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CIMPLICITY Station Flat Panel PC Models IC5002

GE Fanuc Automation

Industrial Computers

CIMPLICITY® Station Flat Panel PC
Models IC5002, IC5005, IC5008

User's Manual

Warnings, Cautions, and Notes
as Used in this Publication

Warning

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

Caution

Caution notices are used where equipment might be damaged if care is not taken.

Note: Notes merely call attention to information that is especially significant to understanding and operating the equipment.

This document is based on information available at the time of its publication. While efforts have been made to be accurate, the information contained herein does not purport to cover all details or variations in hardware or software, nor to provide for every possible contingency in connection with installation, operation, or maintenance. Features may be described herein which are not present in all hardware and software systems. GE Fanuc Automation assumes no obligation of notice to holders of this document with respect to changes subsequently made.

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Alarm Master	Genius	PROMACRO	Series Six
CIMPLICITY	Helpmate	PowerMotion	Series Three
CIMPLICITY 90–ADS	Logicmaster	PowerTRAC	VersaMax
CIMSTAR	Modelmaster	Series 90	VersaPro
Field Control	Motion Mate	Series Five	VuMaster
GEnet	ProLoop	Series One	Workmaster

Content of This Manual

This manual describes the features and operation of the following industrial computer products:

Model	Features
IC5002	12.1" Flat panel display
IC5005	15" Flat panel display
IC5008	18" Flat panel display

Related Publications

GFK-1868   *CIMPLICITY Machine Edition Getting Started Manual*

GFK-1180   *CIMPLICITY HMI Plant Edition Base System User's Manual (2 vols)*

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Chapter 1

Product Features

The CIMPLICITY® Station industrial PC is designed to meet the demands of advanced control and monitoring architectures. All GE Fanuc industrial computers meet industrial requirements for factory automation applications, including extended temperature, shock and vibration, and NEMA 4 sealed front panels. Coupling the industrial packaging with the latest in processor technology and state-of-the-art flat-panel displays, this industrial PC delivers outstanding performance to the factory floor.

Available in 12", 15" or 18" flat panel displays with active matrix Thin Film Transistor (TFT) technology, the CIMPLICITY Station provides installation flexibility and wide viewing angles for the most demanding industrial applications. CIMPLICITY Station is available as a stand-alone product, or bundled with CIMPLICITY software offerings.

Key Features

- Standard model: 750 MHz CPU, or greater, 128 MB RAM with CD ROM (read only)

- Performance model: 933 MHz CPU, or greater, 256 MB RAM with Read/Write CD ROM

- 12", 15" or 18" active matrix TFT Touch Screen displays

- On-board 10/100 base-T Ethernet

- Two or three ISA/PCI expansion slots (open) – Standard and Performance models

- Single ISA/PCI expansion slot

- PS/2 mouse, PS/2 keyboard, USB port, three serial ports, one parallel port

- Five system-level software integration keys (Soft keyboard, Right mouse click, brightness control. etc.)

- System hardware monitoring (temperature, fan)

- CE marked; UL 1604 Certification; NEMA 4

Bundled Solutions

The CIMPLICITY Station is available as a bundled system with the HMI or Control application software of your choice, such as CIMPLICITY HMI Plant Edition or Machine Edition, launched from popular operating systems such as Windows NT® or Windows® 2000. Whatever your choices, powerful processors with PCI and ISA backplanes are standard in every CIMPLICITY Station. To save you time and money, GE Fanuc integrates and tests the powerful hardware and software combination on the CIMPLICITY Station at our factory.

The CIMPLICITY Station is designed to fit seamlessly into your control application and accommodate your ever-changing industrial requirements. End users, OEM, and system integrators will see a single integrated hardware and software platform that provides a scalable computing platform from the factory floor devices to the business enterprise at a lower cost.

CIMPLICITY® Machine Edition (ME) Bundle

CIMPLICITY Station bundled with Machine Edition (ME) software offers a true out-of-the-box Web-enabled solution for machine and process level HMI and PC-based control applications. Incorporating a unique "single-user" interface, Machine Edition hosts several development and runtime engines within a common environment. Operator interface and PC-based motion control programming are just a few of the included components.

Machine Edition comes with run-time and development software. There are two options available:

- CIMPLICITY Machine Edition **View** Run-time & Development (also known as View Station)

- CIMPLICITY Machine Edition **Control & View** Run-time Only, as well as Run-time & Development (also known as Control Station)

CIMPLICITY® HMI Plant Edition™ (PE) Bundle

This enterprise level bundled solution, also known as Display Station, consolidates the collection of data from your facility's sensors and devices, then transforms the data into dynamic text, alarm and graphic displays on a powerful industrial computer. It gives users access to real-time information, helping them make better decisions and prevent problems before they occur for improved quality, productivity and profitability. CIMPLICITY PE features automation software features and options, called Power Tools, that are organized within a Workbench to provide an easy-to-use platform on which to develop and maintain your applications.

Plant Edition also provides a robust supervisory monitoring and control foundation that allows you to build a true e-commerce solution to meet your business needs today and in the future. With an open system design approach, a true client/server architecture, and the latest web technologies, HMI Plant Edition allows you to achieve benefits of digitization across your factory floor.

Technical Support

GE Fanuc provides a single resource for all your services and support needs including technical software support, product training, and complete application consultation and development services.

Phone: 1-800-433-2682 (1-800-GEFANUC)   e-mail: plchotline@gefanuc.com

Standard Features

	IC5002	IC5005	IC5008
Display	TFT LC-Color Touch Display		
Diagonal	307.4 mm (12.1")	383.5 mm (15.1")	459.7 mm (18.1")
Resolution (Pixel)	SVGA (800 x 600)	XGA (1024 x 768)	SXGA (1280 x 1024)
VGA controller	(AGP 1x) 2MB SDRAM	(AGP 1x) 2MB SDRAM	(AGP 1x) 4MB SDRAM
Colors	256k	64k	64k
Brightness	300 cd/m²	200 cd/m²	200 cd/m²
Touch Screen	Analog. 5 wire resistive with serial interface internal connected to COM4		
Front key functions	1. Soft key board via Touch Screen 2. Task changes (Alt + Esc) 3. Hot-Key 4. Right mouse button 5. Display adjustment brightness		
Slot-CPU	All in Passive PCI/ISA bus slot CPU with FCPGA-Socket for Intel processor		
Processor	750 MHz (Optional: PIII 933 MHz. FSB 133)		
RAM	128 MB / 256 MB SDRAM (1 DIMM Slot)		
Storage	Hard disk min. 20 Minimum GB (3.5" UDMA) 3.5" Floppy disk 5.25" CD-ROM (Optional: CD-RW)		
Ports	COM1/2/3 (RS232) LPT1 Keyboard PS/2 Mouse PS/2 CRT Monitor		
	1 USB	2 USB	2 USB
Network	10/100BaseT (RJ45, 10/100Mbit full duplex)		
Slots	2 shared ISA/PCI	2 shared ISA/PCI 1 PCI	2 shared ISA/PCI 1 PCI
Power supply	100—240 VAC, 50—60Hz, 100 watt		
Power consumption	48 watt (typical) 60 watt max.	54 watt (typical) 62 watt max.	67 watt (typical) 75 watt max.
Protection	NEMA4/12; Front IP 65		

Contents of the CIMPLICITY Station Package

Check that one of each of the following items is included in the package with your CIMPLICITY Station:

- Industrial Flat Panel PC

- Conventional power cable and plug

- Hazardous Environment power cable and plug mounting kit

- User manual

- Axiom CD: "SBC Drivers, Utilities & User Manuals.

- ELO TouchSystems CD

- Soft Keyboard Floppy Disk

- Device panel mounting kit

- NERO CD: CD read/write driver

- Media Kit for License Software

Chapter	*Safety Instructions*
2	

<div style="text-align:center">

Warning

</div>

This equipment carries electric currents and contains highly-sensitive components. Other than plugging in additional cards or modules, you should not attempt modifications to the unit. If other modifications need to be made, the manufacturer or an authorized service agent must be contacted. The unit must be switched off at the main power supply and the power cable disconnected during such work. Suitable precautions must be taken to avoid electrostatic discharge on contact with components. If an unauthorized person opens the product case, danger to the user may arise and the warranty will be void.

<div style="text-align:center">

Caution

</div>

To prevent damage to the unit, do not attempt to connect leads (power supply and port cables) unless the unit is switched off.

Installation Site

The CIMPLICITY Station is designed for installation in a metal cabinet. The ambient conditions specified in chapter 8, "Technical Data" must be maintained. Installation in an environment not specified in Technical Data, for example exposed to extended temperatures or at extreme altitudes, may void the warranty.

<div style="text-align:center">

Warning

</div>

When installing the unit in an environment where there is the potential for flammable gases, vapors or liquids to be present, the power cable must be secured to the unit using the enclosed cable clamp kit. In addition, the power cable must have the male plug removed and be permanently hard-wired to the AC source. For details, refer to "Hazardous Locations Installation" in chapter 3.

Damage Resulting from Inappropriate Use

If the CIMPLICITY Station displays signs of damage caused by inappropriate operating/storage conditions, mounting, or incorrect handling, the unit must be taken out of use immediately and secured against unintentional operation.

Warranty and Repairs

Repairs under warranty may only be made by the manufacturer or by agents authorized by the manufacturer.

For return authorization, contact 1-800-432-7521 Customer Service. Be prepared to provide delivery date, product model, customer order number, unit serial number, and reason for return request.

Caution

Units must be returned to the factory in the original shipping container. If you do not have the original shipping container, contact GE Fanuc Customer Care to order a new shipping container. . The part numbers are 44B714940-001R01 (Carton) and 44B714939-001R01 (Insert). For proper shipping one carton and two inserts are required. If the units are not returned in the original shipping container the warranty is voided.

Transportation Damage

Warning

If the product has incurred obvious damage during transportation, do not apply power

If the product has incurred obvious damage during transportation, you should avoid applying power. Obvious transport damage should be reported to the supplier immediately. Less obvious damage that becomes evident in the early operation of the product must be reported within five days of the initial delivery for consideration as transportation damage.

Chapter	*Installation*
Chapter	
3	

CIMPLICITY Station PCs are designed for installation in switchboard panels and cabinet doors. To facilitate installation and access to connectors, switchboard panels and consoles must be accessible from the rear. The unit can be installed in switchgear cubicles or cabinets with wall thicknesses of 2mm to 13mm (0.079 – 0.5 in.). For optimum sealing with the cabinet face, the recommended wall thickness is 3mm (0.118 in.).

Air Inlets and outlets must have at least 25mm (approx. 1.0 inch) of space around them and not be obstructed. Adequate airflow around the exterior of the unit is important to the interior temperature of the unit. Two fans are used to create air flow through the industrial computer to maintain a correct working temperature.

Caution

Only correct mounting ensures front-side NEMA and IP65 protection

Caution

The IC5005 and IC5008 units must be installed and operated in a vertical position to ensure the correct operating position of the CD-ROM drive.

Caution

Viewed from the front, there must be sufficient space (132 mm or 5.20 in. minimum) to the left of the units to allow the CD-ROM drive drawer to open.

Installation Sequence

1. Make a cut-out (corresponding to size of the particular unit) in the switchgear panels or cabinet doors (see Figures 3-1 through 3-3).

2. Insert the unit into this cut-out from the front.

3. Insert the mounting screws together with mounting blocks in the slots provided in the metal cover and tighten all screws evenly until the surround panel covers the cut-out securely. Maximum torque is 0.25 N-m (2.2 lb$_f$-in).

<div align="center">

Caution

</div>

Overtightening the screws will cause irreparable damage to the front panel and break the touch screen itself.

Connect the provided power cord to the AC power supply. If additional grounding to a grounding screw is desired, use 14 AWG gauge wire minimum.

Table 3-1. Critical Dimensions for Installation

Dimension	IC5002	IC5005	IC5008
Cover (W x H)	313 x 252mm 23.3 x 9.9 in.	373.6 x 295.6 mm 14.7 x 11.6 in.	426 x 355mm 16.8 x 14.0 in.
Cutout (recess) (W x H)	318 x 256mm +1.0mm 12.5 x 10.1 in. + 0.04 in.	376 x 299mm +1.0mm 14.8 x 11.8 in. + 0.04 in.	428 x 358mm +1.0mm 16.9 x 14.0 in. + 0.04 in.
Space required for ventilation	Minimum 50mm (2 in) clearance at top and bottom of the unit. Minimum 30mm (1.2 in.) at sides. Note additional side space consideration is required for models with CD-ROM, depending on cabinet design. Viewed from the front, there must be sufficient space (132 mm or 5.20 in. minimum) to the left of the units to allow the CD-ROM drive drawer to open.		
Mounting depth	177mm 6.97 in.	150mm 5.9 in.	154mm 6.1 in.

0   70   260   330

0

6x Mounting blocks M4

View from back side

Dimensions:
Cover: 313 x 252 mm (W x H)
134   Mounting depth: 83 mm
Space required for cooling: ca. 50 mm around the unit
158

Recess: 318 x 256 mm +1,0 (W x H)

132 mm
CD Drawer
Clearance

Outer edge of cover

268

Outer edge of recess

Outer edge of frontpanel
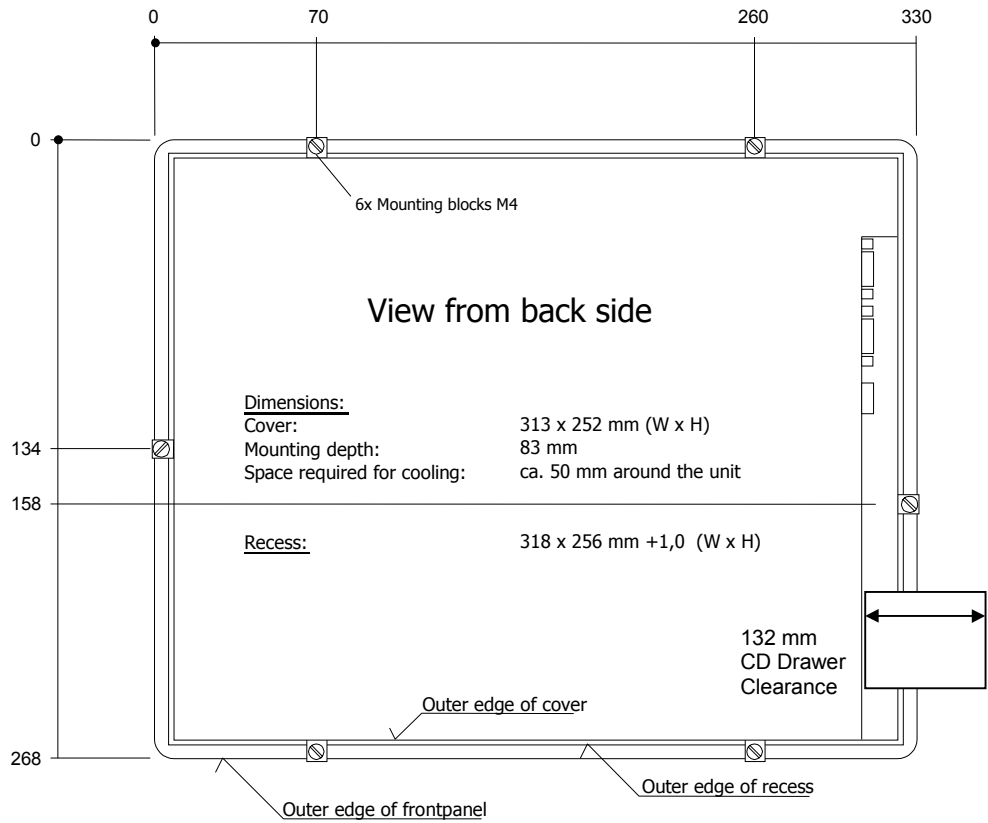
Figure 3-1. IC5002 Installation Diagram

0   31   186   341   390

0

8x Mounting blocks M4

View from back side

125

Dimensions:
Cover: 373,6 x 295,6 mm (W x H)
Mounting depth: 150 mm
Space required for ventilation: ca. 50 mm around the unit

156

Recess: 376 x 299 mm +1,0 (W x H)

132 mm
CD Drawer
Clearance

Outer edge of cover

312

Outer edge of frontpanel   Outer edge of recess
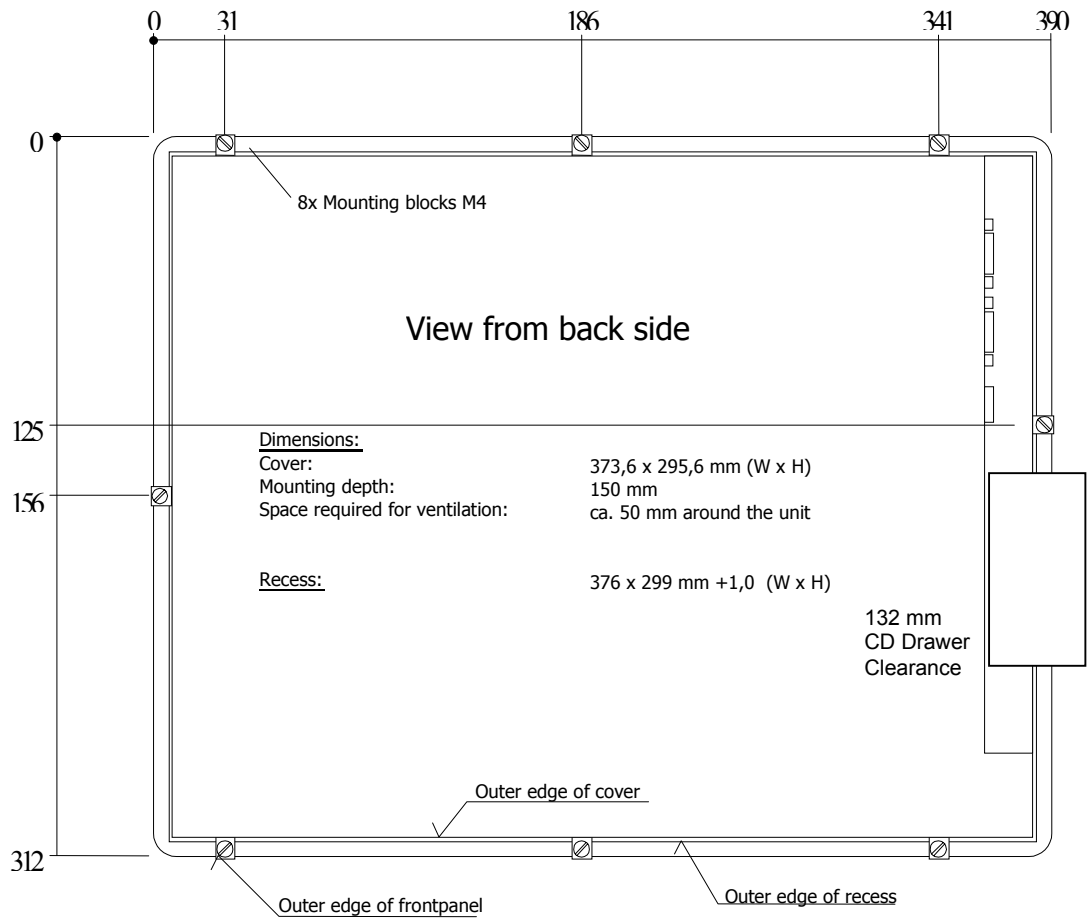
Figure 3-2. IC5005 Installation Diagram

View from back side

8x Mounting blocks M4

0   40   221   402   442

0

185,5
199,5

371

Dimensions:
Cover: 426 x 355 mm (W x H)
Mounting depth: 154 mm
Space required for ventilation: ca. 50 mm around the unit

Recess: 428 x 358 mm +1,0 (W x H)

132 mm
CD Drawer
Clearance

Outer edge of cover

Outer edge of frontpanel
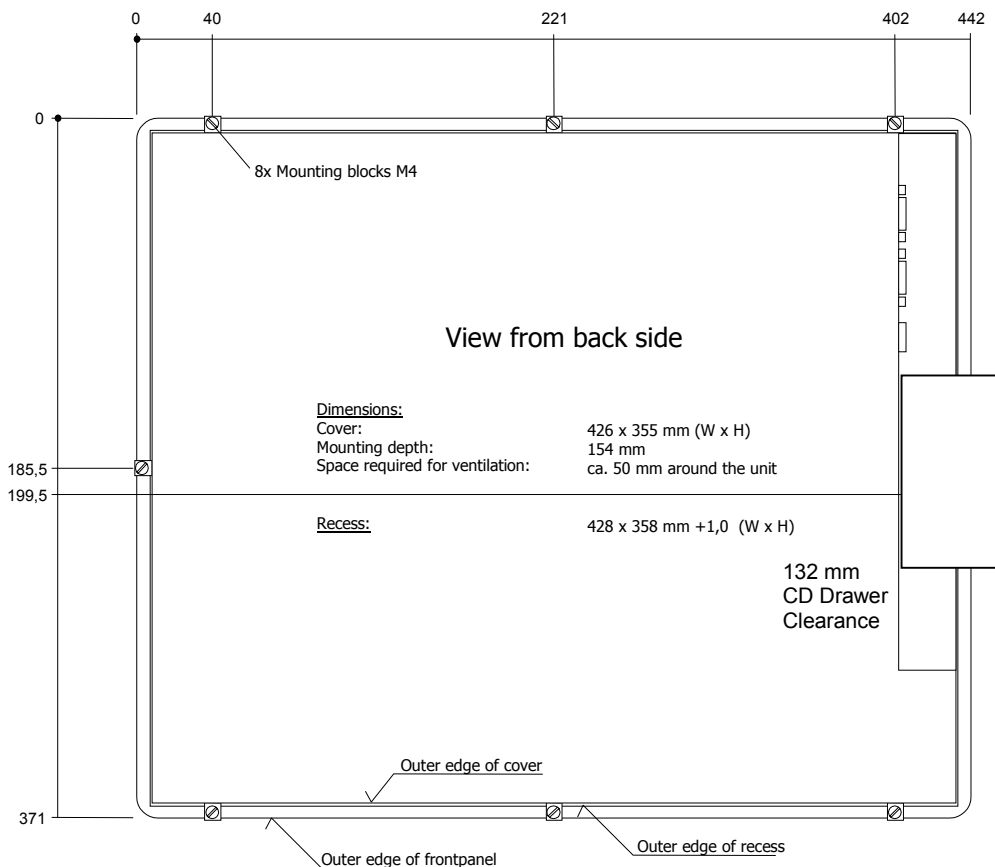
Outer edge of recess

Figure 3-3. IC5008 Installation Diagram

Hazardous Locations Installation

Warning

When installing the unit in an environment where there is the potential for flammable gases, vapors or liquids to be present the power cable must be secured to the unit using the enclosed cable clamp kit. In addition, the power cable must have the male plug removed and be permanently hard-wired to the AC source.
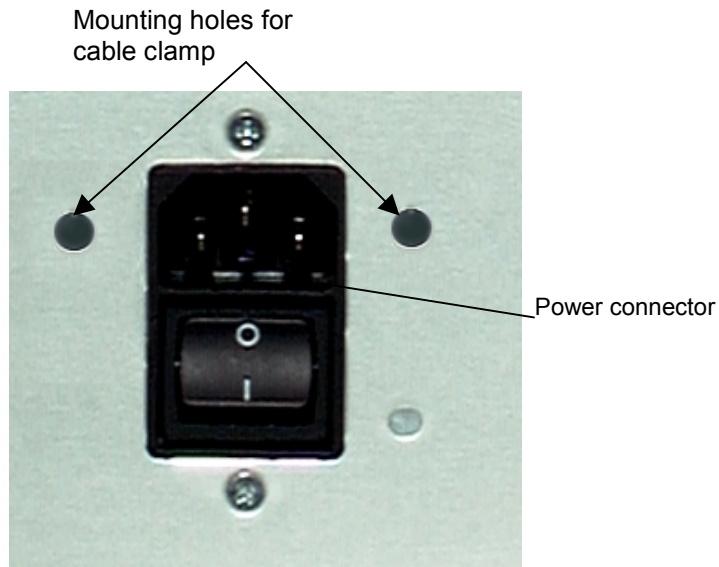
Mounting holes for
cable clamp

Power connector

Figure 3-4. Cable Clamp Mounting for Power Cable

Power Cable Installation Instructions

1. Attach clamp to power plug with the two screws provided.

2. Plug power cable into power connector on unit.

3. Securely attach the power plug and clamp assembly to the chassis at the two screw holes provided to the left and right of the plug.

Chapter	*Installing Plug-in Modules*
4	

PCI bus or ISA bus plug-in modules, such as network or field bus cards, can be installed in the CIMPLICITY Station. The plug-in slots are accessed by removing the rear cover, which is secured by cross-head screws.

Avoiding Electrostatic Discharges

Caution

The components in CIMPLICITY Station PCs are susceptible to electrostatic discharge (ESD) and can be functionally damaged by incorrect handling. The same applies to plug-in modules. It is therefore vital that suitable precautionary measures are taken to avoid electrostatic discharges on contact with the components.

1. Before touching components or modules, always touch a metal object with a conductive surface that is connected to ground potential.

2. Wear a wrist strap.

3. When handling modules, only touch the edges or the module bracket, not the components themselves.

Installing Additional Modules

Caution

To avoid a risk of electric shock, turn off power to the industrial computer and disconnect the power supply before removing the rear panel.

1. Switch off the CIMPLICITY Station and all units connected to the PC and disconnect the PC from the power source.

2. Remove the screws from the rear panel and pick up the cover carefully.

<div style="text-align:center">**Caution**</div>

The rear cover is connected to the base units of the CIMPLICITY Station by a plug-in ground connector and cable. Carefully remove and orient the rear cover to avoid applying unnecessary tension on this cable.

3. Select a free slot and remove the blank cover plate from this slot.

4. Using the precautionary measures described in "Avoiding Electrostatic Discharges," remove the plug-in module from its packaging, plug it into the slot and screw it securely to the bracket.

5. When the module has been installed, refit the ground connector (if disconnected) and replace the rear panel, ensuring that the side clips are correctly positioned.

6. Tighten the six screws on the rear panel.

Installing Expansion Cards

All the expansion slots in the system allow the card to be clamped into place using standard PC card clamping.

- Wear a properly functioning antistatic strap and be sure that you are fully grounded. Never touch the card, or any components inside the computer unless you are wearing an antistatic strap.

- Any surface upon which you place the unprotected card should be static-safe, facilitated by antistatic mats if possible.

- Extra caution should be taken in cold, dry weather, when static charges can easily build up.

Slot Cover Plates

Cover plates are fitted to each unused card position. These plates can be removed as necessary to install new cards. Any empty slots must have a cover plate fitted, otherwise agency approvals become invalid.

Configuring Expansion Cards (Legacy ISA Only)

Caution

For most applications, an interrupt request (IRQ) or address cannot be shared by more than one resource. If more than one resource is set to the same IRQ or address, the application may not respond properly and could cause your machine to lock up. Following these instructions when installing Legacy ISA cards will prevent problems with resource conflicts.

The controllers (Ethernet, IDE) in the slot CPU of the IPC are connected via an internal PCI bus. This ensures that addresses and IRQs are automatically determined by the BIOS. When making changes to the configuration or adding ISA cards:

1. Install the unit without ISA cards, switch on and read off assigned IRQs and addresses.

2. Install additional ISA cards so that IRQs assigned to PCI are not reused (interrupt sharing).

3. Reserve IRQs for ISA in the BIOS

Reserving IRQs for ISA Cards in the BIOS

Legacy ISA cards are the oldest standard and require memory, I/O, and IRQ settings to be manually set on the card using jumpers, DIP switches, or a configuration program. The card and system need to have the same hardware settings.

The GE Fanuc web site http://gefanuc.com/ provides current information on BIOS settings for IRQs.

1. Connect a keyboard, turn on the system power, and press F2 when prompted to enter the BIOS Setup program.

2. Select Advanced, then PCI Configuration, and PCS ISA Resource Exclusion.

3. If the card requires one or more interrupts, go to an IRQ that currently reads "Available" and change it to "Reserved" by pressing +/-. Do *not* use an IRQ that already reads "Reserved."

4. If the card requires memory space, press the arrow key to return to the PCI Configuration screen. Select PCI ISA UMB Region Exclusion. Go to a memory block that currently reads "Available" and change it to "Reserved" by pressing +/-. Do *not* use a memory block that already reads "Reserved."

5. Press ESC to exit the configuration screen. In the Exit menu, select Exit Saving Changes and to save and exit Setup. When the screen goes blank, turn off the power.

6. If the card has jumpers or DIP switches, set them so that they match the IRQ and memory addresses set in the BIOS Setup.

7. Set the I/O port settings of the card (if any) so that they fall within the ranges labeled "Available" in the following table.

8. If the card is set up using a configuration program, proceed with installation, run the card's configuration program. Set the IRQ and memory address to the same settings as those put into BIOS Setup. Set the I/O port settings (if any) to a range labeled "Available" in the following table.

Table 4-1. CIMPLICITY Station I/O Port Range Table

000-1FF	Reserved
200-277	Available
278-2FF	Reserved
300-377	Available
378-3DF	Reserved
3E0-3EF	Reserved
3F0-3FF	Reserved

Initial Startup

Startup Procedure

Warning

Installation of the CIMPLICITY Station in hazardous locations requires the use of a cable mounting clamp with the power connector. For instructions for installing this clamp, refer to "Hazardous Locations Installation" in Chapter 3.

1. Plug the power cable into the unit's power connector and connect to the power source.

2. Plug in the serial/parallel data transfer cables and screw the plugs to the connectors.

Caution

To prevent damage, do not attempt to connect leads unless the unit is switched off.

Note: The data cable shield must be connected to the housing of the push-on connector (EMC).

3. Switch on the unit and check whether any concealed damage has been caused by incorrect transportation, incorrect operating/storage conditions or incorrect handling (e.g. smoke coming out of the unit, etc.). If you notice any damage, switch off the unit immediately and secure it against unintentional use.

System Startup for Windows NT

Connecting a PS/2 keyboard and mouse is recommended before you get started. You need a PS/2 keyboard for convenience. An alternate approach is to use the soft keyboard and touch panel.

1. Plug in the keyboard, PS/2 mouse (if available), and power cord.

2. Power on the unit.

3. Read the license agreement

4. TAB to your choice and press ENTER.

5. Press ENTER to start the Windows NT Setup.

6. Type your name.

7. Press the TAB key and type your company name.

8. Press ENTER.

9. Enter the Windows NT Authentication number found on your Windows NT manual. You will need to use the TAB key to get to each number field. If correct, press ENTER.

    Note: Computer names must be less than or equal to ten characters to run CIMPLICITY PE software. Each computer on a network must have a unique name.

10. Enter a Computer name. This name must be different from other computer names on the same network. Press ENTER.

    Note: Your system has been set up to enable auto logon. Auto logon allows the system to boot into Windows NT without your having to use a keyboard to press CTRL-ALT-DEL.

11. You will be prompted for a password.

    •   To use the auto logon feature, type **admin** for the password. Press the TAB key and type **admin** in the Confirm Password box. Press ENTER.

    •   To skip the password, press ENTER

    •   To assign a password, type in a password, press the TAB key, and type the password in the Confirm Password box. Press ENTER.

12. Press ENTER to continue with Windows NT Setup.

    Note: The factory setting for the IP is 111.111.111.111 and for the Subnet is 255.0.0.0. If necessary, consult your network administrator to select appropriate addresses.

13. After completing the network setup, the system will copy files over and finalize its setup.

14. At the end of the setup process, you will be asked to reboot the system. Press ENTER.

System Startup for Windows 2000

Connecting a PS/2 keyboard and Mouse is recommended before you get started. You need a PS/2 keyboard for convenience.   The soft keyboard and touch panel will not work until the Windows 2000 operating system is licensed. Therefore an external keyboard is required to license the product.

1. Plug in the keyboard, PS/2 mouse (if available), and power cord.

2. Power on the unit.

3. Read the license agreement.

4. Select your choice and press NEXT >.

5. Choose your regional settings (US default) and press NEXT >.

6. Type your name.

7. Press the TAB key and type your company name.

8. Press NEXT >.

9. Enter your Windows 2000 Product Key found on the back of the CIMPLICITY Station itself. When correct, press NEXT >.

> **Note:** Computer names must be less than or equal to ten characters to run CIMPLICITY PE software. Each computer on a network MUST have a unique name.

10. Enter a Computer name. This name must be different from other computer names on the same network. Press NEXT >.

11. If desired, enter an Administrator password. You will need to enter it twice to confirm. When done, press NEXT >.

12. You can now set the Date, Time and Time Zone for the computer. When the information is correct, press NEXT >.

13. Choose Typical settings for the factory setting of TCP/IP protocol at IP 111.111.111.111 and subnet 255.0.0.0, or, choose Custom and press NEXT > to change these settings. Consult your network Administrator for your network's configuration settings.

14. Choose whether this computer will be on a workgroup or domain and enter the name and press NEXT >.

15. After completing the network setup, the system will finalize its setup.

16. At the end of the setup process, you will be asked to reboot the system. Press FINISH.

17. After restarting, you will need to configure the login settings for Windows 2000. When the "Network Identification Wizard" dialog box appears press NEXT >.

18. The "Users of This Computer" dialog box appears.

- If you wish to have the computer automatically log on with the administrator account, select the "User name" pull down and choose "Administrator". Enter the password used in step 11 and press NEXT >. The computer will automatically log on when it starts up.

- If you wish to require a logon when the computer is restarted, select "Users must enter a user name and password to use this computer" and press NEXT >. You will then be asked for a user name and password when the computer starts up.

19. Press FINISH and the setup is complete.

Login Recommendation

With Windows NT, if you type **admin** as your Administrator password, your industrial computer will automatically log on as Administrator.

Log onto the system as Administrator when you power up the system. Doing so eliminates the requirement to log on to CIMPLICITY when you run the CIMPLICITY Demo or any other CIMPLICITY project that includes a user named Administrator. All CIMPLICITY projects are configured with an Administrator user by default.

Installing Application Software

The Windows operating system and GE Fanuc software (except IC850PCT400) are loaded onto the industrial computer at manufacture. If it is necessary to reload software, follow the instructions in the documentation supplied with the software.

Touchscreen Calibration

1. Open Control Panel, by selecting Start, Settings, then Control Panel.

2. Select the Elo Touchscreen icon in the Control Panel window.

3. Select Calibrate in the Elo Touchscreen properties window.

4. Follow the on-screen instructions to calibrate the Touchscreen.

Shutting Down the Computer

Caution

To avoid damaging files, always shut down Windows Operating System before removing power from your CIMPLICITY Station .

To shut down Windows Operating System, select the Start menu and choose Shut Down.

® MS-DOS is a registered trademark of Microsoft Corporation.

Controls

Control Keys

CIMPLICITY Station is shipped with the Windows NT or Windows 2000 operating system installed. Additional pre-installed software includes drivers to support the virtual keyboard. In case you need to re-install the software, CDs and floppy disks are included with the appropriate drivers.

The five keys on the front panel are assigned the following default functions.

Opens and closes the virtual keyboard to allow character input via the TouchScreen
With SHIFT key: No function.

Switches tasks (ALT+ESC) in Windows.
With SHIFT key: No function.

Hot Keys: Launches application - Starts the text editor (Notepad) as the default.
With SHIFT key: Increases display brightness.

Right mouse key function.
With SHIFT key: Decreases display brightness.

SHIFT key for upper case. The SHIFT key must be pressed at the same time as the desired function key.

The general system keys can be disabled or configured to launch an application or tool through an .ini file. For information on application instructions, see the GE Fanuc web site http://gefanuc.com/.

Note: If the Softkeyboard is not installed, only the display setting functions are active.

Note: You can alter the default settings of the virtual keyboard. Information on altering the settings can be found in the README file on the floppy disk.

Softkeyboard

A virtual keyboard that allows you to enter data using the TouchScreen in a similar way to a normal keyboard is supplied with the CIMPLICITY Station. If the CIMPLICITY Station is delivered without an installed operating system, you can install the Softkeyboard using the floppy disk provided (see chapter 3, "Driver Installation"). This also automatically installs the keyboard assignment for the five keys below the display at the front.

> **Note:** To access commands that require two keys to be pressed simultaneously on a standard keyboard (e.g. ALT + F4), these keys have to be pressed one after the other on the virtual keyboard. The special SHIFT, ALT and CTRL keys always have to be pressed first.

> **Note:** Because of programming differences in different software packages, it cannot be guaranteed that the virtual keyboard will be compatible with all software.

Softkeyboard Controls

 Increases the size of the Softkeyboard display

 Decreases the size of the Softkeyboard display

Free area   Moves the virtual keyboard on the screen

External Keyboard

A 6-pin mini-DIN Keyboard socket (PS/2) is located on the side of the operating console. Industry-standard, AT-compatible quality keyboards with the appropriate connector can be plugged into this socket. The suitability of keyboards must be checked before installation.

> **Note:** When the virtual keyboard is displayed as active on screen, only a limited range of controls are available on the external keyboard.

Front Panel LEDs

PWR LED

When the SHIFT key is used to adjust the display settings, the LED goes out. If one of the other four keys is also pressed, the LED flashes until the limit of the adjustment range is reached.

The following modes are also displayed:

- Green light: Indicates ready status (Power ON)

- Red light: Processor fan speed too slow or stopped

- Red flashing: Unit overheating

    Note: The overheating error signal has priority over fan errors and is therefore displayed if both errors occur.

    Note: To ensure that the user has noticed the error signal, the red Overheating and Fan Speed LED signals can only be reset by restarting the computer.

RUN LED

The RUN LED is completely software-controlled and displays the functions of a Control software package (CIMPLICITY Machine Edition – Control Station with soft logic control engine).

CIMPLICITY ME Template for Hardware Monitoring

When using CIMPLICITY Machine Edition or CIMPLICITY Plant Edition, an OPC driver is provided to monitor the PC condition through system status variables. The following features can be monitored:

- CPU Fan error

- Chassis Fan error

- CPU over temperature (greater than 50 degrees C)

- On board NTC (-127 degree C to +127 degree C)

Touchscreen

The operating console is provided with the analog Touchscreen with serial controller, which is connected internally to the COM4 serial port. To be able to use the TouchScreen, the driver software must be integrated in the relevant operating system (see "TouchScreen Driver Installation").

Mouse

A Microsoft-compatible mouse with PS/2 connector can be attached to the Mouse port. The compatibility of the mouse must be checked before use. The mouse can be used in addition to the TouchScreen.

> **Note:** It is recommended that you connect a PS/2 mouse to the mouse port during installation as the TouchScreen is not yet usable. This considerably simplifies the process of initial installation of the operating system. The mouse can be removed later without an error message.

Hard Disk

The hard disk is fitted to a mounting plate with vibration-damping rubber elements. A 3.5" Ultra-DMA hard disk with commonly available capacity (minimum of 20 GB) is provided.

Floppy Disk Drive

The floppy disk drive is fitted on the left of the operating console (viewed from the front) next to the CIMPLICITY Station ports.

CD-ROM Drive

The CD-ROM drive is on the left of the operating console (viewed from the front) under and next to the CIMPLICITY Station ports. The CD-ROM drive cannot be opened unless the CIMPLICITY Station is switched on. Pressing the Eject button activates a motor that opens the drawer. The drawer can be closed again by pushing the drawer gently or by pressing the Eject button.

<div align="center">

Caution

</div>

To avoid damage to the drive, ensure that the motorized drawer is not obstructed as it opens. (See pages 3-3 through 3-5.)

Ports

The ports are arranged in the housing on the left of the operating console (viewed from the front). All ports are labeled. For pin assignments, refer to Chapter 8, "Technical Data".

Caution

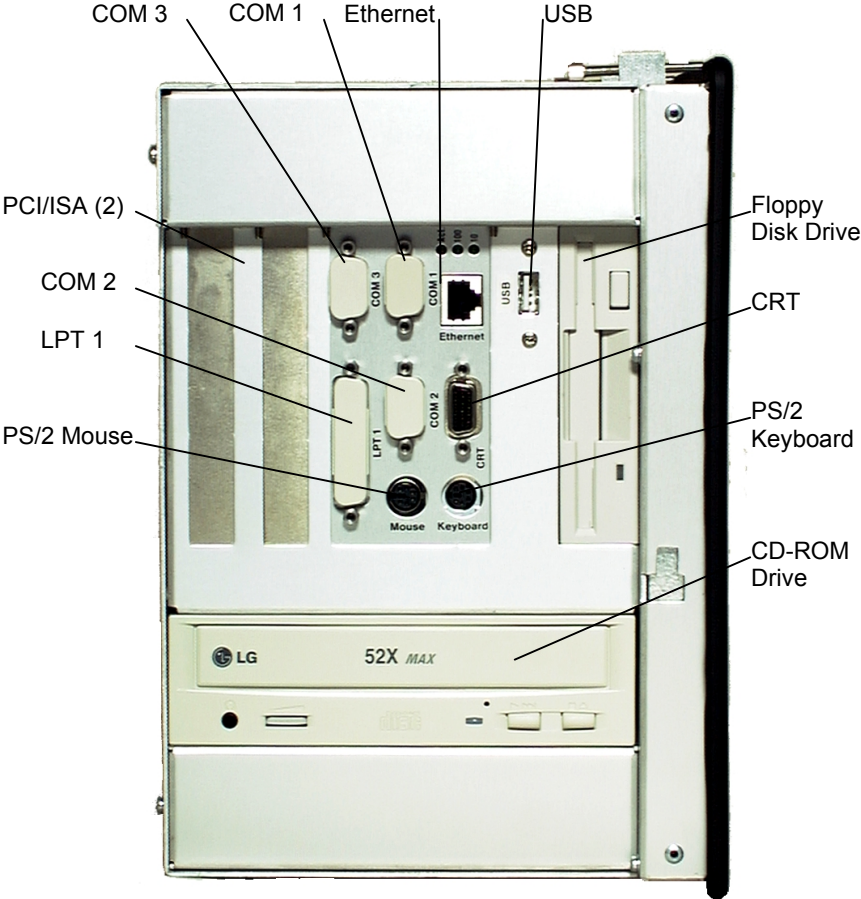To prevent damage to the unit, do not attempt to connect leads unless the unit is switched off.

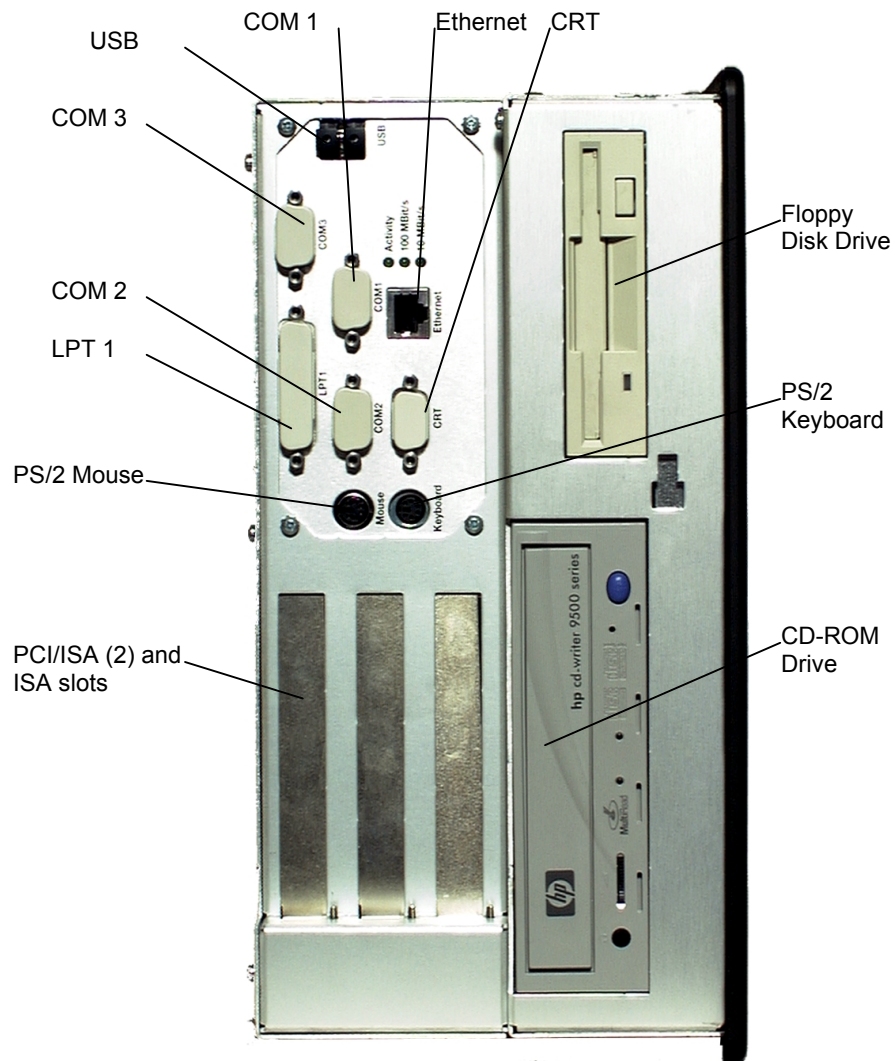**Figure 6-1. Expansion and Communications Ports, 12.1" CIMPLICITY Station**

Figure 6-2. Expansion and Communications Ports, 15" and 18" CIMPLICITY Station

Networking

The IPC can be integrated into an Ethernet supporting 10 or 100 Mbit/sec. using an appropriate network cable from the Ethernet network port (10/100Base-T). Network architecture specifications must be observed. The CD supplied with the unit contains drivers required for network operation, which must be installed according to the particular operating system (see Chapter 7, "Driver Installation").

Connecting an External Monitor

A CRT-Multisync monitor can be operated from the 15-pin monitor connection in parallel with the integral flat screen. The monitor must be capable of running at a minimum horizontal frequency between 31-69 kHz, otherwise the maximum resolution of 1280 x 1024 pixels cannot be displayed.

Caution

Do not connect a standard VGA monitor (horizontal frequency 31.5 kHz) as it will be damaged by timing changeovers!

Power Supply

The CIMPLICITY Station is fitted with an auto-switching power supply.

- Primary voltage 100-240 VAC (50-60 Hz)

- ON/OFF switch

- Power connector with surge protection (to provide protection against power surges and spikes)

Chapter 7

Chapter

7

Driver Installation

CIMPLICITY Station is shipped from the factory with Windows operating system pre-installed. Depending on the product purchased, CIMPLICITY software is also preinstalled. For configurations where no operating system is installed or needs to be re-installed the user must first perform a complete installation procedure and set up all necessary drivers. The original CDs and a Softkeyboard floppy disk are supplied with the unit.

> **Note:** During installation it is recommended that you connect a PS/2 mouse to the mouse port because the TouchScreen is not yet usable. This considerably simplifies the process of initial installation of the operating system. The mouse can be removed later without an error message.

Network Adapter Driver Installation

Caution

To install the driver for the network card, the installation files from the CD "SBC Drivers, Utilities & User Manuals" (file path: CD:\SBC8260\DRIVER\LAN\WINNT) must be copied to the main directory of a floppy disk.

To install the integrated network port for Windows NT:

1. Plug the network cable (TP) into the IPC and connect to the network.

2. Switch on the PC and begin installation of Windows NT 4.0.

3. Confirm the Create Connection Between Computer and Network and Connect Directly to the Network messages.

4. Click the Select From List option and select Floppy disk.

5. Confirm the displayed path A:\ with OK.

6. In the next window select the following driver (card) and confirm with OK:
   RTL8139 (A/B/C/8130) PCI Fast Ethernet Adapter

7. Click Next to define settings for the network protocol desired by the specific user and the operating mode (default setting: (1) Auto). If selecting the TCP/IP protocol, the DHCP mode or fixed IP address must also be selected.

Caution

If selecting DHCP, the IPC must be connected to the DHCP-supported network.

8. Click Next to enter user-specific work groups and domain data.

9. Continue installing Windows NT.

Graphics Driver Installation

Since Windows NT 4.0 installation only installs a standard VGA driver supplied by the operating system manufacturer, this needs to be replaced in order to make full use of the capabilities of the high-resolution flat screen. The driver can be found on the "SBC Drivers, Utilities & User Manuals CD). Installation is performed as follows:

Caution

For Windows NT, do not install the driver unless Service Pack 3 or higher has been installed since in earlier versions Windows does not support the AGP interface of the graphics card. Do not install the driver during initial installation of the operating system.

1. Switch on the PC and after the system has booted up, insert the SBC Drivers CD in the CD-ROM drive.

2. Click Start => Settings => Control Panel => Display => Settings => Configuration => Change graphics card => Floppy disk to open a path request dialog box. Select Browse and specify the following path:
    CD-LW:\SBC8260\DRIVER\VGA\Nt40.129 \OEMSETUP.INF

3. Select OK to switch to the graphics drivers menu and select the following driver from the list and confirm with OK:
    Chips Video Accelerator (65545/48/50/54/55 68554 69000)

4. To confirm the warning message, click Yes.

5. After you have finished specifying the settings, close the Display option box and restart Windows NT.

Caution

Remove the CD-ROM from the drive.

6. Click Control Panel => Display => Settings and select the desired screen resolution.
Max. resolution:	800x600 (12" Display)
	1024x768 (15" Display)
	1280x1024 (18" Display)
Max. color at highest resolution:	16 million colors (12" Display)
	64k colors (15" Display)
	64k colors (18" Display)

7. To confirm the error message, click OK.

TouchScreen Driver Installation

You will find drivers for the TouchScreen on the supplied "TouchTools CD from Elo TouchSystems.

Caution

During driver installation make sure that the TouchScreen is attached to the COM 4 (IRQ 10) serial port.

Installation is performed as follows:

1. Start up the computer

2. Insert the TouchTools CD. The CD automatically starts the setup routine. If the Autostart function is deactivated, start the ELOCD.EXE program from main directory of the CD.

3. After automatic startup, initiate driver installation by selecting the command Install MonitorMice for Windows NT 4.0.

4. Follow the on-screen instructions and confirm the license conditions.

5. Select the Single Monitor and COM4 settings and restart Windows NT by clicking OK.

6. After Windows NT has restarted, calibrate the TouchScreen by touching the sequence of crosses as they appear on the screen. If the cursor movement corresponds to your finger movement across the TouchScreen, select OK.

   Note: The COM port is incorrectly displayed in the driver message.

   Note: The TouchScreen and PS/2 mouse can be used at the same time.

UDMA Driver Installation

To ensure that the hard disk and CD-ROM drive run at maximum speed, the UDMA driver for the VIA chip set must be installed. The driver can be found on the "SBC Drivers, Utilities & User Manuals" CD. Installation is performed as follows:

1. Switch on the PC and after the system has booted up, insert the SBC Drivers CD in the drive.

2. Click Start => Run => Browse to run the following program
    CD-LW:\Utilities and drivers\VIA\CHIPSET Driver V424\SETUP.EXE

3. Follow the on-screen instructions, install the driver and confirm that you want to restart the computer.

Caution

Remove the CD-ROM from the drive.

4. After restarting Windows NT, the following driver is listed in Start => Settings => Control Panel => SCSI Adapter: VIA bus master IDE drivers

5. Click Start => Settings => Control Panel => SCSI Adapter => Add driver and remove any drivers that were not started.

Softkeyboard Driver Installation

To be able to use the five buttons on the front panel and to enter data using the software keyboard and TouchScreen, you need to install the software keyboard driver from the supplied disk. Installation is performed as follows:

Caution

For Windows NT version 4.0, do not install the driver unless Service Pack 5 or higher has been installed because there may be operating problems with earlier versions.

1. Switch on the PC and insert the Drivers floppy after the boot.

2. Click Start => Run => Browse to run the following program from the supplied floppy disk
    Soft-Keyboard_Vxx.exe

3. Follow the on-screen instructions, install the driver, specify the language and confirm that you want to restart the computer.

Regional Settings

You can subsequently adapt the key assignment of your virtual keyboard to the standard layouts of other countries. The settings are stored in an INI file. To change the settings, you will need to modify the file in a text editor such as NotePad. This can be done as follows:

1. Start the text editor and open the SOFTKEY.INI file from the following directory:
   C:\Program Files\ADS-TEC\SOFT-KEYBOARD

2. The available keyboard layouts and relevant parameters are listed in the initial section under Long version code.

3. In the program section under [Common] in the Long version parameter, replace the code entered after the equals sign with the desired code and save the file as a text file with the same name.

4. Open the software keyboard and press the Ctrl, Alt and F11 buttons one after the other. To confirm, click OK. The settings are then immediately applied.

> **Note:** You can make further alterations to the default settings of the software keyboard. Information on altering the settings can be found in the README file on the floppy disk.

Read/Write CD-ROM Utilities

Installation and application instructions for copying files to a write-able CD are provided with the supplied CD Writer Utilities.

<table>
<tr><td></td><td colspan="2">Chapter
8</td><td colspan="2">Technical Data</td></tr>
</table>

Monitor System

	IC5002	IC5005	IC5008
Display:	TFT LC-Display		
Diagonal:	307.4 mm (12.1")	383.5 mm (15.1")	459.7 mm (18.1")
Resolution (Pixel):	SVGA (800 x 600)	XGA (1024 x 768)	SXGA (1280 x 1024)
VGA controller:	(AGP) 2MB SDRAM	(AGP) 2MB SDRAM	(AGP) 4MB SDRAM
Colors:	16 Million Colors.	64k	64k
Brightness:	300 cd/m².	200 cd/m²	200 cd/m²

Note: Back-lighting systems are consumable parts and are therefore not covered by the warranty.

Industrial PC

	IC5002	IC5005	IC5008
Bus/Slot-CPU:	Passive PCI/ISA-Bus / All in One Slot-CPU with FCPGA-Socket		
Processor:	750 MHz or greater (Optional: PIII 933 MHz. FSB 133)		
RAM:	128 MB / 256 MB SDRAM (1 DIMM Slot)		
Storage:	Hard disk min. 20 GB (3.5" UDMA) 3.5" Floppy disk 5.25" CD-ROM (Optional: CD-RW)		
Ports:	a. COM1/2 (RS232 16550 compatible) b. COM3 (RS232 16450 compatible) c. LPT1 d. Keyboard PS/2 e. Mouse PS/2 f. Monitor		
	IC5002: 1 USB	IC5005: 2 USBs	IC5008: 2USBs
	10/100BaseT (RJ45. 10/100Mbit full duplex)		
Slots:	2 shared ISA/PCI	2 shared ISA/PCI 1 PCI	2 shared ISA/PCI 1 PCI
Power supply:	100—240 VAC, 100 watt, 50 – 60 Hz, Auto sense		
Power consumption:	48 watt (typical) 60 watt max.	54 watt (typical.) 62 watt max.	67 watt (typical.) 75 watt max.

Expansion cards

The maximum power consumption of additional expansion cards should not exceed 20 watts to avoid overheating.

IC5005 and IC5008 models support full length cards size (339 mm), and the IC5002 supports up to 290 mm cards size (3/4 ISA size).

Dimensions

	IC5002	**IC5005**	**IC5008**
Dimensions (W x H x D):	330 x 268 x 183 mm	390 x 312 x 156 mm	442 x 371 x 160 mm
Mounting depth:	177 mm + 50 mm for cooling top and bottom 30 mm for cooling on sides	150 mm + 50 mm for cooling top and bottom 30 mm for cooling on sides	154 mm + 50 mm for cooling top and bottom 30 mm for cooling on sides
Weight:	6.9 Kg	8.3 Kg	10.7 Kg

Environmental Specifications

Temperature	Operating: 0—40°C Storage: -20—60°C
Humidity	Operating : 10—85% Non condensing Storage: 10—85% Non condensing
Shock:	Operating 15G equivalent, 11ms, 3 axis pos. and neg. Non-operating 30G Reference IEC 68-2-27.
Vibration:	Operating: 1G, 5 to 9 Hz; 1.0g 9 to 150 Hz. Non-operating: 2.5G, Reference IEC 68-2.
Agency Approvals	UL 1604 Class 1 Div 2 CE
Enclosure Protection	NEMA 4 (IP 65)
Noise Immunity (acc. To EN 50082-2)	Electrostatic Discharge ESD EN 61000-4-2 Radiated Electromagnetic RF Fields EN 61000-4-3, ENV 50204 Fast transients BURST EN 61000-4-4 Conducted Electromagnetic RF-Fields EN 61000-4-6, ENV 50141
Emission (acc. To EN50081-2)	RF voltage EN 55011, EN 55022 RF fields EN 55011, EN 55022

Standards

- The IC500x product models meet the test requirements for the CE mark under European test standards EN 55022 and EN 50082-2

- The IC500x meets the test requirements of DIN EN 60950 (VDE0805. IEC950) "Safety of information processing equipment "

Port Configurations

Port	IRQ	Addresses
COM1	4	3F8h
COM2	3	2F8h
COM3	5	3E8h
COM4 (Touch)	10	2E8h
LPT	7	378h

Pin Assignments

Keyboard/Mouse (6-pin mini-DIN PS/2 socket)

Pin Number	Signal name
1	Data
2	NC
3	GND
4	+5V
5	Clock
6	NC

COM1/2/3 Serial Port (9 pin socket)

Pin-Number	Signal name
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

LPT1 Parallel Port (25-pin D-Sub socket)

Pin-Number	Signal name	Pin-Number	Signal name
1	STROBE	14	-Auto Form Feed
2	Data 0	15	-ERROR
3	Data 1	16	-Initialize
4	Data 2	17	-Printer Select In
5	Data 3	18	GND
6	Data 4	19	GND
7	Data 5	20	GND
8	Data 6	21	GND
9	Data 7	22	GND
10	-ACK	23	GND
11	Busy	24	GND
12	Paper Empty	25	GND
13	Print select		

CRT Analog Monitor Connector (15-pin HD-Sub socket)

Pin-Number	Signal name	Pin-Number	Signal name
1	Red	9	NC
2	Green	10	Sync-GND
3	Blue	11	NC
4	NC	12	DDC-Data
5	Sync-GND	13	H-Sync
6	AGND	14	V-Sync
7	AGND	15	DDC-Clock
8	AGND		

Power Input (cable socket)

The power supply input to the industrial computer uses a standard IEC cable, which is provided with the unit.

Pin	Signal
Outside	100—240 VAC
Center	ground
Outside	100—240 VAC

BIOS Settings

BIOS settings are available through the GE Fanuc web site URL http://gefanuc.com/.

Unit Troubleshooting

For current troubleshooting and frequently asked questions, go to the GE Fanuc web site URL http://gefanuc.com/.

Touchscreen Troubleshooting

The ACCU.PDF file in the \Docs\Manuals directory on the "Drivers" CD supplied for the TouchScreen contains a user manual in Adobe Acrobat format. You will need Acrobat Reader installed on your system to be able to view the manual (Acrobat Reader Version 4 is included on the CD).

The "Troubleshooting" sections in the manuals tell you how to check the drivers in the event of a malfunction of the TouchScreen.