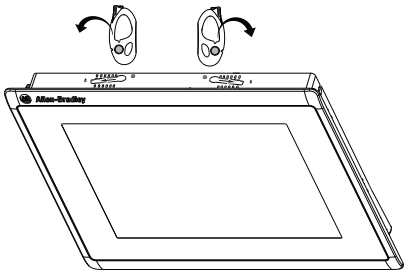
   This gasket forms a compression type seal. Do not use sealing compounds.

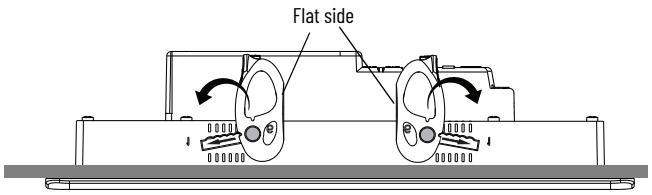


3. Insert and stabilize the terminal in the panel cutout.
   a. Insert the levers in the top corner slots in the orientation that is shown in Mounting Lever Orientation and Lock Sequence on page 30 and rotate the non-flat side of the levers toward the panel.

The mounting levers for PanelView 5510 terminals are black (catalog number 2711P-RMCP).

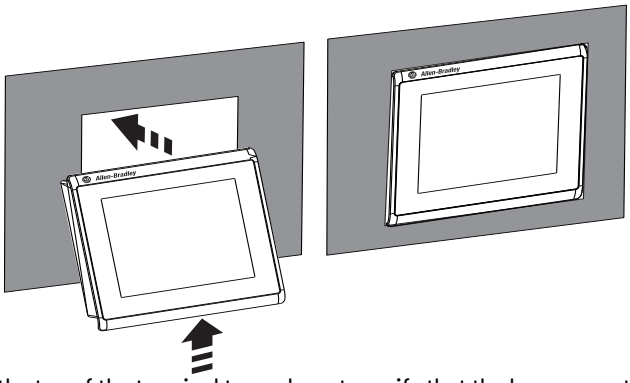
Do not use gray mounting levers; they are not compatible with PanelView 5510 terminals.



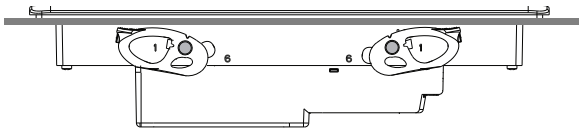


b. Tilt the terminal toward the panel cutout and guide upward into the cutout. Make sure that the levers stay intact.

The levers help prevent the terminal from falling out of the panel.

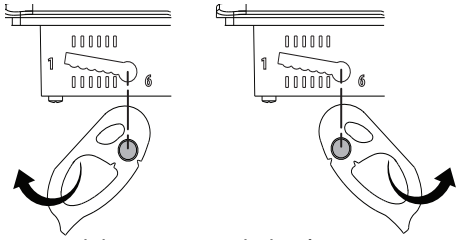


c. Pull the top of the terminal toward you to verify that the levers are still intact and the terminal is stabilized in the panel.



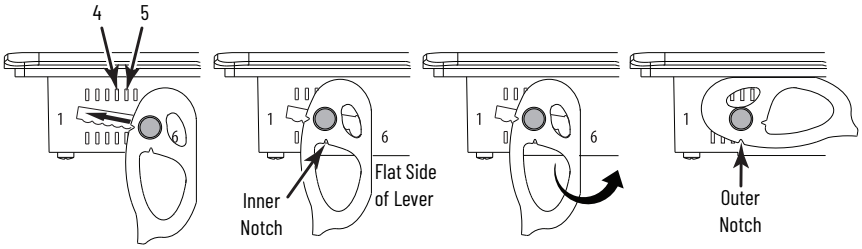
d. Insert the remaining levers in the slots by using the orientations in Mounting Lever Orientation and Lock Sequence on page 30 that are correct for your terminal.

The direction that you rotate the levers varies for each terminal size.



4. Slide and rotate each lever to a notch that is one or two positions greater than the final lock position. Start with the first lever in the sequence.

For example, if the final lock position is 3, slide the lever to notch 4 or 5.



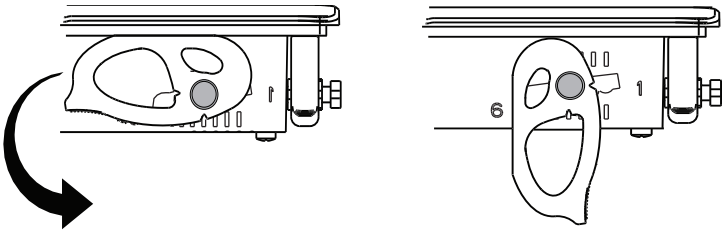
To help position the levers and identify the final slot position, use the alignment marks or previous marks you made on the bezel.

e. See Table 15 on page 28 to get the final lock position of the levers.

f. See Mounting Lever Orientation and Lock Sequence on page 30 to get the locking sequence.

g. Rotate each lever until its flat side comes in contact with the panel.

5. Adjust each lever to its final lock position shown in the same locking sequence in Mounting Lever Orientation and Lock Sequence on page 30.
   h. Unlock lever one in the sequence by rotating it away from the bezel.



   i. With the lever positioned vertically to the slot, slide the lever to the final locking position in Table 15 on page 28.

      The outer notch of the lever aligns with the bezel indentation.
   j. Carefully rotate the lever back toward panel.

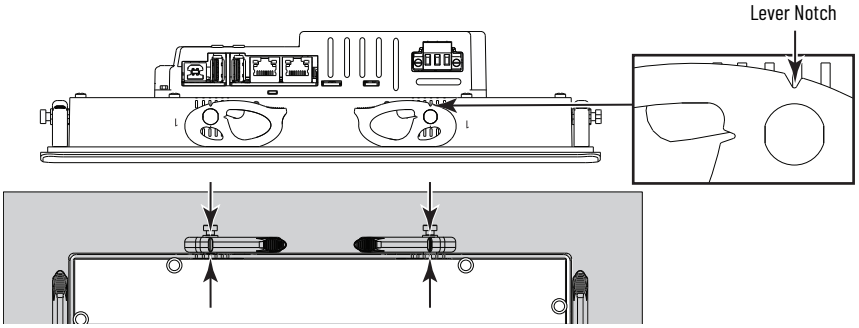
A broken lever does not damage the product.

   k. Lock the remaining levers to their final position.
6. Inspect all levers and make sure each is in the correct locked position.

ATTENTION: All levers must be in the correct and same locked position to provide an adequate gasket seal between the terminal and the panel. Rockwell Automation assumes no responsibility for water or chemical damage to the terminal or other equipment within the enclosure because of improper installation.

The notch on the outside of the lever shows its locked position.

These two views show levers that are locked in position 3.



7. Some terminals are shipped with a thin protective film applied to the touch screen surface that helps protect it from surface damage during storage, transportation, and installation. After all panel fabrication and terminal installation is complete, remove the thin protective film from the touch screen surface.

Remove and Replace the DC Power Terminal Block

The PanelView 5510 terminal has a 3-pin terminal block for DC power connections. You can remove the terminal block for ease of installation, wiring, and maintenance.

WARNING: Explosion Hazard
If you connect or disconnect wiring while the power is on, an electric arc can occur, which can cause an explosion in hazardous location installations. Be sure that power is removed and the area is nonhazardous before proceeding.

Failure to remove power can result in electrical shock or damage to the terminal.

Use a 0.6 x 3.5 mm screwdriver for terminal block wiring.

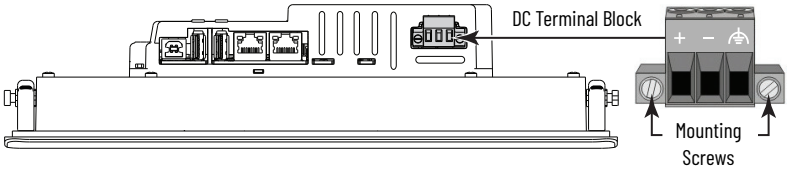
Table 16 - Wire Specifications for the Power Input Terminal Block

Wire Type	Dual-wire Size(1)	Single-wire Size	Strip Length	Screw Torque
Stranded or solid Cu 90 °C (194 °F)	0.3...1.3 mm^2 22...16 AWG	0.3...2.1 mm^2 (22...14 AWG)	7 mm (0.28 in.)	0.4...0.5 N•m (3.5...4.4 lb•in)

(1) Two-wire maximum per terminal.

To remove the terminal block, follow these steps.

1. Loosen the two screws that secure the DC terminal block.



2. Gently pull the terminal block away from the connector.

To install the terminal block, follow these steps.

1. Reattach the terminal block to the connector until seated.

ATTENTION: Do not use excessive force to press the terminal block into position. The terminal blocks are keyed to fit the DC connector. If the terminal block does not fit into the connector, verify that you have the correct terminal block. See Table 6 on page 16.

2. Tighten the two screws that secure the terminal block to the connector.

Connect to DC Power

Terminals with a 24V DC power supply have these power ratings:

- 24V DC nominal (18...30V DC)
- 50 W maximum (2.1 A at 24V DC)

ATTENTION: The power supply is internally protected against reverse polarity. If you connect DC+ or DC- to the earth ground terminal, you can damage the terminal. If you connect AC power, or more than 30V DC, you can also damage the terminal.

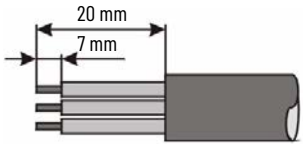
Terminals with a DC power input require a safety extra low voltage (SELV) or protective extra low voltage (PELV) 24V DC power supply. Supported power supplies include catalog numbers 1606-XLP95E, 1606-XLP100E, or 2711P-RSACDIN.

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

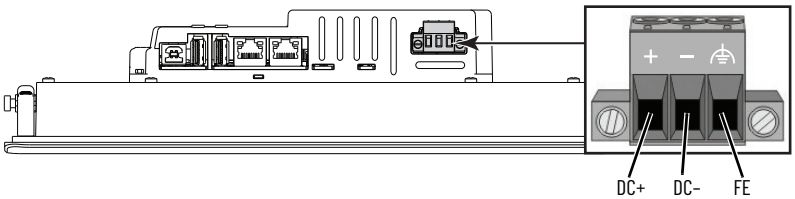
You can power the terminal from the same power source as other equipment by using a DC power bus.

To connect the operator terminal to a DC power source, follow these steps.

1. Verify that the wiring is not connected to a power source.
2. Strip 7 mm (0.28 in.) of insulation from the ends of the wires.



3. Secure the DC power wires to the marked terminals (+ and –) on the terminal block.



4. Secure the functional earth (FE) ground wire to the GND terminal on the terminal block.

   Connect the GND terminal to a low-impedance FE ground.

   ATTENTION: The FE ground connection to ground is mandatory. This connection is required for noise immunity, reliability, and Electromagnetic Compliance (EMC) with the European Union (EU) EMC Directive for CE marking conformance. This connection is required for safety by Underwriters Laboratory (UL).

5. Apply power to the operator terminal.

Connect to a Network

The two Ethernet ports connect to controllers on an EtherNet/IP™ network by standard Ethernet connections. These network topologies are supported:

- Device Level Ring Network Topology
- Linear Network Topology
- Star Network Topology

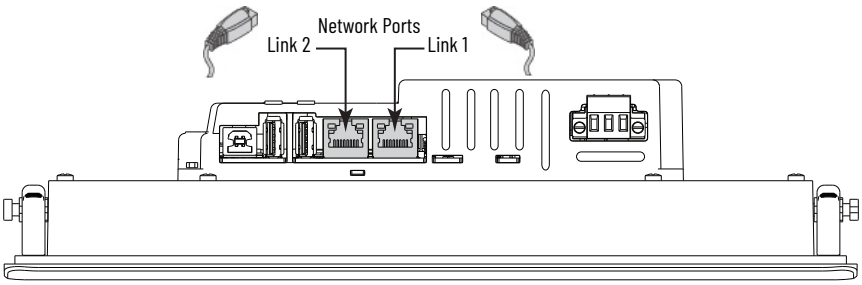
Each of these EtherNet/IP network topologies supports applications that use Integrated Motion over an EtherNet/IP network, if necessary.

IMPORTANT The terminal has dual-Ethernet ports but one device IP address.

Ethernet Ports

The Ethernet ports have two 10/100Base-T connectors for network communication and support MDI/MDIX connections and DLR network topology.

The terminal connects to an EtherNet/IP network by using a CAT5, CAT5E, or CAT6 twisted-pair, Ethernet cable with RJ45 connectors.



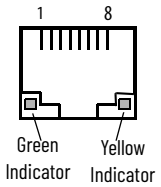
IMPORTANT To help prevent accidental disconnection of the Ethernet cable:

- To minimize vibration at the connector and help reduce the chance that personnel working inside the panel can accidentally disconnect the cable, secure the Ethernet cable to the connector.
- Do not install the Ethernet cable too tightly. To help prevent cable pull when the panel door is opened and closed, leave slack in the cable.

The maximum cable length between the Ethernet ports and a 10/100Base-T port on an Ethernet switch (without repeaters or fiber) is 100 m (328 ft).

WARNING: In hazardous locations, do not connect or disconnect any communication cable with power that is applied to this device or any device on the network. An electric arc can cause an explosion in hazardous location installations. Before you proceed, make sure that the power is off or the area is nonhazardous.

Table 17 - Ethernet Connector Pinout

Connector	Pin	Pin Name
View of RJ45 Connector 	1	TD+
	2	TD-
	3	RD+
	4	Unused
	5	Unused
	6	RD-
	7	Unused
	8	Unused
	Shield Connection	No direct connection (AC coupled to chassis GND)

Each Ethernet port has two indicators that provide the activity status.

Table 18 - Ethernet Status Indicators

Indicator	Color	Description
Link Integrity	Green	On when a link is present.
Activity	Yellow	Blinks when activity is detected on the Ethernet link.

Device Level Ring Network Topology

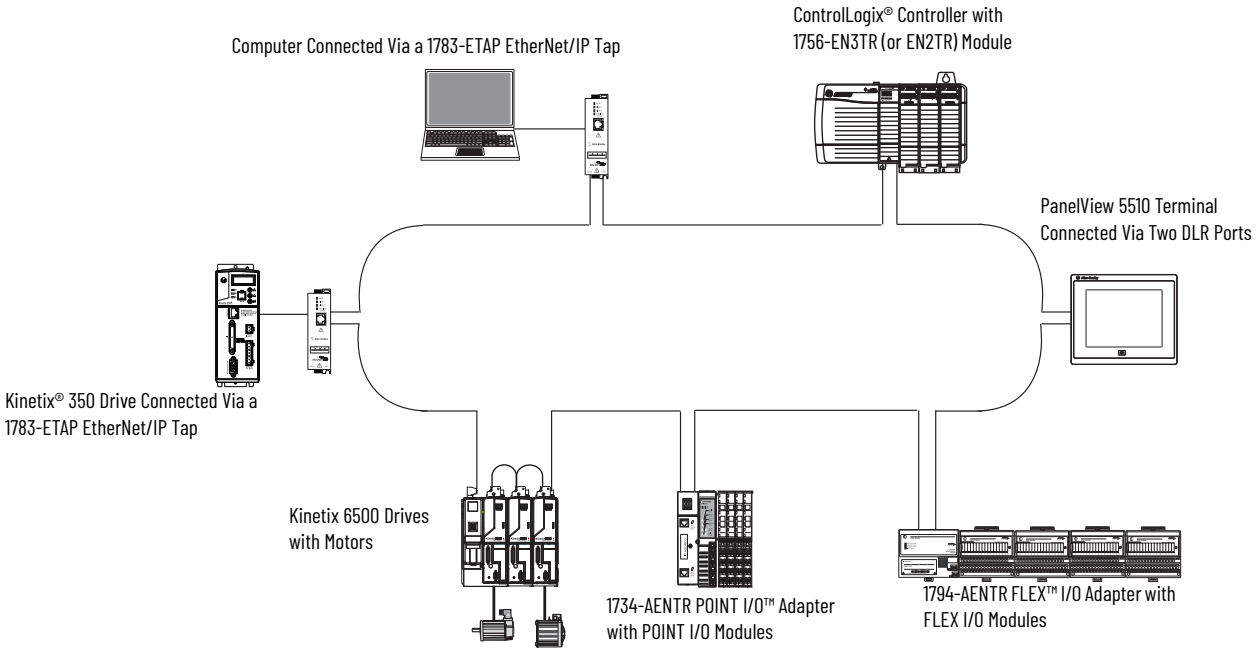
A Device Level Ring (DLR) network is a single-fault tolerant ring network that is intended for the interconnection of automation devices. This topology is also implemented at the device level. No additional switches are required.

A DLR network contains supervisor nodes and ring nodes. The PanelView 5510 terminal operates only as a ring node on the network.

When a fault occurs, the fault location is determined and the supervisor reconfigures the network to continue sending data on the network. Once the fault is corrected, the supervisor reconfigures the network to operate as a normal ring (versus a faulted ring).

For more information on DLR network topology, see EtherNet/IP Embedded Switch Technology Application Guide, publication ENET-AP005.

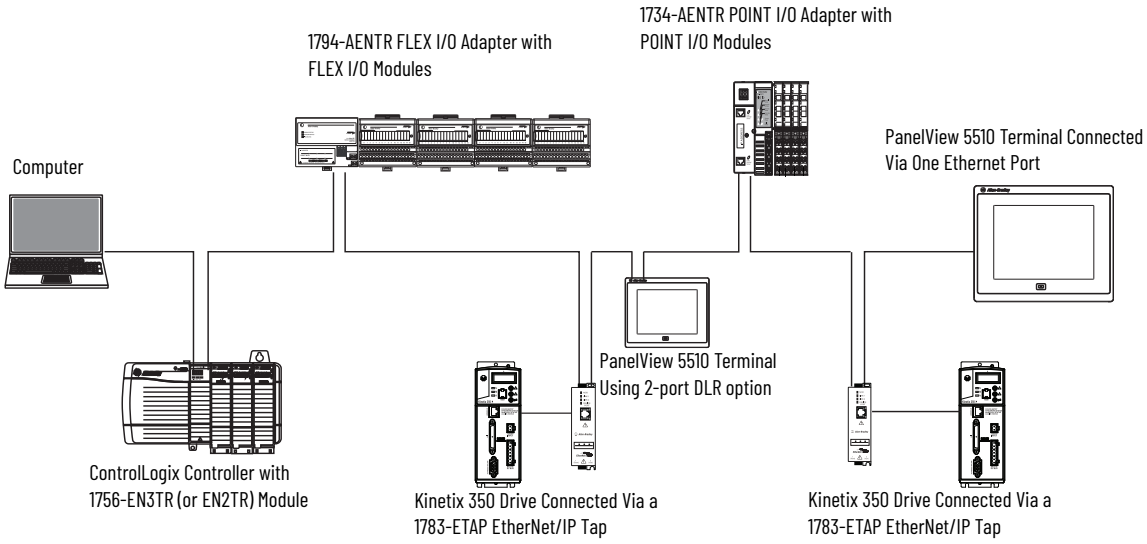
Figure 10 - PanelView 5510 Terminal in a DLR Topology Network



Linear Network Topology

A linear network topology is a collection of devices that are daisy chained together across an EtherNet/IP network. Devices that can connect to a linear network topology use embedded switch technology to eliminate the need for a separate switch, as required in star network topologies.

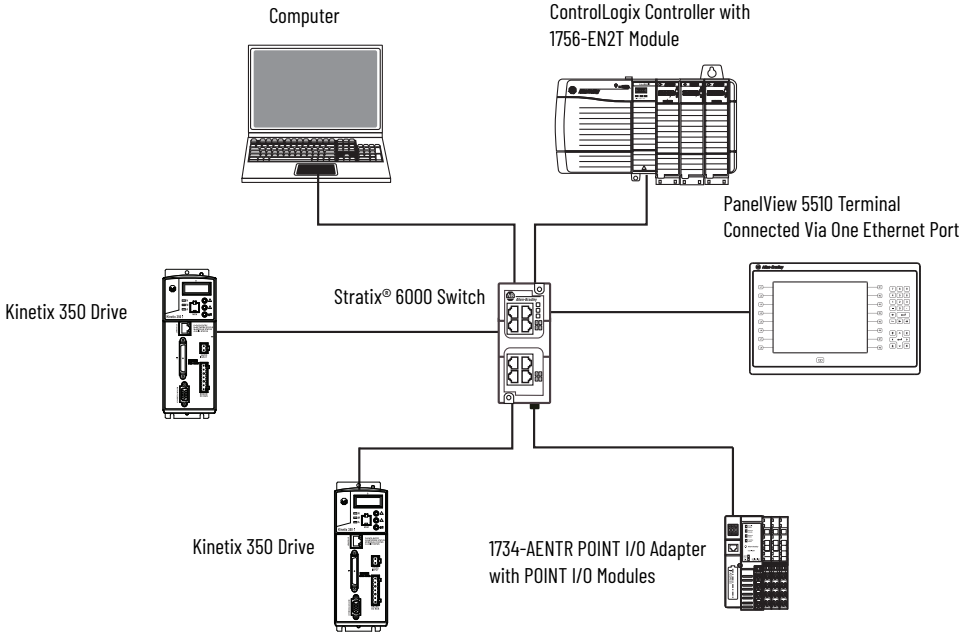
Figure 11 - PanelView 5510 Terminal in a Linear Topology Network



Star Network Topology

A star network topology is a traditional EtherNet/IP network that includes multiple devices that are connected to each other via an Ethernet switch.

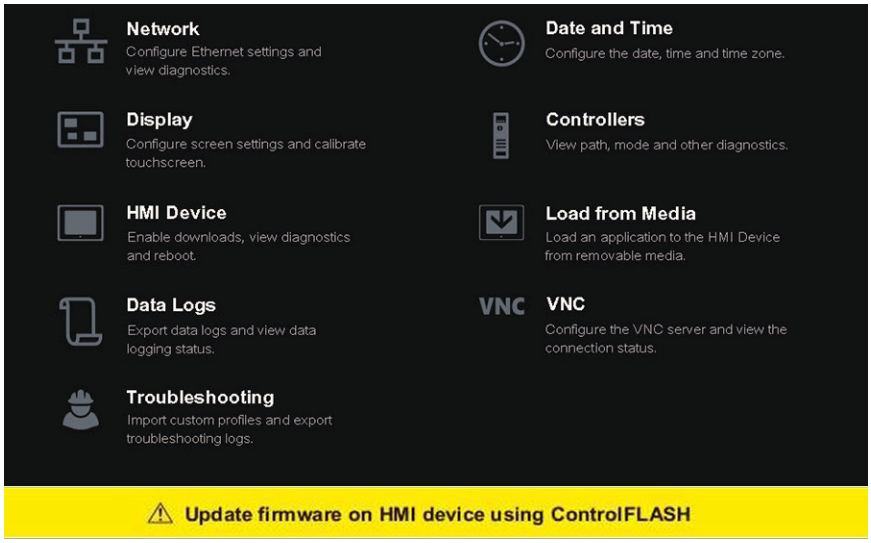
Figure 12 - PanelView 5510 Terminal in a Star Topology Network



Initial Startup

IMPORTANT	You must configure the Ethernet settings and update the firmware before you can download a View Designer project and use the terminal. See Update the Firmware Before You Use the Terminal on page 40.

If you attempt to configure the terminal settings without updating the firmware, the Settings menu shows an update firmware message at the bottom of the screen.



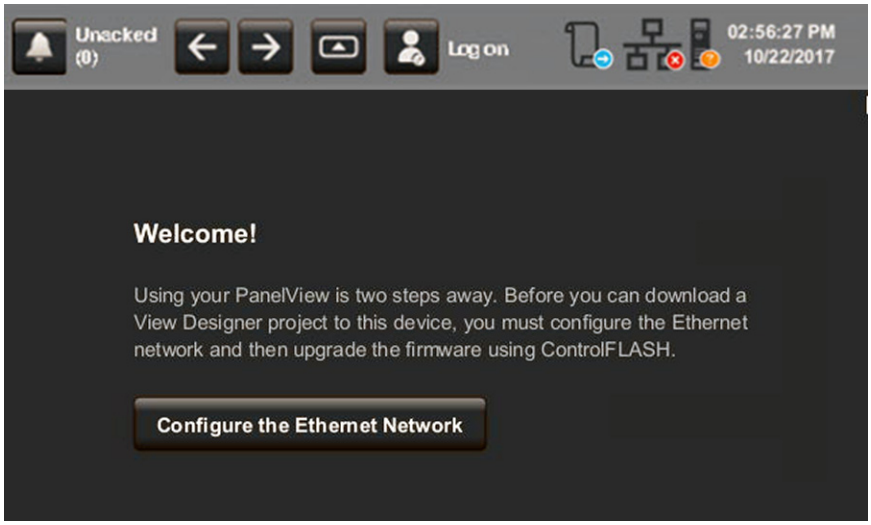
Update the Firmware Before You Use the Terminal

When power is turned on, the terminal goes through its startup sequence. The Welcome screen displays with a Configure the Ethernet Network button.

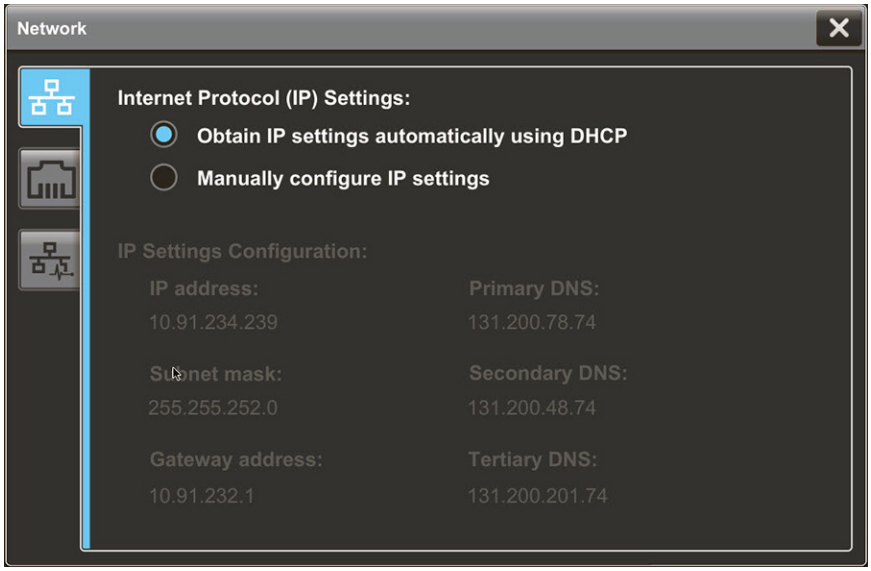
To configure the Ethernet settings and update the firmware, follow these steps.

1. Boot up the terminal.

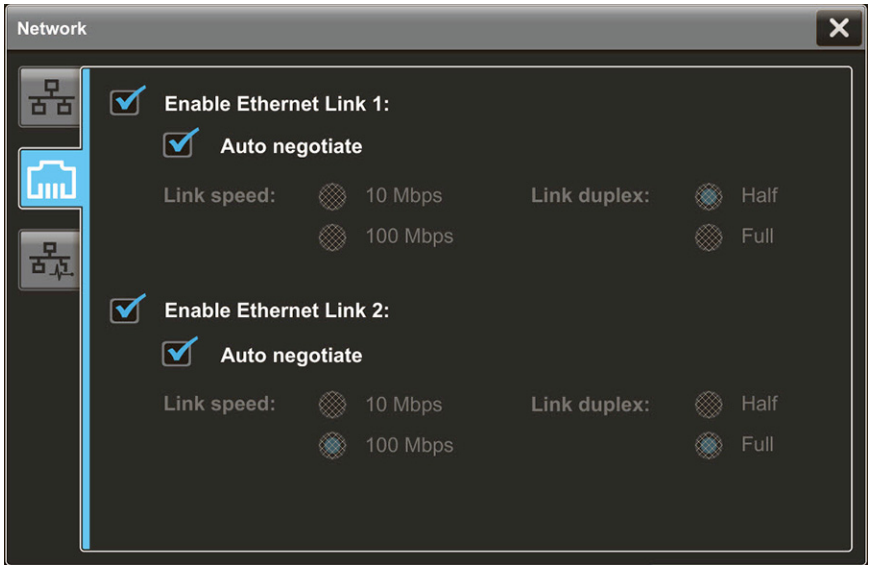
   The Welcome dialog box displays.



2. Tap Configure the Ethernet Network.
   The Internet Protocol (IP) Settings dialog box displays.



3. Configure the IP settings for the terminal.
   - To obtain an IP address automatically, see Use DHCP to Assign an IP Address For the Terminal on page 51.
   - To configure IP settings manually, see Assign a Static IP Address For the Terminal on page 52.
4. Tap the Ethernet icon.
5. Configure the Ethernet ports for the terminal.
   See Configure the Ethernet Ports on page 54.



6. Update the firmware by using the ControlFLASH™ software.
   Begin the update at Get the Terminal Firmware on page 91.

You can now download a View Designer application to the terminal. After the application is downloaded, the terminal resets then automatically launches the application.

Notes:

Configure Terminal Settings

Runtime Environment

During runtime, the PanelView™ 5510 terminal runs HMI projects. A project is configured and downloaded to your terminal from the View Designer application. The project launches each time that the terminal restarts.

The terminal exchanges data values with the controller, animates the displayed data, and responds when you press keys or touch a screen or element on a screen.

During runtime, you can perform these tasks:

- Navigate screens and their graphic elements
- View and manage alarms
- View and perform operations on a trend chart
- Display error information
- Configure terminal settings and view diagnostic information

Here is an example of a screen in a project that is downloaded to the terminal.

Item	Name	Description
1	Alarm status indicator button	Opens the Alarm Summary screen. A button on the screen turns red and flashes when there are active alarms that are unacknowledged. The button returns to its pictured default state with a gray icon when all alarms return to normal, even if alarms are unacknowledged.
2	Automatic Diagnostics button	Opens the Automatic Diagnostics screen, which automatically shows control system faults with no HMI configuration work.
3	Previous button	Opens the previous screen in the navigation history of the terminal.
4	Next button	Opens the next screen in the navigation history of the terminal. **IMPORTANT:** Using the Next button requires that a previous screen is first displayed.
5	Navigation button	Displays the navigation menu at the bottom of the screen. Use the Navigation menu to display shortcuts and folder contents.
6	Log On	Logs you on and off the project. The name of the person who is logged-on appears in the system banner. **IMPORTANT:** The logged-on person sees only the screens for which they have access.
7	General Diagnostics status	Displays data log status and project event errors when the following conditions occur: • The data log is exporting. • The data log is in error while collecting data or exporting. • The media containing the data log is ready to remove without corrupting files or making files read-only on the USB storage device or SD card. • Tags in the data log are in error. You can select the icon to view the error details. A data log status icon only appears when a project contains a data log and there are no project event errors. • Project events and data logs are in error. You can select the icon to open the predefined pop-up dialog for data log and project event status details. • Project events are in error. You can select the icon to view the error details. The Project Event Error ion only appears when a project event is in error.
8	Network status	Appears only if there is an issue with network communication. Tap the icon to open the Device Configuration Network pop-up dialog for details about the issue.
9	Controller status	Appears only if there is an issue with the controller. Tap the icon to open the Controllers pop-up dialog for details about the issue.
10	Time and date	Displays the current time and date.
11	System banner	Appears at the top of each screen in a project.
12	Project screen	Displays screens, shortcuts, and popups of a project that is created in the View Designer application.
13	Navigation menu	Displays menu items that you have access to when you are logged in. To display the navigation menu, press the Navigation button below the screen or in the system banner above the screen. You can tab to menu items to open the screens of the project. Tap a menu item to display that project in the screen. The navigation menu also provides access to the Settings menu for the terminal.

Enter Data With Virtual Keyboards

The virtual keyboard or virtual numeric keypad opens during runtime when text or numeric input is required.

- The virtual keyboard opens on the PanelView 5510 terminal screen when you tap a field or element that requires text or numeric input.
- The virtual numeric keypad opens on the PanelView 5510 terminal screen when you tap a field or element that requires only numeric input.

Figure 13 - Virtual Keyboard

Table 19 - Virtual Keyboard Description

Item	Feature	Description
1	Text entry field	Tap the letters, numbers, and character keys to enter text into this field. The text entry field is always active when the keyboard is open.
2	Clear	Tap this button to remove all characters that are entered in the text entry field.
3	Backspace	Tap this key to delete one character to the left at a time.
4	éüç	Tap this key to toggle between Roman characters and alpha-European characters. Numeric keys are not part of the alpha-European keyboard.
5	Arrow keys	Tap the left arrow key to move the cursor one space to the left. Tap the right arrow key to move the cursor one space to the right.
6	Cancel	Tap Cancel to cancel the entry.
7	OK	Tap OK to complete the entry.
8	Space bar	Tap the space bar to enter a space in the text entry field.
9	#?= ABC	Tap this key to toggle between symbols and alpha-numeric characters: • When in symbol mode, the key displays as ABC. • When in alpha-numeric mode, the key displays as #?=.
10	Shift	Tap this key to toggle the keyboard between uppercase and lowercase letters. The keyboard returns to lowercase characters after one character has been entered.
11	Caps lock	Tap this key to toggle the keyboard between uppercase or lowercase letters. The keyboard remains in the selected state until you tap this key again.

Figure 14 - Virtual Numeric Keypad

Table 20 - Virtual Numeric Keypad Description

Item	Feature	Description
1	Numeric entry field	The numeric entry field into which you type the numeric value for the graphic element.
2	Min-Max value	The displayed minimum and maximum values you can enter for the selected field or element.
3	Clear	Tap the X to remove all numbers that are entered into the numeric entry field.
4	Backspace	Tap the backspace button to delete one number to the left at a time.
5	+ _	Tap the positive-negative value button to toggle between a positive or negative number.
6	Cancel	Tap Cancel to cancel the entry.
7	OK	Tap OK to complete the entry.

Specify Keypad or Keyboard Size

If you prefer to use a larger-size keypad or keyboard, PanelView supports this option.

To specify the keypad or keyboard size, following these steps.

1. In View Designer, select Project Properties.
2. In the Project Properties dialog box, select Application in the left panel.
3. In the Keypad and Keyboard Size section, select either Normal or Large.

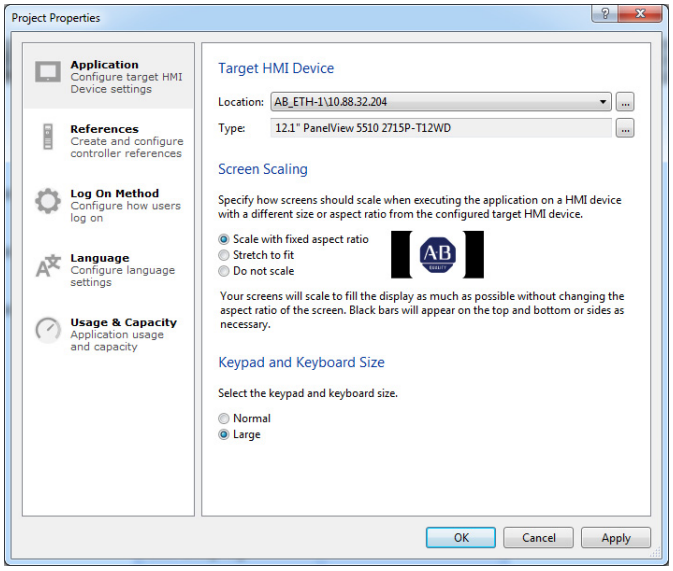


Figure 15 provides a comparison between the Normal and Large-size keypad. The larger size of both the keypad and keyboard gives you easier touch operation, which is useful if you use gloves during equipment operation.

Figure 15 - Normal Versus Large Keypad

Normal Size Keypad

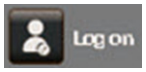
Large Size Keypad

Log On to the Terminal

When you sign in to the terminal, the screens that you have security access to appear as items in the navigation menu. For example, if you have been assigned the administrator role, all screens that have administrator access appear in the navigation menu.

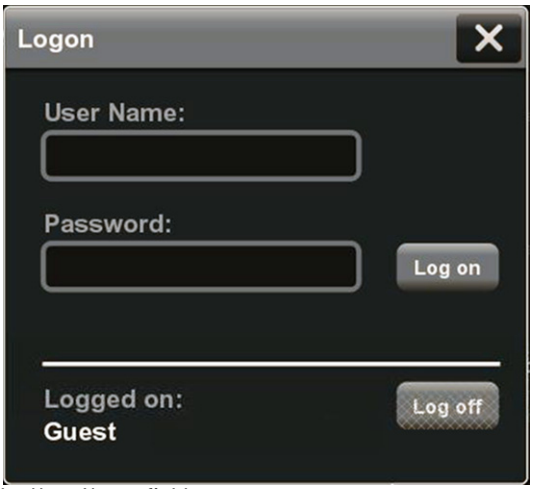
- The Guest user is logged on automatically at system startup. Anyone who is not logged on to the system can view or access only those screens assigned the level of security that is given to the Guest user account.
- Screen security and user roles are assigned in Studio 5000 View Designer® and cannot be modified on the PanelView 5510 terminal.
- User credentials can also be managed centrally in an Active Directory. If using Active Directory authentication, enter your Active Directory User Name and Password to sign in.

To sign in to the terminal, follow these steps.



1. In the system banner at the top of the screen, tap Log On.

   The Log On dialog box opens.



2. Tap the User Name field.

   The virtual keyboard opens.
3. To enter your user name with no spaces, tap the keys.
4. Tap OK.
5. Tap the Password field.

   The virtual keyboard opens.
6. To enter your password with no spaces, tap the keys.

   Passwords are case-sensitive.
7. Tap OK.
8. Tap Log On.

   The Log On dialog box closes and your user name appears on the Log On button on the status banner.

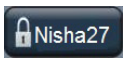
- You can only be logged on under one account at a time.
- To switch to a different account if you're already logged on to the terminal, open the Log On dialog box, enter a different user name and password, and tap Log On.

Log Off of the Terminal

When you log off, the following actions occur:

- The Guest user is logged in by default.
- If the Guest user has access to the current screen, the terminal continues to display the current screen.
- If the Guest user does not have access to the current screen, the Home screen for the project is displayed.

To log off from the terminal, follow these steps.



1. In the status banner at the top of the screen, tap the Log On button that is showing your user name.

   The Log On dialog box opens.
2. Tap Log Off.

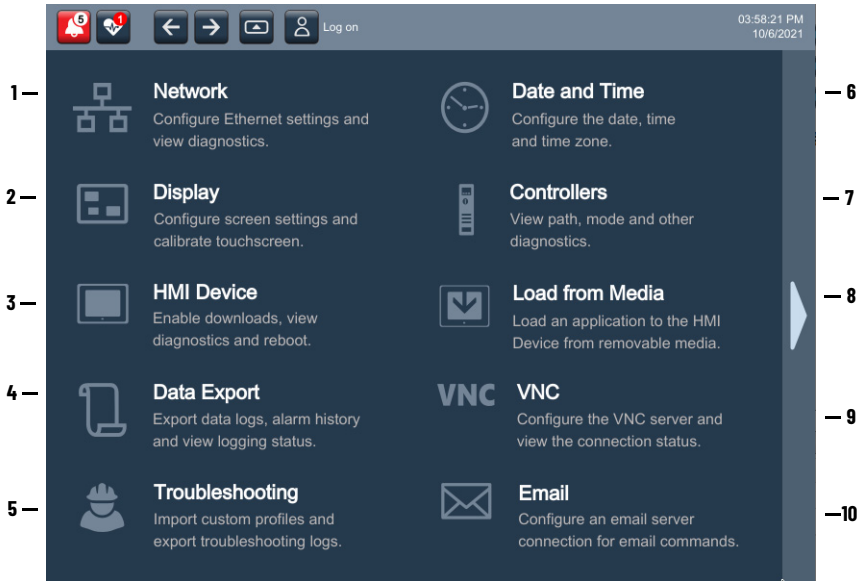
   You are logged off the terminal.

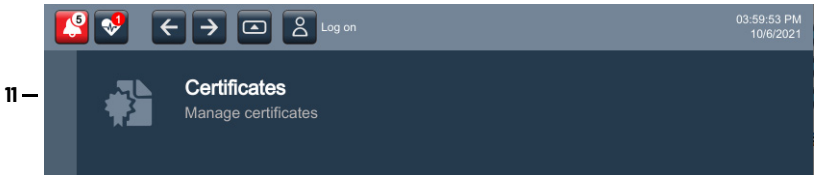
Settings Menu

You can access configuration parameters and system-wide information for the terminal from the Navigation menu.

To open the Settings menu, follow these steps.

1. Press the navigation button on an application screen.
2. On the Settings screen, tab to the menu item and press Enter.
3. Press the large arrow in the left or right gray vertical bar to navigate between pages.





Item	Menu Topic	Tasks That You Can Perform
1	Network	• Configure a static or dynamic device IP address • Configure Ethernet Link 1 settings • View network diagnostics
2	Display	• Adjust the brightness of the display • Enable or disable the screen saver • Configure the screen saver settings • Calibrate the touch screen
3	HMI Device	• Enable or disable downloads and firmware updates • Enter an HMI device name • View the catalog number and current firmware revision • View terminal diagnostic information • Restart the terminal
4	Data Logs	• Export data logs and alarm history • Remove the SD™ or SDHC™ card safely • View data logging status
5	Troubleshooting	• Select a default or imported profile for troubleshooting • Save the troubleshooting log to a USB drive or SD card for Rockwell Automation technical support
6	Date and Time	• Set the date, time, and time zone on the terminal
7	Controllers	• View general and diagnostic information for the controller
8	Load from Media	• Load an application to the HMI device from removable media
9	VNC	• Configure the VNC server and view the connection status
10	Email	• Configure the terminal to send and receive email
11	Certificates	• Import a digital certificate from removable media • Delete a digital certificate from the HMI device

Configure the IP Address of the Terminal

You can configure the IP address of the terminal to use the Dynamic Host Configuration Protocol (DHCP), or manually configure a static IP address.

A project is downloaded to the terminal from the View Designer application through the IP address of the terminal.

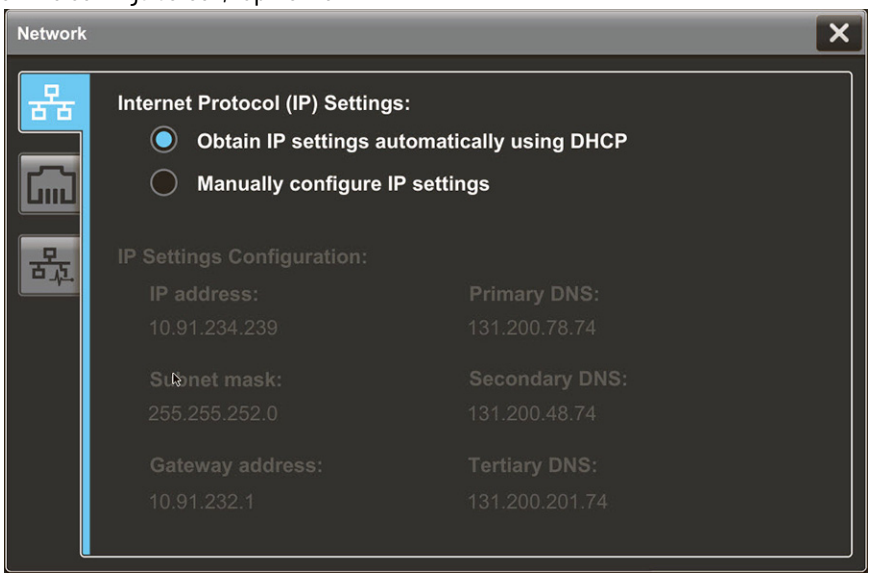
You cannot configure network IP addresses within the View Designer software.

Use DHCP to Assign an IP Address For the Terminal

In a DHCP configuration, the network assigns the IP address, subnet mask, and default gateway address fields.

To configure DHCP for the terminal, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap Network.

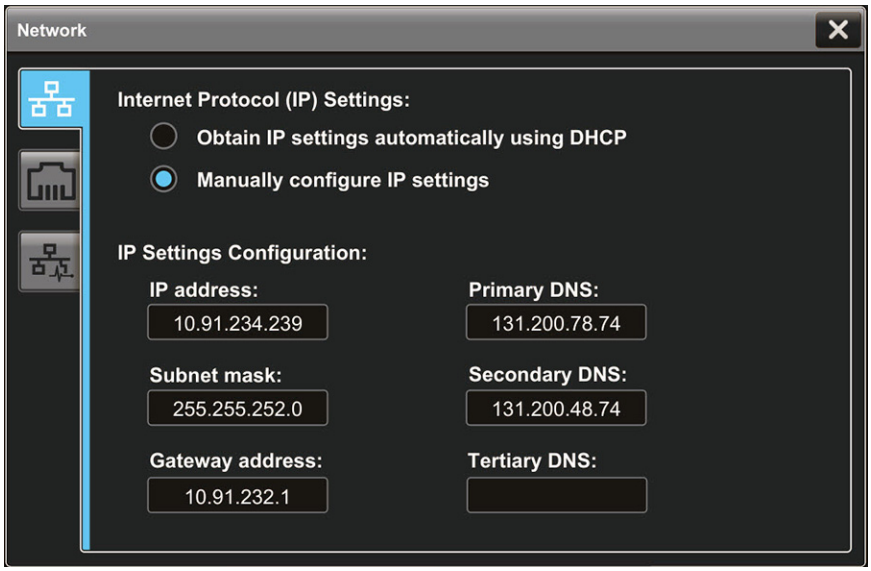


3. Tap the Obtain IP settings automatically using the DHCP radio button.
4. To close the dialog, tap X.

Assign a Static IP Address For the Terminal

To assign a static IP address for the terminal, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap Network.
3. Tap the Manually configure IP settings radio button.



Follow these guidelines to assign the IP Settings Configuration.

Parameter	Description
IP address	The range of values for the first set of numbers is 1...255. The range of values for the last three sets of numbers is 0...255
Subnet mask	The subnet mask address must be identical to the server subnet mask.
Gateway address	Optional address.

4. Tap the IP address field.
   The virtual keyboard opens.
5. To enter the IP address, use the virtual keyboard.
6. Tap OK to close the virtual keyboard.
7. Repeat steps 4...6 for the Subnet mask and the Gateway address fields.
8. To close the dialog, tap X.

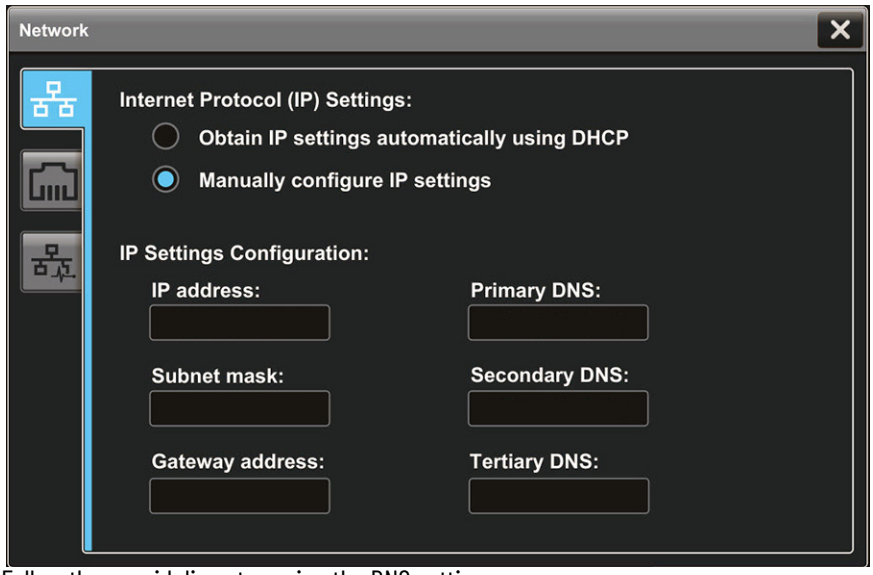
Configure a DNS Address For the Terminal

The domain name system (DNS) translates Internet domain and host names to IP addresses. DNS automatically converts a name that is typed in a web browser address bar to the IP addresses of the web server that host that site. You can configure DNS addresses for common domain or host names.

You cannot configure DNS addresses within the View Designer software.

To configure a DNS address for the terminal, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap Network.
3. Tap the Manually configure IP settings radio button.



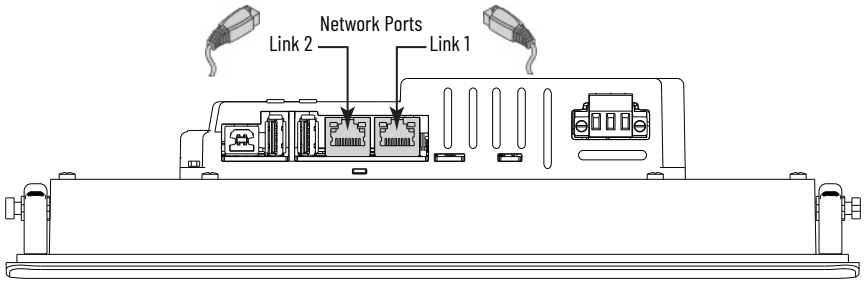
Follow these guidelines to assign the DNS settings.

Parameter	Description
Primary DNS	The range of values for this address is 0...255
Secondary DNS	The range of values for this address is 0...255
Tertiary DNS	The range of values for this address is 0...255

4. Tap the Primary DNS field.
   The virtual keyboard opens.
5. To enter the DNS address, use the virtual keyboard.
6. Tap OK to close the virtual keyboard.
7. Repeat steps 4...6 for the Secondary DNS and the Tertiary DNS fields.
8. To close the dialog, tap X.

Configure the Ethernet Ports

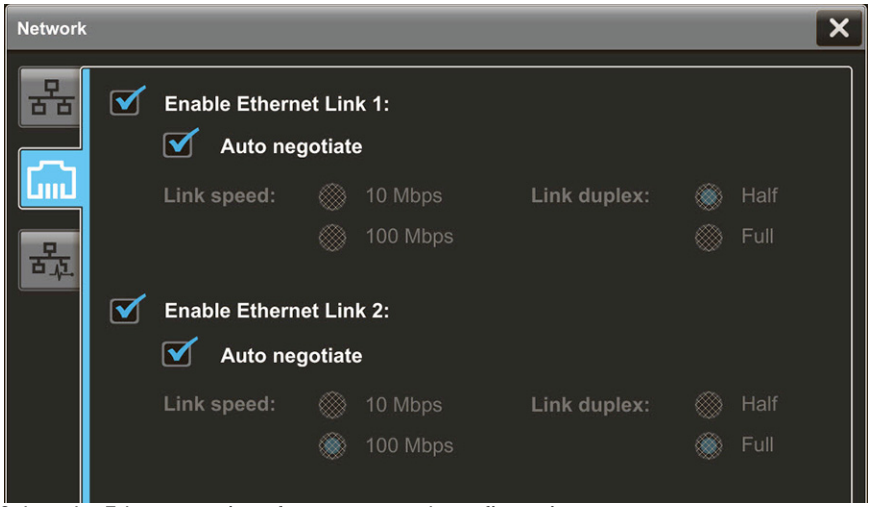
You can configure the link speed and duplex mode for each of the Ethernet ports on the terminal. The ports are identified as Ethernet Link 1 and Ethernet Link 2.



You cannot configure the Ethernet ports within the View Designer software.

To view or change the link settings of the Ethernet ports, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap Network.
3. Tap the Ethernet icon.



4. Select the Ethernet options for your network configuration:
   - Tap the Enable Ethernet Link 1 or Enable Ethernet Link 2 checkbox to add or remove the check mark. The option is enabled when the box is checked.

   IMPORTANT For DLR configurations, Ethernet Link 1 and Ethernet Link 2 must be enabled.

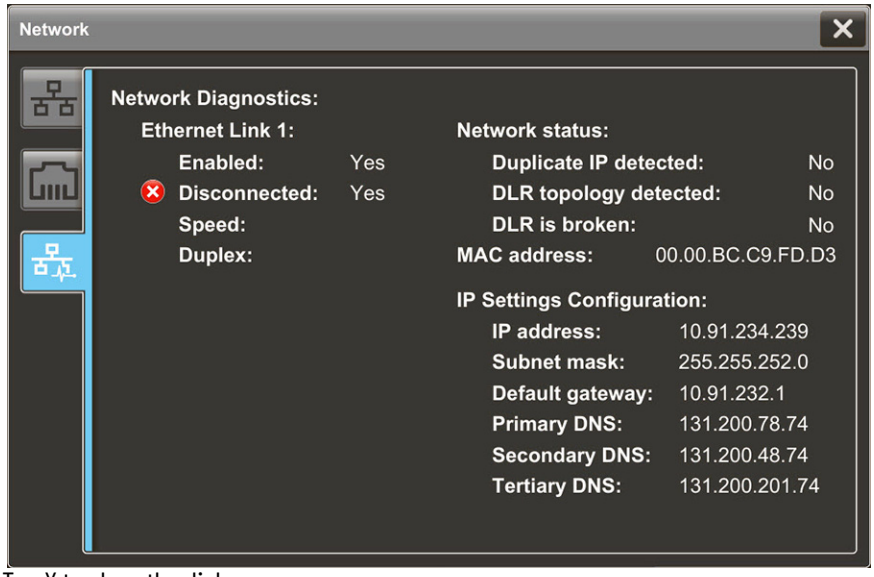
   - To set the speed and duplex options that are based on the network connection, tap the Auto-negotiate checkbox. The option is enabled when the box is checked.
   - To set the speed and duplex options, tap the Auto negotiate checkbox to remove the check mark from the box. Then tap the speed and duplex options for your network.
5. To close the dialog, tap X.

View the Network Diagnostics

From the Network Diagnostics screen, you can view Ethernet Link 1 and Ethernet Link 2 network connection data, network status data, and IP settings configuration data.

To view the Network Diagnostics screen, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap Network.
3. Tap the network diagnostic icon.



4. Tap X to close the dialog.

Use the Data Export Feature

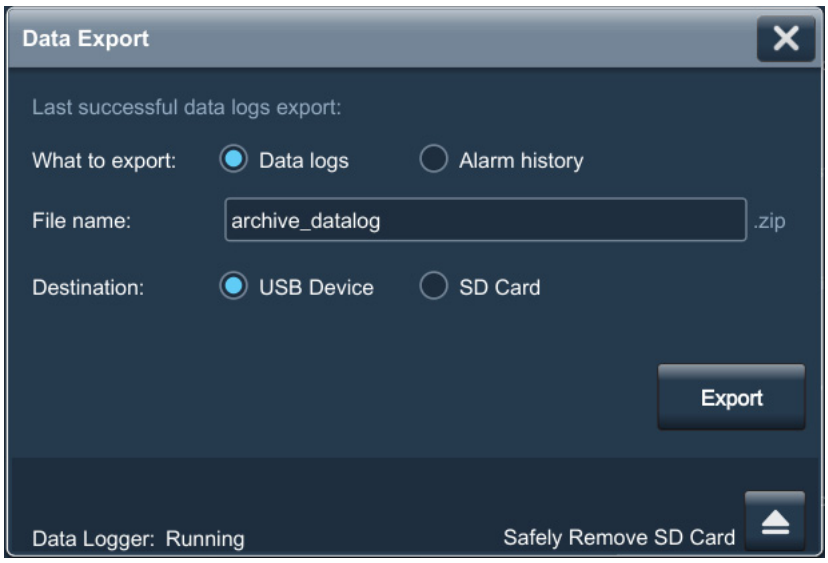
You can export a configured data log or alarm history from the terminal to removable media to view tag values collected on the terminal. The exported ZIP file contains individual CSV files for each data log in the project. You can then open the exported data log file on a personal computer to view the values in the data log.

To export a data log or alarm history to removable media, follow these steps.

1. Insert a USB storage device or SD card into the terminal.

IMPORTANT Verify the following before you insert removable media into the terminal:
- The format is FAT32 for the USB device or ext3 for the SD card
- The media has write permission and sufficient space

2. Press the navigation button on an application screen.
3. On the Settings screen, tap Data Logs.



4. In the Export to file box, type a name for the export file.

   Datalog is the default name.
5. Under Destination, select the media type that you inserted.
6. Tap Export.

   A progress bar appears to show export progress, and a data log pop-up displays the date and time of the last exported data log.
7. If an SD card is used, verify the following before you remove the media:
   a. After the data export completes and the progress bar disappears, tap Safely Remove SD Card.
   b. Verify that the Data Logger status changes from Stopped to Remove SD card.
   c. You can safely remove the SD card.
8. To close the dialog, tap X.

Adjust the Brightness of the Display

You can adjust the brightness level of the terminal display in increments from 1...100%.

Lower the brightness level to reduce the power that the backlight consumes, and extend the life of the backlight.

These tags can also be set to control backlight brightness level:

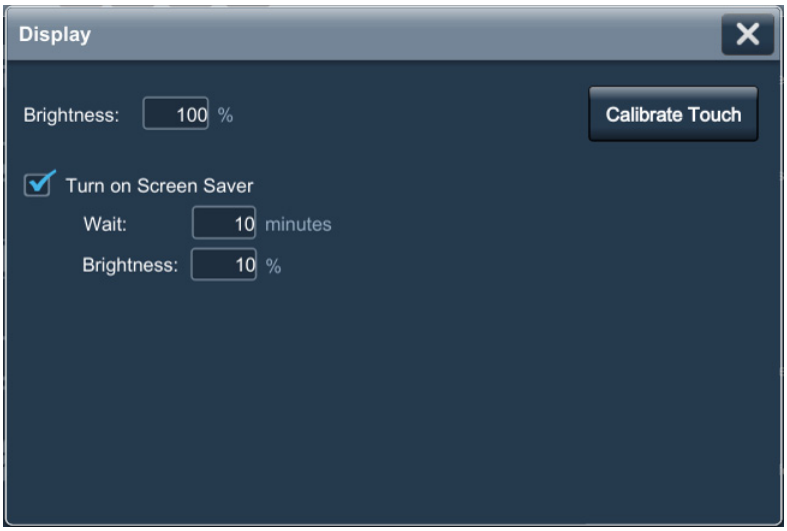
::Local:HMIDevice.Display.BacklightIntensity

::Local:HMIDevice.Display.ScreenSaverIntensity

To adjust the brightness of the display, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap Display.
3. Tap the Brightness field.

   The virtual numeric keypad opens.

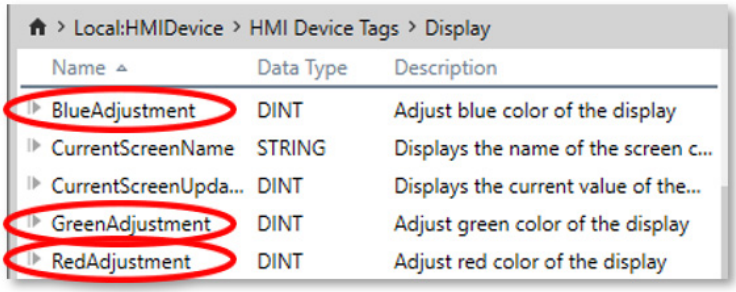


4. Enter the value for the brightness in increments from 1...100%.
5. Tap OK.
6. To close the dialog, tap X.

Modify Screen Color Settings by Using HMI Device Tags

If you must adjust the color of the PanelView 5000 LCD display, there are three HMI device tags available under the Display category:

- BlueAdjustment
- GreenAdjustment
- RedAdjustment



To use these tags, bind them to Numeric Input elements you put on your custom screen. The default value for each color is 50. To make the color more or less pronounced, enter higher or lower values using your Numeric Inputs.

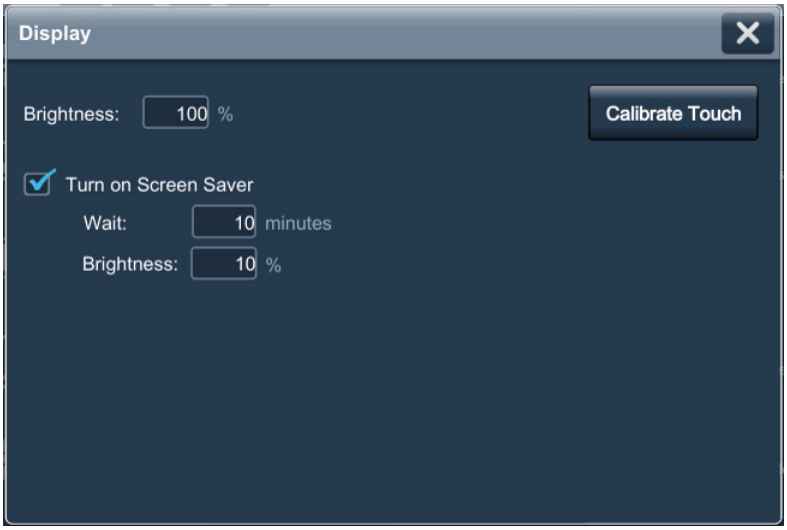
Configure the Display Screen Saver

The screen saver extends the life of the back light by dimming the brightness level when activity is not sensed for a specified amount of time. When the screen saver is activated, the terminal displays a moving image at a reduced brightness level. When user input is sensed, the screen saver is deactivated and the display brightness returns to its configured level.

After the screen saver is deactivated, touch or keypad input is ignored for at least 0.5 seconds.

To configure the brightness and screen saver for the display, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap Display.



3. To add or remove the check mark next to Turn on Screen Saver, tap the checkbox.
   The option is enabled when the box is checked.
4. Tap the Wait field.
   The virtual numeric keyboard opens.
5. Enter the number of continuous, idle minutes from 1...5999 to wait before activating the screen saver.
   The default is 10 minutes.
6. Tap OK.
7. Tap the Brightness (%) field.
   The virtual numeric keyboard opens.
8. Enter the value for the brightness in increments from 1...100%.
9. Tap OK.
10. To close the dialog, tap X.

Calibrate the Touch Screen

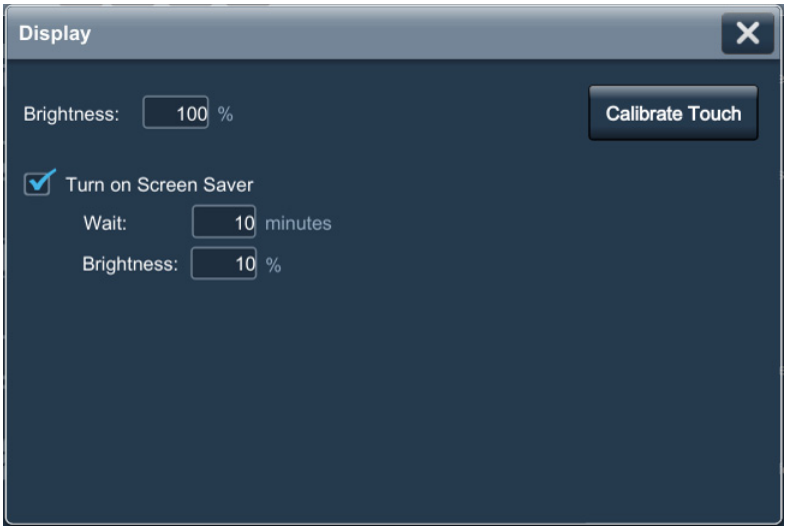
PanelView 5510 touch screens are calibrated at the factory. After installation, you can recalibrate resistive touch screen models to compensate for parallax if the screen is viewed at an angle.

The calibration process requires you to touch a series of targets on the screen.

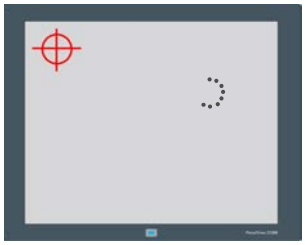
IMPORTANT For accuracy and to help prevent damage to the touch screen, use a plastic stylus device with a minimum tip radius of 1.3 mm (0.051 in.).

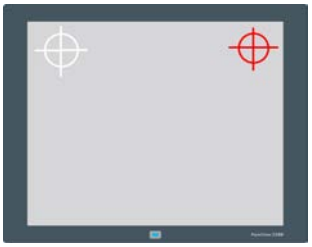
To calibrate the touch screen, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap Display.



3. Tap Calibrate Touch.
   A red target appears on the screen.



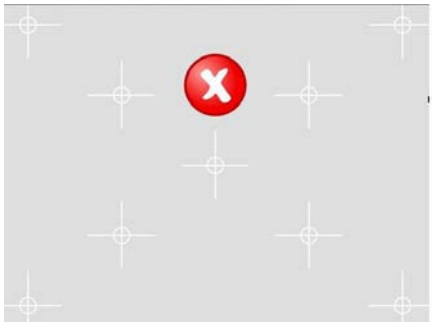


4. Press and hold the center of the target until the target completes the circle.
   The next target appears.

Touch inside the target areas before the progress indicator completes a circle.

5. Continue to press and hold the centers of all remaining targets as they appear.
   All processed targets are replaced with white targets.
   A green circle with a check indicates a successful calibration.

   A red circle with an *X* indicates a failed calibration.



   If the calibration fails, the process automatically repeats. Continue the calibration until the calibration is successful.

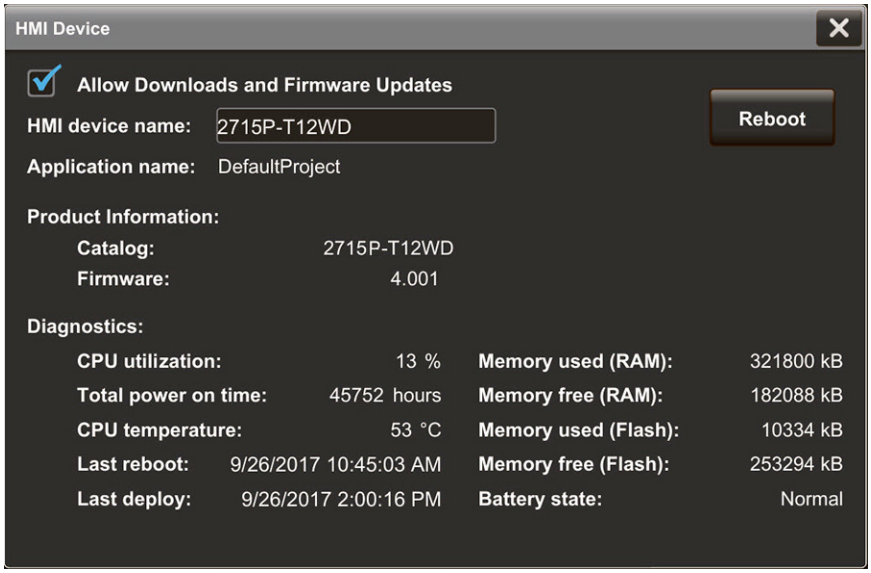
   The calibration is retained after a reset or power cycle.

Disable Downloads to the Terminal

As a security measure, you can disable downloads to the terminal, including application downloads and firmware updates. Disable downloads to help prevent the current application from being replaced when an application is downloaded from the View Designer application.

To disable downloads to the terminal, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap HMI Device.



3. Tap the Allow Downloads and Firmware Updates checkbox to clear the checkbox.
   - Downloads are not permitted when the checkbox is cleared.
   - Downloads are permitted when the checkbox is checked.
4. To close the dialog, tap X.

While this setting is unchecked, you cannot download another application to the terminal or update the terminal firmware.

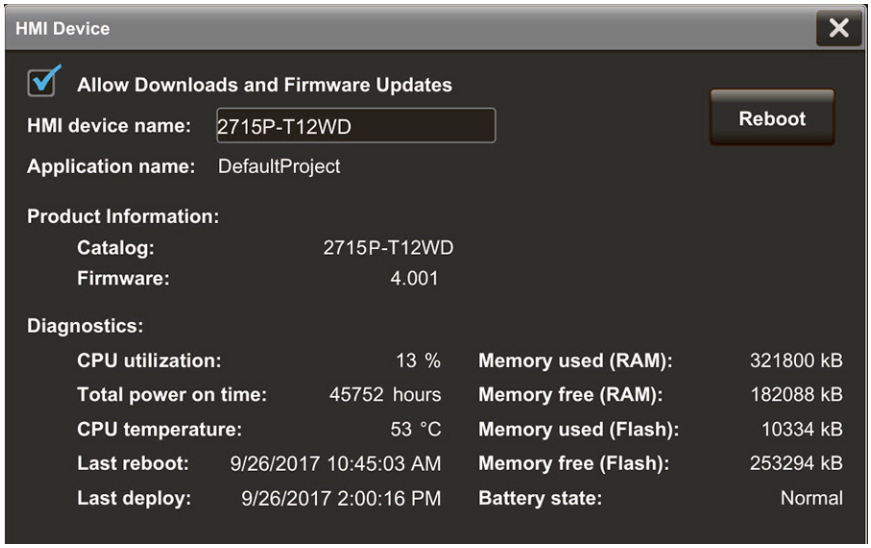
Attempts to download an application from the View Designer application results in an error.

Change the HMI Device Name

Each terminal has a unique default HMI device name that identifies it to other devices on the network. You can view or change this name.

To view or change the HMI device name, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap HMI Device.



   The HMI device name field shows the current name.
3. Tap the HMI device name field.

   The virtual keyboard opens.
4. To enter or modify the current name, tap the virtual keyboard keys.

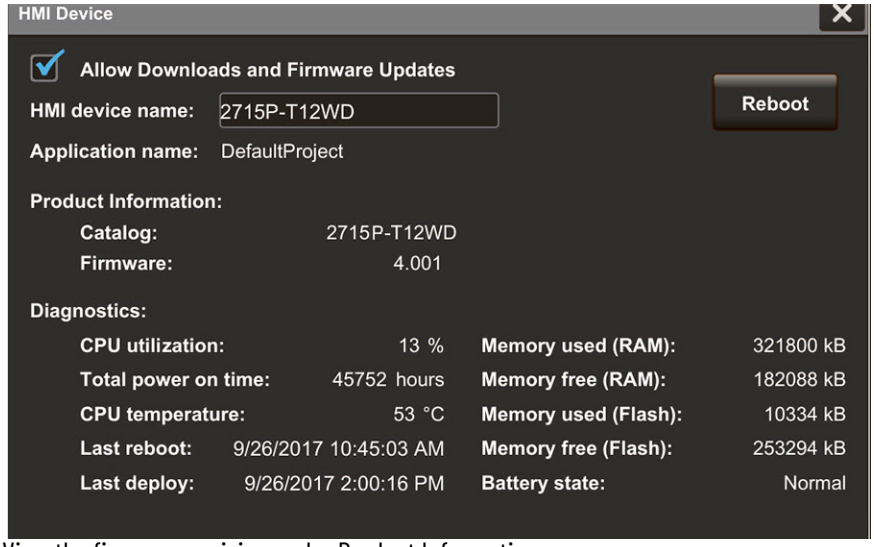
   - You can enter up to 15 characters including letters, numbers, and hyphens.
   - The first character of the terminal name must be an upper or lowercase letter.
5. Tap OK.
6. To close the dialog, tap X.

View the Firmware Revision

You can view the current firmware revision on the terminal. You need this information for firmware updates, or when you call technical support.

To view the firmware revision, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap HMI Device.



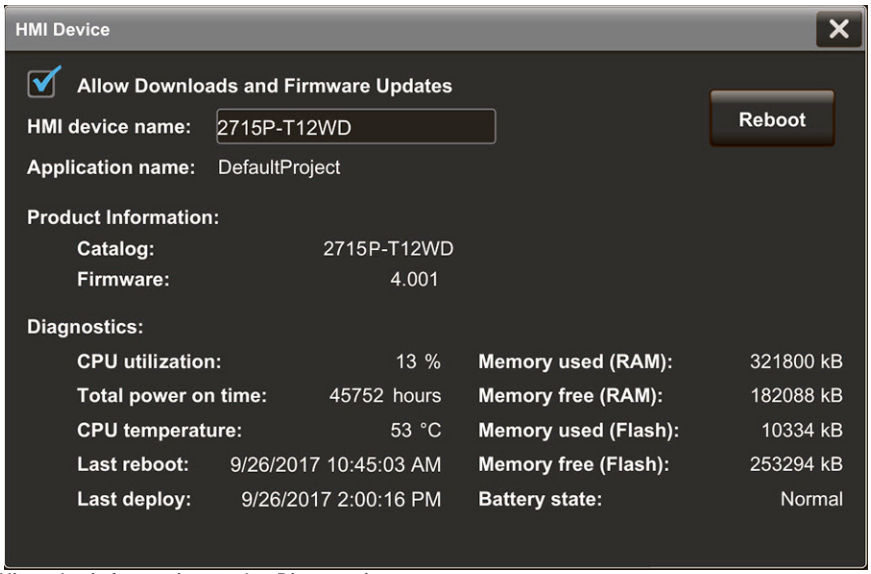
View the firmware revision under Product Information.

3. To close the dialog, tap X.

Display Terminal Diagnostics

To view the diagnostic data for the terminal, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap HMI Device.



3. View the information under Diagnostics.

Diagnostic Parameter	Description
CPU utilization	The processor usage.
Total power on time	The total time the terminal has been running (powered).
CPU temperature	Displays the current temperature of the CPU: • Normal: 25...94 °C (77...201 °F) • High: 100 °C (212 °F) and higher An over-temperature condition of 105...110 °C (221...230 °F) causes a delayed automatic system restart. The restarts continue indefinitely until the system is cool enough to resume normal operation.
Last reboot	Displays the date and time for the most recent reboot of the terminal.
Last deploy	Displays the date and time of the most recent project application download.
Memory used (RAM)	The total RAM memory that is in use.
Memory free (RAM)	The total RAM memory that is remaining.
Memory used (Flash)	The total nonvolatile memory that is in use.
Memory free (Flash)	The total nonvolatile memory that is remaining.
Battery state	• Normal • Low • Depleted

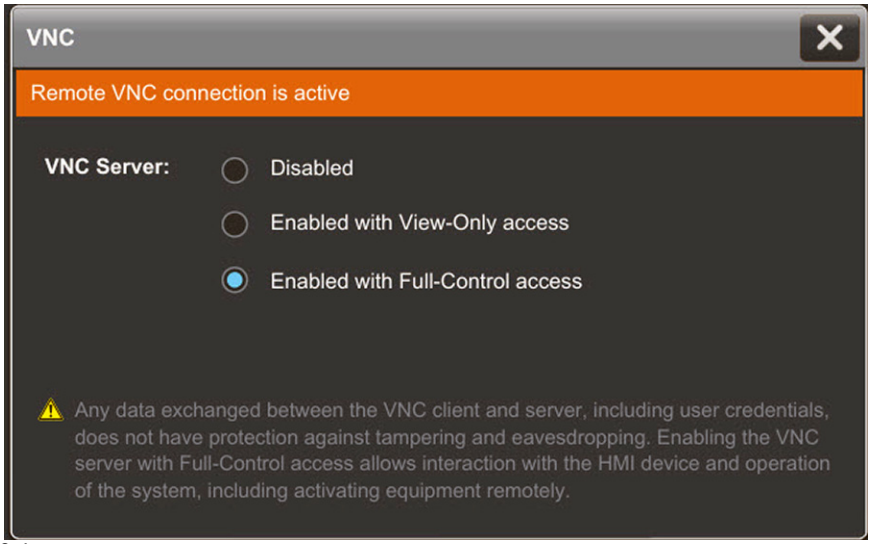
4. To close the dialog, tap X.

Enable the VNC Server

You can enable VNC to connect remotely to a PanelView 5510 terminal. Use the Remote Connectivity screen to enable or disable the VNC server.

To enable or disable a VNC connection, follow these steps.

1. Press the navigation button on an application screen.
2. On the Settings screen, tap VNC.



3. Select an access:
   - **Disabled:** Disables the VNC server
   - **Enabled with view-only access:** You can only view content on the HMI device
   - **Enabled with full-control access:** You can view content and interact with the HMI device

   A warning displays with full-control access that the full-control connection is unprotected.

4. To close the dialog, tap X.

Load an Application from Removable Media

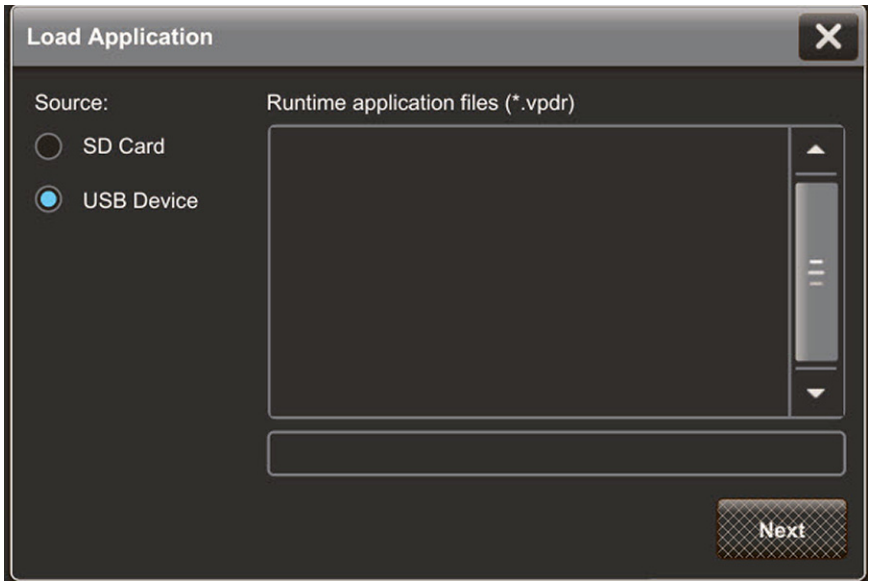
You can load a runtime application from removable media to the HMI device. For PanelView terminals with firmware revision 6.0 or higher, if you load a runtime application and it requires a different firmware revision than the version on the PanelView terminal, the Load from Media procedure updates the firmware.

To load a runtime application from removable media, follow these steps.

1. Insert a USB storage device or SD card with the runtime application into the HMI device.

IMPORTANT Verify the following before you insert removable media into the terminal:
- The format is FAT32 for the USB device or ext3 for the SD card
- The media has write permission and sufficient space

2. Press the navigation button on an application screen.
3. On the Settings screen, tap Load from Media.



4. Select the appropriate source.
5. From the Runtime application files panel, select the runtime application to load.
6. The application appears in the box underneath the Runtime application files panel.
7. Tap Next.
8. Under HMI to controller path, specify the path to use to load the runtime application:
   - **Keep path currently in use on HMI device:** Use the controller path currently used on the HMI device; the current HMI to controller path appears
   - **Load path defined in the runtime application file:** Use the controller path configured in the runtime application on the removable media

   Note: To allow Load from Media to install a new revision of firmware on the PanelView 5000, copy the firmware .dmk file to the root directory of the SD card or USB drive. The firmware major revision must match the major revision of View Designer used to create the .vpdr project. Firmware .dmk files are usually a part of the Studio 5000 install located at:

   C:\Users\Public\Documents\Rockwell Automation\Firmware Kits.
9. Tap Load.

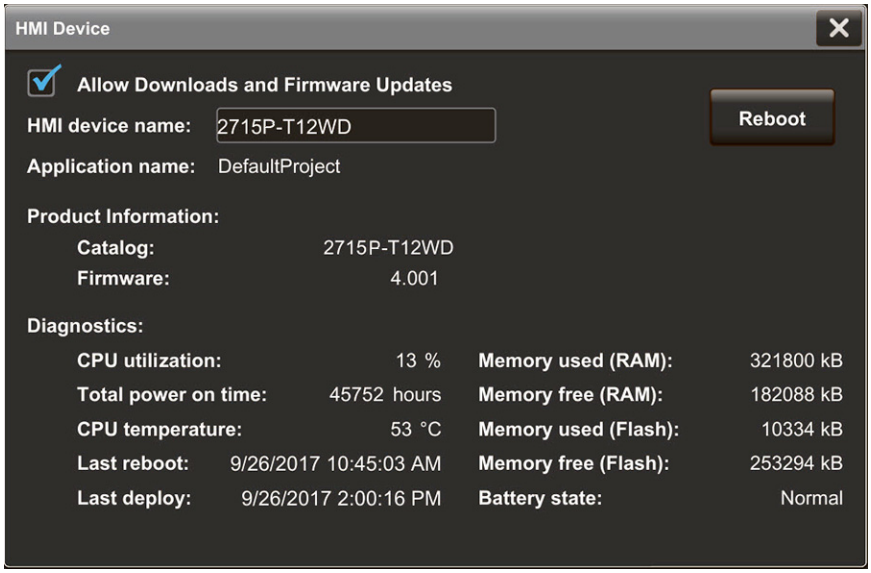
   The HMI device performs a firmware update if needed and then loads and runs the runtime application.

   The Home screen of the runtime application opens on the HMI device.
10. To close the dialog, tap X.

Reboot the Terminal

To reboot the terminal, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap HMI Device.



3. Tap Reboot.

   You are prompted to confirm the reboot.
4. To reboot the terminal, tap Yes.

   If you tap Yes to reboot the terminal, it restarts and displays the project that is downloaded to the terminal.

   To cancel, tap No, and then tap X to close the dialog.

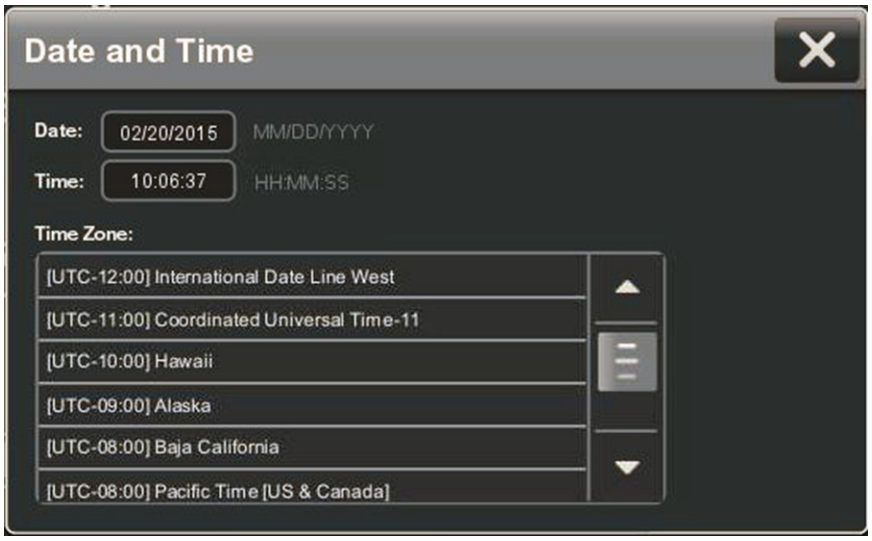
Change the Date and Time

You can change the date and time that is used for terminal operations. The date and time is displayed on the terminal screen and recorded in log files. You can also change the time zone for the terminal.

PanelView 5000 HMI devices contain a built-in database of all daylight savings time rules and automatically switch to daylight savings time according to the selected time zone.

To change the date and time that is used for terminal operations, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap Date and Time.



3. Change the Date and Time fields as appropriate.
   a. Tap a Date or Time field.
      The virtual keyboard opens.
   b. Enter a value and tap OK.

Date and Time Parameters		Valid Values
Date MM/DD/YYYY Enter the date format including the '/' characters.	Year	Up to 2999
	Month	1...12
	Day	0...31
Time HH:MM:SS (24-hour format) Enter the time format including the ':' characters.	Hour	0...23
	Minute	0...60
	Second	0...60

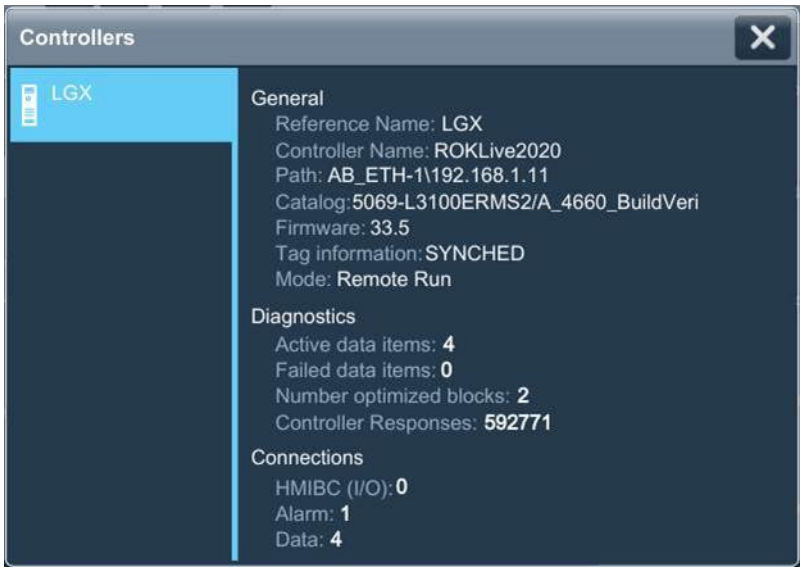
4. Change the time zone, if desired.
   a. To move up and down the list, press and drag the scroll bar (or press and hold an arrow button).
      Or tab to the list and use the arrows keys on the physical keypad of the terminal.
   b. Tap the time zone for the terminal.
      The time on the terminal is adjusted to match the selected time zone.
5. To close the dialog, tap X.

View Information for the Configured Controller

You can view information for the controller that is configured to operate with the terminal.

To view the general information for the controller, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap Controllers.



The general information for the controller includes these data.

Data Type	Description
Reference Name	The name of the controller reference that is configured in the View Designer application. The name does not appear if a controller is not configured for the project.
Controller Name	The name of the controller that is configured in the Logix Designer application. The name does not appear if a controller is not configured for the project.
Path	The communication path for the controller. The path does not appear if a controller is not configured for the project.
Catalog	The Catalog number of the controller. The catalog number does not appear if the controller is disconnected from the network.
Firmware	The major and minor revision numbers for the firmware in the controller. The firmware revision numbers do not appear if the controller is disconnected from the network.
Tag information	The synchronization state to process changes from the controller. For example, the state can be Synchronized, Updating, or Detecting changes. Some tag information cannot appear if the controller tag information is not synchronized (UNINITIATED).
Mode	The operating mode of the controller. For example, the mode can be Run, Program, or Fault. The mode does not appear if the controller is disconnected from the network.

The diagnostic information for the controller includes the following data.

Data Type	Description
Active data items	The number of data items on scan for the controller.
Failed data items	The number of failed data items on scan for the controller.
Number optimized blocks	The numeric of optimized data blocks on scan for the controller.
Controller Responses	The number of responses received from the controller.

The connection information for the controller includes the following data.

Data Type	Description
HMIBC (I/O)	The number of Class 1 Common Industrial Protocol (CIP™) connections to the controller.
Alarm	The number of alarm CIP connections to the controller.
Data	The number of Class 3 CIP connections to the controller.

3. To close the dialog, tap X.

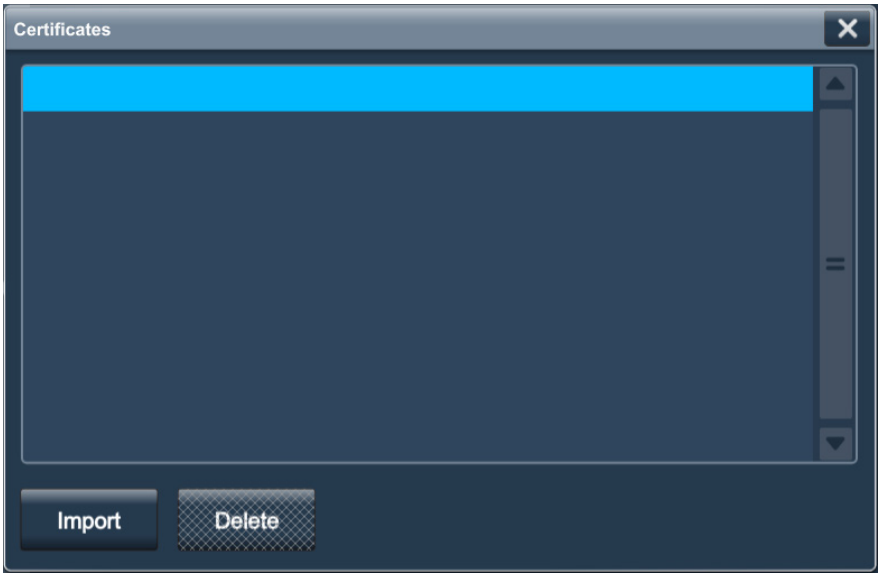
Manage Certificates

The following sections describe what to do when you need to import or delete a digital certificate. A digital certificate allows you to access locations on the Internet that use HTTPS or WSS secured protocols and use StartTLS or LDAPS for encrypted connections to an Active Directory server. The certificates must have a .cer, .crt, or .pem extension.

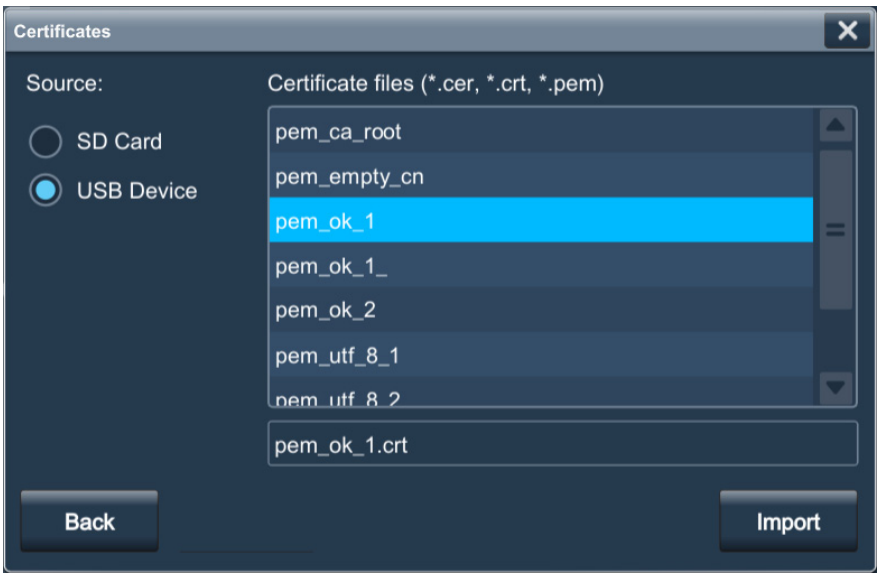
Import a Digital Certificate from Removable Media

To import a certificate from removable media, follow these steps:

1. Insert the USB storage device or SD Card storing the certificate files into the HMI device.
2. Verify that the certificate files are in the root directory of the SD card or the USB drive.
3. On the HMI device or in the System Banner, select Navigation and then select Settings.
4. Select Certificates.
   The Certificates pop-up dialog opens.



5. Select Import.
6. Under Source, select SD Card or USB Device.



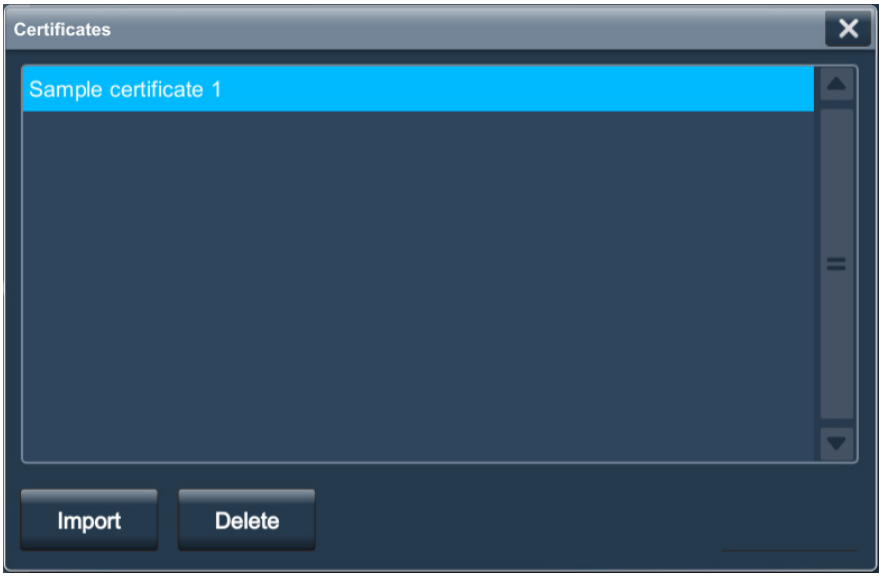
7. From the Certificate files list, select a certificate file to import.
   You can only import one certificate file at a time.
8. Select Import.
   The HMI device imports the digital certificate.

Delete a digital certificate from the HMI Device

To delete a digital certificate from the HMI device, follow these steps:

1. On the HMI device or in the System Banner, select Navigation, and then select Settings.
2. Select Certificates.
   The Certificates pop-up dialog opens.

3. From the certificates list, select the certificate file to delete.
   You can only select one certificate file at a time.



4. Select Delete and then select OK.

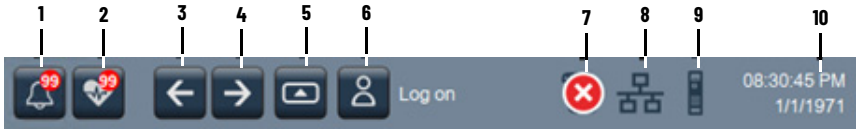
Notes:

Monitor and Manage Control System Alarms

Alarm Indicator

The Alarm Status Indicator button in the system banner displays the number of system alarms.

To open the alarm summary and view process and machine alarms, tap .



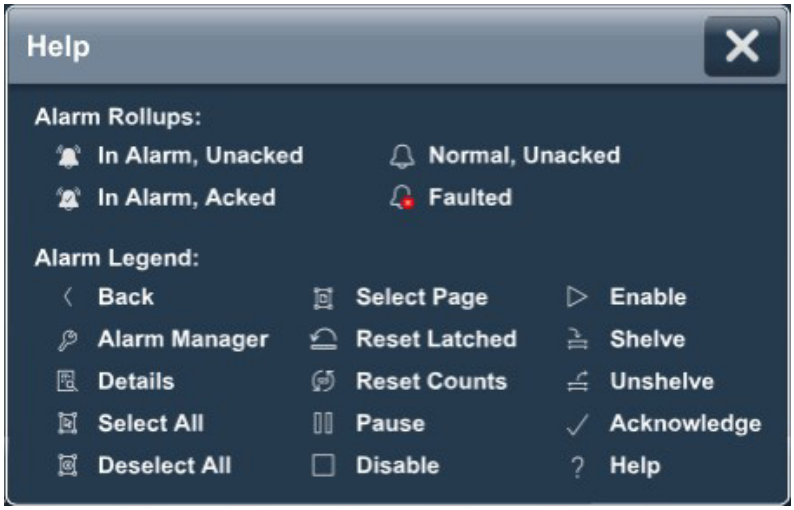
Item	Name	Description
1	Alarm Status Indicator button	Opens the Alarm Summary screen. The button appears in one of the following states: • A steady, non-flashing button with no number indicates that there are no alarms. • A red, flashing button indicates that there are active alarms that are unacknowledged. • A gray button with a numbered notification shows the number of unacknowledged alarms and indicates that all alarms have returned to normal, but some alarms are still unacknowledged. • A red button indicates that there are active alarms and all of them are acknowledged.
2	Automatic Diagnostics button	Opens the Automatic Diagnostics screen, which automatically shows control system faults with no HMI configuration work.The button shows a notification with the number of active diagnostics. The button returns to an outlined icon when no diagnostics are active.
3	Previous button	Opens the previous screen in the navigation history of the terminal.
4	Next button	Opens the next screen in the navigation history of the terminal. **IMPORTANT:** Using the Next button requires that a previous screen is first displayed.
5	Navigation button	Displays the navigation menu at the bottom of the screen. Use the Navigation menu to display shortcuts and folder contents.
6	Log On	Logs you on and off the project. The name of the logged-on user appears in the system banner. **IMPORTANT:** The logged-on user sees only the screens for which the user has access.
7	General Di agnostics status	Displays data log status and project event errors when the following conditions occur: • The data log is exporting. • The data log is in error while collecting data or exporting. • The media containing the data log is ready to remove without corrupting files or making files read-only on the USB storage device or SD card. • Tags in the data log are in error. You can select the icon to view the error details. A data log status icon only appears when a project contains a data log and there are no project event errors. • Project events and data logs are in error. You can select the icon to open the predefined pop-up dialog for data log and project event status details. • Project events are in error. You can select the icon to view the error details. The Project Event Error ion only appears when a project event is in error.
8	Network status	Appears only if there is an issue with network communication. Tap the icon to open the Device Configuration Network pop-up dialog for details about the issue. One of the following messages may appear: • Network caution — the network is functioning but has an issue that requires attention. For example, the Device Level Ring may have a break. • Network error — the network is not functioning. For example, an Ethernet link is disconnected, or there is a duplicate IP address.
9	Controller status	Appears only if there is an issue with the controller. Tap the icon to open the Controllers pop-up dialog for details about the issue. One of the following messages may appear: • Controller error — any controller in the project is disconnected, powered down, or not configured. • Controller caution — any controller in the project is not in Run mode or the tag data of a controller is not synchronized with the HMI device. • Controller unknown — no controller in the project is visible and it is unclear if a controller should be visible to the HMI device. This may occur when a controller is on a disconnected side of the network.
10	Time and date	Displays the current time and date.

Alarm Help Menu

To view a brief description of the alarm function keys and status counts, follow these steps.

1. Open the Alarm Summary (page 76) or Alarm Manager (page 77) screen.
2. Tap ?.

   The Help dialog displays a brief description of the alarm function keys and status counts.



3. Tap X to close the dialog.

This table provides a detailed description of the alarm function keys and alarm status counts.

Table 21 - Alarm Function Key Descriptions

Symbol	Function Key or Message	Description
✓	Acknowledge	Indicates that you are aware of the alarm. This button changes the state of the alarm from unacknowledged to acknowledged.
	Alarm Manager	Opens the alarm manager screen. The alarm manager lists all alarms that are configured in the system and their current states. Therefore, the alarm manager shows alarms that are not shown in the alarm summary, and provides additional tasks for alarms.
〈	Back	Opens the previously displayed screen. When you open the alarm manager screen from the alarm summary screen, this button reopens the alarm summary screen.
	Deselect All	Deselects all alarms in the alarm table, including the alarms that are not displayed on the current page of alarms.
	Details	Hides or shows the details pane, which contains the details of the last selected alarm. The details pane appears on the bottom half of large alarm tables and replaces the list of alarms in medium alarm tables. If no alarm is selected, the details pane is empty.
□	Disable	Stops the alarm condition from being evaluated. In effect, turns off the selected alarm. You can only disable an entire alarm. You cannot disable an individual alarm condition.
▷	Enable	Enables the selected alarms in the alarm manager table, which allows the alarm condition to be evaluated, which turns on the alarm. An enabled alarm enables all conditions for that alarm. You cannot enable an individual alarm condition.
	Faulted	Provides a count of the alarms in a faulted state.
?	Help	Provides a description of the help buttons and alarm status.

Table 21 - Alarm Function Key Descriptions (Continued)

Symbol	Function Key or Message	Description
	In Alarm, Acked (acknowledged)	Provides a count of the alarms in an acknowledged state.
	In Alarm, Unacked (unacknowledged)	Provides a count of the alarms in an unacknowledged state.
	Normal, Unacked	Provides a count of the alarms where the input of the alarm has returned to normal, but the alarm has not yet been acknowledged.
	Pause	Stops updates to the alarm summary table for 10 seconds, or until another operation is performed on the table. While updates to the alarm summary table are paused, alarms in the controller are still evaluated. When the table is no longer paused, any changes to alarm states are reflected in the table, and updates resume.
	Reset Counts	Resets the alarm count in the controller and the alarm count value in the details pane of the alarm manager table to zero. The reset is performed for all conditions of the currently selected alarm.
	Reset Latched	Sets the selected digital latched state of the alarm to normal if the input of the alarm has returned to normal. A reset of a digital latched alarm acknowledges the alarm, if it is not acknowledged.
	Select All	Selects all alarms in the alarm table, including the alarms that are not displayed on the current page of alarms.
	Select Page	Selects all alarms that are displayed on the current page of alarms.
	Shelve	Helps prevents the notification of new state changes to the selected alarm if the alarm is acknowledged. Updates to the alarm do not appear. The alarm remains shelved until the shelve duration from the controller expires automatically or you unshelve the alarm manually. Updates to the alarm then resume. When you shelve an alarm in the alarm summary table, you shelve only the selected alarm conditions. When you shelve an alarm in the alarm manager table, you shelve all conditions of the alarm. From the condition list in the details pane of the alarm manager table, you can also shelve individual alarm conditions.
	Unshelve	Unshelves the selected alarm in the alarm manager table, which allows notification of new state changes to alarms. From the condition list in the details pane of the alarm manager table, unshelve individual alarm conditions.

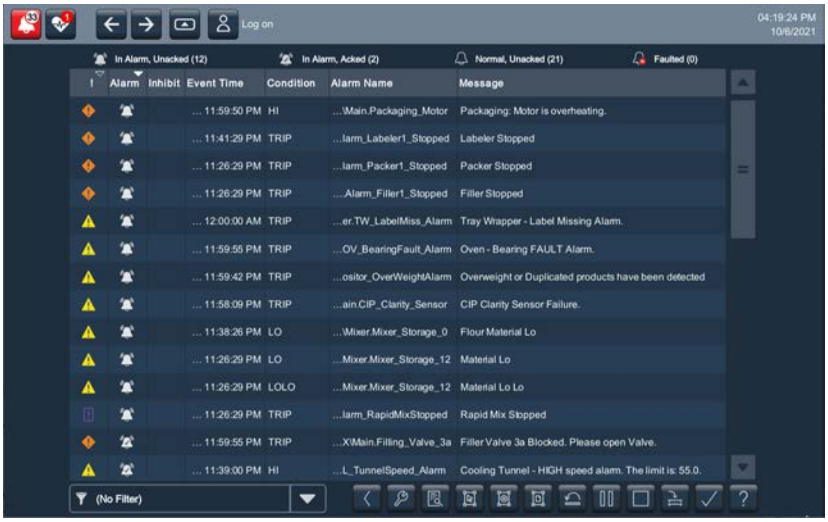
View the Alarm Summary

The alarm summary lists alarms that are in alarm or out of alarm but still unacknowledged. It displays one alarm condition per row. Use the alarm summary to monitor and interact with alarms.

To view the alarm summary for the control system, follow these steps.

1. Press the navigation button on the terminal.

2. Tap Alarm Summary, or tab to the menu item and press Enter.



3. Tap the alarm function keys to view the alarms.
   See Alarm Help Menu on page 74 for a description of the keys.
4. To return to the navigation menu, tap the navigation button on the terminal.
5. To return to the application screens, tap an application icon.

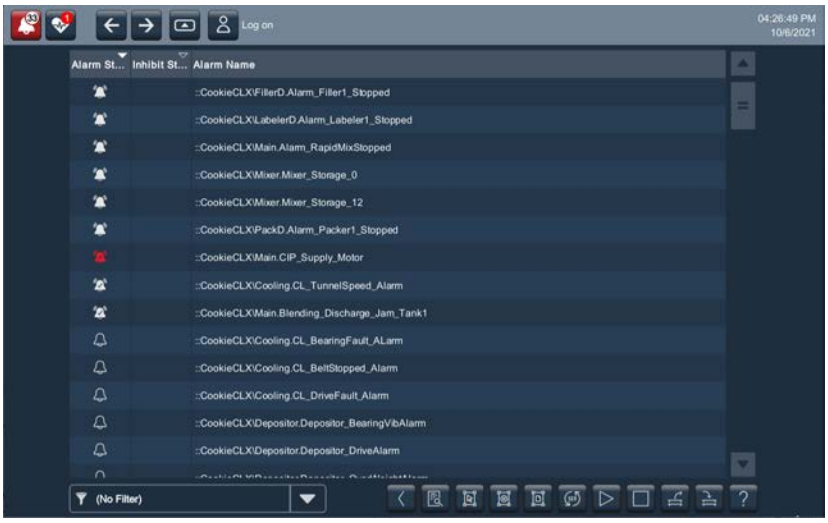
Manage the Alarms

The Alarm Manager lists all alarms that are configured in a system and their current states.

To manage the alarms for the control system, follow these steps.

1. Press the navigation button on the terminal.
2.

3. Tap Alarm Manager, or tab to the menu item and press Enter.



4. Tap the alarm function keys to manage the alarms.
   See Alarm Help Menu on page 74 for a description of the keys.
5. To return to the navigation menu, tap the navigation button on the terminal.
6. To return to the application screens, tap an application icon.

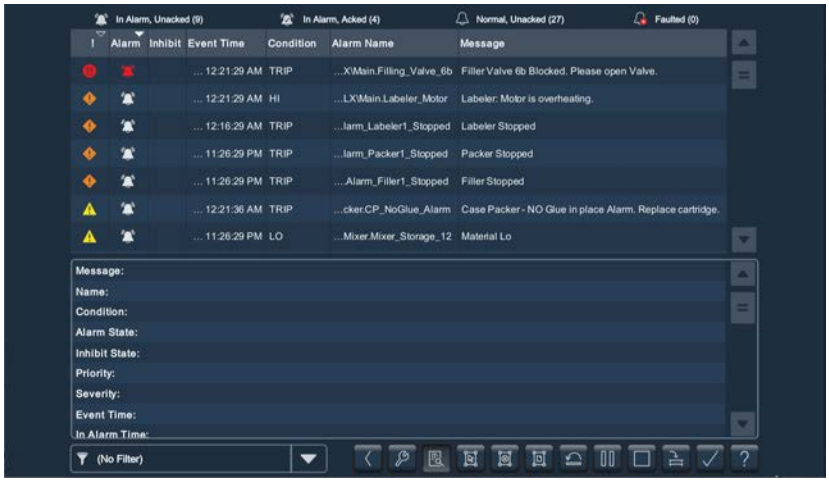
Alarm Detail Pane Descriptions

The details pane shows details for the selected alarm condition of a selected alarm. Condition details display the selected alarm condition in the alarm manager table.

To view the details pane for a selected alarm, follow these steps.

1. Open the Alarm Summary (page 76) or Alarm Manager (page 77) screen.
2. Tap .

The details pane displays a list of alarm states and conditions.



3. Tap again to toggle off the details pane.

See Table 22 for a description of the alarm details.

Table 22 - Alarm Detail Descriptions

Alarm Detail	Description
Acknowledge Time	The time the selected alarm was acknowledged.
Alarm Class	The user-defined class that is assigned to the alarm in the Studio 5000 Logix Designer project.
Alarm Count	The number of times the alarm condition has entered the In Alarm state.
Alarm State	The state of the alarm condition: • Normal Unacknowledged (Normal, Unacked) • In Alarm Acknowledged (In Alarm, Acked) • In Alarm Unacknowledged (In Alarm, Unacked) • Normal Acknowledged (Acknowledge)
Condition	• Analog conditions include: HIHI, HI, LO, LOLO, ROC_POS, and ROC_NEG • Discrete conditions include: TRIP and TRIP_L
Current Value	The current tag input value that results in the alarm state.
Disable Time	The time the selected alarm was disabled.
Enable Time	The time the selected alarm was enabled.
Event Category	• Digital events are categorized as discrete. • Analog events are categorized as level.
Event Time	The date and time the alarm event occurred.
In Alarm Time	The time the selected alarm entered the In Alarm state.
Inhibit State	The value that is applied to the alarm condition that inhibits the alarm at some level. These states, indicated by an icon in the alarm table, include: • Bad Quality • Disabled • Suppressed • Shelved These states can be combined. When an alarm has multiple inhibit states that are applied, the icon of the highest inhibit state appears in the table.
Limit Value Exceeded	The condition limit that is assigned to the alarm in the Studio 5000 Logix Designer project.
Max Shelve Duration	The maximum time the alarm can be shelved.
Message	The message that is assigned to the alarm in the Studio 5000 Logix Designer project.
Name	The name of the alarm. This name includes the controller name of the alarm and the tag name. It can also include the name of the program if the tag is defined at the program level. Therefore, the alarm name can be configured in these configurations: ::ControllerName.TagName Or ::ControllerName\ProgramName.TagName
Out of Alarm Time	The time the selected alarm entered the Normal or Inactive state.
Priority	The urgency of the alarm condition: • Low • Medium • High • Urgent
Quality	The list of reasons why the alarm is of bad quality. This field is blank in the alarm summary because the alarm summary does not show bad quality alarms.
Severity	The numeric value that is mapped to the assigned priority of the alarm condition: • 1...250 (low) • 251...500 (medium) • 501...750 (high) • 751...1000 (urgent)
Shelve Duration	The default time for which the selected alarm condition is shelved to prevent the notification of new state changes. Shelve duration is assigned to the alarm in the Studio 5000 Logix Designer project.
Shelve Time	The time the selected alarm was shelved.
Suppress Time	The time the selected alarm was suppressed.
Tag 1 Value	The value of the associated tag parameter 1.
Tag 2 Value	The value of the associated tag parameter 2.
Tag 3 Value	The value of the associated tag parameter 3.
Tag 4 Value	The value of the associated tag parameter 4.
Unshelve Time	The time the selected alarm was unshelved. If the alarm is shelved, this time is the time that the alarm is unshelved automatically when the shelve duration expires.
Unsuppress Time	The time the selected alarm was unsuppressed.

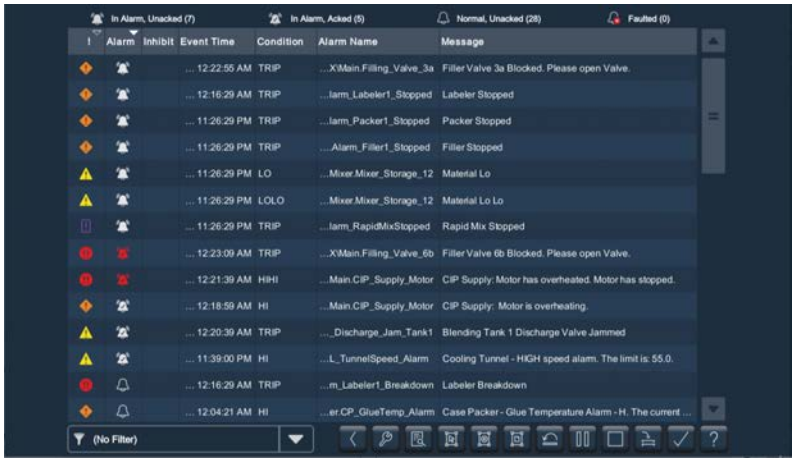
Filter the Alarms

You can filter the alarms to view only the alarms in the selected alarm state.

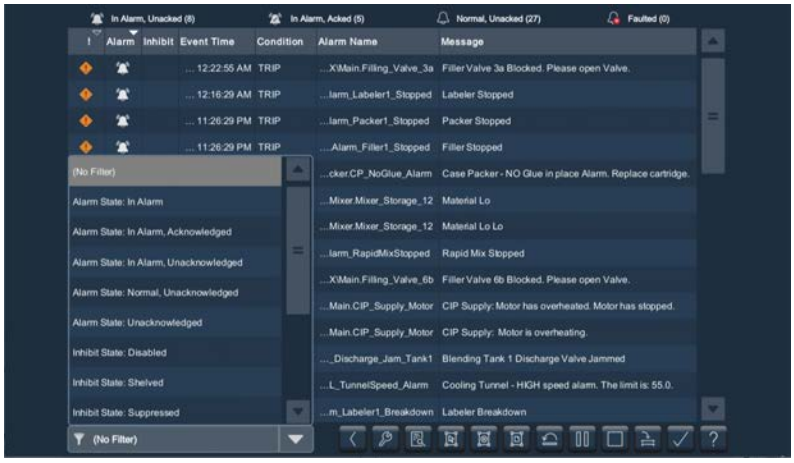
Filters are defined for the alarm summary, alarm manager, and alarm history viewer in View Designer.

To filter the alarms, follow these steps.

1. Tap the filter dropdown arrow.

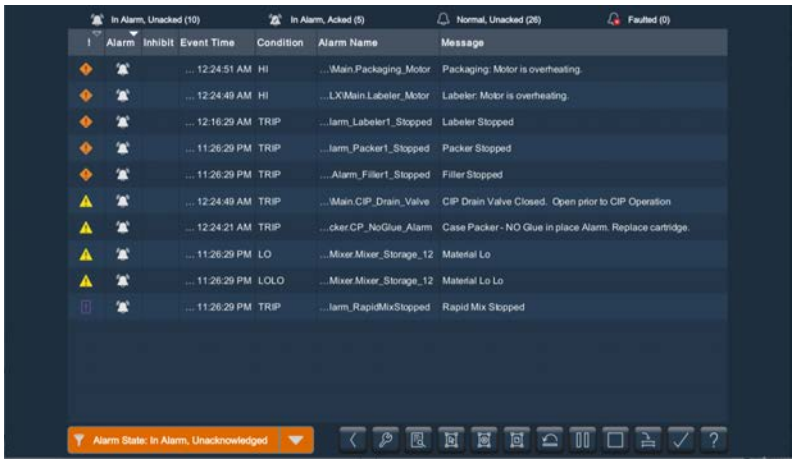


2. Tap the up or down arrows on the scroll bar to scroll through the filter choices



3. Tap the alarm filter that you want to use.

   The selected filter displays in the filter dropdown menu.



   To change the filter, tap the filter dropdown menu and select another filter.

   To turn off the filter, tap No Filter.

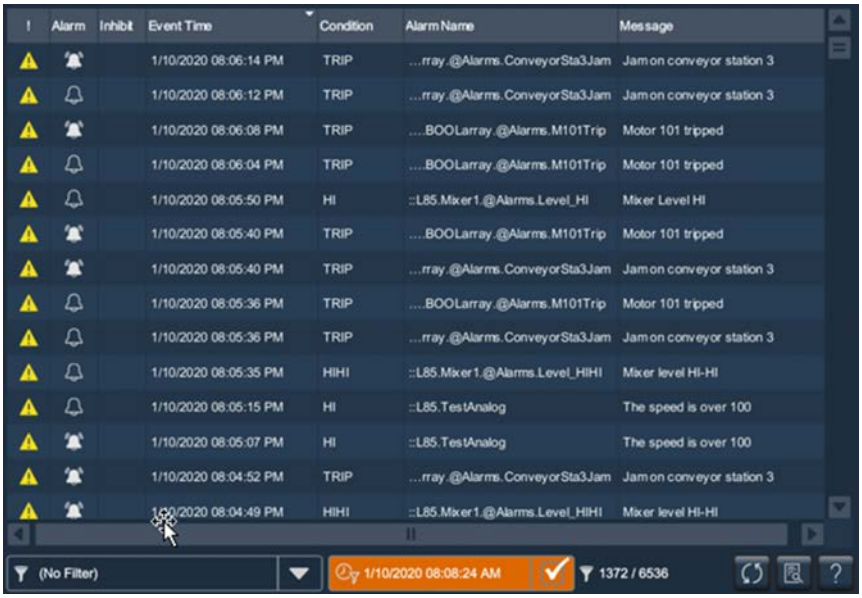
View the Alarm History

The PanelView™ 5510 terminal stores up to 40,000 alarm transitions. The Alarm History Viewer lets you view the alarm history at runtime. You can sort columns, filter by alarm attributes and by time, and view a details pane to see more information about a selected alarm record. The viewer supports both tag-based and instruction-based Logix alarms.

To view the alarm history, follow these steps:

1. On an application screen, press .
2. Tap , and press Enter

   The Alarm History Viewer displays the alarm history.



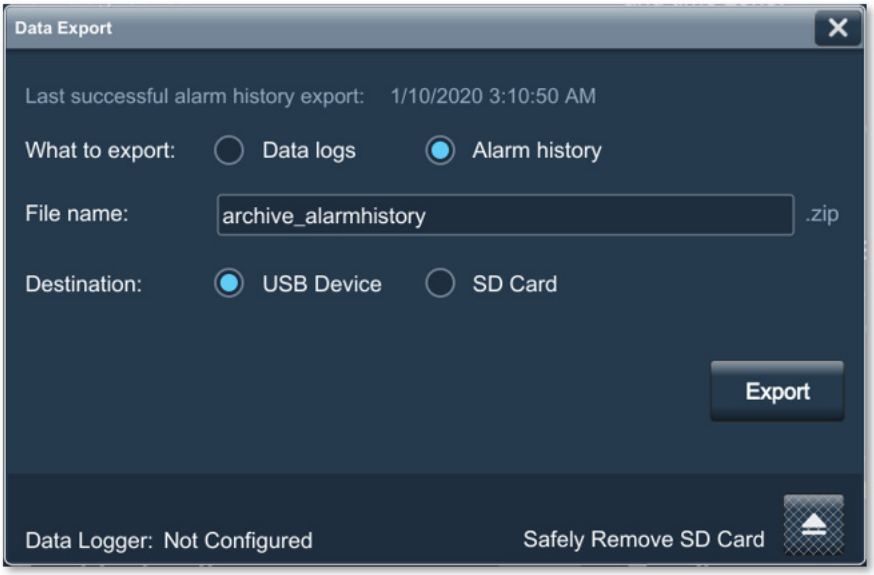
3. To change the way information is presented, you can sort columns by clicking the column header or select filters by following the instructions in Filter the Alarms on page 80.

Export the Alarm History

You can export the alarm history to an SD card or USB drive. The alarm history is exported as a zipped .CSV file that can be opened and analyzed in Excel®.

To export the alarm history, follow these steps:

1. Insert a USB device or an SD card into the PanelView terminal.
2. Navigate to the Settings screen.
3. Click Data Export.
4. In the Data Export dialog box, do the following:
   a. Select Alarm history.
   b. In the File name field, type a name for the file to be exported.
   c. Select either USB Device or SD Card.
   d. Click Export.



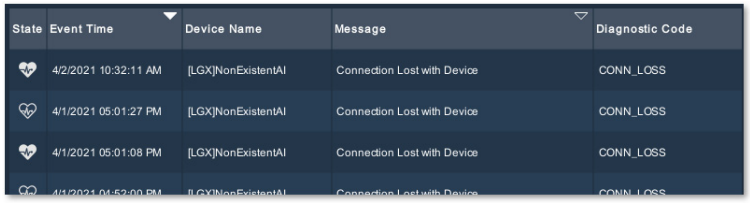
The alarm history is saved as a .zip file containing a .csv file. The .csv file can be opened in Excel for further analysis.

View Automatic Diagnostics

If you prefer, you can view automatic diagnostics for your controllers. This capability is available for ControlLogix® 5580 and CompactLogix® 5380/5480 controllers (version 33 and later), and it automatically displays control system faults with no HMI configuration required on your part.

To view automatic diagnostics, press the automatic diagnostics icon in the system banner.

A diagnostics summary displays current diagnostic notifications.



State	Event Time	Device Name	Message	Diagnostic Code
	4/2/2021 10:32:11 AM	[LGX]NonExistentAI	Connection Lost with Device	CONN_LOSS
	4/1/2021 05:01:27 PM	[LGX]NonExistentAI	Connection Lost with Device	CONN_LOSS
	4/1/2021 05:01:08 PM	[LGX]NonExistentAI	Connection Lost with Device	CONN_LOSS
	4/1/2021 04:52:00 PM	[LGX]NonExistentAI	Connection Lost with Device	CONN_LOSS

You can switch the terminal language at runtime, and view the diagnostic messages in the following languages:

- English
- Portuguese
- French
- Italian
- German
- Spanish
- Chinese
- Japanese
- Korean

The history element shows the past 1000 diagnostic events. These events are maintained through power cycles and project downloads, and they can be cleared by a firmware update or with a Clear Automatic Diagnostics History command.

Notes:

Install and Replace Components

Accessories and Replacement Parts

You can view a list of accessories and replacement parts in Table 5 through Table 9 in Chapter 1.

Review the specifications of a new component before you install it to verify that it is compatible with the terminal. Record the model, serial number, and any other pertinent information about new components for future reference.

IMPORTANT	We recommend that you use only Allen-Bradley® approved accessories and replacement parts.

Voltage Precautions

The terminals contain line voltages. Disconnect all power to the terminal before you install or remove components.

SHOCK HAZARD: Disconnect all power to the terminal before you remove components.
Failure to disconnect power can result in severe electrical shock to an individual or damage to the terminal.

Electrostatic Discharge Precautions

ATTENTION: Electrostatic discharge (ESD) can damage static-sensitive devices or microcircuitry.
- Disconnect all power before you work on the terminal as detailed in Voltage Precautions on page 85.
- Observe proper packaging and grounding techniques to help prevent damage.

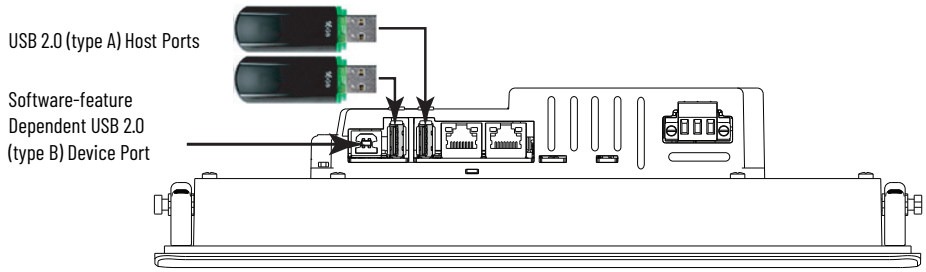
Follow these ESD precautions when you handle this terminal:

- Touch a grounded object to discharge potential static.
- Use an anti-static wriststrap that is connected to the work surface.
- Use properly grounded tools and equipment.
- Avoid touching pins, leads, or circuitry.
- Always hold components with a printed circuit board (PCB) by its edges and place it with the assembly side down.

Connect to USB Ports

The terminals have two USB 2.0 (type A) host ports and one USB 2.0 (type B) device port to connect to a host computer that is software-feature dependent. The two USB host connections can be used with an external keyboard, external mouse, and removable USB drives during runtime operations, and are intended for temporary use.

IMPORTANT See Required Circuit Port Parameters for USB Peripheral Devices on page 23 for information on the USB host ports and USB peripheral devices in hazardous locations.



Icons identify the USB host connections. The USB host connection supports 0.5A at 5V DC. Connected USB devices must not exceed this power load.

Table 23 - USB Connector Pinout

USB Port	USB Icon	USB Connector	Pin	Signal	Description
Host (type A)		4 3 2 1 Type A	1	VCC	+5V
			2	D-	Data -
Device (type B) **IMPORTANT:** This port is software-feature dependent.			3	D+	Data +
			4	GND	Ground

ATTENTION: USB devices that are not powered by the USB port must adhere to the following:
- The USB device must be within the same enclosure as the terminal.
- The USB device must be connected to a ground system common with the terminal or used with a USB hub that provides galvanic isolation.
- The USB device port is not for runtime operation.

Connect only externally powered USB hubs to the terminal that are USB 2.0 compatible. Before you attach devices to a USB hub, the power adapter must be connected and powered on.

USB Cables

Use only high-speed, USB 2.0 certified cables for error-free transmissions.

IMPORTANT The terminals have not been tested with USB 3.0 cables. We recommend only the use of USB 2.0 certified cables.

ATTENTION: When connecting peripheral devices such as an external mouse and/or keyboard, wireless devices are preferable. If you connect them via physical cables, take care to avoid routing the cables near potential sources of radiated electrical noise.

Insert an SD Card

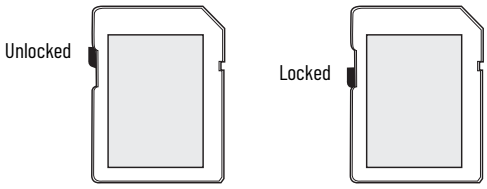
Only use a SD™ or SD HC™ card to load troubleshooting profiles and to save troubleshooting logs. For a list of cards recommended by Rockwell Automation, see Table 8 on page 17. The SD cards are hot-swappable; they can be inserted and removed while the terminal is powered on and in use.

WARNING: Explosion Hazard
In hazardous location installations, if you remove or insert an SD card while the power is on, an electric arc can occur. An electric arc can cause an explosion in hazardous location installations. If the terminal is installed in a hazardous location, do not remove and insert the SD card unless power has been removed or the area is known to be nonhazardous.

The SD card slot is accessible from the inside or back of the panel when the operator terminal is installed.

To install an SD card in the card slot, follow these steps.

1. Verify that the SD card is locked or unlocked according to your preference.
   - If unlocked, the terminal can write data to or read data from the card.
   - If locked, the terminal can only read data from the card.

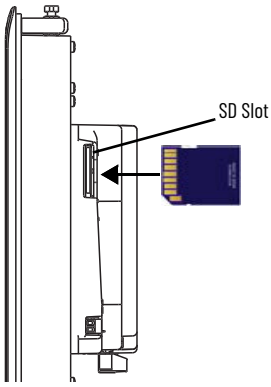


ATTENTION: Orient the SD card correctly before you insert it into the slot. If you force the card into the slot, you can damage the card or the terminal.

2. Insert the SD card firmly into the slot until you hear a click.

   When you hear the click, the card has locked into place.

   To remove the card, push the card in slightly to unlock the SD card so you can remove it from the slot.



Replace the Battery

The product has a lithium battery that provides back-up power for the real-time clock. The battery can be replaced while the product is mounted in the panel. You need a #1 Phillips screwdriver (#1 Phillips bit) to remove the logic module and access the battery.

This product contains a sealed lithium battery, which must be replaced during the life of the product.

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

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

This perchlorate warning only applies to primary Lithium Manganese Dioxide ($LiMnO^2$) cells or batteries, and products containing these cells or batteries, which are sold or distributed in California, USA.

WARNING: There is a danger of explosion if the lithium battery in this product is incorrectly replaced. Do not replace the battery unless power has been removed and the area is known to be nonhazardous.
Replace the battery only with catalog number 2711P-RY2032 or an equivalent CR2032 coin-cell battery.

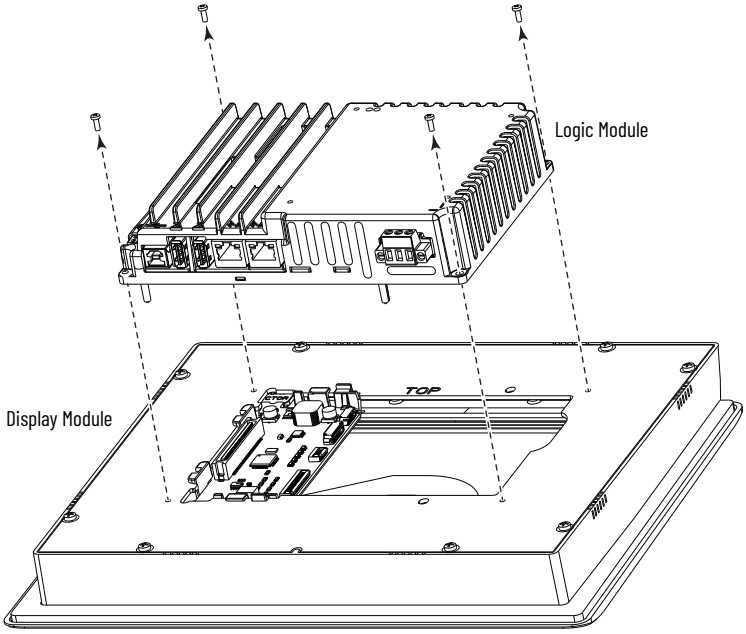
Do not dispose of the lithium battery in a fire or incinerator. Dispose of used batteries in accordance with local regulations.

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

Perchlorate material – special handling instructions apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate.

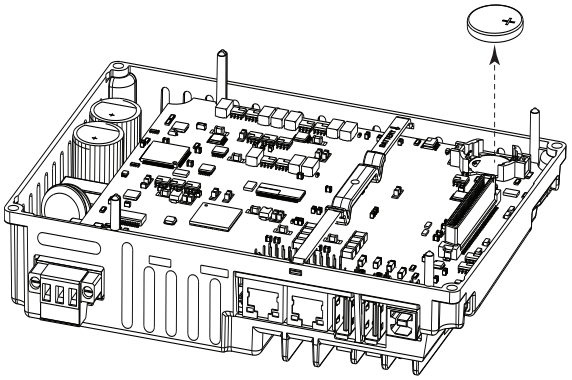
To replace the battery, follow these steps.

1. Disconnect power from the terminal.
2. Loosen the screws that secure the logic module to the back of the display.

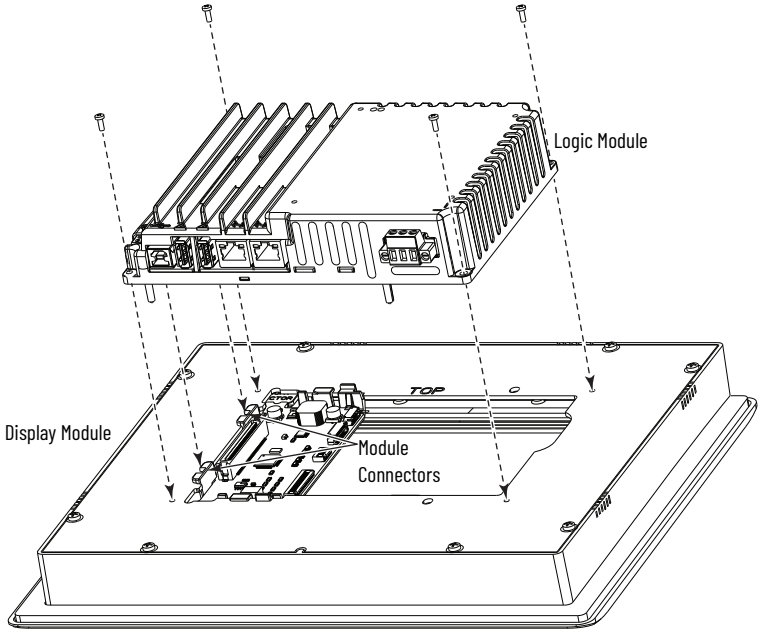


SHOCK HAZARD: This equipment is sensitive to electrostatic discharge (ESD).
Follow ESD prevention guidelines when handling this equipment.

3. Carefully lift the logic module away from the display module and turn over to expose the circuit board.
4. Locate the coin-cell battery on the circuit board.



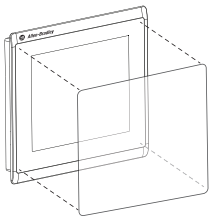
5. Remove the battery by lifting on the side of the battery.
6. Insert the new battery so the positive (+) polarity faces up.
7. Reattach the logic module by aligning the connector on the bottom of the logic module with the connector on the back of the display module.



8. Push down on the logic module and make sure that it is fully seated.
9. Tighten the screws to a torque of 0.68...0.90 N•m (6...8 lb•in).

Install a Protective Overlay

The overlay protects the touch screen and keys from scratches, dust, fingerprints, and external damage from chemicals or abrasive materials. See Table 5 on page 16 for a list of available overlays.



The protective overlay covers the entire surface of the terminal bezel. The overlay has a protective liner that is removed. Do not remove the liner until you are ready to install the overlay.

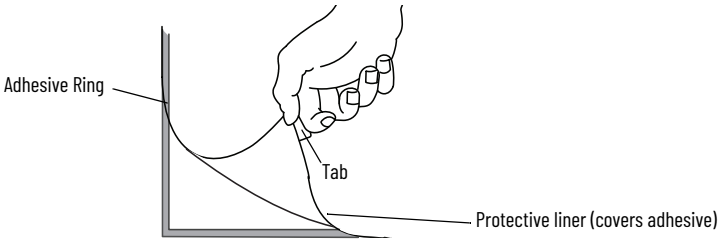
IMPORTANT Follow these guidelines when installing the overlay:

- Make sure that your hands are clean and dry.
- Handle the overlay by its edges to help prevent fingerprints or lint. If you do get marks or lint on the overlay, remove them before proceeding.
- Some terminals are shipped with a protective film applied to the touch screen surface. Ensure that this temporary film is removed prior to applying the protective overlay.
- Do not touch the adhesive on the back side of the overlay.

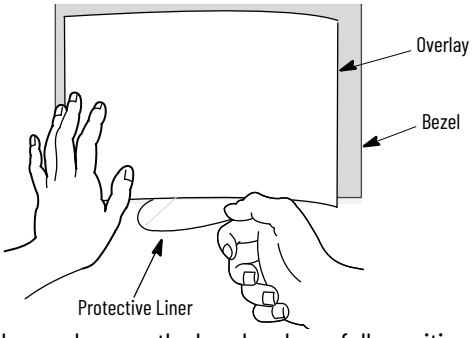
Before installing the overlay, clean the touch screen and keys, if present, using a lint-free cloth and a mild glass cleaner. Remove all fingerprints, grease, or dust. Marks that are not removed get trapped underneath the overlay. Grease also affects the adhesion of the overlay.

To apply the protective overlay, follow these steps.

1. Pull the tab from one of the short sides and partially peel the liner from the adhesive.



   Hold the peeled back portion of the protective liner out of the way.



2. Center the overlay over the bezel and carefully position the adhesive on the terminal.

   While the protective liner is covering the rest of the overlay, verify that it's centered.
3. Slowly remove the rest of the liner, using a soft cloth to press the overlay on the screen.

   Make sure that the overlay lies flat with no bubbles or warps.
4. With a soft cloth or finger, press around the edges of the overlay to seal it, and remove any air bubbles trapped in the adhesive.

Clean the Overlay

Clean the overlay by using a clean, lint-free cloth, and a mild glass cleaner that leaves no streaks. Window or eye glass cleaner is recommended. Avoid cleaners that contain abrasives.

Remove the Overlay

Remove the overlay if it is damaged or needs replacement. Lift a corner and slowly pull off the overlay. Use isopropyl alcohol to remove any residual adhesive. Do not reuse the overlay.

Update Firmware

Before You Begin

Perform these tasks to prepare for the update:

- Verify that FactoryTalk® Linx and ControlFLASH Plus™ are installed.
- Verify that FactoryTalk Linx is configured with an Ethernet driver to communicate with the PanelView™ 5000 terminal.
- Verify that downloads to the terminal are allowed. If downloads are disabled, you cannot update the terminal firmware.

  See Disable Downloads to the Terminal on page 61 and make sure that downloads are allowed to the terminal.
- Verify the catalog number of your product and the current firmware revision on the terminal.

  See View the Firmware Revision on page 63 to get the catalog number and current firmware revision.
- Verify that you have a View Designer .vpd file of your application currently running on the PanelView 5000 terminal. If not, upload the application to View Designer, so you can redownload it after the firmware update.

  The firmware update clears the existing application on the PanelView 5000 terminal, but maintains configuration data such as Ethernet settings, display brightness, time and date, and touch screen settings.

Get the Terminal Firmware

To download terminal firmware and release notes, see Download Firmware, AOP, EDS, and Other Files on page 7.

The terminal firmware is also typically installed along with Studio 5000® in the default folder C:\Users\Public\Documents\Rockwell Automation\Firmware Kits.

Install the ControlFLASH Plus Software

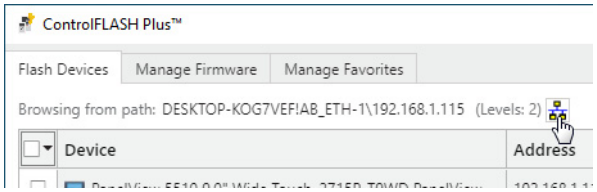
ControlFLASH Plus or ControlFLASH™ software is required to update firmware on the PanelView 5510 terminal. This software is included in the Studio 5000® installation package.

For details on how to install ControlFLASH software, see the ControlFLASH Plus Quick Start Guide, publication CFP-QS001.

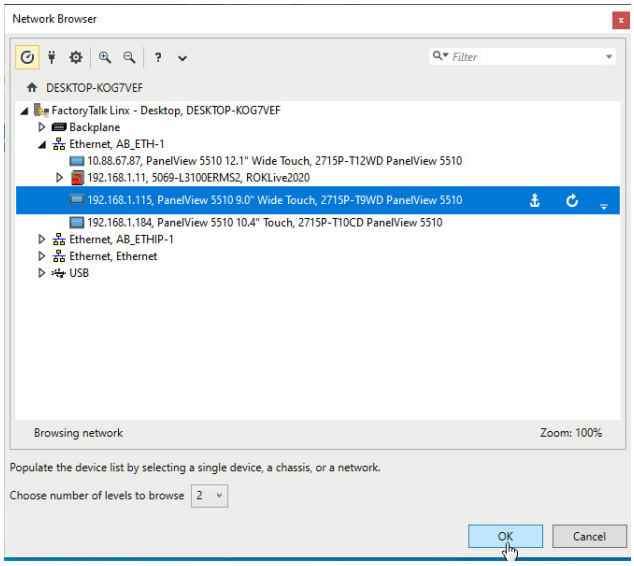
Update the Firmware by Using ControlFLASH Plus Software

To use the ControlFLASH Plus software to update the firmware in a PanelView 5510 terminal, follow these steps.

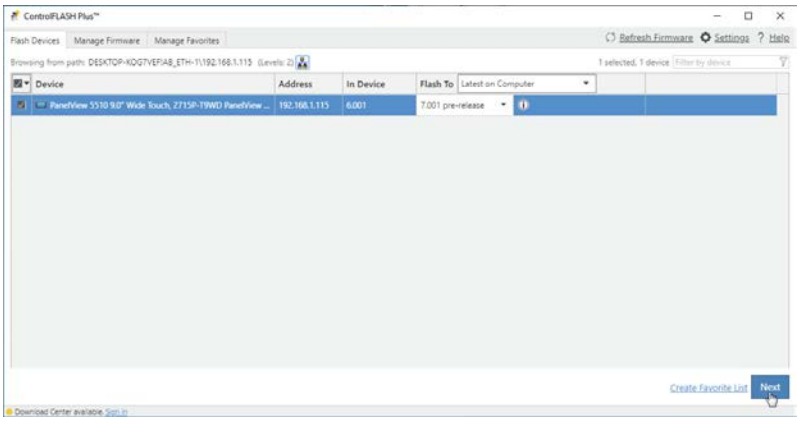
1. Click Start>FLASH Programming Tools>ControlFLASH Plus.
2. To open the FactoryTalk Linx Network Browser, click the Network Browse button.



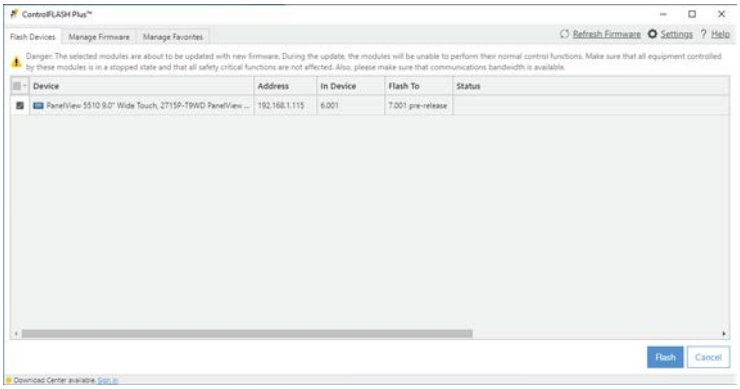
3. Select your PanelView 5000 terminal, and click OK.



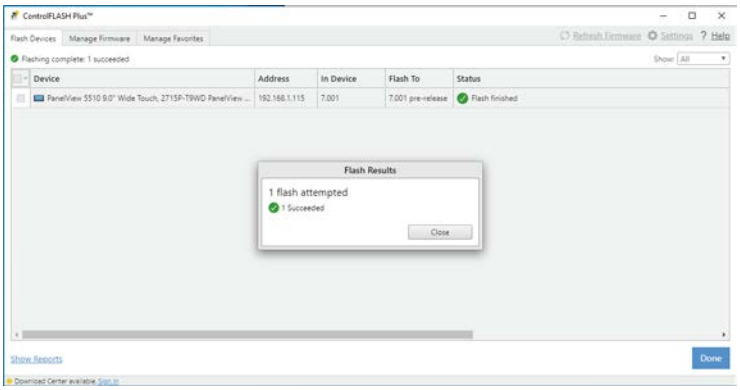
4. Select the firmware revision to use in the Flash To column, make sure the checkbox to the left of your PanelView 5000 terminal is selected, and then press Next.



5. Read the warning and confirm the flash update by pressing Flash.



6. Once the flash update is complete, press Close.



7. To exit ControlFLASH Plus, press Done.

Verify the Firmware Update

To verify that the firmware revision is updated, use the HMI Device settings. For instructions on how to do this, see View the Firmware Revision on page 63.

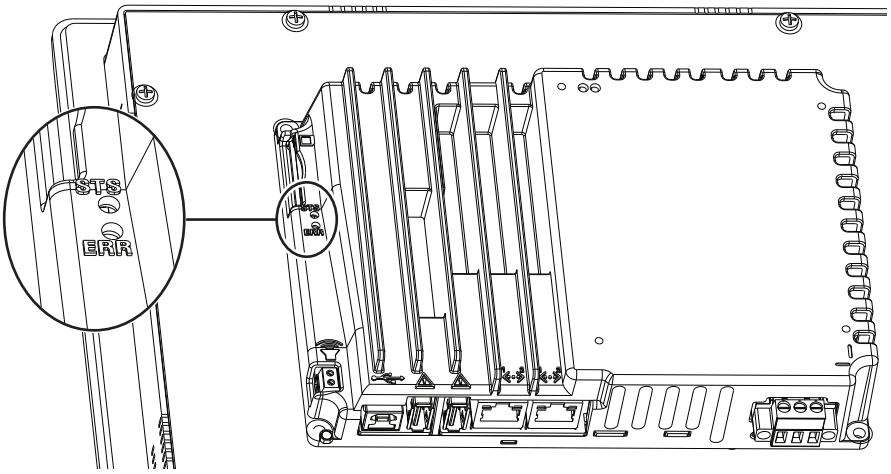
Notes:

Troubleshooting

Status Indicators

The back of the terminal has two indicators to identify system status:

- Status (STS) indicates that the terminal is on and in use. Its light color is green.
- Error (ERR) indicates hardware and firmware faults. Its light color is red.



At startup, the STS and ERR indicators blink on and off, then the STS indicator blinks to signal progress during startup. If the indicators remain off, check the power cable.

After a successful startup, the STS indicator remains on.

This table shows indicator states if the terminal stops during startup.

Table 24 - Fault Indicator States during Terminal during Startup

ERR (red) Indicator	STS (green) Indicator	Description	Recommended Action
Blinking	On	Recoverable firmware error.	Reload the firmware.
	Off	Recoverable configuration failure	Restore factory defaults. Refer to Restore Factory Defaults on page 103.
On	On	Fatal hardware error	Replace the terminal.
	Blinking	Fatal display hardware error	Replace the terminal.

View Diagnostic Information for the Configured Controller

You can view diagnostic information for the controller that is configured to operate with the terminal.

To view diagnostic information for the controller, follow these steps.

1. Press the navigation button on the terminal.
2. On the Settings screen, tap Controllers.
3. Tap the diagnostics tab.

The diagnostic information for the controller includes these data.

Data Type	Description
Active data items	The number of data items on scan for the controller.
Number optimized blocks	The numeric of optimized data blocks on scan for the controller.
Activity	A count that increments when a communication packet is received from the controller.
HMIBC (I/O) connections	The number of Class 1 Common Industrial Protocol (CIP™) connections to the controller.
Alarm connections	The number of alarm CIP connections to the controller.
Data connections	The number of Class 3 CIP connections to the controller.

4. To close the dialog, tap X.

Troubleshooting Profiles

Rockwell Automation compiles data about your system in a secure, encrypted format. This profile is stored on the terminal and can be used to improve usability and assist with troubleshooting.

If you contact technical support, a representative can ask you to export the troubleshooting log to a USB drive, or SD™ or SDHC™ card. You can also import a troubleshooting profile from a USB drive or SD card to capture additional data.

If removable media is needed, then the USB device or SD card must be FAT32 formatted, have write permissions, and sufficient space.

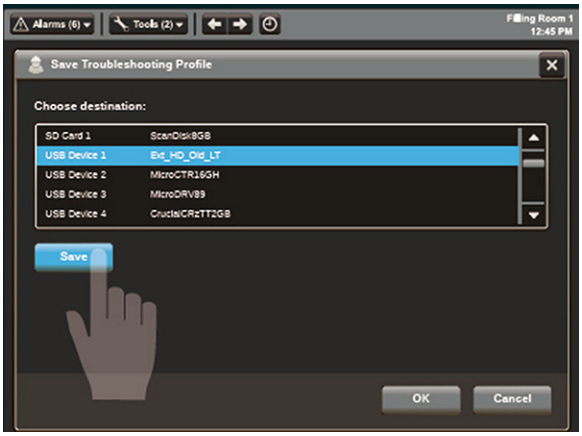
Import a Troubleshooting Profile

The troubleshooting dialog indicates whether a default or imported troubleshooting profile is being used in the terminal. If an imported file is in use, a green check mark and the name of the imported file appears next to the Import Profile button.

To import a troubleshooting profile from a USB drive or SD card, follow these steps.

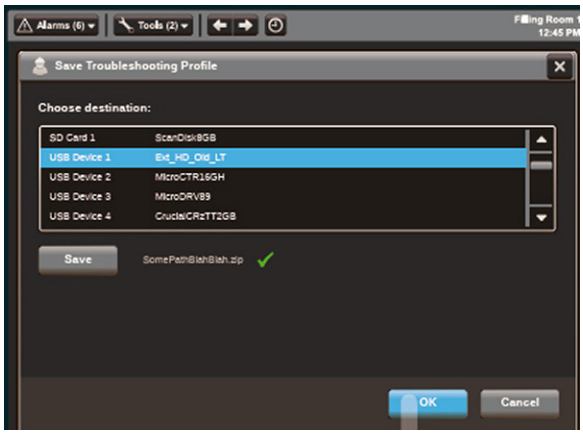
1. Press the navigation button on the terminal.
2. On the Settings screen, tap Troubleshooting.
3. Insert a USB drive or SD card that contains the troubleshooting profile into the appropriate slot on the terminal.
4. Tap Import Profile.

5. Tap to select the target USB device or SD card that contains the profile.
6. Tap Save.



7. To close the dialog, tap OK.

   The name of the imported file is displayed. A green check next to the file name means that the import is complete.



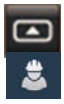
ATTENTION: Do not remove the USB drive or SD card before the import operation is complete. Otherwise, the USB drive or SD card can become corrupt.

8. Tap OK.

   The file is stored on the terminal and captures data in an encrypted format for use by Rockwell Automation technical support.

Export a Troubleshooting Log

To export the troubleshooting log to a USB device or SD card, follow these steps.



1. Press the navigation button on the terminal.
2. On the Settings screen, tap Troubleshooting.
3. Insert a USB drive or SD card into the appropriate slot on the terminal.
4. Tap Export.

5. Tap Save Troubleshooting Profile.

6. Insert a USB drive or SD card into a slot on the terminal.

7. Tap Export.

   The troubleshooting log is exported and the date a time of the last export is displayed next to the Export button.

ATTENTION: Do not remove the USB drive or SD card before the import operation is complete. Otherwise, the USB drive or SD card can become corrupt.

8. To close the dialog, tap X.

Your technical support contact at Rockwell Automation can provide you with information on where to send the profile.

Terminal Does Not Start Up

If the terminal does not start up normally, check the table for possible causes.

Table 25 - Terminal Does Not Start Up Properly

Check For	What to Do	See
Insufficient power	Make sure that the device is receiving adequate power: • Check the DC power requirements.	page 35
Improper power wiring	Verify that the power wiring is correct: • Check the wiring specifications. • Check the DC power wiring.	page 34 page 35
Status indicators	Check the status indicators during startup.	page 95
Stalled progress indicator	If a terminal stalls at the progress indicator and does not load an application or configuration screen, restore the factory defaults.	page 103
Stuck keys	Check for stuck keys on terminals with a keypad and function keys. A stuck key helps prevent the terminal from starting up properly.	
Does an object touch the display	Verify that nothing is pressed against the display or that you are not touching the display during startup.	

Terminal Restarts Intermittently

If the terminal restarts intermittently, check the table for possible causes.

Table 26 - Terminal Restarts Intermittently

Check For	What to Do	See
Improper power wiring	Verify that the power wiring is correct: • Check the wiring specifications. • Check the DC power wiring.	page 34 page 35
Over-temperature conditions	Make sure that the processor is not exceeding temperatures for normal terminal operations: • Check the processor temperature. • Check for adequate clearances around the terminal in the panel. • Check for proper operating temperature.	page 64 page 24 page 64

Touch Screen Issues

If the touch screen does not operate or respond correctly to touches with a finger or stylus, check the table for possible causes.

Table 27 - Touch Screen Not Responding

Check For	What to Do	See
Improper calibration	Check for activation points offset from touch points. Calibrate the touch screen.	page 59
Non-functional touch screen	Check the touch screen for damage, such as cuts or excessive wear. If there is damage, replace the terminal.	
Multiple input elements touched	Application screens contain graphic input elements that are configured in the View Designer application. When touched, these elements perform operations in a predictable manner. For example, an input element is configured to navigate to a specific screen in the application or start a motor when touched. Multiple operations cannot be conducted simultaneously. Doing so results in an unintended operation. • Do not touch multiple input elements at one time. • Do not rest a hand or multiple fingers on the display.	

Display Issues

The display is unreadable or dims unexpectedly.

ATTENTION: If the display darkens, or if the backlight is not functioning properly, the screen can be difficult to read and use of this touch screen could result in a potentially hazardous outcome. **Do not use the touch screen under these circumstances.** The design of the system must take into account the possibility of the touch screen losing functionality and unable to be used to maintain or change control of the system. The touch screen shall not be the single point of control of critical functions and is not intended to replace an E-stop.
System design should follow all applicable code and good engineering practice. Factors to consider include:

- The possibility of an unreadable display
- The possibility of an inoperable touch screen
- Unexpected communication errors or delays
- Operator error in the control of the system
- Proper use of E-stops and other safety practices

Provide means to achieve a safe state during anomalies and ensure that the system has adequate redundancy for critical functions.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Table 28 - Dim Display

Check for	See
Low display brightness setting	Adjust the Brightness of the Display on page 57.
Low brightness level of screen saver	Configure the Display Screen Saver on page 58.

Extend the life of the backlight by reducing the display brightness, by using the screen saver with reduced brightness, or operating at lower temperatures.

Ethernet Issues

This table provides tips on how to isolate Ethernet anomalies.

Table 29 - Ethernet Connection Issues

Check for	Description
Status of invalid Ethernet connection	• Green indicator is on when a link is established. • Yellow indicator blinks when activity is detected. • Verify network connections.
Poor cable connections	Check the Ethernet cabling for the following: • Make sure that the cables are fully connected. • Check for cable crimping. • Check the Ethernet switch connections. • Check the Uplink ports.
Invalid IP address of terminal	If DHCP is enabled, the terminal automatically acquires a valid IP address from the network after startup. The TCP/IP protocol automatically assigns 169.254.*xxx.xxx* when it fails to acquire an IP address from the network. Usually, an IP address that begins with 169 does not support a network connection. See Configure the IP Address of the Terminal on page 51.
Conflict Between IP addresses	If DHCP is not enabled and a static IP address is specified, make sure that the IP address does not conflict with the address of another device on the network. See Configure the IP Address of the Terminal on page 51.

Cannot Download Application to Terminal

You are unable to download an application to the terminal.

Table 30 - Unable to Download Project to Terminal

Check for	Description
Application downloads are disabled on the Settings screen	Verify that downloads are enabled. See Disable Downloads to the Terminal on page 61.
Download of project to correct HMI device	Check the following in the View Designer application: • The project that is downloaded to the correct HMI device • IP address of HMI device is correct
Ethernet connection	Make sure that an Ethernet cable is connected between the computer and the terminal. Verify that the Ethernet port is configured properly. See Configure the Ethernet Ports on page 54.

Performance Is Slow

If the response time of the application is slow, for example screen changes or text display changes, check for the following conditions:

- Application screens that contain too many elements
- A controller that is programmed for feedback can cause delays
- Slow network performance or noise can result in retries

Resistance to Chemicals

The outer surfaces of the terminal including the bezel, touch screen overlay, and panel gasket are tested for chemical resistance. Some of the chemicals can cause discoloration, but they do not interfere with the operation of the terminal.

For more information on the chemical resistance of the product, go to https://www.rockwellautomation.com/knowledgebase and search the Knowledgebase for keywords 'Chemical Resistance PanelView™ Plus'.

IMPORTANT	Do not operate the terminal in direct sunlight. Direct exposure to ultraviolet light can discolor the touch screen.

Clean the Display

A protective overlay can help extend the life of the terminal and make it easier to clean the display. Table 5 on page 16 provides catalog numbers for overlays.

ATTENTION: Do not use abrasive cleaners or solvents, they can damage the display. Do not scrub or use brushes.
Do not apply cleaning solution directly on the terminal screen, the solution can drip or seep onto the gasket. Apply cleaning solution to a clean sponge or soft cloth, and gently wipe the screen to remove the dirt and grime.

To clean the display, follow these steps.

1. Disconnect power from the terminal at the power source.

   ATTENTION: Cleaning a display while power is applied can result in unintended activation of screen items.

2. To clean the display and help prevent scratches, use a clean sponge or soft cloth with mild soap or detergent.
3. Dry the display with a chamois or moist cellulose sponge to avoid water spots.

Remove Paint and Grease

To remove paint or grease from the bezel that is properly mounted in a NEMA, UL Type, or IP rated enclosure, follow these steps.

1. Rub lightly with isopropyl alcohol (70% concentration).
2. To remove residue, use a mild soap or detergent solution.
3. Rinse with clean water.

Equipment Wash Downs

ATTENTION: Do not use a high-pressure washer for cleaning the front bezel of the terminal. A high-pressure washer can damage the terminal.
Do not use a high-pressure washer for cleaning vented enclosures. Water can enter the enclosure and damage the terminal and other equipment.

Ship the Terminal

If you ship the enclosure with the terminal installed, make sure that the terminal is properly secured and guarded against damage from impact, sharp objects, or abrasive materials.

ATTENTION: Rockwell Automation is not responsible for damage to a product that is shipped or transported while installed in a panel or enclosure.

Restore Factory Defaults

Restore a terminal to its default settings to refresh the terminal or to recover from an invalid application configuration. The restore process does not affect the firmware revision on the terminal.

ATTENTION: Restoring factory defaults also removes some data.
- Upload the application with the View Designer application.
- Record the terminal settings so you can update them after the restore.

If a terminal stalls at the progress indicator after a restart and does not load the application or configuration screens, you can restore the factory defaults.

The restore procedure performs the following actions:

- Removes the user application
- Restores the terminal settings to their default state

Table 31 - Factory-default Terminal Settings

Terminal Settings	Factory Default Setting
Backlight intensity: 1...100%	100%
Screen saver • Enabled or disabled • Timeout • Dimmer: 1...100%	 • Disabled • 10 minutes • 10%
Touch screen calibration	Factory calibrated
Ethernet • DHCP-enabled or static IP address • Speed: 10 Mbps, 100 Mbps, Auto sense • Duplex: Half, full, auto sense	 • DHCP-enabled • Auto sense link speed • Auto sense duplex mode

To restore the terminal to its default state, follow these steps.

1. Cycle power to the terminal.

   The Allen-Bradley® logo displays during startup.
2. Wait a few seconds, and then touch the Allen-Bradley logo when the copyright line becomes brighter.

   Wait a few seconds before you touch the logo. If you touch the logo too soon during startup, this error text is displayed under the copyright line.

   ERROR! FEHLER! ERREUR! ERRORE!

   If this error text is displayed, cycle power to the terminal and wait a few seconds longer before you touch the logo.

   The normal startup is suspended so the restore procedure can initiate.

   You are asked if you want to restore the terminal to its defaults.
3. To continue tap Yes, or tap Cancel to resume a normal startup.

   You are asked to confirm the removal of all user files such as applications.
4. To continue tap Yes, or tap Cancel to resume a normal startup.

   Progress messages appear on the screen during the restore operation. When the restore is complete, the terminal performs a normal startup.
5. From the Settings menu, update the terminal network settings.
6. Download an application to the terminal by using the View Designer application.
7. From the Settings menu, update any remaining terminal settings as appropriate.

For details on how to modify device configuration settings, see Disable Downloads to the Terminal on page 61.

Dispose of the Terminal

At the end of its life, collect the terminal separately from any unsorted municipal waste.

These terminals contain heavy metals that can contaminate the earth. Therefore, check with local health and sanitation agencies for ways to dispose this equipment safely.

History of Changes

This appendix contains the new or updated information for each revision of this publication. These lists include substantive updates only and are not intended to reflect all changes. Translated versions are not always available for each revision.

Change Log

2715P-UM001G-EN-P, July 2025

Change
Added information regarding USB peripheral devices and radiated electrical noise

2715P-UM001F-EN-P, January 2025

Change
Summarized catalog numbers on the front cover
Updated the bulleted list of features and capabilities
Updated the Product Selection table with the 10-in. and 15-in. stainless-steel catalog numbers
Added the Stainless Steel Terminal Gasket Kits table to the Accessories section
Added catalog numbers for the PanelView 5510 stainless-steel terminals
Added the capacitive touch terminal information

2715P-UM001E-EN-P, October 2021

Change
Added catalog numbers for the PanelView 5510 stainless-steel 9-in. wide-screen and 12-in. wide-screen terminals
Added catalog numbers for the Protective Overlay and Mounting Hardware
Added new screen captures that depict Studio 5000 View Designer, version 8 features

2715P-UM001D-EN-P, May 2020

Change
Added catalog numbers for the PanelView 5510 conformal-coated terminals
Added instructions on how to configure the keypad size
Added instructions for modifying the PanelView 5000 screen color settings by using HMI device tags
Added instructions on how to load an application from removable media
Added instructions on how to view and export the alarm history

2715P-UM001C-EN-P, March 2019

Change
Converted content in Package Contents section into a table
Increased the maximum number of Logix-based alarms to 4,000
Added information about the number of Logix-based alarms supported by different versions of the Studio 5000 View Designer or Logix Designer applications
Increased user RAM from 250 MB to 1 GB in Product Selection table
Added information about Secure Digital (SD) cards
Added Installation Precautions section
Added Environment and Enclosure Information section
Added Wiring and Safety Guidelines
Added Outdoor Installation Recommendations
Added Accessories and Replacement Parts section

2715P-UM001C-EN-P, March 2019

Change
Added Voltage Precautions section
Added Electrostatic Discharge Precautions section
Added Dispose of the Terminal section

2715P-UM001B-EN-P, April 2012

Change
Revised acceptable angle callouts in the Acceptable and Unacceptable Mounting Positions figure
Added information about the lower temperature range for certain terminal sizes
Added information about SELV and PELV power supplies
Added information about using an SELV or PELV power source when connecting to DC power

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, Knowledgebase, and product notification updates.	rok.auto/support
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Technical Documentation Center	Quickly access and download technical specifications, installation instructions, and user manuals.	rok.auto/techdocs
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.	rok.auto/pcdc

Documentation Feedback

Your comments help us serve your documentation needs better. If you have any suggestions on how to improve our content, complete the form at rok.auto/docfeedback.

Waste Electrical and Electronic Equipment (WEEE)

At the end of life, this equipment should be collected separately from any unsorted municipal waste.

Rockwell Automation maintains current product environmental compliance information on its website at rok.auto/pec.

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