Allen-Bradley 6181P-15TPXPHSS

VersaView 1500P Industrial Computer

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VersaView 6181P Integrated Display Computers

6181P-15TS2KH, -15TP2KH, -15NS2KH, -15NP2KH, -15TSXPH, -15TPXPH, -15NSXPH, -15NPXPH, -17TS2KH, -17TP2KH, -17NS2KH, -17NP2KH, -17TSXPH, -17TPXPH, -17NSXPH, -17NPXPH,

User Manual

Rockwell Automation

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of these products must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards. In no event will Allen-Bradley be responsible or liable for indirect or consequential damage resulting from the use or application of these products.

Any illustrations, charts, sample programs, and layout examples shown in this publication are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

Throughout this publication, notes may be used to make you aware of safety considerations. The following annotations and their accompanying statements help you to identify a potential hazard, avoid a potential hazard, and recognize the consequences of a potential hazard:

WARNING

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

ATTENTION

Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.

IMPORTANT

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

Using This Manual

Read this preface to familiarize yourself with the rest of the manual. The preface covers:

- who should use this manual
- the purpose of the manual
- the contents of the manual
- manual conventions
- Allen-Bradley support

Who Should Use This Manual

Use this manual if you are responsible for installing, using or troubleshooting the VersaView 6181P Integrated Display Computers.

Purpose of This Manual

This manual is a user guide for the VersaView 6181P Integrated Display Computers. It gives an overview of the system and describes procedures you use to:

- install the computer in a panel or enclosure
- make connections to the computer
- configure the computer
- troubleshoot the computer

Contents of This Manual

Chapter	Title	Contents
	Preface	Describes the purpose, background and scope of this manual. Also specifies the intended audience.
1	System Features	Provides an overview of the VersaView 6181P Integrated Display Computers.
2	Installation	Describes installation of the VersaView 6181P Integrated Display Computers including how to install the computers in a panel using mounting clips.
3	Initial Operation and Setup	Provides information on: • operating recommendations • boot-up sequence • system reset and Power On Self Test (POST) • Windows 2000 touchscreen driver installation • Universal Serial Bus (USB)
4	Adding/Removing System Components	Describes how to remove and install: • the back cover • add-in cards • floppy disk drive • hard disk drive • CD-ROM/DVD-ROM drive • external drives • memory modules
5	System Troubleshooting	Describes common operating problems, probable causes, and recommended corrective actions including: • troubleshooting procedure • troubleshooting checklists • boot-up error messages • general error and information messages
6	Maintenance	Describes maintenance procedures for: • cleaning the display • replacing the battery
Appendix A	Specifications	
Appendix B	Using a Touchscreen	Describes how to use a touchscreen with the VersaView 6181P Integrated Display Computers.
Appendix C	POST Messages	Describes error messages that can occur during POST (Power On Self Test).
Appendix D	DMA, IRQ and 1st MB Memory	
Appendix E	How to Upgrade a new BIOS	Explains how to upgrade BIOS for the CPU board.

Manual Conventions

The following conventions are used throughout this manual.

- Bulleted lists such as this one provide information, not procedural steps.
- Numbered lists provide sequential steps or hierarchical information.

Allen-Bradley Support

Allen-Bradley offers support services worldwide, with over 75 Sales/ Support Offices, 512 authorized Distributors and 260 authorized Systems Integrators located throughout the United States alone, plus Allen-Bradley representatives in every major country in the world.

Local Product Support

Contact your local Allen-Bradley representative for:

- sales and order support
- product technical training
- warranty support
- support service agreements

Technical Product Assistance

Before you contact Rockwell Automation for technical assistance, we suggest you please review the troubleshooting information contained in this publication first.

If the problem persists, call your local Rockwell Automation representative or contact Rockwell Automation in one of the following ways:

Phone	United States/Canada	1.440.646.5800
	Outside United States/Canada	You can access the phone number for your country via the Internet: 1. Go to http://www.ab.com 2. Click on *Product Support* (http://support.automation.rockwell.com) 3. Under *Support Centers*, click on *Contact Information*
Internet	⇒	1. Go to http://www.ab.com 2. Click on *Product Support* (http://support.automation.rockwell.com)

System Features

Chapter Objectives

This chapter provides an overview of the VersaView 6181P Integrated Display Computers including:

- available catalog numbers
- packing list
- features

Available Catalog Numbers

The following table summarizes the options available for the VersaView 6181P Integrated Display Computers.

Catalog Number	Display Size	Touchscreen	Performance	Operating System
6181P-15TS2KH	15 in	Yes	Standard	Windows 2000
6181P-15TP2KH		Yes	Performance	
6181P-15NS2KH		No	Standard	
6181P-15NP2KH		No	Performance	
6181P-15TSXPH		Yes	Standard	Windows XP
6181P-15TPXPH		Yes	Peformance	
6181P-15NSXPH		No	Standard	
6181P-15NPXPH		No	Performance	
6181P-17TS2KH	17 in	Yes	Standard	Windows 2000
6181P-17TP2KH		Yes	Performance	
6181P-17NS2KH		No	Standard	
6181P-17NP2KH		No	Performance	
6181P-17TSXPH		Yes	Standard	Windows XP
6181P-17TPXPH		Yes	Peformance	
6181P-17NSXPH		No	Standard	
6181P-17NPXPH		No	Peformance	

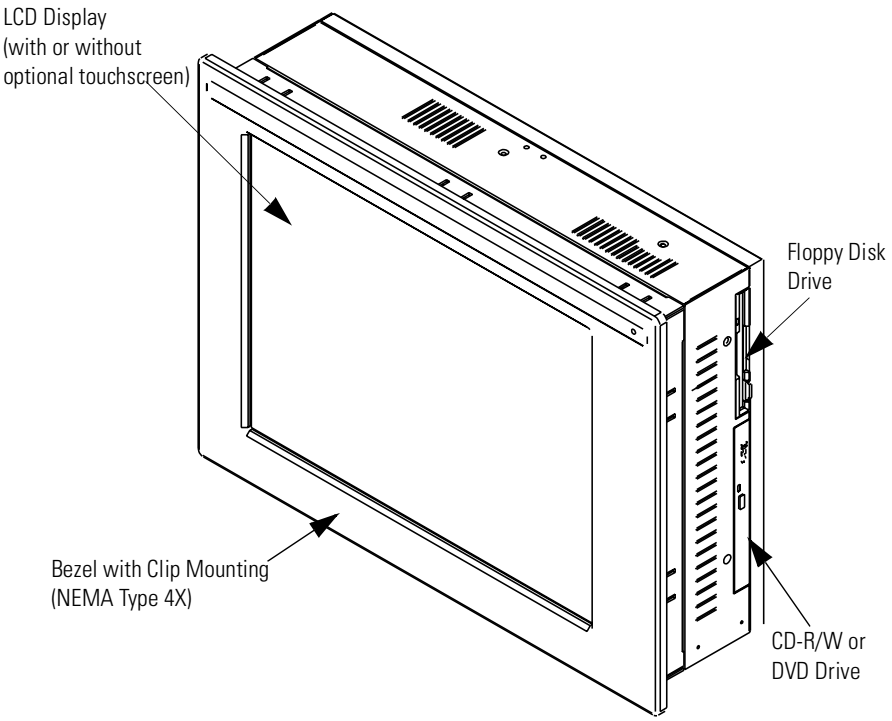
Packing List

- Computer
- Mounting clips (10)
- AC power cord
- Y-adapter cable for Keyboard and Mouse connection
- Operating system media with documentation, if ordered
- CD-ROM containing touchscreen driver, video drivers, Ethernet drivers, and technical documentation
- Recovery CD-ROM
- Quick Start guide

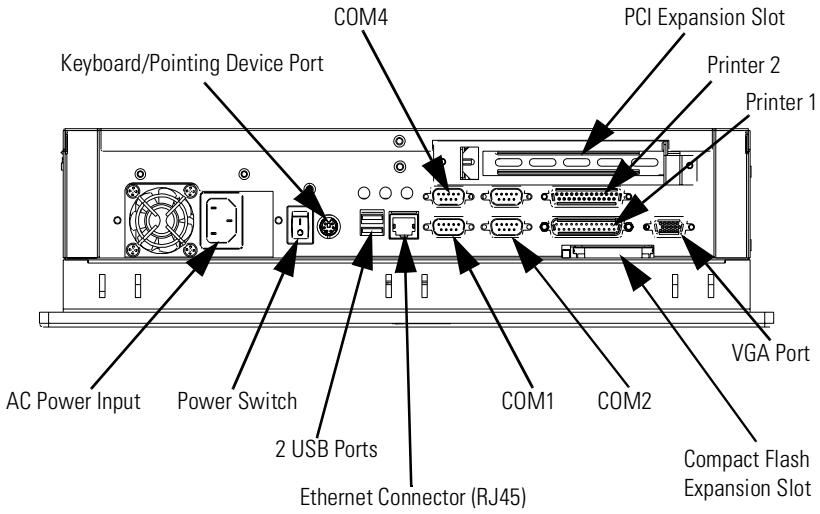
Features

The following illustrations show the major features and controls of the VersaView 6181P Integrated Display Computers.

Top and Side View



Bottom View



Installation

Chapter Objective

This chapter describes installation of the VersaView 6181P Integrated Display Computers and covers:

- unpacking your computer
- shipping/transporting the computer
- European Union Directive Compliance
- enclosures
- environmental considerations
- mounting hardware and tools required
- mounting dimensions and clearances
- panel cutout dimensions
- panel mounting guidelines
- installing computer in a panel
- connecting power
- connecting to a network

Before Unpacking the Computer

Before unpacking your new computer, inspect the shipping carton for damage. If damage is visible, immediately contact the shipper and request assistance. Otherwise, proceed with unpacking.

TIP

Make sure you keep all the original packaging for the computer in case you need to return the computer for repair. Both the inner and outer packing cartons should be used to ensure adequate protection for any units returned for service.

Shipping/Transporting the Computer

If after you have installed the VersaView computer you must ship it via common carrier or otherwise transport it to another location, you must first remove the unit from the panel and place it in its original packing material.

ATTENTION

Do not ship or otherwise transport the VersaView computer while it is installed in a door or panel. You must uninstall the computer and place it in its original packing material before shipping or transporting the unit. If you ship or transport the computer while it is installed in a door or panel, you may **severely damage** the unit. Rockwell Automation is not responsible for damage incurred to the computer if it is shipped or transported while still installed in a door or panel.

European Union Directive Compliance

The VersaView 6181P Integrated Display Computers meet the European Union Directive requirements when installed within the European Union or EEA regions and has the CE mark. A copy of the Declaration of Conformity is available at the Rockwell Automation / Allen-Bradley Internet site: www.ab.com.

ATTENTION

The VersaView 6181P Integrated Display Computers are intended to operate in an industrial or control room environment, which utilizes some form of power isolation from the public low voltage mains. Some VersaView computer configurations may not comply with the EN 61000-3-2 Harmonic Emissions standard as specified by the EMC Directive of the European Union. Obtain permission from the local power authority before connecting any VersaView computer configuration that draws more than 75 watts of AC power directly from the public mains.

ATTENTION

To comply with EN 55024, the Ethernet LAN cable must be less than 30m [98.42 ft] long, and it must only be used indoors (i.e. not exit the building at any point). All other I/O cables must be less than 3m [9.842 ft] long, and must only be used indoors.

Enclosures

Mount the VersaView 6181P Integrated Display Computers in a panel or enclosure to protect the internal circuitry. The Versa Computer, with its gasketed bezel, meets NEMA Type 1, 12, and 4X (Indoor use only) and IEC IP66 only when mounted in a panel or enclosure having an equivalent rating.

ATTENTION

Environment and Enclosure

This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC publication 60664-1), at altitudes up to 2000 meters without derating.

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR Publication 11. Without appropriate precautions, there may be potential difficulties ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbance.

This equipment is supplied as "open type" equipment. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present and appropriately designed to prevent personal injury resulting from accessibility to live parts. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

See NEMA Standards publication 250 and IEC publication 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosure. Also, see the appropriate sections in this publication, as well as the Allen-Bradley publication 1770-4.1 ("Industrial Automation Wiring and Grounding Guidelines"), for additional installation requirements pertaining to this equipment.

Environmental Considerations

Follow these guidelines to help ensure that the computer provides safe and reliable service.

- Ensure that sufficient **space** is available around air inlets and outlets to provide the circulation necessary for cooling. Never allow air passages to become obstructed.
- Allow enough room within the enclosure for adequate ventilation. The **ambient temperature** around the computer must be between 0…50 °C (32…122 °F). Also consider heat produced by other devices in the enclosure. You may need a user-supplied fan, heat exchanger, or air conditioner to meet this condition in some installations.

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TIP

Remember that heat rises. The temperature at the top of an enclosure is often much higher than the rest of the enclosure if air is not circulating.

ATTENTION

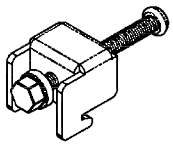
The VersaView 6181P Integrated Display Computers are designed to operate at a range of extremes. However, it is not good design practice to continuously operate the computer at the highest end of the specified temperature range.

While the product will operate at its highest specified temperature, the overall life span of any electronic device is shortened when it operates at its highest rated temperature.

- Ensure that the **humidity** of the ambient air will not exceed specified limits. In very dry environments, static charges build up very readily. Proper grounding of the equipment through the AC power cord can help reduce the likelihood of static discharges, which may cause shocks and damage electronic components.
- Leave the computer's **enclosure or cover** in place at all times during operation. The cover affords protection against high voltages inside the computer and inhibits radio-frequency emissions that might interfere with other equipment.

Mounting Hardware

The VersaView 6181P Integrated Display Computers are shipped with the following types of mounting hardware:

Item	Description	Quantity	Used For
	Mounting Clips	10	Panel or enclosure mounting

Tools Required

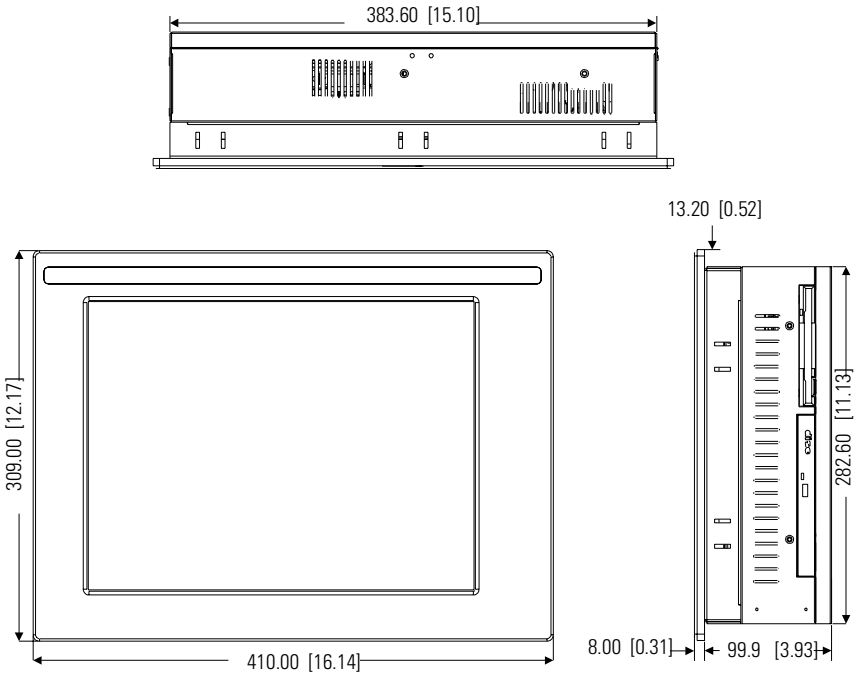
In addition to the tools required to make the cutout, you will need the following tools:

- #2 Phillips screwdriver

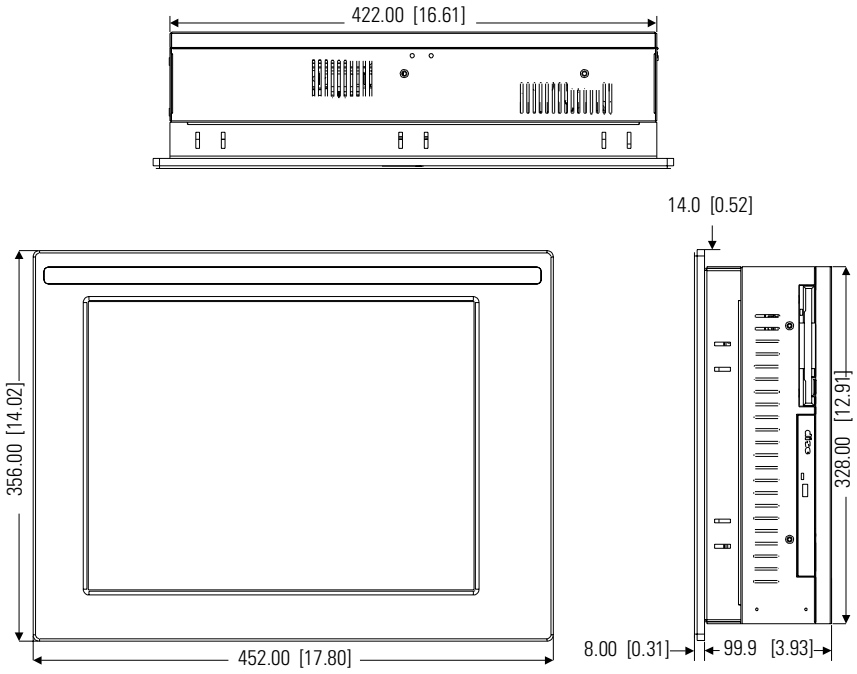
Mounting Dimensions

The following figures show mounting dimensions for the VersaView 6181P Integrated Display Computers. Dimensions are mm [inches]:

1500P Integrated Display Computer



1700P Integrated Display Computer



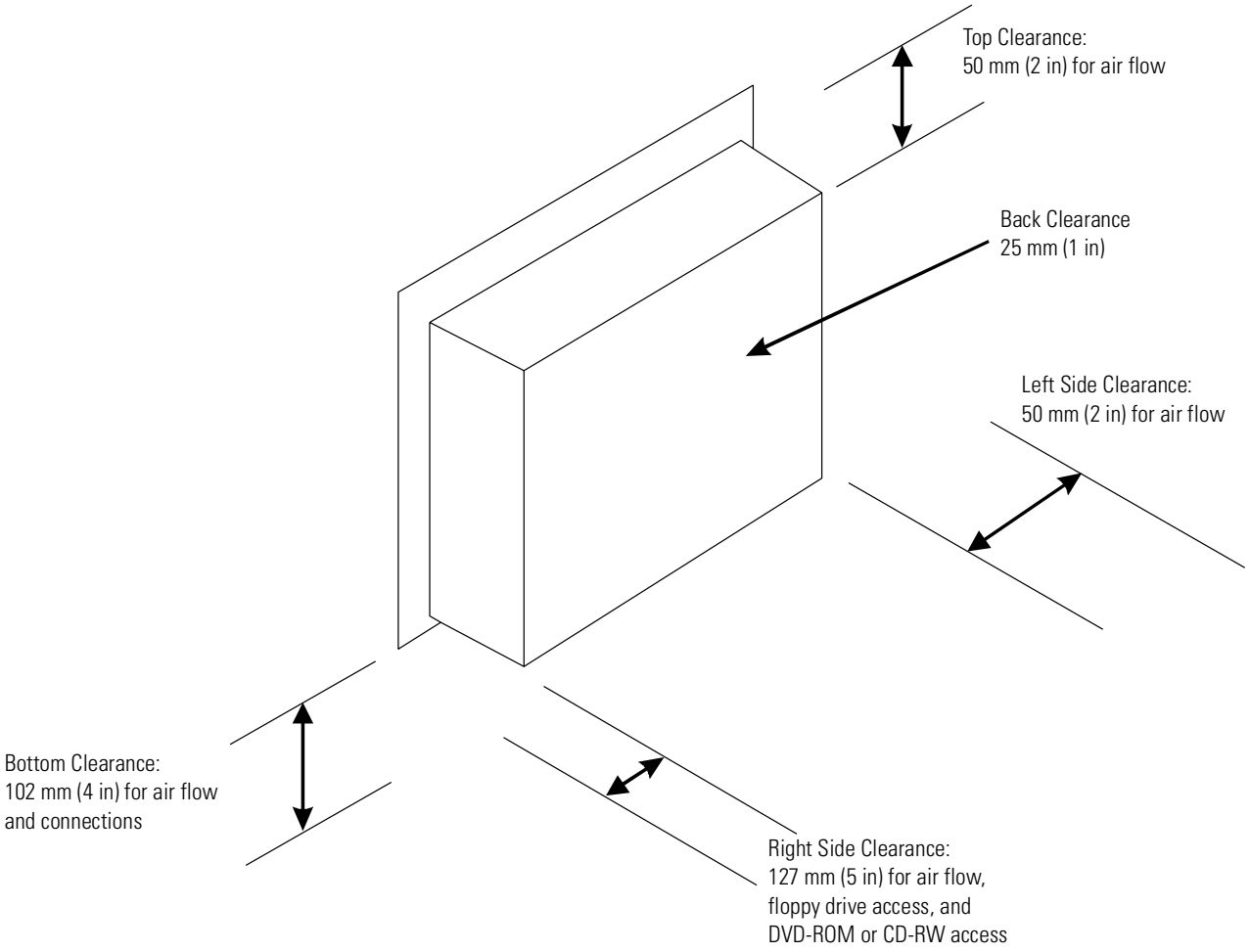
Mounting Clearances

Allow adequate space for mounting, air flow, and maintenance. The figure below shows recommended minimum clearances to other components within the rack or enclosure.

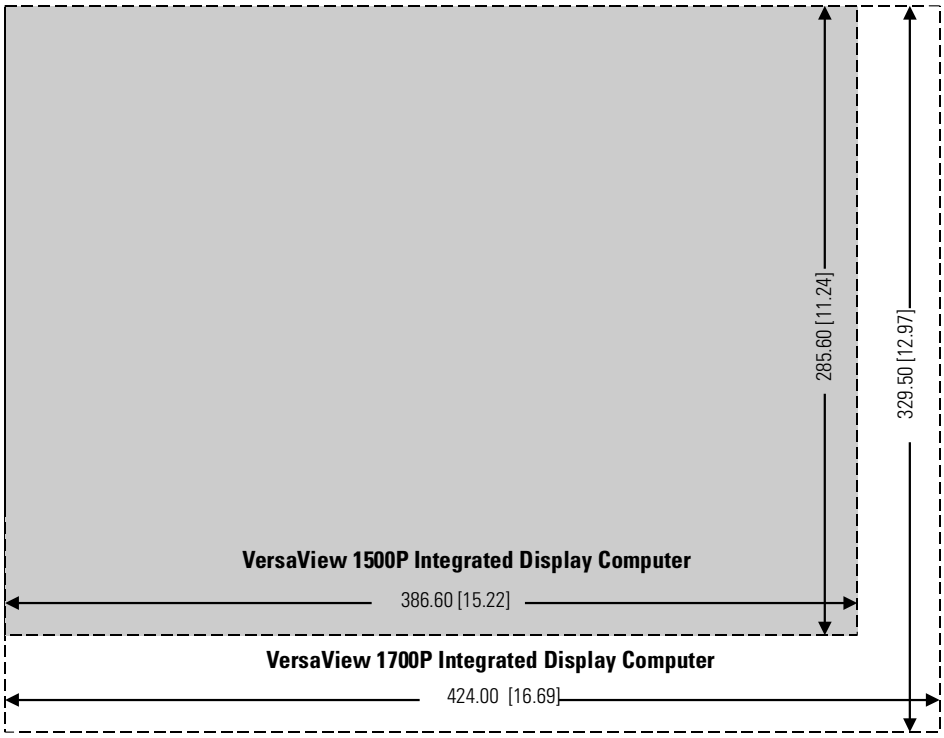
ATTENTION

The VersaView 6181P Integrated Display Computers should not be operated within a confined space of the dimensions shown below unless adequate ventilation or other cooling methods are used to lower the air temperature within the enclosure.

Mounting Clearances for the 6181P Integrated Display Computers



Panel Cutout Dimensions



Panel Mounting Guidelines

Observe the precautions below when installing computer in a panel:

- Confirm that there is adequate space behind the panel. A cabinet with a minimum depth of 127 mm (5.0 in) is sufficient.
- Supporting panels should be at least 14 gauge to ensure proper sealing against water and dust and to provide proper support. The mounting hardware supplied accommodates panels up to 6.25 mm (0.25 in) thick.

IMPORTANT Supporting panels must be cut to specifications before installation.

Installing Computer in Panel

To install the computer in a panel using mounting clips:

ATTENTION

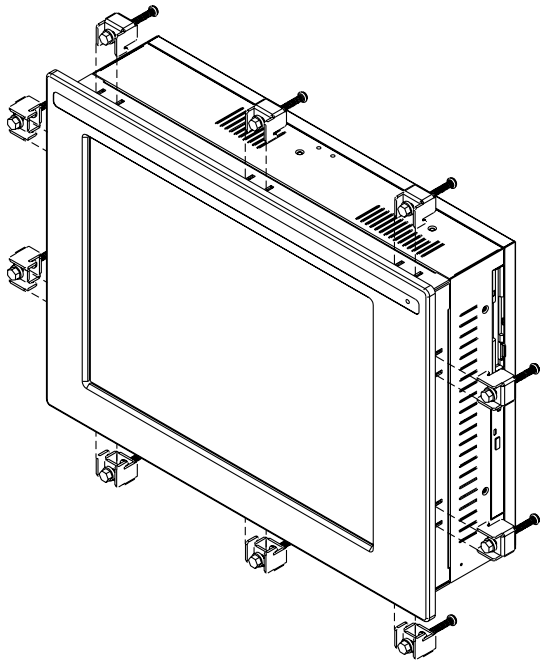
- Disconnect all electrical power from the panel before making cutout.
- Make sure area around the panel cutout is clear.
- Take precautions so that metal cuttings do not enter any components that are already installed in the panel.
- Failure to follow these warnings may result in personal injury or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

3. Cut an opening in the panel using the appropriate panel cutout dimensions provided above.

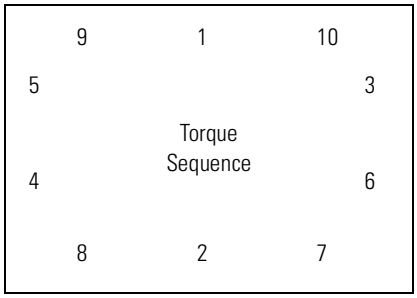
4. Make sure the computer sealing gasket is properly positioned on the terminal. This gasket forms a compression type seal, do not use sealing compounds.

5. Place the computer in the panel cutout.

6. Install the mounting clips. The mounting clips slide into the slots on the top, bottom and sides of the computer.



7. Gradually tighten the clips one at a time around the bezel using the specified sequence. Note that the sequence begins with the center clips and continues to the corner clips.



Repeat this process at least 3 times until the clips are hand-tight and the gasket is compressed uniformly against the panel.

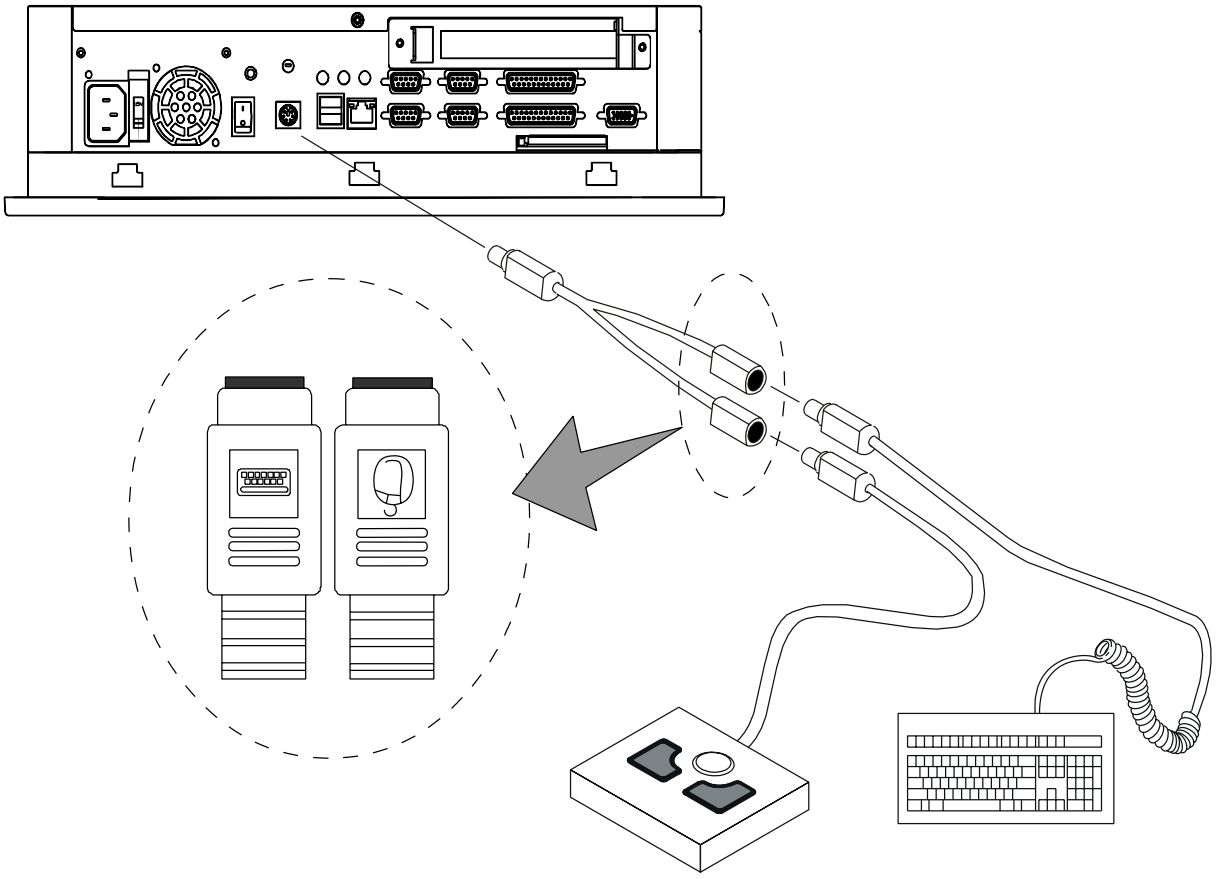
8. Tighten mounting clips to a torque of 10 in-lbs (1.1 N•m) in the sequence shown above. Do not over-tighten.

ATTENTION

Tighten mounting clips to a torque of 10 in-lbs (1.1 N•m) to provide a proper seal and prevent damage to the VersaView computer. Rockwell Automation assumes no responsibility for water or chemical damage to the terminal or other equipment within the enclosure because of improper installation.

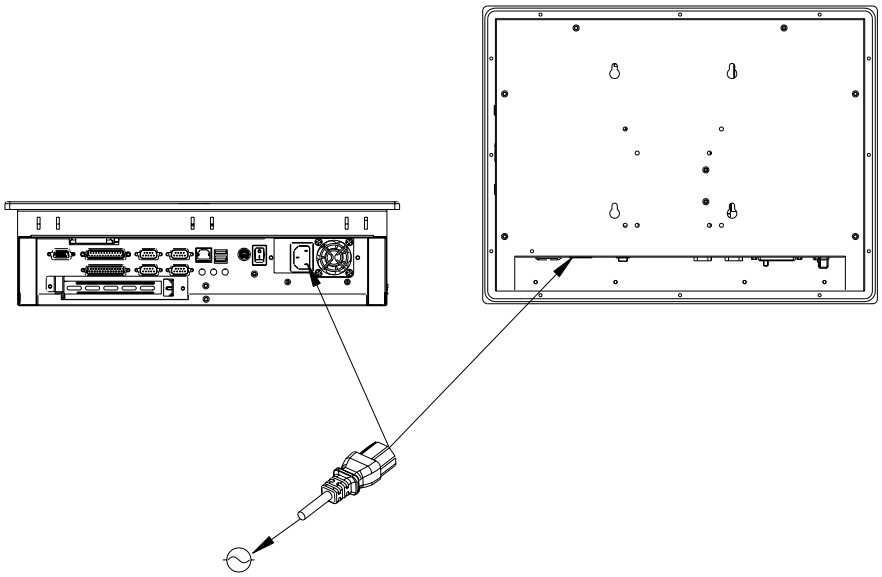
Connecting a Keyboard and Pointing Device

A keyboard can be plugged individually into the PS2 port on the bottom of the computer. The keyboard and pointing device can be plugged together into this port using a wye adapter (included).



Connecting Power

A standard IEC 320 power cord provides power to the VersaView 6181P Integrated Display Computers. The power supply input will accept 120/240V ac. The power supply is autoswitching. Ensure that sufficient power is available.



ATTENTION

Select an electrical outlet carefully before plugging in your computer:

- The power cord must be connected to an outlet having an earth ground (three-prong outlet). Failure to follow this warning could result in severe electrical shock.
- Installing computer in a panel, enclosure or rack that is already connected to Earth ground will satisfy this requirement. Otherwise, connect your computer to Earth ground using a 16 AWG or larger external wire.
- The ground wire should have green insulation with a yellow stripe for easy identification.
- The outlet should have its own disconnect. Do not plug the computer into an outlet that is connected to the main electrical disconnect.
- To prevent problems resulting from power surges or unexpected power failure, protect the outlet with its own fuses or circuit breakers, as well as an Uninterrupted Power Supply (UPS) system.
- Always shut down the operating system prior to removing power. Failure to do so will cause performance degradation and eventual failures in the operating system.

Connecting to a Network

The VersaView 6181P Integrated Display Computers accommodate CAT5 twisted pair Ethernet cabling with RJ45 connectors to support 100 Mbps network data transfer.

IMPORTANT

Performance degradation of your Ethernet communications is likely to result if the unit or cables are subjected to extreme radiated or conducted high-frequency noise. It is the user's responsibility to properly route cables and condition input power in order to improve communication reliability.

Proper cable routing and power conditioning is required to ensure reliable Ethernet communications in industrial environments. Rockwell Automation recommends that all Ethernet cabling be routed through dedicated metal conduits. Installing ferrite bead filters at cable ends may also improve reliability.

Initial Operation and Setup

Chapter Objective

This chapter provides information on:

- operating guidelines
- operator access
- boot-up sequence
- system reset and Power On Self Test (POST)
- driver installation
- Universal Serial Bus (USB)

Operating Guidelines

We recommend the following operating guidelines for the VersaView 6181P Integrated Display Computers:

- Avoid turning the system on and off frequently.
- Always use the proper power down procedures as required by your operating system, such as the Shut Down command in Microsoft® Windows.
- Do not turn off the computer until a message appears telling you that it is safe to do so.
- Do not operate the VersaView 6181P Integrated Display Computers with covers removed. An electrical shock hazard exists. In addition, removing the covers will disrupt air flow and may result in overheating. All covers are required to maintain EMI shield.

ATTENTION

After shutting the system off, do not move the computer or turn it back on again until the hard drive has come to a complete stop (it takes about 30 seconds).

If you are using an external monitor, turn on the monitor first.

Operator Access

Operator access is limited to the front panel of the VersaView computer. This includes the display and touchscreen. Access to components behind the rack or panel in which the computer is installed is restricted to authorized and properly trained personnel.

Boot-up Sequence

To boot up the system:

1. Apply power to the VersaView computer. The computer performs a Power On Self Test (POST) in which it tests the processor board, memory, keyboard, and certain peripheral devices.
2. The computer displays the progress of the POST and initialization of accessory devices.
3. If your system does not boot up, or you notice other problems, refer to Chapter 5, System Troubleshooting.
4. The computer will then display the startup dialogs for the operating system that has been installed.

System Reset

To reset the VersaView computer, press [Ctrl] [Alt] [Delete] on an attached keyboard and follow the operating system instructions.

After resetting, the computer will begin the Power On Self Test (POST). During reset, the computer:

- clears RAM
- starts the POST
- initializes peripheral devices, such as drives and printers
- loads the operating system (if installed)

Driver Installation

The operating system of VersaView computer usually selects the best device driver settings. However, you may want to ensure fully optimized performance by manually installing the device drivers included with your system. Refer to the Readme files on the software CD enclosed with your VersaView computer for details on the latest device drivers and installation procedures.

Using USB

The Universal Serial Bus (USB) is an external bus standard that supports data transfer rates of 12Mbps (12 million bits per second). The computer's USB port can connect multiple peripheral devices, such as mice, modems, and keyboards. USB also supports Plug-and-Play installation and hot plugging.

For more information on installing or using USB, refer to the documentation for your USB peripheral device.

TIP

Many USB devices only work with Windows XP or Windows 2000, because these operating systems have native USB drivers. Make sure the selected USB peripheral has software drivers available for your target operating system.

Adding/Removing System Components

Chapter Objectives

This chapter provides safety precautions and describes how to remove and install:

- back cover
- add-in cards
- hard disk drive
- floppy disk drive
- CD or DVD drive
- external drives
- memory modules

Safety Precautions

The VersaView 6181P Integrated Display Computers contain line voltages. Make sure you disconnect all power to the computer before performing any of the operations described in this chapter.

ATTENTION

Disconnect all power from the computer before removing components. Failure to disconnect power could result in severe electrical shock or damage to the computer.

Internal VersaView computer components may be damaged by Electrostatic Discharge (ESD). Make sure you wear a grounding strap whenever handling circuit boards, memory modules or other internal components.

ATTENTION

Wear a wrist strap (well grounded) and perform work in a static safe environment. Electrostatic discharge can damage the VersaView computer and components.

Removing the Back Cover

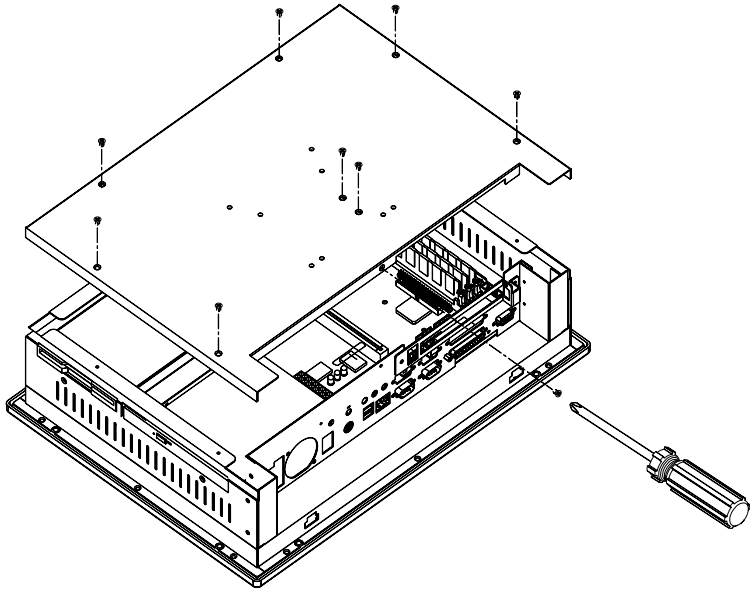
For maintenance, installation or upgrade of computer components, you have to remove the back cover of the VersaView computer first.

ATTENTION

Review Safety Precautions on page 4-1 before proceeding. Failure to follow proper safety procedures could result in severe electrical shock or damage to the VersaView 6181P Integrated Display Computers.

To remove the back cover:

1. Disconnect power from the computer.
2. Remove the screws securing the back cover.



3. To re-install the back cover, position the back cover over the chassis and fasten with the screws.

Installing/Removing Add-In Cards

PCI compatible cards may be installed in the computer's PCI slot.

ATTENTION

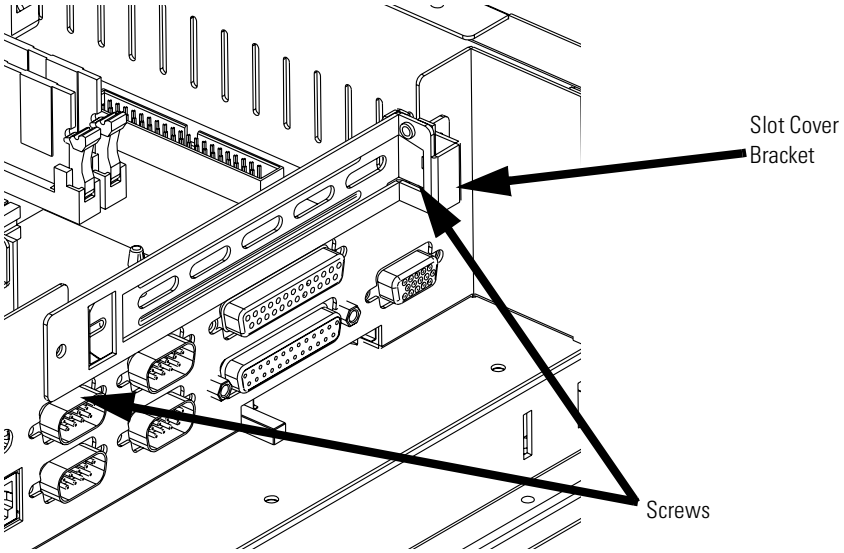
Review Safety Precautions on page 4-1 before proceeding. Failure to follow proper safety procedures could result in severe electrical shock or damage to the computer.

ATTENTION

Add-in cards are sensitive to ESD and require careful handling. Hold cards only by the edges. Do not touch connectors, components or circuits. After removing a card, place it on a flat static-free surface, component side up. Do not slide the card over any surface.

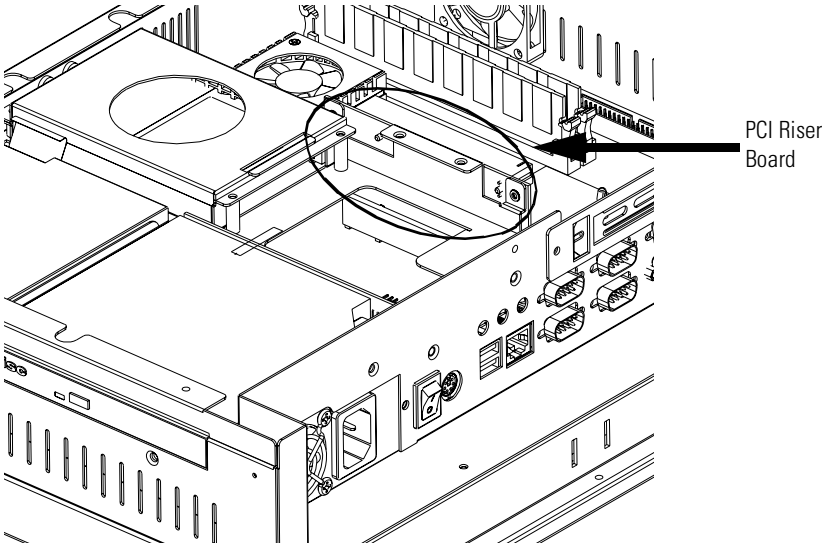
To install an add-in card:

1. Disconnect power from the computer.
2. Remove the back cover (see Removing the Back Cover on page 4-2).
3. Remove the slot cover bracket by removing the 2 screws securing it to the chassis.



4. Remove the screw securing the slot cover to the slot cover bracket and remove the slot cover.

5. Remove the 2 screws at the top of the PCI riser and remove the riser from the PCI slot on the CPU board.



6. Remove the add-in card from its anti-static packaging and place on a grounded, static free surface.

7. Attach the slot cover bracket to the add-in card with the slot cover screw (from step 4).

8. Hold the card by the edges and firmly press the board into the slot on the PCI riser board.

9. Press this complete assembly (PCI riser board, add-in card and slot cover bracket) into the PCI slot on the CPU board.

10. Reattach the PCI riser card with 2 screws (from step 5).

11. Reattach the slot cover bracket to the chassis with 2 screws (from step 3).

12. Reinstall the back cover.

To remove an add-in card:

1. Disconnect power from the computer.
2. Remove the back cover (see Removing the Back Cover on page 4-2).
3. Remove the 2 screws securing the slot cover bracket to the chassis.
4. Remove the 2 screws at the top of the PCI riser board.
5. As a single unit, remove the PCI riser board, add-in card and slot cover bracket from the PCI slot on the CPU board.
6. Remove screw securing the slot cover bracket to the add-in card.
7. Pull the add-in card free of the slot on the PCI riser board. Store the card in an anti-static wrapper.
8. Install a slot cover over the open slot on the slot cover bracket and secure with a screw (from step 6).
9. Press the PCI riser board into the PCI slot on the CPU board.
10. Replace 2 screws at the top of the PCI riser board (from step 4).
11. Secure the slot cover bracket to the chassis with 2 screws (from step 3).
12. Reinstall the back cover.

Installing/Removing the Hard Disk Drive

Observe the following precautions when working with the computer's hard disk drive:

- Do not touch internal components unnecessarily.
- Always handle the hard disk drive by its metal frame.
- Store the hard disk drive in an anti-static bag when it is not installed.
- Never disconnect or install a hard disk drive with the power turned on.

ATTENTION

Review Safety Precautions on page 4-1 before proceeding. Failure to follow proper safety procedures could result in severe electrical shock or damage to the VersaView 6181P Integrated Display Computers.

ATTENTION

ESD can damage the computer and components. Make sure you work in a static-safe environment and wear a grounding strap whenever handling circuit boards, power supply, memory modules or other internal components.

ATTENTION

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

To remove the hard disk drive:

1. Disconnect power from the computer.
2. Remove the back cover (see Removing the Back Cover on page 4-2).
3. Disconnect the ribbon cable from the hard disk drive.

IMPORTANT

Take note of the location and orientation of all cables before you remove the existing power supply and cabling, so that you can reattach them correctly.

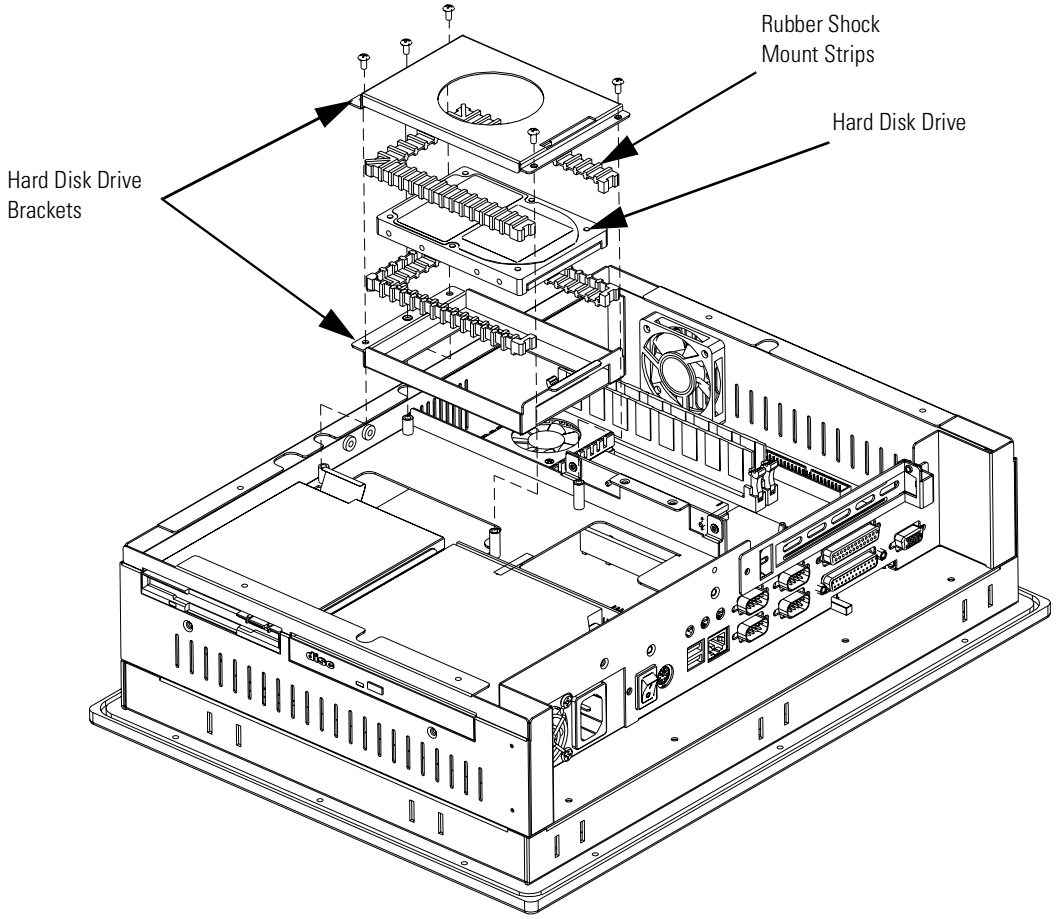
4. Remove the screws that fasten the hard disk drive assembly to the chassis.

5. Lift the hard disk drive assembly out of the chassis.

6. Remove the screw that holds the hard disk drive brackets together.

7. Open the hard disk drive brackets.

8. Lift the hard disk drive out of the bracket.



To install the hard disk drive:

1. Place one of the rubber shock mount strips into the bottom hard disk drive bracket.

2. Place the hard disk drive into the bottom hard disk drive bracket so that it fits inside the rubber shock mount strip.

3. Place the other rubber shock mount strip evenly around the top edge of the hard drive.
4. Place the top hard disk drive bracket on top of the hard drive and shock mount strip, and secure it with a screw.
5. Connect the ribbon cable to the hard disk drive.
6. Fasten the hard disk drive assembly to the chassis with 4 screws.
7. Reinstall the back cover.

Installing/Removing the Floppy Drive

Observe the following precautions when working with the computer's floppy drive:

- Do not touch internal components unnecessarily.
- Always handle the floppy drive by its metal frame.
- Store the floppy drive in an anti-static bag when it is not installed.
- Never disconnect or install a floppy drive with power turned on.

ATTENTION

Review Safety Precautions on page 4-1 before proceeding. Failure to follow proper safety procedures could result in severe electrical shock or damage to the VersaView 6181P Integrated Display Computers.

ATTENTION

ESD can damage the computer and components. Make sure you work in a static-safe environment and wear a grounding strap whenever handling circuit boards, power supply, memory modules or other internal components.

ATTENTION

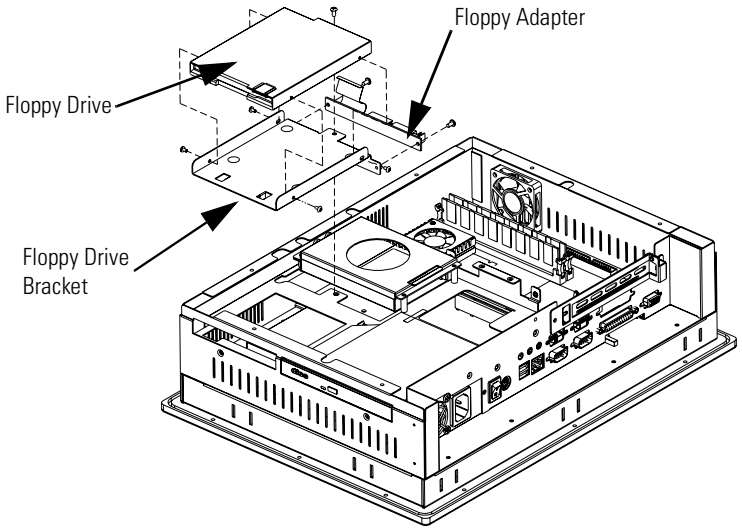
Mechanical shock will damage a floppy drive. Do not drop or bump the drive.

To remove the floppy drive:

1. Disconnect power from the computer.
2. Remove the back cover (see Removing the Back Cover on page 4-2).
3. Remove the hard drive.

IMPORTANT Take note of the location and orientation of all cables before you remove the existing power supply and cabling, so that you can reattach them correctly.

4. Remove the screw that fastens the floppy drive bracket to the chassis.



5. Slide the floppy drive and bracket and lift the floppy drive out door-first.
6. Disconnect the flat cable at the floppy drive.
7. Remove the 4 screws securing the floppy drive to the bracket and remove the floppy drive.

To install the floppy drive:

1. Fasten the floppy drive to the floppy drive bracket with 4 screws.
2. Connect the flat cable to the floppy drive.
3. Insert the floppy drive and bracket into the chassis adapter-end first. Then slide it into position within the chassis.

4. Fasten the floppy drive and bracket to the chassis with the bracket screw.

5. Reinstall the hard drive.

6. Reinstall the back cover.

Installing/Removing the CD-ROM/DVD-ROM Drive

Observe the following precautions when working with the computer's CD-ROM/DVD-ROM drive:

- Do not touch internal components unnecessarily.
- Always handle the drive by its metal frame.
- Store the drive in an anti-static bag when it is not installed.
- Never disconnect or install a drive with the power turned on.

ATTENTION

Review Safety Precautions on page 4-1 before proceeding. Failure to follow proper safety procedures could result in severe electrical shock or damage to the VersaView 6181P Integrated Display Computers.

ATTENTION

ESD can damage the computer and components. Make sure you work in a static-safe environment and wear a grounding strap whenever handling circuit boards, power supply, memory modules or other internal components.

ATTENTION

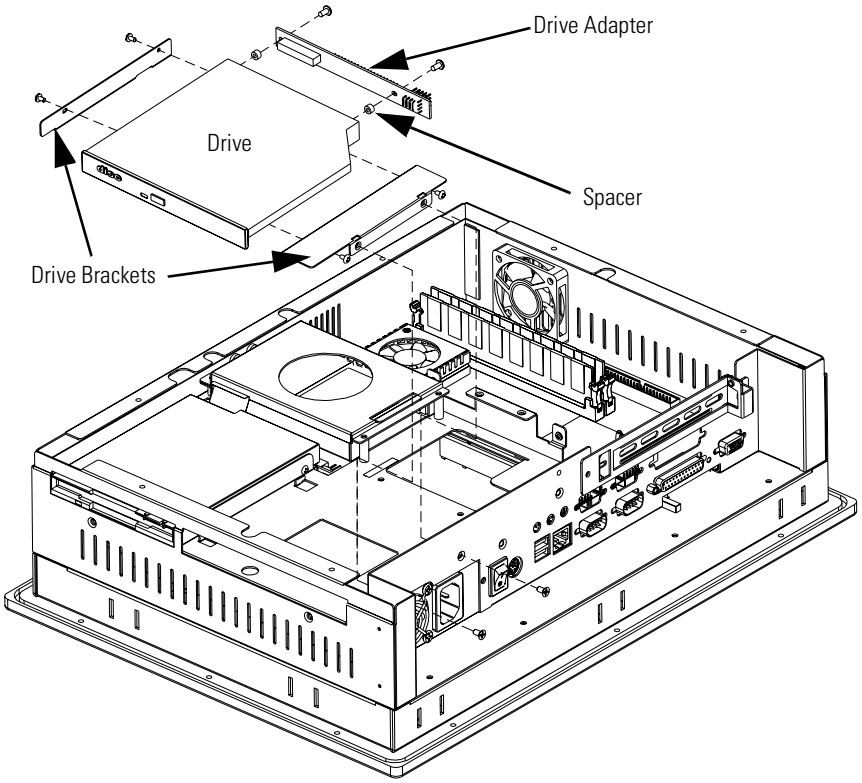
Mechanical shock can damage a CD-ROM/DVD-ROM drive. Do not drop or bump the drive.

To remove the drive:

1. Disconnect power from the computer.
2. Remove the back cover (see Removing the Back Cover on page 4-2).
3. Disconnect power supply, audio cable and ribbon cable from the adapter printed circuit board.

IMPORTANT Take note of the location and orientation of all cables before you remove the existing power supply and cabling, so that you can reattach them correctly.

4. Remove the 3 screws that fasten the drive assembly to the chassis.
5. Lift the drive assembly out of the chassis.
6. Remove the 4 screws that fasten the drive brackets to the drive and remove the brackets from the drive.
7. Remove the 2 screws and spacers that fasten the adapter to the drive and remove the adapter from the drive.



To install the drive:

1. Fasten the drive to the drive brackets with 4 screws.
2. Fasten the drive to the drive adapter with 2 screws and spacers.
3. Gently slide the assembly back into the chassis.
4. Fasten the drive assembly to the chassis with 3 screws.
5. Connect power supply, audio cable and ribbon cables to the drive.
6. Reinstall the back cover.

Connecting an External Drive

Observe the following precautions when connecting an external drive:

- Always handle the media by its case.
- Avoid touching the cable connectors.
- Remove disks before disconnecting power to the drive.
- Avoid exposing the external drive to severe shock or temperature.
- Operate the external drive only on a flat surface.
- Do not move the external drive while it is operating.

Sample External Drives

The following are a few examples of external drives:

- MicroSolutions Backpack CD-ROM drive (parallel port interface). (www.micro-solutions.com)
- Imation SuperDisk LS120 drive (parallel port or USB interface). Supports 120MB and standard high-density 1.44MB floppy diskettes. (www.superdisk.com)
- Iomega Zip drive (parallel port or USB interface). Available in 100MB and 250MB formats. (www.iomega.com)

To connect an external drive:

1. Before you apply power to the computer, connect the parallel connector for the external drive to the parallel port on the computer. For drives supporting a USB interface, connect the drive to the USB port on the computer.
2. Connect the AC plug for the external drive to a power source.

3. Connect power to the computer.

4. Follow the manufacturer's instructions for loading any required software drivers and configuring the computer to operate with the external drive.

Installing/Removing Memory Modules

The computer's CPU board has two 168-pin socket each supporting a single or double-sided 3.3V Dual In-Line Memory Module (DIMM):

Memory Module	Catalog Number
DIMM Memory 128MB	6189-RDIMM128
DIMM Memory 256MB	6189-RDIMM256
DIMM Memory 512MB	6189-RDIMM512

TIP

If you use any type of memory module other than a qualified Allen-Bradley part, you may encounter problems.

Guidelines for Adding/Removing Memory

When adding memory to the computer's CPU board, follow these guidelines:

- Use only a standard, unbuffered 168-pin DIMM that conforms to both PC-100 and Serial Presence Detect (SPD) compliance industry standards.
- Use only Synchronous Dynamic Random Access Memory (SDRAM) type DIMMs.
- BIOS automatically detects memory size and type. It does not detect parity, however, so this must be manually configured by the end-user in BIOS Setup.
- Use only gold-plated lead DIMMs.

Safety Precautions

The VersaView 6181P Integrated Display Computers contain line voltages. Make sure you disconnect all power to the computer before performing any of the operations described in this chapter.

ATTENTION

Disconnect all power from the VersaView 6181P Integrated Display Computers before removing components. Failure to disconnect power could result in severe electrical shock or damage to the computer.

Internal computer components may be damaged by Electrostatic Discharge (ESD). Make sure you wear a grounding strap whenever handling circuit boards, memory modules or other internal components.

ATTENTION

Wear a wrist strap (well grounded) and perform work in a static safe environment. Electrostatic discharge can damage the computer and components.

Also observe the following precautions:

- Always handle the memory cards by the ends not by the memory module contacts.
- Store memory in a sealed anti-static bag when it is not installed.
- Never install or remove memory with the power turned on.

Adding/Removing Memory Modules

This section gives instructions on how to change an installed memory module in the VersaView computer CPU board.

To add or remove memory:

1. Disconnect power from the computer.
2. Remove the back cover (see Removing the Back Cover on page 4-2).
3. The DIMM sockets are located on the side of the CPU board. Remove the existing memory module(s) from the CPU card by clipping the cable tie and pressing outward on the retaining latches.
4. To install a new DIMM, hold the module only by the edges as you remove it from its anti-static package.
5. Position the DIMM so that the small notches in the bottom edge of the DIMM align with the notches in the DIMM socket on the CPU card. The retaining latches should be fully disengaged when attempting to install a DIMM.
6. Press down firmly and uniformly on the DIMM to seat it in the socket. The latches should engage in the DIMM locking slot to secure the part in place.
7. Replace the tie wrap around the DIMM and latches to fully secure the DIMM in place.
8. Replace the back cover.

System Troubleshooting

Chapter Objectives

This chapter describes the most common operating problems, the probable causes, and recommended corrective actions including:

- hardware diagnostics
- troubleshooting procedure
- troubleshooting checklists
- boot-up error messages
- general error and information messages

Hardware Diagnostics

The following items are monitored by the VersaView 6181P Integrated Display Computers:

- voltage ranges
- temperature requirements
- chassis fan speed

You need to perform the following procedure to determine which of these thresholds have been exceeded:

1. Shutdown the computer using the appropriate method for your operating system.
2. Apply power to the computer.
3. Press and hold the Delete (DEL) key to enter BIOS Setup.

   The BIOS Setup Menu is displayed.
4. Press the down arrow key to select the PC Health Status menu.
5. Check the Current value for each setting against the specified threshold to determine if the setting has exceeded the threshold.

Troubleshooting Procedure

To help identify and isolate a problem, we recommend that you do the following when a problem occurs:

1. Disconnect power to the computer.
2. Disconnect any peripheral devices such as printer or external drive.
3. Connect the keyboard and mouse (if used).
4. Check the video connections if using an external monitor.
5. If the system normally boots from the hard drive, make sure there is not a diskette in the floppy drive.
6. Monitor the Power On Self Test (POST). One of three events will occur:
   - The computer will complete the boot-up process.
   - An error message will occur indicating a non-fatal fault. You may have to acknowledge the message before the boot-up process is allowed. See Appendix C, POST Messages, for details about these error messages.
   - The boot-up process will terminate (fatal error).
7. If the system boots up, isolate the problem by connecting peripheral devices one at a time until the problem occurs. If the problem is with a specific software package or driver, you may want to re-install the software.
8. If there is a problem not related specifically to a software installation or peripheral device, refer to the following troubleshooting checklists.

Troubleshooting Check Lists

The following are checklists of items that you may have overlooked.

If you are having problems during boot-up:

- Are all connections secure?
- Are the device drivers installed?
- Are the jumpers on any add-in boards correctly positioned?
- Is the hard drive formatted and set up in the BIOS?
- Is the RAM memory (DIMM or SODIMM) properly installed? You may want to re-install it to ensure a good connection.
- Is the EIDE cable from the hard drive properly connected? You may want to see if the system will boot from a floppy diskette.
- Is BIOS properly configured

If there is a problem after boot-up:

- If you are running a software package, re-install the software.
- If the problem is intermittent, you may have a loose connection. Check all connections including any PCI cards. Check that the memory module (DIMM) is fully installed.
- Does your system have a computer virus? Run anti-virus software.
- Try clearing CMOS by removing and reinstalling the battery (on backplane) and running BIOS Setup (refer to Chapter 6).
- Although the computer has a regulated and protected power supply, a transient voltage in the power line or peripheral cable may cause a flickering display, unexpected reboots, or a locked up system. If so, exit the application and start over.
- Is the EIDE cable from the hard drive properly connected? You may want to see if the system will boot from a floppy drive.
- Is the system overheating? Look at the diagnostics light on the front panel display (if present). Verify that the chassis fan is working.

If there is a problem running new software:

- Does the software have a hardware requirement that is not present?
- Are you using an authorized copy of the software? Some copies of software will not work without proper activation.
- Did the software install correctly? Re-install the software.
- Are you following the software's instructions? Refer to the software vendor's user manual.
- If the new software installed system software (DLL files) or device drivers, reapply the current Service Pack (release) of the operating system. Refer to Chapter 3, Initial Operation and Setup.

If there is a problem with an add-in board:

- Is the board installed and configured correctly? Recheck jumper and other configuration settings.
- Are any cables incorrectly installed?
- If the board uses an interrupt, run BIOS Setup and set the interrupt used by the ISA board to Reserved. In the advanced BIOS menu, select the PCI Configuration PCI/PNP IRQ subscreen and then reserve the IRQ of the card.
- If the board uses memory between 80000H and 9FFFFH, run BIOS setup and set conventional memory to 512K.
- If the board uses memory between C8000H and DFFFH, run BIOS setup and reserve the appropriate memory space.

If incorrect characters are displayed or are distorted:

- Are the display contrast and brightness controls properly adjusted? Refer to the operating system containing the video driver for setup functions.
- Is the monitor compatible with the selected video mode? The computer display is 1024x768 (SVGA) resolution.
- If using the integrated display, disconnect the chassis from the bezel and check the connection to the display.

If characters are not displayed on an external monitor:

You can use an external monitor for a temporary connection or for diagnostics. Using an external monitor for normal operation may result in problems such as characters not displaying.

Maintenance

Chapter Objectives

This chapter provides routine maintenance procedures on how to:

- clean the display
- replace the battery

Cleaning the Display

To clean the display:

ATTENTION

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

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

ATTENTION

If the computer has a touchscreen, be aware that it is possible for screen objects to activate during equipment wash-downs.

To remove paint and grease:

Remove fresh paint splashes and grease before drying by rubbing lightly with isopropyl alcohol. Afterward, provide a final wash using mild soap or detergent solution. Rinse with clean water.

ATTENTION

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

Replacing the Battery

The computer contains a battery to maintain the CMOS settings and real-time clock. The battery is located in a battery holder on the computer's motherboard. Replace this battery as needed with part number CR2032 from one of the following manufacturers: Panasonic, Sony, Toshiba, Sanyo, Duracell, Eveready, FDK, Hitachi, Mitsubishi, Radio Shack, Renata SA, Varta Geratebatterie.

ATTENTION

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

The battery life is dependent on the amount of on-time per week. Estimated life of the battery is listed below:

On-Time	Expected Battery Life
0 hours/week	~ 4 years
40 hours/week	~ 5.5 years
80 hours/week	~ 7 years

Specifications

Display	
Type	Active Matrix Color TFT
Display Size	
1500P	15 inch
1700P	17 inch
Display Area (HxW)	
1500P	305 x 229 mm (12 x 9 in)
1700P	338 x 270 mm (13.3 x 10.7 in)
Resolution	
1500P	1024 x 768 pixels, 24-bit Color
1700P	1280 x 1024 pixels, 24-bit Color
Response Time	15 ms (typical)
Touchscreen (optional)	Resistive analog
Mechanical	
Weight	
1500P	10 kg (23 lb)
1700P	12.6 kg (28 lb)
Dimensions, Overall (h x w x d)	
1500P	309 x 410 x 108 mm (12.17 x 6.14 x 4.29 in)
1700P	356 x 452 x 108 mm (14.02 x 17.80 x 4.29 in)
Cutout Dimensions (h x w)	
1500P	285 x 386 mm (11.24 x 15.22 in)
1700P	329 x 424 mm (12.97 x 16.69)
Environmental	
Operating Temperature	0…50 °C (-32…122 °F)
Storage Temperature	-20…60 °C (-4…40 °F)
Relative Humidity	10…90% without condensation
Shock, Operating	15 g (1/2 sine, 11ms)
Shock, Non-operating	30 g (1/2 sine, 11 ms)
Vibration, Operating	1 G peak (5-500Hz)
Vibration, Non-operating	2 G peak (5-500Hz)

Electrical	
Input Voltage, AC	85…264V ac autoranging
Line Frequency	47…63 Hz
Ground Leakage	1.0 uA max. at 1.5KV dc
Power Consumption, AC	80 VA (0.8 A @ 100Vrms, 0.4 A @ 240 Vrms)
Power Dissipation	80 W max.
Agency Approvals	
UL 508 Listed UL/C-UL Industrial Control Equipment	
	UL 1950 Recognized Component, C-UL 950 Recognized Component
	LVD (73/23/EEC) EMC (89/336/EEC)

Using a Touchscreen

Introduction

The VersaView 6181P Integrated Display Computers can be ordered with an optional touchscreen.

When a touchscreen is delivered with a computer, the touchscreen is installed and the touchscreen controller is installed and connected.

Touchscreen Serial Port Usage

The optional touchscreen controller for a VersaView computer connects internally to the COM2 serial port. The touchscreen is factory configured with the proper COM2 and touchscreen driver settings, so no user configuration is required.

If for any reason these settings are corrupted, reset the COM2 serial port to 9600bps, 8 data bits, 1 stop bit, no parity.

Driver Software

The touchscreen driver is already loaded on the computer. The driver software is also provided on a floppy diskette.

NOTE

The touchscreen utility defaults to COM1 serial port setting. You must change this setting to COM2 when reloading the touchscreen driver.

Resistive Touchscreen Technology

Resistive touchscreens are activated by pressure applied to the touchscreen by an operator's 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 could damage the unit.

Resistive touchscreens consist of two layers:

- A lower layer (glass substrate) with a resistive coating and a voltage applied
- An upper layer (cover sheet) with a conductive coating

Clear spacer dots separate the two layers.

When a user presses the upper layer onto the lower layer, the upper layer receives the voltage applied to the lower layer. The touchscreen controller detects the change in voltage on the upper layer and alternates voltage horizontally and vertically through the layers. The voltage transferred to the upper layer is proportional to the location of the touch on the screen.

Calibrating the Touchscreen

The touchscreen supplied with the VersaView computer is factory installed and calibrated. In the event that you need to recalibrate the touchscreen, use the following procedure:

To calibrate the touchscreen:

1. Locate the calibration utility in the Control Panel or insert the touchscreen driver diskette in the floppy drive of the computer.
2. Using the appropriate commands for your operating system, run the calibration utility.
3. Follow the instructions in the calibration utility to complete the calibration process.

Performing Field Service

If you must perform field service on the VersaView computer, ensure that you plug the touchscreen cable into the controller board with the proper orientation.

POST Messages

Introduction

During the Power On Self Test (POST), the BIOS will either sound a beep code or display a message if it detects an error requiring corrective action. If a message is displayed, it will be accompanied by:

```
PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP
```

POST Beep

Currently there are two kinds of beep codes in BIOS. This code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by three short beeps. The other code indicates that your DRAM error has occurred. This beep code consists of a single long beep repeatedly.

Error Messages

One or more of the following messages may be displayed if the BIOS detects an error during the POST. This list includes messages for both the ISA and the EISA BIOS.

Error Message	Error Description
CMOS Battery has Failed	CMOS battery is no longer functional. It should be replaced.
CMOS Checksum Error	Checksum of CMOS is incorrect. This can indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Check the battery and replace if necessary.
Disk Boot Failure, Insert System Disk and Press Enter	No boot device was found. This could mean that either a boot drive was not detected or the drive does not contain proper system boot files. Insert a system disk into Drive A: and press <Enter>. If you assumed the system would boot from the hard drive, make sure the controller is inserted correctly and all cables are properly attached. Also be sure the disk is formatted as a boot device. Then reboot the system.
Diskette Drives or Types Mismatch Error - Run Setup	Type of diskette drive installed in the system is different from the CMOS definition. Run Setup to reconfigure the drive type correctly.
Display Switch is Set Incorrectly	Display switch on the motherboard can be set to either monochrome or color. This indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the VIDEO selection.
Display Type has Changed Since Last Boot	Since last powering off the system, the display adapter has been changed. You must configure the system for the new display type.
EISA Configuration Checksum Error Please Run EISA Configuration Utility	The EISA non-volatile RAM checksum is incorrect or cannot correctly read the EISA slot. This can indicate either the EISA non-volatile memory has become corrupt or the slot has been configured incorrectly. Also be sure the card is installed firmly in the slot.

Error Message	Error Description
EISA Configuration is Not Complete Please Run EISA Configuration Utility	The slot configuration information stored in the EISA non-volatile memory is incomplete. Note: When either of these errors appear, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.
Error Encountered Initializing Hard Drive	Hard drive cannot be initialized. Be sure the adapter is installed correctly and all cables are correctly and firmly attached. Also be sure the correct hard drive type is selected in Setup.
Error Initializing Hard Disk Controller	Cannot initialize controller. Make sure the cord is correctly and firmly installed in the bus. Be sure the correct hard drive type is selected in Setup. Also check to see if any jumper needs to be set correctly on the hard drive.
Floppy Disk Cntrlr Error or No Cntrlr Present	Cannot find or initialize the floppy drive controller. make sure the controller is installed correctly and firmly. If there are no floppy drives installed, be sure the Diskette Drive selection in Setup is set to NONE.
Invalid EISA Configuration Please Run EISA Configuration Utility	The non-volatile memory containing EISA configuration information was programmed incorrectly or has become corrupt. Re-run EISA configuration utility to correctly program the memory. NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.
Keyboard Error or No Keyboard Present	Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot. If you are purposely configuring the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. This will cause the BIOS to ignore the missing keyboard and continue the boot.
Memory Address Error at...	Indicates a memory address error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.
Memory Parity Error at...	Indicates a memory parity error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.
Memory Size has Changed Since Last Boot	Memory has been added or removed since the last boot. In EISA mode use Configuration Utility to reconfigure the memory configuration. In ISA mode enter Setup and enter the new memory size in the memory fields.
Memory Verify Error at...	Indicates an error verifying a value already written to memory. Use the location along with your system's memory map to locate the bad chip.
Offending Address Not Fount	This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem cannot be isolated.
Offending Segment:	This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem has been isolated.
Press a Key to Reboot	This will be displayed at the bottom screen when an error occurs that requires you to reboot. Press any key and the system will reboot.
Press F1 to Disable NMI, F2 to Reboot	When BIOS detects a Non-maskable Interrupt condition during boot, this will allow you to disable the NMI and continue to boot, or you can reboot the system with the NMI enabled.
RAM Parity Error - Checking for Segment...	Indicates a parity error in Random Access Memory.
Should Be Empty But EISA Board Found Please Run EISA Configuration Utility	A valid board ID was found in a slot that was configured as having no board ID. NOTE; When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.
Should Have EISA Board But Not Found Please Run EISA Configuration Utility	The board installed is not responding to the ID request, or no board ID has been found in the indicated slot. NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Error Message	Error Description
Slot Not Empty	Indicates that a slot designated as empty by the EISA Configuration Utility actually contains a board. NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.
System Halted, (CTRL-ALT-DEL) to Reboot...	Indicates the present boot attempt has been aborted and the system must be rebooted. Press and hold down the CTRL and ALT keys and press DEL.
Wrong Board In Slot Please Run EISA Configuration Utility	The board ID does not match the ID stored in the EISA non-volatile memory. NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.
Floppy Disk(s) Fail (80)	Unable to reset floppy subsystem.
Floppy Disk(s) Fail (40)	Floppy type dismatch.
Hard Disk(s) Fail (80)	HDD reset failed
Hard Disk(s) Fail (40)	HDD controller diagnostics failed.
Hard Disk(s) Fail (20)	HDD initialization error.
Hard Disk(s) Fail (10)	Unable to recalibrate fixed disk.
Hard Disk(s) Fail (08)	Sector verify failed.
Keyboard is Locked Out - Unlock the Key	BIOS detect the keyboard is locked. P17 of keyboard controller is pulled low.
Keyboard Error or No Keyboard Present	Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.
Manufacturing POST Loop	System will repeat POST procedure infinitely while the P15 of keyboard controller is pull low. This is also used for M/B burn in test.
BIOS ROM Checksum Error - System Halted	The checksum of ROM address F0000H-FFFFFH is bad.
Memory Test Fail	BIOS reports the memory test fail if the onboard memory is tested error.

DMA, IRQ and 1st MB Memory

I/O Address Map

DMA Channel Assignments

DMA Channel #	Description
0	Available
1	Available
2	Floppy Disk (8-bit transfer)
3	Available
4	Cascade for DMA controller 1
5	Sound
6	Available
7	Available

IRQ Mapping Chart

IRQ0	System Timer	IRQ8	RTC Clock
IRQ1	Keyboard	IRQ9	USB LAN
IRQ2	Cascade to IRQ Controller	IRQ10	(COM3)
IRQ3	(COM2)	IRQ11	(COM4)
IRQ4	(COM1)	IRQ12	PS/2 Mouse
IRQ5	Sound (LPT2)	IRQ13	FPU
IRQ6	FDC	IRQ14	Primary IDE
IRQ7	LPT1	IRQ15	Secondary IDE

TIP

All IRQs have been assigned to the listed devices, so if you want to add any additional device interface, you must free the unused IRQ first. For example, if you don't use USB K/B or Mouse, then IRQ10 may be set free.

1st MB Memory Address Map

Memory Address	Description
00000-9FFFF	System Board extension for ACPI BIOS
A0000-CBFFF	SIS630
F0000-FFFFF	System Board extension for ACPI BIOS
CC000-CFFFF	Unavailable for use by device

I/O Address Map

I/O Address Range	Description
000-01F	DMA Controller #1
020-021	Interrupt Controller #1, Master
040-05F	8254 Timer
060-06F	8042 (Keyboard Controller)
070-07F	Real Time Clock, NMI Mask
080-09F	DMA Page Register
0A0-0BF	Interrupt Controller #2
0C0-0DF	DMA Controller #2
0F0	Clear Math Coprocessor Busy
0F1	Reset Math Coprocessor
0F8-0FF	Math Coprocessor
408-409	Digital Input/Output
170-177 1F0-1F7	Fixed Disk
270-27F	Printer Port (LPT2)
2E8-2EF	Serial Port 4 (COM4)
2F8-2FF	Serial Port 2 (COM2)
378-37F	Parallel Printer Port 1 (LPT1)
380-38F	SDLC, Bisynchronous 2
3A0-3AF	Bisynchronous 1
3B0-3BB	SIS 630
3C0-3DF	SIS 630
3E8-3EF	Serial Port 3 (COM3)
3F0-3F7	Diskette Controller
3F8-3FF	Serial Port 1 (COM1)
440	Watch-dog timer

How to Upgrade a New BIOS

Introduction

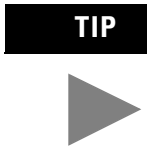
You can install an upgrade BIOS for the CPU board that you can download from the Rockwell Automation Allen-Bradley web site (www.ab.com). New BIOS may provide support for new peripherals, improvements in performance or fixes to address known bugs.

BIOS Update Procedure

1. Make a boot disk.

   a. Go to the DOS command prompt in MS-DOS or Windows 9x.

   b. With a floppy disk in "A", type "format A: /s". That will format the floppy and transfer the needed system files to it.



   A. This procedure will erase any prior data on that floppy, so please Proceed accordingly.

   B. Typically four files will be transferred, only COMMAND.COM being visible when running a simple directory listing.

   C. Please leave the diskette UN-write protected for the balance of this procedure.

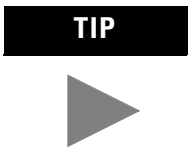
2. Download the BIOS upgrade file and awdflash.exe utility from the Rockwell Automation Allen-Bradley web site to a temp directory on your hard drive, or directly to the floppy you made in step 1.

3. Copy two files (BIOS file and awdflash.exe) to the boot floppy.

4. Reboot the system to the DOS command prompt using the boot diskette you just made.

5. At the DOS command prompt, type "awdflash filename.xxx", where filename.xxx is the file name of the BIOS file. Hit enter.

6. Your first option, in sequence, will be to save the old BIOS. We recommend that you do that in case, for whatever reason, you decide you don't wish to use the new version once it is installed.

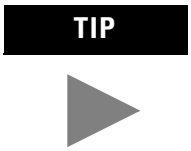


A. This procedure will erase any prior data on that floppy, so please Proceed accordingly.
B. Typically four files will be transferred, only COMMAND.COM being visible when running a simple directory listing.
C. Please leave the diskette UN-write protected for the balance of this procedure.

7. To save the old BIOS, hit Y (for "yes").

8. Enter a name for the OLD BIOS file and hit enter.

9. Your second option, in sequence, will be whether you want to flash your BIOS. Enter Y (for "yes").



This is the critical step. Once you kit the enter key, do NOT touch the keyboard, the reset button, or power switch while the flashing is in progress. There will be bar progressing across the screen while the flashing is progressing.

10. When the flashing process is complete, you will be asked to reset or power off the system. Remove the floppy diskette from the floppy drive and either hit the reset button or the power button.

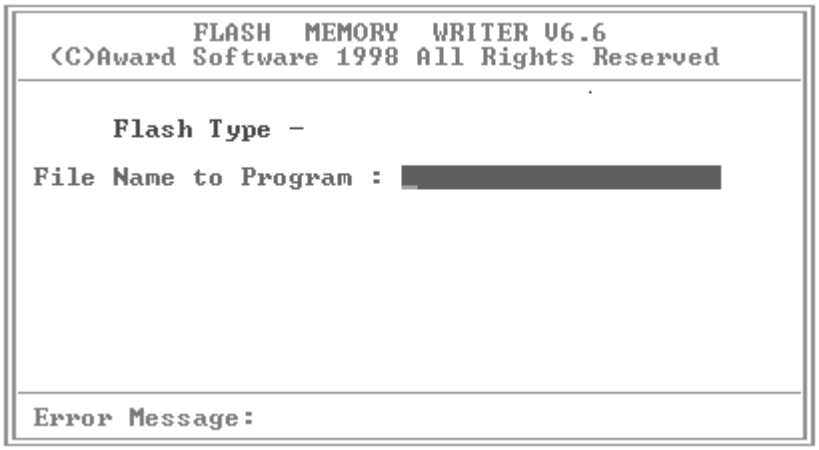
11. Reboot the system and note that the BIOS version on the initial boot-up screen has changed to the new BIOS version. Your BIOS upgrade is now complete.

Recovering Your Old BIOS

1. Assuming you have the floppy made during the upgrade procedure noted above, boot the system with that diskette in the floppy drive. If you do not have floppy made during the upgrade procedure noted above, you will need to repeat steps 1 though 3 (above) for the version of the BIOS you wish to recover to.

2. Complete steps 4, 5, 6, 9, 10, and 11 (above) substituting the name of the BIOS you wish to recover for the upgrade BIOS at step 5.

Install Screen



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