SIEMENS
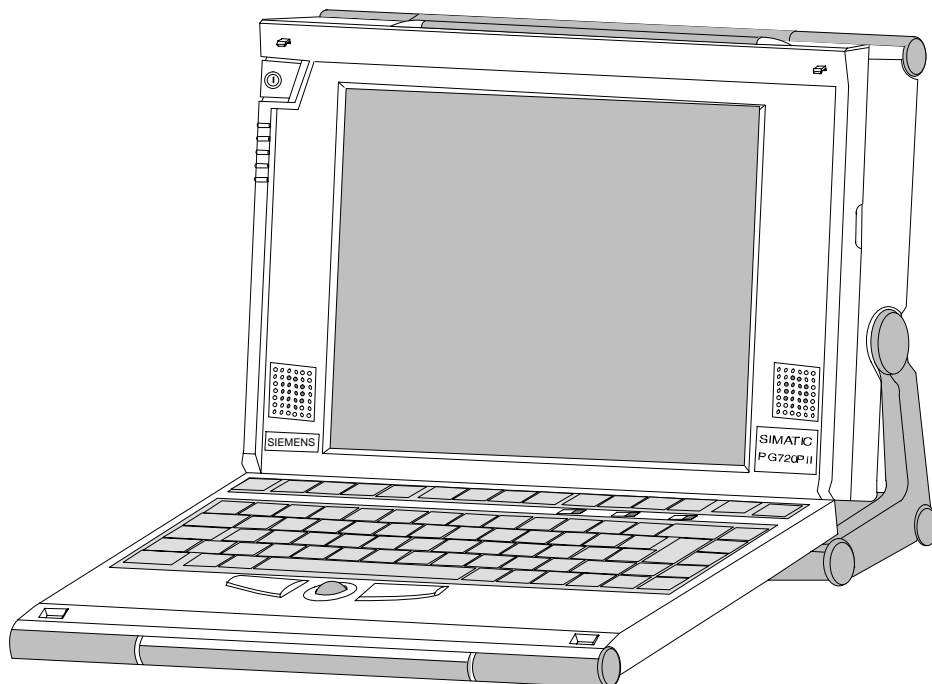
SIMATIC

PG 720 PII Programming Device

This leaflet gives you specific
technical information on your
PG 720 PII programming device.

Safety Guidelines

This operating instructions 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.

Caution

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 PG 720 PII manual. The manual is also available in electronic form on the CD-ROM labeled "Backup PG 720/740".

Only **qualified personnel** should be allowed to install and work on this equipment using the PG 720 PII 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

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Excellence in Automation & Drives: Siemens

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Contents

Welcome to your PG 720 PII

Overview

Your PG 720 PII is a reliable and comfortable programming device because of its innovative technology and ergonomic design. The SIMATIC programming device PG 720 PII is an ideal tool for programming and projecting tasks, for starting up as well as maintenance and supporting all automation applications.

- Unpack, power-up, start: due to preinstalled hardware and software your PG is ready-to-use
- Suitable for hard industrial conditions
- Due to the fact that Windows 98, Windows NT or Windows 2000 is preinstalled, your PG 720 PII operating system can also be used as a fully equipped PC.

Features

The PG 720 PII which suits your application has everything on board that you need for configuring, programming, testing and starting up your SIMATIC. All online and programming interfaces and the necessary connecting cables are included in the PG 720 PII delivery.

Depending on the version delivered, the programming software STEP 5, STEP 7-Micro and STEP 7 are already installed on the PG 720 PII.

High Quality Standard

Your PG 720 PII has a high quality standard. This standard is reached by:

- Extensive climatic, vibrational 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 to EN ISO 9001.

Operational Range

The PG 720 PII is a portable programming device. It can be usd for all SIMATIC automation systems in both online and offline operation. The PG 720 PII meets the strictest requirements by:

- High Level system performance (for example, Intel Pentium II processor)
- High degree of enhanceability (for example, PC-cards, upgradeable processor mother board)
- Color TFT display with an excellent contrast and a high degree of brilliance
- MPI/DP interface port for simultaneous connection to SIMATIC S7 and other automation systems.
- Depending on the version delivered, preinstalled software for SIMATIC S7 and SIMATIC S5
- Programming interface for S5/S7-EPROM memory
- Ergonomic keyboard with integrated trackball
- Highly portable with a wide range of setup possibilities
- Very robust construction

Setup Possibilities

Different setup options facilitate the operation in an industrial environment:

- Swivel display; the display can be rotated 90°. Even when the programming device is placed on the floor its face can be easily read from above.
- Removable keyboard; the keyboard can be detached from the device to render opertaion easier to work under diffcult conditions for example, in narrow spaces.

Functions

The software package supplied with the PG 720 PII allows a universal use of the PG 720 PII. The scope of delivery contains:

- Windows 98, Windows NT or Windows 2000 operating system;
- Depending on the version delivered, STEP 7 and STEP 7-Micro/WIN 32 programming software and STEP 5/ST.

Additionally the PG 720 PII's software offers the following operational options:

- Supplementary SIMATIC software
- Software from the entire world of automation
- Any PC software
- Software for Profibus DP

Further Operational Options:

The PG 720 PII can also be used:

in other areas of automation technology such as for example, SIMATIC HMI; TELEPERM; SINUMERIK; SIROTEC etc. or as a personal computer.

Scope of Delivery/Accessories

- MPI cable (5 m) to connect to SIMATIC S7/M7/C7
- PG-PLC cable (5 m) to connect to SIMATIC S5
- Power cord
- External power unit
- Carrying case
- Recovery CD-ROM Microsoft Windows,
  Microsoft Windows Manual,
  "Certificate of Authenticity" (COA) with a "Product Key" for Microsoft Windows on the programming device.
- CD-ROM "Backup PG 720/740" with electronic manuals (in five languages) and the SIMATIC Software STEP 5, STEP 7, STEP 7-Micro/WIN32 and AuthorsW.
- Depending on the version delivered, authorization disk for STEP 7 and STEP 5.

The software supplied with your PG has been preinstalled on the hard disk drive in one language. The following items must be ordered separately (also see catalogue ST 70 1999) :

- Additional color monitor, printer and connecting cable
- Additional SIMATIC software
- UV eraser for EPROM memory modules
- Memory expansion cards
- Documentation (manuals for STEP 7 in one language)

Information Referring to these Operating Instructions

Regardless whether you have already worked with a programming device like the PG 720 PII or you are not experienced at all, these operating instructions will help you to get familiar with the technical features of your PG. You will learn the most significant elements and operating structures by means of task-oriented sections giving you information to start with almost any possible chapter.

You can find further information in the electronic manual PG 720 PII on the CD-ROM "Backup PG 720/740". The manual contains information on commissioning, troubleshooting, hardware and a glossary with explanations relating to the programming device.

Basic PLC knowledge or familiarity with mouse-handling, window techniques, pull-down menus etc. may be helpful.

With the help of STEP 7 trainings you can broaden and enhance your knowledge of the PG 720 PII as well as learn how to create complete automation solutions using STEP 7.

How to Use your Operating Instructions

Initial Situation	Corresponding Chapter
You have no experience with programming devices	Chapter 1 Important Notes Chapter 2 Starting up and Operating the PG Chapter 3 Hardware components of the PG 720 PII
You want to prepare your PG for programming	Chapter 5 Installing and Operating the PG 720 PII
You want to install additional drivers	Chapter 6.4, Installing Drivers
You have to reinstall the software	Chapter 6 Reinstallation of the Software
You need support	Chapter 8 Hotline Services
You want to connect other hardware components	Chapter 4 Installing System Expansions Connecting Peripheral Devices
You need more information from the electronic manuals	Chapter 5.4 Electronic Manuals

Conventions

There are different modes to complete your tasks under Microsoft Windows and under the SIMATIC 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 >Bold >	Specifies a menu command
" Inverted Comma"	Specifies the name of screen element (for example, 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).

Supplementary PG 720 PII Documentation

- PG 720 PII electronic manual on the CD "Backup PG 720/740" that comes with the PG

- Electronic manuals (complete documentation on CD, in five languages)

- STEP 7 basic package containing of the following manuals: Getting-Started, Programming manual STEP 7, Configuring and Converting Hardware manual.

- Automation system S7-200, System manual

Important Notes

1

1.1 Safety Instructions

⚠ **Caution**

The safety instructions given on the backside of the title page of this manual must be observed. Before adding to the PG 720 PII's functionality by expanding the hardware configuration (see Chapter 4) refer to the electronic manual on the CD "Backup PG 720/740" supplied with your PG 720 PII and observe the relevant safety instructions.

Notes on Inserting and Removing Modules

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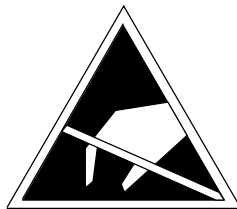
Please observe and carefully follow the guidelines mentioned below when handling modules equipped with electrostatically sensitive devices:

- 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 (containg ESDs).

1.2 Certificates, Directives and Declarations

Notes on the CE Symbol

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

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 Automatisierungs- und Antriebstechnik
A&D AS E4
Postfach 1963
D-92209 Amberg
Tel.: 09621 80 3283
Fax: 09621 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 PG 720 PII is shipped with the software already installed. Please observe the relevant license agreements.

1.3 Certification for the USA, Canada and Australia

Security

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

Underwriters Laboratories (UL) to the UL 1950 standard.

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

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.

1.4 Transporting the PG 720 PII

Preparatory Measures

The PG 720 PII is easy to transport. Before transporting it, however, you should take the following measures:

1. Switch the PG 720 PII off.

2. Then, unplug all connecting cables.

3. Close the covers protecting the ports and connections on the right-hand and left-hand casing side panels.

4. Bring the unit into an upright position.

5. Swing the keyboard up and press it against the front plate of the unit.
   Make sure that the latches on the left and the right sides snap into place.

6. Use the carrying handle if you only intend transporting the unit over a short distance.

7. If you are transporting the PG 720 PII over large distances, pack the unit with all its accessories in the carrying bag supplied.

Transport

Despite the fact that the PG 720 PII is of rugged design, its internal components are sensitive to severe vibrations or impact. You must therefore protect your PG 720 PII against severe mechanical stressing when transporting it.

Use the **original packing material** if you have to ship the PG 720 PII from one location to another.

Starting up and Operating the PG 2

2.1 Unpacking and Checking the Scope of Delivery

Unpacking the PG 720 PII

Unpack your PG 720 PII programming device as follows:

1. Remove the packing.

2. Do no throw the original packing away. Keep it in case you have to transport the unit again sometime in the future.

Checking the Contents

3. Check with the packing list to make sure no components are missing.

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

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

Recording the Serial Number

6. Your programming device is identified by a serial number (F-Nr.) on the type label affixed to the underside of the device. Enter this number in the table below.

   If a programming device 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"

7. Enter the Microsoft Windows "Product Key" from the "Certificate of Authenticity" (COA) in the table. You can find the product key on your programming device.

F-Nr.	
Order No.	
Microsoft Windows Product Key	

2.2   Choosing Setup Position

Setting Up the PG 720 PII

The PG 720 PII is mostly mounted on a desk or table top. To make working with the PG 720 PII easier, it can be adapted as follows to the particular workplace.

Set up your programming device as follows:

1. Set the PG 720 PII down on the desk or the table top.

2. Open the keyboard lock by pulling up the anthracite-colored handle.

3. Swing the keyboard down into position.
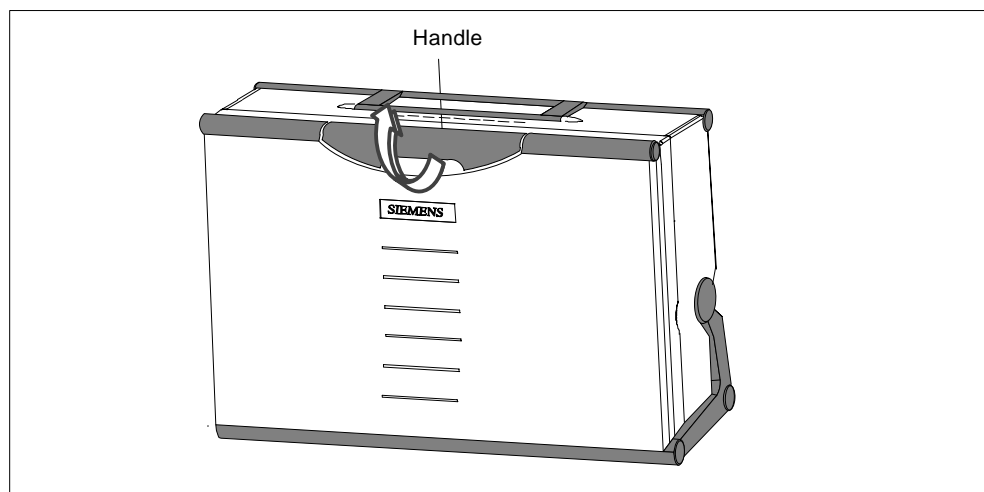
Changing the Angle of Inclination

With the keyboard of the PG 720 PII open, you can incline the unit to any angle between 0 and 90° around the axis of rotation of its stand. Proceed as follows:

1. Pull the extra support out of the rear of the stand.

2. Swing the wire support beneath the extra support out to the rear.

3. Swing the keyboard down.

4. Incline the unit to the angle you prefer.

⚠️ **Caution**

Risk of injury!

There is a danger of the unit tipping over if it is set up without extra support and at an angle of inclination of more than 15°. This could lead to personal injury and also damage to the unit.

If the angle of inclination is greater than 15°, you must use the extra slide-out support in the stand.
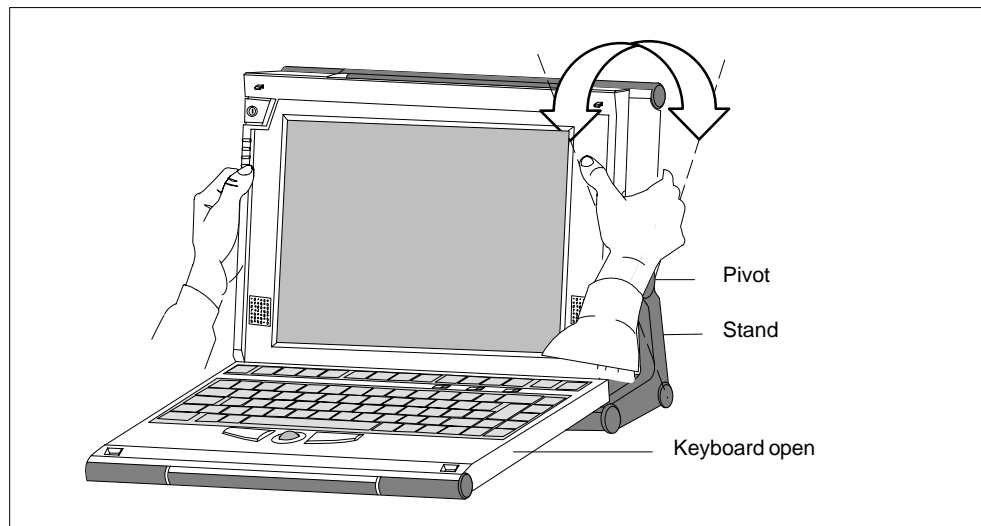
Changing the Angle of Inclination

2.3　　　Operating the PG 720 PII

Connecting to the Power Supply

You can operate the PG 720 PII on 120 V and 230 V power systems. The voltage is selected automatically. In battery mode the programming device draws its power from the built-in rechargeable battery.

Mains Mode

1. Plug the power supply cable supplied with the device into the socket of the external power unit and plug the low-voltage jack of the power unit into the device's input socket.

2. Connect the power cable to a socket outlet with a grounded protective conductor.

Connection for external
power unit
$V_N = 17.5$ V DC
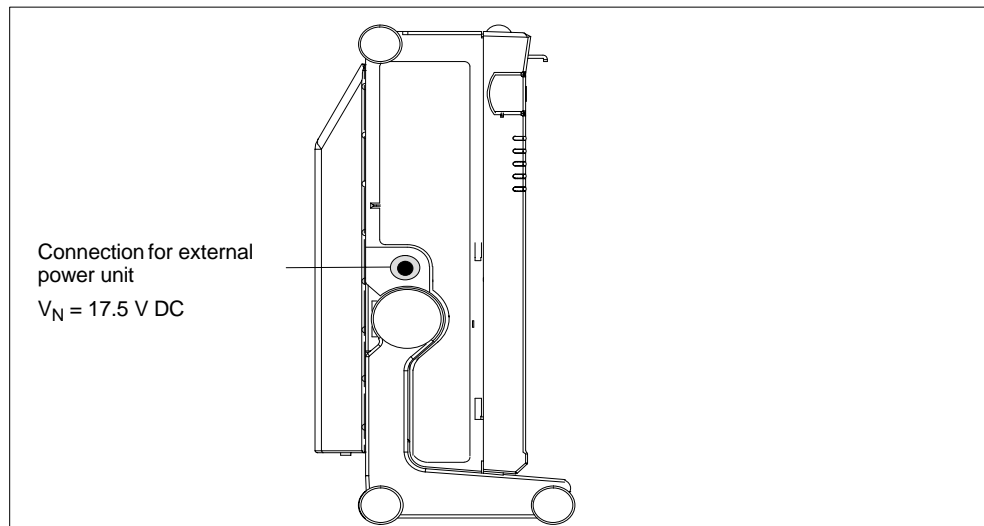
Power Supply Connection

Note

The power plug must be disconnected to isolate the unit completely from the supply.

For operation in Canada and the US, a CSA or UL listed power supply cable must be used.

The external power supply unit is intended for operation with grounded power supply systems (TN networks according to IEC 364-3).

The unit is not intended for operation with grounded or impedance-grounded systems (IT networks).

Switching on the PG 720 PII

The ON/OFF button (1) has three functions (ON/OFF, wakeup from Save to RAM, and Override).

– Press this button for approximately 1 second to switch on the programming device.

– If the system is in the Save to RAM mode (indicated by the flashing Power LED), press this button for approximately 1 second to reawaken the system.

– If a system conflict has occurred and the system fails to react to this button (after approx. 2 seconds), press and hold down the button for approximately 7 seconds to force a hard reset (override).

Press ON/OFF switch for one second to switch on.

2 LEDs

Battery
Power
Accessing external memory
Submodule programming active
MPI/DP port active

Battery: green: Power supply via external power unit

orange: Battery is recharging

red: Battery almost fully discharged

off: Battery is switched off

Power LED green: Programming device is on

Power LED flashing green: Save to DRAM
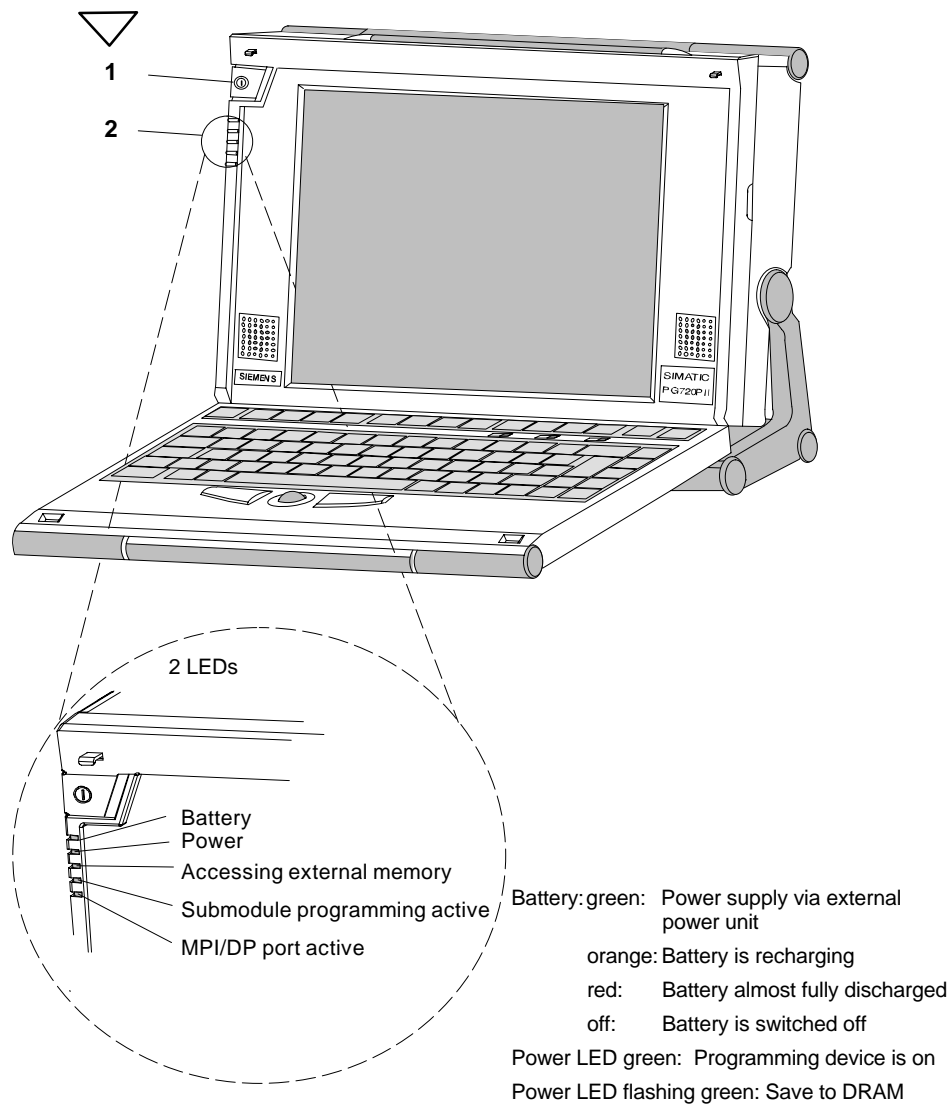
Switching off the PG 720 PII

It is strongly recommended to close all applications and safely turn off the operating system before switching off the PG 720 PII.

⚠ **Warning**

Do not switch off the PG 720 PII while being connected to a network, errors in data transfer and loss of data may occur. It could also damage the swap file on your hard disk and cause loss of data.

Safely turn off the operating system in order to close the swap file and disconnect from the network before switching off your PG 720 PII.

To switch off the PG proceed as follows:

1. Close all applications and shut down the operating system.

2. Wait until the operating system issues a message indicating that it is safe to switch off.

3. Switch off the PG 720 PII by pressing the ON/OFF button.

Note

If you use Windows 98, always use **Start > Shut Down** in the task bar to switch off. If you do this the PG 720 PII will switch off automatically when Windows 98 shuts down.

Remember that your programming device is not fully de-energized unless you unplug it from the mains supply and disconnect the battery (see Section 4.2 in the electronic manual).

Hardware Components of the PG 720 PII **3**

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

- Right- and left-hand side panel of the device
- Underside of the housing
- Connectors and ports
- Drives
- Memory submodules
- External power unit
- Battery and
- Backup battery

3.1 Front

You can access all the important operator controls and displays from the front or sides of the unit. The CD-ROM drive can be accessed from the underside of the device.

1	On/Off switch button [3]	**6**	Keyboard
2	Carrying handle	**7**	Coverplate for COM1/COM2 port, MPI/DP port, mouse port, and LPT1/printer port [1]
3	LC display		
4	Coverplate for module ports, memory card ports, PCMCIA ports, and floppy disk drive [1]	**8**	Trackball
		9	Catches for locking keyboard
5	Stand	**10**	Pivot
		11	Protector strip
		12	CD-ROM drive [2]
		14	Speakers

[1] The coverplates are used to protect the ports from dust, and can be removed and replaced as required.

[2] Can be accessed from the base when the device is turned upside down.

[3] . Press this button for 1 second in order to switch on the programming device. A hard reset (override) is performed if you hold down the button for longer than 7 seconds.

[4] . External storage media: hard disk drive, floppy disk drive, CD-ROM drive

Detail 13

LEDs

Battery
Power
Accessing external storage medium[4]
Submodule programming active
MPI/DP port active

3.2 Left-Hand Casing Side Panel (Communications Side)

All the connectors and interface ports for connecting to external devices are located on the left-hand side panel of the PG 720 PII (communications side).
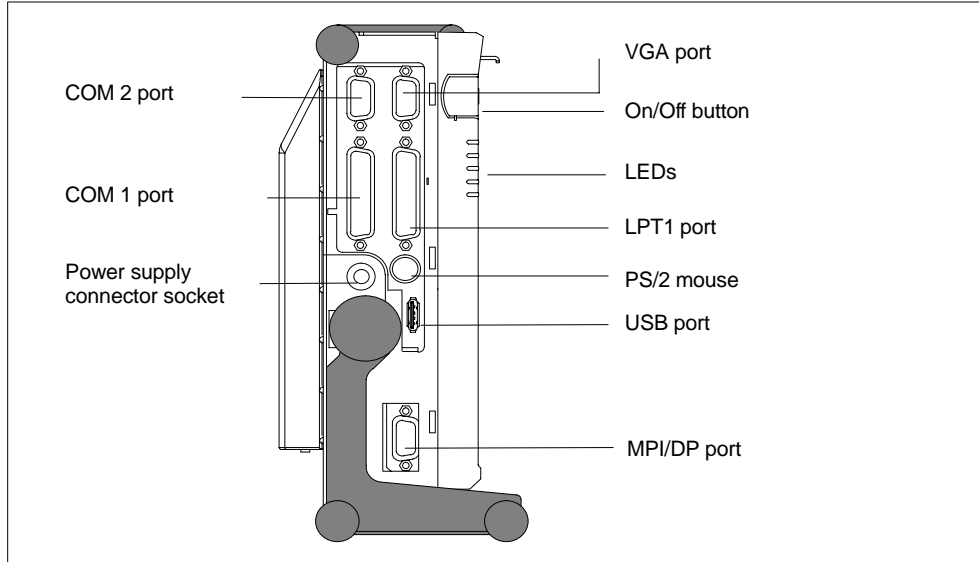
Ports and Connectors	Function
VGA port	Connection for external monitor
COM 2 Serial port	Connection for serial mouse
V.24/mouse Serial port	Connection for serial printer
COM 1 V.24/MODEM/PLC Serial port	Connection for S5 programmable controller
MPI/DP Multipoint Interface	Connection for S7 programmable controller
LPT 1 printer Parallel interface	Connection for parallel printer
PS/2 mouse	Connection for external PS/2 mouse
External power supply unit	Connection for 17 V DC voltage from external power supply
USB type A serial port	Port for the Universal Serial Bus

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 an LC display and an external monitor. The screen display is then optimized to a format of 800 x 600 pixels. Modes with a lower resolution and text modes are expanded to this format.

To optimize the screen display for an external monitor, select "PG 720 PII 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.

1. Open the port cover on the left-hand side panel.

2. 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.

USB port
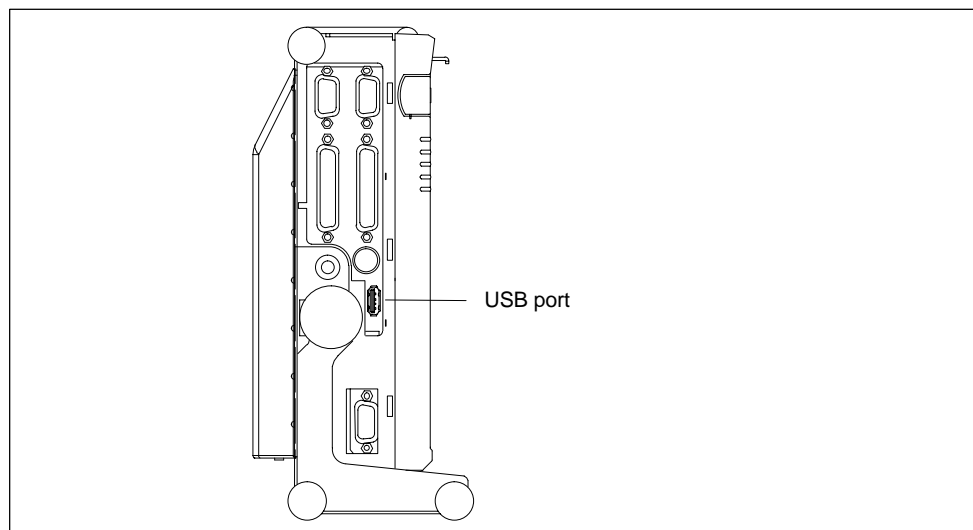
3.3 Right-Hand Casing Side Panel (Processing Side)

You access the slots for the S5/S7 submodule interface, PC card interface and the disk drive from the right-hand side panel of the PG 720 PII's casing (processing side).
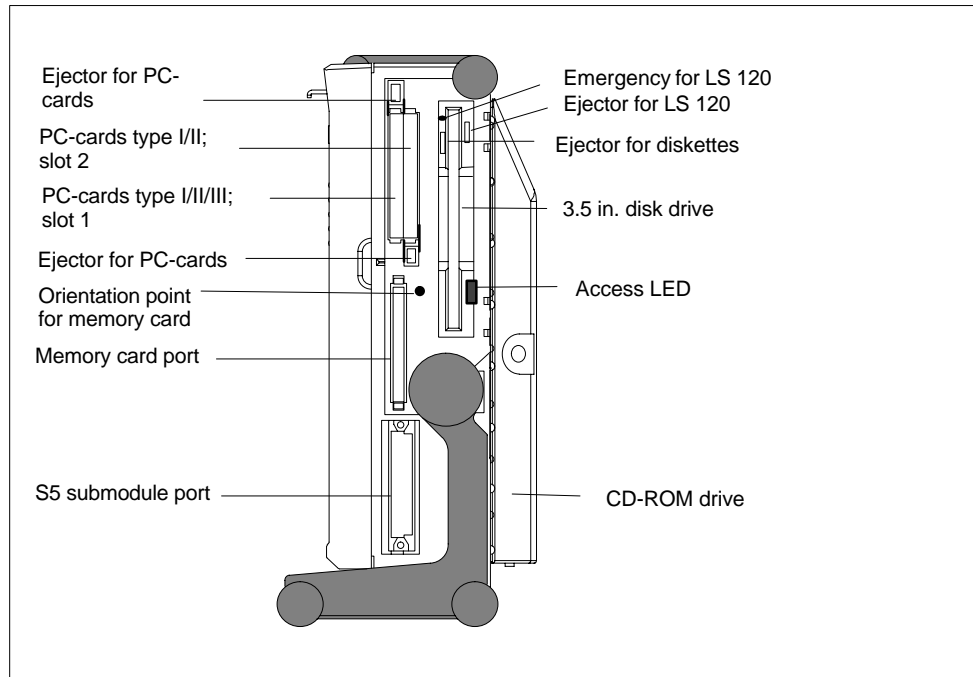
The following table contains an overview of the various interface ports and connectors:

Port	Function
PC-Card type II port; slot 2	Connection for PC-Cards type I/II cards
PC-Card type III port; slot 1	Connection for PC-Cards type I/II/III cards
S5 submodule port	Programming of SIMATIC S5 memory submodules
Memory card port	Programming SIMATIC memory cards
Floppy disk drive	Processing 3.5" floppy disks

Note

PC cards is a generic term for Cardbus cards and PCMCIA cards (see manual).

Base Panel

You can access the CD-ROM drive and the rechargeable battery from the base of the PG 720 PII device.

Battery
CD-ROM drive
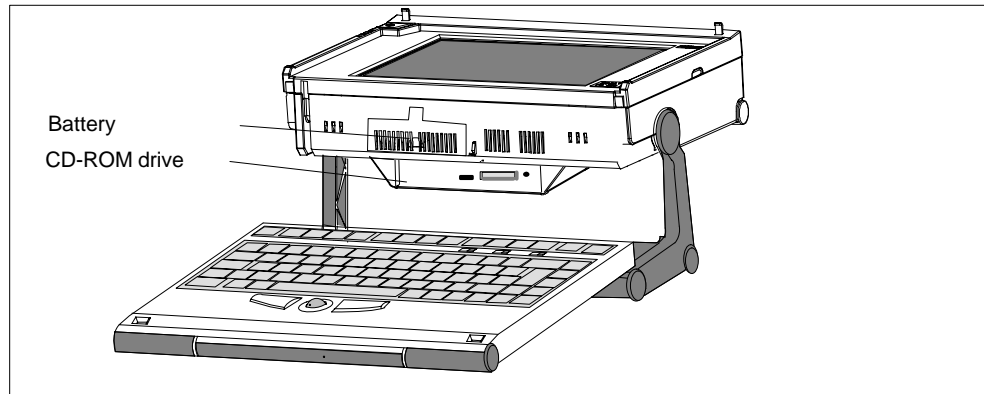
Ventilating Slots

The raised air outlet slots for the ventilation are located above the interface ports. There are also ventilating slots on the underside of the base. These slots must not be covered and blocked in any way (by carpeting, for instance).

> ⚠ **Caution**
>
> Risk of overheating!
>
> If you cover up the slots for the inlet and outlet air in any way, there is a risk that your PG 720 PII will be damaged.
>
> Do not place any objects over, or lay them on, the ventilating slots.

3.4   Color Display of the PG 720 PII

Color Display of the PG 720 PII

The display on the PG 720 PII is an TFT color display with a 12.1 in. diagonal ($\approx$ 31 cm) and a resolution of 800 x 600 pixels.

The three primary colors, red, green and blue, can each be displayed in 64 different shades. This means that, including all the secondary colors, a maximum of 256k different colors can be displayed.

⚠️ **Caution**

Risk of injury!

If a display is **damaged**, liquid crystal may escape. Do not touch this liquid or allow it to come into contact with your skin in any way, and do not breathe in the vapors. If you do come into contact with the liquid, wash those parts of the skin affected immediately with alcohol, and rinse with plenty of water. Then consult a physician right away.

Use **only** a soft cotton cloth slightly moistened with a **mild** cleansing agent for glass or an impregnated wipe for spectacles to clean the display. Do not use water or aggressive solvents (such as alcohol and acetone) and do not spray moisture onto the display.

3.5 Drives

The PG 720 PII is equipped with a 3.5 in. floppy disk drive, a 2.5 in. hard disk drive, and a CD-ROM drive.

Disk Drive

You can store programs and data on diskettes with the disk drive and load them from diskettes into the PG 720 PII.

Note

When a diskette in the FDD is accessed, this status is indicated by the access LED on the drive and the access LED for external storage media on the front of the device.

Wait until the LEDs go out before you remove the diskette from the FDD.

Types of Diskette

You can use the following diskettes:

double sided high density diskette	double sided double density diskette	Superdisk
3.5 "	3.5 "	3.5 "
1,44 Mbyte (135 TPI)	720 Kbyte	120 Mbyte

The PC recognizes the disk type by the coding. Superdisks can only be used in a LS120 drive.

Handling Diskettes with the Floppy Disk Drive

The diskette is inserted in the disk drive as shown below:
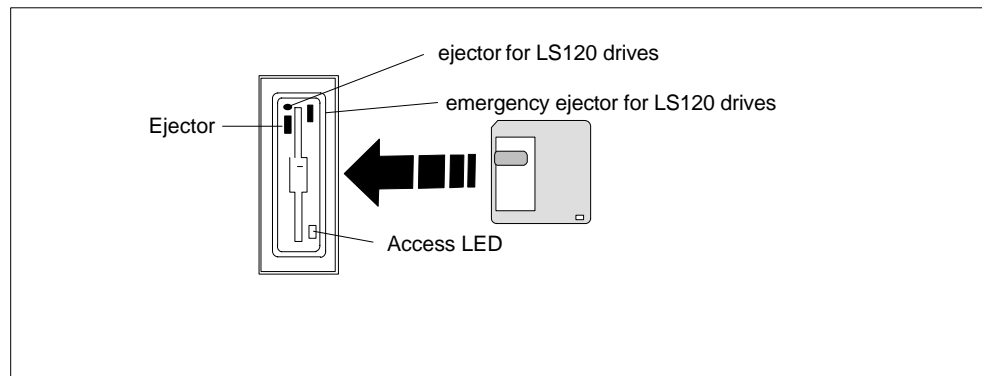
Information on the LS120 Disk Drive

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 PGs 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 programming 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 LS120 Superdisks

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

Note: Track density for Superdisks is10 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: A Superdisk can be completely read or written in 15 minutes.

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:
When the device is switched off, the disk can be forced out by using a pin (forexample, a bent paper clip).

Recommended Superdisks:

The Superdisks available commercially vary in quality. The best results in our quali-fication 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 addres.

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

Hard Disk Drive

Whenever the hard disk is accessed, the access LED on the front of the unit lights up.

⚠ **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 10 seconds) before you move it.

3.6　　CD-ROM Drive

The CD-ROM drive enables you to read CDs.

Note

When a CD in the CD-ROM drive is accessed, this status is indicated by the access LED on the drive and the access LED for external storage media on the front of the device.

Wait until the LEDs go out before you remove the CD from the drive.

Opening the Drawer

Swing the PG 720 PII into a horizontal position. The CD-ROM drive is now on the underside of the programming device. Switch on the programming device. 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.

CD-ROM Front
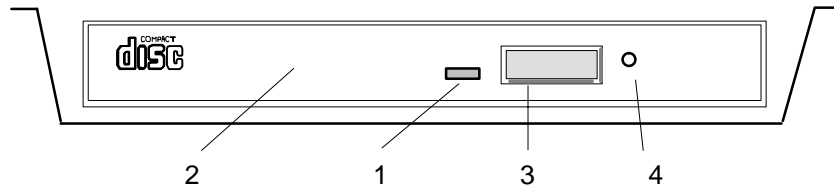
1   Access display
2   Drawer
3   Eject button
4   Emergency eject

⚠ **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.

Emergency removal
By inserting a pin (or a paper clip) while the device is switched off, you can force the drawer to open.

3.7 SIMATIC Memory Submodules and PC Cards

Please note the following instructions for working with SIMATIC S5 memory submodules and SIMATIC memory cards.

Caution

Risk of damage to submodules!

Do not attempt to remove a card while the "Submodule programming active" LED is on. Inserting or removing cards while submodule programming is active can result in damage to the cards. You cannot work with S5 submodules and memory cards at the same time.

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

Note

Do not attempt to program SIMATIC S5 submodules or SIMATIC memory cards unless the programming unit is operating on mains power (external power unit connected). This is the only way of ensuring that the programming session is not interrupted on account of a low battery.

The programming interface is not enabled unless the programming unit is connected to the mains supply when it is switched on.

Note

Operating SIMATIC S5 submodules and SIMATIC memory cards simultaneously is not permitted. The following table shows the operating modes permitted and the maximum possible current consumption for the PC card interface.

S5 Submodule Port	Memory Card Port	PCMCIA Port Slot 1 and Slot 2	5V	12V
S5 memory submodule	–	PC-Card	1)	1)
–	Memory card	PC-Card	2)	–
–	–	PC-Card	3)	4)

1. Depends on the S5 memory submodule

2. Max. permissible current in total for both slots . . . . 250 mA

3. Max. permissible current in total for both slots . . . . 500 mA

4. Max. permissible current in total for both slots . . . . 120 mA

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

SIMATIC Memory Cards

Please note the following instructions while working with memory cards.

⚠ **Caution**

Risk of damage to memory cards!

When inserting a card, always make sure that the identification mark (a spot) is facing up (label to rear).

If you try to plug the memory card in the wrong way around, your programming device or memory card will be damaged!

SIMATIC S5 Memory Submodules

Please not the following instructions for working with S5 memory submodules.

⚠ **Caution**

Risk of damage to S5 memory submodules!

When inserting a memory submodule, always make sure that the printed circuit board is toward the front.

You could damage the PG or the S5 memory submodule if you attempt to insert the memory submodule the wrong way round.

PC Cards

Note

PC cards is a generic term for Cardbus cards and PCMCIA cards (see electronic manual).

Proceed as follows while working with Cardbus-/PC cards:

Ejector for PC-Cards

Ejector for PC-Cards
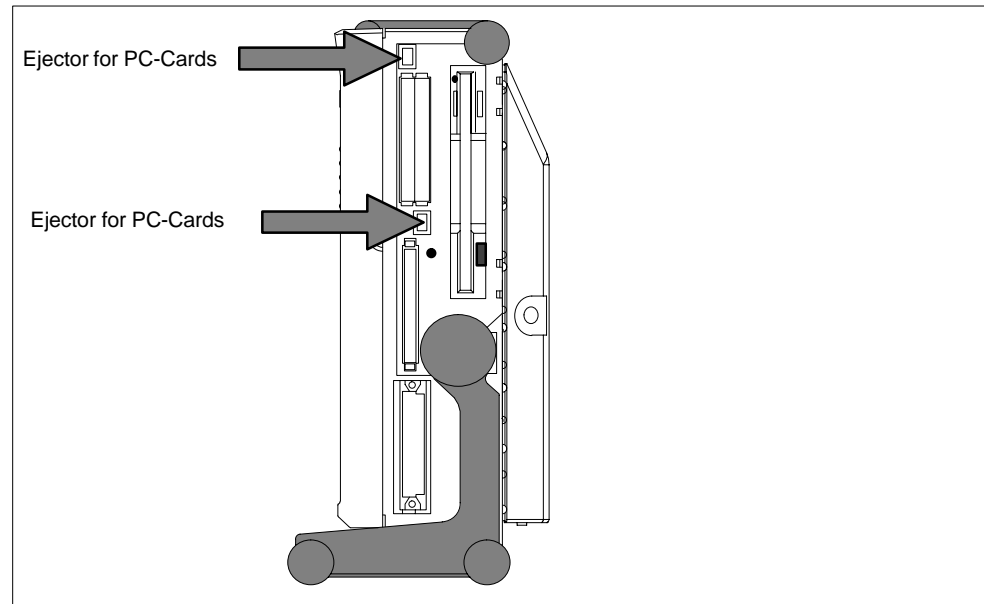
⚠ **Caution**

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 for PG 720 PII).

Otherwise damage could occur.

Installing PC Cards

Note the following when installing these cards:

Note

Depending on the configuration of the PG 720 PII, there may not be any free interrupts available for operating PC-Cards. In this case, you must reserve interrupts in the setup.

To reserve the interrupts, proceed as follows:

Open the "Advanced" BIOS Setup menu and set the interrupt required by the PC cards to "reserved" (default is "available") at "PCI/PNP ISA IRQ Resource exclusion" in the PCI Configuration" line.

The cardbus controller occupies the I/O area from 0x3E0 to 0x3E1.

3.8 External Power Supply

The external power supply supplies power to the PG 720 PII when it is operated using 120 V and 230 V mains power. The voltage range is set automatically. When the programming device is run on mains power, the integrated rechargeable battery is charged automatically. The connecting cable to the PG 720 PII is permanently connected to the external power supply. A socket on the external power supply enables you to connect it to the mains supply.

Caution

Risk of damage to the device.

The PG 720 PII may only be operated with the correct external power supply enclosed with the device.

Note

The power plug must be disconnected to isolate the unit completely from the supply.

For operation in Canada and the USA, a CSA or UL-listed power supply cable must be used.

For the United States and Canada:

In the United States and Canada the cord must be UL-listed and CSA Labelled. The male plug is a NEMA 5-15 style.

For operation with 120 V:

Use a UL-listed, CSA Labelled Cord Set, consisting of a min. 18 AWG. Type SVT or SJT 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 (within the USA):

Use a UL-listed, CSA Labelled Cord Set, consisting of 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):

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

The unit is intended for operation with grounded power supply networks (TN networks, VDE 0100 part 300 or IEC 364-3).
The unit is not intended for operation with non-grounded or impedance-grounded systems.

The connecting cable must meet the necessary safety requirements in the respective country.

3.9   Rechargeable Battery

The PG 720 PII has an integrated NiMH (nickel metal hydride) rechargeable battery. This makes the device portable, meaning you can use it without the external power supply. A charge-status indicator is integrated into the battery.

Note

Do not start a work session in battery mode unless the battery is fully charged. This is the only way of ensuring that the full on-battery operating time is available and that you will be warned in good time when battery power is low. The battery has electronic circuitry for showing the current charge status. You can view the charge status under Windows 98. The indicator has to be recalibrated from time to time (see electronic manual, Section 4.2 Battery Mode).

If the error message "Battery needs calibration cycle" is generated after power on, then calibration must be carried out. Acknowledge the error message with the F1 key and execute a teach-in cycle (see also Section 4.2 in the manual).

The procedure for recalibrating is as follows:

1. Charge the battery until the charge-status indicator shows 100%.

2. Leave the programming device switched on to drain the battery: the programming device will switch itself off when the battery is discharged. Remember to disconnect the power unit from the PG 720 PII so that the battery can discharge.

3. Once the programming device has switched itself off, start another charge cycle by reconnecting the external power unit to the PG 720 PII. The teach-in cycle terminates automatically approximately 10 minutes later.

As soon as the device is connected to the network via the power supply unit, a discharged battery is recharged: if the device is switched off, the battery can be recharged within two hours; if the device is switched on with reduced charging current, this takes about eight hours.

When you switch off the programming device the battery is recharged for a short time (orange LED on) for safety's sake. This ensures that the battery is fully charged.

You should not let the battery become too low. Switch the device off with the on/off switch after use. If the device is not used for some time, for example, several weeks, you should remove the battery plug. This is the best way of saving the battery and ensuring it has a longer life, since it has no connection to the device. The battery can be found behind the battery cover on the underside of the device. It can be accessed when the device is placed in a horizontal position.

The charging process may finish too early if the device is subjected to a significant change in temperature, or when operating in high ambient temperatures (max. 40°C). You should wait until your device has been acclimatized before charging the battery.

⚠️ **Caution**

Do not use a battery other than that supplied with the PG 720 PII.

When disposing of used rechargeable batteries, please observe your local regulations for waste disposal.

Always comply with the ESD Guideline (see Section 1.1 or the electronic manual for the PG 720 PII).

Installing System Expansions, Accessories and Spare Parts

4

4.1 Expansions and Spare Parts

Option	Order No.
Memory expansion 64 MByte	6ES7791-0KR00-0XA0
Memory expansion 128 MByte	6ES7791-0KS00-0XA0
External power unit	C79451-Z634-K12
Rechargeable battery	6ES7798-0AA02-0XA0
Backup battery	W79084-E1003-B1

> ⚠ **Caution**
>
> Electronic components of printed circuit boards are highly-sensitive to electrostatic discharge. When handling these components please follow the guidelines for electrostatically sensitive components (ESD guideline) at the end of the electronic manual of the PG 720 PII.

Refer to chapter 5 of the electronic manual *(PG 720 PII Expansions)* for more information on the following subjects:

- Opening the unit

- Functional units visible after opening the unit

- Block diagram of mother board

- Switch settings and jumpers

- Installing a memory expansion

- Processor Upgrade

- Replace buffer battery

- Closing the unit

Please contact your Siemens sales representative for further options.

Installing SO-DIMM Cards

Plug the DIMM memory cards in as follows:

1. First open the unit as described in Chapter 5 of the manual PG 720 PII Programming Device. The manual is available in electronic form on the CD-ROM "Backup PG 720/740" supplied with your programming device.

⚠ **Caution**

Risk of damage!

NWork on the open programming device must be performed by qualified persons, as otherwise your warranty will be voided. Siemens-authorized maintenance and repair centers provide the necessary qualified service. Their addresses are available on request from the SIMATIC Customer Support Hotline.

---

2. Insert the card into the socket. Note the recesses in the connector side of the SO DIMM card (to prevent installation wrong way round).

3. Press the card lightly and tilt it downwards until it locks into place.

⚠ **Caution**

Risk of damage!

The cards must be plugged in tightly, otherwise they may be damaged.

4.2 Backup Battery

A backup battery (3.6 V lithium battery) powers the hardware clock even when the power supply to the device is switched off.

⚠ **Warning**

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

Danger of explosion if 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 on to the body of the battery. Do not recharge the battery and do not open the battery by force.

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

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

Installing and Operating the PG 720 PII   **5**

5.1   Preparing Startup

Setting Up the PG (Desk-Top Mounting)

Set up your programming device as follows:

1. Set the PG 720 PII down on the desk-top

2. Open the keyboard lock by pulling up the antracite-colored handle.

3. Swing the keyboard down into position.

Connecting to the Power Supply

The external power unit supplied with your PG 720 PII is of the auto-sensing type for connection to either 120 V or 230 V mains socket outlets.

1. Plug the power supply cable supplied with the device into the socket of the external power unit and plug the low-voltage jack of the power unit into the device's 17 V input socket.

2. Connect the unit to a socket outlet with a grounded protective conductor.

Powering Up the PG 720 PII

Both the operating system and system software supplied with the PG 720 PII are preinstalled on the hard disk and are set up by the time you power up your PG for the first time. Depending on the version of the PG 720 delivered, there is no time-consuming installation of the operating system and the SIMATIC software (STEP 7, STEP 7-Micro/Win und STEP 5) any more, just unpack the PG, switch it on and start your programming tasks. The SIMATIC software is not installed in all versions.

• To power up the device hold down the On/Off switch for ON/Power Standby on the front side for at least one second (also see Section 2.3). When powering up the device you have to distinguish between the following:

  – **Initial start** to set up the PG 720 PII's software and a

  – **Complete restart** after initial start and authorization.

5.2 Cold Start of the PG 720 PII

Installing the Operating System

When powering up the PG 720 PII for the **first** time the operating system is set up automatically (depending on the version delivered: Windows 98, Windows NT or Windows 2000). Please proceed as follows:

1. Switch on the PG 720 PII.

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 in the line "Product Key" of the "Certificate of Authenticity".

Note

Never switch off your PG before software installation has been completed in order to avoid the loss of any software components which are essential for the regular operation of the device.

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 PG.

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 2000

After you have entered the requisite information and the operating system has been set up, the PG 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"**.

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".

Authorization

To use the STEP 5 and STEP 7 programming software you have to install an authorization. Without this authorization it is not possible to run this protected software until the authorization for the respective program or program package is detected on the hard disk drive of your PG 720 PII.

With versions delivered with STEP 5 and STEP 7 programming software, the authorizations can be found on the Authorization disk that comes with your PG.

To perform the authorization:

- Insert the authorization disk in drive A:

- Click "Start" on the Windows task bar and

- select the menu command **Simatic > AuthorsW > AuthorsW** to open the authorization tool which will guide you through the installation routine of the authorization. Copy the STEP 5 and STEP 7 authorization by selecting "All".

Note

Keep the Authorization disk in a safe place so that you can save the authorizations to disk.

5.3 Complete Restart of the PG 720 PII

Overview

Once the PG 720 PII'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. You can start with your programming tasks immediately after starting your SIMATIC programs.

Note

SIMATIC Software programs are not on all versions delivered.

Starting the SIMATIC Software Programs

STEP 5/ST

- Click "Start" on the Windows task bar and

- select the desired programm choosing **Simatic > STEP 5**.

    Please note that you have to install the authoization disk before working with STEP 5/ST (see Section 5.2).

STEP 7

- Click on the icon "SIMATIC Manager" on the Windows desktop

    or click "Start" and select the desired program by choosing **Simatic > STEP 7**.

STEP 7-Micro/WIN 32

- Click "Start" on the Windows task bar and select the desired program by choosing **Simatic > STEP 7-MicroWIN 32**.

Note

When you use the P Tools (for editing PCP/M files) supplied with STEP 5/ST, remember that these are not fully supported by the Windows 98, Windows NT and Windows 2000 operating systems nor by LS120 diskette drives. If you use the P Tools, we recommend that you use MS-DOS, Windows 3.x or Windows 95 and standard 1.44 Mbyte floppies.

5.4 Electronic Manuals

Overview

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

- the device description for the PG 720 PII on the CD "Backup PG 720/740" located in the directory "Manuals"

- further documents after installing the SIMATIC software selecting **Start > Simatic > S7 Manuals**

The Adobe Acrobat Reader

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

```
C:\Acrobat3\
```

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

Reading the PLC manuals

To read the PLC manuals, start the program "Welcome.pdf" on your CD "Backup PG 720/740".

Note

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

Reinstallation of the Software

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

6

</div>

6.1 Cause / Remedy

In case of software errors reinstall your software using the Recovery Windows CD and CD "Backup PG 720/740".

To restore all directories and files that were copied to your hard disk after the first set up proceed as follows:

1. If it is possible to save your authorization proceed as described below.

2. If it is not possible to save your authorization please contact the customer support hotline (see Chapter 8). They will provide you with the information neccessary for your authorization.

   Then proceed as described in Section 6.2.

Saving Authorization on Diskettes

Please proceed as follows:

- Insert authorization disk in drive A

- Click "Start" on the Windows task bar and

- Select **Simatic > AuthorsW > AuthorsW** to open the authorization tool which will help you to save all authorizations on your authorization disk.

Note

The authorization disk and the authorization tool are not delivered with all versions.

6.2 Restoring the Hard Disk (Data Deleted)

6.2.1 Creating Partitions under 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 (only for versions delivered with Windows 98):

– a partition of Type PRI DOS, System FAT 16 with 2045 MB or FAT 32 with 4090 MB (depending on the version),

– a Partition of Type EXT DOS, System FAT 32,

– a Partition of Type Non-DOS with 266 MB for the "Save to Disk" Function for the "Standby-Mode".

Information on the FAT 32 file system can be found in Chapter 6 of the manual "Getting Started Microsoft Windows 98".

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

Primary Partition

1. To boot from the Recovery Windows 98 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 "4. ATAPI CD-ROM Drive".

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

4. Start the Microsoft Windows 98 hard disk configuration program with "A:\>FDisk" .
   Select the dialog box for enable large disk support for installing

   – a FAT16 partition "activate support (Y/N)...? [N] " for No

   – a FAT32 partition "activate support (Y/N)...? [Y] " for Yes.

5. Create a primary DOS-Partition of 2045 MB for a FAT 16 file system or with 4090 MB for a FAT 32 file system. Answer the question "Do you wish to use the maximum available size..." with

   – for a 2045 MB FAT16 partition [Y] for Yes,

   – for a FAT32 partition [N] " for No and the partition size 4090 MB.

6. In order to continue with the next step "Create a Save to Disk Partition" the primary partition needs to be formatted.
   Use the Windows 98 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 a Save to Disk Partition

Note

Creating this partition is only possible with a formatted primary partition.

To recreate a Save to Disk Partition for the function "Standby-Mode" you have to,

- Use the Recovery Windows 98 CD to boot as described in steps 1 to 3 above,

- Insert the CD-ROM "Backup PG720/740" in the CD-drive,

- Run the batch file "Makes2D.bat" in the directory R:\Drivers\PG720P2\PHDisk (the CD drive has the drive letter R:) by entering the following DOS commands and confirming them with the Enter key:

  - "R:" (change to CD-ROM Drive),

  - "DIR" (so the CD-change will be noticed),

  - "CD Drivers\PG720P2\PHDisk"

  - "Makes2d.bat"

By doing this an area of 266 MByte for the function "Save to Disk for Standby Mode" will be reserved.

Creating an Extended Partition

In order to create an extended partition, you have to first boot from the Recovery Windows 98 CD as described in steps 1 to 3 above.

Using "A:\>FDisk" start the Microsoft Windows 98 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.

6.2.2   Creating Partitions under Windows 2000

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 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 2000):

– a partition with the FAT32 file system with 4090 Mbytes,

– a partition with the NTFS file system.

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

Primary Partition, FAT 32 File System

1. To boot from the Recovery Windows 2000 CD-ROM press ESC when the BIOS message
   ```
   Press <F2> to enter Setup
   ```
   appears. After initialization a boot menu screen form to select the boot options is displayed.

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

3. Select "2. Boot for FDISK, FORMAT or Windows 2000 Setup" in the "Microsoft Windows 98 Startup Menu" screen form.

4. Start the Microsoft Windows 98 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 4090 MB.

6. To format the partition from the Recovery Windows 2000 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).

The Windows 2000 setup is described in Section 6.5. In the Windows 2000 setup or under Windows 2000 the FAT 32 file system can be changed to a NTFS file system with the function "Format".

Creating an Extended FAT 32 Partition

In order to create an extended partition you have to boot from the Recovery Windows 2000 CD as described above in steps 1 to 4.

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

Under Windows 2000, the FAT 32 file system can be changed to a NTFS file system with the function "Format".

6.2.3 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 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.

The creation of partitions is done under the Windows NT setup program. Starting the Windows NT setup is described in chapter 6.6.

6.3 Installing the Operating System Windows 98

You should only follow these steps when you wish to upgrade from Windows 2000 to Windows 98 or install Windows 98.

The operating system can be reinstalled or restored using the "Recovery Microsoft Windows 98" CD-ROM.

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

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.

The ADD-ONS, CDSAMPLE, DRIVERS, TOOLS and TOUR folders on the "Recovery Microsoft Windows 98" CD-ROM are not encoded. Thus, these programs can always be executed directly from the CD.

After transferring the required data to the hard disk, the operating system can be installed using the Windows 98 setup program. The Windows 98 setup can be started by entering:
HD:\>WIN98\SETUP.EXE
(HD: drive on which the WIN98 folder was transferred to).

Windows 98 Installation Sequence

If a Windows operating system is already installed or if the programming device has been started with a 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-ROM Microsoft Windows 98 in the CD-ROM drive and switch on the PLC.

2. 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.

3. Select "4. 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 Windows98 installation or setup.

7. A selection of disk drives for the data transfer is next offered. The disk drive selected is not the installation drive for Windows. It is the drive on which the necessary installation files and extensions are saved. You need approximately 250 MB of additional memory for the Windows setup following the transfer. During a standard installation Windows 2000 is installed on drive C:. Therefore, please make sure when selecting a drive that there is enough available memory on drive C: after the data transfer.

8. You can start the Windows98 setup after the data transfer and acknowledgement of the completion message via the program
    HD:\WIN98\SETUP.EXE
    (HD: drive on which the folder WIN98 was transferred to).

For further information on the installation of Windows 98 refer to Chapter 2 "Installing Windows 98" of the "Getting Started Microsoft Windows 98" manual.

Follow the instructions given in section "Performing a New Installation".

6.4 Installing Drivers under Windows 98

In order to add or change the device driver of any hardware component proceed as follows:

Procedure

- Click "Start" , point to "Settings", click "Control Panel" , then double-click "System" .

- Click the "Device Manager" tab, click on the plus sign next to the hardware type and then double-click on the selected hardware component.

- Click the "Driver" tab and then click "Update Driver", then follow the instructions that appear on your screen.

- The "Driver" tab may not be available for some devices. In this case try to change the driver by double-clicking on the desired hardware icon in "Control panel".

Installing Sound Drivers

If the sound controller is not recognized as an "ESS Solo-1 PCI Audio Device" during the Windows 98 setup program, Windows stops the setup with the message "The Wizard searches for updated drivers for: PCI Multimedia Audio Device". If this happens, proceed as follows:

1. Insert the CD "Backup PG 720/740" in the CD-ROM drive and click on "Next".

2. Select "Search for a better driver than the one your device is using now. (Recommended)" and then "Next".

3. If necessary, select the check box "Specify a location" with a mouse click. Enter the path for the driver data (HD: drive letter for the CD-ROM drive) HD:\DRIVERS\PG720P2\AUDIO.W98 and then click on "Next"

4. The controller will now be recognized as an "ESS Solo-1 PCI Audio Device" . Click on "Next". Windows 98 will now copy the sound driver into the correct directory on your system.

5. Confirm with "Finish"

6. Answer the question if you wish to restart with "Yes".

Sound Driver Installation after Installing Windows

1. Please observe the following instructions to install the sound drivers located in the directory

   C:\DRIVERS\AUDIO.W98\ENG or located in the directory
   DRIVERS\PG720P2\AUDIO.W98\ENG of the supplied
   CD "Backup PG 720/740".

2. Please read the file Readme.txt before you start installation.

3. Insert the CD "Backup PG 720/740" and go to the directory
   [CD-ROM-drive]:\DRIVERS\PG720P2"\AUDIO.W98 in the Explorer.

4. Double click on the icon "Setup.exe".

5. Click "Next"

6. Click on "Upgrade Drivers" and then click on "Next".

7. The audio driver will now be copied into the correct directory on your system.

8. You will be asked if you wish to restart your computer. Select "Yes, I want to restart my computer now" and then click on "Finish".

Windows will now be restarted.

9. Click "Next".

10. Choose "Search for the best driver for your device" and then "Next".

11. Click on the check box "Specify a location" if neccessary. Enter the directory for the driver path
    "[CD-ROM-drive]:\DRIVERS\PG720P2\AUDIO.W98 and then click "Next"

12. Click "Next"

13. Click "Finish".

The following components will automatically recognized and be immediately available.

- ESS Solo-1 PCI Audio Drive

- ESS Solo-1 DOS Emulation

PC Card Driver Installation

If the Windows 98 setup program does not recognize the CardBus Controller as "Texas Instruments PCI-1225 CardBus Controller", then Windows uses it's general driver "Generic CardBus Controller". In this case proceed as follows:

1. Insert the CD "Backup PG 720/740" in the CD-ROM drive and when the "Generic CardBus Controller" is recognized, click on "Next".

2. Select "Search for a better driver than the one your device is using now. (Recommended)" and then "Next".

3. Click on the check box "Specify a location" if necessary. Enter the directory for the driver path
\DRIVERS\PG720P2\PCCARD.W98
and click on "Next".

4. The controller wil now be recognized as "Texas Instruments PCI-1225 CardBus Controller". Click on "Next". Windows 98 will now copy the PC Card driver in the correct directory on your system.

5. Confirm with "Finish"

6. Answer the question if you wish to restart with "Yes".

PC Card Driver Installation after Installing Windows

1. Use these instructions to install a driver from the directory C:\DRIVERS\PCCARD.W98 or from the CD "Backup PG 720/740" \DRIVERS\PG720P2\PCCARD.W98 respectively.

2. Please read the file Readme.txt before you start installation.

3. Insert the CD "Backup PG 720/740". Click on "Start", then "Settings" and then "Control Panel".

4. Select "System" and click on the tab "Device Manager".

5. Double click on the entry "PCMCIA Socket".

6. Two "Generic CardBus Controller's" will be shown. Select one of them by clicking the left mouse button. Then click the right mouse button. A popup menu appears. Select "Remove" and confirm with "OK".

7. Double click on the entry "PCMCIA Socket"

8. This time only one "Generic CardBus Controller" will be shown. Select this with a left mouse click.

9. Click on the menu command "Properties" and then on the tab "Driver".

10. Select "Update Driver" and then "Next".

11. Select "Search for a better driver than the one your device is using now. (Recommended)" and then "Next".

12. Click on the check box "Specify a location" if necessary. Enter the directory for the driver path
    \DRIVERS\PG720P2\PCCARD.W98
    and click on "Next".

13. The controller will now be recognized as "Texas Instruments PCI-1225 CardBus Controller". Click on "Next". Windows 98 will now copy the PC Card driver to the correct directory on your system.

14. If the window "Insert Windows 98 CD" appears, insert the CD and go to the folder " \Win98".

15. Install the same driver as described above for the second "Generic CardBus Controller".

16. Confirm with "Finish".

17. Close all windows and restart Windows 98.

Installing Display Drivers

During setup Windows 98 detects the display device installed. If Windows 98 does not recognize the existing driver for this device, proceed as follows:

- Insert the CD "Backup PG 720/740" in the CD-ROM drive

- At the command promt

  ```
  copy manufacturer's files from
  ```

  type
  \DRIVERS\PG720P2\DISPLAY.W98

  and press "OK". The recognized display device is displayed.

- Confirm with "Finish".

Display Driver Installation after Installing Windows 98

This chapter describes how to install display drivers after having installed Windows 98.

- Please observe the following instructions to install the display drivers located in the directory
  C:\DRIVERS\DISPLAY.W98 or located in the directory
  DRIVERS\PG720P2\DISPLAY.W98 of the supplied CD "Backup PG 720/740".

- Please read the file Readme.txt or Install.txt before installation.

- Click "Start", then "Settings", and "Control Panel".

- Click the "Display" option.

- Click "Settings" tab and then "Advanced" .

- Select "Change" in the "Adapter" tab.

- Click "Next" and select "Search for a better driver than the one your device is using now" then "Next".

- If necessary, select the check box "Copy manufacturer's files from" and enter the path of the driver
  DRIVERS\PG720P2\DISPLAY.W98 and then "Next"

- The controller "Chips and Tech. 69000 PCI will be recognized. Press "Next".

- Click "Finish" and close the Update Device Driver Wizard.

- When the system asks you to restart for the new settings to take effect , select "Yes".

After restarting your system click "Control Panel" then "Display" (800x600) and adjust the "Screen Area" and "Colors" settings in order to complete your installation.

Installing Advanced Power Management

If the support for Advanced Power Management (APM) is deactivated, it has to be set up again. Start the hardware wizard with **Start > Settings> Control panel > Hardware** in order to do this.

Installing ProgAs

Follow the instructions in order to reserve resources for the programming interface module. The programming interface module for Memorycards/Eproms occupies the I/O area **0x300 to 0x31F**. Please read the progas.txt before the installation if necessary. Start the installation by double clicking on the file progas.bat.

6.5 Installing the Operating System Windows 2000

Do not follow these instructions unless you want to upgrade from Windows 98 to Windows 2000 or if you want to reinstall.

The new installation or reinstallation of the operating system is accomplished with the "Recovery Microsoft Windows 2000" CD-ROM.

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

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.

The folders BOOTDISK, DISCOVER, SETUPTXT, SUPPORT and VALUEADD on the CD "Recovery Microsoft Windows 2000" are not encoded. These programs, texts and functions can always be executed directly from the CD.

The installation of the operating system via the Windows 2000 setup program is possible after transferring the necessary data to the hard disk. The Windows 2000 setup starts when you enter
HD:\>I386\WINNT.EXE.
(HD: drive on which the folder I368 was transferred to).

Setup for Windows 2000 can be carried out for existing Windows installations via the program HD:\I386\WINNT32.EXE.

Windows 2000 Installation Sequence

If a Windows operating system is already installed or if the programming device has been started with a 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 CD "Recovery Microsoft Windows 2000" in the CD-ROM drive and turn on the programming device.

2. To boot from CD "Recovery Microsoft Windows 2000", press the ESC key at the BIOS message:
   `Press <F2> to enter Setup.`
   After completing the initalization a boot menu screen appears in which you can select the device to be booted from.

3. Select "ATAPI CD-ROM Drive".

4. Select "1. Boot for CD-Recovery" in the screen "Microsoft Windows 98 Startup Menu".

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. At the very least it is necessary to copy the folder "I386" to install or setup Windows 2000.

7. A selection of disk drives for the data transfer is next offered. The disk drive selected is not the installation drive for Windows. It is the drive on which the necessary installation files and extensions are saved. You need approximately 500 MB of additional memory for the Windows setup following the transfer. During a standard installation Windows 2000 is installed on drive C:. Therefore, please make sure when selecting a drive that there is enough available memory on drive C: after the data transfer.

8. You can start the Windows setup after the data transfer and acknowledgment of the completion message via the program
   HD:\I386\Winnt.exe
   (HD: drive on which the folder I368 was transferred to).
   If a Windows operating system already installed, you can start the Windows 2000 setup after starting Windows via the program
   HD:\I368\Winnt32.exe.

You can find information on installing Windows 2000 in the manual "Microsoft Windows 2000 Professional". Follow the instructions in the section "Setting Up Windows 2000 Professional".

Setting the Language Selection for Windows 2000

The **Mu**ltilanguage File **I**nstallation (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 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"** .

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"**.

6.6　Installation of the Windows NT Operating System

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
    LW is the drive where the recovery data have been copied.

You can find information on installing Windows NT in Section 2 Chapter 5 "Beginning Installation" in the manual "Start Here - Microsoft Windows NT". Follow the instructions in the section "Starting Setup".

6.7 Installing Drivers under Windows NT

- Please observe the following instructions to install the display drivers located in the directory

  C:\DRIVERS\AUDIO.NT4 or DISPLAY.NT4 or located in the directory DRIVERS\PG720P2\AUDIO.NT4 or DISPLAY.NT4 of the supplied Backup CD.

- Please read the file Readme.txt or Install.txt before installation.

- Please note that the internal ProgAs occupies the I/O-Addresses 0x300 to 0x31F.

Sound Driver Installation

- Open Control Panel and double-click "Multimedia".

- Select "Devices" tab and click "Add".

- Select "Unlisted or Updated Driver" and confirm with "OK".

- In the "Install Driver" dialog box type

  C:\DRIVERS\AUDIO.NT4 or DRIVERS\PG720P2\AUDIO.NT4.

- Confirm the dialog box displaying the selected sound driver with "OK".

- Now the changes of the systems settings are displayed. Confirm with "OK".

- When the system asks you to restart, choose "Restart Computer".

Display Driver Installation

- Double-click "Display" in Control Panel. Click "Settings" tab and select "Display type".

- Select "Change".

- "Have Disk" opens and "Copy manufacturer's files from" appears on the screen.

- Type C:\DRIVERS\AUDIO.NT4 or \DRIVERS\PG720P2\DISPLAY.NT4 and press "OK".

- The selected driver is displayed in a dialog box. Confirm with "Yes", then click "Yes" in "Third-party Driver".

- Press "OK" in "Installing Driver", close all windows and restart the system.

6.8   Installing the SIMATIC Software

You received the "Backup PG 720/740" CD with the product package that comes with your PG 720 PII. The Backup CD contains the data base for the STEP 5/ST Basics package, STEP 7 and STEP 7-Micro/WIN and for the PG's electronic manuals.

To reinstall these program packages insert the Backup CD in the CD-ROM drive. Run Setup by clicking the " SIMATIC Setup" icon or by clicking "Setup.exe" in the "SIMATIC Software" directory. Setup will guide you through the installation.

The authorization diskette with the authorizations necessary for the use of SIMATIC software is only delivered with versions containing SIMATIC software. The installation of the authorizations is described in Section 5.2 "Cold Start of the PG 720 PII".

Technical Specifications

7

7.1　Scope of Delivery

Please check with the following packing list to make sure no hardware or software components are missing:

Your Product Package Consists of the Following :

Scope of Delivery	✔
1 PG 720 PII	
1 Power supply cable　　　　　　　　　　W79079-N2025-A3	
1 MPI cable　　　　　　　　　　　　　　6ES7901-0BF00-0AA0	
1 PG-to-actuator cable　　　　　　　　　6ES5734-2BF00	
1 Carrying bag	
1 Manual incl. Licence and Windows operating system on CD	
1 Authorization Disk for STEP 7, STEP 5 (only for versions delivered with SIMATIC-Software)	
1 "Backup PG 720/740" CD-ROM	
1 Operating Instructions	
1 External power unit　　　　　　　　　C79451-Z634-K12	

7.2 Technical Specifications of the PG 720 PII

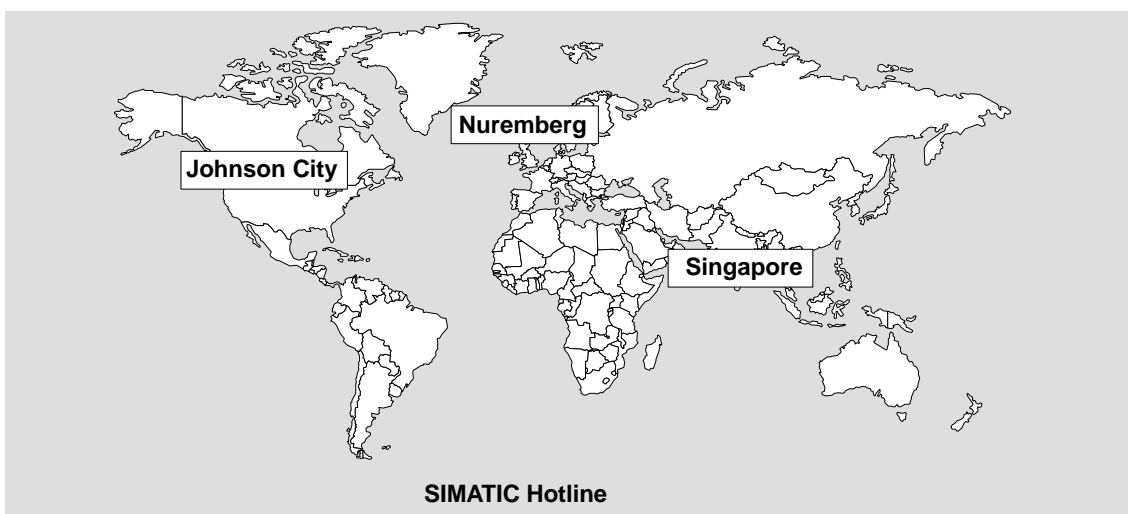|	
Dimensions (w x h x d)	317 x 229 x 104 mm (12.4 x 9 x 3.2 in.)
Weight	approx. 4.5 kg (8.8 lbs.)
Line voltage external power supply	120 VAC to 240 VAC
	(85...240VAC wide range)
Line voltage frequency	50 / 60 Hz (47 to 63 Hz)
Brief voltage interruption acc. to Namur	> 20 ms at 0.85% U_N (with integrated rechargeable battery)
	(max. 10 times per hour; min. recovery time 1 s)
Max. power consumption (external power supply)	60 W
Output voltage (external power supply)	17.5 V at 3.42 A
Standby power (during battery operation)	typically 1 W
NiMH rechargeable battery (nickel metal hydride, 9 cells) with charge-status monitoring	approx. 4 Ah, 10.8V with thermostatic switch and multifuse, recyclable, chargeable up to 40°C (108° F), high number of charge cycles under severe conditions, low self-discharge rate
DC/DC converter	+3.3 V +5 V 3.3Vaux +12 V 9-20V unreg. 600 VAC
Degree of protection	IP30 (covers closed)
Quality assurance	ISO 9001
Safety	
Requirements	VDE 0805 $\triangleq$ EN 60950 and IEC 60950
	protection class I to IEC 60536
	Protective separation between supply and secondary circuit (via external power supply)
Noise emission	<45 dB(A) to DIN 45635
Electromagnetic compatibility (EMC)	
Emitted interference	
limit value calss	B to EN 55022 $\triangleq$ CISPR22
Line-fed interference on AC supply lines	± 2 kV (IEC 61000-4-4; burst)
	± 1 kV (IEC 61000-4-5; μs pulse/line to line)
	± 2 kV (IEC 61000-4-5; μs pulse/line to ground)
Noise immunity on signal lines	± 2 kV (IEC 61000-4-4; burst; length >3 m)
	± 2 kV (IEC 61000-4-5; μs pulse/line to ground; length > 20 m)
Noise immunity to discharges of static electricity	± 4kV, Contact discharge (IEC 61000-4-2; ESD) ± 8kV, Air discharge (IEC 61000-4-2; ESD)
Immunity to RF interference	10 V/m, with 80% amplitude modulation with 1 kHz, 9 kHz - 80 MHz (to IEC 61000-4-6)
	10 V/m with 80% amplitude modulation with 1 kHz, 80 kHz - 1GHz (to IEC 61000-4-3)
	10 V/m, pulse modulated 50% duty cycle, 900MHz and 1,89 GHz (to IEC 61000-4-3)
Magnetic field	30 A/m, 50Hz (to IEC 61000-4-8)

Electromagnetic compatibility (EMC)	
Ambient conditions	
Temperature	tested to DIN IEC 60068-2-1, DIN IEC 60068-2-2
operation	+5° C to +40° C (+41° F to +104° F)
storage/transport	− 20° C to +60° C (−4° F to +140° F)
	(Max. speed of temperature change 10° C/h (18° F/h) condensation not permitted)
Relative humidity	tested to DIN IEC 60068-2-3
operation	5% to 80% at 25° C (77° F) (no condensation)
storage/transport	5% to 95% at 25° C (77° F) (no condensation)
Mechanical specifications	
Vibration	tested to DIN IEC 60068-2-6
operation	10 to 60Hz; amplitude 0.035 mm 60 to 500Hz; acceleration 5 m/s^2
transport	5 to 9Hz; amplitude 3,5 mm 9 to 500Hz; acceleration 9,8 m/s^2
Shock	tested to DIN IEC 60068-2-27
operation	half–sine: 50 m/s^2, 30 ms
storage	half–sine: 250 m/s^2, 6 ms
Motherboard	
Integrated processor	PII Celeron MMC2-Module Intel 500 MHz
Level 2 cache	128 Kbytes internal
Main memory	64 Mbytes expandable to max. 256 Mbytes, (64-bit SO DIMM) 512 Mbytes addressable
Drives	
Floppy disk drive	3.5" LS120 (1.44 Mbytes and with superdisks of up to 120 Mbyte)
Hard disk drive	2.5" / 6 Gbytes
Hard disk/CD-ROM port	IDE (ATA)-33
CD-ROM drive	650 Mbytes, 24x speed
LC display	
Type	Color active TFT (Thin Film Transistor)
Size	246 x 185 mm (w x h) equivalent to 12.1 in.
Resolution	800 x 600 (SVGA)
Colors available	256 k
Horizontal frequency	37.8 kHz
Vertical frequency	60 Hz
Contrast	100 : 1
Brightness	> 70 cd/m^2
Response time	50 / 50 ms (ton / toff)
Faulty spots permitted	High level: $\leq$ 10 spots, low level: $\leq$ 10 spots, Total: $\leq$ 15 spots
Graphics	
Graphics	Super VGA with LCD Windows accelerator
Graphics chip	B 69000 Chips & Technologies
Graphics memory	2 MByte DRAM

Interface to processor	AGP (Accelerated Graphics Port)
Resolutions / frequencies / colors	640 x 480 / 85 Hz / 16.7M colors (external) 800 x 600 / 85 Hz / 16.7M colors (external) 1024 x 768 / 85 Hz / 65535 colors (external) 1280x1024 / 60 Hz / 256 colors (external)
Audio	
Sound controller	ESS Solo-1 PCI audio controller
Compatibility	Sound Blaster Pro and Microsoft Sound System, meets PC98 / PC99 and WHQL specifications
Record and playback features	Up to 16-bit stereo 48 kHz sampling rate, full duplex 3D audio effects and ESFM(TM) music synthesizer
Internal speaker	Max. power output 2 x 0.5 W
Keyboard	
Type	MF2-comp.; with cursor block/numeric keypad emulation; removable; 89 keys + 2 mouse keys
Key spacing	19.05 mm
Key stroke	3 mm
Keytops	international / German
Integrated pointing device	16 mm trackball (PS/2-compatible)
Ports	
COM1	V.24 / V.28 or 20 mA (TTY) active or passive up to 100 m (25-way socket), no galvanic isolation
COM2	V.24 (9-pin connector)
LPT1	Centronics, primarily for printer (parallel) (25-way socket)
VGA	for external monitor (15-way VGA socket)
Keyboard	for keyboard with integrated trackball (6-way mini DIN socket)
PS/2-compatible mouse	external mouse connection
PC card type I/II/III ports	Interface for PC cards (type I, type II or type III); Cardbus controller from Texas Instruments PCI 1225
S5 submodule port	programming interface for SIMATIC S5 submodules
Memory card port	programming interface for SIMATIC memory cards
MPI/DP port	RS485; L2/DP port (9-way socket), max. 12 Mbaud, galvanically isolated
USB	Port for Universal Serial Bus
Function displays	
LEDs on the device	Power On, battery low, battery charging (green, red, orange) Power Accessing external storage medium S5 submodule/memory card active MPI/DP token passing
LEDs on the keyboard	Caps Lock Scroll Lock Num Lock

Hotline Services

<div align="right">

8

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8.1 Customer Support, Technical Support

Open round the clock, worldwide:

SIMATIC Hotline

Worldwide (Nuremberg) **Technical Support** (FreeContact) Local time: Mon.-Fri. 7:00 to 17:00 Phone: +49 (180) 5050-222 Fax: +49 (180) 5050-223 E-Mail: techsupport@ ad.siemens.de GMT: +1:00	**Worldwide** (Nuremberg) **Technical Support** (fee based, only with SIMATIC Card) Local time: Mon.-Fri. 0:00 to 24:00 Phone: +49 (911) 895-7777 Fax: +49 (911) 895-7001 GMT: +01:00	

Europe / Africa (Nuremberg)
 Authorization
 	
 Local time: Mon.-Fri. 7:00 to 17:00
 Phone: +49 (911) 895-7200
 Fax: +49 (911) 895-7201
 E-Mail: authorization@
      nbgm.siemens.de
 GMT: +1:00
	America (Johnson City)
	 Technical Support and
	 Authorization
	
	 Local time: Mon.-Fri. 8:00 to 19:00
	 Phone: +1 423 461-2522
	 Fax: +1 423 461-2289
	 E-Mail: simatic.hotline@
	      sea.siemens.com
	 GMT: −5:00
		Asia / Australia (Singapore)
		 Technical Support and
		 Authorization
		
		 Local time: Mon.-Fri. 8:30 to 17:30
		 Phone: +65 740-7000
		 Fax: +65 740-7001
		 E-Mail: simatic.hotline@
		      sae.siemens.com.sg
		 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.		

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8.2 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`

- Current product information leaflets and downloads which you may find useful are available:
  - the **Internet** under `http://www.ad.siemens.de/simatic-cs`
  - 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).

- You can find your local customer service representative for Automation & Drives in our customer service representative data bank:
  - in the **Internet** under `http://www3.ad.siemens.de/partner/ search.asp?lang=en`

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.