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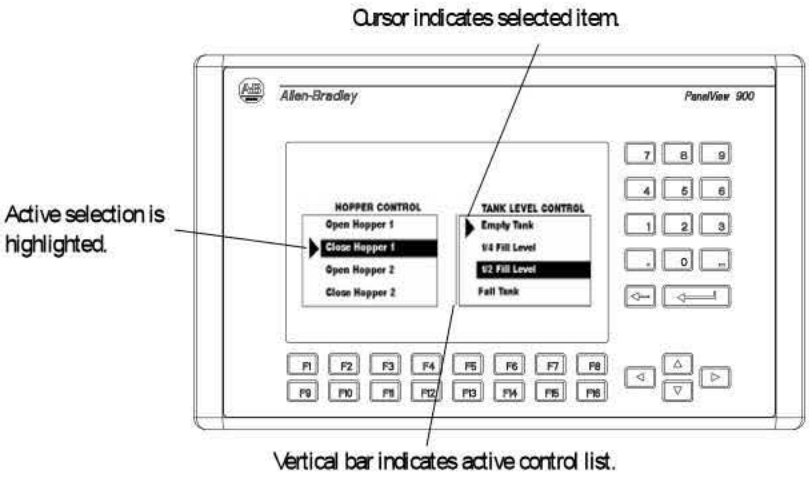
All push buttons are momentarily disabled (0.5 second) after a screen change. This prevents multiple buttons, in the same location on different screens, from being pressed inadvertently.

All push buttons must be released on the previous screen before buttons can be pressed on the new screen.

Momentary push buttons are assigned a hold time. The hold time maintains the pressed state so that each change of state can be read by the controller at least once. The hold time varies between 0 and 1 second depending on the configured setting.

Control Lists

Control lists perform functions similar to push buttons. They can modify either individual bits or values at a controller address.



Active List Item

Active item is highlighted.

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Active Control List

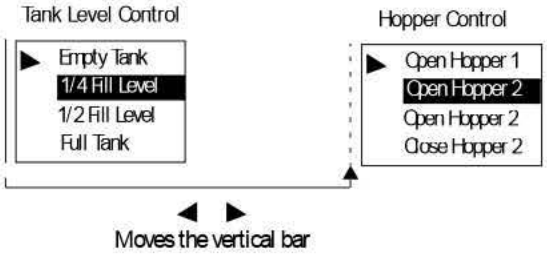
Has a vertical indicator bar on the left side of the list. Only one control list or numeric entry cursor point can be active on a screen.

To activate a control list:

touch the object (touch screen terminals only)

or press the assigned function key

or on a screen with multiple control lists or numeric entry cursor points, press the Left ◄ or Right ► arrows to move the indicator bar between the objects.

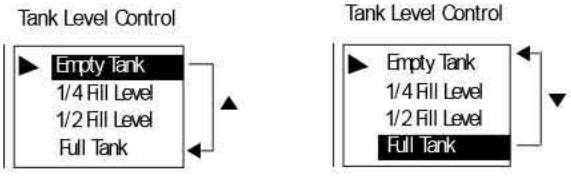


Cursor

Indicates the selected item. Move the cursor up or down the control list using the Up ▼ and Down ▲ arrow keys. Cursor operation is configured by the application designer. If the cursor is at the first or last item in a control list, pressing the Up arrow (when at the top) or the Down arrow (when at the bottom) will either:

cause no movement of the cursor.

move the cursor to the top or bottom of the list.



If the list contains more items than can appear at one time, the list scrolls. If the cursor is at the top or bottom of a scrolling list, the list scrolls one row at a time as the arrow keys are pressed.

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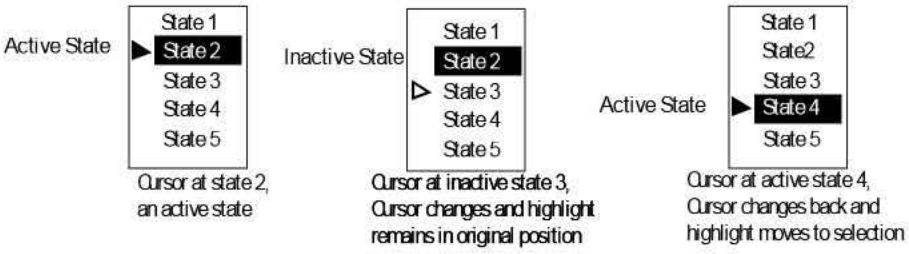
List Keys

Touch screen terminals require list keys on the screen to move the cursor in a control list and select entries. The following table shows the list keys.

List Key	Type	Description
▲	Move Up	Moves the cursor to the previous item in the list.
▼	Move Down	Moves the cursor to the next item in the list.
▲	Home	Moves the cursor to the first item in the list.
▼	End	Moves the cursor to the last item in the list.
⇞	Page Up	Moves the cursor up one page in a scrolling list.
⇟	Page Down	Moves the cursor down one page in a scrolling list.
←	Backspace	Returns the cursor to the currently highlighted selection.
↵	Enter	Confirms a selection and sends the value to the controller if Write on Enter was configured for the control list.

Cursor-piloted Control Lists

On a piloted control list, some items are under controller operation only. In addition, some items may be designated as inactive. You cannot select controller items or inactive items. In both cases, the cursor is hollow when you select the item.



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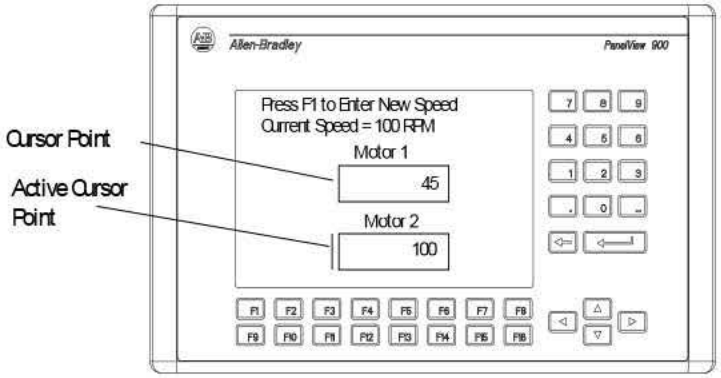
Follow these steps to select an item on a control list.

1. Select the control list by:
   touching the screen object (touch screen terminals only).
   pressing its function key.
   pressing the Left ◄ or Right ► arrow keys until the control list has a vertical bar indicating it is active.

2. Move the cursor up or down the list using the Up ▲ or Down ▼ arrows. If the cursor is hollow, the item cannot be selected.

3. Depending on the application design, you may or may not have to press to enter the selection indicated by the cursor.

Two types of controls allow a numeric value at a controller address: Cursor Point and Keypad Enable button.



Numeric Entry Cursor Point

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Cursor points appear as a box. A vertical line on the left side of the box appears when the cursor point is selected. Data is entered in a numeric entry scratchpad.

Keypad Enable Button

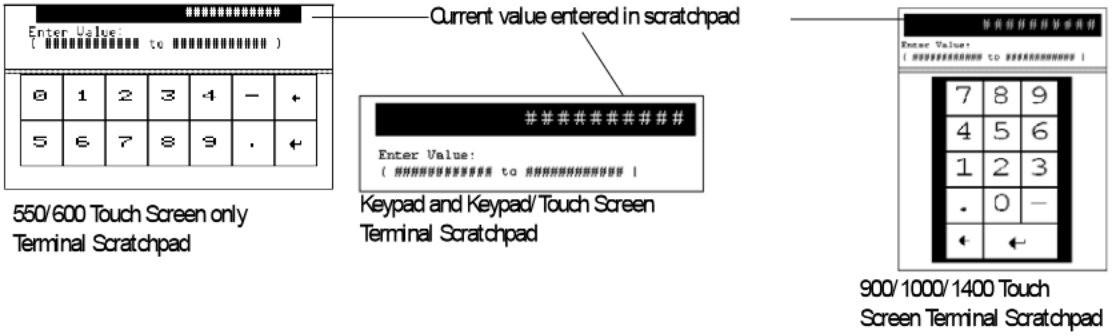
Enter Value 367

A keypad enable button appears like a standard push button. The data displayed in the button is the last value sent to the button's tag address. When selected, a numeric entry scratchpad opens.

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Scratchpad

Both controls display a numeric entry scratchpad in the center of the screen. The scratchpad shows the current value entered and the range of possible values you can enter.



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

Follow these steps to enter a cursor point.

1. Select the cursor point by:
   touching the object (touch screen terminal only).
   pressing the associated function key.
   pressing the Left ◄ or Right ► arrows until the cursor point shows a vertical bar.

2. Press Enter or type the first digit of the number you want to enter.
   The scratchpad opens.

3. Enter the value using the terminal keypad and press Enter .

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Follow these steps to enter a value by using the keypad enable button.

1. Press the keypad enable button.
   The scratchpad opens.
2. Enter the value by using the terminal keypad and press Enter .

Follow these steps to change an entry on a scratchpad.

1. Press the backspace key to delete one character at a time.
2. Enter a new value and press Enter .

Follow these steps to cancel a scratchpad.

1. Press the Backspace key to delete one character at a time.
   When pressing the Backspace key in an empty scratchpad

PanelView 300, 300 Micro Terminal Thumbwheel Scratchpad

The thumbwheel scratch pad lets you enter values on terminals without a numeric keypad or touch screen by cycling through the available characters one position at a time. Use the Up ▲ and Down ▼ cursors to cycle through the available characters. The thumbwheel scratchpad shows:

display area where the value is entered or modified

ESC - F1 key to exit the scratchpad without saving any changes or sending a value

Scroll through and select digits 0 9. You can select the sign (+, -) from the leftmost column. If the decimal point is keypad controlled, you can also select a decimal point (if one has not been previously selected).

Keys	Function
Left / Right Cursor ◄ ►	Moves the cursor one position to the left or right in the display area. The cursor wraps around to the opposite side when reaching the leftmost or rightmost character,
Up / Down Cursor ▲ ▼	Cycles through the available characters at the cursor position.
Enter Key	Send the numeric value to the logic controller. Leading and trailing spaces are removed.

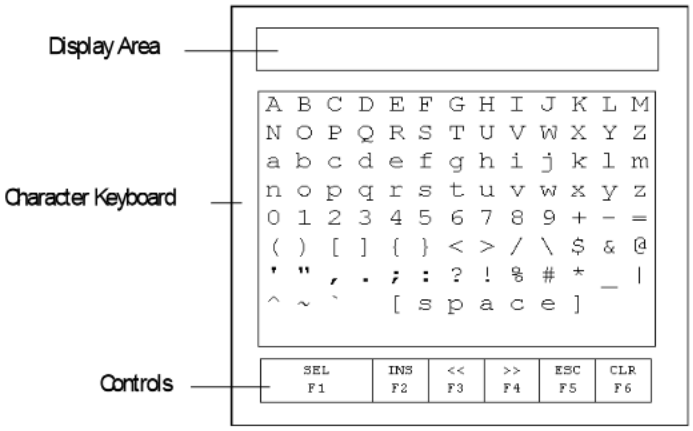
TIP The Up/Down/Left/Right cursor keys can have an autorepeat configured. If you hold down the key, the key is repeated at the set key repeat rate.

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ASCII Entry Controls

ASCII entry controls let you send an alphanumeric string (up to 128 characters) to a controller. Like numeric entry controls, the ASCII entry control can appear on a screen as a keypad enable button or a cursor point. When either object is activated, the ASCII scratchpad opens. The look of the scratchpad depends on the terminal.

ASCII Scratchpad - Keypad or Keypad/Touch Screen Terminals



Select characters from the Character Keyboard by moving the cursor (with the keypad arrows) over a character and pressing the Sel-F1 function key. The character appears in the Display Area. This area scrolls so you can enter a string that is longer than the Display Area. All characters are sent to the controller even if not visible.

After entering characters, press to send the string to the controller. The leftmost character is placed in the high byte of the first word (of the write tag), the next character in the low byte, and so on.

TIP DeviceNet ASCII entry allows for byte swapping.

Controls	Location	Function
◄►▲▼	Terminal Keypad	Moves the cursor up, down, left, or right in the Character Keyboard.
	Terminal Keypad	Deletes the character to the left of the cursor in the Display Area. If the cursor is at the leftmost position when you press , the scratchpad closes.
	Terminal Keypad	Sends the character string to the assigned write tag address in the controller. When opening the ASCII scratchpad, the string is highlighted. If you select a character immediately, the terminal clears the Display Area and displays the selected character. If you press a control key, the terminal continues to display the existing string, allowing you to edit it.
SEL F1	Function Keys	Selects the highlighted character and places it at the cursor position in the Display Area.
INS F2	Function Keys	Toggles between Insert and Overstrike mode. Overstrike mode appears in reverse video. In Insert mode, the selected character is inserted before the cursor in the Display Area. If the maximum number of characters is entered in the Display Area, new characters are ignored. In Overstrike mode, the selected character replaces the character at the cursor in the Display Area.
<< F3	Function Keys	Moves the cursor one character to the left in the Display Area.

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Controls	Location	Function
>> F4	Function Keys	Moves the cursor one character to the right in the Display Area.
ESC 5	Function Keys	Closes the scratchpad without making any changes.
CTRL F6	Function Keys	Clears the string in the Display Area.

ASCII Scratchpad - PV300 Micro/300 Terminals

The thumbwheel scratch pad lets you enter values on terminals without a numeric keypad or touch screen by cycling through the available characters one position at a time. This is the character sequence:

<space> A - Z, a - z, + - = ( ) [ ] { } < > / \ $ & @ ' " , . ; : ? ! % # * _ ^ ~ ` ¬ ¡ ¿
ß ° £ ç Ç µ â à á ä Ä ê è é Ê î ì í Ñ ñ ô ò ó ö Ö û ù ú ü Ü, 0 - 9

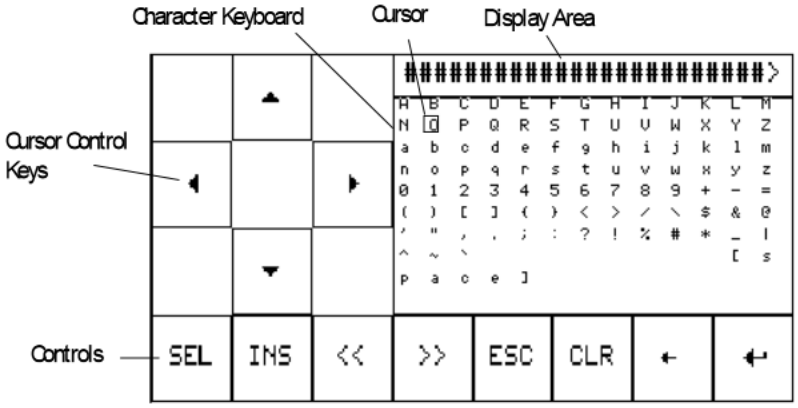
The default scratchpad indicates <space>. Press the Up or Down cursor keys on a <space> to cycle through the available characters, beginning with A. Press the Down cursor to cycle back through the list, beginning with 9.

The scratchpad has the following function keys.

Keys	Function
F1 - ESC	Exits the scratchpad without saving any changes or sending characters to the logic controller.
F2 - Clear	Clears all characters in the display area.
F3 - INS	Inserts a space at the current cursor position.
F4 - DEL	Deletes the character at the current cursor position.

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ASCII Scratchpad - PV550/600 Touch Screen Terminals



To select characters from the Character Keyboard, press the cursor control keys to move the cursor over a character and then press the SEL key. The character is entered in the Display Area. This area scrolls so you can enter a string that is longer than the Display Area. All characters are sent to the controller even if not visible.

After entering the characters, press to send the string to the controller. The leftmost character is placed in the high byte of the first word (of the write tag), the next character in the low byte, and so on.

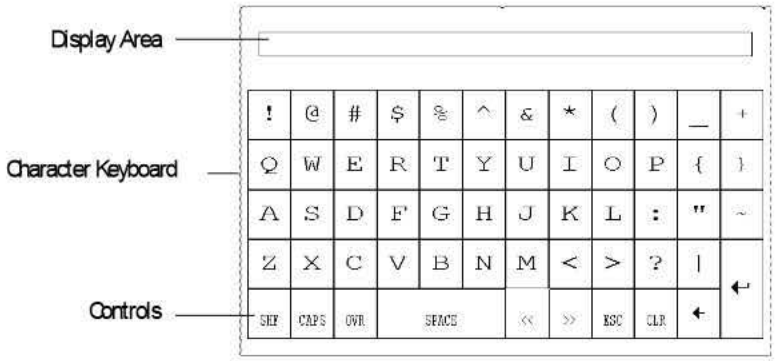
TIP DeviceNet ASCII entry allows for byte swapping.

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Controls	Function
◄►▲▼	Moves the cursor up, down, left, or right in the Character Keyboard.
SEL	Selects the highlighted character and places it at the cursor position in the Display Area.
INS	Toggles between Insert and Overstrike mode. Overstrike mode appears in reverse video. In Insert mode, the selected character is inserted before the cursor in the Display Area. If the maximum number of characters is entered in the Display Area, new characters are ignored. In Overstrike mode, the selected character replaces the character at the cursor in the Display Area.
<<	Moves the cursor one character to the left in the Display Area.
>>	Moves the cursor one character to the right in the Display Area.
ESC	Closes the scratchpad without making any changes
CLR	Clears the string in the Display Area.
	Deletes the character to the left of the cursor in the Display Area.
	Sends the character string to the assigned write tag address in the controller. When opening the ASCII scratchpad, the string is highlighted. If you select a character immediately, the terminal clears the Display Area and displays the selected character. If you press a control key, the terminal continues to display the existing string so you can edit it.

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ASCII Scratchpad - PV900/1000/1400 Touch Screen Terminals



Select characters by touching the Character Keyboard on the screen. The character is entered in the Display Area. This area scrolls so you can enter a string that is longer than the Display Area. All characters are sent to the controller even if not visible.

After entering the characters, press on the scratchpad to send the characters to the controller. The leftmost character is placed in the high byte of the first word (of the write tag), the next character in the low byte, and so on.

TIP DeviceNet ASCII entry allows for byte swapping.

Controls	Function
SHF (Shift)	By default this function is off and keys are in unshifted state. When you press SHF, the button appears in reverse video. All character keys, including numbers and symbols, appear in the shifted state. For example, a becomes A; 2 becomes @.
CAPS	By default, keys appear in lowercase. When you press CAPS, the button appears in reverse video. Letters appear and are entered in uppercase but numbers and symbols are not shifted. This state is maintained between power cycles.
INS	Toggles between Insert and Overstrike mode. Overstrike mode appears in reverse video. In Insert mode, the selected character is inserted before the cursor in the Display Area. If the maximum number of characters is entered in the Display Area, new characters are ignored. In Overstrike mode, the selected character is replaced at the cursor in the Display Area.
<<	Moves the cursor one character to the left in the Display Area.
>>	Moves the cursor one character to the right in the Display Area.
ESC	Closes the scratchpad without making any changes.

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Controls	Function
CLR	Clears the string in the Display Area.
	Deletes the character to the left of the cursor in the Display Area.
	Sends the character string to the assigned write tag address in the controller. After pressing to open the ASCII scratchpad, the string is highlighted. If you select a character immediately, the terminal clears the Display Area and displays the selected character. If you press a control key, the terminal continues to display the existing string so you can edit it.

ASCII Scratchpads in Other Languages

The ASCII Scratchpad is available with character keyboards in:

French.
German.
Italian.
Spanish.

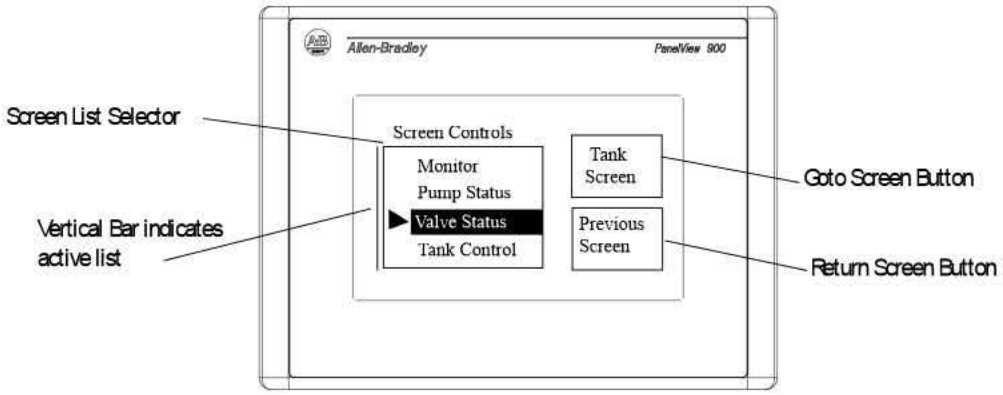
If the PanelView terminal is configured for operation in one these languages, the ASCII scratchpad will display the appropriate Character Keyboard.

The SHF control toggles between SHF/SHF2. In SHF mode, the Character Keyboard displays the shifted state characters (for example, a to A, and 3 to #). In SHF2 mode, the Character Keyboard displays additional characters available for the language.

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Screen Selectors

The 2 types of screen selector controls are Screen List Selectors and Screen buttons.



Goto and Return screen buttons can have a variety of appearances such as unique inner text, fill pattern, border or shape. Return screen buttons display the previous screen. Goto screen buttons display the assigned screen.

Screen lists display a list of application screens. The selected screen is highlighted.

To activate a screen list:

touch the object (touch screen only).

press the assigned function key.

press the Left ◄ or Right ► arrow key until a vertical bar appears on a screen with multiple screen lists.

Follow these steps to select an item on a screen list.

1. Move the cursor up or down the list by using the Up ▲ or Down ▼ arrow keys.

2. Press Enter to enter the selection.

   The selected screen is displayed.

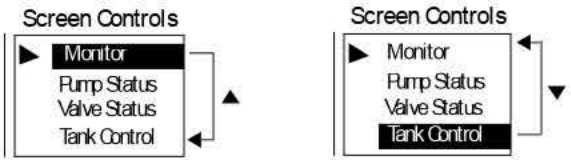
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Cursor Operation

Cursor operation is configured by the application designer. If the cursor is at the first or last item in a screen list, pressing the Up ▲ arrow (when at top) or Down ▼ arrow (when at bottom) will either:

cause no movement of the cursor

move the cursor to the top or bottom of the list



If a screen list contains more items than can appear at one time, the list scrolls. If the cursor is at the top or bottom of a scrolling list, the list scrolls one row at a time as the Up/Down arrows are pressed.

List Keys

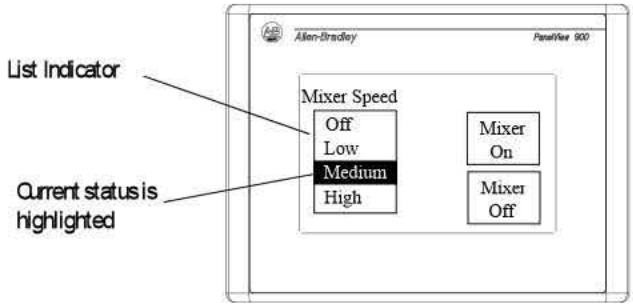
Touch screen terminals require list keys on the screen to move the cursor in a screen list and select an entry. The following table shows the list keys.

List Key	Type	Description
▲	Move Up	Moves the cursor to the previous item in the list.
▼	Move Down	Moves the cursor to the next item in the list.
⤒	Home	Moves the cursor to the first item in the list.
⤓	End	Moves the cursor to the last item in the list.
⇞	Page Up	Moves the cursor up one page in a scrolling list.
⇟	Page Down	Moves the cursor down one page in a scrolling list.
←	Backspace	Returns the cursor to the currently highlighted selection.
↵	Enter	Confirms a selection and displays the screen.

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List Indicators

List indicators highlight an item from a list depending upon the status of either a bit or value at a controller address.



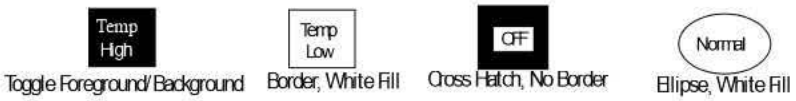
An indicator list may have a maximum of 255 entries. The list automatically scrolls to display the status of an item.

TIP List indicators do not have a cursor ► like control or screen selector lists.

Multistate Indicators

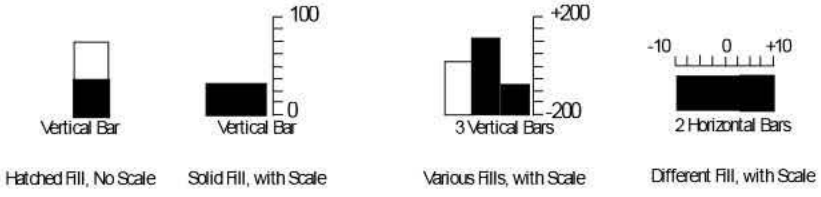
Multistate indicators display the status of either a bit or value at a controller address.

Multistate indicators can have a variety of appearances. In addition, multistate indicators may change their inner text, fill pattern, or graphic with each state (each state assigned different attributes). Each indicator may have up to 2,000 states.



Bar Graph Displays

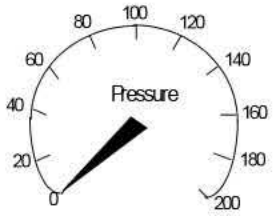
Bar graphs provide a graphical representation of a variable value. Bar graphs can appear with or without scales and border, and can have a variety of fill patterns.



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Analog Gauges

The analog gauge uses a rotating needle to display a process variable such as speed, temperature or pressure. The gauge consists of a circular scale with tick-marks, 1 4 needles, and a label with text or variable data. The circular scale is an integral part of the gauge but can be created separately.



Numeric Data Displays

Numeric Data Displays may appear with or without supporting text.



Depending on the application design, displayed data may have these properties:

- zero fill
- fixed, floating or no decimal point
- different field widths (number of digits)
- various text sizes
- scaled

Message Displays

Message displays contain alphanumeric characters and are displayed when triggered by a controller. The message display can be any size and will not overlap other controls. Messages may contain:

- alphanumeric text
- variable data
- graphics
- time and date

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Time or Date

Time and date information can appear as a separate item or in some control/display objects (push buttons, multistate indicators, message displays or data displays). A time and date can appear with or without supporting text.

The date can have a variety of formats.

Month/Day/Year 7/3/01	With Leading Zeroes 07/03/01
Day/Month/Year 3/7/01	With 4 Digit Year 3/7/2001
Year/Month/Day 01/7/3	With User-Defined Separator 7*3*01

The time can also have a variety of formats.

12 Hour Format 2:56	With Time Zone & Time Standard Designations 07/03/00
24 Hour Format 14:56	With Leading Zeroes 02:56
with Seconds 14:56:29	With User-Defined Separator 14*56*29

Printing

Terminals equipped with an RS-232 printer port can print:

- triggered messages in a message display.
- triggered states of a multistate indicator.
- alarm messages.
- alarm list.

Text is printed without formatting options. Print attributes for objects and alarms are defined in the application.

Printing is a background operation. While printing, the terminal continues to update and you can perform other terminal operations.

The terminal prints messages in the order they are received. If the print buffer is full, the terminal displays a queue full warning message. New print requests are aborted.

The print queue is not maintained between power cycles. Any messages in the queue when the terminal is reset are cleared.

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Alarms

Applications that support alarms may contain:

- Alarm Banner display that pops up when an alarm is triggered
- Alarm buttons that enable the operator to act on an alarm (Print Alarm, Acknowledge Alarm, Clear Alarm, Acknowledge All)
- Alarm List which stores information on triggered alarms (Print Alarm List or Clear Alarm List button)

Alarm configurations are application dependent. Consult your application designer for details on how to handle alarms for your application.

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Installing the PV300 Micro Terminal

Chapter Objectives

This chapter shows how to install the PanelView 300 Micro terminal and covers:

- hazardous locations
- enclosures
- required tools
- mounting dimensions
- clearances
- cutout dimensions
- installing the PV300 micro terminal in a panel

Hazardous Location Considerations

This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F, G; Class III; or non-hazardous locations only. The following WARNING statement applies to use in hazardous locations.S

WARNING



EXPLOSION HAZARD

Substitution of components may impair suitability for Class I, Class II, Class III, Division 2.

Do not replace components or disconnect equipment unless power has been switched off or the area is known to be non-hazardous.

Do not connect or disconnect components unless power has been switched off or the area is known to be non-hazardous.

This product must be installed in an enclosure. All cables connected to the product must remain in the enclosure or be protected by conduit or other means.

All wiring must comply with N.E.C. article 501-4(b), 502-4(b), 503-3(b) as appropriate.

See the nameplate on terminal for hazardous locations certifications.

ATTENTION



In Class I, Class II, Class III, Division 2 Hazardous locations, the PanelView terminal must be wired per the National Electric Code as it applies to hazardous locations. Peripheral equipment must also be suitable for the location in which it is installed.

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Use only the following communication cables in Class 1, Division 2, Hazardous Locations.

Environmental Classification	Communication Cable
Class I, Division 2, Hazardous Locations	1761-CBL-PM01, Series C
	1761-CBL-HM02, Series C
	1761-CBL-AM00, Series C
	1761-CBL-AP00, Series C
	2711-CBL-PM05, Series C
	2711-CBL-HM05, Series C
	2711-CBL-PM10, Series C
	2711-CBL-HM10, Series C

Enclosures

Mount the PanelView 300 Micro terminal in a panel or enclosure to protect the internal circuitry. The terminal meets NEMA 12/13, 4X (indoor use), IP54 or IP65 ratings only when properly mounted in a panel or enclosure with the equivalent rating. Allow enough space within the enclosure for adequate ventilation. Consider heat produced by other devices in the enclosure. The ambient temperature around the PanelView 300 Micro terminal must be between 0 55 C (32 131 F).

Make provisions for accessing the side panel of the terminal for wiring, maintenance and troubleshooting.

Required Tools

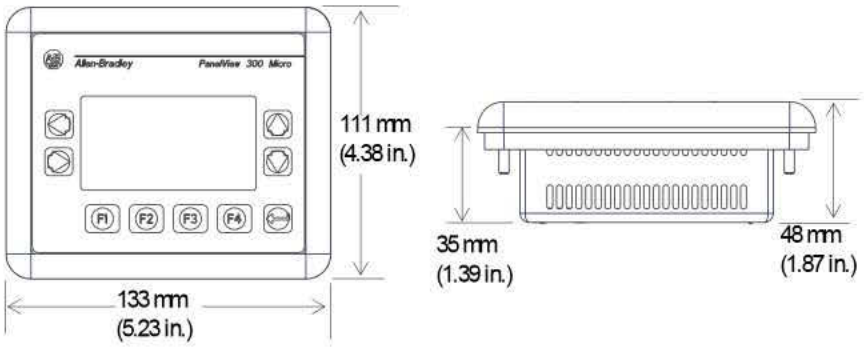
Other than the tools required to make panel or enclosure cutouts, these tools are required for installation.

7 mm (M4) deep-well socket wrench or nut driver

small slotted screwdriver

torque wrench (lb-in)

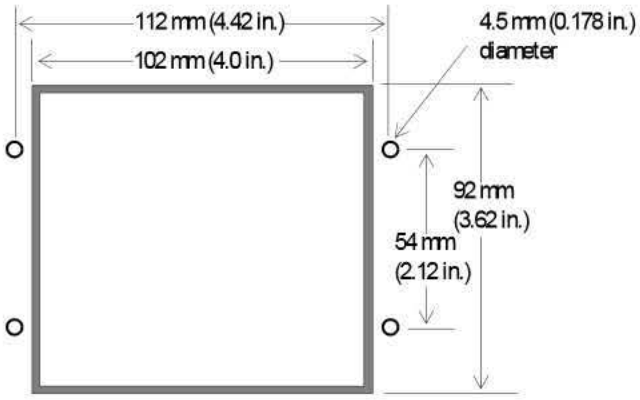
Mounting Dimensions



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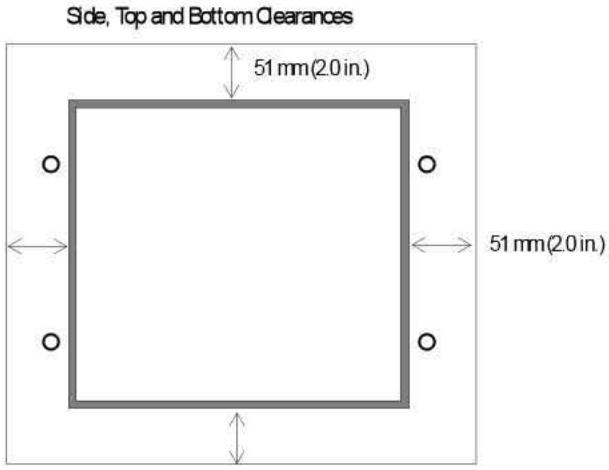
Cutout Dimensions

Use the full size template shipped with the PV300 Micro terminal to mark the cutout dimensions. The figure below shows a reduced scale cutout. A full scale template is also available inside the back cover of this document.



Clearances

Allow 51 mm (2.0 in.) of space on all sides of the terminal for adequate ventilation and maintenance.



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Install Terminal in Panel

Follow these steps to install the PV300 Micro in a panel.

ATTENTION



Disconnect all electrical power from the panel before making cutout.

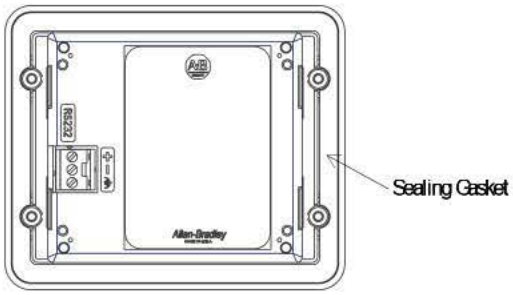
Make sure area around the panel cutout is clear.

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

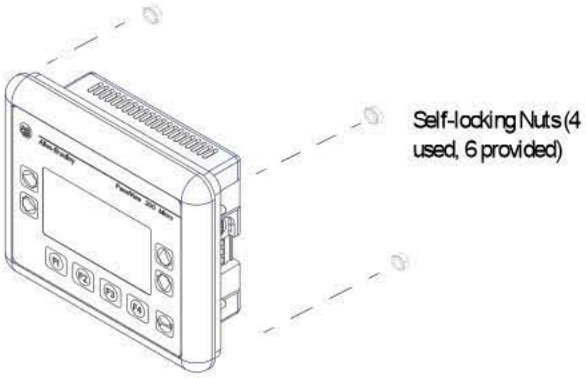
Failure to follow this warning may result in personal injury or damage to the panel components.

1. Cut an opening in the panel by using the panel cutout template provided with the terminal and remove sharp edges or burrs.
2. Make sure the sealing gasket is properly positioned on the terminal, particularly around the mounting studs as shown.

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



3. Place the terminal in the panel cutout.
4. Install the four self-locking nuts, and tighten hand tight.



5. Alternately tighten the self-locking nuts until the terminal is held firmly against the panel.

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6. Tighten the nuts to a torque of 1.13 Nm (10 lb-in).

   Do not overtighten.

ATTENTION



Mounting nuts must be tightened to a torque of 1.13 Nm (10 lb-in) to provide a proper seal and to prevent potential damage to the terminal. Allen-Bradley assumes no responsibility for water or chemical damage to the terminal or other equipment within the enclosure because of improper installation. A properly installed terminal has a small gap between the bezel and enclosure.

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Installing the PV300 Terminal

Chapter Objectives

This chapter shows how to install the PanelView 300 terminal and covers:

- hazardous locations.
- enclosures.
- required tools.
- mounting dimensions.
- clearances.
- cutout dimensions.
- installing the PV300 terminal in a panel.

Hazardous Location Considerations

This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F and G; Class III; or non-hazardous locations only. The following WARNING statement applies to use in hazardous locations.

WARNING



EXPLOSION HAZARD

Substitution of components may impair suitability for Class I, Class II, Class III Division 2.

Do not replace components or disconnect equipment unless power has been switched off or the area is known to be non-hazardous.

Do not connect or disconnect components unless power has been switched off or the area is known to be non-hazardous.

This product must be installed in an enclosure. All cables connected to the product must remain in the enclosure or be protected by conduit or other means.

All wiring must comply with N.E.C. article 501-4(b), 502-4(b), 503-3(b) as appropriate.

See the nameplate on terminal for hazardous locations certifications.

ATTENTION



In Class I, Class II, Class III Division 2 Hazardous locations, the PanelView terminal must be wired per the National Electric Code as it applies to hazardous locations. Peripheral equipment must also be suitable for the location in which it is installed.

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The PV300 terminals have an operating temperature code of T4 (maximum operating temperature of 135 C or 275 F). Do not install these terminals in environments where atmospheric gases have ignition temperatures less than 135 C (275 F).

Enclosures

Mount the PV300 terminal in a panel or enclosure to protect the internal circuitry. The terminal meets NEMA Type 12/13 and 4X (indoor use) ratings only when mounted in a panel or enclosure with the equivalent rating.

Allow enough space within the enclosure for adequate ventilation. Consider heat produced by other devices in the enclosure. The ambient temperature around the terminals must be between 0 55 C (32 131 F).

Make provisions to access the back panel of the terminal for wiring, maintenance, installing a memory card and troubleshooting.

Required Tools

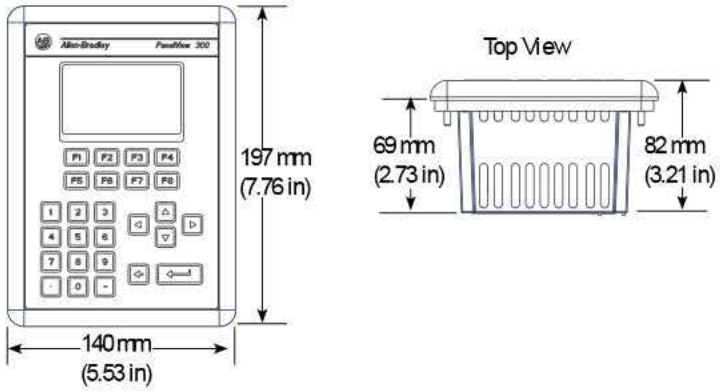
Other than the tools required to make the PV300 panel cutout, the tools required for installation are:

- 7 mm (M4) deep well socket wrench or nut driver
- small slotted screwdriver
- torque wrench (lb-in)

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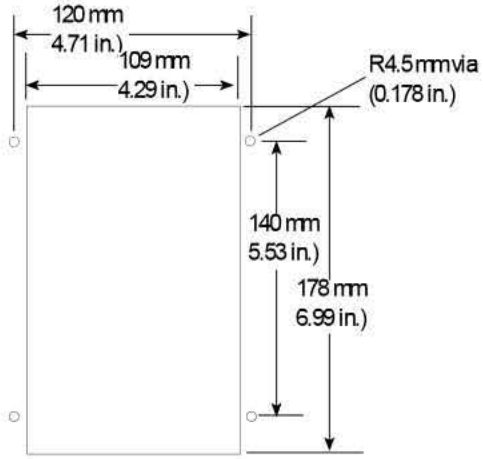
Mounting Dimensions

The illustration below shows mounting dimensions for the PV300 keypad terminals.



Cutout Dimensions

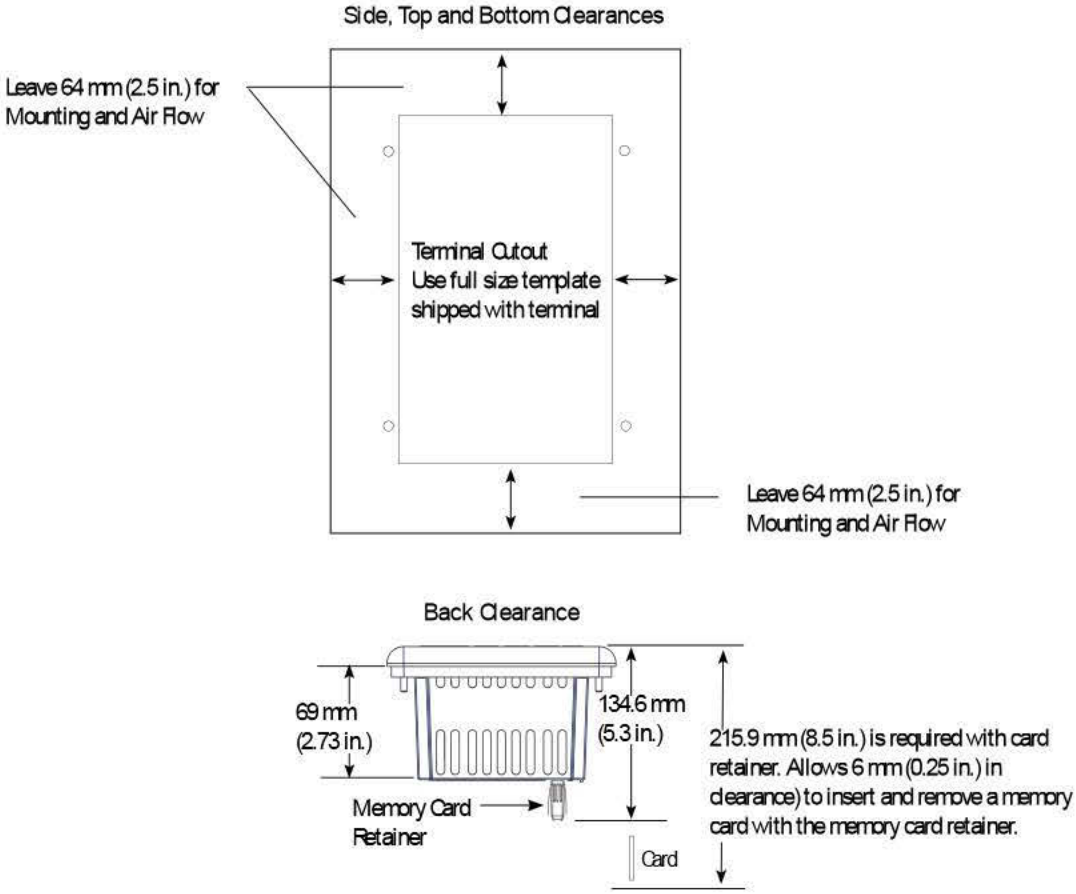
Use the full size template shipped with the PV300 terminal to mark the cutout dimensions. Below is a reduce size cutout.



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Clearances

When installing the PV300 terminal, allow space for mounting, air flow, maintenance, memory card and legend strip installation.



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Install the PV300 Terminal in a Panel

Follow these steps to install the PV300 terminal in a panel.

ATTENTION



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

Make sure the area around the panel cutout is clear.

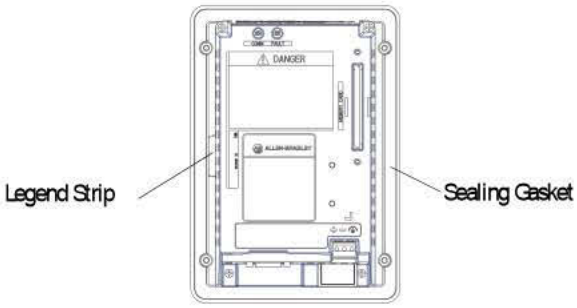
Do not allow metal cuttings to enter any components that may already be installed in the panel.

Failure to follow this warning may result in personal injury or damage to the panel components.

1. Cut an opening in the panel by using the panel cutout template provided with the terminal and remove any sharp edges or burrs.

2. Make sure the terminal sealing gasket is properly positioned on the terminal, particularly around the mounting studs as shown.

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



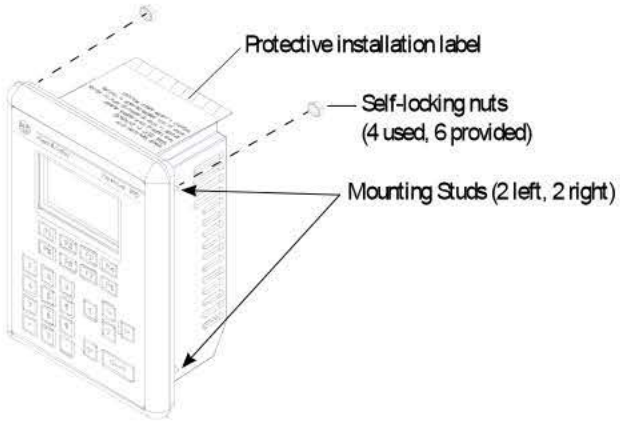
3. Verify that the end of the legend strip is fully inserted and does not interfere with the sealing gasket.

4. Place the terminal in the panel cutout.

5. Verify that the opening is the proper size to clear the bezel and to allow the gasket to contact the panel.

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6. Install the self-locking nuts hand tight.



7. Alternately tighten the self-locking nuts until the terminal is held firmly against the panel

8. Tighten the nuts to a torque of 1.13 Nm (10 lb-in).

   Do not over-tighten.

ATTENTION



Mounting nuts must be tightened to a torque of 1.13 Nm (10 lb-in) to provide a proper seal and to prevent potential damage to the terminal. Allen-Bradley assumes no responsibility for water or chemical damage to the terminal or other equipment within the enclosure because of improper installation. A properly installed terminal has a small gap between the bezel and enclosure.

9. Remove the protective installation label covering the top vents of the terminal.

ATTENTION



Failure to remove the protective installation label covering the top vents could result in overheating and damage to the terminal.

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Installing the PV550 Terminal

Chapter Objectives

This chapter describes how to mount the PV550 terminal in a panel or enclosure including:

- hazardous locations
- enclosures
- required tools
- mounting dimensions
- clearances
- cutout dimensions
- installing the PV550 terminal in a panel

Hazardous Location Considerations

This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D or non-hazardous locations only. Keypad Series H, Keypad/touch Series H, and touch-only Series B are also rated Class II, Division 2, Groups F, G, Class III, or non-hazardous locations only. The following WARNING statement applies to use in hazardous locations.

WARNING



EXPLOSION HAZARD

Substitution of components may impair suitability for Class I, Class II, Class III, Division 2.

Do not replace components or disconnect equipment unless power has been switched off or the area is known to be non-hazardous.

Do not connect or disconnect components unless power has been switched off or the area is known to be non-hazardous.

This product must be installed in an enclosure. All cables connected to the product must remain in the enclosure or be protected by conduit or other means.

All wiring must comply with N.E.C. article 501-4(b), 502-4(b), 503-3(b) as appropriate.

See the nameplate label on terminal for hazardous locations certifications.

ATTENTION



In Class I, Class II, Class III, Division 2 Hazardous locations, the PanelView 550 terminal must be wired per the National Electric Code as it applies to hazardous locations. Peripheral equipment must also be suitable for the location in which it is installed.

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The following PV550 terminals have an operating temperature code of T2 (maximum operating temperature of 300 C or 572 F).

keypad terminals (series G or earlier)
keypad and touch screen terminals (series G or earlier)
touch screen only terminals (series A)

Do not install these terminals in environments where atmospheric gases have ignition temperatures less than 300 C (572 F).

The following PV550 following PV550 terminals have an operating temperature code of T4 (maximum operating temperature of 135 C or 275 F).

keypad terminals (series H and later)
keypad and touch screen terminals (series H and later)
touch screen only terminals (series B and later)

Do not install these terminals in environments where atmospheric gases have ignition temperatures less than 135 C (275 F).

Enclosures

Mount the PV550 terminal in a panel or enclosure to protect the internal circuitry. The terminal meets NEMA Type 12/13 and 4X (indoor use) ratings only when mounted in a panel or enclosure with the equivalent rating.

Allow enough space within the enclosure for adequate ventilation. Consider heat produced by other devices in the enclosure. The ambient temperature around the terminals must be between 0 55 C (32 131 F).

Make provisions to access the back panel of the terminal for wiring, maintenance, installing a memory card and troubleshooting.

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Required Tools

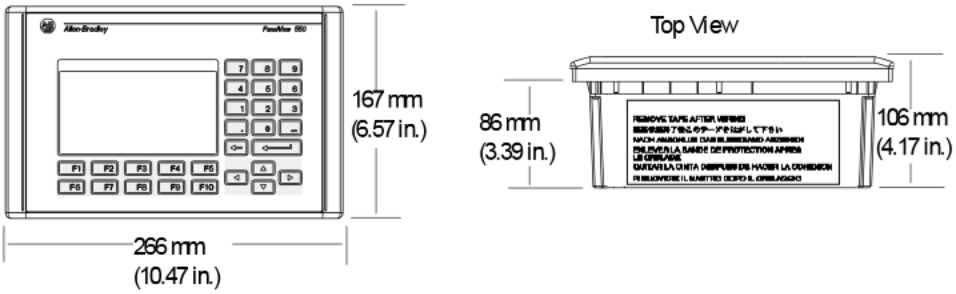
Other than the tools required to make the PV550 panel cutout, the tools required for installation are:

7 mm (M4) deep well socket wrench or nut driver
small slotted screwdriver
torque wrench (lb-in)

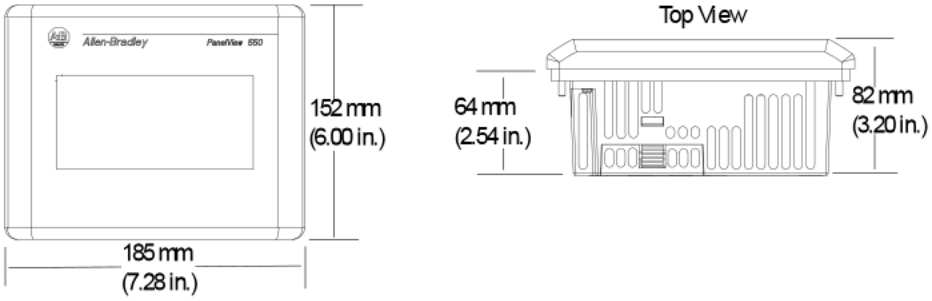
Mounting Dimensions

The illustration below shows mounting dimensions for the PV550 terminals.

PV550 Keypad, Keypad & Touch Screen Terminals



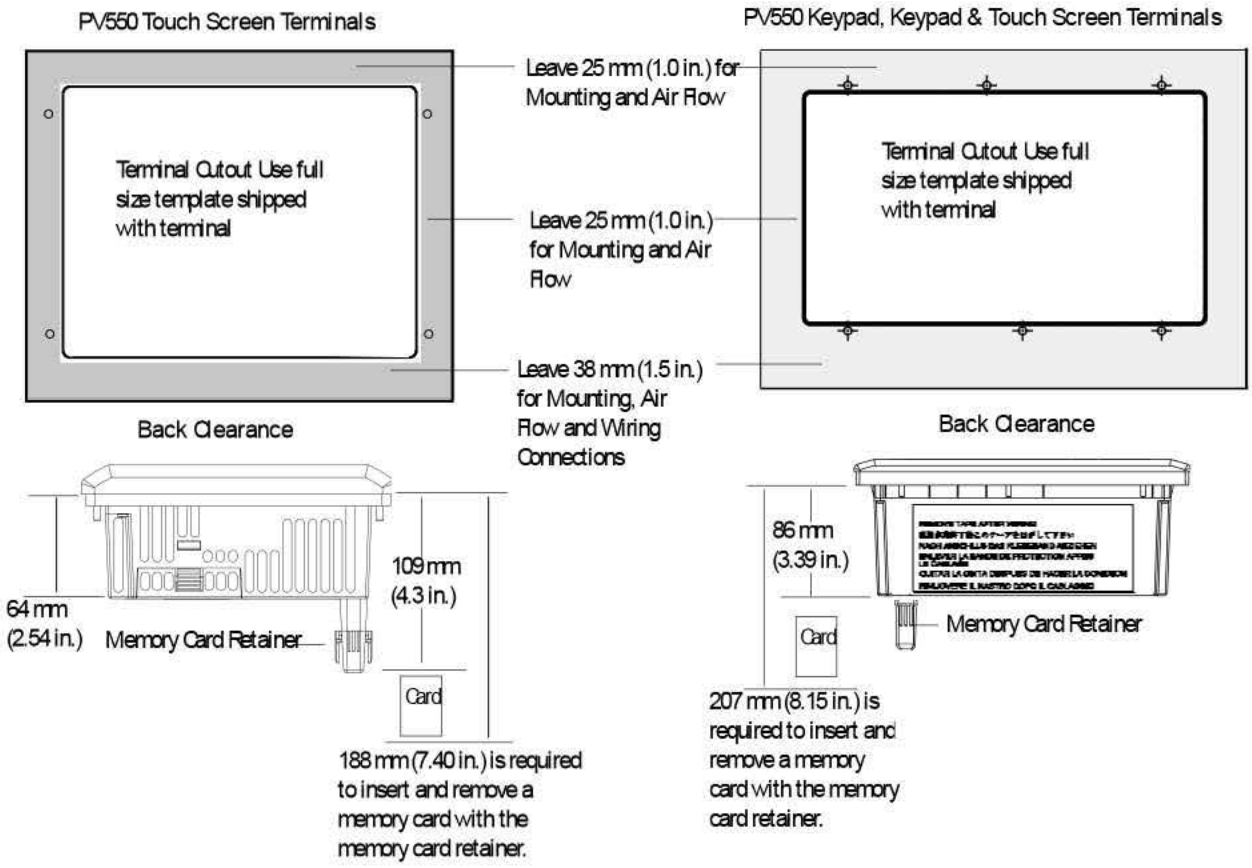
PV550 Touch Screen Terminals



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Clearances

When installing the PV550 terminal, allow space for mounting, air flow, maintenance, memory card and legend strip installation.

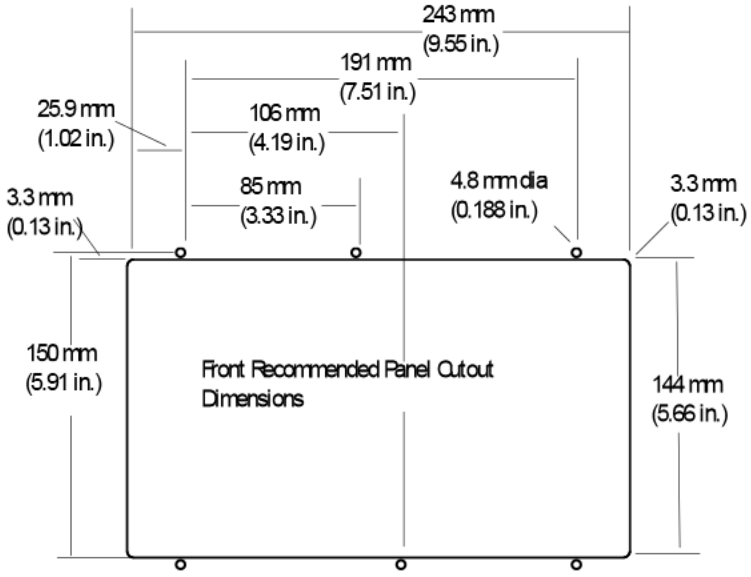


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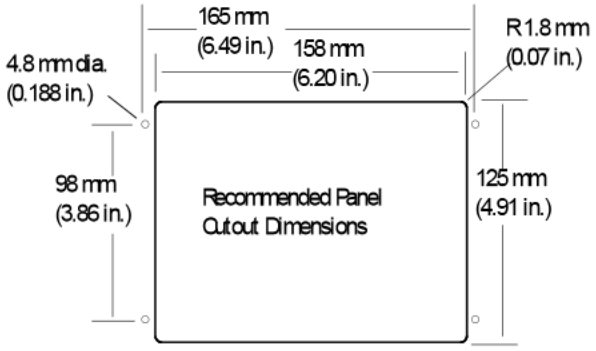
Cutout Dimensions

Use the full size template shipped with the PV550 terminal to mark the cutout dimensions. Below is a reduce size cutout.

PV550 Keypad, Keypad and Touch Screen Terminals



PV550 Touch Screen Terminals



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Install the PV550 Terminal in a Panel

Follow these step to install the PV550 terminal in a panel.

ATTENTION



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

Make sure the area around the panel cutout is clear.

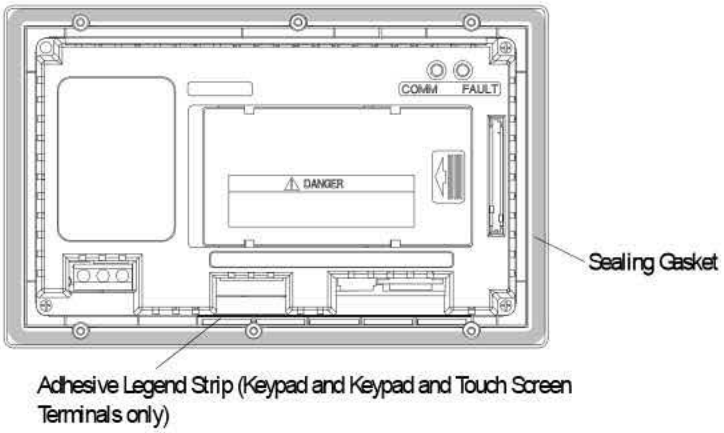
Do not allow metal cuttings to enter any components that may already be installed in the panel.

Failure to follow this warning may result in personal injury or damage to the panel components.

1. Cut an opening in the panel by using the panel cutout template provided with the terminal and remove any sharp edges or burrs.

2. Make sure the terminal sealing gasket is properly positioned on the terminal, particularly around the mounting studs as shown.

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



3. On the keypad and keypad and touch screen terminals, secure the ends of the legend strips to the legend strip adhesive.

4. Place the terminal in the panel cutout.

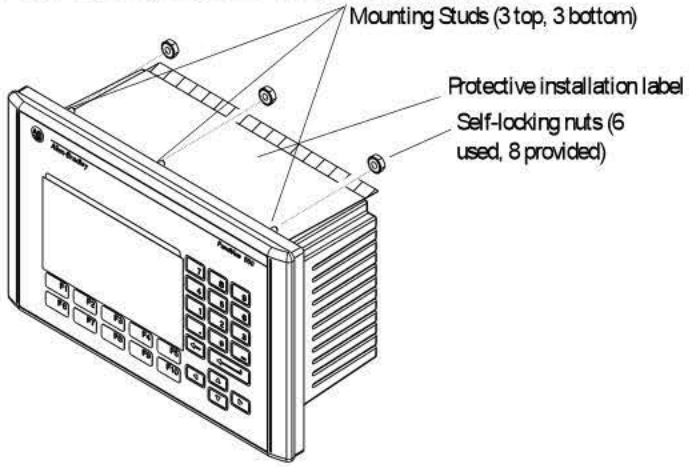
5. Verify that the opening is the proper size to clear the bezel and to allow the gasket to contact the panel.

6. On the keypad and keypad and touch screen terminals, position the ends of the legend inserts behind the panel cutout.

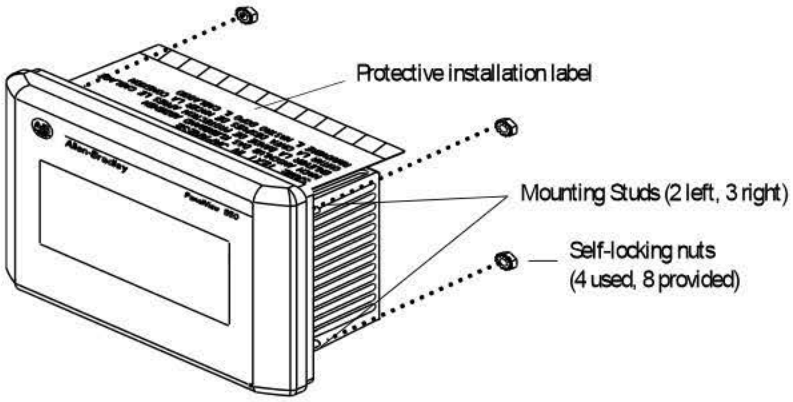
7. Install the self-locking nuts hand tight.

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PV550 Keypad, Keypad & Touch Screen Terminals



PV550 Touch Screen Terminal



8. Alternately tighten the self-locking nuts until the terminal is held firmly against the panel.

9. Tighten nuts to a torque of 1.13 Nm (10 lb-in).

   Do not over-tighten.

ATTENTION



Mounting nuts must be tightened to a torque of 1.13 Nm (10 lb-in) to provide a proper seal and to prevent potential damage to the terminal. Allen-Bradley assumes no responsibility for water or chemical damage to the terminal or other equipment within the enclosure because of improper installation. A properly installed terminal has a small gap between the bezel and enclosure.

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10. Remove protective installation label from top vents of terminal.

ATTENTION



Failure to remove the protective installation label covering the top vents could result in overheating and damage to the terminal.

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Installing the PV600 Terminal

Chapter Objectives

This chapter describes how to mount the PV600 terminal in a panel or enclosure including:

- hazardous locations
- enclosures
- required tools
- mounting dimensions
- cutout dimensions
- clearances
- installing the PV600 terminal in a panel

Hazardous Location Considerations

This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F, G; Class III; or non-hazardous locations only. The following WARNING statement applies to use in hazardous locations.

WARNING



EXPLOSION HAZARD

Substitution of components may impair suitability for Class I, Class II, Class III, Division 2.

Do not replace components or disconnect equipment unless power has been switched off or the area is known to be non-hazardous.

Do not connect or disconnect components unless power has been switched off or the area is known to be non-hazardous.

This product must be installed in an enclosure. All cables connected to the product must remain in the enclosure or be protected by conduit or other means.

All wiring must comply with N.E.C. article 501-4(b), 502-4(b), 503-3(b) as appropriate.

See the nameplate label on terminal for certifications on hazardous locations.

ATTENTION



In Class I, Class II, Class III, Division 2 Hazardous locations, the PanelView terminal must be wired per the National Electric Code as it applies to hazardous locations. Peripheral equipment must also be suitable for the location in which it is installed.

The PV600 terminals have an operating temperature code of T4 (maximum operating temperature of 135 C or 275 F). Do not install the terminals in environments where atmospheric gases have ignition temperatures less than 135 C (275 F).

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Enclosures

Mount the PV600 terminal in a panel or enclosure to protect the internal circuitry. The terminal meets NEMA Type 12/13 and 4X (indoor use) ratings only when mounted in a panel or enclosure with the equivalent rating.

Allow enough space within the enclosure for adequate ventilation. Consider heat produced by other devices in the enclosure. The ambient temperature around the terminals must be between:

0 55 C (32 131 F) for the PV600 keypad or keypad & touch screen terminal

0 50 C (32 122 F) for the PV600 touch screen only terminal

Make provisions to access the back panel of the terminal for wiring, maintenance, installing a memory card and troubleshooting.

Required Tools

Other than the tools required to make the PV600 panel cutout, the tools required for installation are:

small slotted screwdriver

torque wrench (lb-in)

#2 phillips screwdriver

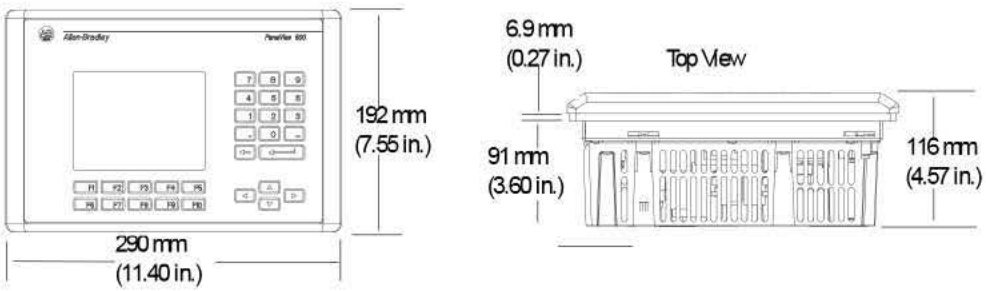
#2 phillips bit for torque wrench

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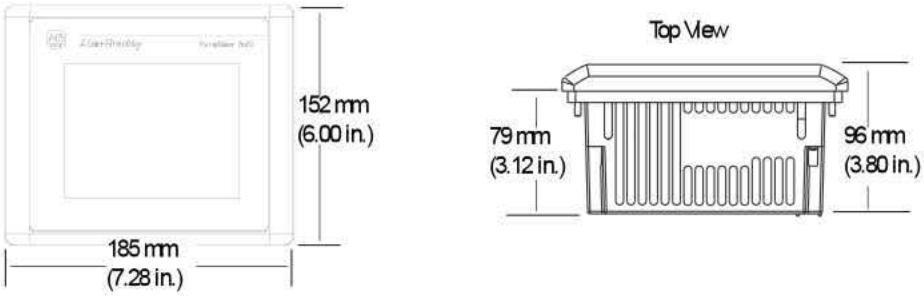
Mounting Dimensions

The illustration below shows mounting dimensions for the PV600 terminals.

PV600 Keypad, Keypad and Touch Screen Terminals



PV600 Touch Screen Terminals

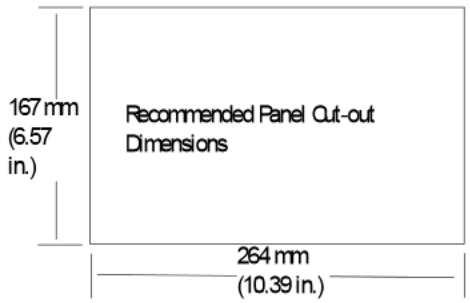


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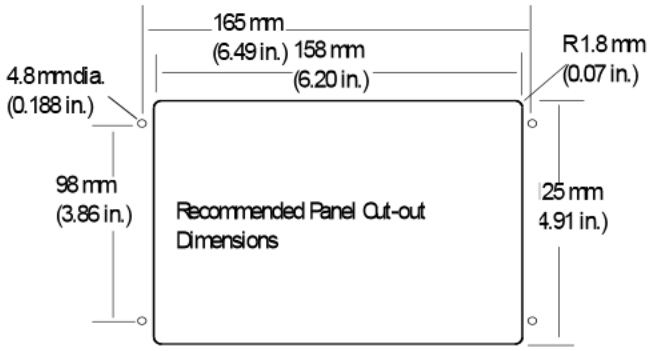
Cutout Dimensions

Use the full size template shipped with the PV600 terminal to mark the cutout dimensions. Below is a reduce size cutout.

PV600 Keypad, Keypad and Touch Screen Terminals



PV600 Touch Screen Terminals

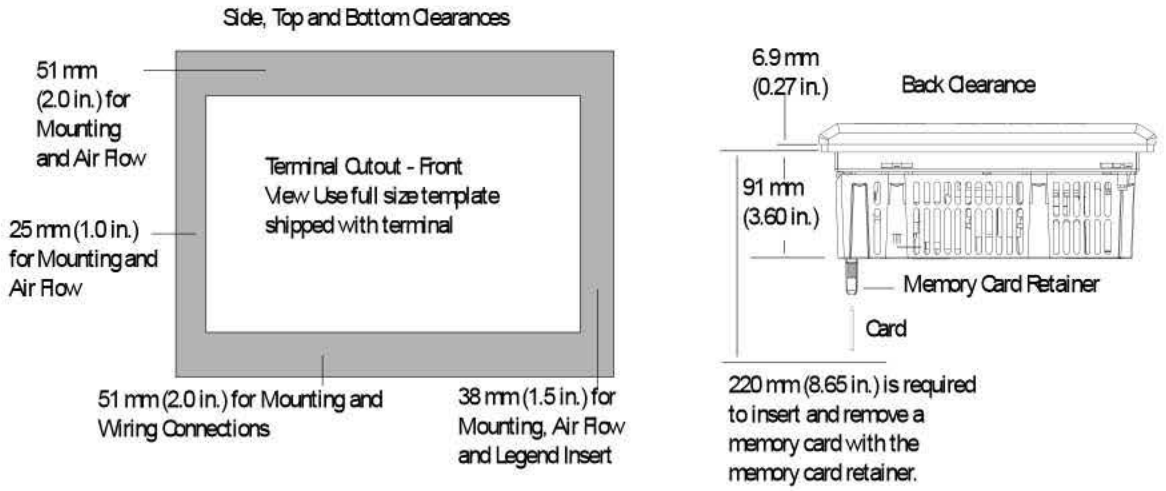


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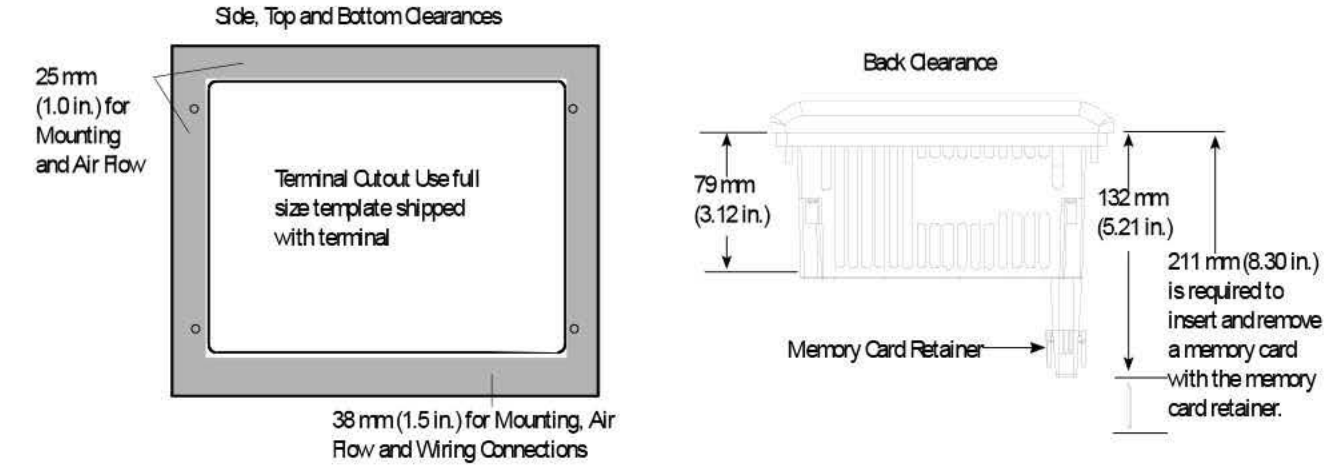
Clearances

When installing the PV600 terminal, allow adequate space for mounting, air flow, maintenance, memory card and legend strip installation.

PV600 Keypad and Keypad and Touch Screen Terminals



PV600 Touch Screen Terminals



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Install the PV600 in a Panel

To install the PV600 terminal in a panel:

ATTENTION



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

Make sure the area around the panel cutout is clear.

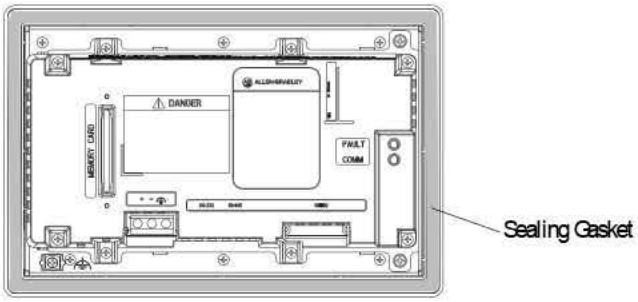
Do not allow metal cuttings to enter any components that may already be installed in the panel.

Failure to follow this warning may result in personal injury or damage to the panel components.

1. Cut an opening in the panel by using the panel cutout template provided with the terminal and remove any sharp edges or burrs.

2. Make sure the terminal sealing gasket is properly positioned on the terminal, particularly around the mounting studs as shown.

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



   Although the keypad legend strip can be installed on the keypad and keypad & touch screen terminals at any time, we recommend that you install the strip after the terminal is installed.

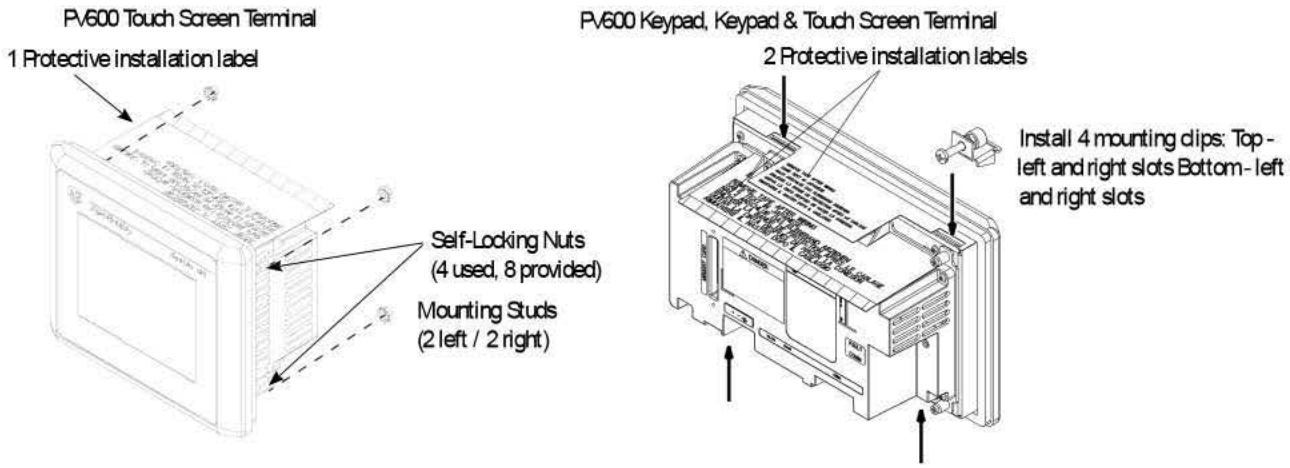
3. Place the terminal in the panel cutout.

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4. Install the 4 mounting clips (2 on top, 2 on bottom).

   The ends of the clips slide into the slots on the terminal.

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



6. Alternately tighten the self-locking nuts or mounting clip screws until the terminal is held firmly against the panel.

7. Tighten the nuts or screws to a torque of 1.13 Nm (10 lb-in).

   Do not over-tighten.

ATTENTION



Mounting nuts must be tightened to a torque of 1.13 Nm (10 lb-in) to provide a proper seal and to prevent potential damage to the terminal. Allen-Bradley assumes no responsibility for water or chemical damage to the terminal or other equipment within the enclosure because of improper installation. A properly installed terminal has a small gap between the bezel and enclosure.

8. Remove protective installation labels over top vents of terminal.

ATTENTION



Failure to remove the protective installation label covering the top vents could result in overheating and damage to the terminal.

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Installing the PV900/1000 Terminals

Chapter Objectives

This chapter describes how to mount the PV900 and PV1000 terminals in a panel or enclosure including:

- hazardous locations and enclosures
- required tools
- mounting dimensions
- clearances
- cutout dimensions
- installing the PV900/PV1000 terminal in a panel

Hazardous Location Considerations

This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D; or non-hazardous locations only. PV 1000 terminals are also suitable for use in Class II, Division 2, Groups F, G, Class III, or non-hazardous locations. The following WARNING statement applies to use in hazardous locations.

WARNING EXPLOSION HAZARD



Substitution of components may impair suitability for Class I, Class II, Class III Division 2.

Do not replace components or disconnect equipment unless power has been switched off or the area is known to be non-hazardous.

Do not connect or disconnect components unless power has been switched off or the area is known to be non-hazardous.

This product must be installed in an enclosure. All cables connected to the product must remain in the enclosure or be protected by conduit or other means.

All wiring must comply with N.E.C. article 501-4(b), 502-4(b), 503-3(b) as appropriate.

See the nameplate on terminal for hazardous locations certifications.

ATTENTION



In Class I, Class II, Class III Division 2 Hazardous locations, the PanelView 900/1000 terminals must be wired per the National Electric Code as it applies to hazardous locations. Peripheral equipment must also be suitable for the location in which it is installed.

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The PV900/PV1000 terminals have an operating temperature code of T4 (maximum operating temperature of 135 C or 275 F). Do not install the terminals in environments where atmospheric gases have ignition temperatures less than 135 C (275 F).

Enclosures

The PV900/PV1000 terminal must be mounted in an environment that provides IEC-1131-2 Pollution degree 2 protection.

Mount the terminal in a panel or enclosure to protect the internal circuitry. The terminal meets NEMA Type 12/13 and 4X (indoor use) ratings only when mounted in a panel or enclosure with the equivalent rating.

Allow enough space within the enclosure for adequate ventilation. Consider heat produced by other devices in the enclosure. The ambient temperature around the terminals must be between 0 55 C (32 131 F).

Required Tools

Other than the tools required to make the panel cutout, the tools required for installation are:

- small slotted screwdriver
- torque wrench (lb-in) with slotted or phillips head driver

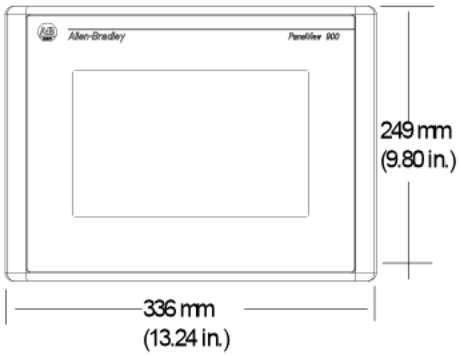
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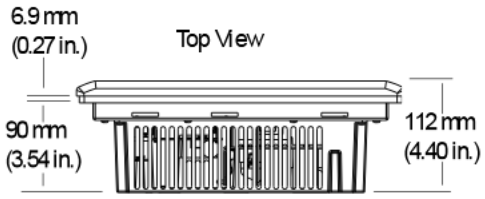
PV900 Terminals Mounting Dimensions

IMPORTANT PanelView 900 terminals are no longer available. Contact your local sales office or authorized Rockwell Distributor for suitable substitutes.

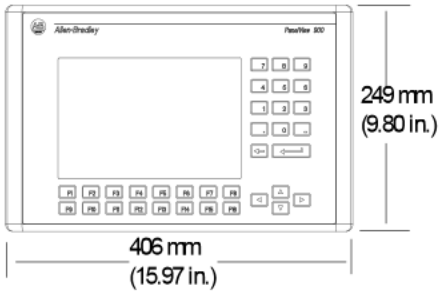
The illustrations below show mounting dimensions for the PV900 monochrome and color terminals.

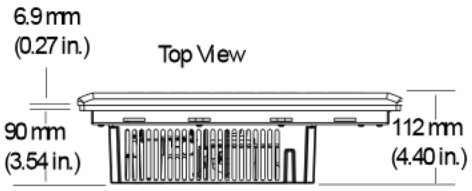
PV900 Touch Terminal Mounting Dimensions





PV900 Keypad Terminal Mounting Dimensions



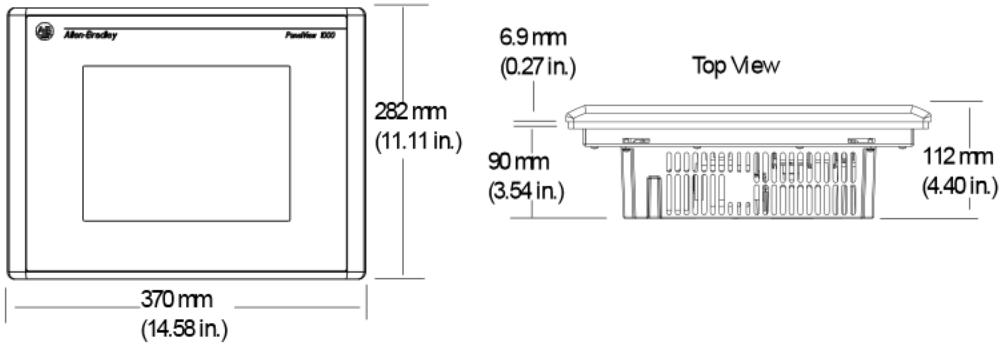


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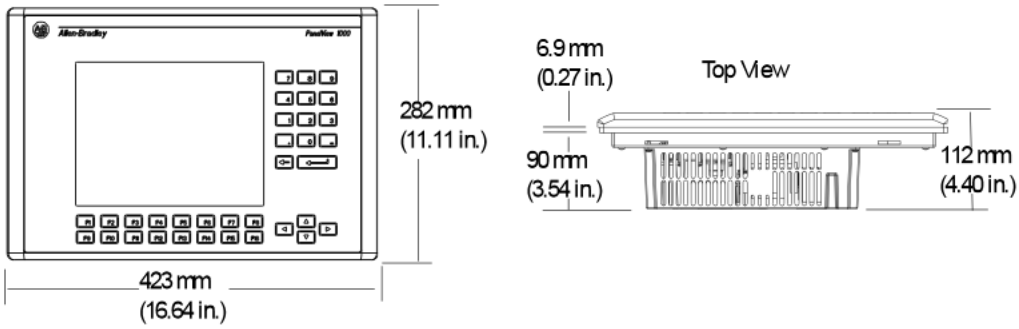
PV1000 Terminals Mounting Dimensions

The illustrations below show the mounting dimensions for the PV1000 grayscale and color terminals.

PV1000 Touch Terminal Mounting Dimensions



PV1000 Keypad Terminal Mounting Dimensions

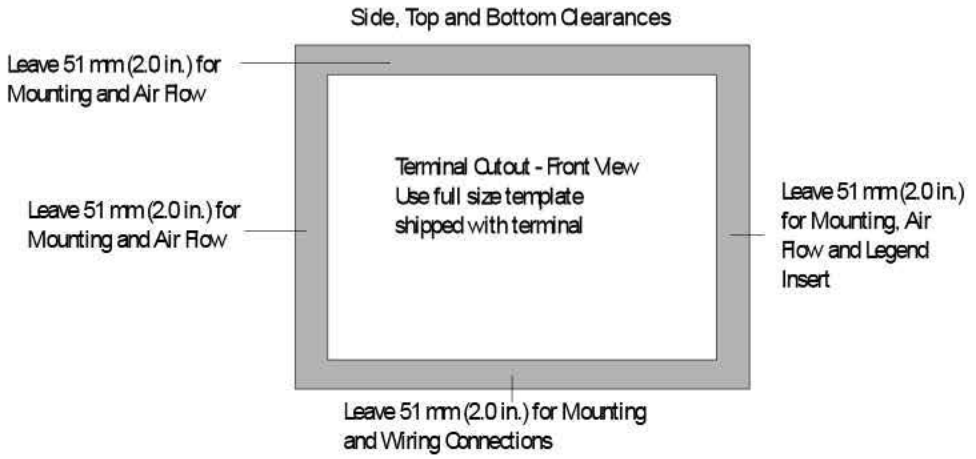


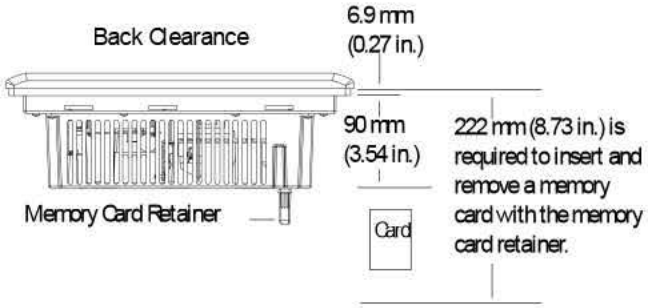
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Clearances

Allow adequate space for mounting, air flow, maintenance, memory card and legend strip installation.

IMPORTANT If using a memory card and/or memory card retainer, allow a back clearance to load the card.



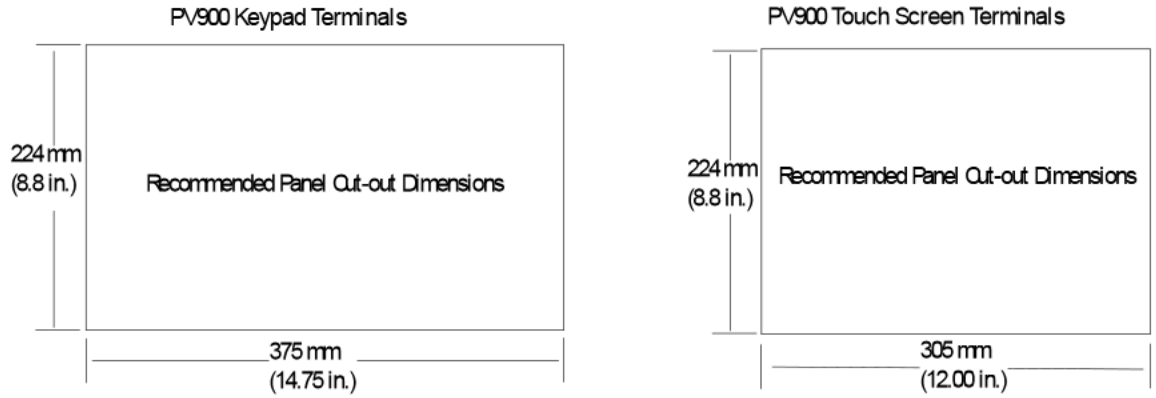


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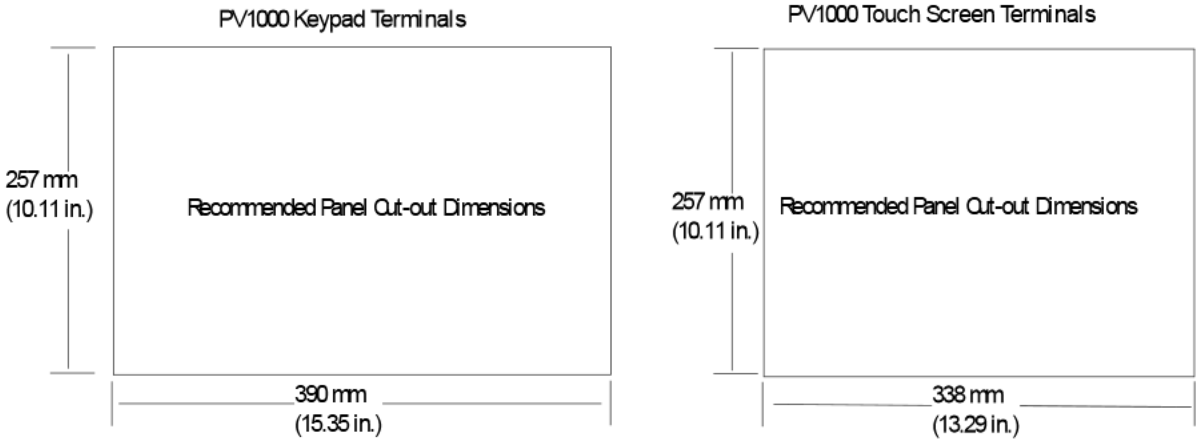
Cutout Dimensions

Use the full size template shipped with the PV900 and PV1000 terminals to mark the cutout dimensions. The following illustrations show reduced cutouts for these terminals with dimensions.

PV900 Panel Cutout Dimensions



PV1000 Panel Cutout Dimensions



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Install the PV900/PV1000 Terminals in a Panel

Follow these steps to install the PV900/PV1000 terminal in a panel.

ATTENTION



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

Make sure the area around the panel cutout is clear.

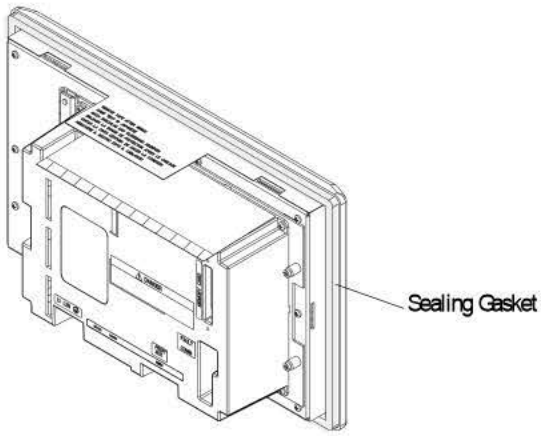
Do not allow metal cuttings to enter any components that may already be installed in the panel.

Failure to follow this warning may result in personal injury or damage to the panel components.

1. Cut an opening in the panel by using the panel cutout template provided with the terminal and remove any sharp edges or burrs.

2. Make sure the terminal sealing gasket is properly positioned on the terminal, particularly around the mounting studs as shown.

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



   Although the keypad legend strip can be installed any time, we recommend that you install it after the terminal is installed.

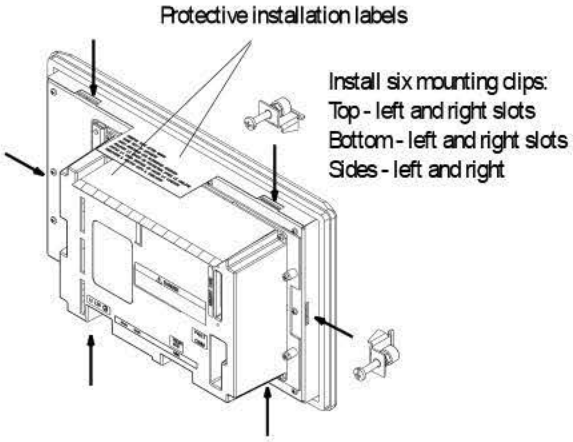
3. Place the terminal in the panel cutout.

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4. Install the 6 mounting clips (2 on top, 2 on bottom, 1 on each side).

   The ends of the clips slide into the slots on the terminal.

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



6. Alternately tighten the mounting clip screws to a torque of 1.13 Nm (10 lb-in).

   Do not over-tighten.

ATTENTION



Mounting nuts must be tightened to a torque of 1.13 Nm (10 lb-in) to provide a proper seal and to prevent potential damage to the terminal. Allen-Bradley assumes no responsibility for water or chemical damage to the terminal or other equipment within the enclosure because of improper installation. A properly installed terminal has a small gap between the bezel and enclosure.

7. Remove the two protective labels covering the top vents of the terminal.

ATTENTION



Failure to remove the protective installation label covering the top vents could result in overheating and damage to the terminal.

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Installing the PV1400 Terminal

Chapter Objectives

IMPORTANT PanelView 1400 terminals are no longer available. Contact your local sales office or authorized Rockwell Distributor for suitable substitutes.

This chapter describes how to mount the PV1400 terminal in a panel or enclosure including:

- enclosures
- recommended tools
- mounting dimensions
- clearances
- cutout dimensions
- installing the PV1400 terminal in a panel

Enclosures

The PV1400 terminal must be mounted in an environment that provides IEC-1131-2 Pollution degree 2 protection.

Mount the PV1400 terminal in a panel or enclosure to protect the internal circuitry. The terminal meets NEMA Type 12/13 and 4X (indoor use) ratings only when mounted in a panel or enclosure with the equivalent rating.

Allow enough space within the enclosure for adequate ventilation. Consider heat produced by other devices in the enclosure. The ambient temperature around the terminals must be between 0 55 C (32 131 F).

Make provisions to access the back sides of the terminal. Access is required for wiring, routine maintenance, adjusting brightness/contrast, installing a memory card and troubleshooting.

Required Tools

In addition to the tools required to make the panel cutout, you need the tools below.

For clip mounting:

- socket screwdriver (phillips head or slotted)
- 406 mm (16 in.) extension rod (minimum)
- socket driver (in/lab torque wrench recommended)

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For stud mounting:

7/32 and 3/8 in. socket

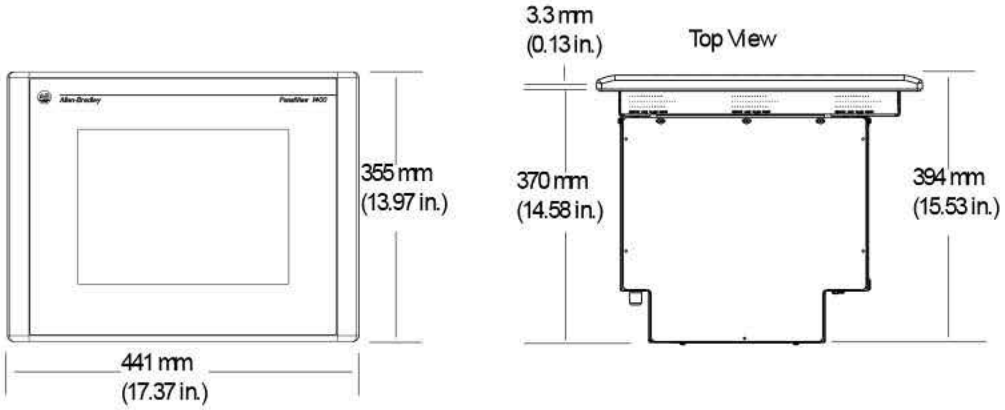
406 mm (16 in.) extension rod (minimum)

socket driver (lb-in torque wrench recommended)

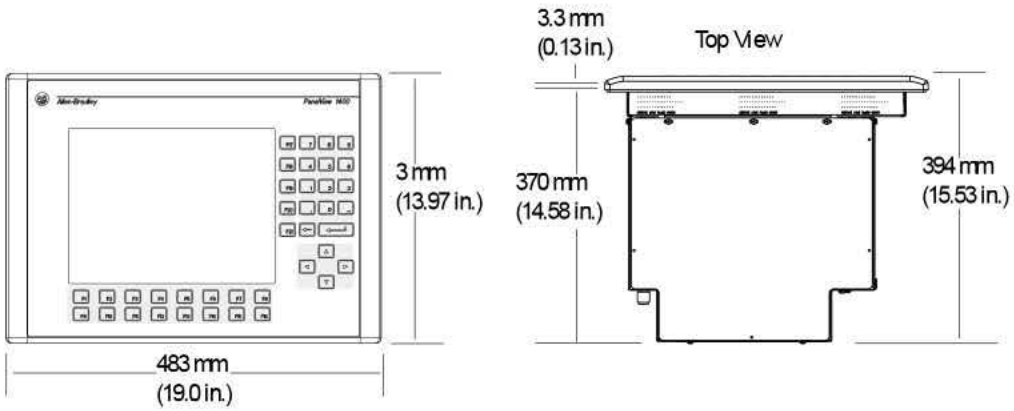
Mounting Dimensions

The illustrations below show mounting dimensions for the PV1400 terminals.

PV1400 Touch Terminal Mounting Dimensions



PV1400 Keypad Terminal Mounting Dimensions

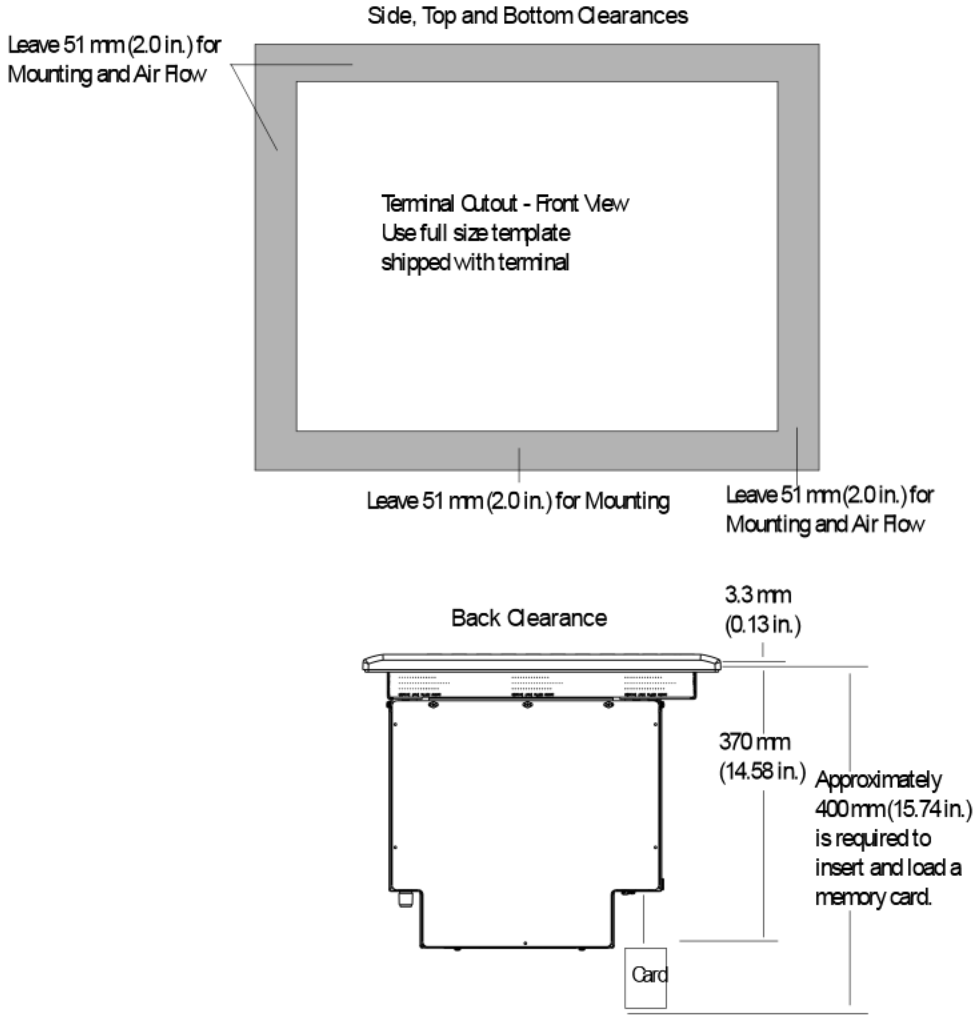


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Clearances

Allow adequate space for mounting, air flow, maintenance, adjusting brightness/contrast, memory card and legend strip installation.

IMPORTANT If using a memory card, allow a back clearance to load the card.

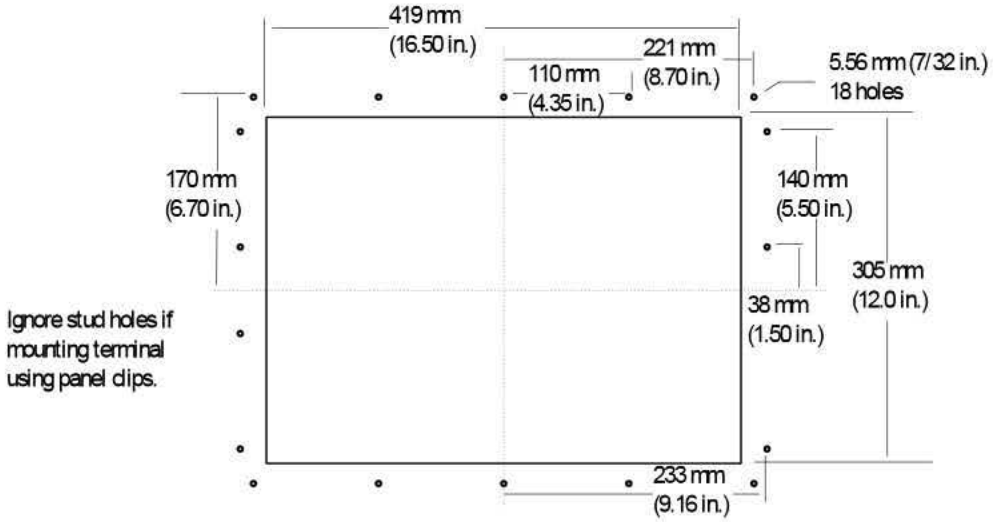


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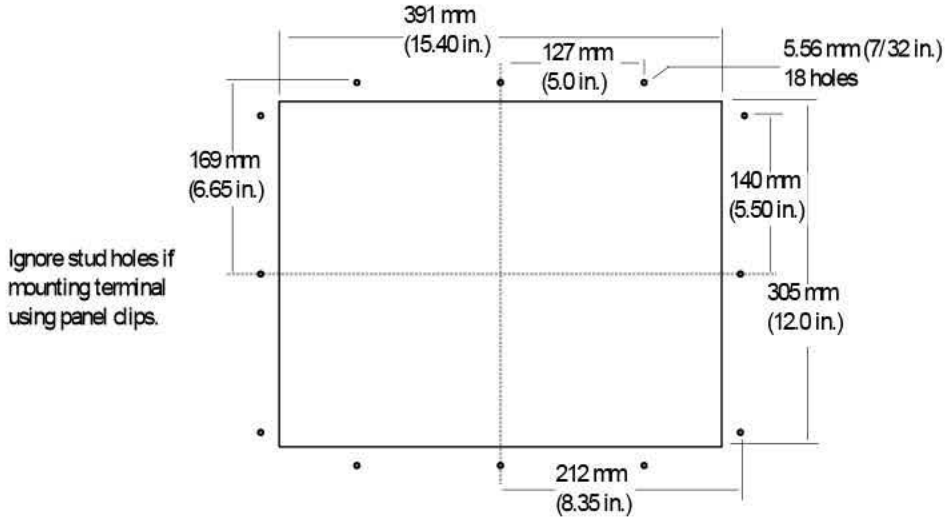
Cutout Dimensions

Use the full size template provided with the terminal to mark cutout dimensions. The illustration below shows reduced size cutouts with dimensions.

PV1400 Keypad Terminals



PV1400 Touch Screen Terminals



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Install the PV1400 Terminal in a Panel

This section gives procedures for mounting a PV1400 terminal by using:

mounting clips (10 shipped with terminal, 10 required)

mounting studs (ordered separately, Catalog No. 2711-NP3)

ATTENTION



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

Make sure the area around the panel cutout is clear.

Do not allow metal cuttings to enter any components that may already be installed in the panel.

Failure to follow this warning may result in personal injury or damage to the panel components.

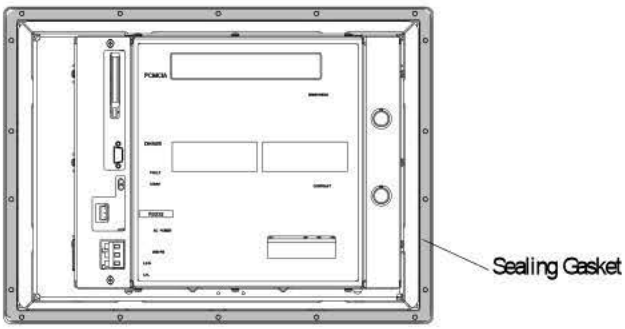
Follow these steps to install the PV1400 terminal in a panel using clips.

1. Cut an opening in the panel by using the panel cutout template provided with the terminal and remove any sharp edges or burrs.

   Do not drill the mounting stud holes if you are using clips.

2. Make sure the sealing gasket is properly positioned on the terminal, particularly around the mounting studs as shown.

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



   Although the keypad legend strip can be installed any time, we recommend that you install them after the terminal is installed.

3. Place the PV1400 terminal in the panel cutout.

   The terminal will snap into the panel as the temporary retaining tabs lock against the panel.

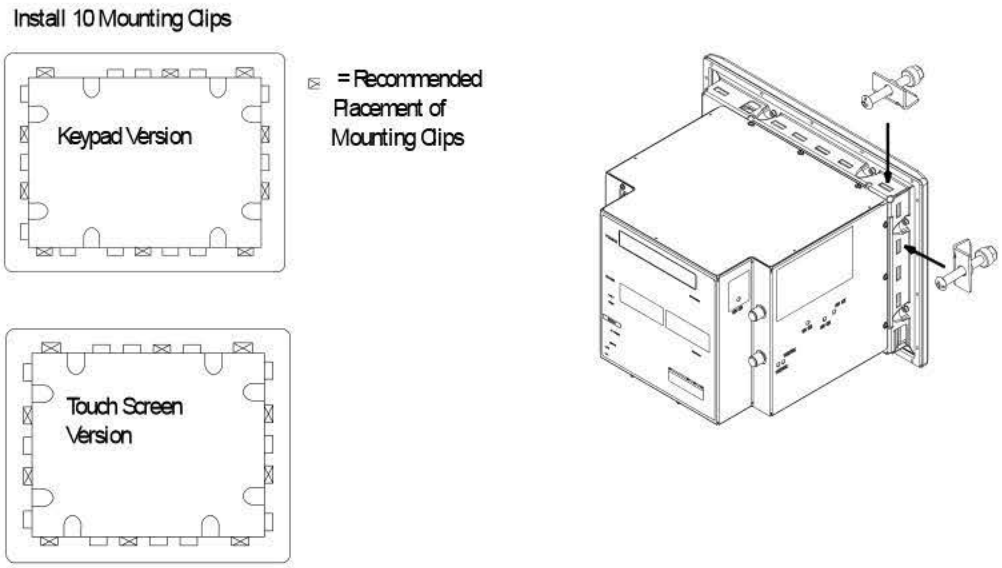
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TIP The PV1400 terminal has two metal tabs (on bottom edge) that temporarily lock the terminal against the panel. These tabs only facilitate installation of the mounting hardware. The tabs are not designed to provide permanent mounting.

4. Install the 10 mounting clips (three on top, three on bottom, two on each side).

   The ends of the clips slide into slots on the terminal.

5. Tighten the clip mounting screws hand tight.



6. Alternately tighten the mounting clip screws until the terminal is held firmly against the panel.

7. Tighten mounting screws to a torque of 1.13 Nm (10 lb-in.).

   Do not over-tighten.

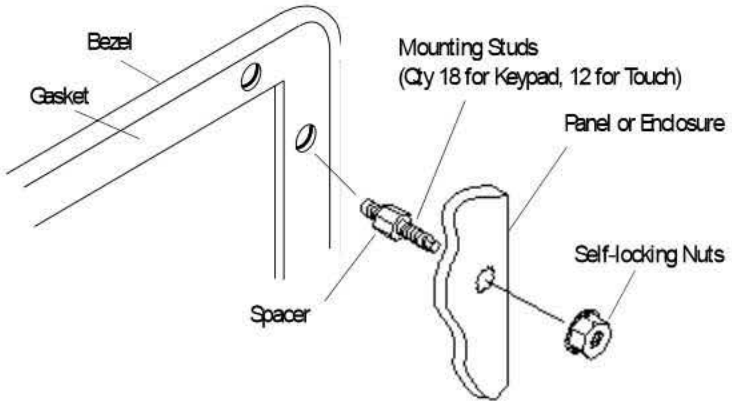
ATTENTION Mounting nuts must be tightened to a torque of 1.13 Nm (10 lb-in.) to provide a proper seal and to prevent potential damage to the terminal. Allen-Bradley assumes no responsibility for water or chemical damage to the terminal or other equipment within the enclosure because of improper installation.

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Mount Terminal with Mounting Studs

Follow these steps to install the PV1400 terminal in a panel by using mounting studs.

1. Cut an opening in the panel by using the panel cutout template shipped with the terminal.
2. Carefully drill 5.56 mm (7/32 in.) holes for studs as indicated.
3. Install the mounting studs (Cat. No. 2711-NP3) using a 7/32-inch socket on the end of the stud.
4. Turn stud clockwise and tighten to approximately 1.13 Nm (10 in.-lb).



5. Make sure the sealing gasket is properly positioned on the terminal.

   This gasket forms a compression type seal (NEMA Type 4). Do not use sealing compounds.

ATTENTION



Be careful not to damage the sealing gasket when installing or removing studs. A damaged seal may result in damage to the PanelView terminal and other panel components due to a leaking seal.

6. Place the PV1400 terminal in the panel cutout aligning the studs with the mounting holes.

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7. Install the self-locking nuts hand tight.

ATTENTION

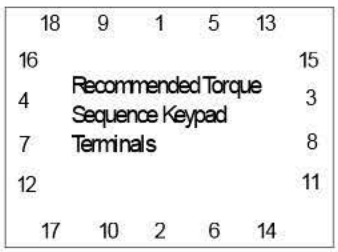


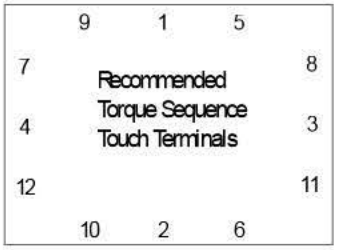
Tighten mounting nuts to a torque of 1.13 Nm (10 lb-in.) to provide a proper seal and prevent potential damage to the terminal. Allen-Bradley assumes no responsibility for water or chemical damage to the terminal or other equipment within the enclosure because of improper installation. A properly installed terminal has a small gap between the bezel and enclosure.

8. Alternately tighten the self-locking nuts (use 3/8 in. socket) until the PV1400 terminal is held firmly against the panel.

   The recommended tightening sequence is shown below.

   The studs have an integral spacer that prevents the gasket from being over-compressed. The amount of torque required increases significantly as the gasket reaches the proper compression. Tighten nuts to a torque of 1.13 Nm (10 lb-in.).





Note the sequence starts at center studs and continues to the corner studs.

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Terminal Connections

Chapter Objectives

This chapter describes network and device connections for PanelView terminals.

- Wiring and safety guidelines
- Cable charts
- Remote I/O connections
- DH+ connections
- DH-485 connections
- RS-232 (DH-485) connections
- RS-232 (DF1) connections
- ControlNet connections
- DeviceNet connections
- EtherNet/IP connections
- PanelView 300 Micro connections
- Computer or printer connection to RS-232 serial port

Wiring and Safety Guidelines

Use publication NFPA 70E, Electrical Safety Requirements for Employee Workplaces when wiring the PanelView terminals. In addition to the NFPA general guidelines:

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

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

where power and communication lines must cross, they should cross at right angles. Communication lines can be installed in the same conduit as low level dc I/O lines (less than 10 volts).

grounding minimizes noise from Electromagnetic Interference (EMI) and is a safety measure in electrical installations.

use the National Electric Code published by the National Fire Protection Association as a source for grounding.

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Cable Charts

Refer to the following charts for a summary of PanelView terminal connections to controllers and network interface modules.

Runtime Communication Cables - to Processors

Protocol	PanelView Standard Comm Port	Cables: PanelView to Processor				
		SLC-500, 5/01, 5/02 CH1 RJ45 (DH-485)	SLC-5/03, 5/04, 5/05 CH0 (9-pin RS-232) (DF1 or DH-485)	SLC 5/03 CH1 (RJ45) (DH-485)	SLC 5/04 CH1 (DH+)	SLC 5/05 CH1 (ENET)
DF1 xxx16 xxx17 xxx18	RS-232 (DF1) Comm Port (8-pin Mini Din) PanelView 300 Micro 2711-xxx18	N/A	1761-CBL-AP00 (0.5 m/1.5 ft) 1761-CBL-PM02 (2 m/6.5 ft) 2711-CBL-PM05 (5 m/16 ft) 2711-CBL-PM10 (10 m/32 ft)	N/A	N/A	N/A
	RS-232 (DF1) Communication Port (9-pin) PanelView 300 - 1400 2711-xxx16, 2711-xxx17	N/A	2711-NC13 (5 m/16 ft) 2711-NC14 (10 m/32 ft) 2706-NC13 (3 m/10 ft)	N/A	N/A	N/A
DH-485 xxx2 xxx3 xxx5 xxx9 xxx19	RS-232 (DH-485) Comm Port (8-pin Mini Din) PanelView 300 Micro 2711-xxx19	use AIC+ Module (1761-NET-AIC) Connect to Port 1 or 2	1761-CBL-AP00 (0.5 m/1.5 ft) 1761-CBL-PM02 (2 m/6.5 ft) 2711-CBL-PM05 (5 m/16 ft) 2711-CBL-PM10 (10 m/32 ft)	use AIC+ Module (1761-NET-AIC) Connect to Port 1 or 2	N/A	N/A
	RS-232 (DH-485) Communication Port (9-pin) PanelView 300 - 1400 2711-xxx5, 2711-xxx9	use AIC+ Module (1761-NET-AIC) Connect to Port 1 or 2	2711-NC13 (5 m/16 ft) 2711-NC14 (10 m/32 ft) 2706-NC13 (3 m/10 ft)	use AIC+ Module (1761-NET-AIC) Connect to Port 1 or 2	N/A	N/A
	DH-485 Communication Port (RJ45) PanelView 300 - 1400 2711-xxx2, 2711-xxx3	1747-C10 (2 m/6 ft) 1747-C11 (1 ft/0.3 m) 1747-C20 (6 m/20 ft)	use AIC+ Module (1761-NET-AIC) Connect to Port 3	1747-C10 (2 m/6 ft) 1747-C11 (1 ft/0.3 m) 1747-C20 (6 m/20 ft)	N/A	N/A

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Protocol	PanelView Standard Comm Port	Cables: PanelView to Processor				
		SLC-500, 5/01, 5/02 CH1 RJ45 (DH-485)	SLC-5/03, 5/04, 5/05 CH0 (9-pin RS-232) (DF1 or DH-485)	SLC 5/03 CH1 (RJ45) (DH-485)	SLC 5/04 CH1 (DH+)	SLC 5/05 CH1 (ENET)
DeviceNet xxx10	DeviceNet Communication Port PanelView 300 - 1400 2711-xxx10	to SLC 5/02 with 1747-SDN and DeviceNet cable	use 1747-SDN Module with DeviceNet cable			
ControlNet xxx15	ControlNet Communication Port PanelView 550T - 1400 2711-xxx15	N/A	not applicable - PanelView does not support SLC ControlNet configurations			
EtherNet/IP xxx20	Ethernet Comm Port PanelView 550T - 1400 2711-xxx20	N/A	N/A	N/A	N/A	Ethernet cable

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Protocol	PanelView Standard Comm Port	Cables: PanelView to Processor		
		PLC-5, PLC-5C, PLC-5E CH0 (25-pin RS-232) (DF1)	ControlLogix CH0 (9-pin RS-232) (DF1)	MicroLogix 1000, 1200, 1500LSP CH0 (8-pin Mini DIN) (DF1 or DH-485)
DF1 xxx16 xxx17 xxx18	RS-232 (DF1) Comm Port (8-pin Mini Din) PanelView 300 Micro 2711-xxx18	1761-CBL-AP00 (1.5 ft/0.5 m) 1761-CBL-PM02 (6.5 ft/2 m) 2711-CBL-PM05 (16 ft/5 m) 2711-CBL-PM10 (32 ft/10 m) (9-to-25 pin adapter required)	1761-CBL-AP00 (1.5 ft/0.5 m) 1761-CBL-PM02 (6.5 ft/2 m) 2711-CBL-PM05 (16 ft/5 m) 2711-CBL-PM10 (32 ft/10 m)	1761-CBL-AM00 (1.5 ft/0.5 m) 1761-CBL-HM02 (6.5 ft/2 m) 2711-CBL-HM05 (16 ft/5 m) 2711-CBL-HM10 (32 ft/10 m)(1)
	RS-232 (DF1) Communication Port (9-pin) PanelView 300 - 1400 2711-xxx16, 2711-xxx17	2711-NC13 (16 ft/5 m) 2711-NC14 (32 ft/10 m) 2706-NC13 (10 ft/3 m) (9-to-25 pin adapter required)	2711-NC13 (16 ft/5 m) 2711-NC14 (32 ft/10 m) 2706-NC13 (10 ft/3 m)	2711-NC21 (16 ft/5 m) 2711-NC22 (49 ft/15 m) (null modem not required)(1)
DH-485 xxx2 xxx3 xxx5 xxx9 xxx19	RS-232 (DH-485) Comm Port (8-pin Mini Din) PanelView 300 Micro 2711-xxx19	N/A	N/A	1761-CBL-AM00 (1.5 ft/0.5 m) 1761-CBL-HM02 (6.5 ft/2 m) 2711-CBL-HM05 (16 ft/5 m) 2711-CBL-HM10 (32 ft/10 m)(1)
	RS-232 (DH-485) Communication Port (9-pin) PanelView 300 - 1400 2711-xxx5, 2711-xxx9	N/A	N/A	2711-NC21 (16 ft/5 m) 2711-NC22 (49 ft/15 m) (null modem not required)(1)
	DH-485 Communication Port (RJ45) PanelView 300 - 1400 2711-xxx2, 2711-xxx3	N/A	N/A	use AIC+ Module (1761-NET-AIC) Connect to Port 3
DeviceNet xxx10	DeviceNet Communication Port PanelView 300 - 1400 2711-xxx10	use 1771-SDN Module with DeviceNet cable	use 1756-DNB Module with DeviceNet cable	use 1761-NET-DNI Module with DeviceNet cable
ControlNet xxx15	ControlNet Communication Port PanelView 550T - 1400 2711-xxx15	to PLC-5C with ControlNet cable	use 1756-CNB Module with ControlNet cable	N/A

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Protocol	PanelView Standard Comm Port	Cables: PanelView to Processor		
		PLC-5, PLC-5C, PLC-5E CH0 (25-pin RS-232) (DF1)	ControlLogix CH0 (9-pin RS-232) (DF1)	MicroLogix 1000, 1200, 1500LSP CH0 (8-pin Mini DIN) (DF1 or DH-485)
EtherNet/IP xxx20	Ethernet Communication Port PanelView 550T - 1400 2711-xxx20	to PLC-5E with Ethernet cable	Use 1756-ENET Module with Ethernet cable	Use 1761-NET-ENI Module with Ethernet cable
Remote I/O xxx1	Remote I/O Communication Port PanelView 550T - 1400 2711-xxx1	shielded twinaxial cable (1770-CD)	use 1756-DHRIO Module with shielded twinaxial cable (1770-CD)	N/A
DH+ xxx8	DH+ Communication Port PanelView 550T - 1400 2711-xxx8	shielded twinaxial cable (1770-CD)	use 1756-DHRIO Module with shielded twinaxial cable (1770-CD)	N/A

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

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Protocol	PanelView Standard Comm Port	Cables: PanelView to Processor		
		MicroLogix 1500LRP CH1 (9-pin RS-232) (DF1 or DH-485)	CompactLogix CH0 (9-pin RS-232) (DF1 or DH-485)	FlexLogix CH0 (9-pin RS-232) (DF1)
DF1 xxx16 xxx17 xxx18	RS-232 (DF1) Comm Port (8-pin Mini Din) PanelView 300 Micro 2711-xxx18	1761-CBL-AP00 (1.5 ft/0.5 m) 1761-CBL-PM02 (6.5 ft/2 m) 2711-CBL-PM05 (16 ft/5 m) 2711-CBL-PM10 (32 ft/10 m)	1761-CBL-AP00 (1.5 ft/0.5 m) 1761-CBL-PM02 (6.5 ft/2 m) 2711-CBL-PM05 (16 ft/5 m) 2711-CBL-PM10 (32 ft/10 m)	1761-CBL-AP00 (1.5 ft/0.5 m) 1761-CBL-PM02 (6.5 ft/2 m) 2711-CBL-PM05 (16 ft/5 m) 2711-CBL-PM10 (32 ft/10 m)
	RS-232 (DF1) Communication Port (9-pin) PanelView 300 - 1400 2711-xxx16, 2711-xxx17	2711-NC13 (16 ft/5 m) 2711-NC14 (32 ft/10 m) 2706-NC13 (10 ft/3 m)	2711-NC13 (16 ft/5 m) 2711-NC14 (32 ft/10 m) 2706-NC13 (10 ft/3 m)	2711-NC13 (16 ft/5 m) 2711-NC14 (32 ft/10 m) 2706-NC13 (10 ft/3 m)
DH-485 xxx2 xxx3 xxx5 xxx9 xxx19	RS-232 (DH-485) Comm Port (8-pin Mini Din) PanelView 300 Micro 2711-xxx19	1761-CBL-AP00 (1.5 ft/0.5 m) 1761-CBL-PM02 (6.5 ft/2 m) 2711-CBL-PM05 (16 ft/5 m) 2711-CBL-PM10 (32 ft/10 m)	1761-CBL-AP00 (1.5 ft/0.5 m) 1761-CBL-PM02 (6.5 ft/2 m) 2711-CBL-PM05 (16 ft/5 m) 2711-CBL-PM10 (32 ft/10 m)	N/A
	RS-232 (DH-485) Communication Port (9-pin) PanelView 300 - 1400 2711-xxx6, 2711-xxx9	2711-NC13 (16 ft/5 m) 2711-NC14 (32 ft/10 m) 2706-NC13 (10 ft/3 m)	2711-NC13 (16 ft/5 m) 2711-NC14 (32 ft/10 m) 2706-NC13 (10 ft/3 m)	N/A
	DH-485 Communication Port (RJ45) PanelView 300 - 1400 2711-xxx2, 2711-xxx3	use AIC+ Module (1761-NET-AIC) Connect to Port 3	use AIC+ Module (1761-NET-AIC) Connect to Port 3	N/A
DeviceNet xxx10	DeviceNet Communication Port PanelView 300 - 1400 2711-xxx10	use 1761-NET-DNI Module with DeviceNet cable		N/A
ControlNet xxx15	ControlNet Communication Port PanelView 550T - 1400 2711-xxx15	N/A	N/A	use 1788-CNC module with ControlNet cable
EtherNet/IP xxx20	Ethernet Communication Port PanelView 550T - 1400 2711-xxx20	use 1761-NET-ENI Module with Ethernet cable	use 1761-NET-ENI Module with Ethernet cable	use 1761-NET-ENI Module with Ethernet cable
Remote I/O xxx1	Remote I/O Communication Port PanelView 550T - 1400 2711-xxx1	N/A	N/A	N/A
DH+ xxx8	DH+ Communication Port PanelView 550T - 1400 2711-xxx8	N/A	N/A	N/A

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Runtime Communication Cables - to Network Interface Module

Protocol	PanelView Standard Comm Port	Cables: PanelView to Interface Module				
		1747-AIC	1761-NET-AIC			1761-NET-DNI or 1761-NET-ENI
DF1 xxx16 xxx17 xxx18	RS-232 (DF1) Comm Port (8-pin Mini Din) PanelView 300 Micro 2711-xxx18	N/A	1761-CBL-AP00 (1.5 ft/0.5 m) 1761-CBL-PM02 (6.5 ft/2 m) 2711-CBL-PM05 (16 ft/5 m) 2711-CBL-PM10 (32 ft/10 m)	1761-CBL-AM00 (1.5 ft/0.5 m) 1761-CBL-HM02 (6.5 ft/2 m) 2711-CBL-HM05 (16 ft/5 m) 2711-CBL-HM10 (32 ft/10 m)	N/A	1761-CBL-AM00 (1.5 ft/0.5 m) 1761-CBL-HM02 (6.5 ft/2 m) 2711-CBL-HM05 (16 ft/5 m) 2711-CBL-HM10 (32 ft/10 m)
	RS-232 (DF1) Communication Port (9-pin) PanelView 300 - 1400 2711-xxx16, 2711-xxx17	N/A	2711-NC13 (16 ft/5 m) 2711-NC14 (32 ft/10 m) 2706-NC13 (10 ft/3 m)	2711-NC21 (16 ft/5 m) 2711-NC22 (49 ft/15 m) (null modem not required)		1761-CBL-AP00 (1.5 ft/0.5 m) 1761-CBL-PM02 (6.5 ft/2 m) 2711-CBL-PM05 (16 ft/5 m) 2711-CBL-PM10 (32 ft/10 m)
DH-485 xxx2 xxx3 xxx5 xxx9 xxx19	RS-232 (DH-485) Comm Port (8-pin Mini Din) PanelView 300 Micro 2711-xxx19	N/A	1761-CBL-AP00 (1.5 ft/0.5 m) 1761-CBL-PM02 (6.5 ft/2 m) 2711-CBL-PM05 (16 ft/5 m) 2711-CBL-PM10 (32 ft/10 m)	1761-CBL-AM00 (1.5 ft/0.5 m) 1761-CBL-HM02 (6.5 ft/2 m) 2711-CBL-HM05 (16 ft/5 m) 2711-CBL-HM10 (32 ft/10 m)	N/A	N/A
	RS-232 (DH-485) Communication Port (9-pin) PanelView 300 - 1400 2711-xxx5, 2711-xxx9	N/A	2711-NC13 (16 ft/5 m) 2711-NC14 (32 ft/10 m) 2706-NC13 (10 ft/3 m)	2711-NC21 (16 ft/5 m) 2711-NC22 (49 ft/15 m) (null modem not required)	N/A	N/A
	DH-485 Communication Port (RJ45) PanelView 300 - 1400 2711-xxx2, 2711-xxx3	1747-C10 (6 ft/2 m) 1747-C11 (1 ft/0.3 m) 1747-C20 (20 ft/6 m)	N/A	N/A	1761-CBL-AS03 (10 ft / 3 m) 1761-CBL-AS09 (30 ft / 9 m)	N/A

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Application File Upload/Download (Direct) Cables

PanelView Standard Type	Cable to Personal Computer
PanelView 300 Micro 2711-M3A18L1, -M3A19L1	1761-CBL-PM02 (6.5 ft/2 m) 2711-CBL-PM05 (16 ft/5 m) 2711-CBL-PM10 (32 ft/10 m)
DH-485 Comm Port only or DH-485 Comm Port & RS-232 Printer Port PanelView 300, 550/550T, 600/600T 2711-KxA2, -KxC2, -BxA2, -BxA3, -TxA2, -TxC2, 2711-KxA3, -KxC3, -KxG3, -BxA3, -BxC3, -TxA3, -TxC3, -TxG3	1747-PIC
RS-232 (DH-485) Comm Port only or RS-232 (DH-485) Comm Port & RS-232 Printer Port PanelView 300, 550/550T, 600/600T 2711-KxA5, -KxC5, -BxA5, -BxC5, -TxA5, -TxC5, 2711-KxA9, -KxC9, -KxG9, -BxA9, -BxC9, -TxA9, -TxC9, -TxG9	2711-NC13 (16 ft/5 m) 2711-NC14 (32 ft/10 m) 2706-NC13 (10 ft/3 m)
RS-232 (DF1) Comm Port only PanelView 300 2711-K3A17	
RS-232 (DF1) Comm Port & RS-232 Printer/Download Port PanelView 550T - 1400 2711-KxA16, -KxC16, -KxG16, -BxA16, -BxC16, -TxA16, -TxC16, -TxG16	
DeviceNet Comm Port & RS-232 Printer Port PanelView 300 - 1400 2711-KxA10, -KxC10, -KxG10, -BxA10, -BxC10, -TxA10, -TxC10, -TxG10	
ControlNet Comm Port & RS-232 Printer Port PanelView 550T - 1400 2711-KxA15, -KxC15, -KxG15, -BxA15, -BxC15, -TxA15, -TxC15, -TxG15	
Remote I/O Comm Port & RS-232 Printer Port PanelView 550T - 1400 2711-KxA1, -KxC1, -KxG1, -BxA1, -BxC1, -TxA1, -TxC1, -TxG1	
Ethernet Comm Port and RS-232 Printer Port PanelView 550T - 1400 2711-KxA20, -KxC20, -KxG20, -BxA20, -BxC20, -TxA20, -TxC20, -TxG20	
DH+ Comm Port & RS-232 Printer Port PanelView 550T - 1400 2711-KxA8, -KxC8, -KxG8, -BxA8, -BxC8, -TxA8, -TxC8, -TxG8	
Profibus Comm Port & RS-232 Printer Port PanelView 550T - 1400 2711-KxA12, -KxC12, -KxG12, -BxA12, -BxC12, -TxA12, -TxC12, -TxG12	
Modbus Comm Port & RS-232 Printer Port PanelView 550T - 1400 2711-KxA14, -KxC14, -KxG14, -BxA14, -BxC14, -TxA14, -TxC14, -TxG14	

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Remote I/O Terminal Connections

This section describes connections for the remote I/O PanelView terminals including:

- remote I/O port.
- supported controllers.
- making remote I/O connections.
- remote I/O pass-through.

Remote I/O Terminal Ports

The remote I/O versions of the PanelView terminal (catalog numbers ending in 1) have a remote I/O port and an RS-232 port.

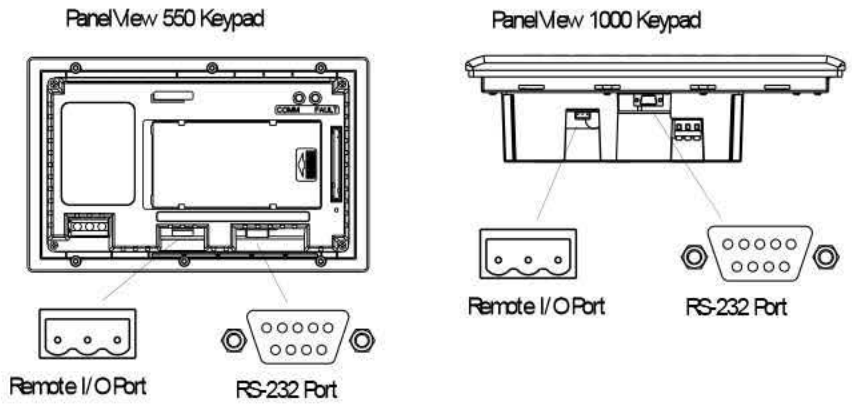
Use the remote I/O port to:

- communicate with the remote I/O scanner port on a PLC controller.
- communicate with SLC controllers using a 1747-SN remote I/O scanner module.
- communicate with other remote I/O scanners.
- transfer applications using remote I/O pass-through.

Use the RS-232 Port to:

- transfer PanelView applications between a computer and the terminal.
- connect a printer.

For details on connecting to the RS-232 port, see page 223.



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Supported Controllers

The remote I/O terminal connects to any Allen-Bradley 1771 remote I/O link. Applicable host controllers include almost all Allen-Bradley PLCs, computers, VME controllers, and DEC Q-Bus controllers with a remote I/O scanner module. New PLC product releases that support 1771 remote I/O will also work with PanelView.

When connecting a PanelView terminal to a controller refer to the user manual for your controller or scanner module for connection diagrams and any remote I/O limitations. The table below provides a summary of possible connections.

Controller	Scanner	Comments
ControlLogix	1756-DHRIO	Connect PanelView terminals through the 1756-DHRIO module.
PLC-5/11, 5/15[1], 5/20, 5/25, 5/30, 5/60, 5/80, 5/250	PLC Integral 1771-SN	Connect PanelView terminals directly to the remote I/O port (scanner mode). Connect PanelView terminals through the 1771-SN subscanner module.
PLC-5/10, 5/12	1771-SN	Connect PanelView terminals through the 1771-SN subscanner module.
PLC-2	1771-SN or 1772-SD2[2]	Connect PanelView terminals to the PLC-2 family of processors through a 1771-SN I/O subscanner module.
PLC-3 and PLC-3/10	None PLC-3/10 remote I/O Scanner[3]	Connect PanelView terminals directly to a PLC-3. Connect PanelView terminals to the PLC-3/10 through the remote I/O scanner.
SLC-5/02, 5/03, 5/04, 5/05	1747-SN	Connect PanelView terminals through the 1747-SN subscanner module. Each module provides an additional remote I/O link for up to 4 racks. Important: Only Series B and later versions of the 1747-SN subscanner support block transfers.
IBM PC	6008-SI	6008-SI I/O scanner is compatible with IBM PC or compatible computers. The scanner provides a computer access to the 1771 remote I/O link.
VME	6008-SV	6008-SV I/O scanner provides access to the 1771 remote I/O link for VME controllers.
DEC Q-BUS	6008-SQ	6008-SQ I/O scanner provides access to the 1771 remote I/O link for DEC Q-BUS controllers.

(1) If using a PLC-5/15 with partial rack addressing and block transfers, you must use Series B, Rev. J or later.

(2) If using a 1772-SD2 Remote Scanner/Distribution Panel, use revision 3 or later.

(3) If using a 1775-S4A Remote Scanner/Distribution Panel, user Series B or later.

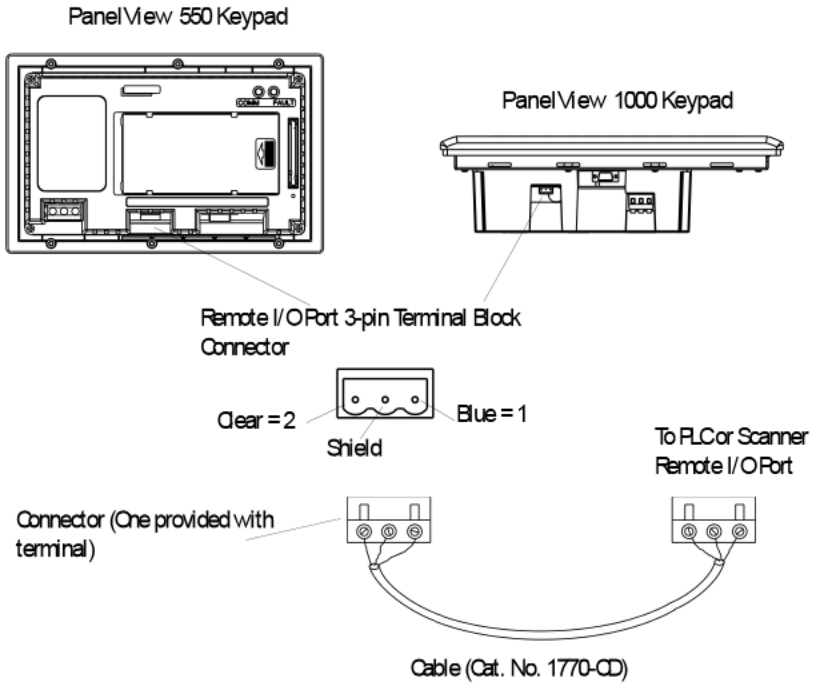
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Making Remote I/O Connections

To connect a PanelView terminal to a remote I/O scanner, use cable Catalog No. 1770-CD (equivalent to Belden 9463). The maximum cable length (link distance) is determined by the communication rate.

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

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



TIP The polarity of the remote I/O connector on the PanelView terminal is reversed from the PLC Scanner connector. However, the polarity is the same as the scanner card connection to the SLC controller.

TIP If the terminal is the last device on the link, connect a 1/2 watt terminating resistor across terminals 1 and 2. The value of the resistor depends on the remote I/O communication rate:

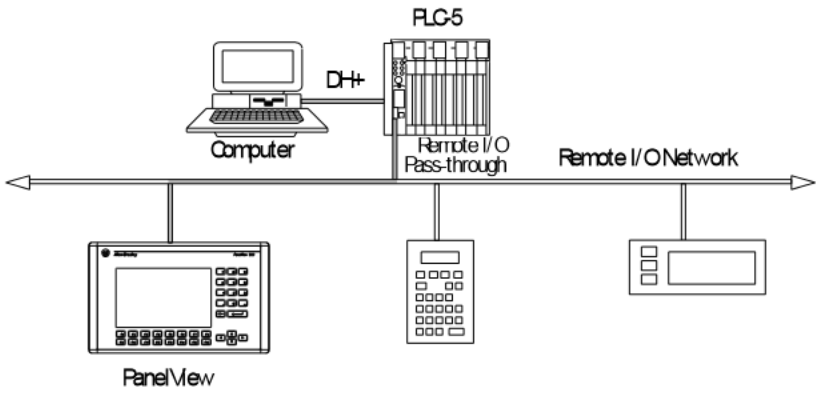
for 57.6 kilobaud and 115.2 kilobaud, use a 150-ohm resistor

for 230 kilobaud, use an 82-ohm resistor

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Remote I/O Pass-through using DH+

Remote I/O terminals allow the transfer of applications from a computer on the Allen-Bradley DH+ link to a PLC-5 or SLC-5/04 controller. The controller passes data to the PanelView terminal over the remote I/O network.



Follow these steps to transfer an application using remote I/O pass-through:

1. A Data Highway Plus Interface Module must be installed in the computer.

   Allen-Bradley offers a variety of interface cards for a DH+ connection between a computer and a controller.

2. The appropriate communication driver must be configured on the computer.

3. Connect the computer to the PLC.

   See the instruction sheets provided with the communication module or card to select the proper cable.

4. Connect the cable between the computer and the controller.

5. Pass-through must be enabled for the terminal.

6. Check the RIO Configuration screen on the terminal's Configuration Mode menu.

   Pass-through is enabled using the out-of-box application provided with the terminal or when defining remote I/O parameters in the PanelBuilder32 software.

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7. Refer to the online help in the PanelBuilder32 software for procedures on how to transfer applications by using pass-through.

TIP

If the terminal is the last device on the link, connect a 1/2 watt terminating resistor across terminals 1 and 2. The value of the resistor depends on the DH+ baud rate:

for 57.6 kilobaud and 115.2 kilobaud, use a 150-ohm resistor

for 230 kilobaud, use an 82-ohm resistor

DH+ Terminal Connections

This section describes connections for the DH+ PanelView terminals including:

DH+ ports
typical DH+ system configuration
making DH+ connections

DH+ Terminal Ports

The DH+ versions of the PanelView terminals (catalog numbers ending in 8) have a DH+ port and an RS-232 port.

Use the DH+ port to:

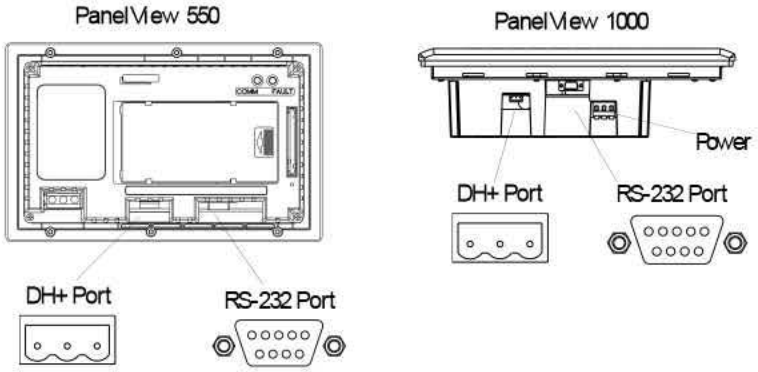
communicate with a PLC-5 controller on the Allen-Bradley DH+ link via the processor's DH+ port.
communicate with an SLC 5/04 controller (Channel 1 port) on the Allen-Bradley DH+ link via the processor's DH+ port.
communicate with a ControlLogix controller on the Allen-Bradley DH+ link via the 1756-DHRIO module.
transfer applications over the DH+ link from a computer with a DH+ connection.

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Use the RS-232 port to:

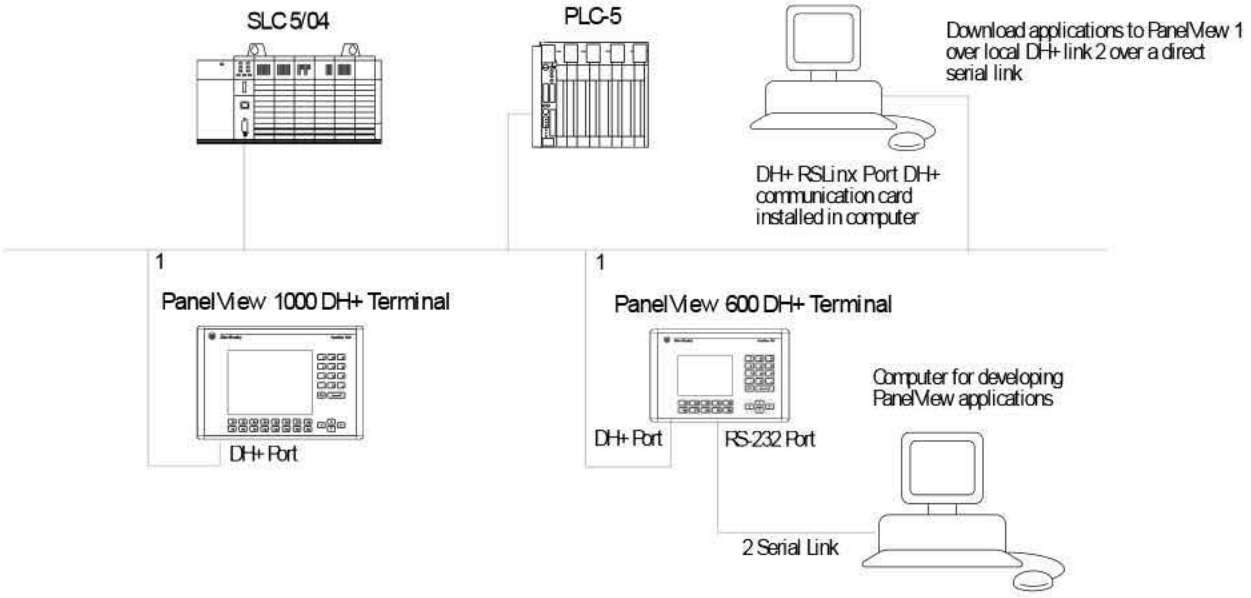
transfer PanelView applications between a computer and the DH+ terminal using a direct connection.

connect a printer. For connection details, see the last section in this chapter.



Typical DH+ System Configuration

For more information on the Allen-Bradley DH+ link, refer to the Data Highway/Data Highway Plus/Data Highway II/Data Highway 485 Cable Installation Manual, publication 1770-6.2.2.



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Making DH+ Connections

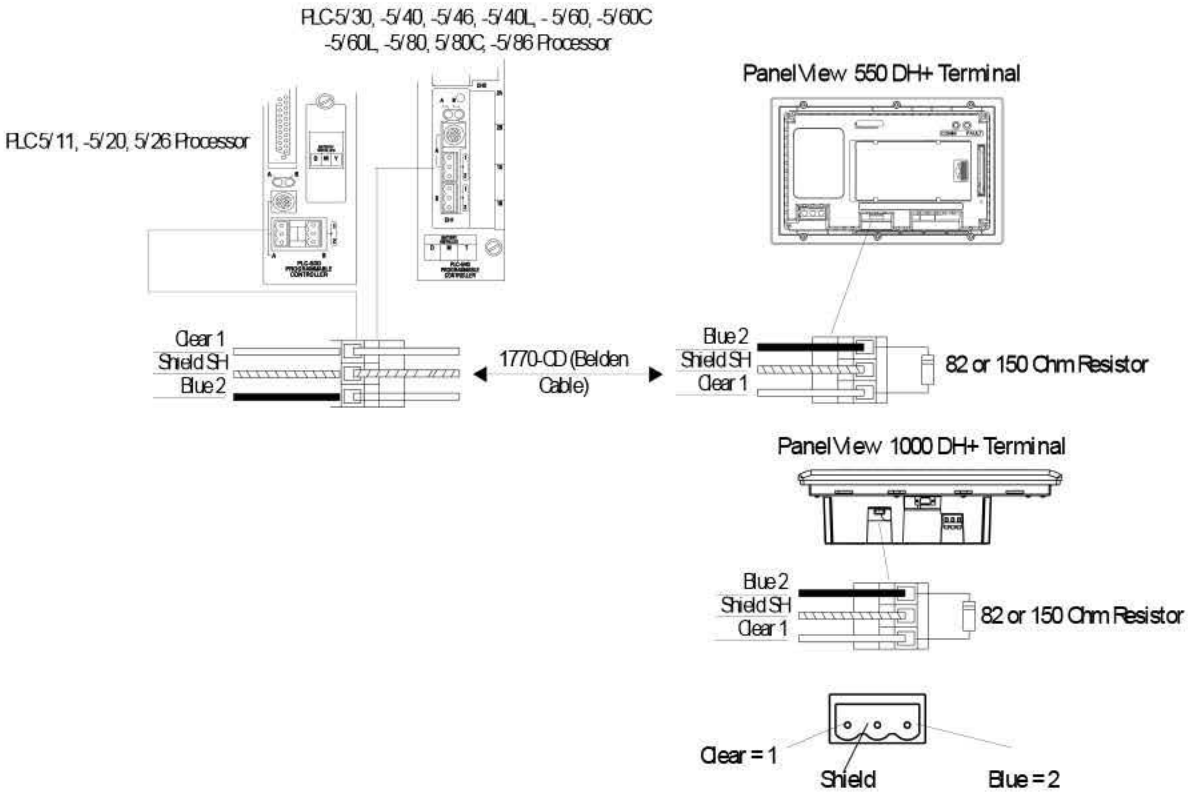
Use the Belden 9463 twin axial cable (1770-CD) to connect a DH+ PanelView terminal to the DH+ link.

You can connect a DH+ link in 2 ways.

- trunk line/drop line - from the drop line to the connector screw terminals on the DH+ connectors of the processor
- daisy chain - to the connector screw terminals on the DH+ connectors on the processor

Follow these guidelines when installing DH+ communication links.

- do not exceed these cable lengths:
  - trunk line-cable length: 3,048 m (10,000 ft)
  - drop-cable length: 30.4 m (100 ft)
- do not connect more than 64 stations on a single DH+ link



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DH-485 Terminal Connections

This section describes connections for the DH-485 PanelView terminals.

DH-485 terminal ports
Connecting to a single SLC controller (Point-to-point)
Connecting to a DH-485 network
Connecting a computer
Connecting a Hand-held terminal

TIP For PanelView 300 Micro terminals, refer to page 218.

DH-485 Terminal Ports (RJ45)

DH-485 PanelView terminals with catalog numbers ending in 2 have two DH-485 ports. Terminals with catalog numbers ending in 3 also have an RS-232 printer port.

Use the DH-485 communication port to:

communicate with a single or multiple SLC controllers over a DH-485 network.

Use the DH-485 SLC Programming connector to:

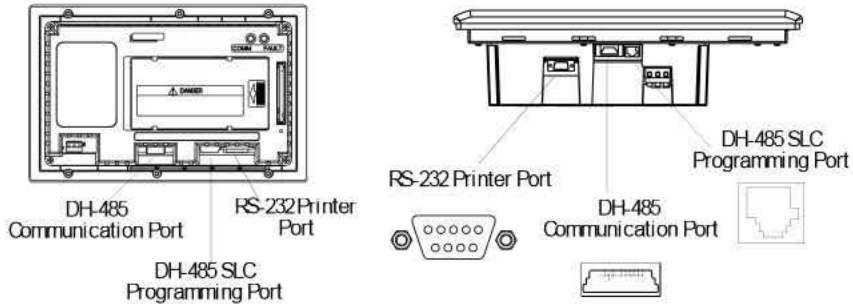
upload/download PanelView applications.
monitor SLC operation, enter/modify SLC programs, test network devices.

Use the RS-232 Printer port to:

connect a printer that supports the IBM enhanced character set. For details on connecting to the RS-232 port, see the last section in this chapter.

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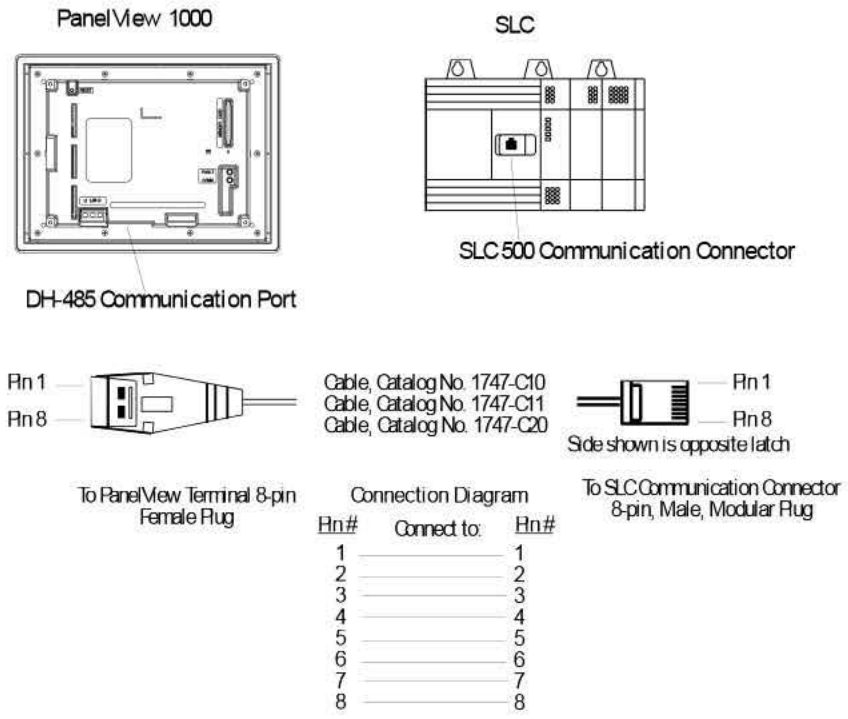
The DH-485 communication port and programming connector may appear in different locations on specific terminals. Identify the ports by their size and shape or by the port labels.



Connecting to a Single SLC Controller (Point-to-point)

To connect a DH-485 terminal to a single SLC controller use one of these cables:

0.3 m (1 ft) Cat. No. 1747-C11
1.83 m (6 ft) Cat. No. 1747-C10
6.1 m (20 ft) Cat. No. 1747-C20



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The DH-485 connectors are not electrically isolated. If electrical isolation is required, use Link Couplers (Cat. No. 1747-AIC) as shown on next page.

ATTENTION

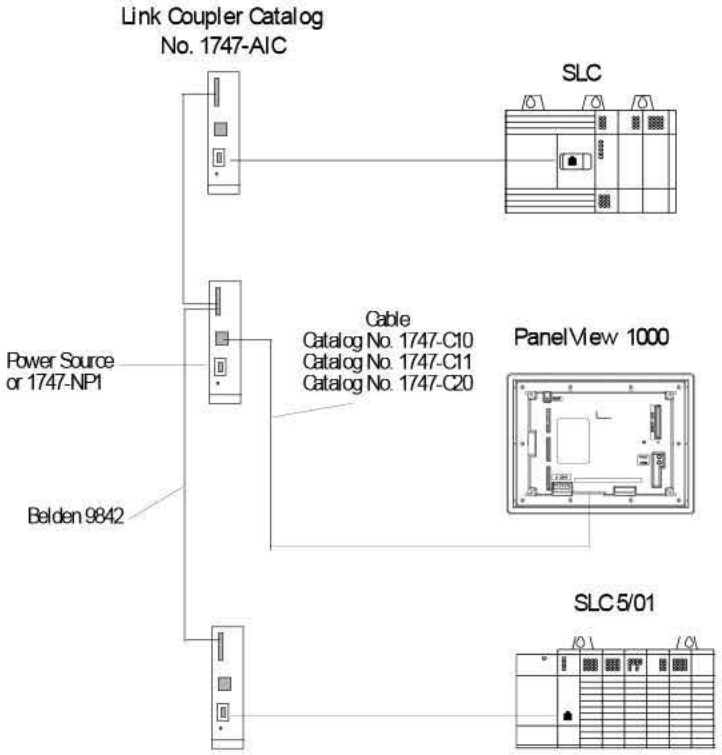


Electrical isolation using Link Couplers (Cat. No. 1747-AIC) is required where the distance between the PanelView terminal and the SLC is greater than 6.1 m (20 ft).

Connecting to a DH-485 Network

This section shows how to connect a DH-485 terminal to multiple SLC controllers on a DH-485 network through the AIC Link Coupler.

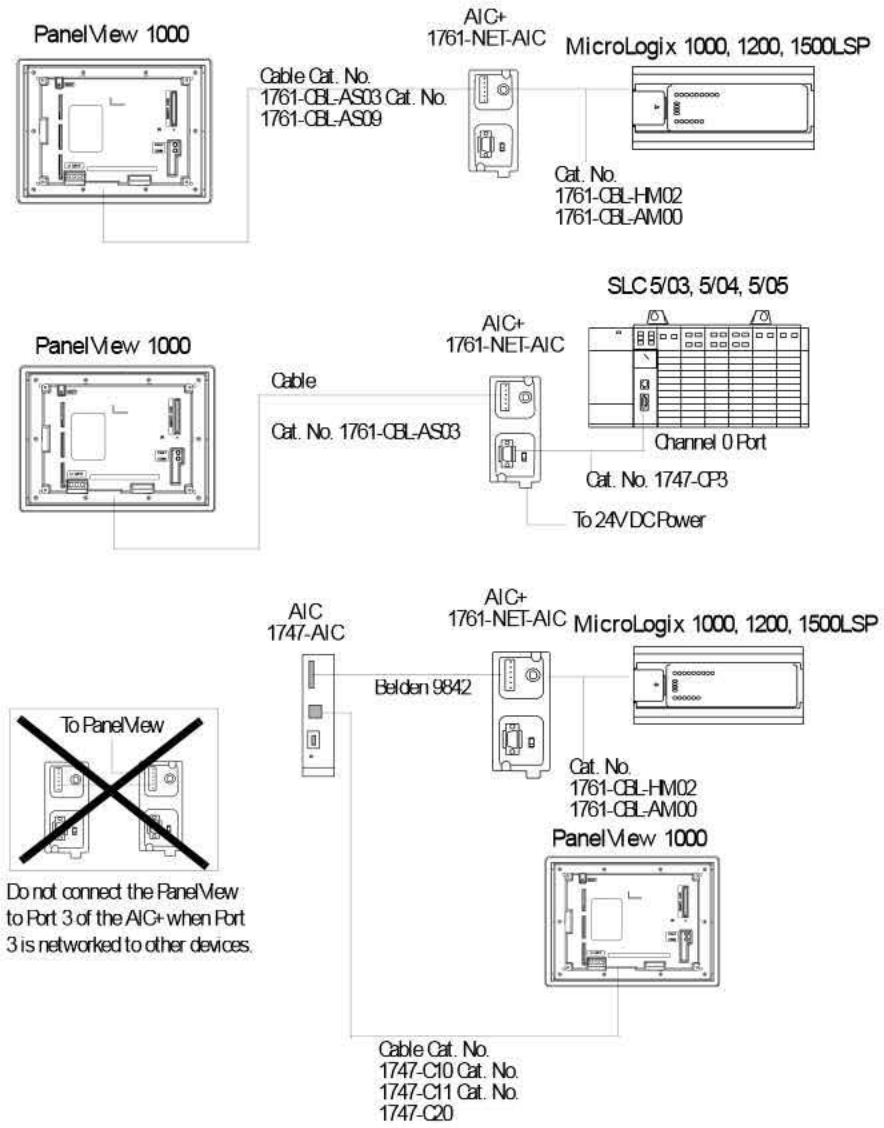
TIP For PanelView 300 Micro terminals, refer to page 218.



IMPORTANT The DH-485 network cable requires proper shielding, grounding and termination. Refer to Data Highway / Data Highway Plus / Data Highway-485 Cable Installation Manual, publication 1770-6.2.2).

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The illustration below shows how to connect a DH-485 terminal to a MicroLogix or SLC controller using the AIC+ Link Coupler (Cat. No. 1761-NET-AIC).



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Connecting a Computer

On DH-485 terminals, PanelView applications are transferred:

through the DH-485 programming connector to the terminal.
through any node on a DH-485 network.

To connect a computer to the PanelView terminal, you need:

a cable (same cables used to transfer applications from APS software to SLC)
- 0.3 m (1 ft) cable, Cat. No. 1747-C11
- 1.83 m (6 ft) cable, Cat. No. 1747-C10
- 6.1 m (20 ft) cable, Cat. No. 1747-C20

Personal Computer Interface Converter (PIC), Cat. No. 1747-PIC. The PIC connects to the computer. The cable connects the PIC to the DH-485 programming connector.

Personal Computer Interface Converter (PIC)

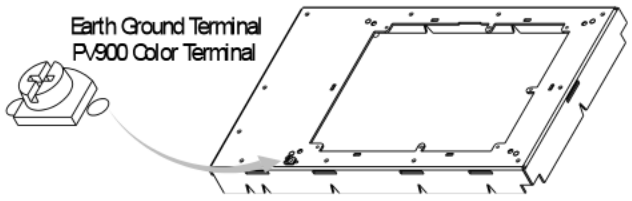
The Personal Computer Interface Converter (PIC) receives power from a controller through DH-485 connections. When connecting a computer directly to a PanelView terminal without a controller connected, you need to use a power supply (Cat. No. 1747-NP1). The power supply connects to the DH-485 communication connector with the same cables used to connect an SLC.

IMPORTANT The terminal must be connected to an SLC, DH-485 network, or power supply (Cat. No. 1747-NP1). This connection provides power to the PIC.

Connecting Earth Ground to PanelView Terminals

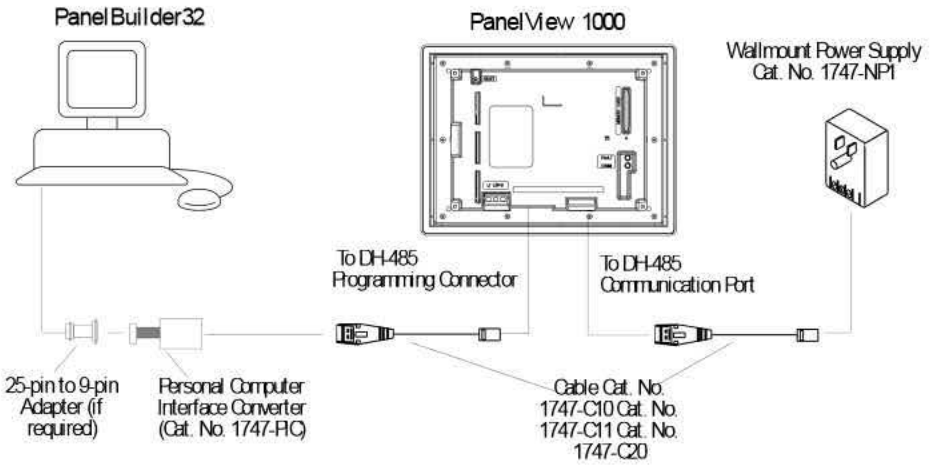
When using the 1747-PIC converter with the PV600, PV900, PV1000 color, and PV1000 grayscale terminals, you must connect the Earth Ground terminal on the back of the terminal to Earth Ground.

Connect the Earth Ground terminal using 14-gauge, stranded wire no longer than 1 meter (40 inches).

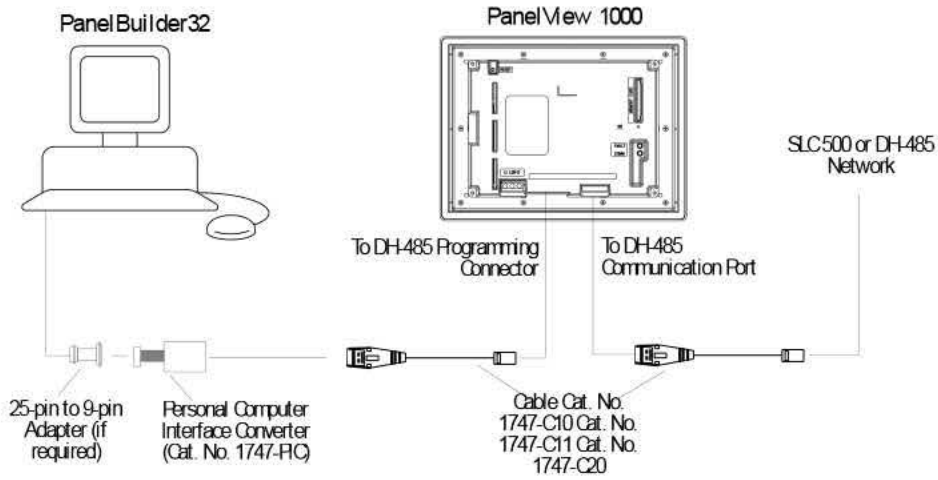


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Connecting a Computer to DH-485 Connector Using a Power Supply



Connecting a Computer to DH-485 Connector Using a DH-485 Powered Device



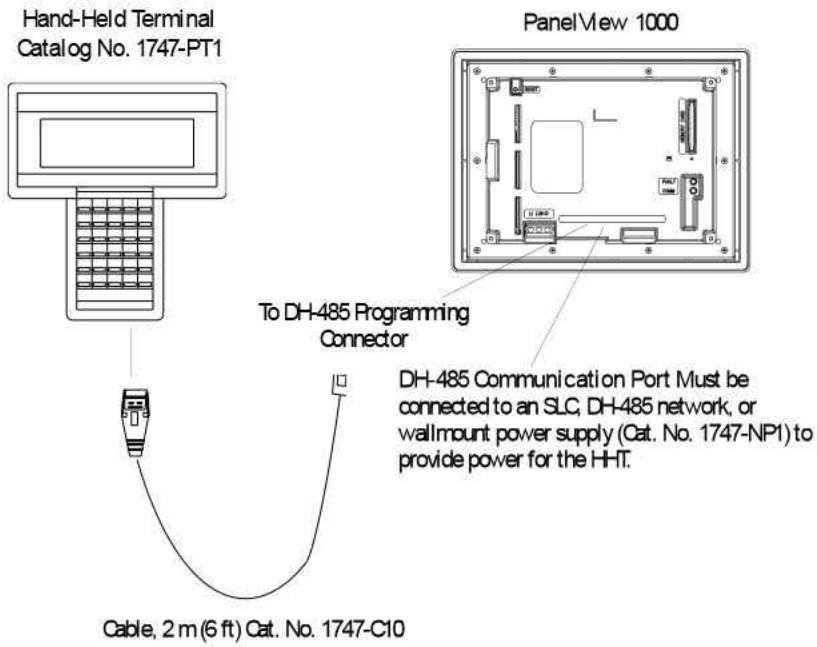
TIP The computer can connect to any node on the network. It is not necessary to directly connect the computer to the PanelView terminal.

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Connecting a Hand-held Terminal

To connect a Hand-held Terminal (HHT) to the PanelView terminal, use cable Cat. No. 1747-C10. One end of the cable connects to the HHT connector and the other end connects to the DH-485 programming connector on the terminal. All power is supplied to the HHT through the cable.

IMPORTANT The PanelView terminal must be connected to an SLC, DH-485 network, or power supply. This connection provides power for the HHT.



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RS-232 (DH-485) Terminal Connections

This section describes connections for the RS-232 (DH-485) PanelView terminals including:

- RS-232 ports
- connecting to a SLC, CompactLogix, or MicroLogix Controller (point-to-point)
- connecting to a MicroLogix Controller through the AIC+ module
- connecting a computer
- connecting to a DH-485 link

Refer to page 218 for PanelView 300 Micro RS-232 connections.

RS-232 Terminal Ports

RS-232 (DH-485) PanelView terminals with catalog numbers ending in 5 have a single RS-232 communication port. Terminals with catalog numbers ending in 9 also have an RS-232 printer port.

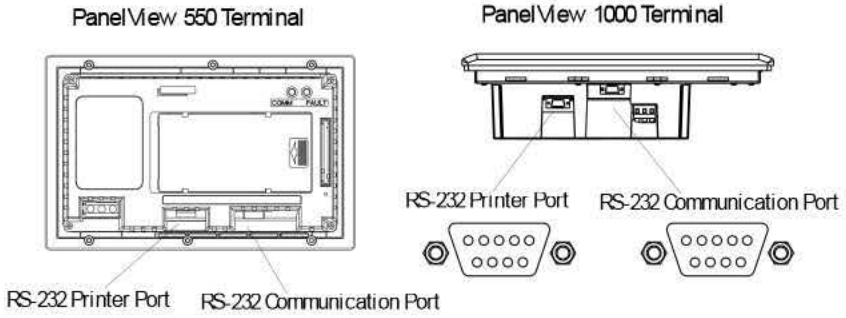
Use the RS-232 communication port to:

- communicate with a single SLC 5/03, 5/04 or 5/05 controller (Channel 0 port) or MicroLogix 1000, 1200 or 1500 controller using point-to-point communication
- download/upload PanelView applications

Use the RS-232 printer port to:

- connect a printer that supports the IBM enhanced character set. For connection details, see the last section in this chapter.

The RS-232 communication port and the printer port are reversed on the PanelView 550 touch screen terminals.



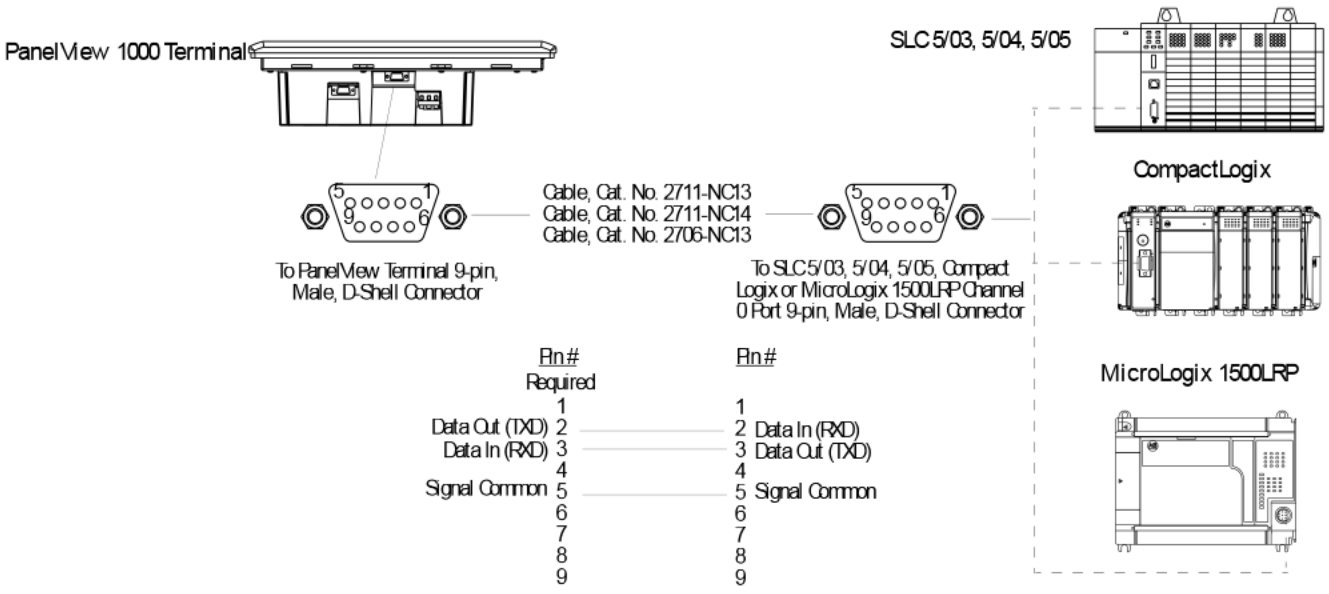
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Connecting to an SLC, CompactLogix, MicroLogix Controller (Point-to-point)

This section shows how to connect a CompactLogix, MicroLogix 1500LRP, or SLC controller (SLC 5/03, SLC 5/04, or SLC 5/05) to the RS-232 PanelView terminal for point-to-point (DH-485) communication. On terminals with two ports, use the RS-232 communication port.

For the SLC, CompactLogix or MicroLogix 1500LRP controller, use one of these cables:

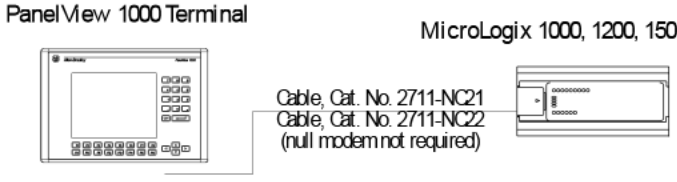
5 m (16.4 ft) Cat. No. 2711-NC13
10 m (32.7 ft) Cat. No. 2711-NC14
3 m (10 ft) Cat. No. 2706-NC13



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

For the MicroLogix 1000, MicroLogix 1200, or MicroLogix 1500LSP controller, use one of these cables:

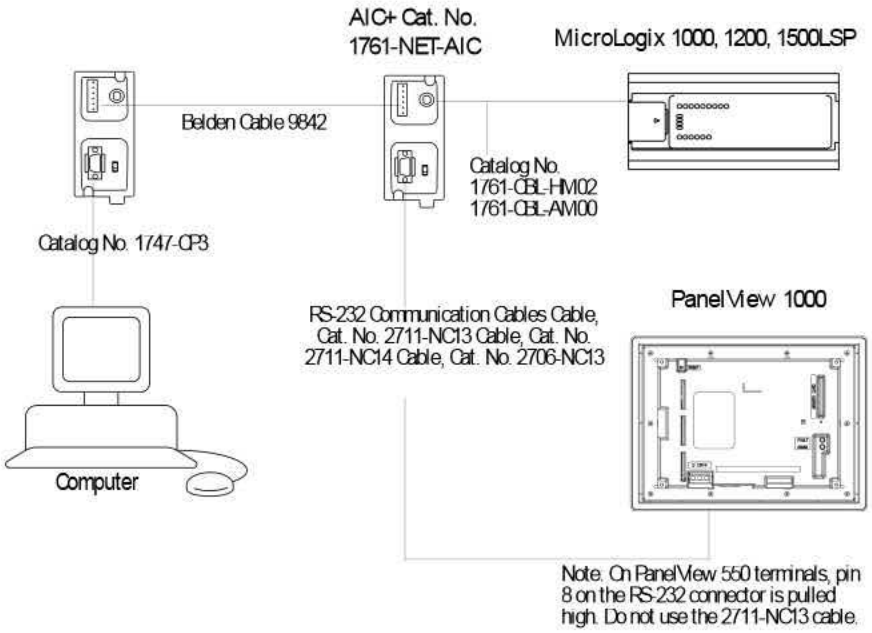
5 m (16.4 ft) Cat. No. 2711-NC21
15 m (49 ft) Cat. No. 2711-NC22



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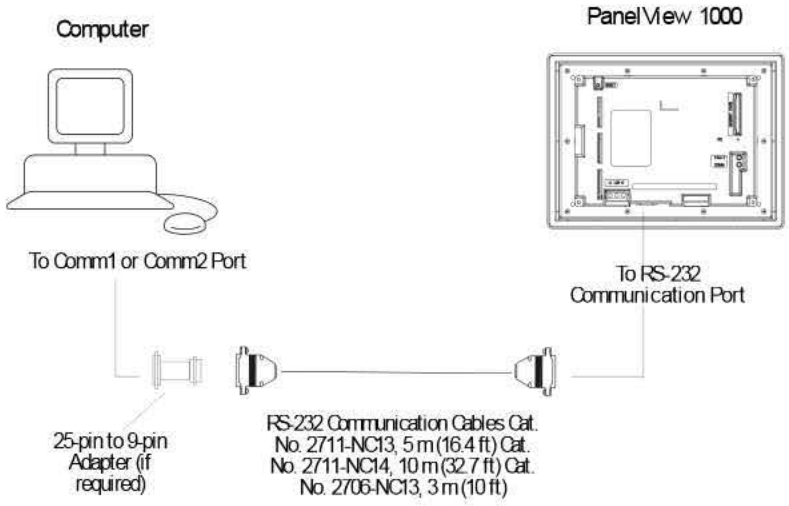
Connecting to a MicroLogix Controller through an AIC+ Module

This section shows how to connect the RS-232 (DH-485) version of the PanelView terminal to a MicroLogix controller through an AIC+ Link Coupler.



Connecting a Computer

This section shows how to connect a computer to the RS-232 (DH-485) PanelView terminal for transferring applications.

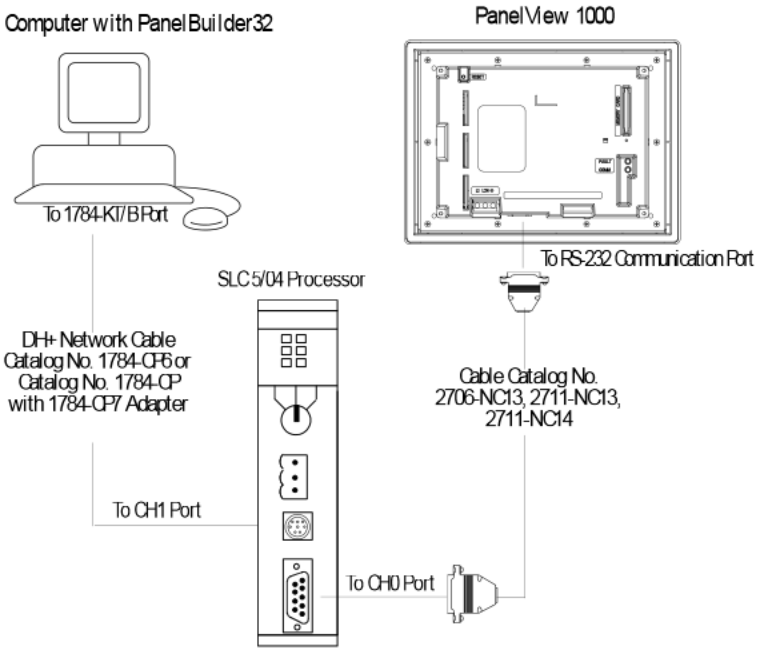


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Connecting a DH+ to DH-485 Pass-through Link

This section shows connections for transferring applications between a computer on the Allen-Bradley DH+ link and an RS-232 (DH-485) PanelView terminal, through an SLC 5/04 controller.

The RS-232 (DH-485) communication port on the terminal connects to the CH0 port of the controller using one of the cables listed below.



RS-232 (DF1) Terminal Connections

This section describes connections for the RS-232 (DF1) versions of the PanelView terminal including:

- compatible controllers
- RS-232 terminal ports
- connecting to a controller (point-to-point)
- using a modem
- connecting to a DeviceNet or EtherNet/IP network

TIP For PanelView 300 Micro terminals, refer to page 218.

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Compatible Controllers

The RS-232 (DF1) terminals support full duplex communication with the following controllers.

MicroLogix 1000, 1200, 1500 controllers via the communication port.

ControlLogix, CompactLogix, FlexLogix controller via RS-232 port

SLC, PLC or MicroLogix 1000, 1200 or 1500 controllers via 1761-Net-DNI modules (for DeviceNet Network).

SLC 5/03, SLC 5/04, or SLC 5/05 controllers via Channel 0/DF1 port.

PLC-5/10, PLC-5/12, PLC-5/15, or PLC-5/25 controllers via bridge such as the 1770-KF2, or 1785-KE.

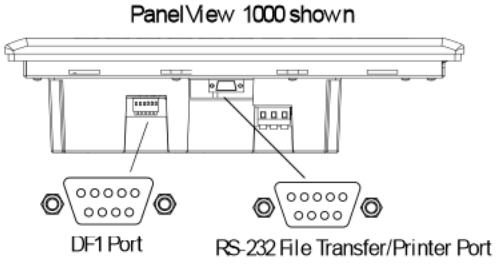
Enhanced PLC-5 controllers (for example, PLC-5/11, PLC-5/20, PLC-5/20C, PLC-5/20E) via Channel 0/DF1 port.

RS-232 (DF1) Terminal Ports

The RS-232 (DF1) PanelView terminals, with catalog numbers ending in 17, have a single RS-232 communication port supporting DF1 (Full Duplex) communication port. PanelView terminals with catalog numbers ending in 16 also have an RS-232 printer/file transfer port.

Use the DF1 port to communicate with a logic controller using DF1 full duplex communication.

Use the RS-232 printer/file transfer port to transfer applications between a computer and the terminal or to connect a printer. For connection details, see the last section in this chapter.



Note: The PanelView 300 has one DF1 port which is used for communication and transferring applications.

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RS-232/DF1 Port Connector

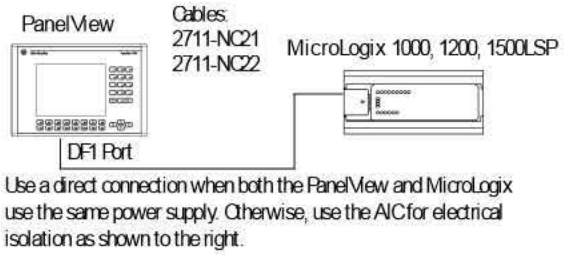
The DF1 port on the PanelView terminal is a 9-pin, male, RS-232 connector. The table below shows the pinout descriptions for this port and how these pins map to the DF1 ports on the controllers.

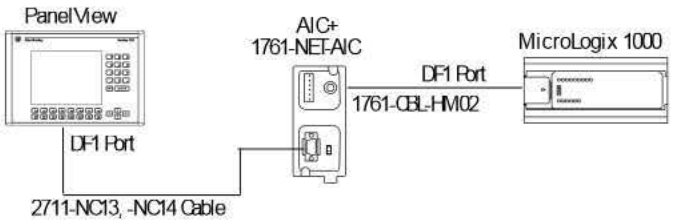
DF1 Port 9-pin DCE		SLC 9-pin	PLC 25-pin	MicroLogix/ DNI 8-pin DIN
1				
2	RXD →	2	3	4
3	← TXD	3	2	7
4	← DTR	4	20	
5	↔ COM	5	7	2
6	DSR →	6	6	
7	← RTS	7	4	
8	CTS →	8	5	
9				

The maximum cable length for DF1/full duplex communication is 15.24 m (50 ft).

Connecting to a MicroLogix 1000 Controller

The following shows a point-to-point connection between the RS-232 (DF1) port of the PanelView terminal and a MicroLogix 1000 controller.



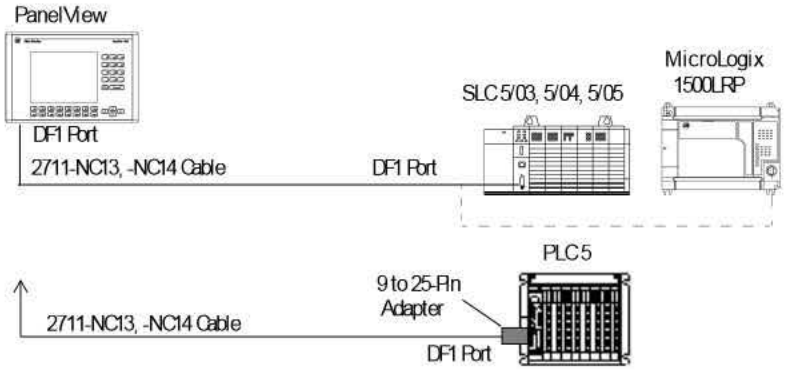


The 1761-NET-AIC module is used only with the MicroLogix controller and eliminates grounding level differences between the controller and PanelView terminal.

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Connecting to an SLC, PLC, or MicroLogix 1500LRP Controller

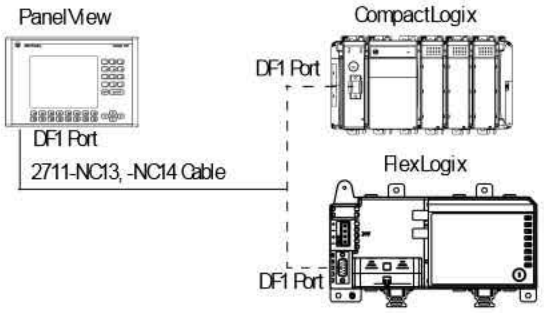
The following shows a point-to-point connection between the DF1 port of the PanelView terminal and an SLC or PLC controller.



Use an optical isolator or equivalent when grounding level differences exist between the controller or modem and the PanelView.

Connecting to a CompactLogix or FlexLogix

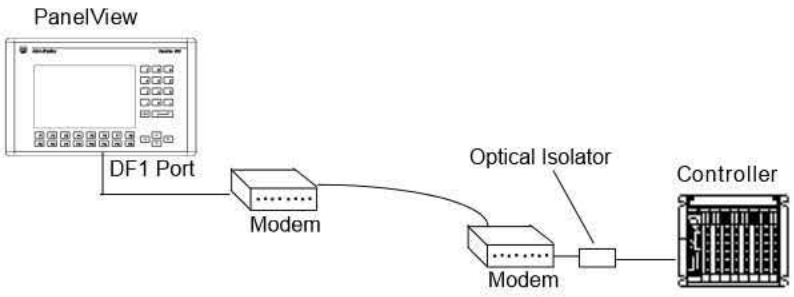
The following shows a point-to-point connection between the DF1 port of the PanelView and a CompactLogix or FlexLogix controller.



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Using a Modem

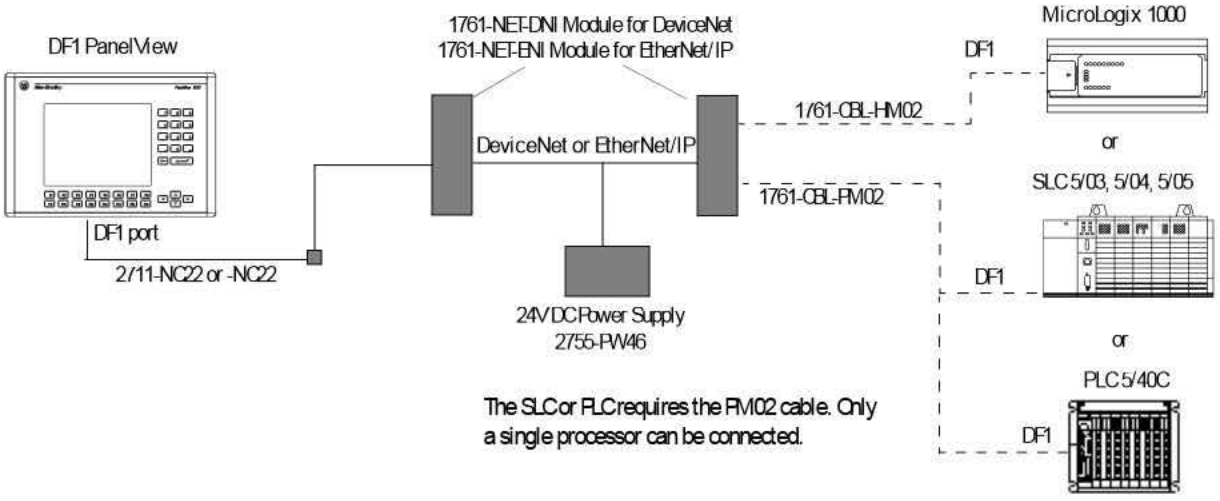
Wire or radio modem communication is possible between a DF1 terminal and controller. Each modem must support full duplex communication. Refer to your modem user manual for details on settings and configuration.



Connecting to a DeviceNet or EtherNet/IP Network

The following illustration shows a DF1 PanelView terminal connected to a single controller (MicroLogix, SLC or PLC) on:

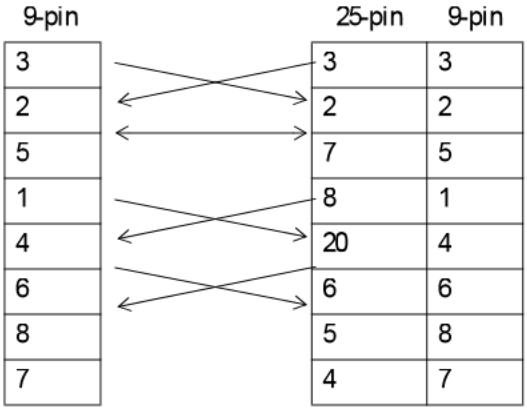
a DeviceNet network via 1761-NET-DNI modules or
an EtherNet/IP network via 1761-NET-ENI modules



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Constructing a Null Modem Cable

To construct a null modem cable, refer to the following pinout:



ControlNet Connections

This section describes connections for the ControlNet PanelView terminals including:

- ControlNet Protocol
- Compatible ControlNet Controllers
- ControlNet ports on the PanelView terminal
- Typical ControlNet network
- Making ControlNet connections

Related Information

For more information on ControlNet products, refer to the following publications.

- ControlNet System Overview, publication NETS-SG001
- ControlNet System Planning and Installation Manual, publication CNET-IN002
- ControlNet Cable System Component List, publication AG-PA002

The Allen-Bradley website (www.ab.com) provides information and product descriptions of ControlNet products. Under the Products and Services heading, select Communication.

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ControlNet Protocol

The PanelView terminal supports release 1.5 of ControlNet. Scheduled and Unscheduled PLC-5C and ControlLogix messaging. Redundant cabling is supported.

ControlNet allows a flexible control architecture that can work with multiple processors and up to 99 nodes (via taps) anywhere along the trunk cable of the network. There is no minimum tap separation and you can access the ControlNet network from every node (including adapters).

Compatible ControlNet Controllers

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

ControlLogix using 1756-CNB module

PLC-5/20C, PLC-5/40C, PLC-5/60C, PLC-5/80C

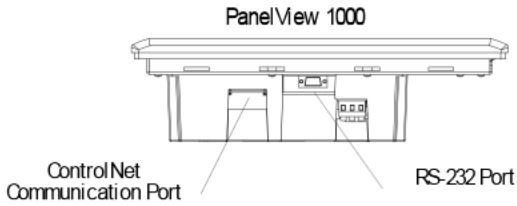
ControlNet Terminal Ports

ControlNet versions of the PanelView terminal (catalog numbers ending in 15) have a ControlNet communication port and an RS-232 serial port.

Use the ControlNet port to connect to devices on a ControlNet network and transfer applications over a ControlNet network.

Use the RS-232 port to transfer applications between a computer and the terminal using a direct connection or to connect a printer.

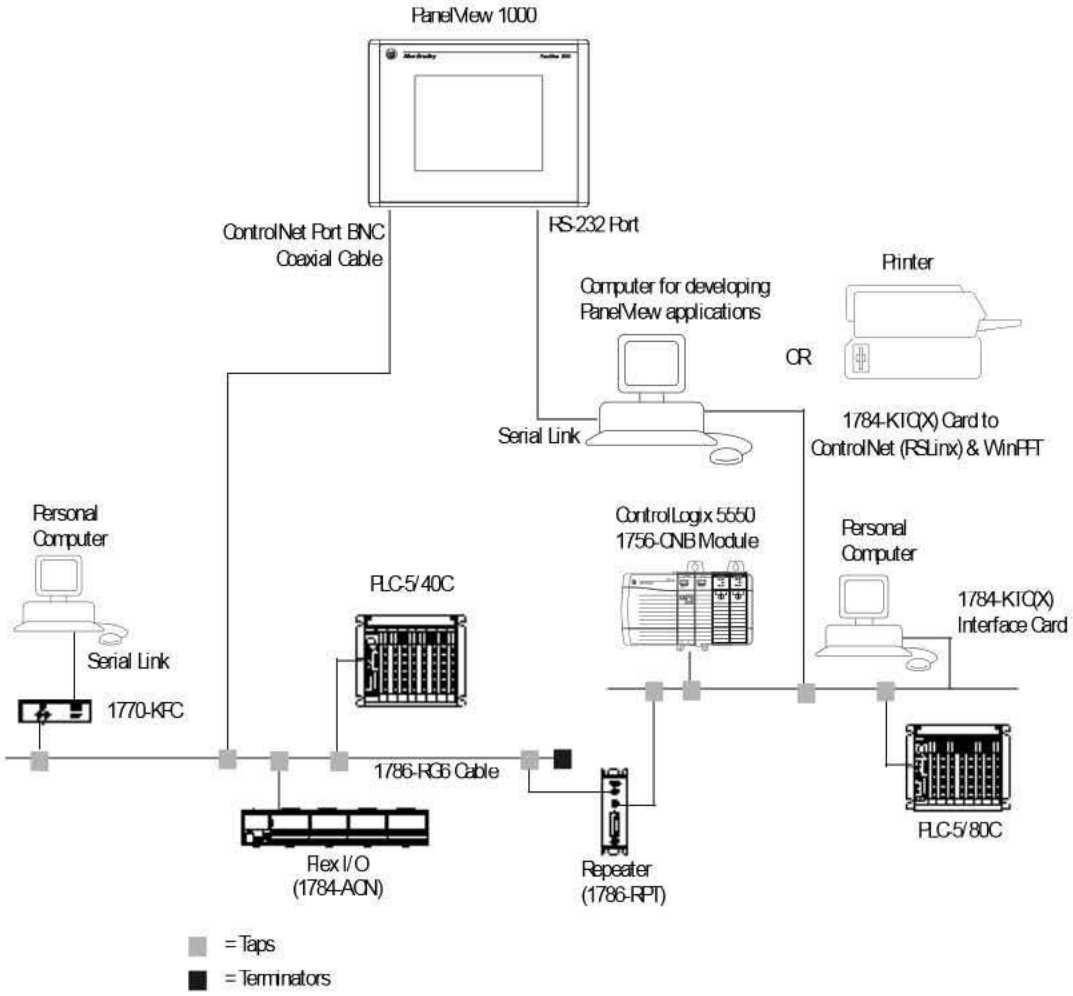
For details on connecting to the RS-232 port, see the last section in this chapter.



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Typical ControlNet Network

Below is a typical ControlNet network with a PanelView terminal installed on a network drop.

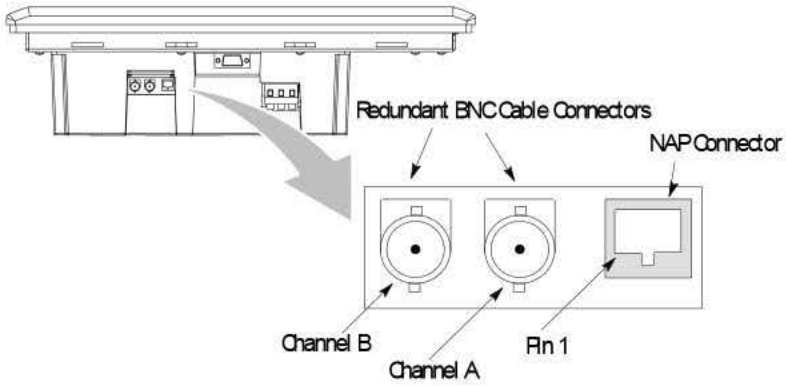


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Making ControlNet Connections

Use the pinout information below to connect the PanelView to a ControlNet network.

IMPORTANT Follow the ControlNet network layout and design as specified in the ControlNet Cable System Planning and Installation Manual, publication CNET-IN002.



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

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NAP and Redundant Cables

ControlNet cables, taps, connectors. Refer to the ControlNet Cable System Planning and Installation manual, publication CNET-IN002 for descriptions of these components. For information on purchasing these items, refer to the Allen-Bradley ControlNet Cable System Component List, publication AG-PA002.

Item	Catalog Number
RG-6 quad-shield	1786-RG6
Coax repeater	1786-RPT, -RPTD
Coax taps	1786-TPR, -TPS, -TPYR, -TPYS
Network access cable	1786-CP
Coax tool kit	1786-CTK
Segment terminators	1786-XT
BNC connectors	1786-BNC, -BNCJ, -BNCP, -BNCJ1

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

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DeviceNet Network Terminal Connections

This section describes connections for the DeviceNet PanelView terminals including:

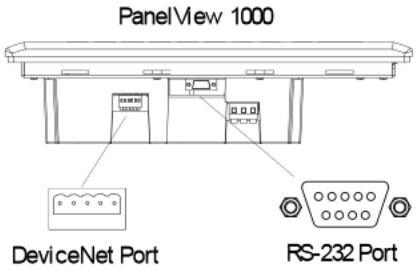
- DeviceNet connectors
- connections
- typical DeviceNet network

DeviceNet Terminal Ports

The DeviceNet versions of the PanelView terminals (catalog numbers ending in 10) have a DeviceNet port and an RS-232 serial port.

- Use the DeviceNet port to connect to devices on a DeviceNet network or transfer applications over a DeviceNet network.
- Use the RS-232 port to transfer applications between a computer and the terminal using a direct connection or to connect a printer.

For details on connecting to the RS-232 port, see the last section in this chapter.



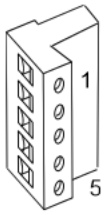
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Making DeviceNet Connections

Use one of the cables below to connect the DeviceNet version of the PanelView terminal to a DeviceNet network.

Cable	Publication No.
DeviceNet Cable, 50 m (164 ft)	1485C-P1A50
DeviceNet Cable, 100 m (328 ft)	1485C-P1A150
DeviceNet Cable, 150 m (492 ft)	1485C-P1A300

IMPORTANT Refer to DeviceNet Cable System Planning and Installation manual, publication DNET-UM072 for network layout and design information

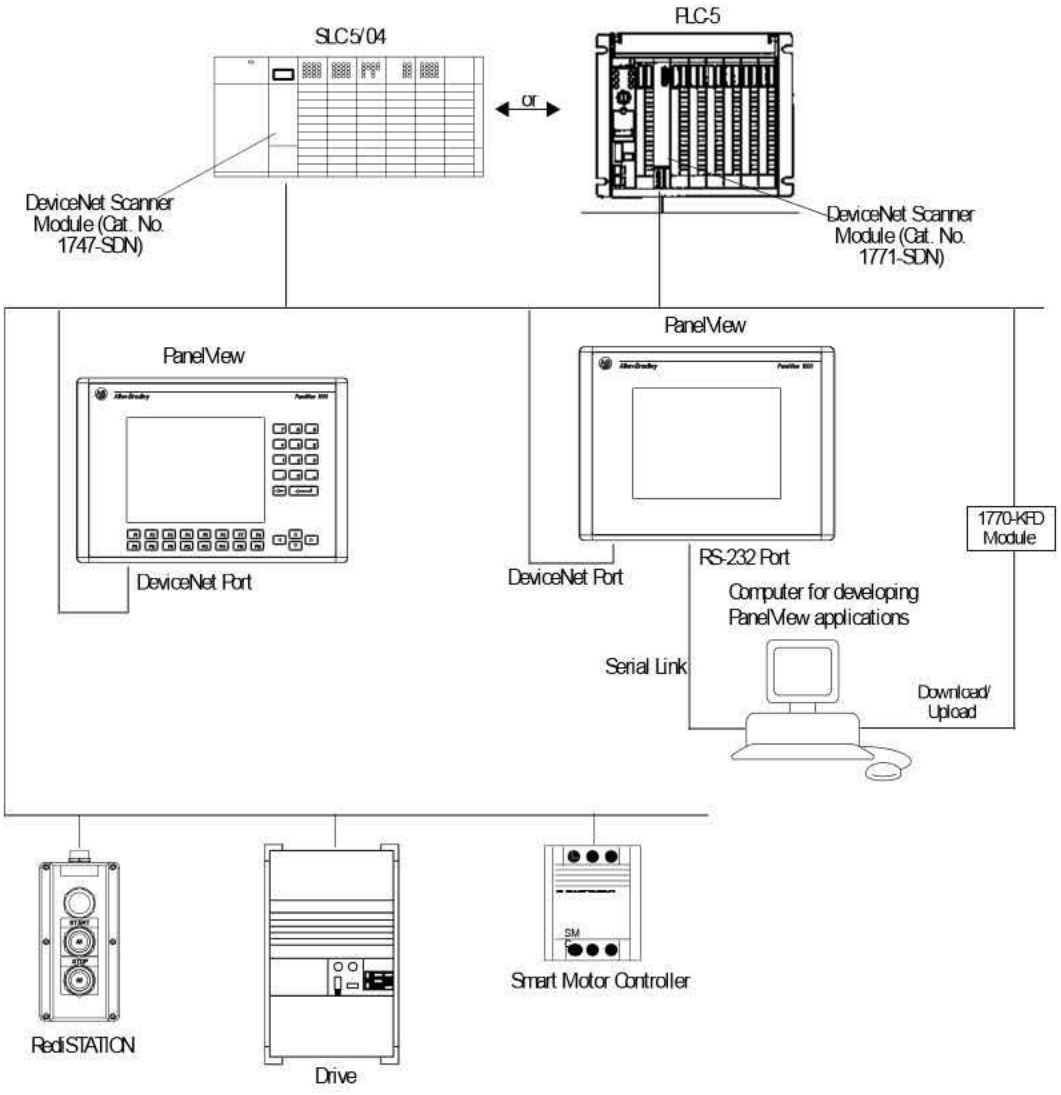
DeviceNet Terminal Block	Terminal	Signal	Function	Color
	1	COM	Common	Black
	2	CAN_L	Signal Low	Blue
	3	SHIELD	Shield	Uninsulated
	4	CAN_H	Signal High	White
	5	VDC+	Power Supply	Red

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Typical DeviceNet Network

Below is a typical DeviceNet network with PanelView terminals installed on 2 of the network drops.

A DeviceNet network requires a 24V DC power supply. DeviceNet power consumption is 24 90 mA @24V DC. The PanelView terminal does not receive its power from the network.



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EtherNet/IP Connections

The EtherNet/IP PanelView terminal can communicate on an EtherNet TCP/IP network with the following devices:

- PLC-5E or PLC-5 with 1761-NET-ENI or 1785-ENET module
- SLC-5/05 or SLC with 1761-NET-ENI module
- ControlLogix controller with 1756-ENET/B or 1761-NET-ENI module
- MicroLogix, CompactLogix, or FlexLogix with 1761-NET-ENI module
- Another EtherNet/IP PanelView terminal
- Any device that can process CIP messages

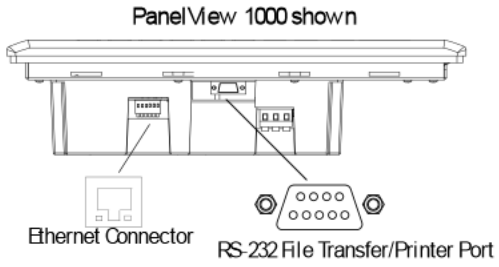
The PanelView terminal supports access to multiple ControlLogix controllers through:

- a single 1756-ENET/B module in a single 1756-I/O rack.
- multiple 1756-ENET/B modules in a single 1756-I/O rack.
- multiple 1756-ENET/B modules in multiple 1756-I/O racks.

EtherNet/IP Terminal Ports

The EtherNet/IP versions of the PanelView terminals (catalog numbers ending in 20) have an Ethernet RJ45 communication port and an RS-232 serial port.

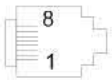
- Use the RJ45 port to communicate with a logic controller on an EtherNet/IP network and transfer applications over an EtherNet/IP network.
- Use the RS-232 serial port to transfer applications between a computer and the terminal using a direct connection or to connect a printer. For connection details, see the last section in this chapter.



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Ethernet Connector

The Ethernet connector is an RJ45, 10/100Base-T connector. This is the pinout for the connector.

Pin	Pin	Pin Name
RJ45 Connector 	1	TD+
	2	TD-
	3	RD+
	4	NC
	5	NC
	6	RD-
	7	NC
	8	NC

When to use a straight-through and cross-over pin-out:

> Direct point-to-point 10/100Base-T cables, with cross over pin-out (1-3, 2-6, 3-1, 6-2), connect the PanelView Ethernet port directly to another SLC 5/05 Ethernet port (or a computer 10/100Base-T port).

Cables

Category 5 shielded and unshielded twisted-pair cables with RJ45 connectors are supported. The maximum cable length between the PanelView Ethernet port and a 10/100Base-T port on an Ethernet hub (without repeaters or fiber) is 100 m (328 ft). However, in an industrial application, the cable length should be kept to a minimum.

ATTENTION

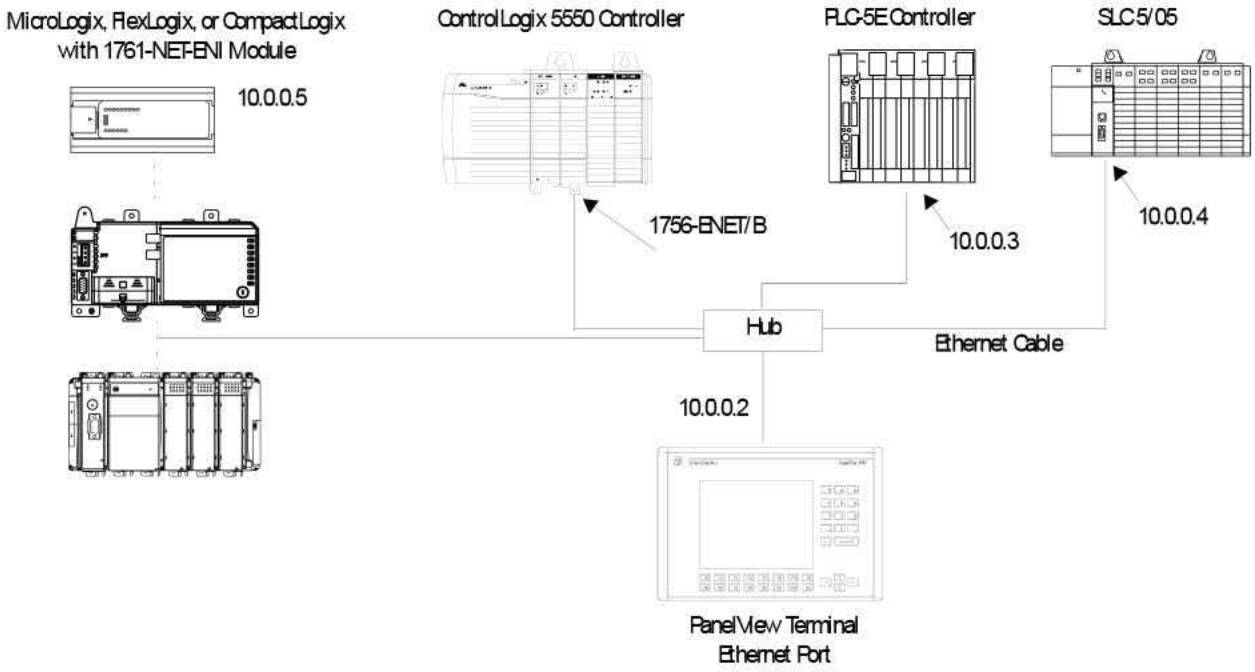


If you connect or disconnect the Ethernet cable with power applied to the PanelView or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

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Typical EtherNet/IP Configuration

The following illustration shows a ControlLogix Controller (with 1756-ENET/B modules), a PLC-5E controller, SLC 5/05, a MicroLogix/CompactLogix/FlexLogix (with 1761-NET-ENI module), and an Ethernet PanelView terminal connected to an EtherNet/IP network. Note that each node has a unique IP address.



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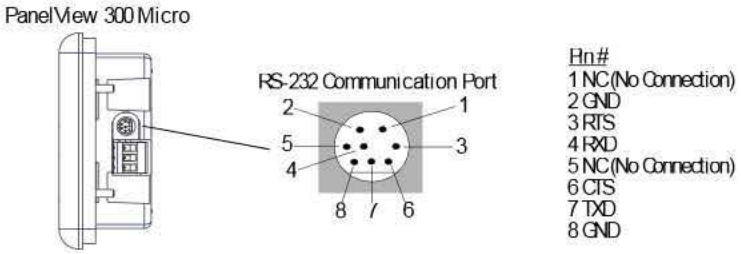
PanelView 300 Micro Terminal Connections

This section describes how to connect the PanelView 300 Micro terminal. Refer to the following topics in this section:

- RS-232 communication port
- Connecting to a MicroLogix Controller
- Connecting to a SLC, PLC-5, ControlLogix, MicroLogix, CompactLogix, or FlexLogix Controller
- Connecting to a DH-485 Network
- Connecting to a DeviceNet Network
- Connecting to a personal computer

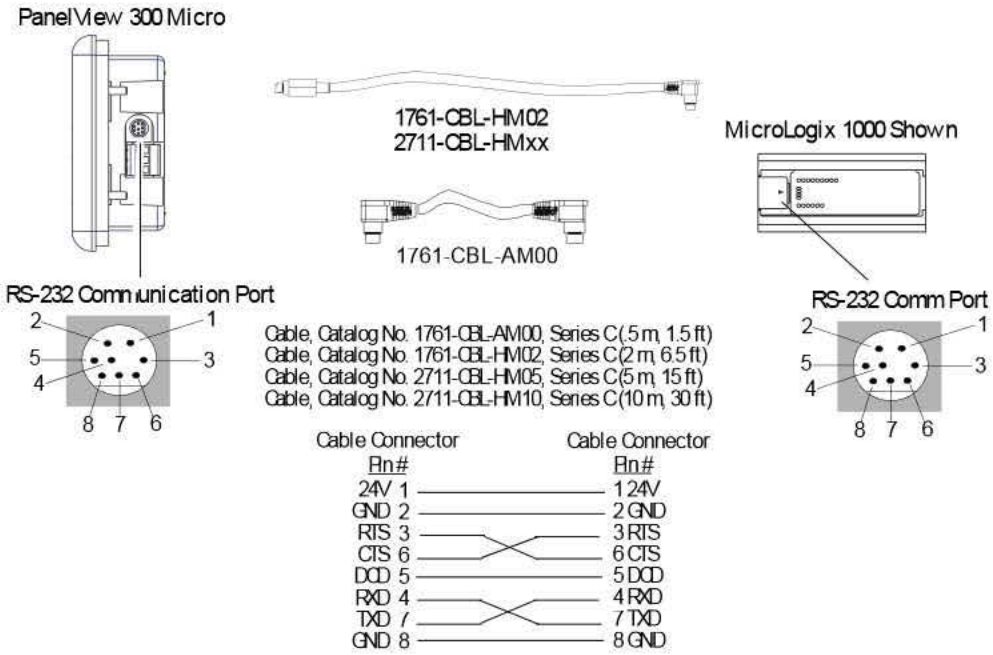
RS-232 Communication Port

The PanelView 300 Micro terminal (catalog numbers ending in 18 and 19) has a single RS-232 communication port (8-pin mini DIN).



Connecting to a MicroLogix Controller

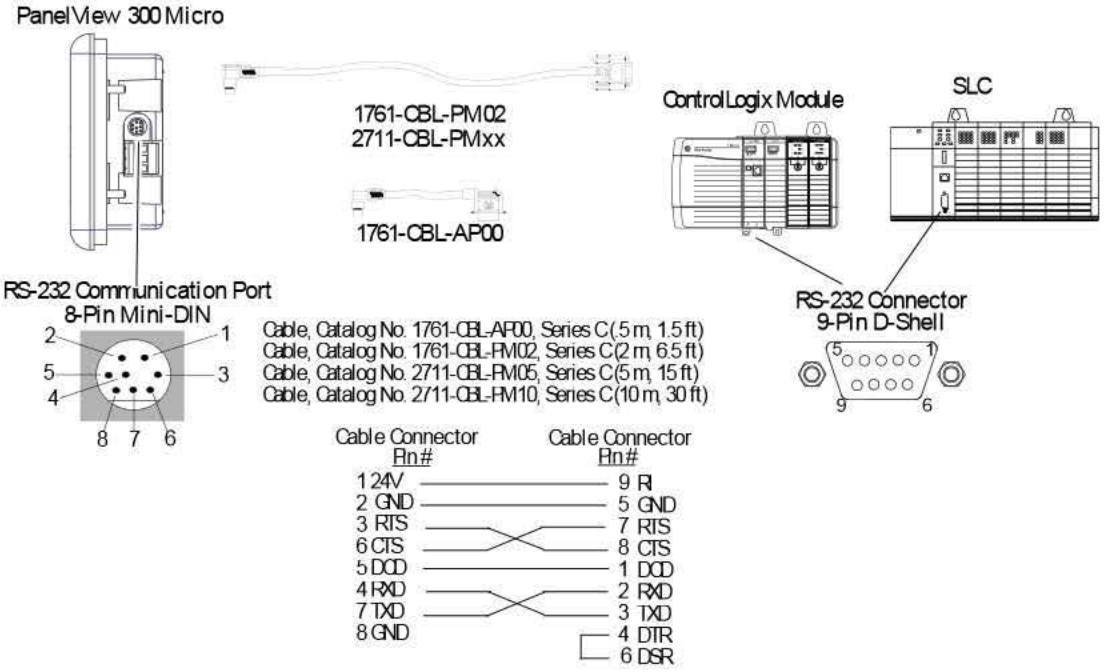
Directly connect the PanelView 300 Micro terminal to a MicroLogix 1000/1200/1500 controller using the following cables. Use DH-485 or DF1 protocols for communication.



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Connecting to an SLC, PLC-5, ControlLogix, MicroLogix 1500LRP, CompactLogix, or FlexLogix

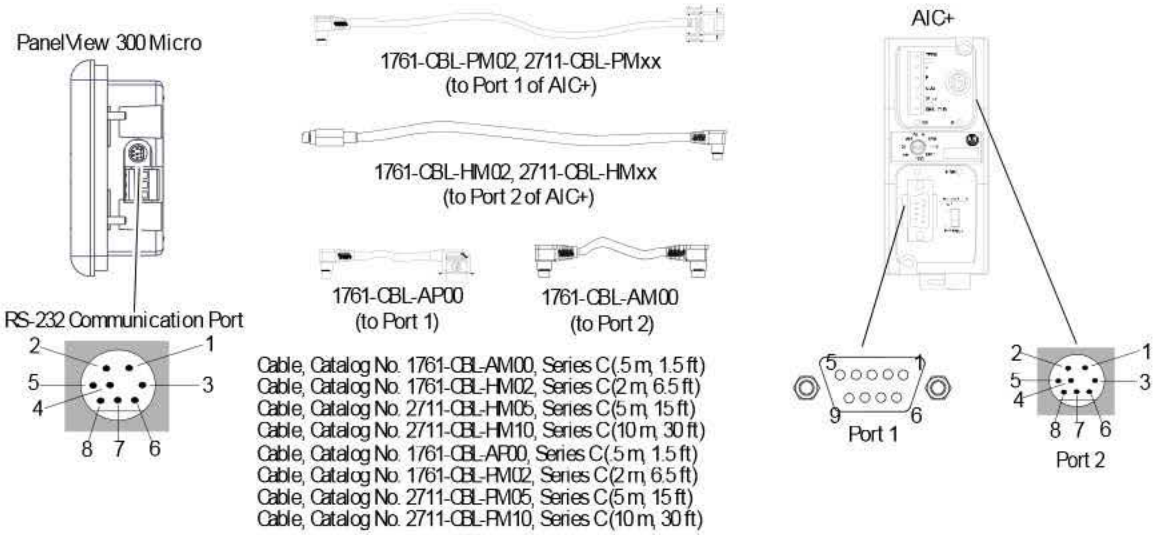
Directly connect the PanelView 300 Micro terminal to an SLC, PLC-5 ControlLogix, MicroLogix 1500LRP, CompactLogix, or FlexLogix processor using the following cables. Use DH-485 (SLC only) or DF1 protocols for communication.



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Connecting to an Advanced Interface Converter

DH-485 versions of the PanelView 300 Micro can operate on a DH-485 network through an Advanced Interface Converter (AIC+) module. Use the following cables.

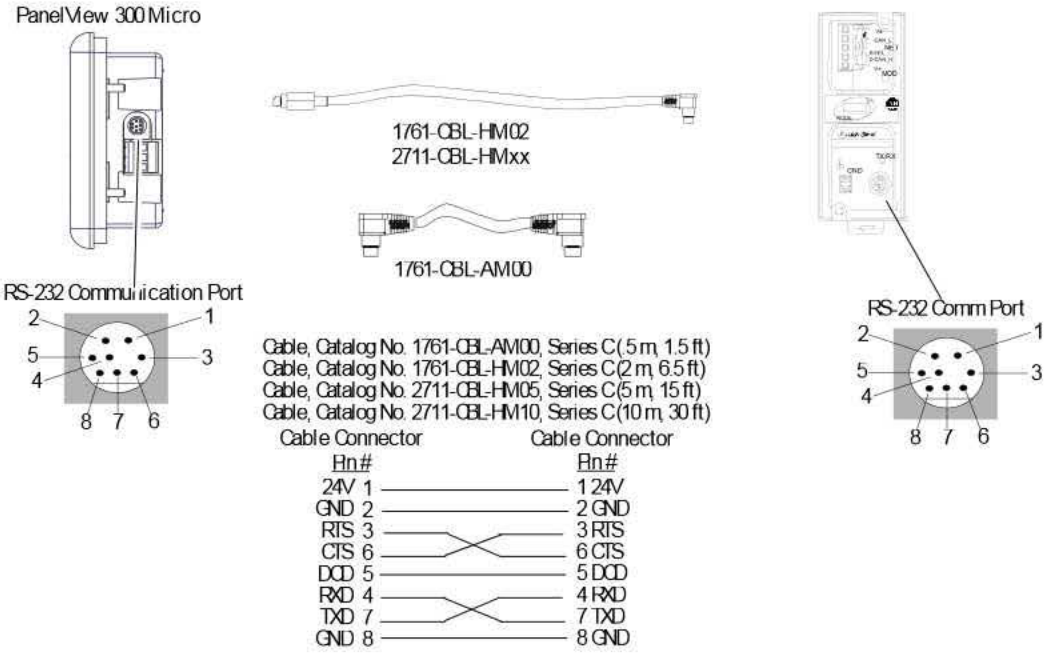


Cable, Catalog No. 1761-CBL-AM00, Series C(.5 m, 1.5 ft)
Cable, Catalog No. 1761-CBL-HM02, Series C(2 m, 6.5 ft)
Cable, Catalog No. 2711-CBL-HM05, Series C(5 m, 15 ft)
Cable, Catalog No. 2711-CBL-HM10, Series C(10 m, 30 ft)
Cable, Catalog No. 1761-CBL-AP00, Series C(.5 m, 1.5 ft)
Cable, Catalog No. 1761-CBL-PM02, Series C(2 m, 6.5 ft)
Cable, Catalog No. 2711-CBL-PM05, Series C(5 m, 15 ft)
Cable, Catalog No. 2711-CBL-PM10, Series C(10 m, 30 ft)

Refer to previous sections for cable diagrams.

Connecting to a DeviceNet Interface (DNI)

Operate the PanelView 300 Micro on a DeviceNet network using DF1 protocol through a point-to-point connection to a DNI module.



Cable, Catalog No. 1761-CBL-AM00, Series C(.5 m, 1.5 ft)
Cable, Catalog No. 1761-CBL-HM02, Series C(2 m, 6.5 ft)
Cable, Catalog No. 2711-CBL-HM05, Series C(5 m, 15 ft)
Cable, Catalog No. 2711-CBL-HM10, Series C(10 m, 30 ft)

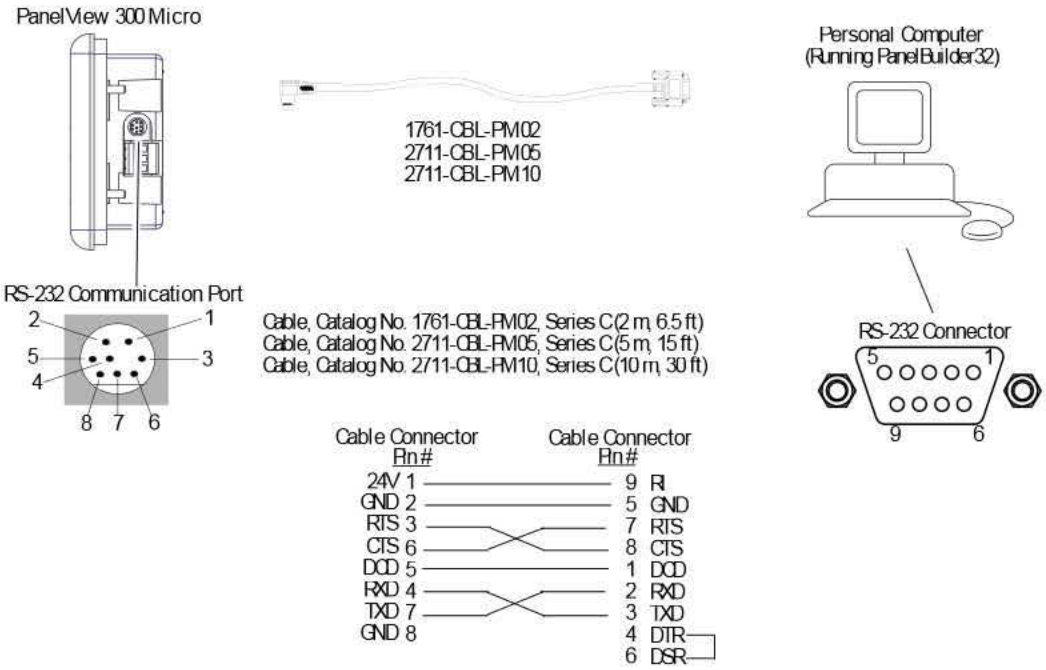
Cable Connector Rn#		Cable Connector Rn#
24V 1		1 24V
GND 2		2 GND
RTS 3		3 RTS
CTS 6		6 CTS
DCD 5		5 DCD
RXD 4		4 RXD
TXD 7		7 TXD
GND 8		8 GND

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Connecting to a Personal Computer (Application File Transfers)

Transfer applications between a computer and PV300 Micro terminal using one of the following cables.

TIP Applications for the PanelView 300 Micro terminal are developed using PanelBuilder32 Software (Catalog No. 2711-ND3, V3.60 or later).



Refer to the PanelBuilder32 software user manual for application download instructions. Here's a short summary of the methods that can be used to transfer files to a PanelView 300 Micro terminal.

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PanelBuilder32 Software

Supports the direct transfer of application files from PanelBuilder32 using an RS-232 link.

Windows PanelView File Transfer (WinPFT) Utility

Supports the direct transfer of PanelBuilder32 application files from WinPFT over an RS-232 link. The WinPFT utility is included with the PanelBuilder32 Software. RSLinx software may be required to transfer applications to the terminal for DH-485 and DF1 protocols.

This method is recommended for direct downloads to installed PanelView 300 Micro terminals using a portable or laptop computer.

Windows CE Pocket PanelView File Transfer (PocketPFT) Utility

Supports the direct transfer of PanelBuilder32 application files from the PocketPFT software over an RS-232 link. The PocketPFT software and an RS232 cable is available from Rockwell Software as part of the MaintenCE suite of tools. You will also need one of the recommended download cables.

This method is recommended for direct downloads to installed PanelView 300 Micro terminals using an HPC JORNADA portable CE computer, available only from Rockwell Software.

IMPORTANT After a successful download of an application, you may not be able to download another application. The downloaded application may have different communication settings than the settings in PanelBuilder32 software. Either change the terminal settings using the Communication Setup screen (see page 72) or the Application settings dialog in PanelBuilder 32 software.

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Connecting a Computer or Printer to the Terminal

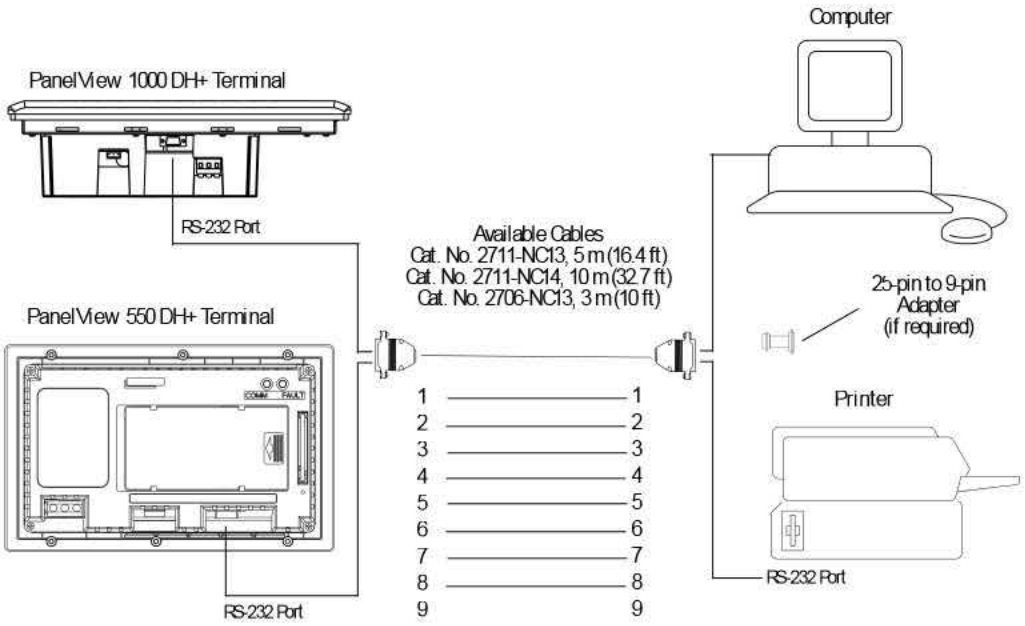
Most of the PanelView terminals have an RS-232 serial port to:

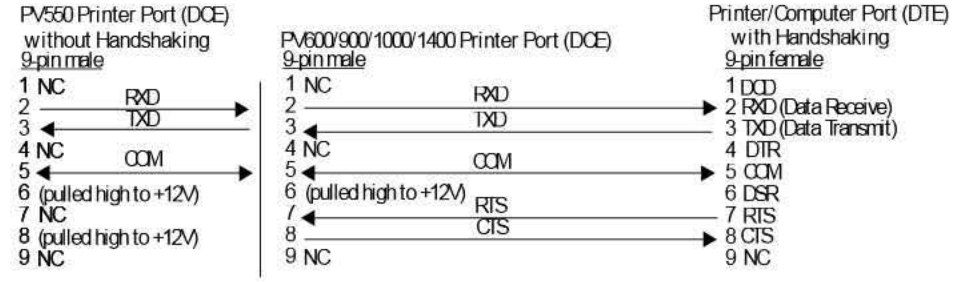
- download/upload applications over a serial link.
- connect a printer that supports the IBM enhanced character set.

PanelView terminals that don't have an additional RS-232 Printer Port include the 300 Micro, the 300 (except for DeviceNet), and the -xxA2/ -xxA5 versions of the 550/600 and 900 monochrome terminals.

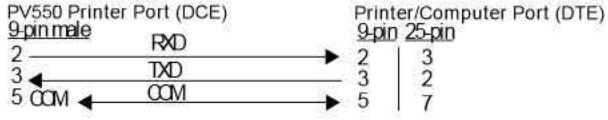
The illustration below shows how to make these connections.

Communication parameters for the RS-232 port are set on the Printer Setup screen of the Configuration Mode menu.





Upload/Download or Printer Cable without Hardware Handshaking



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Troubleshooting and Maintenance

Chapter Objectives

This chapter tells how to isolate and correct common operating problems and perform routine maintenance tasks.

- Using required equipment
- Using troubleshooting chart
- Interpreting status indicators
- Cleaning display window
- Replacing clock module
- Replacing backlight

TIP You cannot access the PanelView 300 Micro terminal s internal components. The rear cover is not removable; do not attempt to remove the cover. The real-time clock battery and LCD display backlight are not replaceable.

Equipment Required

Use a voltmeter to verify that the correct power source is connected to the terminal. No other electronic diagnostic equipment is required for troubleshooting.

Use the Troubleshooting Chart

The following pages provide a troubleshooting chart for the terminal. This chart lists the most common operating problems, causes, and steps to correct them.

ATTENTION



The PanelView terminals contain hazardous voltages. Do not insert objects or let objects fall into the terminal through ventilation slots. Always disconnect power when checking wiring connections. Failure to take adequate precautions may result in electrical shock.

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Troubleshooting Chart

Problem	Probable Causes	Corrective Actions
Terminal does not power up.	Improper connection to power source.	Verify wiring and connections to power source.
	Incorrect input voltage level.	Verify correct voltage is present at power terminals.
	The dc power wires reversed (dc terminals only).	Make sure dc power positive and negative are connected to the proper terminals.
	Power terminal block not fully seated (PV300 terminals only).	Verify power terminal block is snapped onto base of PV300 Micro.
Application file will not download (first download).	Communication cable disconnected.	Check communication cable type and connections.
	Incorrect communication rate or communication settings.	Verify computer and terminal are set to same communication settings.
	Incorrect computer COM port selection.	Verify correct COM port number in WinPFT or PanelBuilder32 software.
Application file will not download (subsequent downloads).	Incorrect communication or communication rate settings.	Verify computer and terminal have same communication settings. Change settings in Communication Setup screen of the terminal.
No communication with MicroLogix, ControlLogix, SLC or PLC controller.	Communication (CCMM) fault.	Check status of CCMM Status. Verify cable connections using cable diagrams in Chapter 12.
	Communication rates not set properly.	Verify that terminal and controller are set at the same communication rate.
	Controller is not in run mode.	Place controller in run mode.
	Terminal node and maximum node numbers are not set correctly.	Verify node address settings.
No communication with PLC but CCMM Status is active.	PanelView is trying to communicate with a controller at a different address.	Verify address of the controller.
	The inhibit bit is set as the default on the Channel Status Screen in the PLC.	Change setting of the inhibit bit.
No communication with computer.	Communication (CCMM) fault.	Check status of CCMM Status. Verify cable connections using cable diagrams in Chapter 10.
	No SLC, network, or power supply connection at terminal's DH-485 port.	Personal Computer Interface Converter (PIC) receives power from DH-485 connection. Verify that the terminal is connected to an SLC, network, or wallmount power supply as shown in Chapter 12.
	Communication rates not set correctly.	Verify that terminal and computer are set at the correct communication rate.
	Terminal node and maximum node numbers are not set correctly.	Verify node number settings.
	Computer fault.	Refer to user manual for computer.
	Communication driver not properly loaded.	Refer to RSLinx online help or manual.
	Printer port is enabled.	Disable printing on the Printer Setup screen of the Configuration Mode menu.

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