

**SIEMENS**

**SIMATIC**

**PC RI25 P**

**Manual**

**English**

**C79000-G7076-C798**

**Edition 02**

## Safety Guidelines

This 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:



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### Warning

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

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### Note

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

---

## Qualified Personnel

The device/system may only be set up and operated in conjunction with this manual. Only **qualified personnel** should be allowed to install and work on this equipment. Qualified persons are defined as persons who are authorized to commission, to ground, and to tag circuits, equipment, and systems in accordance with established safety practices and standards.

## Correct Usage

Note the following:



---

### Warning

This device and its components may only be used for the applications described in the catalog or the technical description, 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, set up, and installed correctly, and operated and maintained as recommended.

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### Disclaimer of Liability

We have checked the contents of this manual for agreement with the hardware and software described. Since deviations cannot be precluded entirely, we cannot guarantee full agreement. However, the data in this manual are reviewed regularly and any necessary corrections included in subsequent editions. Suggestions for improvement are welcomed.

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# Safety Instructions

# 1

**Chapter Overview** This chapter provides you with mandatory safety instructions you must follow when you operate your PC and its components.

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 confer with our service representative. Chapter 5 contains the service address locations.

## 1.1 General Notes

**Transport** We recommend that you transport the device only in the original packaging (protection against shock and impact).

**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 Section 1.4, “Technical Specifications,” and the installation notes in Chapter 2 of this manual when installing and operating the device.

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

The sliding door in front of the drives on the front side must be kept closed for safety reasons (fire protection according to UL 1950/EN 60950). You may open the sliding door only to service the drives. You must not remove the sliding door.

**Power  
Connection**

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.

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.

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 PC 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  
Notes**

For operation in Canada and the United States, use CSA or UL-listed power cables.

**For the USA and Canada:**

Both an UL approval and a CSA marking are required for the cable in the USA and Canada. The connector must comply with the NEMA 5-15 specification.

**For 120 V devices**

A flexible cable with UL approval and CSA marking and the following features must be used: SVT or SJT design with three conductors, min. 18 AWG cross-section, a maximum length of 4.5 m and parallel grounding-type plug (15 A, min. 125 V).

**For 240 V devices (used in Germany)**

A flexible cable with UL approval and CSA marking and the following features must be used: SVT or SJT design with three conductors, min. 18 AWG cross-section, a maximum length of 4.5 m and Tandem grounding-type plug (15 A, min. 125 V).

**For 230 V devices (outside the USA)**

A flexible cable with the following features must be used: min. 18 AWG cross-section and grounding-type plug (15 A, min. 250 V). The cables must conform with the relevant safety guidelines of the country where they are installed and bear the specified markings.

The device is intended for connection to grounded power supply systems. (TN networks to VDE 0100 part 300 or IEC 364-3).

No provision is made for connection to non-grounded or impedance-grounded power supply systems (IT networks).

The power cable should comply with the safety guidelines of the country concerned.

**Repairs**

Only authorized personnel are permitted to repair the device. 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 PC, the warranty becomes void.

Only authorized service personnel may remove or exchange the power supply.

**Battery**

This device includes a battery on the motherboard and, in some cases, a battery on the SafeCard. The battery must only be replaced by service personnel. Please refer to the instructions given in the documentation for the CPU module.

Dispose of used batteries in keeping with local regulations (special waste).

---



**Caution**

Danger of explosion while handling or replacing the battery improperly. You may only replace the battery with an identical battery or a battery type recommended by the manufacturer. You should dispose of used batteries in keeping with the manufacturer's regulations.

---

**ESD  
Guidelines**

The following sticker can be used to identify modules with ESD (electrostatically sensitive devices):



If you handle modules with ESD, you absolutely must adhere to the following guidelines:

- Before you work with modules with ESD, you must statically discharge yourself (for example, through contact with a grounded object).
- Devices and tools you use must be free of a static charge.
- Disconnect the power plug before you connect or disconnect modules with ESD.
- Touch modules with ESD on the edge only.
- Do not touch any wiring posts or conductors on a module with ESD.



## 1.2 Information Regarding the CE Label



The following applies to the SIMATIC product described in this manual:

**EMC Directive** In accordance with the EU Directive 89/336/EEC “Electromagnetic Compatibility.” In accordance with the CE label for this product, the following areas of application are relevant:

Application Area	Requirements	
	Emitted Interference	Immunity
Domestic, business and commercial areas, as well as small businesses	EN 50081-1: 1992	EN 50082-1: 1992
Industrial area	EN 50081-2: 1993	EN 50082-2: 1995

**Low-Voltage Directive** This product complies with the requirements of the EU Directive 73/23/EEC “Low-Voltage Directive.” Conformance with this standard has been verified according to EN60950.

**Declaration of Conformity** The EU declarations of conformity and the relevant documentation are held at the disposal of the competent authorities at the address below:

Siemens Aktiengesellschaft  
 Bereich Automatisierungstechnik  
 AUT E 8  
 Postfach 1963  
 D-92209 Amberg  
 Germany

Products not bearing the CE label fulfill the requirements and standards as specified in the section on “Technical Specifications.”

**Observing the Installation Guidelines** The installation guidelines and safety instructions specified in the documentation must be observed during startup and operation.

### 1.3 Approvals for the USA and Canada

#### UL/CSA Approval

Important for the USA and Canada:



The following labels indicate that the relevant approval is available for the device bearing the label:

Underwriters Laboratories (UL) to standard UL 1950



Underwriters Laboratories (UL) to Canadian standard C22.2 No. 950



UL Recognition Mark



Canadian Standard Association (CSA) to standard C22.2 No. 950



Canadian Standard Association (CSA) to American standard UL 1950

#### FCC Approval for USA and Canada

##### **Federal Communications Commission Radio Frequency Interference Statement**

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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.

---

#### **Canadian Notice**

This equipment does not exceed the Class A limits for radiated emissions as described in the Radio Interference Regulations of the Canadian Department of Communications.

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#### **Avis Canadien**

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

## 1.4 Technical Specifications

Order number	See title page			
Dimensions	(w x h x d in mm) 448 x 177 x 482			
Weight	approx. 15 kg			
Line voltage	120 VAC (103 to 132 VAC or 240 VAC (200 to 264 VAC) (no automatic switchover)			
Line voltage frequency	50/60 Hz (47 to 63 Hz)			
Brief voltage interruption acc. to NAMUR	max. 20 ms at 160 W load			
max. power consumption	220 W			
max. current delivery + 12 V can be loaded max. 10s on 8A	5V 19 A	12V 4.2 A	-5V 0.5 A	-12V 0.5 A
Degree of protection	IP41 front with closed protective cover, IP20 on the rear panel			
<b>Safety</b>				
Protection class	Protection class I acc. to VDE 0106 T1: 1982 (IEC 536)			
Safety requirements	EN 60950			
<b>Electromagnetic compatibility (EMC)</b>				
Emitted interference	EN 55022 limited value class B			
Noise immunity: line-fed interference on supply lines	+- 2 kV (to IEC 1000-4-4:1995; burst) +- 1 kV (to IEC 1000-4-5:1995; surge symm) +- 2 kV (to IEC 1000-4-5:1995; surge unsymm)			
Noise immunity on process, measuring, and control lines	+- 1 kV (to IEC 1000-4-4:1995; burst; length < 3m) +- 2 kV (to IEC 1000-4-4:1995; burst; length > 3m) +- 1 kV (to IEC 1000-4-4:1995; surge symm; length > 3m) +- 2 kV (to IEC 1000-4-4:1995; surge unsymm; length > 3m)			
Noise immunity to discharges of static electricity	+- 6 kV contact discharge (to IEC 1000-4-2:1995) +- 8 kV air discharge (to IEC 1000-4-2:1995)			
Noise immunity to high-frequency radiation	10 V/m 80-1000 MHz, 80% AM (to ENV 50140:1993) 10 V/m 900 MHz, 50% ED (to ENV 50204:1995)			

<b>Ambient conditions</b>	
Temperature	tested to DIN EN 60068-2-2:1994, DIN IEC 68-2-1, DIN IEC 68-2-14
- operation	+ 5°C to +45°C
- storage/transport	40°C for CD-ROM operation
- gradient	- 20°C to +60°C max 10°C/h (no condensation)
rel. humidity	tested to DIN IEC 68-2-3, DIN IEC 68-2-30, DIN IEC 68-2-56
- operation	5% to 80% at 25°C (no condensation)
- storage/transport	5% to 95% at 25°C (no condensation)
<b>Mechanical specifications</b>	
Vibration	tested to DIN IEC 68-2-6
- operation	10 to 58 Hz: 0.0375 mm, 58 to 500 Hz: 4.9 m/s
- transport	5 to 9 Hz: 3,5 mm, 9 to 500 Hz: 9.8 m/s
Shock	tested to DIN IEC 68-2-29
- operation	50 m/s <sup>2</sup> , 30 ms, 100 shocks
- storage	250 m/s <sup>2</sup> , 6 ms, 1000 shocks
<b>Motherboard</b>	
Processor	Pentium 200MMX
Internal processor cache	2 x 8 KB
Main memory	2 x 8 MByte EDO-SIMM max. 128 MB
Second level cache	256 kByte synchron
Expansion slots	RI25/RI45: 6 ISA long format/2 PCI long format If the device has a SafeCard, this occupies one ISA expansion slot.
max. admissible power consumption per ISA slot	5V 2A; 12V 0.3 A; -12 V 0.05 A; -5 V 0.05 A (the sum of 5V 9A must not be exceeded)
max. admissible power consumption per PCI slot	5V 2A; 12V 0.5A; -12V 0.1A; -5V 0.1A
<b>Drives</b>	
Floppy disk drive	3.5" (1.44 MB)
Hard disk drive	3.5" EIDE 3.2 Gbytes (ATA 33), cylinder 6704, sectors 63, heads 15
CD-ROM drive	650 MBytes, type see Logbook
CD-ROM port	EIDE (secondary)

<b>Graphics</b>	
Graphics chip	SVGA-LCD Controller Cirrus GD7543 on PCI bus with Windows accelerator
Graphics memory	1 MByte DRAM
Resolutions/frequencies/colors	CRT: up to 1024x768/75 Hz/256 colors
<b>Interfaces</b>	
COM1	Serial port 1 (V24), 25-pin sub-D socket
COM2	Serial port 2 (V24), 9-pin sub-D connector (standard)
LPT1	Parallel port Connection for printer with parallel port
VGA	VGA interface, connection for external monitor
Keyboard	PS/2 keyboard connection
Mouse	PS/2 mouse connection
<b>MPI/DP interface, optically isolated*</b>	9-pin sub-D socket, screw-type locking
Transmission rate	9.6 Kbps to 1.5 Mbps, assign parameters with software
Operating mode	Optically isolated*: data lines A, B control lines RTS AS, RTS_PG 5V line voltage (max. 90 mA)  Ground connection: MPI/DP connection cable shield
Physical interface	RS485, optically isolated
Memory address area	0CC000 <sub>H</sub> – 0CC7FF <sub>H</sub> or 0DC000 <sub>H</sub> – 0DC7FF <sub>H</sub> , to be set in BIOS Setup
Interrupts	IRQ5, 10, 11 or 15 assign parameters with software (only 1 interrupt possible)
Relay interface	Connection of a signaling device to a SafeCard monitoring module. See SafeCard description in the section on “Monitoring Module”.
<b>Function display</b>	
LEDs on the device	Power Disk Run (only with SafeCard option) Temp (only with SafeCard option) Floppy CD-ROM

\*) Optically isolated within the safety extra-low voltage circuit (SELV)

# Starting Up Your PC

# 2

## Chapter Overview

In this chapter, we tell you:

- What you should note when you set up your PC
- Which interface you use to connect the standard I/Os
- How you connect your PC to the supply voltage

## 2.1 Unpacking and Checking the Delivery Contents

### Unpacking the PC RI25/45

Proceed as follows to unpack your PC:

1. Remove the packaging material.
2. Do not throw the original packaging material away. Save it in case you need to transport your PC.
3. Make certain you keep the enclosed documentation. You will need this documentation when you start up your PC for the first time. (See Chapter 3).

### Checking

Proceed as follows:

1. Check the delivery against the packing list to make certain you have received everything.
2. Check the delivery to see if there are any transport damages apparent.
3. Inform your supplier immediately if there are any transport damages or differences between the packing list and the actual delivery.

If necessary, refer to the logbook on the inside of your PC to obtain the exact computer configuration.

### Setting Up

Your SIMATIC PC can be used as a 19" built-in or for desktop operation. Section 2.2 provides you with more information.

## 2.2 Installing Your PC in a 19" Cabinet or Rack (19" Operation)

### Layout

The installation height for your SIMATIC PC is only four ET (height modules = 177 mm, Figure 2-1). Therefore, special installation assemblies are not required for installing this computer in a 19" cabinet or rack. You must use four screws to fix the computer into position on the cabinet's braces. However, you should under no circumstances mount the computer just on these screws (without rack slide rails). Use the respective manufacturer's cabinet or rack slide rails or L-sections. Contact your cabinet supplier directly regarding cabinet or rack installation.

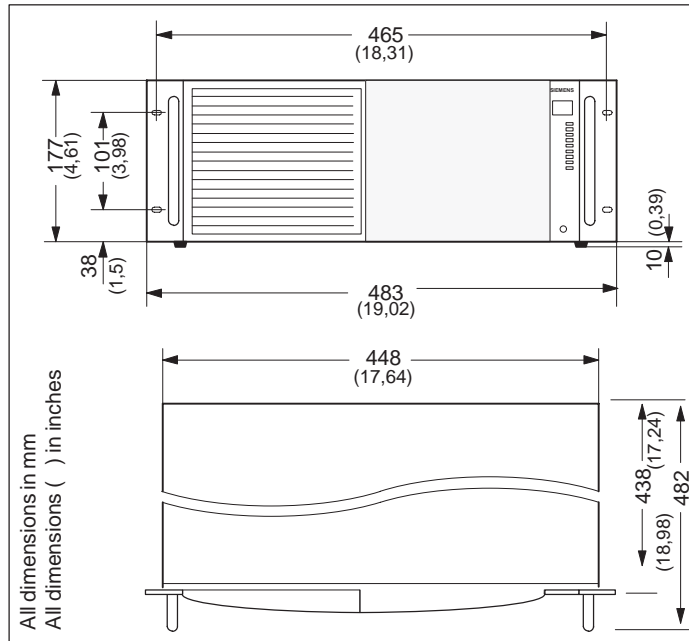


Figure 2-1 SIMATIC PC Installation Dimensions





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**Warning**

Avoid extreme ambient conditions as far as possible. Protect your SIMATIC PC from dust, moisture, and heat. (Refer to the “System Unit” section in the Technical Description.)

Mount the device as safely as possible to prevent any danger (for example, by falling over).

The clearance around the system unit must be at least 200 mm at the front and rear, so that the system unit is sufficiently ventilated.

Make certain that the ventilation slots for the system unit and the monitor are not covered.

Make certain that the sliding door in front of the drives is closed during operation. If the sliding door is not closed, insufficient air is drawn through the ventilation slots to cool the interior of the system unit.

---

## 2.3 Connecting I/O Devices (such as a Monitor, Mouse, or Keyboard)

**Rear Panel of the Device** All of the connections and interfaces for connecting I/O devices are mounted on the back of the system housing.

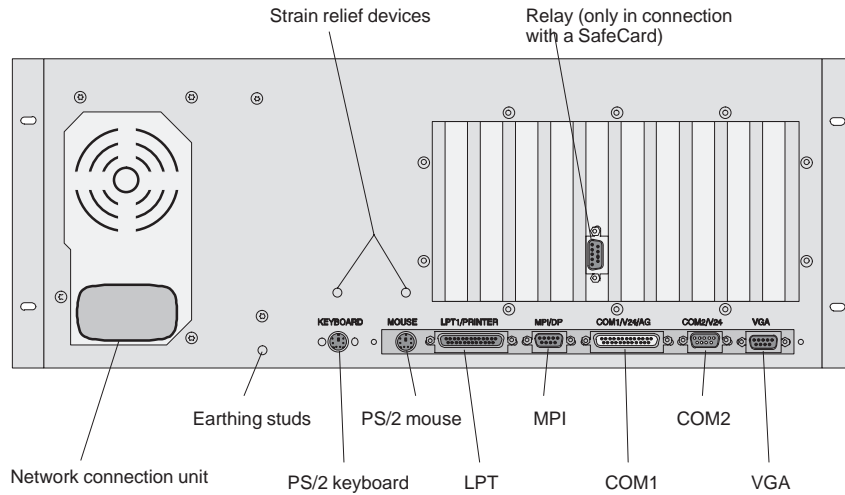


Figure 2-2 Rear Panel of the System Housing

---

**Note**

Make sure you follow the safety instructions in Chapter 1 when connecting I/O devices!

---

Table 2-1 Connections on the Back of the PC

Connections	Function
VGA	VGA interface Connection for external monitor
COM1	Serial interface 1 (RS 232) 25-pin sub-D socket
COM2	Serial interface 2 (RS 232) 9-pin sub-D connector (standard)
Mouse	PS/2 mouse connection
Keyboard	PS/2 keyboard connection
LPT1/Printer	Parallel port Connection for printer with parallel interface
MPI/DP Multipoint Interface (RS 485)*	Multipoint Interface Connection for a SIMATIC S7 programmable logic controller system
Inlet connector input	Power connection (115/230 VAC)
Inlet connector output	Power connection for an external monitor (115/230 VAC)
Relay output (only in connection with a SafeCard)	Connection for a signal device on the SafeCard monitoring module. Refer to the description of the SafeCard in the "Monitoring Module" section in the Technical Description. Technical specifications: DC switching voltage : max. 60V DC switching current : max. 1A DC switching cap. : max. 30W Permanent DC curr. : max. 1A

\* Optically isolated within the safety extra-low voltage circuit (SELV)

If expansion boards are connected in the PC, there are additional interfaces. Please refer to the description of the relevant module for the significance of these additional interfaces.

---

**Note**

When connecting I/O devices, watch out for shielded cables and metal connectors, or you will terminate the operating license! Use a screwdriver to place the interface cable connectors on the PC housing. This improves the electrical shielding.

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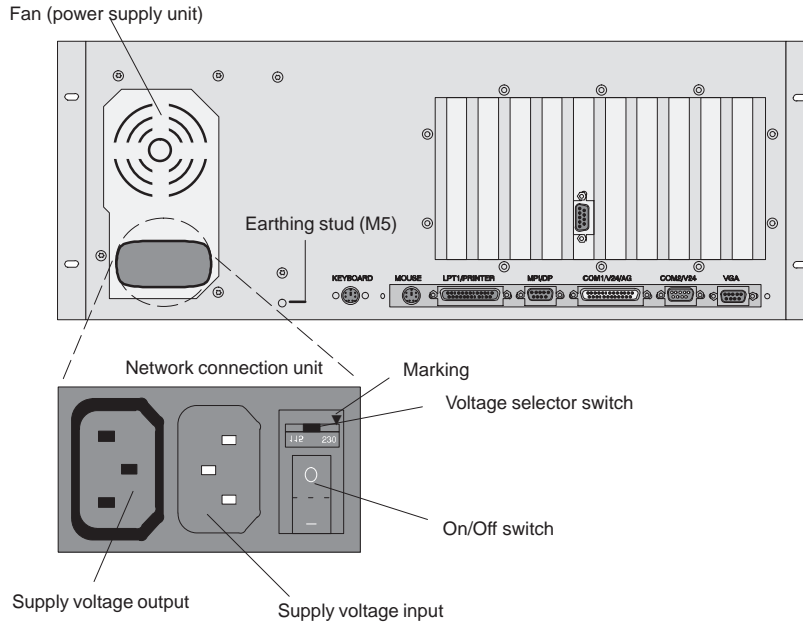
**Connecting  
the Keyboard  
and Mouse**

After the PS/2 connector is connected, both cables must be secured with the provided strain relief device. This keeps the PS/2 connector from coming loose when the mouse or keyboard is moved.

## 2.4 Connecting the Supply Voltage

### Converting the Supply Voltage

The 220V standard power supply for the SIMATIC PC is designed for 120/240V power. The voltage selector switch is located on the back of the system unit beneath the ventilation grid (Figure 2-3).



English

Figure 2-3 Voltage Selector Switch, Voltage Input, and Voltage Output on the Rear Panel of the PC RI25/45

**Selecting the Supply Voltage**

If the voltage indicated on the voltage selector switch does not correspond to your local supply voltage, you must change the position of the voltage selector switch so that the marker points to the required supply voltage.



---

**Warning**

Damage may be caused to device!

The RI may be damaged due to a wrong supply voltage setting. The same voltage is applied to the supply voltage output and the supply voltage input.

Please observe the specifications made by the monitor manufacturer when operating the monitor.

The following table lists the permissible input currents for the monitor:

---

Input voltage	120 V / 240 V $\pm$ 10%
Input current	4 A / 3 A
Output voltage	Equal to input voltage
Max. output current	1 A / 0.5 A

1. Make certain that the supply voltage set on the voltage selector switch matches your local supply voltage.
2. Connect the power supply cable for the monitor to the PC RI depending on the connector type, or connect the power supply cable to the grounding outlet. Please observe the maximum current limit when connecting to the PC RI (see back of device).
3. Connect the power supply cable supplied to the PC RI.
4. Connect the device to a grounding outlet.
5. An earthing stud (M5) can be used to guarantee equipotential bonding between the PC and its surroundings.

# Setting Up and Operating Your PC

# 3

## Chapter Overview

In this chapter, we:

- Introduce you to the operator elements of the SIMATIC PC.
- Describe the initial installation.
- Describe how to use the electronic manual.

### 3.1 Operator Elements of the System Unit

**Front Side** Before you switch on your SIMATIC PC, you should become familiar with its operator elements. Figure 3-1 illustrates the operator elements on the front side of your PC.

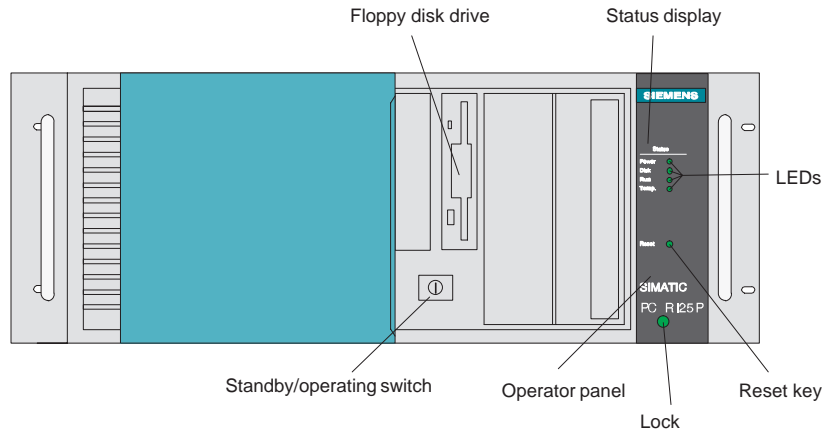


Figure 3-1 Operator Elements on the Front Side of the SIMATIC PC

#### Operator Panel

The following functions appear on the operator panel:

- LEDs for displaying:
  - Power
  - Hard disk
  - Run (watchdog) (only in connection with a SafeCard)
  - Temperature (only in connection with a SafeCard)
- Speaker
- Status display (only in connection with a SafeCard)
- Reset key
- Sliding door lock (access protection)



Table 3-1 Control LEDs

Power LED	green off	Power supply switched on Power supply switched off or in standby mode
Disk LED	green	Lights up for a hard disk access
Run LED	green red	Watchdog monitor switched <i>on</i> (only in connection with a SafeCard) Monitoring time run out
Temp. LED	green red	Temperature in the device is normal (only in connection with a SafeCard) Inner temperature is critical

**Status Display (7-Segment Display)**

When you switch on your PC, it automatically executes a self-test that tests all of the important PC components for reliability performance. The diagnostics display of the SafeCard provides you with information about the individual test steps. In case of an error, this display provides instructions for troubleshooting. The “CPU Module” register in the Technical Description provides you with an explanation of the possible displays.

**Reset Key**

If you press the reset key with a pointed object (for example, the tip of a ballpoint pin or the end of an opened paper clip), you trigger a hardware reset, and you completely restart the PC.

### 3.2 Starting Up Your PC for the First Time

**Switching On** Your PC is ready for system operation after you connect the I/O devices and the system unit. You can now switch to standby mode using the switch on the power supply unit. The power switch is located on the back of the power supply unit. When you press the standby/operating switch, the PC switches from standby mode to active operation. The green light of the power supply is lit.

The standby/operation switch is located behind the drive cover on the front of the device.

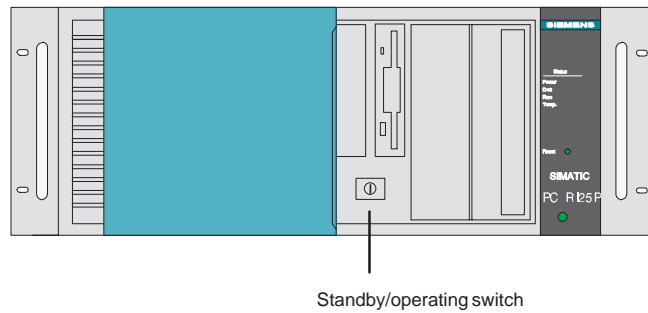


Figure 3-2 Switching on the System Unit

**Standby** To change from active operation to standby mode you must press the standby/operation switch again.

**Switching Off** When you switch off the system unit, you must disengage the ON/OFF switch.

---

**Note**

When your PC is switched on, the POWER LED is green. The ON/OFF switch on the power supply unit does not separate the system unit from the power supply. You must unplug the power plug to separate the system unit from the power supply completely.

---

### 3.3 Setting Up Your PC

**Overview** The operating system and the system software for your PC were factory-installed on the hard drive.

You must differentiate the following two instances when you switch on your PC:

- Initial startup
- Complete restart

**Initial Startup** Your PC software is set up during the initial startup. Proceed as follows:

1. Switch on your PC.
2. Set the monitor's brightness control switch to bright. (Refer to the operating instructions for the monitor.) Switch on the monitor.

The PC conducts a self-test. The following message appears briefly during the self-test:

Press <F2> to enter SETUP

3. Wait until the message disappears and then follow the instructions on the screen.

Your operating system loads after the self-test is finished. The loading procedure depends on the operating system and therefore varies, depending on your PC variation (Sections 3.4 and 3.5).

**Complete Restart** Once your PC is set up, the operating system interface will be automatically displayed after the startup procedure every time you switch on or reset the PC.

### 3.4 Loading the MS-DOS Operating System

**MS-DOS** Your operating system is loaded after the self-test has been carried out. After the load procedure is complete, you are prompted to back up all the hard disk files on diskettes. Section 3.10 contains more information about backing up files.

### 3.5 Loading the Windows 95 Operating System

**Windows 95** After the self-test has been carried out, the Windows 95 operating system prompts you to carry out your initial setup. The Windows setup menu provides you with step-by-step information. Follow the instructions displayed on the screen.

*Language Selection*

#### **Operator Inputs**

Here, you can change the language you first selected. Once you confirm with *Next*, you can no longer undo your selection.

*User Specifications*

#### **Operator Inputs**

You can not correct your entries at a later time.

*Authenticity Certificate*

#### **Operator Inputs**

The registration number is located on the authenticity certificate above the bar code. The authenticity certificate is a part of your documentation package and belongs to the items provided with your PC.

**Setting Up Again**

If your software becomes defective, you can reinstall it using the backup diskettes. (See Section 4.7).

### 3.6 Electronic Manual

**Overview** Your PC is equipped with an electronic manual. This manual consists of two parts:

- The User's Guide (the document you are reading now) in four languages (German, English, French, and Italian) and
- The Technical Description in two languages (German and English)

**User's Guide** The User's Guide is located in the DOCU directory:

- c:\DOCU\U\_MAND.PDF(German manual)
- c:\DOCU\U\_MANE.PDF(English manual)
- c:\DOCU\U\_MANF.PDF(French manual)
- c:\DOCU\U\_MANI.PDF(Italian manual)

**Technical Description** The Technical Description is located in the DOCU directory:

- c:\DOCU\T\_DESD.PDF(German Technical Description)
- c:\DOCU\T\_DESE.PDF(English Technical Description)

**ADOBE Acrobat Reader** You need the ADOBE Acrobat Reader to read and print out the user's guide and the Technical Description. The ADOBE Acrobat Reader is a software package located in the following directory:

c:\acrodos or c:\acroread

For technical licensing reasons, we do not pre-install the software. This must be installed by the user.

---

**Note**

We recommend that you print out a copy of the Technical Description during startup and store it together with the Manual.

---

### 3.7 Installing Adobe Acrobat

#### Acrobat Reader Installation

Before you install the Acrobat Reader, we recommend that you connect a mouse and install the mouse driver. It is possible to operate the Acrobat Reader with the keyboard, but it is considerably easier to use the mouse.

From steps 2 through 6, the installation procedure is identical for both the DOS and Windows 95 operating systems. Proceed as follows:

1. Start:

- `install.exe` in the `c:\acrodos` for MS-DOS
- `acroread.exe` in the `c:\acroread` for Windows 95.

The following message appears:

```
Adobe Acrobat Reader for DOS Installation,  
version x.y or  
Adobe Acrobat Reader for WINDOWS Installation,  
version x.y
```

2. Use any key to confirm your entry.

The following license agreement appears:

```
Adobe Systems Incorporated License Agreement
```

3. Confirm your answer with `Accept`.

4. You are prompted to enter your name.

Use the `ENTER` key to confirm your answer.

5. You are prompted to enter your organization.

Use the `ENTER` key to confirm your answer.

6. You are prompted to specify the directory where you want the installation to take place. Use the suggested directory.

Use the `ENTER` key to confirm your answer.

In Windows 95, the installation now runs automatically. The installation ends when the Acrobat Reader icon appears in a window.

**Additional Steps**

Additional steps are required for the SIMATIC PC RI with MS-DOS:

1. You are prompted to specify a directory for printing fonts. Use the suggested directory and confirm with the `ENTER` key.
2. You are prompted to choose if you wish to install the Reader Tour, a tutorial which requires approx. 0.5 MB on the hard disk. Use the `ENTER` key to confirm your answer.
3. You are prompted to specify your working directory (temporary directory). Use the suggested directory and confirm with the `ENTER` key.
4. You are prompted to specify a directory for the swap-out file. Use the suggested directory and confirm with the `ENTER` key.
5. You are prompted to decide if you want modifications in the `CONFIG.SYS` and `AUTOEXEC.BAT` files to be made automatically by the installation program, or if you wish to make them yourself. We recommend you select the suggested option:  
Go ahead and modify  
and to confirm your selection with the `ENTER` key.
6. A message is now displayed if you have not connected a mouse and installed a mouse driver. You can do this after the installation of Adobe Acrobat is finished. Confirm with `ENTER`.
7. After installation has been finished, you are prompted to reboot your PC. Confirm with `ENTER` and reboot your PC (press `CTRL-ALT-DEL` or the reset key).
8. In order to edit larger documents, you must first carry out the following steps:
  - `cd C:\ACRODOS` ; Select the root directory `C:\`
  - `ACROBAT` ; Start the ACROBAT reader
  - `<ALT F>` ; Select the PREFERENCES submenu
  - `LARGE` ; Set the setting "virtual memory size" to `LARGE`
  - `OK` ; Exit the menu
  - `<ALT F>` ; Exit the ACROBAT reader
  - `EXIT` The settings are complete and will be saved



### 3.8 Using Adobe Acrobat

#### Using the Acrobat Reader

Proceed as follows to use the Acrobat Reader:

1. To start the Acrobat Reader, type in **acrobat** in MS-DOS. In Windows 95, click on the Acrobat Reader icon. You can start the Acrobat Reader from any directory, if you followed the recommendation during installation.

An interface that looks like the MS-DOS shell appears. Use the TAB key or the mouse to switch between windows. Use the cursor keys on the keyboard (or use the mouse) to move the cursor between windows. (Important: your selection is not chosen until the line is displayed inversely, that is, white lettering on a dark background.)

2. Open the file you want to read

U_MANE . PDF	User's Guide
T_DESE . PDF	Technical Description

These files are located in the c : \docu directory.

3. Use the FILE menu to print out the opened file. First choose PRINTER SETUP from the FILE menu. Then make your selection according to the printer you have connected. Then you choose PRINT from the FILE menu to print out your file.

### 3.9 SafeCard

Please refer to the Technical Description for notes on the SafeCard module.

When installing the SafeCard driver for various operating systems, refer to the ReadMe.TXT file in directory C:\SAFECARD.

### 3.10 Backing Up Hard Disk Data on Diskettes

**Overview** When it is delivered, the hard drive of your industrial PC contains important data and programs (for example, the operating system). It is essential that you make backup copies of these files on diskette. These data may be lost if there is an operating error or if there is a hard drive defect.

**Backing Up in MS-DOS** Your industrial PC is delivered with a batch routine that considerably simplifies data backup during the initial installation. Backing up the hard drive data is menu-driven:

- Follow the instructions for the backup program. To back up the hard drive data, you need a number of formatted, blank diskettes (at least sixteen).

**Backing Up in Windows 95** During the initial installation of the operating system, you are prompted to back up (refer to Section 3.5). You need 32 formatted, blank diskettes (1.44 Mbytes) for the backup.

Refer to Section 4.7 to set up your PC again.

### 3.11 Safety Functions

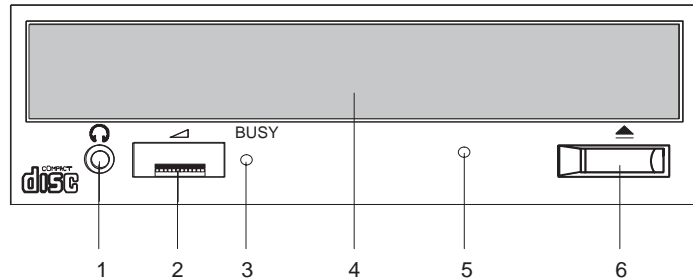
Using passwords during setup, you can keep unauthorized persons from making entries in the setup. Refer to the CPU module section in the Technical Description for more information on setup passwords (see Section 3.6).

### 3.12 CD-ROM Drive

#### CD-ROM Drive

The CD-ROM drive allows you to load programs and data from CDs. The CD-ROM drive also enables you to easily update the already installed software. The CD-ROM drive is run via the secondary IDE interface.

#### Part Names and Functions

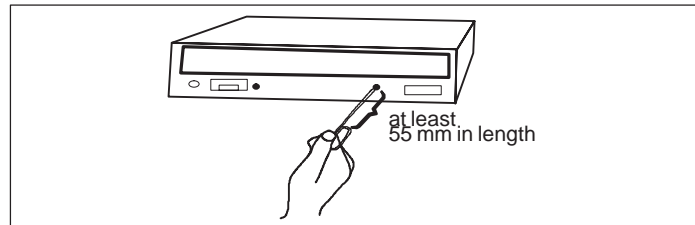


- |   |                             |  |
|---|-----------------------------|--|
| 1 | <i>Phones Jack</i>          | This jack is used to connect a set of headphones with a 3.5 mm stereo mini-jack plug.  |
| 2 | <i>Volume Control</i>       | This control is used to adjust the headphone volume. This control has no effect on the left and right audio outputs from the LINE OUT connector on the back of the unit.                                       |
| 3 | <i>BUSY Indicator</i>       | This indicator lights while data is being read.  |
| 4 | <i>Door</i>                 | This door prevents dust from getting inside the CD-ROM reader and should remain closed. If your programming device is not switched on, you can manually push the tray and close the door of your CD-ROM drive. |
| 5 | <i>Emergency Eject Hole</i> | Use a clip or any other device to remove the cartridge from the CD-ROM reader if the electrical eject is disabled by software or if power failure occurs (See "Emergency Eject" for details).                  |
| 6 | <i>Open/Close Button</i>    | This button is pressed to open or close the CD tray when the power of your programming device is on.   |

**Emergency Eject**

The procedure described below can be 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 minimum length of 55 mm) into the emergency eject hole at the front of the drive and 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.



**Operating your CD-ROM Drive**

By pushing the Open/Close button the CD tray is opened smoothly with a slight delay. Insert the CD with the labeled side to the right into the cutout in the tray. The holders integrated in the tray must be opened out to prevent the CD from falling out. The CD tray is retracted automatically when the tray is pushed briefly or the Open/Close button is pressed.



---

**Caution**

Risk of data loss and damage to the drive.

CD-ROM drives are sensitive to vibrations and shock. Any vibrations occurring during operation can lead to damage to the drive or CD.

Only use 12 cm standard CDs.

---

# Error Diagnostics

# 4

## Chapter Overview

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

- Refer to your operating system documentation for operating system error messages.
- Refer to the “CPU Module” section in the Technical Description for explanations of error messages caused by the CPU. Refer to Sections 4.8 and 4.9 of this manual for error messages that occur during the self-test (display LEDs and screen messages).

---

### Note

If you want to disconnect or connect cables, note of the safety instructions in Chapters 1 and 2.

---

## **4.1 The PC Does not React to the ON/OFF Switch**

**Error Display** The PC does not show any reaction at all when it is switched on. The power LED does not light up.

**Cause** The power supply is faulty.

**Remedy** Proceed as follows:

- Is the standby/operating switch on?
- Switch the PC off at the power supply unit.
- Check whether the power supply cable is connected.
- Check whether the power supply connector is connected correctly.
- Switch the PC on again at the power supply unit and press the standby/operating switch.

---

**Note**

If no LED lights up on the system unit after you have carried out these checks and measures, notify your technical support team (Chapter 5).

---

## 4.2 Problems When Using Modules from Other Manufacturers

**Error Display** The PC crashes during power-up.

**Cause** The following causes are possible:

- Double assignment of input/output addresses
- Double assignment of hardware interrupts and/or DMA channels
- Signal frequencies or signal levels are not met
- Deviating connector assignment

**Remedy** Use the logbook (located inside the PC) to check your computer configuration.

- If the computer configuration is the same as when your PC was delivered, please contact your technical support team (Chapter 5).
- 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.

### 4.3 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 5).

---



#### 4.4 The Screen Display Does not Appear or Drifts

<b>Cause and Remedy</b>	<p>Either the incorrect line frequency and/or the incorrect resolution is set for the screen or for the user program.</p> <ul style="list-style-type: none"><li>• 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.</li><li>• Adjust the relevant entries for the monitor in the <i>CONFIG.SYS</i> file (on the hard drive).</li><li>• Correct the settings for the monitor and graphics in your user program.</li><li>• Select the correct screen driver for your user program.</li></ul>
-------------------------	--

## 4.5 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 5).

---

## 4.6 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 5).

---

## 4.7 Rebooting Your Hard Drive (Data Deleted)

### Cause and Remedy

If you have created a system diskette and a backup copy of the hard drive, you can reboot your hard drive again. The directories and files present on your hard drive when you created your backup diskette are recreated.

1. Start your PC with the inserted system diskette.
2. Partition your hard drive with the `FDISK MS-DOS` command. (You must have knowledge of the system to carry this out.)
3. Format the hard drive with the `FORMAT MS-DOS` command and the `/s` option (for example, `FORMAT c: /s`). The option `/s` causes the system files you need to start the operating system to be copied to the hard drive.

### Under MS-DOS 6.22

Re-create your files on the hard disk. Use the `XCOPY MS-DOS` command and your backup diskettes, which have been created as specified in Section 3.11. Insert the first backup diskette.

1. Start copying the data to the hard disk using the following command:  

```
A: <CR>
XCOPY *.* C:\ /s<CR>
```
2. After the first diskette has been copied, insert the next diskette. Repeat this procedure until all diskettes have been copied. Now you have re-established the hard disk's original delivery status.
3. If your hard disk still works incorrectly after you have carried out these steps, it needs to be exchanged.

**Under  
Windows 95**

Follow the instructions given in the chapter *Installing Windows 95* of the User's Guide **Introduction to Microsoft Windows 95**. Here is some additional information:

**Starting SETUP for Windows 95**

1. Start SETUP.EXE.
2. Confirm with **Enter** when the first message appears.
3. Quit SCANDISK after it has checked your drives by confirming with **Exit**.
4. The Welcome screen form of the Setup program appears. Confirm with **Continue**. Setup performs routine checks on your PC and prepares the Setup utility.
5. You are requested to insert further diskettes and to confirm with **OK**.

*License Agreement for Windows 95*

6. Carefully read the MICROSOFT WINDOWS 95 END USER LICENSE AGREEMENT and agree to its conditions with **YES**.

*Windows 95 Setup Utility*

7. First the *system information request* occurs, which you start with **Continue**. Then you have to select the directory. Select **C:\Windows** and confirm with **Continue**.
8. The Standard Setup mode is suggested. Confirm with **Continue**.

*Hardware Recognition*

9. Make sure that all devices and modules have been correctly connected or installed and activate the check boxes of the additionally connected components. Confirm with **Continue**. This procedure may take a few minutes.

*Unlimited Communication*

10. Activate the check boxes for the communication programs, you want to install. Confirm your selection with **Continue**.

*Windows Components*

11. Select as recommended *Install standard components*. Acknowledge with **Continue**.

*Create Start Diskette*

12. Select **No** for the option *Create start diskette* and confirm with **Continue**.

*Start Copying the Windows 95 Files*

13. Confirm *Copy Windows 95 files* with **Continue**. The Windows files are then copied onto the hard disk.

*Complete System Restart*

14. After the files have been copied, the complete system restart is prepared. Confirm *System restart and exit installation* with **Continue**. After this acknowledgement a complete system restart is performed.

The first startup of Windows 95 is prepared and the configuration files are updated. The Control Panel is generated, the programs are entered in the start menu, the Windows help files are prepared and the MS-DOS programs are configured.

*Time Zone*

15. You can now select the time zone of your country/state using the mouse. Confirm your selection with **Close**.

The Windows 95 installation is now complete.

## 4.8 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 & Play problem Contact your technical support team.
Combination not supported	Plug & Play problem Contact your technical support team.
I/O device IRQ conflict	Plug & Play problem Contact your technical support team.
Invalid System Configuration Data	Plug & Play problem Set the RESET CONF...DATA option in the Setup. Contact your technical support team.
Allocation Error for	Plug & 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 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.
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.

Error Message on the Screen	Meaning/Suggestion
Failure Fixed Disk	Error accessing the hard drive. 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.
K System RAM Failed at offset:	Memory error. Contact your technical support team.
K Shadow RAM Failed at offset:	Memory error. Contact your technical support team.
K 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. Correct the entries in 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.



## 4.9 Error Messages During the Self-Test (POST Codes)

After the PC R125 P is switched on, a self-test (POST = Power On Self Test) is performed. If errors are detected during the POST, the tone sequence (beep code) which corresponds to the POST code is issued. The beep code consists of 2 x 2 sequences.

Conversion table showing the beep codes in hex format.

Beep Tones		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	BBB	BBBB	BBB	Tone sequence
2		E		Hex code
Error during: RAM basic test				Meaning

The POST Codes in Order of Occurrence

Display (hex)	Meaning	Description
02	TP_VERIFY_REAL	Test whether the CPU is in real mode
04	TP_GET_CPU_TYPE	Determine the CPU type
06	TP_HW_INIT	Initialize the main hardware (DMA and IRQ)
18	TP_TIMER_INIT	Initialize the timer
08	TP_CS_INIT	Initialize the chip set
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
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
14	TP_8742_INIT	Initialize the 8742 circuit
1A	TP_DMA_INIT	Initialize the DMA circuits
1C	TP_RESET_PIC	Reset the interrupt controller
22	TP_8742_TEST	Test circuit 8742
32	TP_COMPUTE_SPEED	Determine the clock pulse speed
34	TP_CMOS_TEST	Test the CMOS RAM
C1	TP_7xx_INIT	Initialize the PG 7xx I/Os
3C	TP_ADV_CS_CONFIG	Configure the advanced chip set
42	TP_VECTOR_INIT	Initialize the interrupt vectors

Display (hex)	Meaning	Description
46	TP_COPYRIGHT	Test the copyright
47	TP_PCI_OP_INIT	Initialize the PCI interface
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
52	TP_KB_TEST	Keyboard available?
54	TP_KEY_CLICK	Switch on/off the keyboard click
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
66	TP_CACHE_ADVNCNCD	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
72	TP_TEST_CONFIG	Check SETUP irregularities
74	TP_RTC_TEST	Test the REAL TIME CLOCK
7C	TP_HW_INTS	Set the IRQ vectors
7E	TP_COPROC	Check whether the CO processor is present
94	TP_DISABLE_A20	Disable the A20 line
80	TP_IO_BEFORE	Disable IO circuits

Display (hex)	Meaning	Description
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	Reenable the IO circuits
88	TP_BIOS_INIT	Initialize the BIOS data area
8C	TP_FLOPPY	Initialize the floppy controller
90	TP_FDISK	Initialize the hard disk controller
8A	TP_INIT_EXT_BDA	Initialize the external BIOS data area
8B	TP_MOUSE	Test the internal mouse interface
98	TP_ROM_SCAN	Search for BIOS expansions
69	TP_PM_SETUP	Initialize power management
9E	TP_IRQS	Enable the hardware IRQ
A0	TP_TIME_OF_DAY	Set the clock time and date
A8	TP_ERASE_F2	Delete the F2 message
AA	TP_SCAN_FOR_F2	Check whether to activate setup
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
B6	TP_PASSWORD	Password query (option)
BC	TP_PARITY	Cancel the parity memory bit
BD	TP_BOOT_MENU	Display the boot menu (option)
BE	TP_CLEAR_SCREEN	Clear the screen
C0	TP_INT19	Boot via Interrupt 19
D2		Unexpected interrupt

# SIMATIC PC Service Representatives

# 5

## Chapter Overview

Please contact the authorized regional service department or repair centers (service shop) for all of your service needs. You can obtain the relevant addresses by contacting the SIMATIC Customer Support Hotline.

## SIMATIC Customer Support Hotline

Open round the clock, world-wide:



<b>Nuremberg SIMATIC BASIC Hotline</b>	<b>Johnson City SIMATIC BASIC Hotline</b>	<b>Singapore SIMATIC BASIC Hotline</b>
Local time: Mo.-Fr. 7:00 to 17:00 Phone: +49 (911) 895-7000 Fax: +49 (911) 895-7002 E-Mail: simatic.support@nbgm.siemens.de GMT: +1:00	Local time: Mo.-Fr. 8:00 to 17:00 Phone: +1 423 461-2522 Fax: +1 423 461-2289 E-Mail: simatic.hotline@sea.siemens.com GMT: -5:00	Local time: Mo.-Fr. 8:30 to 17:30 Phone: +65 740-7000 Fax: +65 740-7141 E-Mail: simatic@singnet.com.sg GMT: +8:00
<b>Nuremberg SIMATIC Authorization Hotline</b>	<b>SIMATIC Premium Hotline</b>	
Local time: Mo.-Fr. 7:00 to 17:00 Phone: +49 (911) 895-7200 Fax: +49 (911) 895-7201 E-Mail: authorization@nbgm.siemens.de GMT: +1:00	(Calls charged, only with SIMATIC Card) Time: Mo.-Fr. 0:00 to 24:00 Phone: +49 (911) 895-7777 Fax: +49 (911) 895-7001 GMT: +01:00	
The working languages of the SIMATIC Hotlines are generally English and German; the Authorization Hotline can also be contacted in French, Italian, or Spanish.		

**SIMATIC  
Customer  
Support  
Online  
Services**

The SIMATIC Customer Support team offers you substantial additional information about SIMATIC products via its online services:

- General current information can be obtained from:
  - the **Internet** under <http://www.ad.siemens.de/simatic-cs>
  - the **Fax-Polling** number 08765-93 02 77 95 00

- Current product information leaflets and downloads which you may find useful are available:
  - on the **Internet** under  
[http://www.ad.siemens.de/support/html\\_00/](http://www.ad.siemens.de/support/html_00/)
  - via the **Bulletin Board System** (BBS) in Nuremberg (*SIMATIC Customer Support Mailbox*) under the number +49 (911) 895-7100.

To access the mailbox, use a modem with up to V.34 (28.8 Kbps) with parameters set as follows: 8, N, 1, ANSI; or dial in via ISDN (x.75, 64 Kbps).

English

## 5.1 Regional Repair Centers

SIMATIC-Hotline		
If problems occur, the SIMATIC Hotline should be able to help.		
Siemens AG		
AUT 1 CS		
Gleiwitzerstr. 555		
D-90475 Nürnberg-Moorenbrunn		
Telefon: (49)911-895-7000		
Fax: (49)911-895-7001		
(49)911-895-7002		
Region	PG-Repair Center	Phone
Augsburg	ATD TD ABG 6	(0821)3252 599
Berlin	ATD TD BLN 5	(030)386 34926
Bielefeld	ATD TD	(0521)291 323
Bremen	ANL TD 47	(0421)364 2996
Chemnitz	A&D B 14	(0371)475 3860
Cologne	ATD TD SSH 5	(0221)576 6516
Erlangen	ATD TD 3 LSE-ITC	(09131)7 32714
Erlangen	ATD TD 3 LSE-RC	(09131)7 31048
Essen	ATD TDE	(0201)816 1580
Frankfurt	ANL TD 84	(069)797 7358
Fürth	A&D SE B 9.1	(0911)750 2741
Hamburg	ANL TD FSZ	(040)2889 4230
Hanover	ANL TD HVR 1	(0511)877 2241
Karlsruhe	A&D AS EWK PLZ 52	(0721)595 4183
Kassel	ATD TD	(0561)7886 434
Langen	ATD TD E	(069)797 5608
Leipzig	ATD TD 31	(0341)210 2049
Mannheim	ATD TD 9	(0621)456 1328
Munich	ATD TD MCH 53	(089)9221 6213
Nuremberg	ATD TD S 1	(0911)654 6117
Saarbrücken	ATD TD 3	(0681)386 2598
Stuttgart Weilimdorf	ATD TD SDW 5	(0711)137 6228



Country	PG-Repair Center	Phone
Argentina	WA. SERVICE	0054 1 738 7333
Australia	Technical Service	0061 3 9420 72 74
Austria	SERVICE SHOP	0043 1 1707 23729
Belgium	ES 1-4-5/AQ (15/+0)	0032 2 536 2905
Brazil	STI A 43 E	0055 11 7947 1999
China	AUT 1 Customer Support	0086 10 643 61888 3371
Denmark	GR.319-ET	0045 7640 5151
England	Control Systems (Repair Centre)	0044 161 446 5760
Finland	TTR 3/Automaatiohuolto	+358051 3835
France	M.et S/SER	0033 1 4922 3160
India	AUT 1 Quality Control	0091 253 381462
Italy	SERVICE T 47 A	0039 2 6676 3490
Mexico	EA-ST Servicios Tecnicos	0052 5 328 2078
Netherlands	FS-REP B 3.0.24	0031 70 333 3858
Poland	Bioro Automatyki	0048 22 670 91 66
Portugal	DE/AT	00351 1 7573234
Singapore	ATD Technical Service	0065 740 7150
South Africa	FSPC	0027 11 407 4838
Spain	ST4/EIA	0034 1 754 5406
Sweden	TT-Service	0046 8 728 14 62
Switzerland	TDS 2	0041 1 749 1304
USA	REPAIR CENTER	001 423 461 2497

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

SIMATIC PC  
C79000-G7076-C798-02

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Siemens AG  
A&D AS E81  
Oestliche Rheinbrueckenstr. 50  
D-76181 Karlsruhe  
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