

Crestron **CPC-2000A**  
Touchpanel with Dual Joysticks

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Operations Guide



# Contents

<b>Touchpanel with Dual Joysticks: CPC-2000A</b>	<b>1</b>
Description.....	1
Functional Description .....	1
Software .....	1
Physical Description.....	1
Leading Specifications.....	3
Setup.....	4
Recommended Cleaning.....	4
Network Wiring.....	5
Hardware Hookup .....	5
Identity Code .....	6
Configuring the Touchpanel.....	7
Programming .....	10
Reserved Join Numbers.....	10
Sample Program .....	11
Problem Solving .....	11
Troubleshooting .....	11
Further Inquiries.....	13
Software License Agreement.....	14
Return and Warranty Policies.....	16
Merchandise Returns / Repair Service .....	16
CRESTRON Limited Warranty .....	16



# Touchpanel with Dual Joysticks: CPC-2000A

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## Description

### Functional Description

The CPC-2000A is a 5.7 inch (14.5 cm) passive matrix color LCD touchscreen control panel with dual joystick control and adjustable speed knobs for the remote control system (herein referred to as the control system). As part of the Crestron ProCam family which includes pan/tilt heads, a camera control network is formed. The network can accept up to 250 separate cameras - or other controlled devices - at distances up to 5000 feet without expansion modules. This unique camera control network also allows the option of additional or alternative controllers, such as Crestron touchpanels, PC-based control software, and button panel consolettes.

When included in a camera control network with proper programming, the CPC-2000A permits control of camera pan/tilt and lens zoom/focus with speed adjustments. Presets that store the pan/tilt/zoom/focus positions are allowed.

### Software

*The CPC-2000A has one 256-color palette. Therefore, all custom colors are mapped to the nearest color in that palette, such that colors from the custom color dialog box may not be exactly represented. If the precise shade is not immediately achieved, the solution is to experiment with a slightly different color from the custom color dialog box in VT Pro-e.*

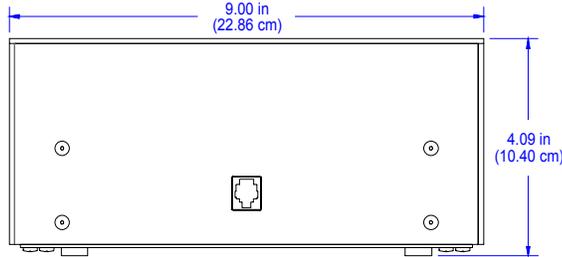
VisionTools™ Pro-e (VT Pro-e), a Windows®-based design software, permits the creation of unlimited control screen variations incorporating two and three-dimensional graphics and text. A set of pages which make up a project can be designed for each CPC-2000A application. Each page contains objects such as custom control graphics, two and three-dimensional buttons, sliders, and digital readouts which allow the user to interface with the control system. The project is uploaded to the touchpanel and programmed into the flash PROM. The touchpanel uses the programmed project until another set is uploaded from the PC. The PC may be disconnected from the rack or panel, except during reprogramming. VT Pro-e also allows users the option to generate projects destined for web browsers rather than for physical touchpanels. For additional software information, consult the VT Pro-e help file.

### Physical Description

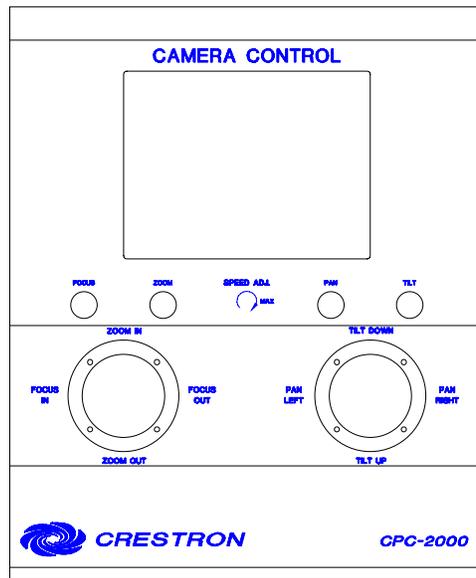
The 5.7 inch (14.5 cm) touch sensitive viewing screen is located on the large angled portion of the top face of the CPC-2000A. The touchscreen is identical to the

Crestron CT-1600 with respect to programming and configuration. The electronic hardware is housed in a black metal enclosure with silk-screened labels, shown below. Four speed adjustment knobs are located below the touchscreen area. Two joysticks are located on the horizontally level area of the top face. A RJ-type network connector is available from the back panel of the unit. There are four rubber feet on the base of the unit for stability and to prevent slippage.

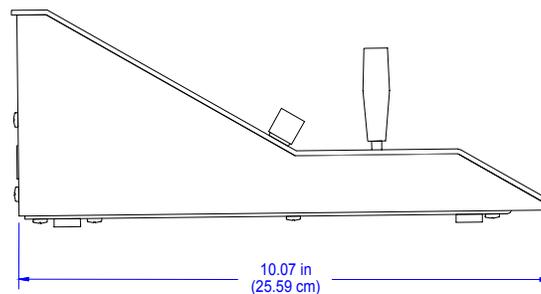
**CPC-2000A Physical Views**



BACK PANEL



TOP FACE



SIDE VIEW

**Sensitivity Adjustment Knobs**

Four sensitivity adjustment knobs, located beneath the touchscreen, are used to regulate pan, tilt, focus, and zoom speeds. Turning the knobs clockwise maximizes

the speed. Speed can be adjusted while using the joysticks. The knobs are panel mounted single-turn potentiometers.

### **Joysticks**

Two 2-axis, spring centering joysticks, located beneath the sensitivity adjustment knobs, are used to control pan, tilt, focus, and zoom movement of a network camera/lens assembly. Vertical movement of the right-most joystick (when viewing the touchscreen) tilts the head. Horizontal movement of the right-most joystick pans the head. Vertical movement of the left-most joystick zooms the lens. Horizontal movement of the left-most joystick focuses the lens.

### **Network Connector**

This 6-pin, 6-position RJ11 modular jack, located on the back panel of the CPC-2000A, is used to receive power and to communicate with the control system. Use the cable assembly (supplied) to connect the CPC-2000A to the CN-RJ11 (supplied) and, in turn, connect the CN-RJ11 to the control system per the latest revision of the network interconnection diagram (Doc. 5411). If connecting the CPC-2000A to a CNX-series control system, the CN-RJ11 is not required. Make connections per the latest revision of the modular cable requirements (Doc. 5682).

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## Leading Specifications

The two tables, shown after this paragraph, provides a summary of leading specifications for the CPC-2000A and joystick particulars. Dimensions and weight are rounded to the nearest hundredth unit.

### *Leading Specifications of the CPC-2000A*

SPECIFICATION	DETAILS
Power Requirements	12 Watts, 24 VDC 0.5 Amp
Default Network ID	03 (touchpanel) & 30H (joystick)
SIMPL™ Windows®	Version 1.22 or later*
CNX Operating System	Version 5.01.09x or later
CNX Monitor	Version 2.00 or later
CNMS, CNRACK, CNLCOMP Operating System	Version 3.16.08 or later
ST-CP Operating System	Version 4.00.29 or later
ST-CP Monitor	Version 1.29 or later
VisionTools™ Pro	Version 1.2.1 or later*
Crestron Database	Version 11.7.209 or later*
Memory	768 Kbytes flash memory for display
Dimensions	Height: 4.09 in (10.40 cm) Width: 9.00 in (22.86 cm) Depth: 10.07 in (25.59 cm)
Weight (without CN-RJ11)	3.60 lb (1.63 Kg)

\* The latest software versions can be obtained from the Downloads page (SIMPLWIN, TOUCHPNL, and CRESDB Libraries) on the Crestron website ([www.crestron.com](http://www.crestron.com)). New users are required to register in order to obtain access to the FTP site.

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**NOTE:** In order to have **CPC-2000A** available from the *Device Library* when programming in SIMPL Windows, use the latest version of SIMPL Windows available from Crestron's website or use an earlier version with library update file smwlib58.exe and library update document smwlib58.txt or later. These update files are available from the Downloads page (SIMPLWIN Library) of Crestron's website.

*Leading Specifications of the CPC-2000A (Continued)*

SPECIFICATION	DETAILS
View Screen Dimensions	Height: 3.50 in (8.89 cm) Width: 4.70 in (11.94 cm)
View Screen Resolution	320 x 240 pixels
View Screen Display	Passive Matrix Color LCD
View Screen Illumination	Edgelit Fluorescent
View Screen Touch Screen	Resistive Membrane

*Leading Specifications of the CPC-2000A Joysticks*

SPECIFICATION	DETAILS
Number of Axes	2-Axis
Mounting Bezel	Rubber Boot Seal
Centering	Spring Centering

As of the date of manufacture, the CPC-2000A has been tested and found to comply with specifications for CE marking.



**NOTE:** This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) these devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation.

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## Setup

### Recommended Cleaning

Keep the surface of the touchscreen free of dirt, dust, or other materials that could degrade optical properties. Long term contact with abrasive materials can scratch the surface which may detrimentally affect image quality.

For best cleaning results, use a clean, damp, non-abrasive cloth with any commercially available non-ammonia glass cleaner. The surrounding plastic enclosure may not provide a complete water-tight seal, therefore, apply cleaning solution to the cloth rather than the surface of the touchscreen. Wipe touchscreen clean and avoid ingress of moisture beneath panels.

## Network Wiring

**NOTE:** This section only applies to those applications using 4-wire Cresnet wiring.

When calculating the wire gauge for a particular network run, the length of the run and the power factor of each network unit to be connected must be taken into consideration. If network units are to be daisy-chained on the run, the power factor of each network unit to be daisy-chained must be added together to determine the power factor of the entire chain. If the network unit is a home-run from a Crestron system power supply network port, the power factor of that network unit is the power factor of the entire run. The length of the run in feet and the power factor of the run should be used in the resistance equation, shown below, to calculate the value on the right side of the equation.

### Resistance Equation

$$R < \frac{40,000}{L \times PF}$$

Where: R = Resistance (refer to table below)  
L = Length of run (or chain) in feet  
PF = Power factor of entire run (or chain)

The required wire gauge should be chosen such that the resistance value is less than the value calculated in the resistance equation. Refer to the table below.

### Wire Gauge Values

RESISTANCE (R)	WIRE GAUGE
4	16
6	18
10	20
15	22
13	Doubled CAT5
8.7	Tripled CAT5

**NOTE:** All Cresnet wiring must consist of two twisted-pairs. One twisted pair is the +24V conductor and the GND conductor and the other twisted pair is the Y conductor and the Z conductor.

**NOTE:** When daisy-chaining Cresnet units, strip the ends of the wires carefully to avoid nicking the conductors. Twist together the ends of the wires that share a pin on the network connector, and tin the twisted connection. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. Insert the tinned connection into the Cresnet connector and tighten the retaining screw. Repeat the procedure for the other three conductors.

## Hardware Hookup

**WARNING:** To avoid shock hazard and possible damage to the unit, do not use touchpanel in rain or expose it to unnecessary moisture.

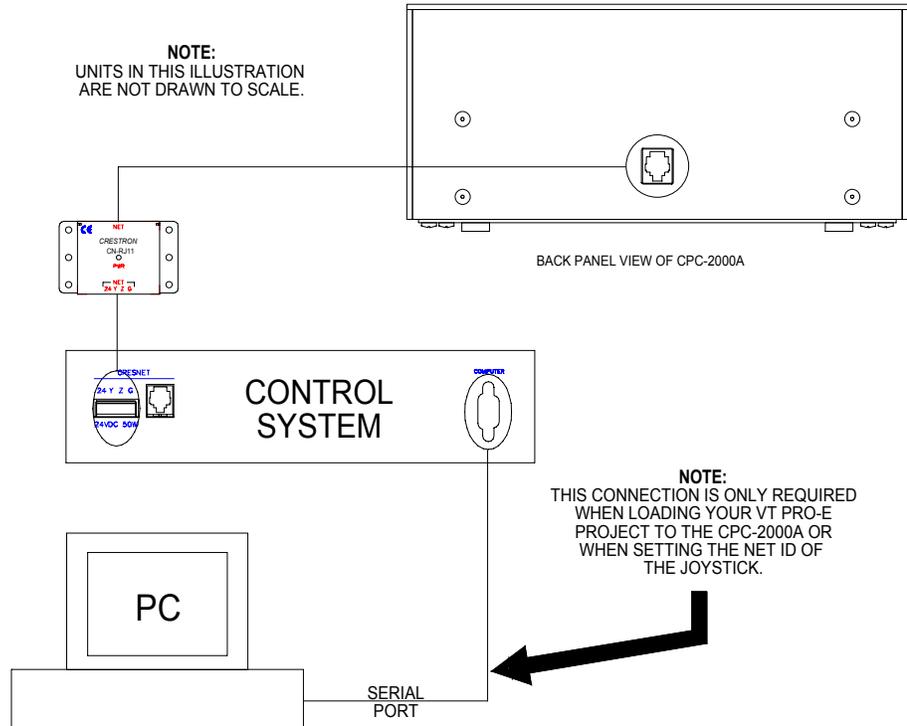
**NOTE:** The CN-RJ11 is not necessary if the CPC-2000A is connected directly to a CNX-series control system.

**NOTE:** Before making any connections, review the latest revisions of the network interconnection drawing (Doc. 5411) and the network modular cable requirements

(Doc. 5682). Pinout notations are provided on these documents. The wiring documents can be obtained from the Downloads page (CABLES and MANUALS Libraries) of the Crestron website ([www.crestron.com](http://www.crestron.com)). Search for the CRESNET.PDF and MODULAR.PDF files.

Refer to the hookup diagram below for proper connections of the CPC-2000A to the control system. Other than making the power connection last, complete the connection in any order.

#### Control System Hookup Connections for the CPC-2000A



## Identity Code

Each device and user interface within the network requires a unique identity code (NET ID). These codes are recognized by a two-digit hexadecimal number from 03 to FE. The NET ID of the unit must match an identity code specified in the SIMPL Windows program.

The CPC-2000A possesses two distinct identity codes; one code is for the touchpanel and the other is for the sensitivity adjustment knobs and joysticks which are treated as a network device. The NET ID of the touchpanel component is set to 03. Refer to “Interface Menu” on page 9 for instructions on setting the touchpanel component of the unit’s identity code. For the knob/joystick component, the NET ID has been factory set to 30H, but may be changed from the PC via VT Pro-e or SIMPL Windows.

The method for changing the unit’s NET ID is identical regardless of the software chosen. Attach the CPC-2000A to the control system (verify that the software is running) and complete the following steps to change the NET ID.

1. Disconnect all network devices from the control system, except for the one CPC-2000A that needs to have its NET ID changed.

2. Select **Tools | ViewPort** to open the “Crestron Performance Viewport” dialog box.
3. Select **Functions | Set Network ID**. The software checks the baud rate and then opens the “Set Network ID” dialog box.
4. Notice the list of current network devices in the dialog box. Highlight the CPC-2000A.
5. The NET ID of the CPC-2000A (default is 30H) appears in the box below the list. Use the scroll arrow to assign another NET ID.
6. When the newly assigned NET ID appears, select the **Set ID** button to initiate the change.
7. The software responds with a successful message to confirm the new NET ID.
8. To verify this procedure, select **Diagnostics | Report Network Devices**. Confirm that the CPC-2000A has a new NET ID code.
9. Reconnect other network devices that were disconnected in step 1.

## Configuring the Touchpanel

It may be necessary to make adjustments or *configure* the touchpanel due to utilization or a particular appearance chosen by the user. To configure the CPC-2000A, it may be necessary to access a series of setup screens prior to viewing run-time screens that are loaded into the touchpanel for normal operation. The Main Menu for configuring the touchpanel appears when a finger is held to the touchscreen as power is applied. Remove your finger when the message “SETUP MODE” appears on the touchscreen. Holding a finger to the touchscreen for five seconds after the “SETUP MODE” message is displayed sets the brightness to high and the contrast to a safe value.

*Main Menu*

TOUCH SCREEN CALIBRATION	SAVE SETUP AND RUN PROGRAM
	SETUP
	DIAGNOSTICS

Upon entering SETUP MODE, the Main Menu, shown to the left of this paragraph, displays four buttons: **TOUCH SCREEN CALIBRATION**, **DIAGNOSTICS**, **SETUP**, and **SAVE SETUP AND RUN PROGRAM**.

### Calibration Menu

*Calibration Menu*

Perform Calibration	Return to Main Menu

Calibration of the touchscreen is required if the active touch area of a button does not coincide with the button’s image. Select the **TOUCH SCREEN CALIBRATION** button on the Main Menu to display the Calibration Menu, shown to the left of this paragraph. The Calibration Menu offers the choice to initiate calibration with the **Perform Calibration** button or return to the previous screen with the **Return to Main Menu** button. Choose an option by touching the correct button. When touching the screen, be as accurate as possible.

If you proceed to calibrate the touchpanel, the screen prompts you with the message “Touch Screen Calibration Menu” nearly centered on the display. Another message, “Touch Upper Left Corner”, appears in the upper left corner. Touch the corner of the screen to initiate calibration. Another message, “Touch Lower Right Corner”, appears in the lower right corner. Touch the corner of the screen to return to the Main Menu and terminate calibration.

## Diagnosics Menu

### Diagnosics Menu

DISPLAY EEPROM	DISPLAY PALETTE
DISPLAY TOUCH DATA	SELF TEST
ABOUT...	RETURN

The **DIAGNOSTICS** button from the Main Menu should only be used under supervision from a Crestron technical support representative during telephone support. The options available from the Diagnostics Menu, shown to the left of this paragraph, are numeric in nature and its interpretation is beyond the scope of this manual. Select the **RETURN** button, located at the lower right corner, to get back to the Main Menu.

## Setup Menu

### Setup Menu

MANAGE POWER	INTERFACE	SOUND
CONT <<	CONT >>	PANEL TRACKING
BRT LOW	BRT MED	BRT HI
RETURN		

To obtain the Setup Menu, shown to the left of this paragraph, select the **SETUP** button from the Main Menu. Many options for setting touchpanel parameters are available from the Setup Menu and are explained in the following paragraphs. After setup parameters have been set, select the **RETURN** button, located at the lower right corner of the Setup Menu.

### Brightness

Screen brightness may need to be altered because of ambient light conditions or personal preference. Three brightness buttons, **BRT LOW**, **BRT MED**, and **BRT HI**, located in the lower left row of the Setup Menu may be selected to increment the backlight setting.

### Contrast

Screen contrast may need to be altered because of ambient light conditions, panel temperature, or personal reference. Two contrast buttons, **CONT <<** and **CONT >>**, located on the left side, center row of the Setup Menu may be held down for continuous and smooth adjustment of the screen.

### Timeout Menu

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**NOTE:** Display backlight requires warm-up time. A display reaches 80% of its final level in five minutes and full brightness in 20 minutes.

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### Timeout Menu

	BACKLIGHT TIMEOUT 2 MIN.	
	DOWN	UP
SAVE TIMEOUT	RETURN	

The touchpanel display hardware life can be lengthened by turning off the backlight when the touchpanel is inactive. The **MANAGE POWER** button is located in the top left corner of the Setup Menu. Selection of this button changes the touchpanel display to reveal the Timeout Menu, shown to the left of this paragraph.

**BACKLIGHT TIMEOUT** is displayed on the Timeout Menu. This setting turns the backlight off when the touchpanel is inactive for a specified time frame (shown in minutes). When the touchpanel is activated, the last screen to be displayed reappears. A two minute **BACKLIGHT TIMEOUT** is shown in the illustration. Minutes can vary from 0 to 120, where 0 disables the timeout. **DOWN** and **UP** buttons decrease and increase the timeout, respectively.

After the timeout parameter has been set, touch the **SAVE TIMEOUT** button in the lower left corner of the screen to save the new settings. Touch the **RETURN** button, located in the lower right corner of the screen, to display the Setup Menu.

### Panel Tracking

Panel tracking is a useful communication feature between touchpanels when more than one touchpanel exists on the network. Panel tracking is enabled when the **PANEL TRACKING** button, located on the right side of the center row of the Setup Menu, is selected. Selection is indicated with red text. When enabled, a given touchpanel maintains communication in such a way that a page change to any

touchpanel on the network forces the same page change to all enabled touchpanels. Panel tracking is disabled when the **PANEL TRACKING** button is deselected. When disabled a given touchpanel does not respond to page changes made to other touchpanels on the network. Panel tracking is factory set with the **PANEL TRACKING** button deselected.

**Interface Menu**

*Interface Menu*

ID# ##	< CRESNET ID	CRESNET > ID
	CRESNET II	LOCAL
	RS-232 ON	RS-232 OFF
		RS232 SETTINGS
RETURN		

The touchpanel communicates with a control system to activate other controls or to display feedback from components within the system. The communication interface must be correctly specified or communication does not occur. To set communication parameters select the **INTERFACE** button located centrally in the top row of the Setup Menu and display the Interface Menu, shown to the left of this paragraph.

The Cresnet network identity number (NET ID) is displayed in the top left corner of the Interface Menu. NET ID is the two-digit hexadecimal number represented by ## in the figure for illustrative purposes. The hexadecimal number can range from 03 to FE and must correspond to the NET ID set in the SIMPL Windows program. Matching NET IDs between touchpanel and the program is required if data is to be successfully transferred or new touchpanel screens are to be loaded. NET ID is factory set to 03.

Two side-by-side buttons adjacent to the hexadecimal display, **< CRESNET ID** and **CRESNET ID >**, decrease and increase the NET ID by one, respectively.

The touchpanel usually communicates with a control system. Occasionally the touchpanel can be used in local demo mode where it merely displays various menus, but does not communicate with the control system. In local mode, the directory buttons change pages, but buttons requiring feedback do not work. Two centrally located buttons on the Interface Menu, **CRESNET II** and **LOCAL**, determine communication mode. Select **LOCAL** to set the touchpanel into demo mode and **CRESNET II** for normal control system communication mode. Text within the selected button changes color from black to red. Communication mode is factory set to **CRESNET II**.

Two side-by-side buttons, **RS-232 ON** and **RS-232 OFF**, are centrally located on the Interface Menu. Text within the selected button changes color from black to red. Since there is no RS-232 port on the unit, verify that the **RS-232 OFF** button is selected. Furthermore, there is no need to use the **RS232 SETTINGS** button on the Interface Menu.

**Sound Menu**

*Sound Menu*

KEYCLICK ON	VOLUME UP
KEYCLICK OFF	VOLUME DOWN
RETURN	

The **SOUND** button, located at the top right corner of the Setup Menu, is used to display the Sound Menu, shown to the left of this paragraph. Use this screen to activate audible key clicks. This feature is a useful feedback tool. Confirmation of a button press on a touchpanel is acknowledged by an audible click assuming this feature is enabled. To enable this feature, verify that the **KEYCLICK ON** button is active (red). An active **KEYCLICK OFF** button disables the feature. Volume of the audible click is controlled with the **VOLUME UP** and **VOLUME DOWN** buttons. The unit is factory set with the sound on.

**Return**

Select the **RETURN** button, located at the lower right corner of the Setup Menu, after setup parameters have been set.

### Save Setup and Run Program

The **SAVE SETUP AND RUN PROGRAM** button, located at the upper right corner of the Main Menu, saves all of the setup information to EPROM and displays the main page that has been programmed into your system.

## Programming

The touchpanel component of the CPC-2000A is programmed as if it were a CT-1600 touchpanel. Therefore, when designing projects in an earlier version of VT Pro for use with the CPC-2000A, choose **CT-1600** as the touchpanel target type. The latest version of VT Pro-e has **CPC-2000A** available as a target type. However, instructions for screen design are not presented in this guide; refer to VT Pro-e's help file for assistance. The software also provides a step-by-step tutorial to fully acquaint the novice programmer. Once the project has been developed, it must be uploaded to the touchpanel. Refer to the hook-up diagram illustrated in

RESISTANCE (R)	WIRE GAUGE
4	16
6	18
10	20
15	22
13	Doubled CAT5
8.7	Tripled CAT5

**NOTE:** All Cresnet wiring must consist of two twisted-pairs. One twisted pair is the +24V conductor and the GND conductor and the other twisted pair is the Y conductor and the Z conductor.

**NOTE:** When daisy-chaining Cresnet units, strip the ends of the wires carefully to avoid nicking the conductors. Twist together the ends of the wires that share a pin on the network connector, and tin the twisted connection. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. Insert the tinned connection into the Cresnet connector and tighten the retaining screw. Repeat the procedure for the other three conductors.

Hardware Hookup” on page 5 for proper connections when uploading the project.

**NOTE:** Do not choose **CPC-2000** from the *Device Library* when programming in SIMPL Windows. It represents an older product that incorporates the CT-1500. Instead choose **CPC-2000A** which incorporates the CT-1600 or choose **CT-1600**. In order to have **CPC-2000A** available from the *Device Library* when programming in SIMPL Windows, use the latest version of SIMPL Windows available from Crestron's website or use an earlier version with library update file smwlib58.exe and library update document smwlib58.txt or later. These update files are available from the Downloads page (SIMPLWIN Library) of Crestron's website.

### Reserved Join Numbers

A reserved join number is a feature of the software that enables a designer to create a button on a page that either calls up the Setup Menu, ramps brightness, etc. The table shown after this paragraph provides a list of reserved join numbers available within the software for the CPC-2000A.

*Reserved Join Numbers for the CPC-2000A*

JOIN NUMBER	FUNCTION	VALUE
1016	Backlight	Off
1017	Brightness	Low
1018	Brightness	Medium
1019	Brightness	High
1035	Call up Setup Menu	N/A

## Sample Program

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**NOTE:** Rather than presenting an illustrative example with SIMPL Window screen shots in this documentation, please refer to the zipped file available from the Crestron website.

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Due to the unique combination of a user interface and additional network device properties of the CPC-2000, a complete sample program is available from the Downloads page (EXAMPLES Library) on the Crestron website ([www.crestron.com](http://www.crestron.com)). The file CPC2000A.ZIP contains the VT Pro-e touchpanel files, SIMPL Windows files, and all supporting files such as macros. There is also a text file that explains all that is to be known about the sample programs provided.

The program works in conjunction with selected CPC-CAMIs in a sample application where the CPC-2000A controls the pan/tilt head and a lens with focus/zoom capabilities. The application provides 16 presets that store the pan/tilt/focus/zoom positions. Via the sample program, the speed of the pan/tilt/focus/zoom axes are finely controlled by the sensitivity adjustment knobs of the CPC-2000A. Turning the knob counterclockwise decreases the speed of axis movement. To increase the speed, turn the knob clockwise. If the knob is turned counterclockwise to a stop, the axis does not move.

A page from a touchpanel project in VT Pro-e is also provided to allow an operator to set up the camera and flip any of the axes. Sometimes when a system is installed, an axis may appear backwards (i.e., the camera tilts up when it should tilt down). This project page provides easy setup without having to change wiring or modify the program. The flip states are preserved through power downs of the system. This project page is accessed by touching and holding the upper left camera icon for five seconds. A brightness and contrast control page for the touchpanel component of the CPC-2000A is accessed by touching the upper right camera icon.

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## Problem Solving

### Troubleshooting

The table below and on the next page provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

*CPC-2000A Troubleshooting*

<b>TROUBLE</b>	<b>POSSIBLE CAUSE(S)</b>	<b>CORRECTIVE ACTION</b>
Project can not be uploaded to the touchpanel.	Touchpanel has powered down.	Power panel with power pack when programming and uploading project.
	NET ID on touchpanel is improperly set.	Verify that NET ID match. Refer to "Interface Menu" in this Operations Guide and NET ID parameters assigned in the software program.
	Communication error; incorrect COM port specified.	Verify upload preferences is set to the COM port being used to communicate to the control system.
		Verify upload preferences specifies RACK (not the PANEL) as target of the upload.
Panel type error; NET ID for panel and VT Pro-e project NET ID do not match.	Verify that panel NET ID matches the NET ID set in the VT Pro-e program. Refer to "Interface Menu" in this Operations Guide.	
Wrong screens appear on touchpanel.	Screens were not uploaded.	Upload screens as described in the help files found in VT Pro-e.

*CPC-2000A Troubleshooting (Continued)*

<b>TROUBLE</b>	<b>POSSIBLE CAUSE(S)</b>	<b>CORRECTIVE ACTION</b>
Touchpanel does not function.	No power to the touchpanel.	Confirm that network power is supplied.
	CPC-2000A is incorrectly calibrated.	Select Perform Calibration button from Calibration Menu to enter "calibration mode". If the Perform Calibration button cannot be reached, complete the following steps. Remove network power. Reapply power while holding finger to the touchscreen for approximately 10 seconds. During this short period, the words "SETUP MODE" appear as does the Opening Screen. Touch the Opening Screen and select the Perform Calibration button from the Calibration Menu to enter "calibration mode".
	Touchpanel is not communicating to the control system.	Poll the network (F4 in either VT Pro-e or SIMPL Windows) to verify communication.
Touchpanel display is dark.	Standby or power down timeout has elapsed.	Touch screen to reactivate.
	Power is not applied to the touchpanel.	Verify that power is properly applied and all connections are made.
Touchpanel display is dark or too light.	Screen brightness or contrast is improperly set.	Hold a finger to the touchscreen for more than 10 seconds as power is applied. The display sets the brightness and contrast to a safe value.
Touchpanel exhibits slow operation.	Compressed graphics take time to decompress.	If there are no memory problems, decompressed graphics decrease the drawing time of panel pages.

## Further Inquiries

If after reviewing this Operations Guide for the CPC-2000A, you can not locate specific information, please take advantage of Crestron's award winning customer service team by calling:

- In the US and Canada, call Crestron's corporate headquarters at 1-888-CRESTRON [1-888-273-7876] or 1-201-767-3400.
- In Europe, call Crestron International at +32-15-50-99-50.
- In Asia, call Crestron Asia at +852-2341-2016.
- In Latin America, call Crestron Latin America at +5255-5093-2160.
- In Australia, call Crestron Pacific at +613-9480-2999.

For local support from exclusive Crestron factory-trained personnel in New Zealand call Amber Technologies at +649-410-8382.

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## Software License Agreement

This License Agreement (“Agreement”) is a legal contract between you (either an individual or a single business entity) and Crestron Electronics, Inc. (“Crestron”) for software referenced in this guide, which includes computer software and, as applicable, associated media, printed materials, and “online” or electronic documentation (the “Software”).

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