SIEMENS

SIMATIC

SIMATIC Box PC 620

| Operating Manual | C79000-Z7076-C638-04 |

Safety Guidelines

This operating manual contains notices which you should observe to ensure your own personal safety, as well as to protect the product and connected equipment. These notices are highlighted in the manual by a warning triangle and are marked as follows according to the level of danger:

⚠ **Warning**

indicates that death, severe personal injury or substantial property damage can result if proper precautions are not taken.

⚠ **Danger**

indicates that minor personal injury or property damage can result if proper precautions are not taken.

Note

draws your attention to particularly important information on the product, handling the product, or to a particular part of the documentation.

Correct Usage

Please observe the following

Note

You can set up and operate your programming device in conjunction with the following instructions. You should only connect external devices and work with memory cards in conjunction with the manual SIMATIC Box PC620. The manual is also available in electronic form on the CD-ROM labeled "Documentation and Drivers".

Only **qualified personnel** should be allowed to install and work on this equipment using the manual. Qualified persons are defined as persons who are authorized to commission, to ground, and to tag equipment, systems, and circuits in accordance with established safety practices and standards.

⚠ **Warning**

This device may only be used for the applications described in the catalog or manual, and only in connection with devices or components from other manufacturers which have been approved or recommended by Siemens.

This product can only function correctly and safely if it is transported, stored and set up carefully and correctly, and operated and maintained as recommended.

Trademarks

SIMATIC® , SIMATIC NET® and SIMATIC HMI® are registered trademarks of Siemens AG.

Exclusion of Liability

We have checked the content of this publication for compliance with the described hard- and software. However, discrepancies cannot be excluded, with the result that we assume no guarantee for total compliance. The information in this publication is checked regularly, and any necessary corrections are included in the following editions. We would be grateful for any suggestions for improvement.

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Subject to technical change.

C79000-Z7076-C638

Excellence in Automation & Drives: Siemens

Contents

Welcome to your SIMATIC Box PC 620

Overview

The SIMATIC Box PC 620 serves as an entry-level system for PC-based automation, a basic component for PC-based HMI devices (Panel PC), a basic component for PC-based machine control panels (OP031, OP032S, OP032L) and in special configurations as a basis for devices with a customised construction.

The SIMATIC Box PC 620 is intended for use in the industrial sector as well as in residential and commercial areas and small businesses. In addition to the industrial applications, it can also be used in building services automation or in facilities open to the public.

Features

The SIMATIC Box PC 620 is a compact box computer with Pentium II mobile technology.

The SIMATIC Box PC 620 is a particularly powerful industrial PC for installation as a box system. It is flat, ruggedized and designed for continuous operation. On account of its low dimensions, it can be fitted into areas where little space is available.

Quality

The SIMATIC Box PC 620 has a high quality standard. For example:

- Extensive climate, vibration and shock tests to guarantee industrial compatibility;
- Electromagnetic compatibility according to CE and FCC;
- UL/CSA approval;
- Hotline, Service, spare parts;
- Quality assurance in accordance with ISO 9001.

Range of Application

The SIMATIC Box PC 620 is a basic device for high performance automation solutions. It meets the highest requirements through:

- compliance with the requirements for a fire enclosure to UL1950/EN60950 (device with AC power supply), i.e. it may be used without an additional fire enclosure;

- extremely compact dimensions;

- suitability for continuous 24 hour operation;

- serviceability in a wide ambient temperature range;

- high robustness;

- a design which is easy to service and maintain.

Fitting Option

The SIMATIC Box PC 620 can be installed in all the usual positions.

There are anchorage points on both of the long sides for securing the unit. Mounting brackets can be screwed on to these anchorage points.

Functions

The SIMATIC Box PC 620 is equipped with software that allows it to be used universally. The following software packages are available:

- Operating system Windows NT;

or

- Operating system Windows 2000

or

- Operating system Windows 98

Due to its hardware, the SIMATIC Box PC 620 additionally allows the use of:

- SIMATIC supplementary software

- Software from the entire world of automation

- Software from the PC world

Further Areas of Application:

The SIMATIC Box PC 620 can also be used in other areas of automation (SIMATIC HMI, SIMATIC NET, TELEPERM-M, SINUMERIK / SIMODRIVE, etc.).

Consignment/Assessories

- Basic unit with preinstalled operating system

- Power cord for AC supply or connector for DC supply (depending on device configuration)

- Installation material (depending on device configuration)

- Microsoft Windows manual, required Product Key (on the manual or the device), and Recovery CD

- CD "Documentation and Drivers" with electronic manuals (German, English) and drivers for Windows NT, Windows 98 and Windows 2000

- Operating manual

- Gender changer for COM1 port

- Product information depending on device configuration

Information about this Manual

This manual will introduce you to the technical features of your SIMATIC Box PC 620, so it doesn't matter whether or not you have industrial PC experience or not. We'll show you the most important components and procedures by means of task-oriented sections giving you information to start with practically any chapter.

It would be helpful if you already know how to use a mouse, windows and pull-down menus etc..

Using the Manual

You can work with the operating manual in various ways. Either go through the chapters in turn or, depending on the initial situation, read the overview at the beginning of the chapter to find the desired topic.

The following table serves as a guideline:

Initial Situation	Corresponding Chapter
You have no experience with industrial PCs	Chapter 1 Important Notes Chapter 2 Commissioning the SIMATIC Box PC 620 Chapter 3 Hardware Components of the SIMATIC Box PC 620
You want to prepare the PC for programming	Chapter 5 Setting up the SIMATIC Box PC 620
You want to install additional drivers	Section 6.11 Installation of drivers
You have to reinstall the software	Chapter 6 Error Diagnosis and Reinstallion
You need exact information about the hardware	Chapter 7 Technical specifications
You need support	Chapter 8 Hotline Services
You want to install additional hardware components.	Chapter 4 Connecting of System Expansions and External Devices
You need more information from the electronic manuals	Section 5.4 Electronic manuals

Conventions

There are different modes to complete your tasks under Microsoft Windows software. To make it easier for you, we explain how to fulfill your tasks by means of the menus. Apart from that, the following conventions are used:

Convention	Meaning
Command <subcommand >	Specifies a menu command
" Inverted Comma"	Specifies the name of screen element (e.g. a menu or a command button)
Double-click	A rapid and fast double-click on the standard mouse key (in general the left mouse key).

Other Documentation for the SIMATIC Box PC 620

Electronic manual (Acrobat Reader) on the "Documentation and Drivers" CD.

Important Information

1

1.1 Safety Instructions

⚠ **Caution**

The safety instructions given on the reverse of the title page of this manual must be observed. Before adding to the SIMATIC Box PC 620's functionality by expanding the hardware configuration (see Section 4.1) refer to the electronic manual on the Backup CD supplied with your SIMATIC Box PC 620 and observe the relevant safety instructions.

This device corresponds to the relevant safety measures according to IEC, EN, VDE, UL, and CSA. If you have questions about the permissibility of the installation in the designated environment, please contact our service representative.

Installation

Condensation can occur if the device is transported from a cold environment into the operating area. The device must be dry prior to startup. You must allow for an acclimatization time of at least four hours.

Please observe the notes on ambient conditions in Chapter 7 *Technical Specifications* and the installation notes in Section 2.2 of this manual when installing and operating the device. The device is to be installed so that there is no danger of it falling or of causing damage to itself or others.

Be sure the fan ventilation slots are open so that a sufficient amount of air can be drawn in to cool the housing interior.

⚠ **Warning**

Take not of the permissible fitting positions without fail when installing the systems (see Section 2.2).

If the systems are installed in a non-permissible fitting position, the approvals pursuant to UL 1950 and EN60950 are no longer valid!

Power Connection

The device is intended for service in grounded electricity supply systems (TN systems to VDE 0100, part 300, or IEC 364–3).

Service in non-grounded or impedance-grounded supply systems (IT systems) is not intended.

The power cord should meet the respective local safety requirements.

Check whether the device's set supply voltage is the same as the local supply voltage.

This device is equipped with a safety-tested power supply cable. You may connect this device only to a grounding outlet with a grounding contact.

Make certain that the socket outlet on the device or the grounding contact for the building wiring system is freely accessible and as near to the device as possible.

The mains switch does not separate the device from the power system. To establish a complete power separation, you must disconnect the power plug (inlet connector on the back of the device). This location must be accessible. A central isolating switch must be present for cabinet mounting.

Install the cables so that no one can step on them or trip over them. When you connect the device, adhere to the relevant instructions in chapter 2 of this manual.

Do not connect or disconnect power supply cables and data transmission lines during thunderstorms.

In emergency situations (for example, damaged housing, damaged operator elements, a damaged power supply cable, ingress of liquids or foreign particles), switch off the device. Disconnect the power plug and inform the responsible service personnel.

The SIMATIC Box PC 620 must be switched off when you connect or disconnect I/O devices (keyboard, mouse, printer, etc.). You can damage the PC if you do not adhere to these instructions.

Country-Specific Information

For the United States and Canada:

In the United States and Canada USA, a CSA or UL-listed power supply cable must be used.

The male plug is a 5-15 style.

For operation with 120 V:

Use a UL Listed, CSA Labelles Cord Set, consisting of a min. 18 AWG. Type SVT or STJ three conductor flexible cord, max. 4.5 m (15 feet) in length and a parallel blade grounding type attachment plug rated 15 A, min 125 V.

For operation with 240 V:

Use a UL Listed, CSA Labelled Cord Set, consisting od a min. 18 AWG. Type SVT or SJT three conductor flexible cord, max. 4.5 m (15 feet) in length and a tandem blade grounding type attachment plug, rated 15 A, 250 V.

For operation with 230 V (outside of USA and Canada)

Use a Cord Set consisting of a min 18 AWG cord and grounding type attachment plug rated 15 A, 250 V. The cord set should have the approviate safety approvals for the country in which the equipment will be installed and marked.

Repairs

Only authorized personnel are permitted to repair the SIMATIC Box PC 620. Unauthorized opening and improper repairs on the device can result in significant danger to the user.

Before you open the device, first switch it off and then disconnect the power plug.

Install only system expansion devices provided for this computer. If you install other expansion devices, you can damage the system or violate the safety requirements and regulations for radio interference suppression. Contact your technical support team or where you purchased your PC to find out which system expansion devices may safely be installed.

If you install or exchange system expansions and damage your SIMATIC Box PC 620, the warranty becomes void.

The power supply may only be dismantled or exchanged by authorized technical personnel.

Battery

There is a battery on the motherboard in this device. Batteries may only be exchanged by technical personnel.

Observe the local regulations on disposal of special waste when disposing of dead batteries.

⚠ **Note**

There is the danger of an explosion, if the battery is not exchanged as directed. Replace only with the same type or an equivalent type recommended by the manufacturer. Dispose of used batteries in accordance with the manufacturer's instructions.

Notes on Inserting and Removing Modules

Modules containing electrostatically sensitive devices (ESDs) can be identified by the following label:
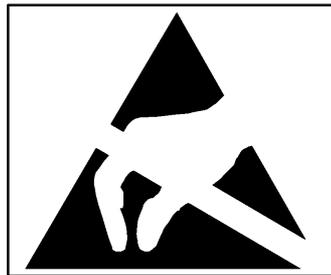
Please observe and carefully follow the guidelines mentioned below when handling modules equipped with electrostatically sensitive devices:

- Always discharge your body before handling modules equipped with ESDs (for example by touching a grounded object).

- Devices and tools must be free of static electricity.

- Always pull the power plug and disconnect the battery before connecting or disconnecting modules (containing ESDs).

- Touch modules fitted with ESDs by their edges only.

- Never touch wiring posts or printed conductors on modules (containing ESDs).

1.2 Certificates, Directives and Declarations

Notes on the CE Symbol

CE   The following applies to the SIMATIC product described in this operating instruction:

EMC Directive

This product fulfils the requirements for the EC directive 89/336/EEC on "electromagnetic compatibility" and the following fields of application apply according to this CE symbol:

Field of Application	Requirement For	
	Emitted Interference	Noise Immunity
Residential and commercial areas and small businesses.	EN 50081-1: 1992	EN 50082-1: 1992
Industry	EN 50081-2: 1993	EN 50082-2: 1995

The product is also compliant with the Standards EN 61000-3-2:1995 (Harmonic currents) and EN 61000-3-3:1995 (Voltage fluctuation and flicker).

Low Voltage Directive

This product fulfils the requirements for the EC directive 73/23/EEC on "low voltage" and was tested to EN60950

Declaration of Conformity

The EC declarations of conformity and the documentation relating to this are available to the authorities concerned, according to the above EC directive, from:

Siemens AG
Bereich Automation & Drives
A&D AS E 4
Frau Zisler
Postfach 1963
D-92209 Amberg
Tel.: +49 (9621) 80-3283
Fax: +49 (9621) 80-3278

Observing the Setup Guidelines

The setup guidelines and notes on safety given in the manual must be observed on startup and during operation.

ISO 9001 Certificate

The quality assurance system for the whole product process (development, production, and marketing) fulfills the requirements of ISO 9001 (corresponds to EN29001: 1987).

This has been certified by the German society for the certification of quality management systems (DQS).

EQ-Net certificate no.: 1323-01

Software License Agreement

The SIMATIC Box PC 620 is shipped with the software already installed. Please observe the relevant license agreements.

1.3 Certification for the USA, Canada and Autralia

Security

One of the following markings on a device is indicative of the corresponding approval:

	Underwriters Laboratories (UL) to the UL 1950 standard (I.T.E) or to the UL508 (IND.CONT.EQ)
	Underwriters Laboratories (UL) to the Canadian Standard C22.2 No. 950 (I.T.E) or to the C22.2 No. 142 (IND.CONT.EQ)
	Underwriters Laboratories (UL) to Standard UL 1950, Report E11 5352 and to the Canadian Standard C 22.2 No.950 (I.T.E) or to the UL508 and C22.2 No. 142 (IND.CONT.EQ)
	UL-Recognition-Mark
	Canadian Standard Association (CSA) to standard C22.2. No. 950 (LR 81690) or to C22.2 No. 142 (LR 63533)
	Canadian Standard Association (CSA) to the American Standard UL 1950 (LR 81690) or to the UL 508 (LR 63533)

EMC

USA

**Federal Communications Commission
Radio Frequency Interference Statement**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Shielded Cables

Shielded cables must be used with this equipment to maintain compliance with FCC regulations.

Modifications

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Conditions of Operations

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

Canada

Canadian Notice

This Class B digital apparatus complies with Canadian ICES-003.

Avis Canadien

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Australia

This product meets the requirements of the AS/NZS 3548 Norm.

Commissioning the SIMATIC Box PC 620 **2**

2.1   Unpacking and Checking the Scope of Delivery

Unpacking the SIMATIC Box PC 620

Unpack your SIMATIC Box PC 620 programming device as follows:

1. Remove the packing.

2. Do not throw the original packing away. Keep it in case you have to transport the unit again sometime in the future.

3. Please keep the documentation in a safe place. It is required during the initial start–up of the PC (see Section 5.2) and are part of the devicet.

4. Check the packing and its contents for any shipping or transport damage.

5. Check with the packing list to make sure no components are missing. Also check the accessory parts, which you can order separately.

6. Please inform your local dealer of any shipping or transport damages and of outstanding items indicated on the packing list.

Recording the Serial Number

7. Your PC is identified by a serial number (F-Nr.). Enter this number in the table below.

   If a PC is stolen and subsequently submitted for repair, the repair center will be able to identify it by the F-Nr..

Enter the Microsoft Windows "Product Key" from the "Certificate of Authenticity"

8. Enter the Microsoft Windows "Product Key" from the "Certificate of Authenticity" (COA) in the table. You will find the "Product Key" on the Windows manual or the device. You need the Windows "Product Key" if you want to reinstall the operating system.

F-Nr.	
Order No.	
Microsoft Windows Product Key	

2.2 Installing the SIMATIC Box PC 620

The SIMATIC Box PC 620 can be operated in all the usual fitting positions. It is particularly suitable for fitting in consoles, switch boards and control panels.

The SIMATIC Box PC 620 **with AC power supply** meets the requirements for a fire enclosure to EN60950. it can therefore be fitted without an additional fire enclosure.

The SIMATIC Box PC 620 **with DC power supply** is an open device (right device side); therefore the mounting must meet the requirements of a fire enclosure.

Please note the following points when installing the PC:

- Avoid extreme ambient conditions as far as possible. Protect your PC from dust, moisture, and heat.
- Keep the PC out of direct sunlight.
- Mount the PC as safely as possible to prevent any danger (for example, by falling over).
- The clearance around the housing must be at least 100 mm at the front and rear, so that the PC is sufficiently ventilated.
- Make certain that the ventilation slots for the housing are not covered.
- Observe the permissible fitting positions without fail when installing the systems.

Warning

If the systems are installed in a non-permissible fitting position, the approvals pursuant to UL 1950, UL 508 and EN60950 are no longer valid!

Depending on the configuration of the device, two mounting brackets are included in the scope of delivery. You can attach these to the housing with 6 screws (M3x6).
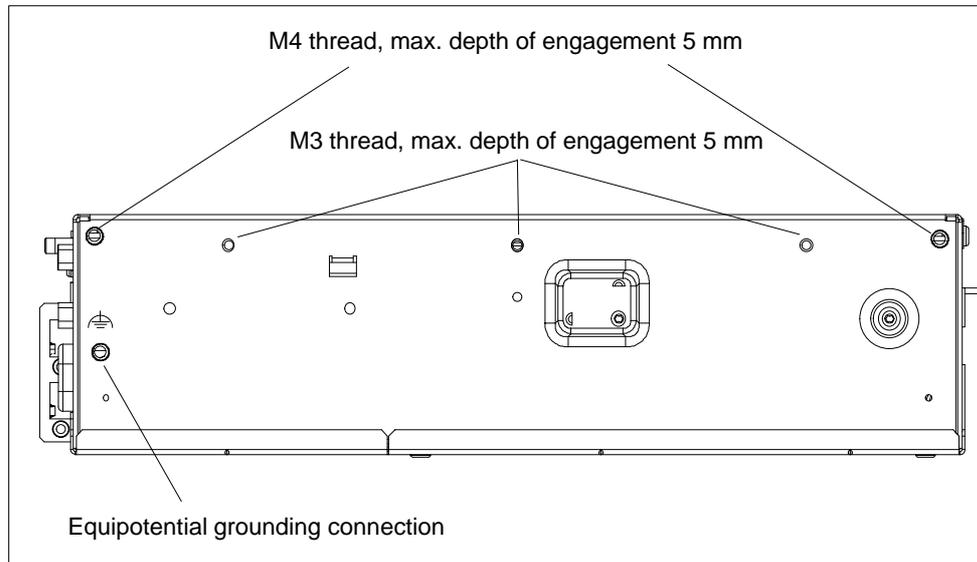
Figure 2-1   Screw Connection Points for Mounting Brackets (Cover Side Downwards)

Instructions for wall and ceiling mounting

To install the SIMATIC Box PC 620 in a concrete wall or ceiling proceed as follows:

1. Fix the mounting brackets at the housing of the PC.

2. Drill four holes of 8 mm diameter and 60 mm depth into the wall or ceiling. You will find the required dimension drawings on the following pages.

3. Insert the concrete plugs (8 mm diameter and 50 mm long) into the drill holes.

4. Fix the PC with four screws (4 mm diameter and 50 mm long).

In a plasterboard wall or ceiling (min. 13 mm thick), drill holes of 14 mm diameter and fasten the PC with four anchors (4 mm diameter and 50 mm long).

In a metal sheet wall or eiling (min. 2 mm thick), drill holes of 5 mm diameter and fasten the PC with four screws (4 mm diameter and min. 15 mm long).

⚠ **Warning**

The installer must verify that the wall or ceiling can support four times the full load of the SIMATIC Box PC 620 (with mounting brackets and Add-On-Cards).
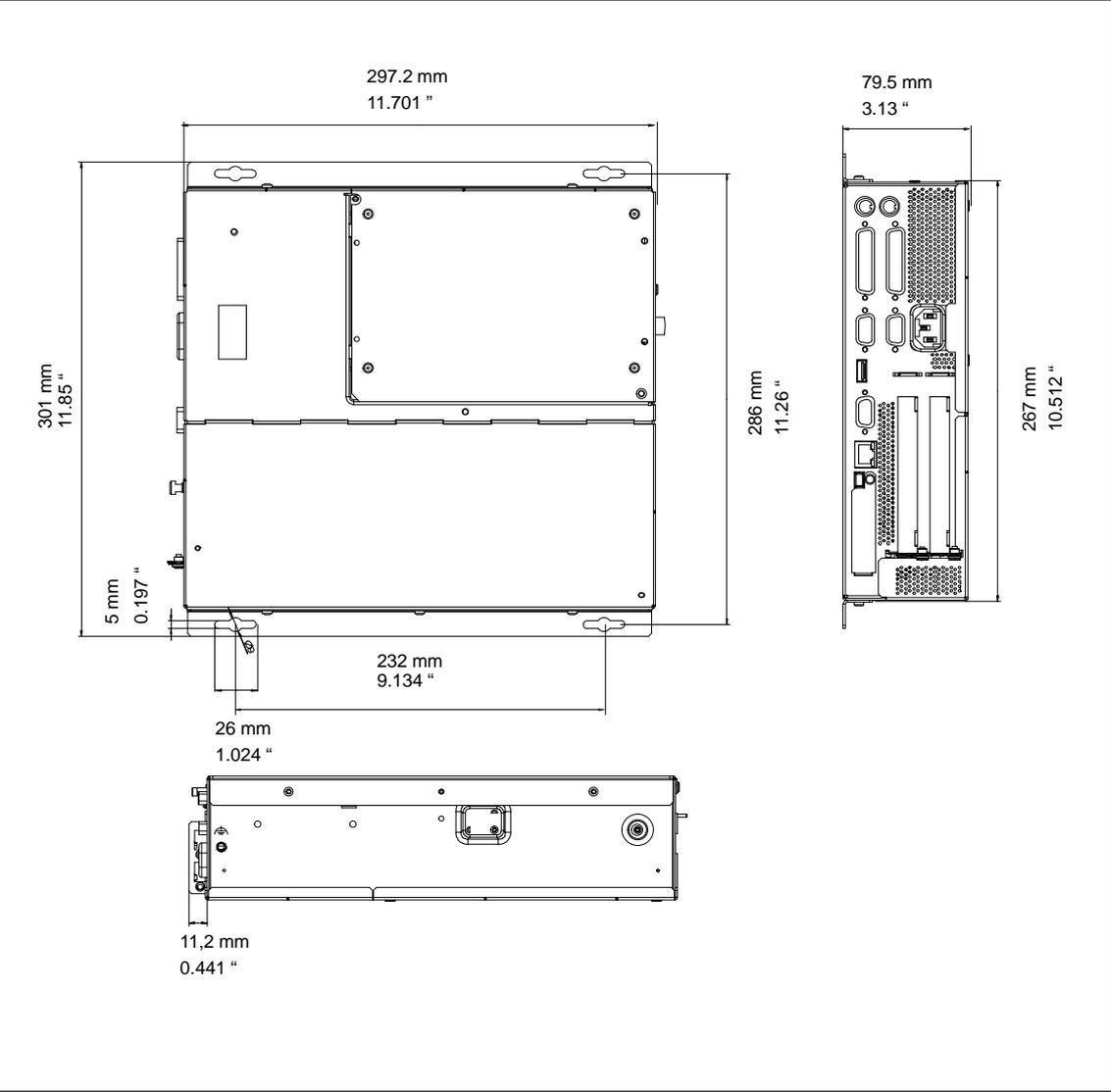
Figure 2-2   Dimension Drawings for Fitting in Control Panel with Installation Angle (Device without CD-ROM Drive)
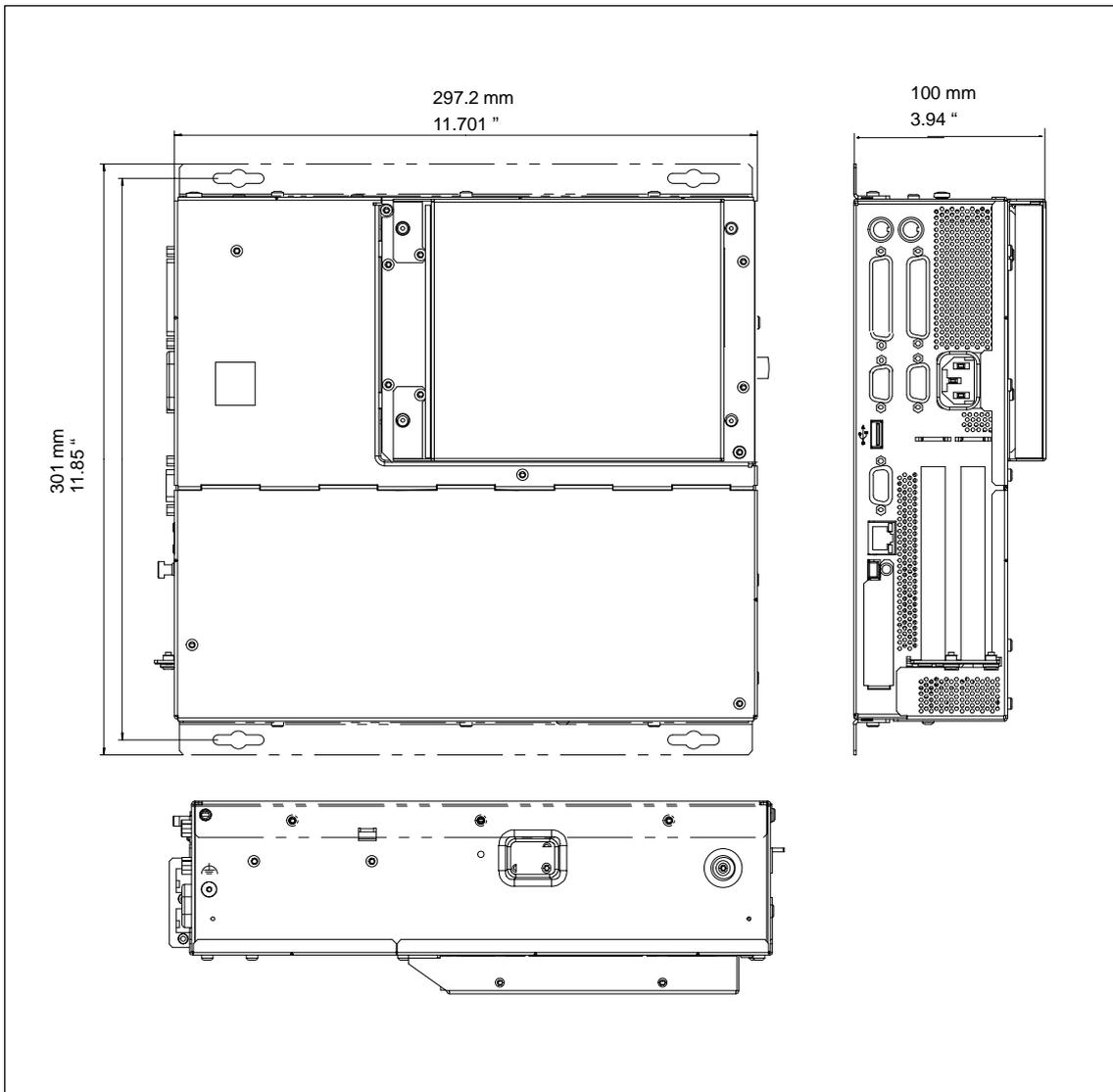
Figure 2-3   Dimension Drawings for Fitting in Control Panel (Device with CD-ROM Drive)

267.2 mm
10.52 "

79.5 mm
3.13 "

267 mm
10.512 "

11.2 mm
0.441 "
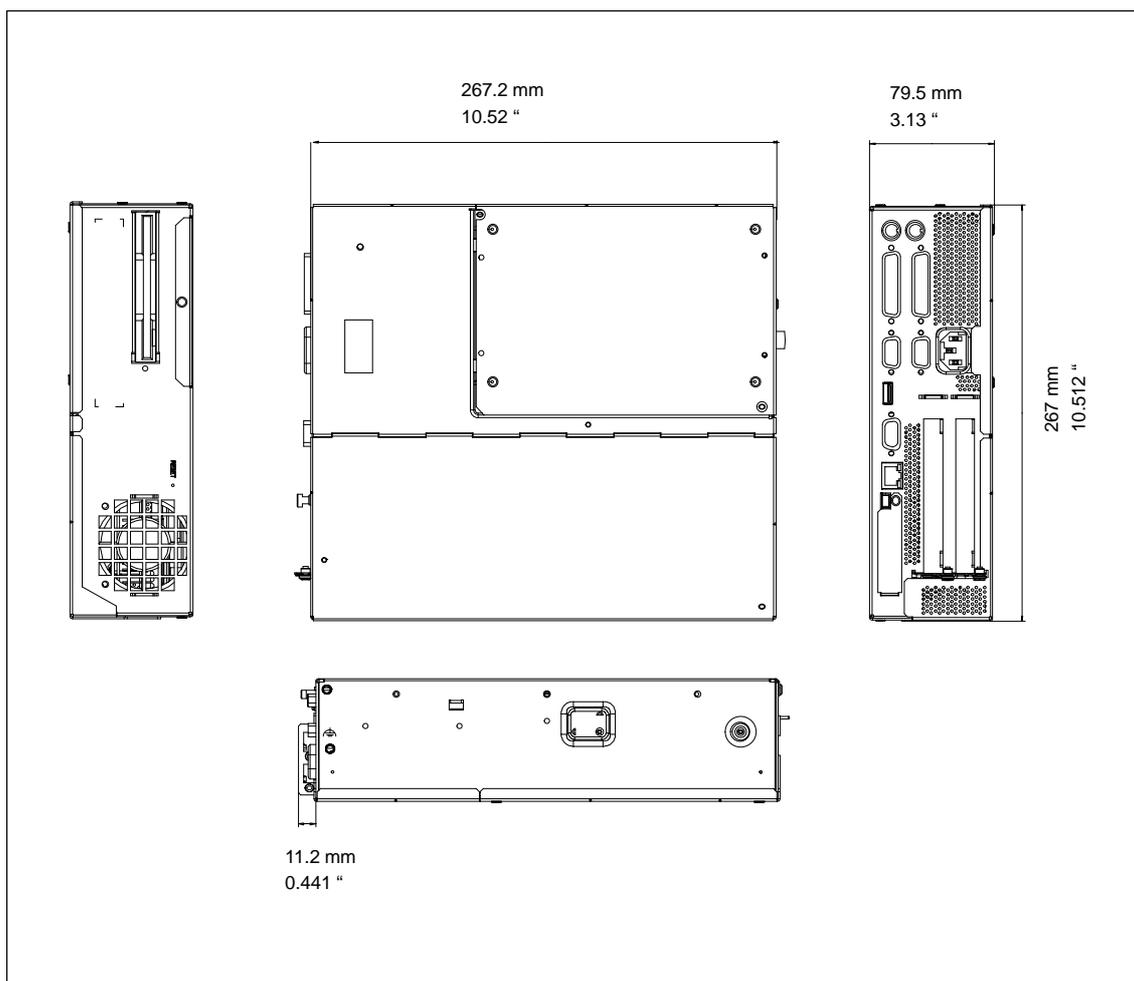
Figure 2-4   Dimension Drawings for Fitting in Control Panel without Installation Angle

Permissible Fitting Positions of the PC with Floppy Disk Drive

An inclined position of + 20° is allowed in each of the permissible fitting positions.
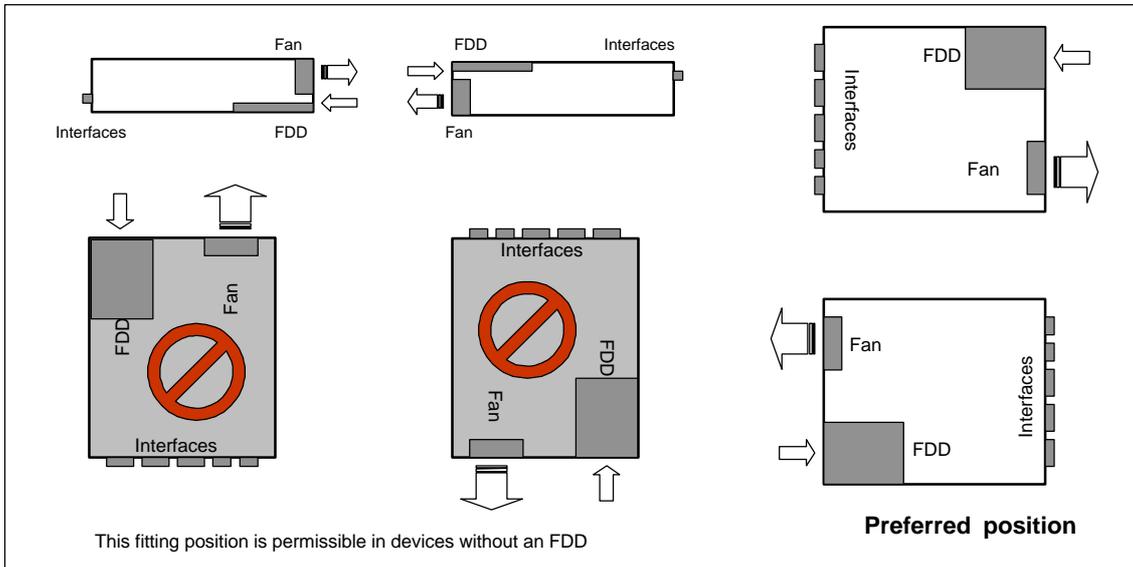
Figure 2-5   Permissible Fitting Positions of the PC with Floppy Disk Drive

Permissible Fitting Positions of the PC with LS120

An inclined position of ± 15° is allowed in each of the permissible fitting positions.
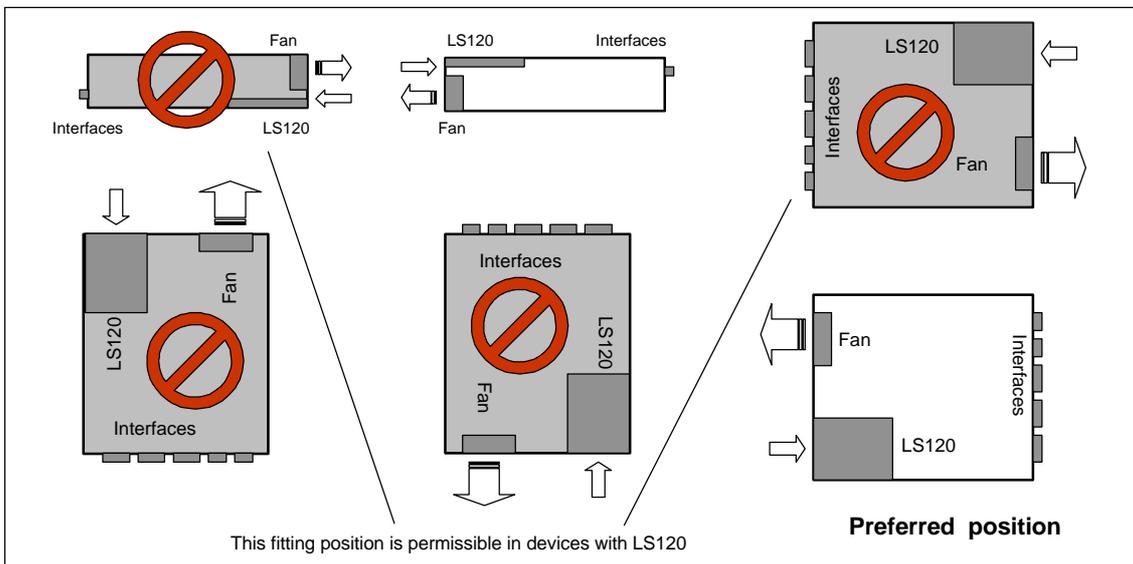
Figure 2-6   Permissible Fitting Positions of the PC with LS120

2.3 Preparing for Operation

Connection to the Power Supply Unit

Note

The SIMATIC Box PC 620 is equipped with a safety-tested mains cable and may only be connected to a grounded grounding outlet.

Make sure that the socket on the device or the grounding outlet of the building installation is easily accessible and as near as possible to the device.

The SIMATIC Box PC 620 has no mains switch. The mains plug must be pulled out for complete mains separation. This point must be easily accessible.

If the PC is installed in a cabinet, there must be a central mains disconnector.

The standard power supply unit of the SIMATIC Box PC 620 is designed for 115/230 V systems.

The power supply unit has automatic mains voltage changeover. It is not necessary to adjust the voltage span.

Equipotential Measures

Low-impedance ground connections ensure that faults arising from external power supply cables, signalling cables or cables to peripheral units are diverted.

Therefore connect the equipotential grounding connection on the system housing to the central earth terminal of the cabinet or the unit, into which the computer is fitted, in such a way that it has low impedance (large surface area, large contacts). The minimum cross section should not be less than 5 mm^2.

The connection is on the side of the device and is identified.by the symbol:

⏚

Connecting and Switching on the SIMATIC Box PC 620

Before you connect the SIMATIC Box PC 620 to the mains, the keyboard, mouse and display or monitor must be connected.

1. Insert the connector cable of these peripheral units into the corresponding sockets on the port side of the SIMATIC Box PC 620 (see Section 3.1.)

2. Once the peripheral units have been connected, the device is ready for operation from the power supply. Connect the device to the mains. The SIMATIC Box PC 620 is now in service.
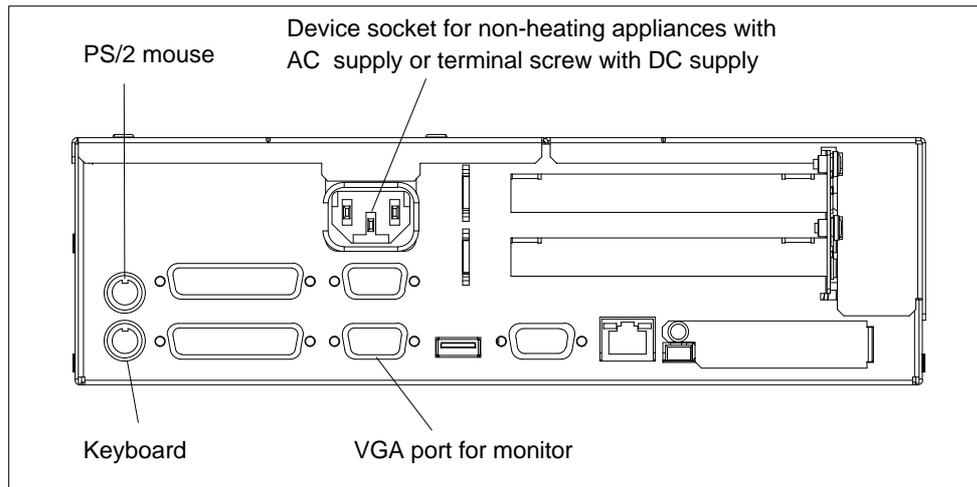
Figure 2-7   Connecting and Switching on the SIMATIC Box PC 620

Switching off the SIMATIC Box PC 620

The SIMATIC Box PC 620 has no mains switch and is switched off after only disconnection from the mains.

2.4　Transport

Transporting

Despite the fact that the SIMATIC Box PC 620 is of rugged design, its internal components are sensitive to severe vibrations or shock. You must therefore protect your PC from severe mechanical stress when transporting it. Use the original packing material if you have to ship the programming device from one location to another.

Use the **original packing material** if you have to ship the SIMATIC Box PC 620 from one location to another.

<table>
<tr>
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Caution

Risk of damage!

When transporting the PC cold weather, when it may be submitted to extreme variations in temperature, make sure that there is no moisture (condensation) on or in the PC.

The PC must be allowed to reach room temperature slowly before you switch it on. If condensation has formed, you should wait approximately 4 hours before switching on the PC.

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</table>

Hardware Components of the SIMATIC Box PC 620

3

This chapter provides you with information on hardware components and their functions, such as:

- Right- and left-hand side panel of the device
- Connectors and ports
- PC-Cards
- Drives
- Backup battery

3.1   Right-Hand Side of the Device (Port Side)
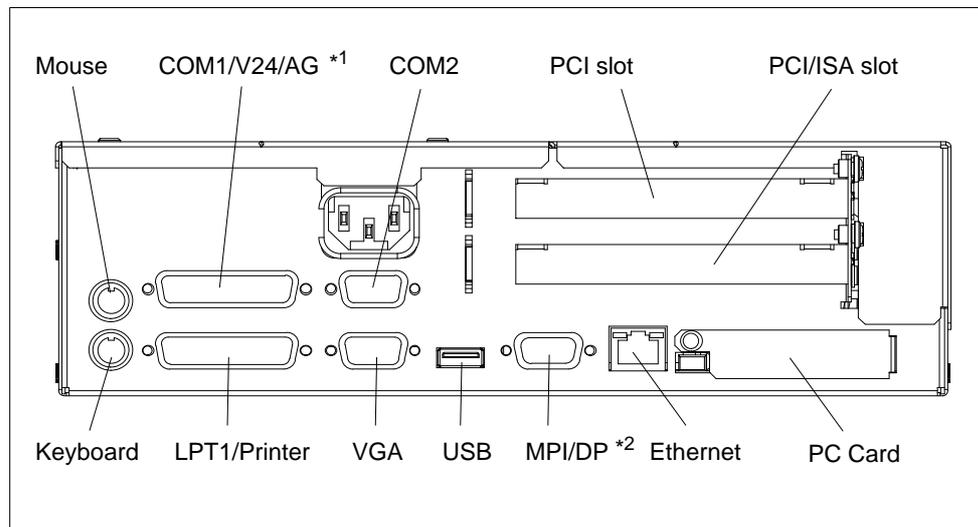
Figure 3-1   Right-Hand Side of the Device with Ports

[*1]   Without TTY for the basic variant of the Box PC

[*2]   Not available for the basic variant of the Box PC

Note

Ensure that you use shielded cables and metal plugs to connect the peripheral units; if this is not done, the approval for operation will be invalid! Screw down the plugs of the interface cables to the PC housing by means of a screwdriver. You thereby improve the electrical shielding.

Connections	Function
VGA	VGA port for connecting an external monitor, 15 pins, subminiature Cannon connector, sockets
COM1/V24/AG*3	Serial port 1 (V24, via BIOS-Setup can be switched to TTY), 25 pins, subminiature Cannon connector, sockets
COM2	Serial port 2 (V24) 9 pins, subminiature Cannon connector, pins
Mouse	PS/2 mouse connector
Keyboard *1	PS/2 keyboard connector
LPT1/Printer	Parallel port, connection for devices with parallel interface (e.g. printer), 25 pins, subminiature Cannon connector, sockets
MPI/DP (RS 485) *2	Connection of an S7 programmable controller, 9 pins, subminiature Cannon connector, socket
Ethernet	Connection for local network (LAN), RJ45
USB	Connection for Universal Serial Bus
PC card	Connection for PC cards Type I/II/III
PCI slot	Internal slot for expansion modules
PCI/ISA slot	Internal slot for expansion modules
Device socket for non-heating appliances with AC supply or terminal screw with DC supply	Power suppply

If expansion modules have been inserted in the PC, there are additional ports. Please refer to the description of the respective module for their purpose.

*1   Keyboards with an integrated track ball (e.g. PG 720 or PG 740) can be connected.

*2   Electrical isolation through an extra-low voltage safety circuit (SELV). MPI/DP is not available for the basic variant of the Box PC

*3   You change the connection into a male connector by attaching the gender changer (constituent part of the source material package). Without TTY for the basic variant of the Box PC

3.2 Left-Hand Side of the Device (Drive Side)
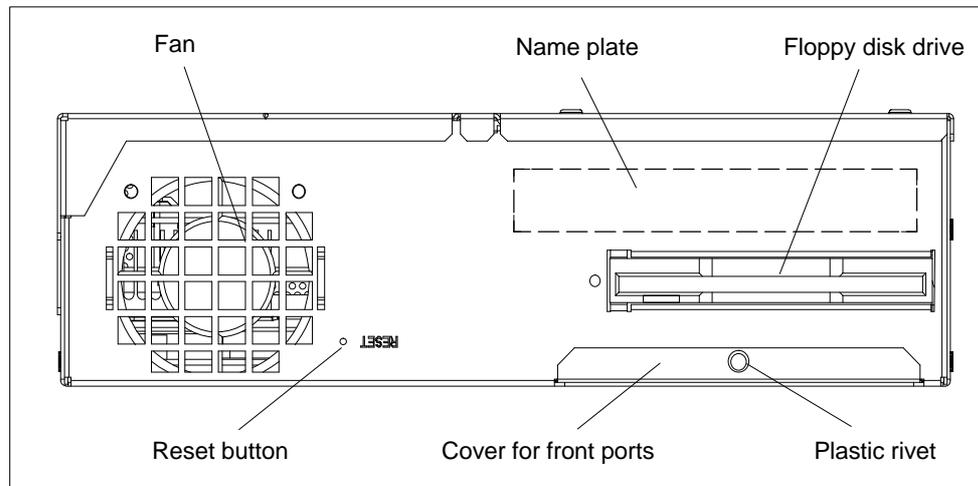
Figure 3-2   Left-Hand Side of the Device

Connections	Function
Device fan	Cooling
Floppy disk drive with ejector (LS120 as an alternative)	Processing of 3.5" disks
Front ports	Connection of front elements
Reset button	Reset of the SIMATIC Box PC 620 (cold start)

Reset Button

The reset button can be actuated with a pointed object (e.g. an opened up paper clip).

If you actuate, the button, a hardware reset is triggered. The PC restarts.

Caution

Data loss is possible with a hardware reset.

3.3 Ports

Front Ports

The front ports are located behind the cover below the floppy disk drive. They are used for connection of the following front elements:

- I/O port for the connection of front components
- LVDS display port
- CMOS display port

The front ports can be accessed as follows:

1. Undo the plastic rivet on the cover below the floppy disk drive with a flat screwdriver.
2. Pull the cover out of the guide. The front ports are now accessible.

The CMOS display port is only accessible after removal of the floppy disk drive.

Note

Keep the cover and the plastic rivet for reuse.

VGA Port

Please read the note referring to the operation of LC displays and external monitors.

Note

The default setting of the display provides the simultaneous operation of a LC display and an external monitor. The screen display is then optimized to a format of 640 x 480 pixels. Modes with a lower resolution and text modes are expanded to this format.

To optimize the screen display for an external monitor, select "Hardware Options" under Setup and set "CRT/LCD selection: CRT enabled". A resolution of 1024*768 pixels with a higher refresh rate can then be set.

Connecting USB Devices

You can connect peripheral devices with USB interfaces to the USB port.

- Plug the USB cable into the port

  The device connected in this way is available as soon as it has been registered by the Plug and Play operating system (e.g. Windows 98).

  A USB keyboard can be used to manipulate the Bios setup.

USB port
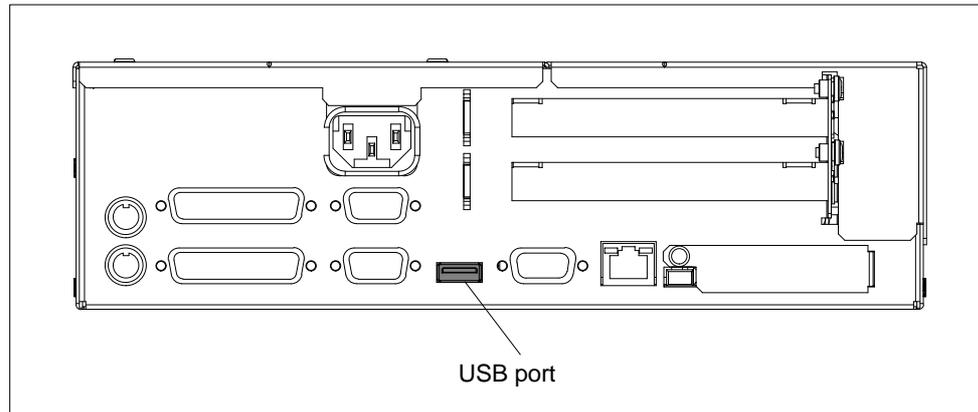
Figure 3-3   Connection of USB Devices

Note

Operating systems which do not support Plug and Play (e.g. Windows NT 4.0), do not in general allow the operation of USB devices.

Connect Ethernet

The drivers for the Ethernet interface are pre-installed. A wait period of approximately 30 results if no Ethernet cable in inserted or no active node is found during the startup of the operating systems Windows 98 or Windows NT.

Note

A class 5 Ethernet cable is necessary for interface operation at 100 Mbit/s.

If you do not want to use the Ethernet interface, you can turn it off in the BIOS setup (setting disabled). This results in no waiting period.

In the BIOS setup, the following settings are possible for the Ethernet interface:

Note

Disabled: Ethernet deactivated.
The Ethernet interface hardware is turned off. It is not possible to operate the interface within the operating system.

Enabled: Ethernet activated.
It is possible to plug in and operate the network cable at any time later during operation (hot plug).
If no cable is plugged in when the system starts up, the device checks whether or not an Ethernet cable is inserted for about 30 seconds when it first boots. If there is an active network connection, there are no noticeable delays.

3.4 PC Card Port

Cardbus cards and PCMCIA cards can be operated through the PC card port of the SIMATIC Box PC 620.

PC card port Type I/II/III
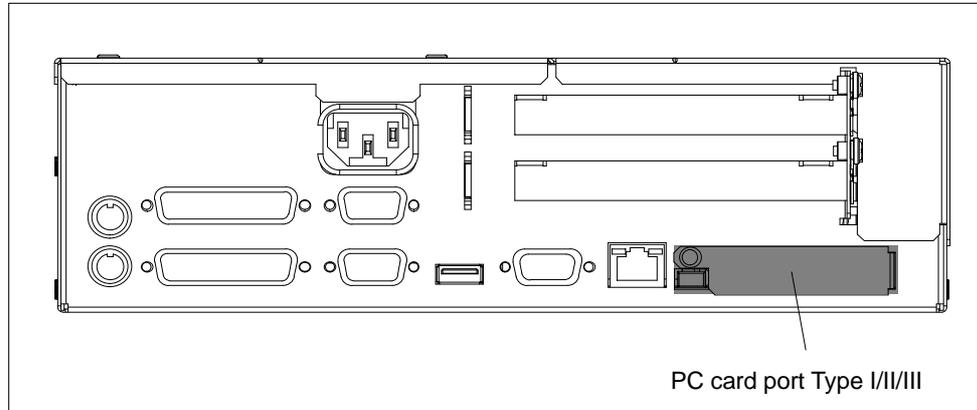
Figure 3-4   PC Card Port

The following is to be observed when working with cardbus/PC cards:

1. Open the port cover on the left-hand side of the device by undoing the plastic rivet with a flat screwdriver.

2. Pull the cover out of the guide.

3. Insert the desired PCMCIA card or cardbus card.

⚠ **Caution**

Before inserting PC-Cards please make sure that the PC-Card Ejector is completely pressed otherwise the cards e.g. Flash Memory Cards could get stuck in the slot. The PC-Cards can not be inserted correctly.

Always insert the PC card with the **label** toward the rear of the programming device.

Do not remove the PC card while data transfer is in progress (risk of data loss and system crash).

⚠ **Caution**

Always discharge your body's charge of static electricity by briefly touching a grounded object before inserting or removing a PC card (see ESD Guideline in Section 1.1 or electronic manual).

Otherwise damage could occur.

Note

Peak currents of 650 mA at 5 V based on 3 s are permitted!

Examples of PCMCIA cards connected to PC card interface for

Hard Disk	330 mA *read/write*
(Maxtor MXL-131-III)	640 mA *spin up 2 s*
. . . .	110 mA *idle*
Fax/modem	60 mA *idle*
(Dr. Neuhaus)	140 mA *transfer*
Ethernet	
(XIRCOM)	150 mA

Installing PC Cards

Note the following when installing these cards:

Note

Depending on the configuration of the SIMATIC Box PC 620, there may not be any free interrupts available for operating PC Cards. You have to reserve the necessary PC card interrupts in the BIOPS setup menu as follows:

Set the necessary interrupt via **Advanced > PCI-Configuration > PCI/PNP ISA IRQ Resource Exclusion** to "reserved" (default: available).

3.5 Drives

The SIMATIC Box PC 620 is equipped as standard with a 3.5" disk drive or an LS 120 drive and a 3.5" hard disk drive.

3.5.1 Disk Drive (Depending on the Device Configuration)

You can store programs and data on diskettes with the disk drive and load them from diskettes into the SIMATIC Box PC 620.

Types of Diskette

You can use following diskettes:

double sided high density diskette	double sided double density diskette
3.5 in.	3.5 in.
1.44 Mbytes (135 TPI)	720 Kbytes

Handling Diskettes with the Floppy Disk Drive

The diskette is inserted in the disk drive as shown below:
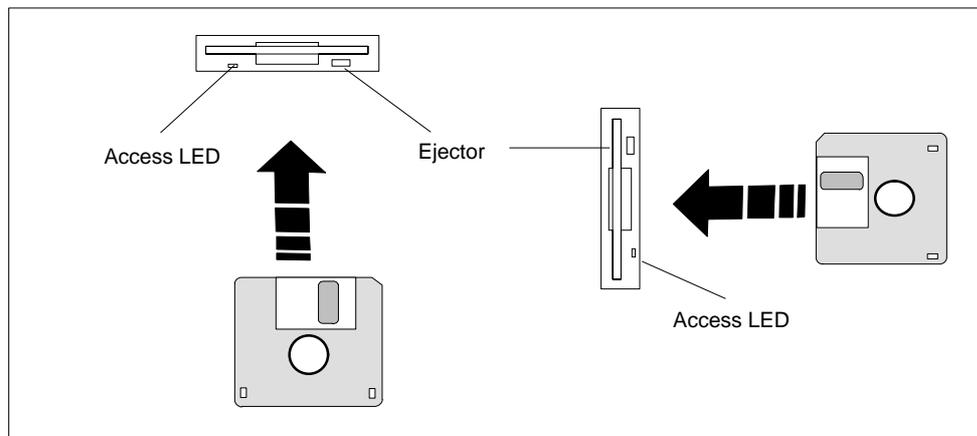
Figure 3-5   Handling Floppy Disks

When the floppy disk drive is being accessed, the access indicator light is lit.

⚠️ **Caution**

Risk of loss of data!

When the green access LED of the floppy disk drive is lit, the ejector may not be actuated.

3.5.2 LS120-Drive (Depending on the Device Configuration)

The SIMATIC Box PC 620 can be equipped with an LS120 drive as an alternative to a floppy disk drive.

Larger volumes of data can be stored on LS120 data carriers than on a 1.44 MB floppy disk drive. The LS120 has the following features:

– The LS120 is compatible with a 1.44 MB floppy disk drive i.e. 1.44 Mbyte disks can also be processed·
– An LS120 data carrier has a maximum data volume of 120 Mbytes.
– The LS120 is connected via an ATAPI(IDE) port.

Handling Disks with the LS120-Drive

Depending on the fitting position, the disks are inserted into the disk drive as illustrated below:
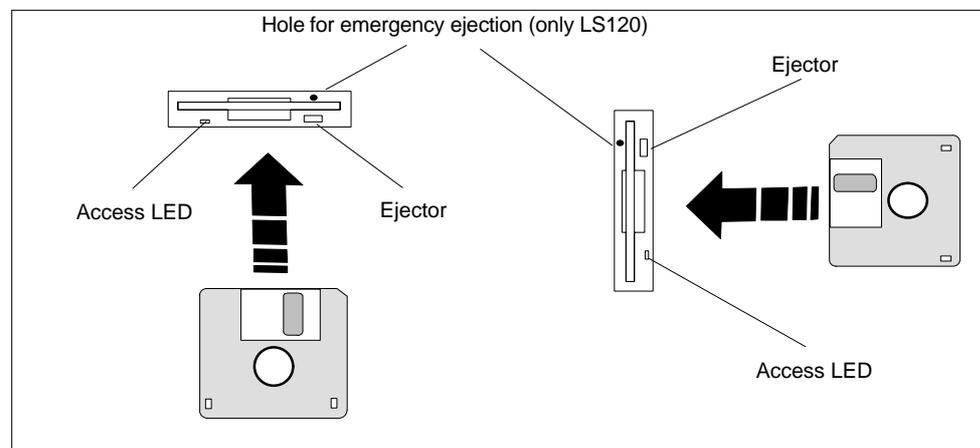
Figure 3-6   Handling Disks

When the LS120-drive is being accessed, the access indicator light is lit.

Emergency ejection is carried out in the same way with the LS120 as in the CD–ROM drive. See Section 3.4.4. for details.

> **⚠ Caution**
>
> Risk of loss of data!
>
> When the green access LED of the LS120-drive is lit, the ejector may not be actuated.
>
> LS120-drives are very sensitive to shocks of a non-permissible level. Shocks during operation can lead to damage to the drive or the data carrier. You can find the permissible values in the technical data in Section 7.1.

Information on the LS120-disk drive

Restrictions

P Tools under STEP 5

Data cannot be edited in PCP/M format on the LS120-drive using P Tools under STEP 5.

Authorization with Authors Vx.x

In order to authorize STEP 5 and other SIMATIC components, use AuthorsW. When using PCs start the taskbar under **Start > Simatic > AuthorsW.**

Settings in Setup

In order to put the LS120-drive into operation the following settings are valid. These are the default settings for the device.

To open the Setup menu, press function key F2 during the boot sequence. Make the following settings in Setup:

1. In the "Main" menu, set Diskette A: to "Disable".

2. In the "Main" menu under Boot Options:

   Set the boot sequence as follows:

   ```
   1    Removable Devices

   2    Hard Drive

   3    ATAPI CD-ROM Drive

   4    Diskette Drive
   ```

3. In the "Advanced" menu, set Floppy-Disk-Controller to "Disable".

4. Boot the device with "Save Changes & Exit".

With these settings the LS120-drive can be addressed in the same way as the 1,44 Mbyte floppy-disk drive previously installed.

Usage notes for LS 120 Superdisks

In Floppy disks up to 1.44 Mbytes as well as Superdisks up to 120 Mbytes can be used in LS120-drives.

Track density for Superdisks is 10 μm compared with the 120 μm of conventional disks.

The LS120 recognizes when a Superdisk is in the drive and switches to the higher capacity. With conventional disks, a capacity of 1.44 Mbytes or 720 Kbytes can be reached.

Due to their higher storage capacity, Superdisks are more sensitive to dirt, temperature and shock than conventional diskettes.

Note

In order to achieve a reliable operation and high data security, please note the following during use:

- Store and transport the Superdisk in the protective cassette included. Doing this will keep dust and dirt from the disk.

- Remove Superdisk from the drive when it is not being read or written to keep dirt particles away from the disk. Do not expose the disk to unnecessarily high operating temperatures.

Note

If possible avoid vibration of the device, when using Superdisks.Superdisks are more sensitive to vibration as a result of their high track density.

Emergency removal:
By inserting a pen (or a paper clip) while the device is switched off, you can force the disk out of the drive.

Recommended Superdisks:

The Superdisks available commercially vary in quality. The best results in our qualification tests achieved the third generation disks from the company IMATION.

External identification features: blue housing and silver-colored sliding cover.

These Superdisks can be obtained from the following address:

IMATION corp.	IMATION Europe BV	IMATION Deutschland GmbH
1 Imation Place	1119 PH Schipol-RIJK	Hammfelddamm 11
Oakdale, MN 55128-3414		41460 Neuss
USA	Netherland	Germany
Phone (888) 466-3456	Tel +31 (0) 20 654 2100	Tel +49 (0) 2131 226 01
E-mail info@imation.com	Fax +31 (0) 20 654 2222	Fax +49 (0) 2131 226 100

3.5.3 Hard Disk Drive

The hard disk drive is used for the storage of large quantities of data. it is fitted in a mounting which is easily exchangeable and damped against vibration.

Caution

Risk of loss of data and damage to the drive!

Drives are sensitive to vibrations and shock. Any vibrations occurring during operation can lead to the loss of data or damage to the drive.

If you intend transporting the unit, switch it off, and wait until the drive has come to rest (about 20 seconds) before you move it.

3.5.4 CD-ROM Drive (depending on the device equipment)

Depending on the device equipment, a CD-ROM drive is fitted in the SIMATIC Box PC 620. The fitting depth of the SIMATIC PC is increased by 20 mm as a result. The CD-ROM drive allows you to read CDs.

Opening the Drawer

By briefly pressing the eject button, the drawer springs out slightly. Now pull the drawer out until it clicks into position.

Inserting / Removing CDs

Now insert the CD in the drawer with the labeling face up, and press it firmly down into the center of the turntable. To remove the CD, hold it by the edges and pull upwards.

Caution

To avoid too much pressure on the open drawer, **always** hold the drawer at the front with one hand when inserting or removing a CD.

Closing the Drawer

Push in the drawer until it closes completely. Do **not** press the eject button.

Note

The EJECT function offered by various applications for opening the
CD-ROM drawer does not work with this drive.

After the drawer has been closed, the CD is tested and the access display light on
the drive starts to flash:

– If the display flashes continually, the CD is faulty but can still be read,
– If the display flashes several times and then remains lit, the CD you have
  inserted is defective and cannot be read.
– the access indicator light is normally lit when the CD is being read.

CD-ROM Front
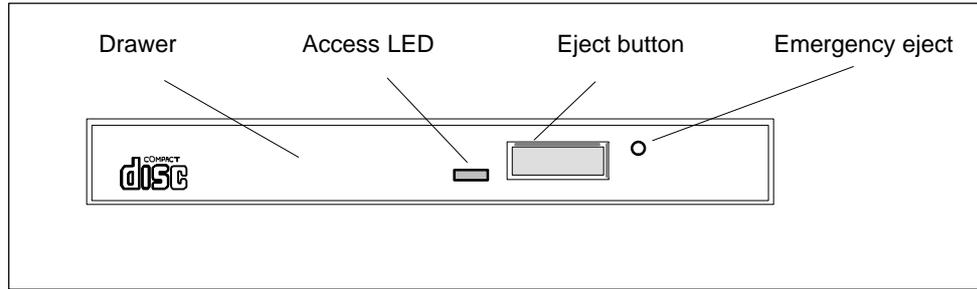
Figure 3-7   CD-ROM Front

⚠️ **Caution**

Risk of data loss and damage to the drive!

CD-ROM drives are sensitive to vibrations and shock. Any vibrations occuring during operation can lead to damage to the drive or CD. You can find the permissible values in the technical data in Section 7.1.

Emergency Eject

The procedure described bellow can used to remove a disc from the CD-ROM reader if the Open/Close button is disabled by software or a power failure occurs. In this case the CD tray cannot be opened automatically.

1. Turn off the power to the CD-ROM reader (switch off your device if necessary).

2. Insert a steel rod or a stiff paper clip (with a maximum diameter of 1.3 mm and a mimimum of 55 mm) into the emergency eject hole at the front of the drive an push lightly. The CD tray is ejected by about 10 mm. Pull it all the way open by hand and lift the disc out carefully.
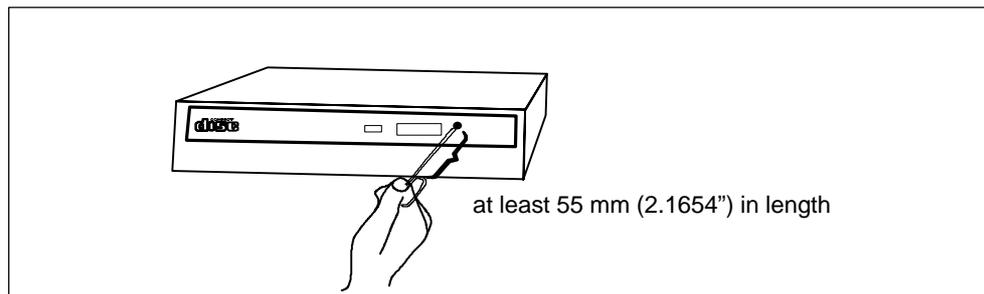
Figure 3-8   Emergency Ejection

3.6 Backup Battery

A backup battery (3.6 V lithium battery) powers the hardware clock even after the programming device is switched off.

There is a battery on the motherboard in this device. Batteries may only be exchanged by technical personnel. Note the information in the CPU module documentation! Observe the local regulations on disposal of special waste when disposing of dead batteries.

Caution

There is the danger of an explosion if the battery is not exchanged as directed. Replace only with the same type or an equivalent type recommended by the manufacturer. Dispose of used batteries in accordance with the manufacturer's instructions.

Warning

Risk of severe personal injury or property damage, danger of release of harmful substances.

There may be a danger of explosion if the battery is not handled properly. Incorrect disposal of used batteries can cause the release of harmful substances.

Do not throw a new or discharged lithium battery into an open fire, do not solder onto the cell container. Do not recharge the battery, do not open the battery by force.

The correct lithium battery is available from Siemens (order-no.: W79084-E1003-B1).

Return used batteries to the manufacturer/recycler or dispose of them according to local regulations.

Connection of System Expansions and External Devices

4

4.1   Connecting Peripheral Devices

It is possible to expand the SIMATIC Box PC 620's functionality by installing additional modules. Due to the rugged design and the high functionality the device is easy and economical to service. For information on how to proceed please refer to chapter 5 *Setting up the SIMATIC Box PC 620* of the electronic manual. Please observe and follow the **Safety Instructions** given in the manual.

Note

When fitting system expansions (e.g. expansion modules or PC cards) and connecting external devices (mouse, keyboard, printer, etc.), ensure that the components have industrial capability.

Setting up the SIMATIC Box PC 620

5

5.1 Preparing for Start Up

Powering Up the SIMATIC Box PC 620

Both the operating system and system software supplied with the SIMATIC Box PC 620 are preinstalled on the hard disk and are set up by the time you power up your PG for the first time. The operating system is either Windows 98 or Windows NT or Wondows 2000.

When powering up the device you have to distinguish between the following:

– **Initial start** and

– **Complete restart**

5.2 Initial Start of the SIMATIC Box PC 620

Installing the Operating System

When powering up the SIMATIC Box PC 620 for the **first** time the operating system is set up automatically (depending on the version delivered: Windows 98 or Windows NT or Windows 2000). Please proceed as follows:

1. Switch on the SIMATIC Box PC 620.

2. The PG executes a self-test. During self-test the following message appears on the screen:

   ```
   Press <F2> to enter SETUP
   ```

Wait until the message disappears and follow the instructions displayed on the screen.

3. Enter the user information (name,company)

4. Enter your product key. The product key can be found on the device or on the Windows manual in the line "Product Key" of the "Certificate of Authenticity".

Note

Never switch off your SIMATIC PC before software installation has been completed in order to avoid the loss of any software components which are essential for a regular operation of the SIMATIC Box PC 620.

Do **not** change the BIOS default values.

Startup under Windows 98

The operating system is set up once you have entered the requisite information. The **Welcome to Windows 98** screen helps you to get familiar with the Desktop user interface.

Now the user interface is displayed following system startup every time you power up or reset the PC.

You can find information for the installation, login, password entry and registration in the manual "Getting Started Microsoft Windows 98" in Chapter 2 "Windows 98 Installation".

Startup under Windows NT

You can start Windows NT by simultaneously pressing Ctrl + Alt + Del after you have entered the requisite information and the operating system has been set up.

You can find information for the installation, login, administrator account, password entry, creation of an emergency disk and startup of Windows NT in the manual "Microsoft Windows NT" in part 2 "Installation".
The operating system is set up once you have entered the requisite information. The **Welcome to Windows 98** screen helps you to get familiar with the Desktop user interface.

Now the user interface is displayed following system startup every time you power up or reset the PC.

Startup under Windows 2000

After you have entered the requisite information and the operating system has been set up, the PC will be restarted.

Via the "Getting Started with Windows 2000" program you can get acquainted with Windows 2000.

You can find information on setting up Windows 2000 Professional or a user account, and on configuring the computer as well as information about Windows 2000 Professional in the manual "Microsoft Windows 2000 Professional".

Your device is set to English menus and dialogs and a US keyboard when delivered. You can set another language and keyboard via the control panel with the dialog **Start > Settings > Control Panel > Regional Options >** tab **"General"**, box **"Menus and dialogs">** tab **"Input locales",** box **"Input language"**.

5.3 Complete Restart of the SIMATIC Box PC 620

Overview

Once the SIMATIC Box PC 620's operating system is set up, the user interface of the operating system is displayed following system startup every time you switch on or reset the PG.

5.4 Electronic Manuals

Overview

The PC comes with different electronic manuals. You can find:

- The appliance description of the SIMATIC Box PC 620 is on the "Documentation and Drivers" CD in the directory "\English\Manual\BoxPC620"

The Adobe Acrobat Reader

To read or to print out these manuals you need the Adobe Acrobat Reader. The Adobe software is located in the following directory:

```
C:\Acrobat3\
```

is preinstalled and is set up and activated by double-clicking on any electronic manual.

Reading the manuals

To read the manuals, start the program "Start.exe" on your CD "Documentation and Drivers".

Note

It is recommended to print out the PC's product information and keep it together with the operating instructions for future reference.

Error Diagnosis and Reinstallation

<div align="right">**6**</div>

Chapter Overview

This chapter provides you with tips on how to localize and troubleshoot frequently occurring problems.

- Please look up the meaning of operating system error messages in your operating system documentation.

- You will find error messages which occur during the self-test (intermittent tones, screen messages) in Section 6.6 and 6.8 of this manual.

Note

Follow the safety information in Chapters 1 and 2 when you disconnect or connect leads.

6.1 Problems When Using Modules from Other Manufacturers

Error Display

The PC crashes during power up.

Cause

The following causes are possible:

– Double assignment of I/O addresses

– Double assignment of hardware interrupts and/or DMA channels

– Signal frequencies or signal levels are not met

– Different connector assignments

Remedy

Check your computer configuration:

- If the computer configuration is the same as when your PC was delivered, please contact your technical support team (Chapter 8).

- If the computer configuration has changed, re-establish the configuration you had when your PC was delivered. Remove any modules from other manufacturers. Perform a complete restart on your PC.

  – If the PC still crashes, you must contact your technical support team.

  – If the error no longer occurs, the module you used from another manufacturer was the cause of the fault. Replace this module with a Siemens module, or contact the module supplier.

6.2 The Monitor Remains Dark

Cause and Remedy

The following causes are possible:

The monitor has been switched off.

- Switch on the monitor.

The monitor is in "powersave" mode.

- Press any key on the keyboard.

The brightness button has been set to dark.

- Set the screen's brightness button to obtain more light. Refer to the operator's guide for the monitor for more detailed information.

The power supply cable or the screen cable is not connected.

- Switch off the monitor and the system unit.

- Check whether the power supply cable has been connected correctly to the monitor and to the system unit or to the grounding outlet.

- Check whether the monitor cable has been connected correctly to the system unit and to the screen (if a connector is present).

- Switch on the monitor and the system unit.

Note

If the monitor screen still remains dark after these checks and measures have been carried out, please contact your technical support team (Chapter 8).

6.3 The Screen Display Does not Appear or Drifts

Cause and Remedy

Either the incorrect line frequency and/or the incorrect resolution is set for the screen or for the user program.

- Stop the user program. If the error still occurs after you have ended the program, switch off the monitor. After at least three seconds, switch on the monitor again.

- Adjust the relevant entries for the monitor in the *CONFIG.SYS* file (on the hard drive).

- Correct the settings for the monitor and graphics in your user program.

- Select the correct screen driver for your user program.

6.4 No Mouse Pointer Appears on the Screen

Cause and Remedy

The mouse pointer may not appear for the following reasons:

The mouse driver is not loaded

- Check whether the mouse driver is correctly installed. Check whether the mouse pointer is present when you start your user program. Refer to the manuals for the mouse and user program to obtain detailed information about the mouse driver.

The mouse is not connected

- Switch off your PC.

- Check whether the mouse cable is connected to the system unit correctly. If you use an adapter or an extension cord for the mouse cable, also check their plug-in connections.

- Switch on your PC.

Note

If the mouse pointer still does not appear on the screen after you have performed these checks and measures, please contact your technical support team (Chapter 8).

6.5   The Clock Time and/or the Date in Your PC Is Incorrect

Remedy

Set the clock time and the date in the setup menu.

Press <F2> to call setup when booting the computer.

Note

The battery is dead if the clock time and the date are still incorrect after you switch off your PC and switch it back on again. In this case, please contact your technical support team (Chapter 8).

6.6   An Error Message Appears on the Screen

Error Messages

The following table describes the error messages that the BIOS system outputs. Error messages the operating system or program outputs are described in the manuals for these programs.

Press <F2> to call Setup when booting the computer.

Error Message on the Screen	Meaning/Suggestion
Address conflict	Plug and Play Problem Contact your technical support team.
Combination not supported	Plug and Play Problem Contact your technical support team
IO device IRQ conflict	Plug and Play Problem Contact your technical support team
Invalid System Configuration Data	Plug and Play Problem Please set the option RESET CONFIGURATION.DATA in the Advanced Setup menu. Contact your technical support team
Allocation Error for ...	Plug and Play Problem Please undo the last hardware change. Contact your technical support team
System battery is dead Replace and run SETUP	The battery on the CPU module is defective or dead. Contact your technical support team
System CMOS checksum bad Run SETUP	Call up SETUP, adjust settings and save. If this message appears during each power up, contact your technical support team.
Incorrect Drive A type Run SETUP	Check the SETUP entries for drive A.

Error Message on the Screen	Meaning/Suggestion
Incorrect Drive B type Run SETUP	Check the SETUP entries for drive B.
Diskette drive A error	Error accessing drive A. Contact your technical support team.
Diskette drive B error	Error accessing drive B. Contact your technical support team.
Failure Fixed Disk	Error accessing the hard drive. Check the SETUP settings Contact your technical support team.
Keyboard error	Check whether the keyboard is connected correctly.
Stuck Key	Check whether a key on the keyboard is stuck.
System RAM Failed at offset:	Memory error Contact your technical support team.
Shadow RAM Failed at offset:	Memory error Contact your technical support team
Extended RAM Failed at offset:	Memory error Contact your technical support team
Failing Bits:	Memory error Contact your technical support team
Operating system not found	Possible causes: No operating system present Incorrect drive addressed (diskette in drive A/B) Incorrect active boot partition Incorrect entries in SETUP for the BOOT drive
Previous boot incomplete Default configuration used	Abort of the previous BOOT procedure, for example, due to a power failure. Check the hardware settings and the SETUP.
System cache error Cache disabled	Error in the CPU's cache module. Contact your technical support team.
Monitor type does not match CMOS Run SETUP	The monitor does not match the SETUP entries. Adapt the SETUP entries to the monitor.
System timer error	Hardware error Contact your technical support team.
Real time clock error	Clock chip error Contact your technical support team.
Keyboard controller error	Keyboard error Contact your technical support team.

6.7   No Connection via COM1/TTY Possible

Cause and Remedy

The COM1 interface is set to the V24 mode. In the Setup menu **Advanced > COM/LPT Configuration** set the parameter COM1 TTY to enabled.

6.8 Diagnostic Messages (Port 80)

When the SIMATIC PC is powered up, it runs a self-test (POST = Power On Self-Test). If the POST detects a fault, it outputs the sequence of beeps (beep code) assigned for the fault. Each beep code consists of 2 x 2 sequences.

In addition, the individual self-test steps are output at I/O port 80h.

Conversion table for the beep codes to hexadecimal representation:

Beeps		Hex-Code
B	B	0
B	BB	1
B	BBB	2
B	BBBB	3
BB	B	4
BB	BB	5
BB	BBB	6
BB	BBBB	7
BBB	B	8
BBB	BB	9
BBB	BBB	A
BBB	BBBB	B
BBBB	B	C
BBBB	BB	D
BBBB	BBB	E
BBBB	BBBB	F

Example:

B	BBBB	BBB	BBB	Beeps
3		6		Hexadecimal code
Check shutdown code		Meaning	

The POST codes in order of occurrence:

Display (hex)	Meaning	Description
02	TP_VERIFY_REAL	Test whether the CPU is in real mode
1C	TP_RESET_PIC	Reset the interrupt controller
12	TP_RESTORE_CRO	Restore the controller register
13	TP_PCI_BM_RESET	Reset the PCI bus master
36	TP_CHK_SUTDOWN	Check the shutdown code
24	TP_SET_HUGE_ES	Switch the ES to special mode
03	TP_DISABLE_NMI	Switch off the NMI
0A	TP_CPU_INIT	Initialize the CPU
04	TP_GET_CPU_TYPE	Determine the CPU type
AE	TP_CLEAR_BOOT	Edit the boot flag
06	TP_HW_INIT	Initialize the main hardware
18	TP_TIMER_INIT	Initialize the timer
08	TP_CS_INIT	Initialize the chip set
C4	TP_PEM_SIZER_INIT	Reset system error
0E	TP_IO_INIT	Initialize IO
0C	TP_CACHE_INIT	Initialize the cache
16	TP_CHECKSUM	EPROM checksum test
28	TP_SIZE_RAM	Determine the RAM size
3A	TP_CACHE_AUTO	Determine the cache size
2A	TP_ZERO_BASE	Set 512k base RAM to 0
2C	TP_ADDR_TEST	Test the base RAM address cables
2E	TP_BASERAML	Check the 1.64k base RAM
38	TP_SYS_SHADOW	BIOS-shadow
20	TP_REFRESH	Refresh circuit test
29	TP_PMM_INIT	Initialize the post memory manager
33	TP_PDM_INIT	Initialize the dispatch manager
C1	TP_7xx_INIT	Initialize the PG 7xx I/Os
09	TP_SET_IN_POST	Start power ON self-test
0A	TP_CPU_INIT	Initialize the CPU
0B	TP_CPU_CACHE_ON	Switch on the cache
0F	TP_FDISK_INIT	Initialize the hard disk
10	TP_PM_INIT	Initialize the power management
14	TP_8742_INIT	Initialize the 8742 circuit
1A	TP_DMA_INIT	Initialize the DMA circuits
1C	TP_RESET_PIC	Reset the interrupt controller
32	TP_COMPUTE_SPEED	Determine the clock pulse speed

Display (hex)	Meaning	Description
C1	TP_740_INIT	Initialize the PG 740 I/Os
34	TP_CMOS_TEST	Test the CMOS RAM
3C	TP_ADV_CS_CONFIG	Configure the advanced chip set
42	TP_VECTOR_INIT	Initialize the interrupt vectors
46	TP_COPYRIGHT	Test the copyright
49	TP_PCI_INIT	Initialize the PCI interface
48	TP_CONFIG	Check the configuration
4A	TP_VIDEO	Initialize the video interface
4C	TP_VID_SHADOW	Copy the video BIOS to RAM
24	TP_SET_HUGE_ES	Switch the ES to special mode
22	TP_8742_TEST	Test circuit 8742
52	TP_KB_TEST	Keyboard available?
54	TP_KEY_CLICK	Switch the keyboard click on/off
76	TP_KEYBOARD	Check the keyboard
58	TP_HOT_INT	Test for unexpected interrupts
4B	TP_QUIETBOOT_START	Switch off any boot messages
4E	TP_CR_DISPLAY	Display the copyright notice
50	TP_CPU_DISPLAY	Display the CPU type
5A	TP_DISPLAY_F2	Display the F2 message for "SETUP"
5B	TP_CPU_CACHE_OFF	Switch off the cache if applicable (SETUP setting)
5C	TP_MEMORY_TEST	Test the system memory
60	TP_EXT_MEMORY	Test the extended memory
62	TP_EXT_ADDR	Test the A20 address line
64	TP_USERPATCH1	Area for own initializations
66	TP_CACHE_ADVNCD	Determine and enable the cache size
68	TP_CACHE_CONFIG	Configure and test the cache
6A	TP_DISP_CACHE	Display the cache configuration
6C	TP_DISP_SHADOWS	Configuration and size of the shadow Display RAM
6E	TP_DISP_NONDISP	Display non-disposable segment
70	TP_ERROR_MSGS	Display post error
72	TP_TEST_CONFIG	Check SETUP irregularities
7C	TP_HW_INTS	Set the IRQ vectors
7E	TP_COPROC	Check whether the CO processor is present
96	TP_CLEAR_HUGE_ES	Switch the ES back
80	TP_IO_BEFORE	Disable IO circuits

Display (hex)	Meaning	Description
88	TP_BIOS_INIT	Various initialisations
8A	TP_INIT_EXT_BDA	Initialize the external BIOS data area
85	TP_PCI_PCC	Determine the PCI circuits
82	TP_RS232	Determine the serial interfaces
84	TP_LPT	Determine the parallel interface
86	TP_IO_AFTER	Re-enable the IO circuits
83	TP_FDISK_CFG_IDE_CTRLR	Configure the IDE controller
89	TP_ENABLE_NMI	Enable the NMI
8C	TP_FLOPPY	Initialize the floppy controller
90	TP_FDISK	Initialize the hard disk controller
8B	TP_MOUSE	Test the internal mouse interface
95	TP_CD	Test the CP
92	TP_USERPATCH2	Area for own initializations
98	TP_ROM_SCAN	Search for BIOS expansions
69	TP_PM_SETUP	Initialize the power management
9E	TP_IRQS	Enable the hardware IRQ
A0	TP_TIME_OF_DAY	Set the clock time and date
A2	TP_KEYLOCK_TEST	Preset the keylock
C2	TP_PEM_LOCK	Stop the error manager
C3	TP_PEM_DISPLAY	Display any possible errors
A8	TP_ERASE_F2	Delete the F2 message
AA	TP_SCAN_FOR_F2	Was F2 printed?
AC	TP_SETUP_CHEK	Output any F1/F2 message
AE	TP_CLEAR_BOOT	Cancel the self-test flag
B0	TP_ERROR_CHECK	Check for any possible errors
B2	TP_POST_DONE	End of the self-test
BE	TP_CLEAR_SCREEN	Clear the screen
B6	TP_PASSWORD	Password query (option)
BC	TP_PARITY	Cancel the parity memory bit
BD	TP_BOOT_MENU	Display the boot menu (option)
B9	TP_PREPARE_BOOT	Prepare the boot
C0	TP_INT19	Boot via Interrupt 19
00		Message after startup is complete

6.9 Restoring the Hard Disk

6.9.1 Creating Partitions unter Microsoft Windows 98

After installing a new hard disk it is necessary to create partitions with the program "FDisk" when the partitions have errors or need to be changed.

Note

By deleting or creating partitions or logical DOS-hard drives all saved data is lost on the hard disk. All drives on the hard disk will be erased.

The hard disk is delivered with the following installed:

– a partition of Typ PRI DOS, System FAT 16,

– a apartition of Typ EXT DOS, System FAT 32.

To restore the partitions to their original condition, please do the following:

Primary Partition

1. To boot from the Recovery CD proceed as follows: When the message
   `Press <F2> to enter Setup`
   appears on the screen press the ESC key. After intialization a boot menu to select the boot options is displayed.

2. Select "4. ATAPI CD-ROM Drive".

3. When "Microsoft Windows 98-Startup Menu" is displayed, select "2. Start Windows 98 Setup from CD ROM".

4. In the "Microsoft Windows 98-Start Menu" select "2. Start Windows 98 Setup from CD ROM".

5. Start the Microsoft Windows 98 hard disk configuration program with "A:\>FDisk" .
   Select the dialog box for enable large disk support (Y/N)...? [N] " for No.

6. Create a primary DOS-Partition of 2045 MB for a FAT 16 file system. Answer the question "Do you wish to use the maximum available size..." for a 2045 MB FAT16 partition with [Y] for Yes.

7. In order to continue with the next step "Create a Save to Disk Partition" the primary partition needs to be formatted.
   Use the Recovery CD to boot as described in steps 1 to 3 above and then format drive C: with the program "Format".
   Type: "A:\>Format C:".

Creating an Extended Partition

In order to create an extended partition, you have to first boot from the Windows 98 CD as described in steps 1 to 4 above.

Using "A:\>FDisk" start the Recovery CD hard disk configuration program.

Select the dialog box for large disk support. "Do you wish to enable large disk support (Y/N)...? [Y] for Yes.

Create an extended DOS partition for the rest of the disk space.

6.9.2 Creating Partitions unter Microsoft Windows 2000

After installing a new hard disk it is necessary to create partitions when the partitions have errors or need to be changed.

Note

By deleting or creating partitions or logical DOS-hard drives all saved data is lost on the hard disk. All drives on the hard disk will be erased.

The hard disk is delivered with the following installed:

– a partition of with the FAT file system,

– a partition of with NTFS file system.

To restore the partition to its delivery state, proceed as follows:

Primary Partition, FAT32 File System

1. Boot from the Recovery CD and press ESC when the BIOS message
   ```
   Press <F2> to enter Setup
   ```
   appears. After initialization, select the boot options in the boot menu.

2. Select "ATAPI CD-ROM Drive".

3. Select "2. Boot for FDISK, FORMAT or Windows 98 Setup" in the "Microsoft Windows Startup Menu" screen form.

4. Start the Microsoft Windows hard disk configuration program with "A:\>FDisk". In the screen form select "Do you wish to enable large disk support (Y/N)...? [Y]" for Yes to support data media with large memory capacity.

5. Create a primary DOS partition with 4090 MB. Enter [N] for "No" for the question "Do you want to use the maximum memory size available for the primary DOS partition and do you want to activate this partition?" and set the partition size to 6100 MB.

6. Set this partition as an active partition.

7. To format the partition from the Recovery CD, as described above in steps 1 to 3, reboot and then format drive C: with the "Format" program. Enter:
"A:\>Format C:"
(A: is the CD-ROM drive).

Creating an Extended FAT 32 Partition

In order to create an extended partition you have to boot from the Recovery CD as described above in steps 1 to 4.

Create an extended DOS partition for the rest of the disk space.

In the Windows 2000 setup or under Windows 2000 the FAT 32 file system can be converted to an NTFS file system with the "Format" function.

6.9.3 Creating Partitions under Windows NT

After installing a new hard disk it is necessary to create partitions when they partitions have errors or need to be changed.

Note

By deleting or creating partitions or logical DOS hard drives all saved data is lost on the hard disk. All drives on the hard disk will be erased.

The hard disk is delivered with the following installed (only for versions delivered with Windows NT):

– a partition of with the FAT16 file system with 2045 Mbytes,

– a partition of with the NTFS file system.

To restore the partitions to their original condition, please do the following:

Primary Partition

1. To boot from the Recovery CD proceed as follows: When the message
   `Press <F2> to enter Setup`
   appears on the screen press the ESC key. After initialization a boot menu to select the boot options is displayed.

2. Select "ATAPI CD-ROM Drive".

3. When "Microsoft Windows 98 Startup Menu" is displayed, select "2. Boot for FDISK, FORMAT or Windows NT Setup".

4. Start the Microsoft Windows 98 hard disk configuration program with "A:\>FDisk" (A is the CD-ROM drive).
   Select the dialog box for enable large disk support for installing a FAT16 partition "activate support (Y/N)...? [N] " for No.

5. Create a primary DOS-Partition of 2045 MB for a FAT 16 file system. Answer the question "Do you wish to use the maximum available size..." for a 2045 MB FAT16 partition with [Y] for Yes.

6. In order to continue with the next step "Create a Save to Disk Partition" the primary partition needs to be formatted.
   Use the Recovery CD to boot as described in steps 1 to 3 above and then format drive C: with the program "Format".
   Type: "A:\>Format C:".

The creation of NTFS partitions is done under the Windows NT setup program. Starting the Windows NT setup is described in chapter 6.10.1.

6.10 Installation of the Windows Operating System

Dependent on the device model, different operating system CDs are shipped:

Microsoft Windows NT or Recovery Microsoft Windows NT,
Microsoft Windows 98 SE or Recovery Microsoft Windows 98 SE,
Recovery Microsoft Windows 2000.

6.10.1 Installing the Microsoft Windows NT Operating System

Install the operating system directly from the operating system CD supplied.
Proceed as follows:

1. Insert the CD.

2. Reboot the system hold the ESC key down.
   The boot menu appears on the monitor.

3. Select "ATAPI CD-ROM Drive".
   Windows will be installed from the CD.

4. Follow the installation program instructions on the screen.

Installation of the Recovery CD in Microsoft Windows NT

This CD contains encoded data which can only be transferred onto a SIEMENS
SIMATIC PC.

Data transfer is carried out with the OEMSETUP.EXE program on the CD-ROM or,
after booting, from the CD-ROM with the Recovery function.

After transferring the required data to the hard disk, the operating system can be
installed using the Windows NT setup program.

Windows NT Installation Sequence

If a Windows operating system is already installed or if the PC has been started
with a user created bootdisk, the transfer of the data takes place using the
program OEMSETUP.EXE. To do this, start the program OEMSETUP.EXE on the
recovery CD and continue the sequence as of point 5.

If there is no operating system installed, then please do the following:

1. Insert the Recovery CD and reboot the system.

2. To boot from the CD proceed as follows: When the message
   ```
   Press <F2> to enter Setup
   ```

appears on the screen press the ESC key. After intialization a boot menu to select
the boot options is displayed.

3. Select "ATAPI CD-ROM Drive".

4. When "Microsoft Windows 98-Startup Menu" is displayed, select "1. Boot for CD-Recovery".

5. You have to acknowledge the "SIEMENS End User License Agreement" with the F8 function key. Pressing ESC allows you to decline the agreement and cancels the installation.

6. In the next screens you can select the components which are to be copied from the CD to the hard disk. Transfer of at least the folder "I386" is necessary for the Windows NT installation or setup.

7. Select the drive for data transfer. You can use the selected drive as the installation drive for Windows. For the Windows setup, you need an available disk space of approximately 300 MB on the installation drive for Windows.

Note

By default, drive C: is used for the data transfer (Recovery).

Ensure that there is an available disk space of approximately 300 MB left on drive C: after the selected recovery data have been copied.

---

8. Confirm the end massage box.

9. Start the Windows setup program
   LW:\I386\Winnt.exe b/
   LW is the drive where the recovery data have been copied.

You can find the information on installation of Windows NT on the Recovery CD in the folder SUPPORT\BOOKS\.

Note

If you want to become an expert user of Microsoft Windows NT Workstation, see the "Windows NT Workstation Resource Kit" Version 4.0 (is not included in the package). It contains specific information for administrators who are responsible for installing, managing, and integrating Windows NT Workstation in a network or multiuser environment.

6.10.2 Installing the Microsoft Windows 98 Operating System

You should only follow these steps when you wish to upgrade from Windows NT to Windows 98 or install Windows 98.

1. Insert the CD-ROM Microsoft Windows 98 in the CD-ROM drive and switch on the PLC.

2. To boot from the Windows 98 CD proceed as follows: When the message
   `Press <F2> to enter Setup`

appears on the screen press the ESC key. After intialization a boot menu to select the boot options is displayed.

3. Select "ATAPI CD-ROM Drive".

4. When "Microsoft Windows 98-Startup Menu" is displayed, select "2. Boot from CD-ROM".

5. In the "Microsoft Windows 98-Start Menu" select "1. Start Windows 98 Setup from CD-ROM" .

Installation of the Recovery CD in Microsoft Windows 98

This CD contains encoded data which can only be transferred onto a SIEMENS SIMATIC PC.

Data transfer is carried out with the OEMSETUP.EXE program on the CD-ROM or, after booting, from the CD-ROM with the Recovery function.

After transferring the required data to the hard disk, the operating system can be installed using the Windows 98 setup program.

Windows 98 Installation Sequence

If a Windows operating system is already installed or if the PC has been started with a user created bootdisk, the transfer of the data takes place using the program OEMSETUP.EXE. To do this, start the program OEMSETUP.EXE on the recovery CD and continue the sequence as of point 5.

If there is no operating system installed, then please do the following:

1. Insert the Recovery CD in the CD-ROM drive and reboot the system.

2. To boot from the Windows 98 CD proceed as follows: When the message
   `Press <F2> to enter Setup`
   appears on the screen press the ESC key. After intialization a boot menu to select the boot options is displayed.

3. Select "ATAPI CD-ROM Drive".

4. When "Microsoft Windows 98-Startup Menu" is displayed, select "1. Boot for CD-Recovery".

5. You have to acknowledge the "SIEMENS End User License Agreement" with the F8 function key. Pressing ESC allows you to decline the agreement and cancels the installation.

6. In the next screens you can select the components which are to be copied from the CD to the hard disk. Transfer of at least the folder "Win98" is necessary for the Windows 98 installation or setup.

7. Select the drive for data transfer. You can use the selected drive as the installation drive for Windows. For the Windows setup, you need an available disk space of approximately 250 MB on the installation drive for Windows.

Note

By default, drive C: is used for the data transfer (Recovery).

Ensure that there is an available disk space of approximately 250 MB left on drive C: after the selected recovery data have been copied.

---

8. Confirm the end massage box.

9. Start the Windows setup program
   LW:\IWIN98\SETUP.exe
   LW is the drive where the recovery data have been copied.

10. After starting the setup.exe please follow the screen instructions.

6.10.3   Installing the Recovery CD for Microsoft Windows 2000

This CD contains encoded files which can only be transferred to a SIEMENS SIMATIC PC.

The transfer of information is made with the program OEMSETUP.EXE on the CD-ROM, or after booting from the CD–ROM with the recovery function.

After transferring the required data to the hard disk, the operating system can be installed using the Windows 2000 setup program.

Windows 2000 Installation Sequence

If a Windows operating system is already installed or if the PC has been started with a user created bootdisk, the transfer of the data takes place using the program OEMSETUP.EXE. To do this, start the program OEMSETUP.EXE on the recovery CD and continue the sequence as of point 5.

If there is no operating system installed, then please do the following:

1. Insert the Recovery CD in the CD-ROM drive and reboot the system.

2. To boot from the Windows 98 CD proceed as follows: When the message
   `Press <F2> to enter Setup`
   appears on the screen press the ESC key. After intialization a boot menu to se-
   lect the boot options is displayed.

3. Select "ATAPI CD-ROM Drive".

4. When "Microsoft Windows 98-Startup Menu" is displayed, select
   "1. Boot for CD-Recovery".

5. You have to acknowledge the "SIEMENS End User License Agreement" with
   the F8 function key. Pressing ESC allows you to decline the agreement and
   cancels the installation.

6. In the next screens you can select the components which are to be copied from
   the CD to the hard disk. Transfer of at least the folder "I386" is necessary for
   the Windows 2000 installation or setup.

7. Select the drive for data transfer. You can use the selected drive as the installa-
   tion drive for Windows. For the Windows setup, you need an available disk
   space of approximately 500 MB on the installation drive for Windows.

Note

By default, drive C: is used for the data transfer (Recovery).

Ensure that there is an available disk space of approximately 500 MB left on drive C: after the selected recovery data have been copied.

---

8. Confirm the end massage box.

9. Start the Windows setup program
   LW:\I386\Winnt.exe
   LW is the drive where the recovery data have been copied.

10. Now follow the screen instructions.

Setting the Language Selection for Windows 2000

The **M**ultilanguage **U**ser **I**nterface (MUI) allows you to set the Windows 2000 menus and dialogs to another language.

In order to install the MUI, run the program MUISETUP.EXE in the CD_DRIVE:\MUI folder on the Recovery CD and follow the screen dialog to install the desired languages.

The desired language for Windows 2000 menus and dialogs, as well as the keyboard layout can be set via the control panel with the dialog **Start > Settings > Control Panel > Regional Options >** tab **"General" >** box **"Menus and dialogs"** and in the tab **"Inputs"**, box **"Keyboard layout"** .

In addition to the language for menus and dialogs, you can also set via **Regional Options** the standard for the region with **Set Default**.

Your device is set to English menus and dialogs and a US keyboard when delivered. You can set another language and keyboard via the control panel with the dialog **Start >Settings > Control Panel > Regional Options >** tab **"General"**, box **"Menus and dialogs">** tab **"Input locales",** box **"Input language"**.

6.11   Installing Drivers and Software

To install the drivers and software from the "Documentation and Drivers" CD supplied, proceed as follows:

1. Place the "Documentation and Drivers" CD in the CD ROM drive.

2. Start the Start programm on the CD. The Acrobat Reader will be installed if necessary.

3. Navigate to the driver list (language, operating system and device dependent).

4. Please install the corresponding driver according to driver list.

Note

When reinstalling Windows 2000, make sure to install the chip set driver prior to the other drivers.

When reinstalling Windows NT, the Windows NT Service Pack has to be installed prior to all the other drivers. The Service Pack has to be reinstalled after a driver installation.

Technical Specifications

<div style="text-align: right"># 7</div>

7.1 Technical Specifications of the SIMATIC Box PC 620

General	
Order nos.	See order documentation
Dimensions (w x h x d)	295x265x80 mm, without CD-ROM drive 295x265x100 mm, with CD-ROM drive
Weight	approx. 6kg (13.5 lbs.)
Supply voltage (U_N)	120 V (85 V to 132 V (AC), or 230 V (170 V to 264 V) AC (autorange) alternative: 24 V (DC)
Line voltage frequency	50/60 Hz (47 to 63 Hz)
Brief voltage interruption acc. to Namur	max. 20 ms at O.85 U_N (max. 10 times per hour; min. recovery time 1 s)
max. power consumption	120W
max. current output (DC)	+5V/10A 3.3V/4.2A +12V/1.7A +18V/0.08A -12/0.2A -5V/0.1A (in total max. 84W)
Noise emission	< 55dB(A) to DIN 45635
Enclosure	IP20
Safety	
Protection class	Protection class I pursuant IEC 60536
Safety specifications	IEC 60950 corresponds to DIN VDE 0805
Electromagnetic compatibility (EMC)	
Emitted interference	EN 55011 Class A (requirement for industrial sector)
Noise immunity: Mains borne disturbance variables on supply lines	± 2 kV (to IEC 61000-4-4; Burst) ± 1 kV (to IEC 61000-4-5; Surge symm) ± 2 kV (to IEC 61000-4-5; Surge unsymm)

Noise immunity on signal lines	± 1 kV (IEC 61000-4-4; Burst; length < 3m)
	± 2 kV (IEC 61000-4-4; Burst; length > 3m)
	± 1 kV (IEC 61000-4-4; Surge symm;
	               length > 20 m)
	± 2 kV (to IEC 61000-4-4:1995; Surge unsymm;
	               length > 20 m)

Noise immunity to discharges of static electricity	± 6 kV Contact discharge (to IEC 61000-4-2) ± 8 kV Air discharge (to IEC 61000-4-2)
Immunity to RF interference	10 V/m 80-1000 MHz, 80% AM (to IEC 61000-4-3) 10 V/m 900 MHz and 1,89 GHz, 50% ED (to IEC 61000-4-3) 10 V 9KHz- 80MHz (to IEC 61000-4-6)
Magnetic field	30 A/m 50Hz (to IEC 61000-4-8)

Ambient Conditions	
Temperature	tested to DIN EN 60068-2-2:1994, DIN IEC 60068-2-1,DIN IEC 60068-2-14,
– operation	+ 5°C to +45°C
– storage/transport	- 20°C to +60°C
– gradient	(Max. speed of temperature change 10º C/h (50º F/h) condensation not permitted)
Relative humidity	tested to DIN IEC 60068-2-3, DIN IEC 60068-2-30,DIN IEC 60068-2-56
– operation	5% to 80% at 25°C (no condensation)
– storage/transport	5% to 95% at 25°C (no condensation)
– gradient	(Max. speed of temperature change 10º C/h (50º F/h) condensation not permitted)
Mechanical Specifications	
Vibration *)	tested to DIN IEC 60068-2-6
– operation	10 to 58 Hz: 0.075 mm, 58 to 500 Hz: 9.8 m/s^2
– storage/transport	5 to 9 Hz: 3.5 mm, 9 to 500 Hz: 9.8 m/s^2
Shock	tested to DIN IEC 60068-2-29
– operation	50 m/s^2, 30 ms,
– storage/transport	250 m/s^2, 6 ms,
Special Features	
Quality assurance	to ISO 9001
Motherboard	
Processor	Intel Mobile Pentium II / III / Celeron (type: MMC2), (see order documentation)
Internal processor cache	2x 16KB first level, 128/256 KB second level, dependent on the processor used
Main memory	maximum 512 MB SDRAM, memory configuration (see order documentation)
2. Level Cache	Processor internal
Free expansion slots	1 shared ISA/PCI (max 175 mm long), 1 PCI (max 265mm long)
– max. permissible current input per ISA slot	5V 2A, 12V 0.3A, -12V 0.1A
– max. permissible current input per PCI slot	5V 2A, 12V 0.3A, -12V 0.1A
– in total (all slots)	5V 3A, 12V 0.6A, -12V 0.15A may not be exceeded
Drives	
Floppy disk drive / LS 120	3,5" (1.44 MB) / 3.5" (120 MB or 1.44 MB)
Hard disk drive	3,5" , EIDE, UDMA33, hard disk capacity (see order documentation)
Graphics	
Graphic controller	XGA LCD controller on the AGP bus
Graphic store	2 MB SDRAM, integrated in the graphic controller
Resolutions/frequencies/colors	CRT: up to 1024x768/75 Hz / 65535 colors or up to 1280x1024/75 Hz / 256 colors

*) Restrictions for LS 120 and CD ROM
LS 120 with120 MB data carrier   10 to 58 Hz: 0.015 mm, 58 to 500 Hz: 2 m/s^2
CD-ROM   10 to 58 Hz: 0.019 mm, 58 to 500 Hz: 2.5 m/s^2

Ports	
COM1 *1	Serial port 1 (V.24 / TTY), 25 pin subminiature Cannon connector
COM2	Serial port 2 (V.24), 9 pin subminiature Cannon connector
LPT1	Parallel port (standard, EPP and ECP mode)
	Connection for printer with parallel port
VGA	VGA port, connection for external monitor
Keyboard	PS/2 keyboard connection (combined interface with track ball signals
Mouse	PS/2 mouse connection
USB	2 channels (1x internal, 1x external)
Card bus	1 port (max. type III)
DP12 port, potentially isolated *2	9 pin subminiature Cannon socket, screw locking
• Transfer rate	• 9,6 kBaud to 12 Mbaud, configurable by SW
• Operating mode	• potentially isolated*:
	- data lines A,B
	- control lines RTS AS, RTS_PG
	- 5V supply voltage (max. 90 mA)
	• connected to ground:
	- shield of the DP12 connecting line
• Physical interface	• RS485, potentially isolated*
• Memory address area	• 0CC000h ...0CC7FFh or 0DC000h ...0DC7FFh
• Interrupts	• IRQ5, 10, 11 or 15 configurable by SW
Ethernet	Ethernet port (RJ45)
Function Indicators (LEDs) on the Device	
SIMATIC Box PC 620	FD/LS120 access (on FD/LS120 drive on the side of the computer box)
	CD ROM access (on the CD ROM drive, if fitted)

*1   Without TTY for the basic variant of the Box PC

*2   Not available for the basic variant of the Box PC

Hotline Services

<div style="text-align: right; font-size: 2em; font-weight: bold;">8</div>

8.1 Customer Support, Technical Support

Open round the clock, worldwide:

SIMATIC Hotline

Worldwide (Nuremberg)	**Worldwide** (Nuremberg)	
Technical Support	**Technical Support**	
(FreeContact)	(fee based, only with SIMATIC Card)	
Local time: Mon.-Fri. 7:00 to 17:00		
Phone: +49 (180) 5050-222	Local time: Mon.-Fri. 0:00 to 24:00	
Fax: +49 (180) 5050-223	Phone: +49 (911) 895-7777	
E-Mail: techsupport@ ad.siemens.de	Fax: +49 (911) 895-7001	
GMT: +1:00	GMT: +01:00	
Europe / Africa (Nuremberg)	**America** (Johnson City)	**Asia / Australia** (Singapore)
Authorization	**Technical Support and Authorization**	**Technical Support and Authorization**
Local time: Mon.-Fri. 7:00 to 17:00	Local time: Mon.-Fri. 8:00 to 19:00	Local time: Mon.-Fri. 8:30 to 17:30
Phone: +49 (911) 895-7200	Phone: +1 423 461-2522	Phone: +65 740-7000
Fax: +49 (911) 895-7201	Fax: +1 423 461-2289	Fax: +65 740-7001
E-Mail: authorization@ nbgm.siemens.de	E-Mail: simatic.hotline@ sea.siemens.com	E-Mail: simatic.hotline@ sae.siemens.com.sg
GMT: +1:00	GMT: −5:00	GMT: +8:00
The languages of the SIMATIC Hotlines are generally German and English, in addition, French, Italian and Spanish are spoken on the authorization hotline.		

8.2   SIMATIC Customer Support Online Services

Further Support

If you have questions related to the use of the products which are not answered in this manual, please consult your Siemens representative in your local agency.

http://www.ad.siemens.de/partner

Training Center

Siemens offers a number of training courses to familiarize you with the SIMATIC S7 automation system. Please contact your regional training center or our central training center in D 90327 Nuremberg, Germany for details:

Telephone: +49 (911) 895-3200

http://www.sitrain.com/

SIMATIC Documentation on the Internet

You will find the documentation on the internet at:

http://www.ad.siemens.de/support

Use the Knowledge Manager to find the documentation you need quickly. If you have any questions or suggestions concerning the documentation you can use the ”Documentation” conference in the internet forum.

Service & Support on the Internet

In addition to our documentation, we offer our Know-how online on the internet at:

http://www.ad.siemens.de/support

where you will find the following:

- Current Product Information leaflets, FAQs (Frequently Asked Questions), Downloads, Tips and Tricks.
- A newsletter giving you the most up-to-date information on our products.
- The Knowledge Manager helps you find the documents you need.
- Users and specialists from all over the world share information in the forum.
- Your local customer service representative for Automation & Drives in our customer service representative data bank.
- Information on field service, repairs, spare parts and more under ”Services”.

8.3 Regional Repair Centers

Region	Phone	Fax
Augsburg	+49 (821)2595 599	+49 (821)2595 546
Berlin	+49 (30)386 34926	+49 (30)386 34933
Bielefeld	+49 (521)291 323	+49 (521)291 538
Bremen	+49 (421)364 2093	+49 (421)364 2107
Chemnitz	+49 (371)475 3860	+49 (371)475 3888
Erlangen	+49 (9131)7 31048	+49 (9131)7 35263
Essen	+49 (201)816 1580	+49 (201)816 1522
Frankfurt	+49 (69)797 7358	+49 (69)797 7131
Hamburg	+49 (40)2889 4230	+49 (40)2889 4430
Hannover-Laatzen	+49 (511)877 2241	+49 (511)877 1320
Karlsruhe	+49 (721)595 4183	+49 (721)595 6667
Cologne-Ossendorf	+49 (221)576 6633	+49 (221)576 6630
Langen	+49 (69)797 5608	+49 (69)797 5567
Leipzig	+49 (341)210 2049	+49 (341)210 2049
Mannheim	+49 (621)456 1328	+49 (621)456 1460
Munich	+49 (89)9221 6213	+49 (89)9221 6201
Nuremberg	+49 (911)654 6127	+49 (911)654 7630
Saarbrücken	+49 (681)386 2598	+49 (681)386 2397
Stuttgart Weilimdorf	+49 (711)137 6001	+49 (711)137 6210

Country	Phone	Fax
Argentina	+54 (1) 3408400	+54 (1) 3408400 3163
Australia	+61 (3) 9420 7274	+54 (3) 9420 7500
Belgium	+32 (2) 536 2905	+32 (2) 536 2880
Brazil	+55 (11) 7947 1999 ext. 3013	+55 (11) 7947 1888
China	+86 (21) 6213 2050 ext. 301	+86 (21) 6213 5538
Denmark	+45 (7640) 5151	+45 (7640) 5143
Finland	+358 (9) 5105 3303	+358 (9) 5105 3661
France	+33 (1) 49 22 31 60	+33 (1) 49 22 29 42
Great Britain	+44 (161) 446 5760	+44 (161) 446 5772
India	+91 22 7577115	+91 22 7577106
Italy	+39 (02) 6676 3490	
Japan	+81 (3) 5423 8502	+81 (3) 5423 8737
Mexico	+52 (5) 328 2456	+52 (5) 328 2058
Netherlands	+31 (70) 333 3858	+31 (70) 333 3878
Austria	+43 (1) 1707 29886	+43 (1) 1707 53730
Poland	+48 (22) 670 9166	+48 (22) 670 9169
Portugal	+351 (1) 75 73234	+351 (1) 75 89333
Schweden	+46 (8) 728 1462	+46 (8) 728 1703
Switzerland	+41 (1) 749 1304	+41 (1) 749 1284
Singapur	+65 (740) 7150	+65 (740) 7196
Spain	+34 (91) 514 8400	+34 (91) 514 9217
South Africa	+27 (12) 309 0149	+27 (12) 309 0142
South Korea	+82 (2) 3420 4880	+82 (2) 3420 4889
Taiwan	+886 (2) 2376 1849	+886 (2) 2378 8958
Thailand	+66 (2) 716 4609	+66 (2) 716 4601
USA	+1 (423) 461 2497	+1 (423) 461 2094

Note

In countries not listed above, please contact your local service representative. He will arrange for your repairs to be carried out.