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VersaView 1500P Industrial Computer

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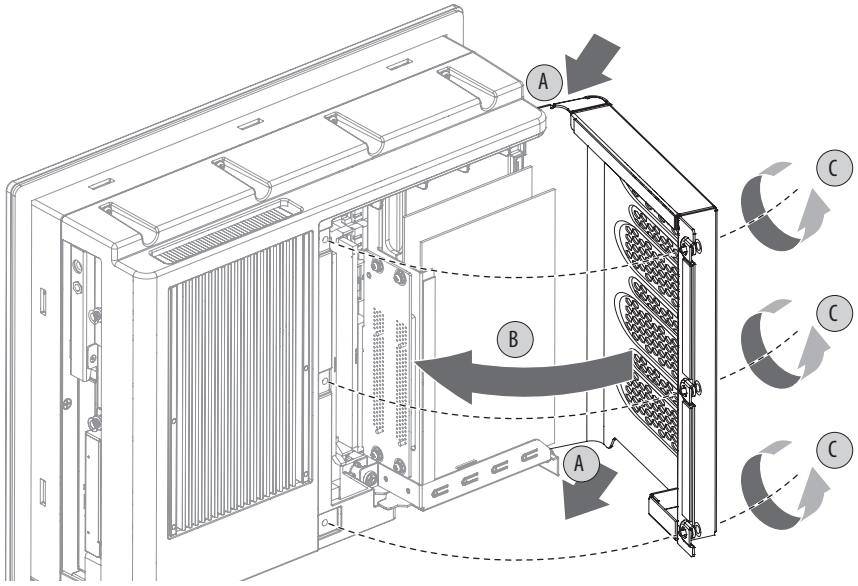
4. Tighten the three screws to secure the rear cover (C).

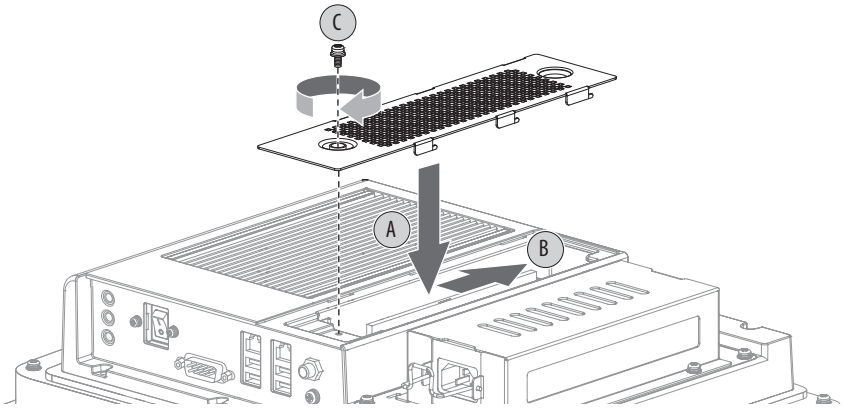


5. Follow steps 4 and 5 for Post-configuration on page 37.

Standard Computers

Follow these steps to reinstall the rear cover.

1. Follow steps 1...3 for Post-configuration on page 37.
2. Insert the rear cover tabs on the slats lining the internal slot bay (A).
3. Slide the cover upward to engage the tabs to the chassis (B).
4. Tighten the one screw to secure the rear cover (C).



5. Follow steps 4 and 5 for Post-configuration on page 37.

CompactFlash Card

The computers have a CompactFlash (CF) Type II card slot for loading CF cards:

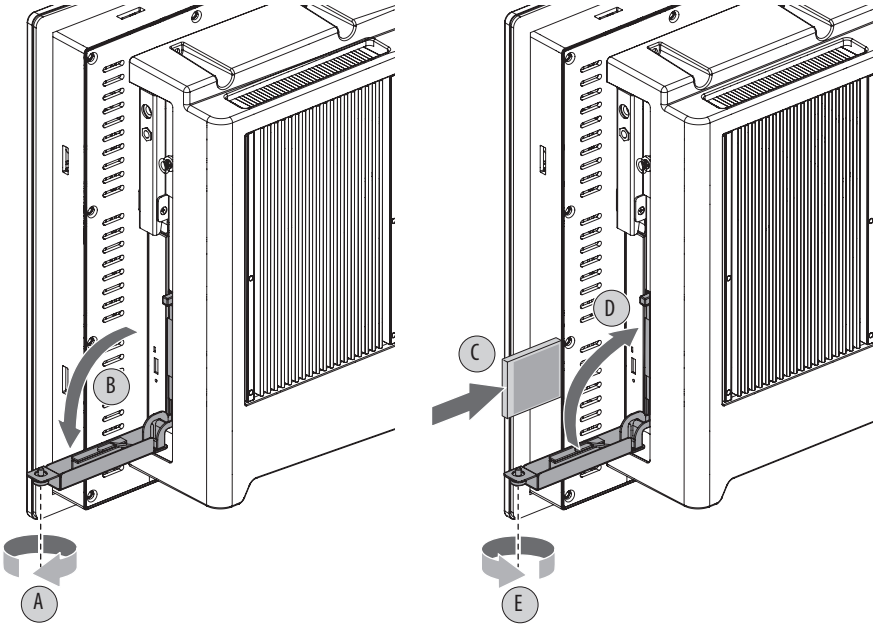
- The standard computers have one CF slot on the right side of the computer.
- Performance and non-display computers have two CF slots: one on the right side of the computer, and another on the I/O port panel below the serial ports.

Load a Card in the Right CF Card Slot

Follow these steps to load a CF card in the card slot of all three computer models.

IMPORTANT The CF card slot on the right side of all computer models is not hot-swappable. You must first shut down the computer before you can insert or remove a card from this slot.

1. Follow the steps for Pre-configuration on page 36.
2. Loosen the screw that secures the CF card slot cover (A).
3. Open the CF card slot cover (B).



4. Insert the CF card into the slot (C) until it is firmly seated.

ATTENTION: When properly seated, more than 80% of the CF card easily inserts into the slot before you encounter resistance. If you encounter resistance before then, remove the card, rotate it 180°, and reinsert.

Do not force the card into the slot. Forcing the card into the slot can damage the connector pins.

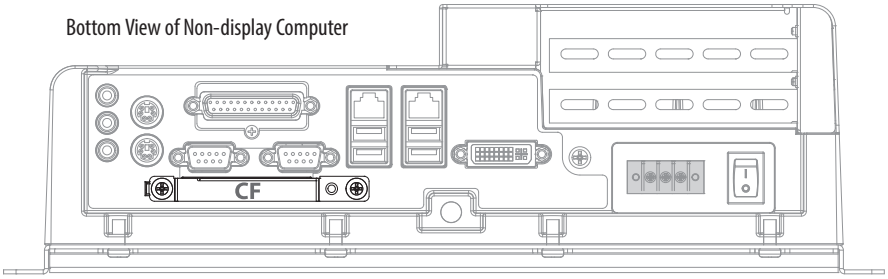
5. Close the CF card slot cover (D).
6. Tighten the screw to secure the slot cover (E).
7. Follow the steps for Post-configuration on page 37.

Load a Card in the Bottom CF Card Slot

Follow these steps to load a CF card in the bottom card slot of performance and non-display computer models.

IMPORTANT The CF card slot on the bottom of performance and non-display computers is hot-swappable. You can insert or remove a card from this slot while the computer is on.

1. Loosen the two screws that secure the CF card slot cover.
2. Remove the CF card slot cover.



3. Insert the CF card into the slot until it is firmly seated.

ATTENTION: When properly seated, more than 80% of the CF card easily inserts into the slot before you encounter resistance. If you encounter resistance before then, remove the card, rotate it 180°, and reinsert.

Do not force the card into the slot. Forcing the card into the slot can damage the connector pins.

4. Reattach the CF card slot cover.
5. Tighten the two screws to secure the slot cover.

Drive Precautions

Follow these precautions when working with a drive.

IMPORTANT Back up or clone your computer before replacing a drive.

- Do not touch internal components.
- Always handle the drive by its frame.
- Never remove or install a drive with the power on.
- Store the drive in an antistatic bag when it is not installed.

SHOCK HAZARD: Electrostatic discharge (ESD) can damage the computer and components. Read and follow Electrostatic Discharge Precautions on page 36 before removing a drive.

Failure to follow proper safety precautions can result in severe electrical shock to an individual or ESD damage to the computer and its components.

ATTENTION: Mechanical shock can damage a drive. Do not drop or bump the drive.

Replace a Drive

The procedures for replacing a drive (HDD or SSD) are different for the computer models.

Replace a Performance and Non-display Computer Drive

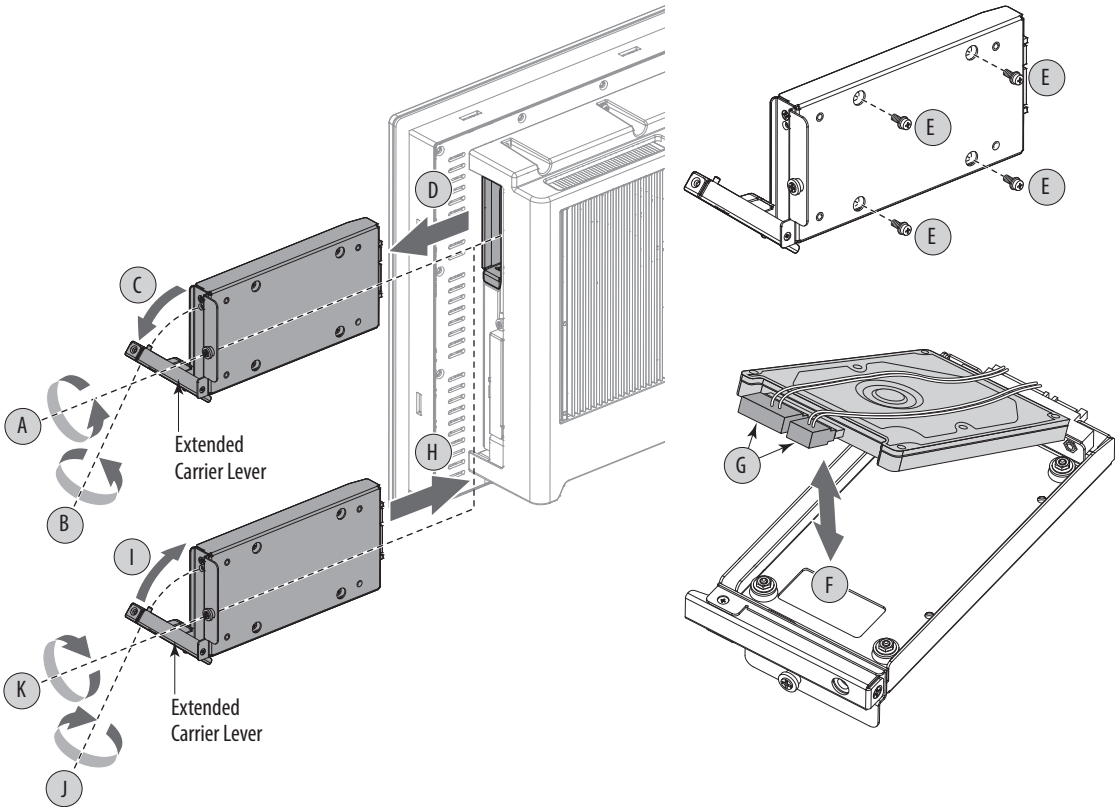
The drive (HDD or SSD) in performance and non-display computers is on the right side of the computer.

Follow these steps to replace the drive.

1. Read and follow Drive Precautions on page 42 before performing any drive removal.
2. Follow the steps for Pre-configuration on page 36.
3. Remove the one screw that secures the drive assembly (A).
4. Loosen the screw to release the carrier lever (B).
5. Extend the carrier lever (C), then use it to slide the assembly out of the drive bay (D).
6. Remove the four screws that secure the drive to its carrier (E).
7. Lift the cable connector end of the drive (F) and disconnect the power and data cables (G).
8. Remove the default drive from its carrier.

9. Hold the new drive by its edge and remove it from its protective packaging.
10. Align the new drive on the carrier (F).
11. Connect the power and data cables to the drive (G).
12. Secure the new drive to the carrier with the four screws (E).

    Torque the screws to 0.452 N•m (4 lb•in).
13. Use the extended carrier lever to slide the assembly into the drive bay (H).
14. Retract the carrier lever (I) and tighten its screw to lock in place (J).
15. Secure the drive assembly with the one screw (K).



16. Follow the steps for Post-configuration on page 37.

Replace a Standard Computer Drive

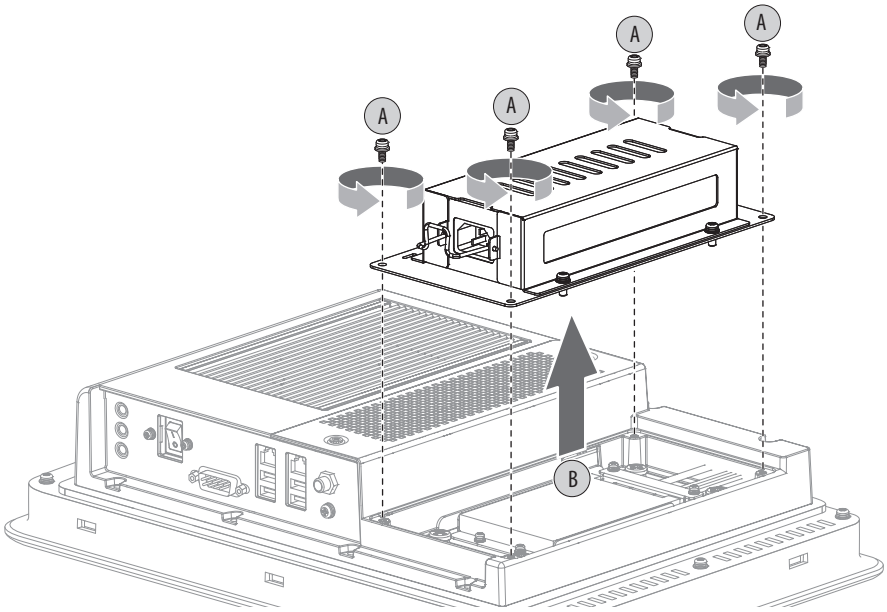
The drive (HDD or SSD) in standard computers is under the power adapter assembly.

Follow these steps to replace the drive.

1. Follow the steps for Pre-configuration on page 36.
2. Disconnect the DC barrel connector from the power input jack.

   See page 29 for more information on the DC barrel connection.

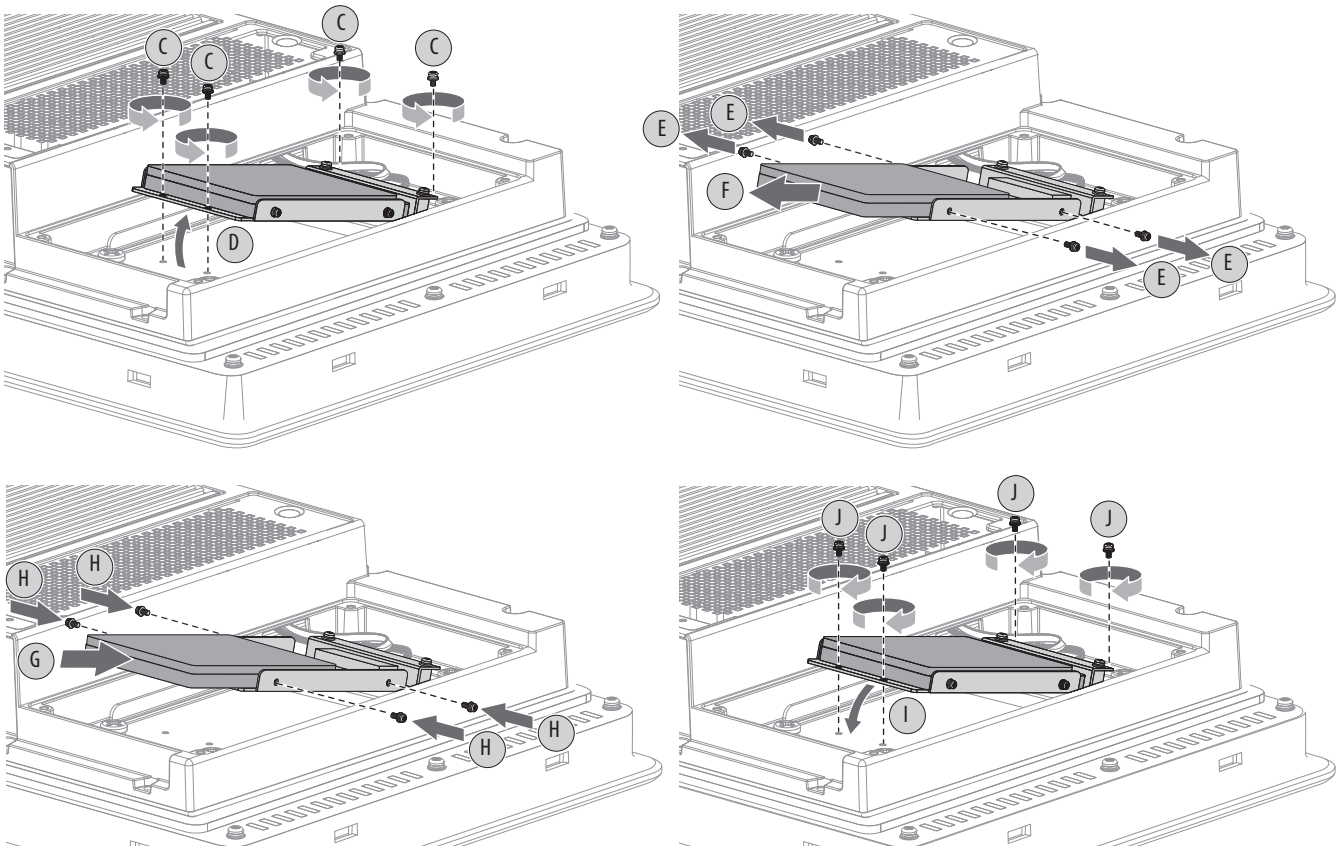
3. Remove the four screws that secure the power adapter assembly (A).
4. Remove the power adapter assembly from the chassis (B).



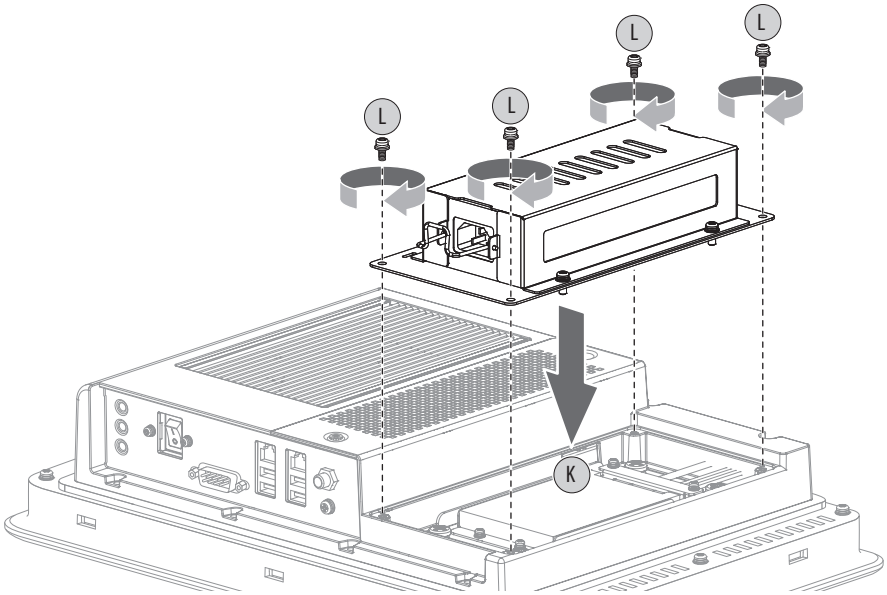
TIP Refer to Figure 12 on page 45 for the corresponding letters in parentheses in steps 5 though 13.

5. Remove the four screws that secure the drive assembly (C).
6. Lift the bottom end of the drive metal frame about 45° from the chassis (D).
7. Remove the four screws that secure the drive (E).
8. Slide the default drive out of its metal frame (F).
9. Hold the new drive by its edge and remove it from its protective packaging.
10. Slide the new drive into its metal frame and make sure it's properly engaged to the power and data cables (G).
11. Secure the drive to its frame with four screws (H).
12. Lay the bottom end of the drive metal frame on the chassis (I).
13. Secure the drive assembly with the four screws (J).

Figure 12 - Drive Replacement for Standard Computers



14. Place the power adapter assembly over the drive assembly (K).
15. Secure the power adapter assembly with the four screws (L).



16. Reconnect the DC barrel connector as detailed on page 29.
17. Follow the steps for Post-configuration on page 37.

Install an Add-in Card

The performance and non-display computers support half-length, full-height add-in cards. Half-length PCI cards are 106.68 mm (4.2 in.) high by 175.26 mm (7.0 in.) long.

IMPORTANT Even though the standard computer has onboard PCI slots, its chassis design prevents it from supporting add-in card installation.

The following table lists onboard PCI slots and configurations supported by the performance and non-display computers.

Computer Model	Default Configuration	Alternate Configuration A Using PCI Extender Kit (Cat. No. 6189V-EXTPCIS)	Alternate Configuration B Using PCI Extender Kit (Cat. No. 6189V-EXTPCIS)
Integrated display computer			
1200P	2 PCI	1 PCI + 1 PCI Express	—
1500P	1 PCI	1 PCI + 1 PCI Express	2 PCI
1700P	1 PCI	1 PCI + 1 PCI Express	2 PCI
Non-display computer	2 PCI	1 PCI + 1 PCI Express	—

The PCI slot supports a maximum load of 4 W. Make sure your card does not exceed its thermal ratings. When the computer is running at its maximum rated temperature, the ambient temperature in the PCI slot with a 4 W fanless card in operation may reach 80 °C (176 °F). With a 1 W load, the ambient temperature may reach 70 °C (158 °F).

ATTENTION: Add-in cards are sensitive to ESD and require careful handling.

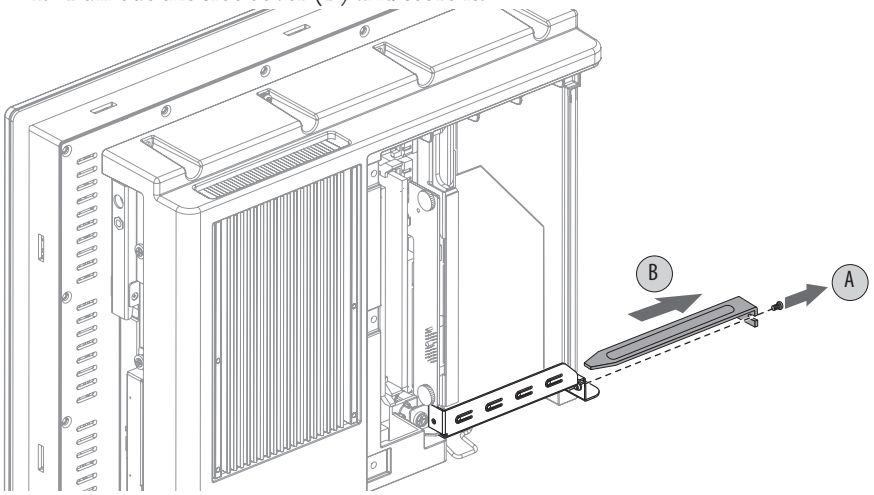
- Hold cards only by the edges.
- Do not touch the card connectors, components, or circuits.
- After removing an add-in card, place it on a flat, static-free surface, component side up.
- Do not slide the card over any surface.

IMPORTANT Use an antistatic wrist strap connected to the work surface, and properly grounded tools and equipment.

Follows these steps to install an add-in card (the performance computer is shown).

1. Follow the steps for Pre-configuration on page 36.
2. Remove the computer cover as detailed in Remove the Cover on page 37.

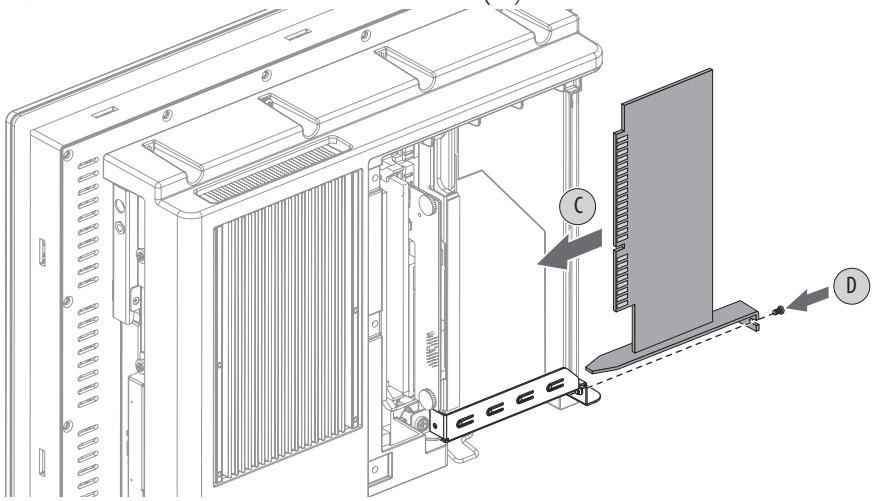
3. Remove the screw that secures the slot cover (A).
4. Pull out the slot cover (B) and store it.



ATTENTION: Do not discard the slot cover. If the add-in card is removed in the future, the slot cover must be reinstalled to maintain proper cooling.

5. Remove the add-in card from its protective packaging.
6. Slide the add-in card into a compatible riser-board slot (C).

   Press to make sure it is firmly seated in the slot.
7. Secure the add-in card with the screw (D).



8. Connect any necessary cables to the add-in card.
9. Refer to any installation instructions that came with the add-in card to verify that all installation steps are followed.
10. Reinstall the computer cover as detailed in Reinstall the Cover on page 38.
11. Follow the steps for Post-configuration on page 37.

PCI Riser Board Options

You can use the PCI expansion slot kit, catalog number 6189V-EXTPCIS, to change the default one-slot PCI riser board to the following:

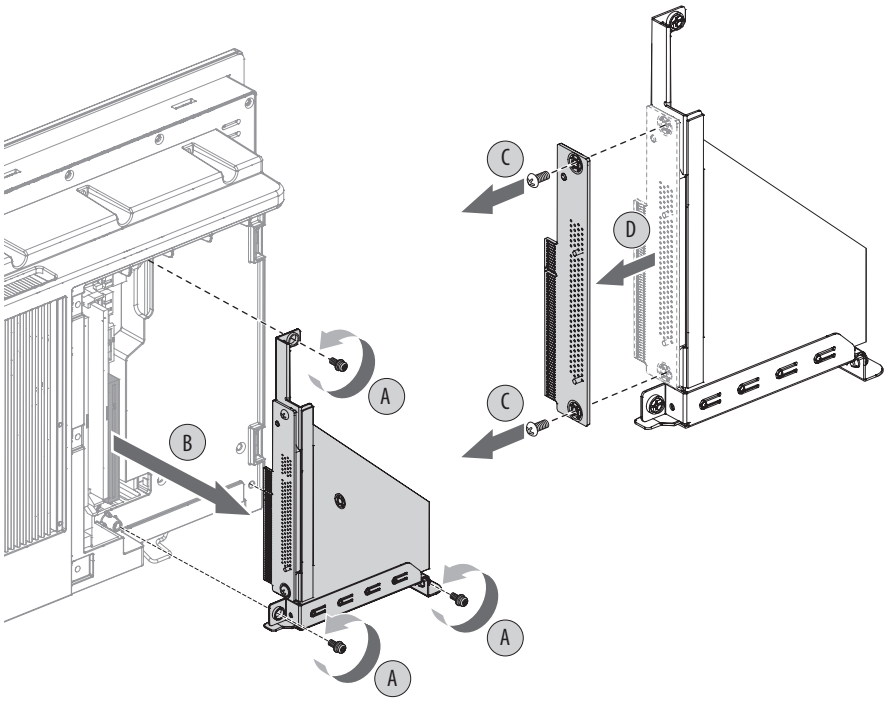
- Two-slot PCI riser board
- One-slot PCI Express riser board
- Two-slot riser board with one PCI slot and one PCI Express x1 slot

Follow these steps to install the PCI expansion slot kit (the performance computer is shown).

SHOCK HAZARD: Electrostatic discharge (ESD) can damage the computer and components. Read and follow Electrostatic Discharge Precautions on page 36 before removing the rear cover.

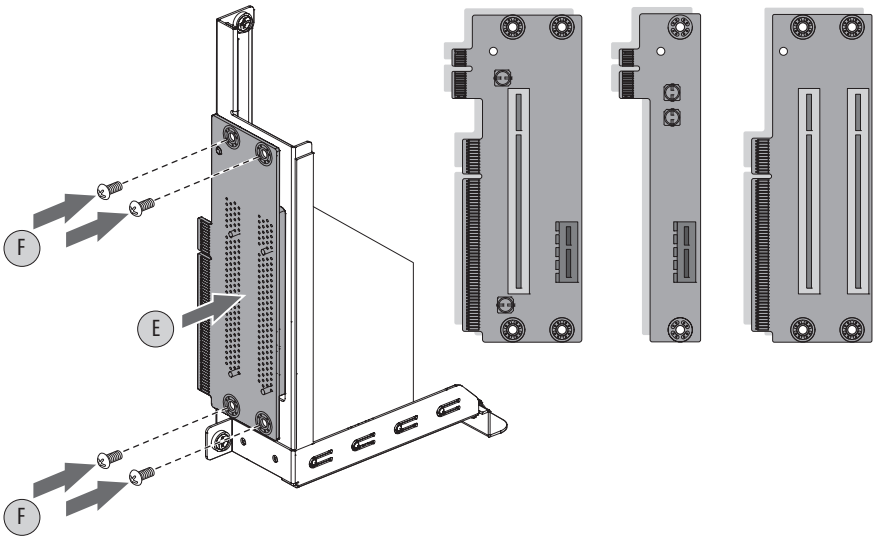
Failure to follow proper safety precautions can result in severe electrical shock or damage to the computer.

1. Follow the steps for Pre-configuration on page 36.
2. Remove the computer cover as detailed in Remove the Cover on page 37.
3. Loosen the three screws that secure the PCI riser board bracket (A).
4. Remove the PCI riser board assembly from the chassis (B).
5. Remove the two screws that secure the default riser board (C).
6. Remove the riser board from its bracket (D).



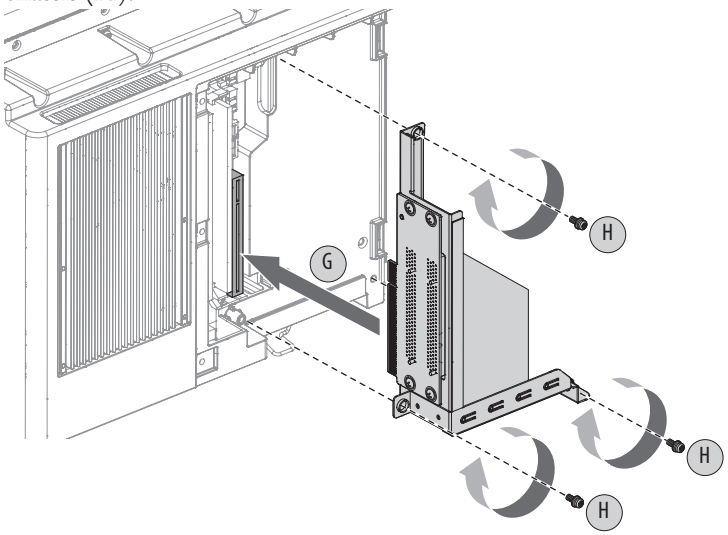
7. Place the default riser board with its screw on a static-dissipating work surface or inside an antistatic bag.

8. Hold the new riser board by its edge and remove it from its protective packaging.
9. Align the new riser board with the PCI riser board bracket (E).
10. Secure it with the screws provided with the kit (F).



If you are installing	Then use	Secure it with
A two-slot riser board	The PCI riser bracket provided with the kit	Four screws
A single-slot riser board	The default PCI riser bracket	Two screws

11. Insert the riser board connector in the onboard expansion slot making sure the board is properly seated in the slot (G).
12. Tighten the three screws to secure the PCI riser board assembly to the chassis (H).



IMPORTANT Make sure the mounting bracket does not pinch any cables under the bracket.

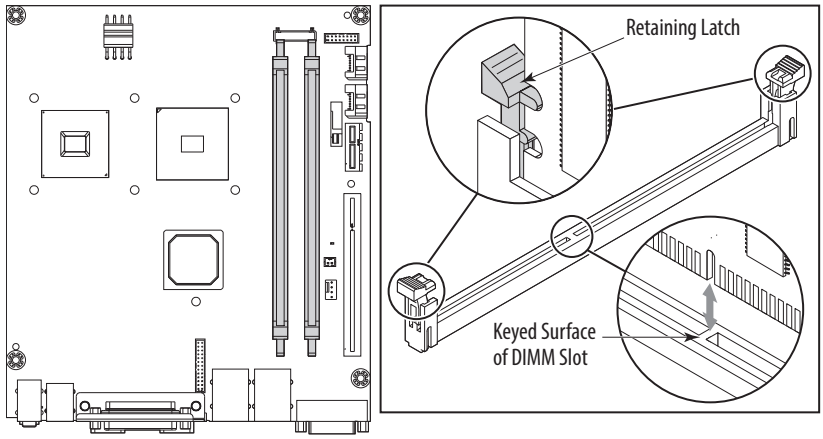
If you intend to install	Then
A compatible add-in card **now**	Proceed to page 46 for instructions.
An add-in card **later**	1. Reinstall the rear cover. 2. Apply power to the computer.

13. Reinstall the rear cover as detailed in Reinstall the Cover on page 38.
14. Follow the steps for Post-configuration on page 37.

Replace or Add Memory Modules

The computers have two dual-channel DDR2 DIMM slots that support up to 4 GB maximum system memory.

Figure 13 - Memory Module Slots and Module Alignment



ATTENTION: Some older Microsoft Windows operating systems limit the maximum usable memory capacity to approximately 3 GB.

Memory Configuration Guidelines

Follow these guidelines when replacing or adding memory to the computers:

- Use only standard unbuffered memory modules that conform to both PC2-3200 and SPD compliance industry standards.
- Use only DDR-II type memory modules.
- Use only memory modules with gold-plated contacts.
- Always handle a memory module by its edges.

IMPORTANT We recommend that you use only Allen-Bradley approved memory modules. Refer to http://ab.rockwellautomation.com/Computers for qualified replacement parts and accessories.

Replace or Add a Memory Module

Follow these steps to replace or add a memory module.

IMPORTANT Use an antistatic wrist strap connected to the work surface, and properly grounded tools and equipment.

1. Follow the steps for Pre-configuration on page 36.
2. Remove the computer cover as detailed in Remove the Cover on page 37.

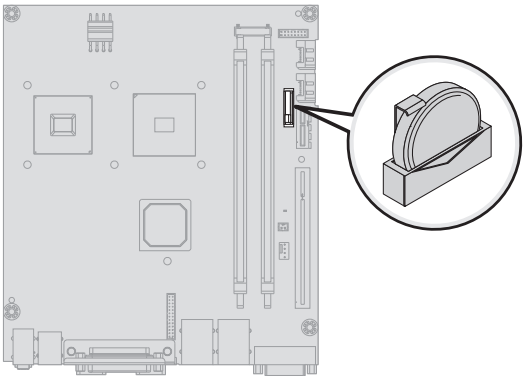
   TIP To install additional memory, proceed to step 4 of this section.
3. Remove the selected memory module.
   a. If necessary, use side cutters to cut the cable tie from the retaining latches that hold the selected memory module.
   b. Completely open the retaining latches to release the memory module from its slot and make it easier to remove. See Figure 13 on page 50.
   c. Gently pull out the memory module to remove it from its slot.
   d. Place the memory module on a static-dissipating work surface or inside an antistatic bag.
4. Install the new memory module.
   a. Hold the memory module by its edges as you remove it from its antistatic bag.
   b. Orient the module so the notch on its bottom edge aligns with the keyed surface of the DIMM slot. See Figure 13 on page 50.

      TIP The keyed surface is off center to assist the correct alignment.
   c. Press the module fully into the slot to engage the retaining latches. See Figure 13 on page 50.
   d. Fasten a replacement cable tie around the DIMM slot latches.
   e. Pull the end of the cable tie to lock it in place.
   f. Using side cutters, cut the excess length of the cable tie.
5. Reinstall the computer cover as detailed in Reinstall the Cover on page 38.
6. Follow the steps for Post-configuration on page 37.

Replace the RTC Battery

The computers use nonvolatile memory that require a RTC battery to retain system information when power is removed. The lithium battery is on the computer's motherboard next to the DIMM1 slot.

The battery must be replaced during the life of the computer. The battery life depends on the amount of time the computer is on, or on-time.



On-time (hrs/wk)	Expected Battery Life (yrs)
0	4
40	5.5
80	7

If the computer does not retain the correct time and date, replace the battery.

ATTENTION: A risk of fire and chemical burn exists if the battery is not handled properly.

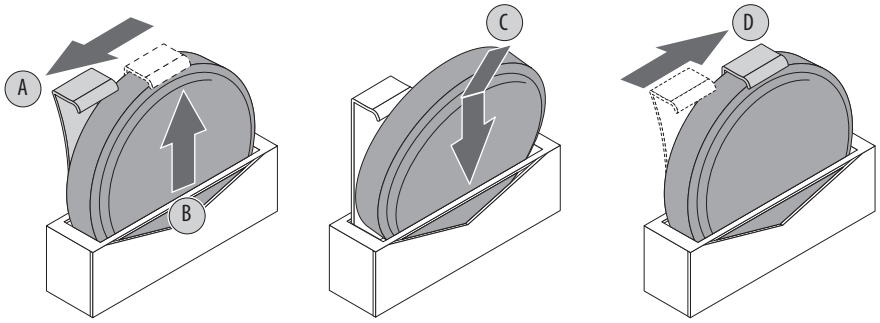
- Do not disassemble, crush, puncture, or short external contacts.
- Do not expose the battery to temperatures higher than 60 °C (140 °F).
- Do not dispose of a used battery in water or fire.

For safety information on handling lithium batteries, see Guidelines for Handling Lithium Batteries, publication AG-5.4.

Follow these steps to replace the RTC battery.

1. Follow the steps for Pre-configuration on page 36.
2. Remove the computer cover as detailed in Remove the Cover on page 37.
3. If necessary, remove any accessory boards or cables that prevent access to the RTC battery socket.

4. Disengage the battery latch (A) from the battery.
5. Remove the old battery from its socket (B).
6. Insert the new battery, with the positive polarity (+ side) facing the latch, in the socket, making sure the battery is seated completely (C).
7. Engage the battery latch (D).



IMPORTANT Do not over-bend the battery latch when replacing the RTC battery. The latch must retain contact with the battery for proper operation.

8. Reinstall the computer cover as detailed in Reinstall the Cover on page 38.
9. Follow the steps for Post-configuration on page 37.
10. During POST, press F2 on an attached keyboard to enter the BIOS setup and reconfigure settings.

IMPORTANT Replacing the battery results in all BIOS settings returning to their default settings. BIOS settings other than default must be reconfigured after replacing the battery.

This computer contains a sealed lithium battery that may need to be replaced during the life of the computer.

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

Notes:

System Troubleshooting

Chapter Objectives

This chapter provides information on the following topics:

Hardware Monitoring

The built-in hardware monitor of the computer tracks the operating threshold levels of the voltage and temperature sensors.

Follow these steps to determine whether an operating threshold has been reached.

1. Shut down the computer by using the appropriate method for the installed operating system.

   See Shut Down the Computer on page 30 for more information.

2. Apply power to the computer.
3. During POST, press F2 to access the BIOS set-up utility.

   TIP Use the arrow keys on a keyboard to navigate between BIOS menus and menu selections.

4. Select the Hardware Monitor menu from the BIOS-Advanced menu.

   Use this menu to determine if there is an issue with internal voltages or component temperatures.

Troubleshooting

Follow these steps to identify and isolate an issue with the computer's operation.

1. Shut down the computer by using the appropriate method for the installed operating system.

   See Shut Down the Computer on page 30 for more information.

2. Disconnect power to the computer.
3. Disconnect all peripheral devices from the computer.
4. If using a keyboard and mouse, verify that they are properly connected.
5. If using an external display, verify that it is properly connected.
6. Connect power to the computer. During POST, one of three events occurs:
   - The computer completes the start-up process.
   - A nonfatal error occurs and the related error message is displayed.
   - A fatal error occurs and the start-up process terminates.

If	Then
The computer starts	Isolate the issue by connecting peripheral devices one at a time until the issue occurs.
The issue is with a specific software or driver	Reinstall the software or driver.
The issue is not related specifically to software, a driver, or a peripheral device	Refer to the troubleshooting checklists.

TIP Some computers emit beeps. These audible alerts only signal that an error is detected. The beeps can apply to nonfatal and fatal errors.

Troubleshooting Checklists

To manage common issues, use these checklists to test and verify components. If an issue occurs, refer to these checklists before calling technical support.

Issues during Startup

- Are all connections secure?
- Are the device drivers installed?
- Are the jumpers on any add-in boards correctly positioned?
- If starting from a drive:
  - Is it formatted and set up in the BIOS?
  - Are the drive's data and power cables properly connected? Verify that the computer can start from an external bootable device.
- Are memory modules properly installed? You can reinstall them to be sure of a good connection.

- Is the BIOS properly configured? You can restore the default BIOS settings by either of the following methods:
  - Load system defaults as detailed in Load the System Defaults on page 59.
  - Use the CMOS jumper to reset the BIOS as detailed in Clear the CMOS on page 59.

Issues after Startup

- If an issue is intermittent, you can have a loose connection. Verify that the following items are secure or properly installed:
  - All connections to the computer including any add-in cards
  - The memory modules
- Does your computer have a virus? Run an anti-virus software.
- Is the BIOS properly configured? To restore the default BIOS settings, see Load the System Defaults on page 59.
- If there is a flickering display or a locked computer, restart the computer as specified in Restart the Computer on page 33. Although the computers have a regulated and protected power supply, a transient voltage in the power line or peripheral cable can cause errors.
- Is the drive's data cable properly connected? Verify that the computer can start from an external bootable device.
- Is the computer overheating? Verify the following:
  - Any fan (if available) is working.
  - Any fan filter (if available) is clean.
  - Any cooling method (such as heat sink and vents) are not blocked.
  - There is proper clearance as detailed in Mounting Clearance Requirements on page 18.
  - The air temperature is not exceeding its rated specification in Table 5 on page 65.

Issues Running New Software

- Does the software have a hardware requirement that is not present?
- Are you using an authorized copy of the software? Some software does not work without proper activation.
- Did the software install correctly? Reinstall the software.
- Are you following the software's instructions? Refer to the software vendor's user manual.

Issues with the Add-in Card

- Is the card installed and configured correctly? Verify the jumper and other configuration settings.
- Are the card cables properly connected?
- Is the add-in card recognized in Device Manager?
- A card issue not listed here? Refer to troubleshooting information supplied by the add-in card manufacturer.

Issues with the Integrated Display

- Verify that the selected character color is not the same as the background color.
- Try setting to the native resolution. Refer to Table 3 on page 64.

Issues with an External Display

- Are the display contrast and brightness controls properly adjusted? Refer to the operating system containing the video driver for set-up functions.
- Verify that the selected character color is not the same as the background color.
- Is the display compatible with the selected video mode?
- Is the video cable properly connected?
- Is the video driver properly installed?
- Restart the computer with the external display connected and turned on.
- Is the display functioning properly? Verify the display function by operating it with another computer.

Diagnostic Utility

If you completed the troubleshooting steps and are still having issues, you can use a diagnostic utility to isolate the issue. This utility determines the cause by testing computer components.

Computers shipped before January of 2013 include a system diagnostic (green) CD with this diagnostic utility. If you need a copy of the CD, please contact your local distributor or Rockwell Automation representative, or use the resources on the back cover of this publication.

By using the diagnostic utility, you can perform an initial diagnosis without disconnecting or moving your computer. No software is installed nor does the utility affect any software already installed. Depending on the tests selected, the process can take as little as five minutes or as long as eight hours. After the diagnostic utility is run, you can generate a report for analysis by a technical support representative, expediting any necessary repair process.

Load the System Defaults

If the computer fails after you make changes in the set-up menus, load the system default settings to correct the error. These default settings have been selected to optimize your computer's performance.

Follow these steps to load the system defaults.

1. Restart the computer as specified in Restart the Computer on page 41.
2. During POST, press F2 to access the BIOS set-up utility.

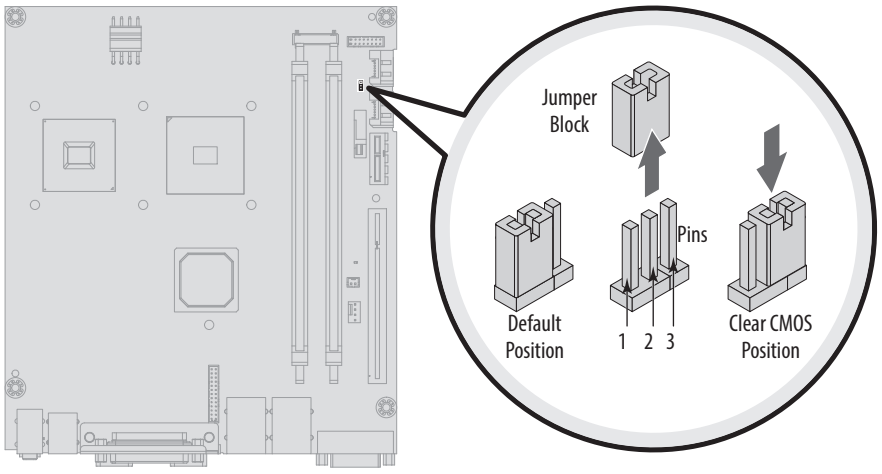
   TIP Use the arrow keys on a keyboard to navigate between BIOS menus and menu selections.
3. Depending on your computer series, press or select the system defaults and exit the BIO set-up utility.

Clear the CMOS

If the system configuration has been corrupted, an incorrect setting has caused error messages to be unreadable, or you cannot access the BIOS set-up utility to load the system defaults, you must clear the system configuration values stored in the CMOS.

Follow these steps to clear the CMOS.

1. Back up all system data and then shut down the computer.
2. Follow the steps for Pre-configuration on page 36.
3. Disconnect the power and peripheral cables from the computer.
4. Remove the rear cover as detailed in Remove the Rear Cover on page 33.
5. Locate the CMOS jumper (CN6) on the motherboard.



6. Remove the jumper block from its default position (over pins 1 and 2).
7. Place the jumper block over pins 2 and 3 **for 10 seconds**.

8. Return the jumper block to its default position.

IMPORTANT	The jumper block must be returned to its default position over pins 1 and 2. The computer will not start if you leave the jumper block over pins 2 and 3.

9. Reinstall the rear cover as detailed in Reinstall the Rear Cover on page 35.
10. Follow the steps for Post-configuration on page 33.

IMPORTANT	When you clear the CMOS, all BIOS settings return to their defaults. BIOS settings other than default must be reconfigured after clearing the CMOS.

11. During POST, press F2 to access the BIOS set-up utility and reconfigure settings.

Ship or Transport the Computer

If you need to ship the computer via common carrier or otherwise transport it to another location for servicing or any other reason, you must first uninstall the computer and place it in its original packing material.

ATTENTION: Do not ship or transport the computer when it is installed in a machine, panel, or rack. Doing so can damage the computer. You must uninstall the computer and place it in its original packing material before shipping. Rockwell Automation is not responsible for damage incurred to a computer that is shipped or transported while installed in a machine, panel, or rack.

Maintenance

Chapter Objectives

This chapter provides information on the following topics:

- Clean the Computer
- Backlight Assembly Disposal

Clean the Computer

It is important to maintain your computer by cleaning the display, heat sink and vent holes, and removing grease or paint.

Clean the Integrated Display

Perform the following steps to clean the display.

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

   ATTENTION: If the computer has a touch screen, it is possible for screen objects to activate during equipment wash-downs if the computer is turned on.

2. Clean the display with a mild soap or detergent by using a clean sponge or a soft cloth.

   ATTENTION: Use of abrasive cleansers or solvents can damage the display window. Do not scrub or use brushes.

3. Dry the display with a chamois or moist cellulose sponge to avoid water spots.

Clean the Heat Sink and Vent Holes

Perform the following steps to clean the chassis.

1. Disconnect power from the computer at the power source.
2. Disconnect all peripheral devices from the computer.
3. Vacuum dust and debris from the heat sink and vent holes.

Remove Paint and Grease from Bezel

Perform the following steps to remove paint and grease from the bezel of computers properly mounted in NEMA Type 4/4X or IEC IP66 enclosures.

1. Close and lock the access cover on the front bezel.

ATTENTION: Step 1 does not apply to computers with a stainless steel bezel.

2. Remove paint splashes and grease by rubbing lightly with isopropyl alcohol.

ATTENTION: Make sure the isopropyl alcohol does not come in contact with the equipment labels. Alcohol can cause the label printing to smear.

3. Use a mild soap or detergent solution to remove residue.
4. Rinse with clean water.

Backlight Assembly Disposal

ATTENTION: The backlight assembly in this computer can contain mercury. At the end of its life, this equipment should be collected separately from any unsorted municipal waste.

Specifications

The following tables contain specifications for the 1200P, 1500P, and 1700P integrated display industrial computers. For additional specifications, go to http://ab.rockwellautomation.com/Computers.

Table 2 - Hardware and Software Specifications

Specification	Attribute	6181F, 6181P
Hardware	Processor Performance Standard	 Intel Core Duo U2500, 1.2 GHz/2M L2 cache/533 MHz 9 W Intel Celeron M423, 1.06 GHz/1M L2 cache/533 MHz 5.5 W
	System chipset	Intel 945GME, ICH7-M
	System memory slots	Dual channel DDR2, 2 DIMM slots, 4 GB max
	System memory, installed Performance Standard	 4 GB 2 GB
	Expansion slots(1) 1200P and non-display 1500P 1700P	 2 PCI (upgradable to 1 PCI + 1 PCI Express) 1 PCI (upgradable to 2 PCI slots or 1 PCI + 1 PCI Express) 1 PCI (upgradable to 2 PCI slots or 1 PCI + 1 PCI Express)
	CompactFlash Type II slot Performance Standard	 2 slots (one bootable(2), one hot-swappable) 1 slot, bootable(2)
	Storage drive 6181P Performance/Standard 6181F Performance 6181F Standard	 2.5-in. SATA rotating hard disk drive, 100 GB min 2.5-in. SATA SLC solid-state drive, 32 GB min CompactFlash solid-state drive, 16 GB min
	Optical disc drive Performance Standard	 Slim DVD-RW/CD-RW None
	I/O ports Performance Standard	 • PS/2 mouse port • PS/2 keyboard port • Parallel port • DVI-I port • 2 serial COM ports • 4 rear USB ports • 1 front USB port(3) • Audio line in/line out • Microphone • 1 serial COM port • 4 USB ports • Audio line in/line out • Microphone
	Ethernet LAN	2 gigabit LAN ports (RJ45)
Software	Operating systems	Windows 7 Professional (32 bit) Windows XP Professional, Service Pack 3 Windows Embedded Standard 2009

(1) Performance models only.
(2) The CompactFlash card must be inserted in the bootable slot before power is applied.
(3) Not available on 1500P and 1700P display computers with stainless steel bezel.

Table 3 - Display Specifications

Attribute	6181F, 6181P
Display	Active Matrix Color TFT
Touch screen (optional)	Resistive antiglare
Display size (diagonal) 1200P 1500P 1700P	 308 mm (12.1 in.) 381 mm (15 in.) 432 mm (17 in.)
Display area (WxH) 1200P 1500P 1700P	 246 x 185 mm (9.7 x 7.3 in.) 305 x 229 mm (12 x 9 in.) 338 x 270 mm (13.3 x 10.7 in.)
Native resolution 1200P 1500P 1700P	 800 x 600, 256K colors 1024 x 768,16.7M colors 1280 x 1024, 16.7M colors
Viewing angle Horizontal Vertical	 60° 40°
Response time	15 ms (typical)

Table 4 - Power Specifications

Attribute	6181F, 6181P
Performance and non-display, AC Input voltage Line frequency Power consumption	 100…240V AC autoranging 47…63 Hz 110VA (0.95 A @ 100V rms, 0.46 A @ 240V rms)
Performance and non-display, DC Input voltage Power consumption	 18…32V DC 95 W (5.28 A @ 18V, 2.97 A @ 32V)
Standard models, AC Input voltage Line frequency Power consumption	 100…240V AC autoranging 47…63 Hz 100VA (1.0 A @ 100V rms, 0.42 A @ 240V rms)
Standard models, DC Input voltage(1) Power consumption	 20V DC 65 W (3.25 A @ 20V)
Heat dissipation (2)	65W (222 BTU/h)

(1) Power adapter required.

(2) Add-in cards and peripherals are not included in the heat dissipation value. Calculate heat dissipation separately for installed add-in cards and peripherals.

Table 5 - Environmental Specifications

Attribute	6181F, 6181P
Weight, approx	
Non-display	7.7 kg (17.0 lb)
1200P Performance	9.5 kg (20.9 lb)
1200P Standard	7.85 kg (17.31 lb)
1500P Performance	10.7 kg (23.6 lb)
1500P Performance w/stainless steel bezel	11.9 kg (26.2 lb)
1500P Standard	9.0 kg (19.8 lb)
1700P Performance	12.6 kg (27.8 lb)
1700P Performance w/stainless steel bezel	14.5 kg (32.1 lb)
1700P Standard	11.0 kg (24.3 lb)
Dimensions, overall (HxWxD), approx	
Non-display	251 x 353 x 108 mm (9.88 x 13.90 x 4.25 in.)
1200P Performance	279 x 349 x 124 mm (10.98 x 13.74 x 4.90 in.)
1200P Standard	279 x 349 x 99 mm (10.98 x 13.74 x 3.91 in.)
1500P Performance	309 x 410 x 100 mm (12.16 x 16.14 x 3.94 in.)
1500P Standard	309 x 410 x 95 mm (12.16 x 16.14 x 3.74 in.)
1700P Performance	356 x 452 x 100 mm (14.01 x 17.80 x 3.94 in.)
1700P Standard	356 x 452 x 95 mm (14.01 x 17.80 x 3.74 in.)
Panel cutout dimensions (HxW)	
1200P	254 x 324 mm (10.00 x 12.76 in.)
1500P	285 x 386.6 mm (11.24 x 15.22 in.)
1700P	329.5 x 424 mm (12.97 x 16.69 in.)
Enclosure Ratings (for display models only)(1)	
Performance	NEMA Type 1 NEMA Type 12 NEMA Type 4 IEC IP66
Performance w/stainless steel bezel	NEMA Type 1 NEMA Type 12 NEMA Type 4 NEMA Type 4X IEC IP66
Standard	NEMA Type 1 NEMA Type 12 NEMA Type 4 IEC IP66
Temperature, operating(2)	
All Standard models	0…50 °C (32…122 °F)
Non-display 1200P and 1500P Performance	0…55 °C (32…131 °F)
1700P Performance	0…50 °C (32…122 °F)
Temperature, nonoperating	-20…60 °C (-4…140 °F)
Relative humidity	10…90% without condensation
Altitude, operating	2,000 m (6,561 ft)
Altitude, nonoperating	12,000 m (40,000 ft)
Shock, operating(2)(3)	15 g (1/2 sine, 11ms)
Shock, nonoperating(2)(3)	30 g (1/2 sine, 11 ms)
Vibration, operating(2)(3)	
6181P	0.006 in. p-p 10…57 Hz; 1 g peak (57…640 Hz)
6181F	0.012 in p-p 10…57 Hz; 2 g peak (57…640 Hz)
Vibration, nonoperating(2)(3)	0.012 in p-p 10…57 Hz; 2 g peak (57…640 Hz)

(1) Type ratings apply only when computer is properly mounted on a flush surface of an equivalent type enclosure.

(2) The optical disc drive (ODD) is considered a maintenance device. Therefore, do not operate computers with ODDs in temperatures above 45 °C (113 °F) or in environments with the shock and vibration levels listed.

(3) Applies only to panel mounted display computers and wall mounted non-display computers.

Table 6 - Certifications(1)

Attribute	6181F, 6181P
c-UL-us	UL/c-UL Listed per UL 60950-1 and CSA C22.2 No. 60950-1-03
CE	Marked for all applicable directives: EMC 2004/108/EC LVD 2006/95/EC
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
RoHS	China RoHS Turkey RoHS (EEE Yönetmeliğine Uygundur. In Conformity with the EEE Regulation)

(1) See http://www.rockwellautomation/certification for declarations of conformity, certificates, and other certification details.

Use a Touchscreen

Touchscreen Controller

Computers with a touchscreen are shipped with the touchscreen controller installed and connected. The touchscreen controller connects internally to a USB port. The touchscreen is factory configured with the proper USB and touchscreen driver settings, so no user configuration is required.

Driver Software

The touchscreen driver is already loaded on the computer. The driver software is also available for download at the Rockwell Automation Product Compatibility and Download Center (PCDC) at http://www.rockwellautomation.com/support/pcdc.

TIP If you must reinstall the touchscreen driver, the touchscreen utility automatically detects the USB port used by the touchscreen controller.

Resistive Touchscreen Technology

Resistive touchscreens are activated when you apply pressure to the touchscreen with your finger. You can operate a resistive touchscreen while wearing gloves.

ATTENTION: Do not use sharp instruments to activate the touchscreen. Scratching the surface of the touchscreen can damage the display.

Calibrate the Touchscreen

The touchscreen supplied with the computer is factory installed and calibrated.

Perform the following steps to recalibrate the touchscreen.

1. Run the touchscreen configuration utility through the Programs menu of the operating system.
2. Start the calibration routine offered within the utility.
3. Follow the calibration instructions on the touchscreen.

Notes:

Upgrade to a New BIOS

BIOS Upgrade Procedure

Sometimes a new BIOS is released to enhance the performance of your computer or to correct a defect. In such cases, you can download BIOS upgrades at the Rockwell Automation Product Compatibility and Download Center (PCDC) website at http://www.rockwellautomation.com/support/pcdc. CD and floppy disk drive upgrades are available.

Upgrade the BIOS from a CD Drive

Follow these steps to upgrade the BIOS in your computer from an external CD drive.

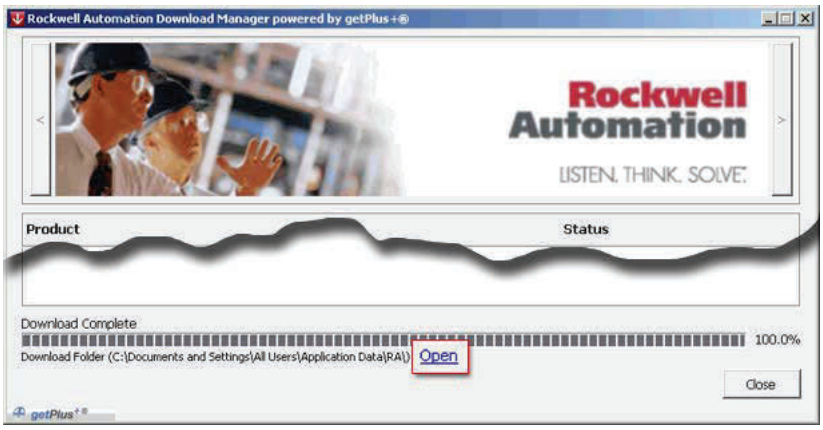
1. Attach the following external peripherals to your computer:
   - Display (for non-display models)
   - Keyboard
   - CD drive (for standard models)
2. Access the Rockwell Automation PCDC website at http://www.rockwellautomation.com/support/pcdc.
3. Click the Get Downloads tab (A).
4. Click the Find Product Downloads link (B).

5. Use the Product Search criteria to find your specific computer model.
6. Follow the instructions on the PCDC site to find your BIOS.

TIP You must be registered with the Rockwell Automation PCDC website to download files.

You must accept a User Agreement before files can be downloaded.

7. After the download completes, click Open to access the folder where ZIP files were downloaded.



8. Open the downloaded file to locate and extract the ISO (*.iso) file.
9. Write the ISO file to a blank CD/CD-RW with the included CD Write utility (or one of your choice).
10. With the BIOS upgrade CD in the CD drive, restart the computer.
11. During POST, press F2 to access the BIOS set-up utility.

    TIP Use the arrow keys on a keyboard to navigate between BIOS menus and menu selections.

12. Navigate through the BIOS set-up utility to where you can select the CD drive as your boot source.
13. Save your change and exit the BIOS set-up utility.
14. Follow the directions that appear on the display to properly upgrade the BIOS.

Upgrade the BIOS from an External Floppy Disk Drive

Follow these steps to upgrade the BIOS in your computer from an external floppy disk drive.

1. Attach the following external peripherals to your computer:
   - Display (for non-display models)
   - Keyboard
   - Floppy disk drive
2. Follow step 2 through step 7 in Upgrade the BIOS from a CD Drive starting on page 69 before proceeding to step 3 in this section.
3. Open the downloaded file to locate and extract the executable (*.exe) file.
4. Run the extracted executable file and then write that file to a floppy disk inserted in the external floppy disk drive.

   This creates a BIOS upgrade floppy disk that you can use to start your computer.
5. With the BIOS upgrade disk in the external floppy disk drive, restart the computer.
6. During POST, press F2 to access the BIOS set-up utility.

   TIP Use the arrow keys on a keyboard to navigate between BIOS menus and menu selections.
7. Navigate through the BIOS set-up utility to where you can select the floppy disk drive as your boot source.
8. Save your change and exit the BIOS set-up utility.
9. Follow the directions that appear on the display to properly upgrade the BIOS.

Notes:

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Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At http://www.rockwellautomation.com/support you can find technical and application notes, sample code, and links to software service packs. You can also visit our Support Center at https://rockwellautomation.custhelp.com/ for software updates, support chats and forums, technical information, FAQs, and to sign up for product notification updates.

In addition, we offer multiple support programs for installation, configuration, and troubleshooting. For more information, contact your local distributor or Rockwell Automation representative, or visit http://www.rockwellautomation.com/services/online-phone.

Installation Assistance

If you experience a problem within the first 24 hours of installation, review the information that is contained in this manual. You can contact Customer Support for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
Outside United States or Canada	Use the Worldwide Locator at http://www.rockwellautomation.com/rockwellautomation/support/overview.page, or contact your local Rockwell Automation representative.

New Product Satisfaction Return

Rockwell Automation tests all of its products to help ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

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

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete this form, publication RA-DU002, available at http://www.rockwellautomation.com/literature/.

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