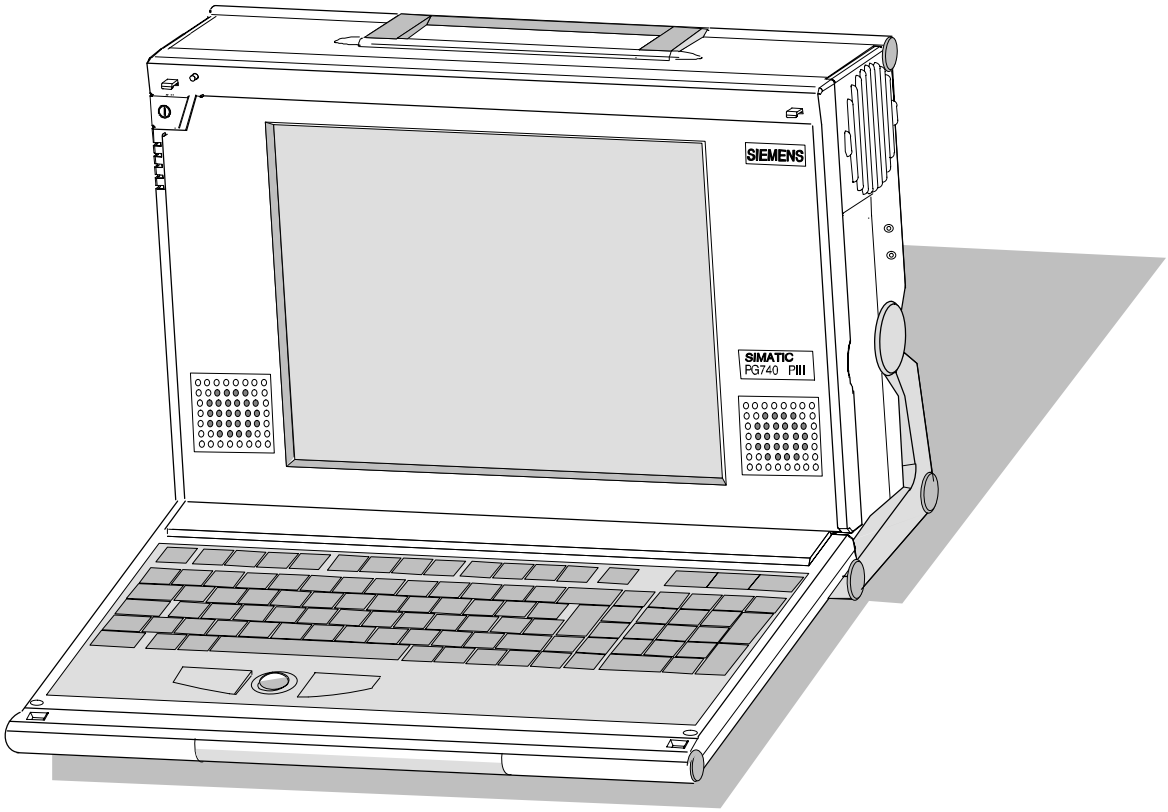
SIEMENS

SIMATIC

PG 740 PIII Programming Device

Operating Instructions A5E00063150-03

This leaflet gives you specific
technical information on your
PG 740 PIII 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 740 PIII 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 740 PIII manual. Qualified persons are defined as persons who are authorized to commission, to ground, and to tag equipment, systems, and circuits in accordance with established safety practices and standards.



Warning

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

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

Trademarks

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

Copyright © Siemens AG 2000 All Rights Reserved

The transmission and reproduction of this documentation and the exploitation and communication of its contents are not allowed, unless expressly granted. Contraventions are liable to compensation for damage. All rights reserved, especially in the case of the granting of a patent or registration by GM.

Exclusion of Liability

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

Siemens AG
Bereich Automatisierungs- und Antriebstechnik
Geschaeftsgebiet Industrie-Automatisierungssysteme
Postfach 4848, D-90327 Nuernberg

© Siemens AG 2000
Subject to technical change.

Contents

Welcome to your PG 740 PIII ..... **v**

Overview v

Information referring to these operating instructions viii

Conventions ix

1 Important Notes **1-1**

1.1 Safety Instructions 1-1

1.2 Certificates, Directives and Declarations 1-2

1.3 Certification for the USA, Canada and Australia 1-4

1.4 Transporting the PG 740 PIII 1-6

2 Starting up and Operating the PG **2-1**

2.1 Unpacking and checking the scope of delivery 2-1

2.2 Choosing Set-up Position 2-2

2.3 Operating the PG 740 PIII 2-4

3 Hardware Components of the PG 740 PIII **3-1**

3.1 Front 3-2

3.2 Left-Hand Casing Side Panel (Communications Side) 3-3

3.3 Right-Hand Casing Side Panel (Processing Side) 3-5

3.4 Color Display of the PG 740 PIII 3-6

3.5 Keyboard 3-6

3.6 Drives 3-7

3.7 CD-ROM-Drive 3-10

3.8 S5 Submodules and Memory Cards 3-12

3.9 Backup Battery 3-14

4 Installing System Expansions and Connecting Peripheral Devices **4-1**

4.1 Connecting peripheral devices 4-1

4.2 Memory Expansions 4-2

5 Installing and Operating the PG 740 PIII **5-1**

5.1 Preparing Start up 5-1

5.2 Cold Start of the PG 740 PIII 5-2

5.3 Complete restart of the PG 740 PIII 5-4

5.4 Electronic Manuals 5-5

6 Reinstallation of the Software 6-1

6.1 Cause / Remedy 6-1

6.2 Restoring the Hard Disk (Data deleted) 6-2
6.2.1 Creating Partitions unter Windows 98 6-2
6.2.2 Creating Partitions unter Windows 2000 6-4
6.2.3 Creating Partitions under Windows NT 6-5

6.3 Installing the Operating System Windows 98 6-6

6.4 Installing Drivers under Windows 98 6-8

6.5 Installing the Operating System Windows 2000 6-12

6.6 Installation of the Windows NT Operating System 6-15

6.7 Installing Drivers under Windows NT 6-16

6.8 Installing the SIMATIC software 6-17

7 Technical Specifications 7-1

7.1 Scope of Delivery 7-1

7.2 Technical Specifications PG 740 PIII 7-2

8 Hotline Services 8-1

8.1 Customer Support, Technical Support 8-1

8.2 SIMATIC Customer Support Online Services 8-2

8.3 Regional Repair Centers 8-3

Welcome to your PG 740 PIII

Overview

Your PG is a reliable and comfortable programming device because of its innovative technology and ergonomic design. The SIMATIC programming device PG 740 PIII 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 for harsh industrial conditions
- Due to the fact that Windows 98, Windows NT or Windows 2000 is preinstalled, your PG 740 PIII operating system can also be used as a fully equipped PC.

Features

The PG 740 PIII 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 740 PIII delivery.

Depending on the version delivered, the programming software STEP 5, STEP 7-Micro and STEP 7 are already installed on the PG 740 PIII.

High Quality Standard

Your PG 740 PIII has a high quality standard. This standard is reached by:

- Extensive climatic, vibrational and shock tests to garant 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 740 PIII is a portable programming device. It can be usd for all SIMATIC automation systems in both online and offline operation. The PG 740 PIII meets the strictest requirements by:

- High Level system performance (e. g. Intel Pentium III processor)
- High degree of enhanceability (e.g. PCMCIA cards, upgradeable processor mother board, 1 PCI/ISA slot and 1 PCI slot (length 170 mm)
- 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 module and SIMATIC Memory Cards
- TTY interface (Online interface for S5)
- Ergonomic keyboard with integrated trackball
- Highly portable with a wide range of set-up possibilities
- Very robust construction
- Ethernet

Set-up Possibilities

Different set-up 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 e.g. in narrow spaces.
- Wall mountability; in addition to set-up possibilities on the floor or on a desk the device can also be mounted to the e.g. wall.

Functions

The software package supplied with the device allows a universal use of the PG 740 PIII. 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 740 PIII's software offers the following operational options:

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

Further operational options:

The PG 740 PIII can also be used:

in other areas of automation technology such as e.g. 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 cable
- Carrying bag
- Recovery CD-ROM Microsoft Windows,
  Manual Microsoft Windows,
  “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

Information referring to these operating instructions

Regardless wether you already worked with a programming device like the PG 740 PIII 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 740 PIII 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 740 PIII
You want to prepare your PG for programming	Chapter 5 Installing and Operating the PG 740 PIII
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 >Subcommand>	Specifies a menu command
“ Inverted Comma”	Specifies the name of screen element (e.g. a menu or a command button)
Double-click	A rapid and fast double-click on the standard mouse key (in general the left mouse key).

Supplementary PG 740 PIII documentation

- PG 740 PIII electronic manual on the CD “Backup PG720/740” 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
- STEP 5/ST manual

Important Notes

1

1.1 Safety Instructions

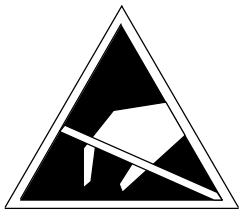


Caution

The safety instructions given on the backside of the title page of this manual must be observed. Before adding to the PG's functionality by expanding the hardware configuration (see chapter 4) refer to the electronic manual on the CD "Backup PG720/740" supplied with your PG 740 PIII 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 opject).
- Devices and tools must be free of static electricity.
- Always pull the power plug 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

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

EMC Directive

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

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

* In its basic configuration the device has a medium power consumption of < 65 W and, in this configuration, fulfills the requirements for residential areas (class B) according to the EN 61000-3-2 standard (harmonic currents).
If the device configuration is expanded with additional modules, a medium power consumption of 75 W may be exceeded. The device may then cause disturbances which are not permitted for residential areas. If the device with expanded configuration is intented for residential areas (secondary distribution network), it is the operator’s own responsibility to make sure that no disturbances are caused.

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, Article 10 (1), 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 740 PIII 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:

	Unterwriters Laboratories (UL) to the UL 1950 standard.
	UL Recognition Mark
	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 740 PIII

Preparatory Measures

The PG 740 PIII is easy to transport. Before transporting it, however, you should take the following measures:

1. Switch the PG 740 PIII off and wait approx. 20 seconds.
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 740 PIII over large distances, pack the unit with all its accessories in the carrying bag supplied.

Transport

Despite the fact that the PG 740 PIII is of rugged design, its internal components are sensitive to severe vibrations or impact. You must therefore protect your PG 740 PIII against severe mechanical stressing when transporting it.

Use the **original packing material** if you have to ship the PG 740 PIII from one location to another.

Starting up and Operating the PG

2

2.1 Unpacking and checking the scope of delivery

Unpacking the PG 740 PIII

Unpack your PG 740 PIII 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.

Retaining the Serial number

6. If your device has been stolen and repair work is required, the repair and maintenance centers can only identify it by its **serial number**.

   Enter the serial number of your programming device in the table below. You can find this number on the type label attached to the base of the device.

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-No.	
Order No.	
Microsoft Windows Product Key	

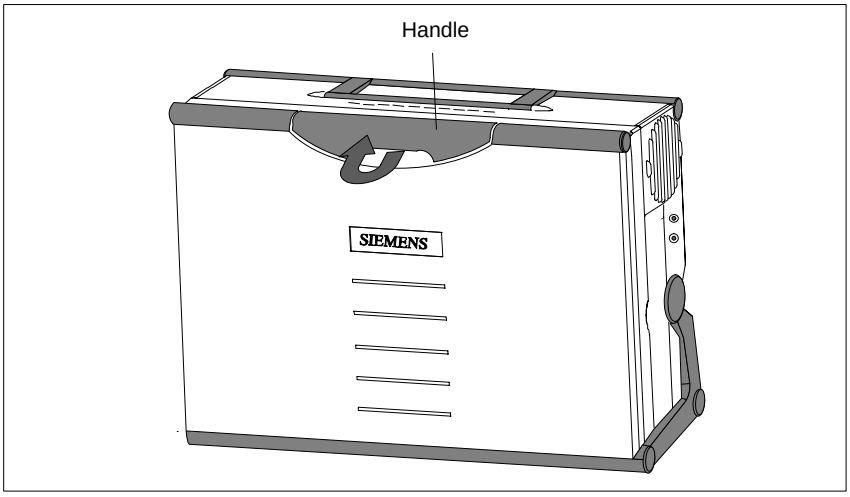
2.2 Choosing Set-up Position

Setting up the PG 740 PIII

The PG 740 PIII is mostly mounted on a desk or table top. To make working with the PG 740 PIII easier, it can be adapted as follows to the particular workplace.

Set up your programming device as follows:

1. Set the PG 740 PIII 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 open, you can incline the unit to any angle between 0 and 90° around the axis of rotation of its stand. Proceed as follows:

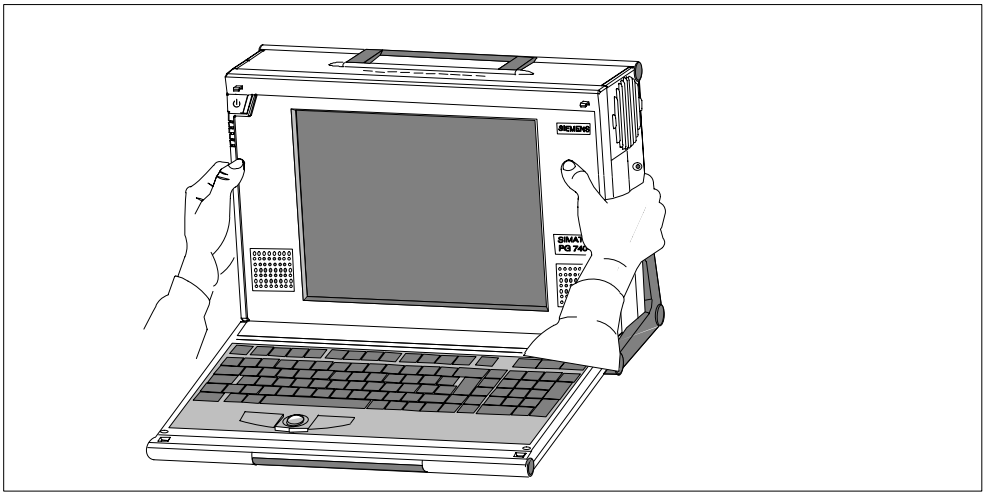
1. Swing the keyboard down.
2. Pull the extra support out of the rear of the stand.
3. Incline the unit to the angle you prefer.

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.



2.3 Operating the PG 740 PIII

Connecting to the Power Supply

You can operate the PG 740 PIII on 115 V and 230 V power systems. The voltage is selected automatically.

1. Plug the power supply cable supplied with the unit into the connector labeled ”Power”.
2. Connect the unit to a socket outlet with grounded protective conductor.

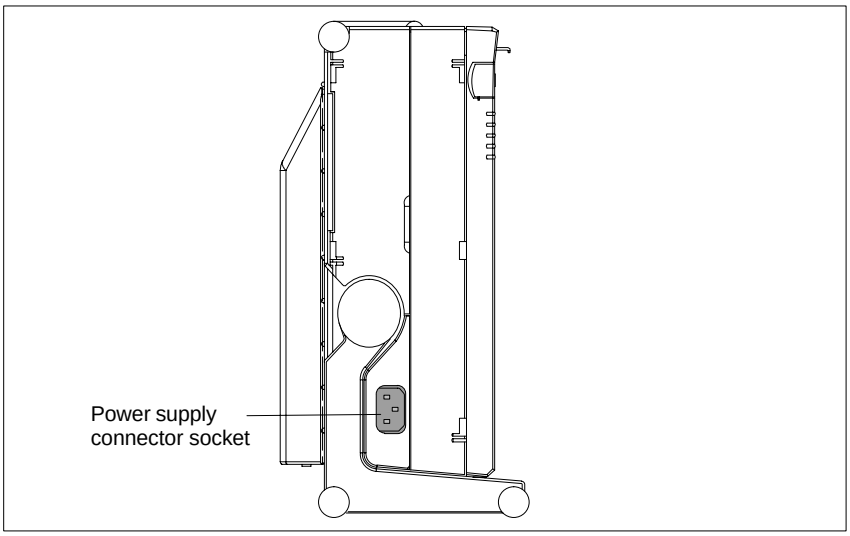


Figure 2-1 Connecting the Power Supply

Note

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

Note

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

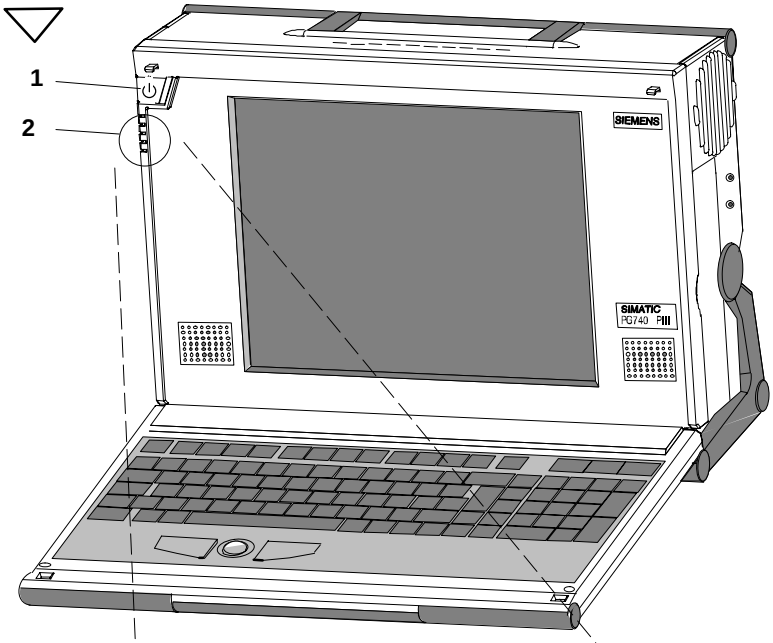
The unit is intended for operation with normal grounded power supply networks (TN networks, VDE 0100 part 300 or IEC 364-3).

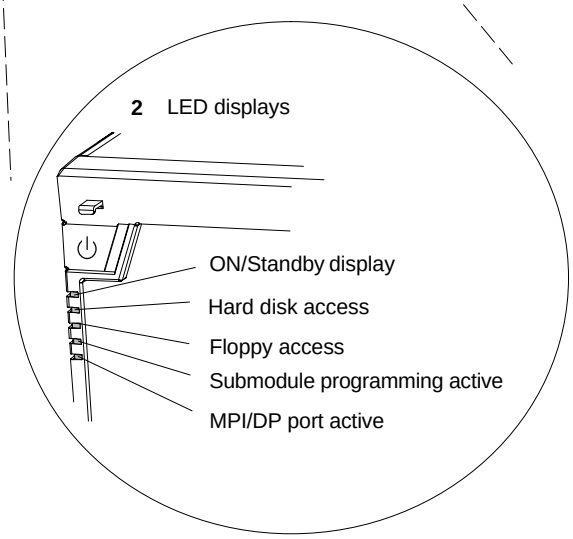
The unit is not intended for operation with non-grounded or impedance-grounded systems (IT systems).

Switching on the PG 740 PIII

To power up the device hold the On/Off switch for ON/Power Standby on the front side for at least one second.

Hold the on/off switch down for one second to commission the device.





Power ON: green
Power Standby: orange

Switching off the PG 740 PIII

It is strongly recommended to close all applications and safely turn off the operating system before switching off the PG 740 PIII. The procedure is described in the “Getting Started Microsoft Windows 98” manual.



Warning

Do not switch off the PG 740 PIII 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.

To switch off the PG proceed as follows:

1. Close all applications and shut down the operating system.
2. Wait while the operating system prepares your PG to be turned off then switch off the PG.
3. Depending on the operating system you have installed, the PG switches off automatically or you have to switch it off via the On/Off switch. Now it is possible to connect peripherals to the PG 740 PIII.

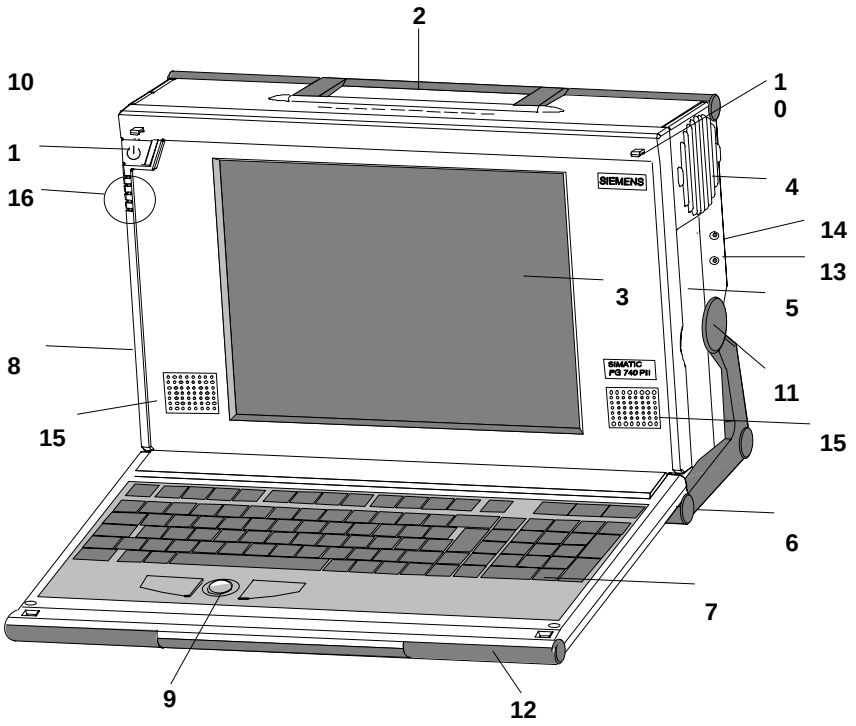
Hardware Components of the PG 740 PIII 3

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

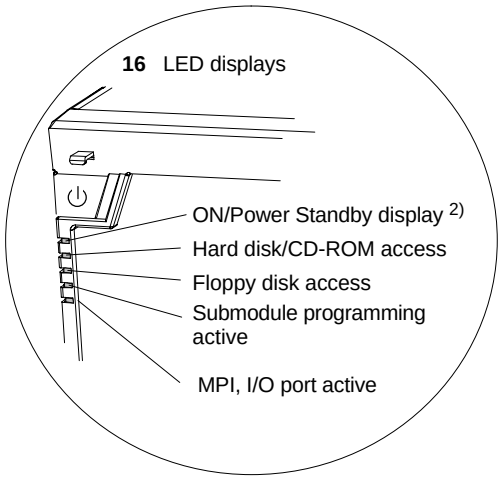
- Right- and Left-hand side panel of the device
- Connectors and ports
- Drives
- Memory submodules and cards and the
- Backup battery

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 for ON/Power Standby
2 Carrying handle
3 Display
4 Ventilating slots
5 Coverplate for memory submodules, MEM card PC-Card interface ports and floppy disk drive 1)
6 Stand
7 Keyboard
8 Coverplate for interfaces: VGA, COM2, COM1, MPI/DP, LPT1/Printer, mouse1)
9 Trackball
10 Catches for locking keyboard
11 Pivot
12 Protector strip
13 Socket for headphones
14 Socket for microphone
15 Loudspeaker opening



1) The coverplates are used to protect the interface ports from dust, and can be detached and snapped back on

2) Power ON: green
Power Standby: orange

You can use the On/off switch to switch to Power/Standby. When the network connection is withdrawn, the device is completely without power.

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 740 PIII (communications side).

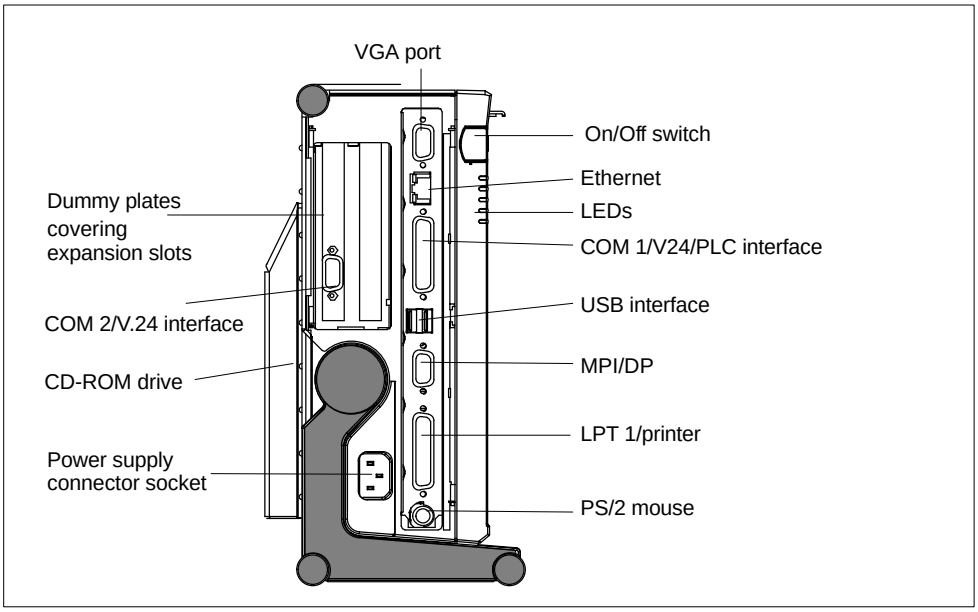


Figure 3-1 Left-Hand Casing Side Panel with Coverplates Removed

Ports and Connectors	Function
VGA port	Connection for external monitor
COM 2 V.24/mouse Serial port	Connection for serial mouse
	Connection for serial printer
COM 1 V.24/MODEM/PLC Serial port	Connection for S5 programmable controller
MPI/DP Multipoint Interface (RS485)*	Connection for S7 programmable controller via a CP5611-compatible MPI/DP interface
LPT 1 printer Parallel interface	Connection for parallel printer
PS/2 mouse	Connection for external PS/2 mouse
Power supply connector socket	Connection for power supply
Ethernet *	Connection for local Network (LAN)
USB interface **	Double connection of Highcurrent USB devices

* Galvanic isolation within the safety extra-low voltage circuit (SELV)

** The USB connection is supported only by Windows 98 at this time. In addition, the BIOS setup can be controlled by USB keyboard.

VGA Port

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

Note

The default setting of the display provides the simultaneous operation of a LC display and an external monitor. The screen display is then optimized to a format of 1024*768 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 740 PIII Hardware Options” under Setup and set “CRT/LCD selection: CRT enabled”.Then a resolution of 1024*768 pixels with a refresh rate or the even higher resolution SXGA (1280*1024 pixels) is possible.

Ethernet Interface

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

Note

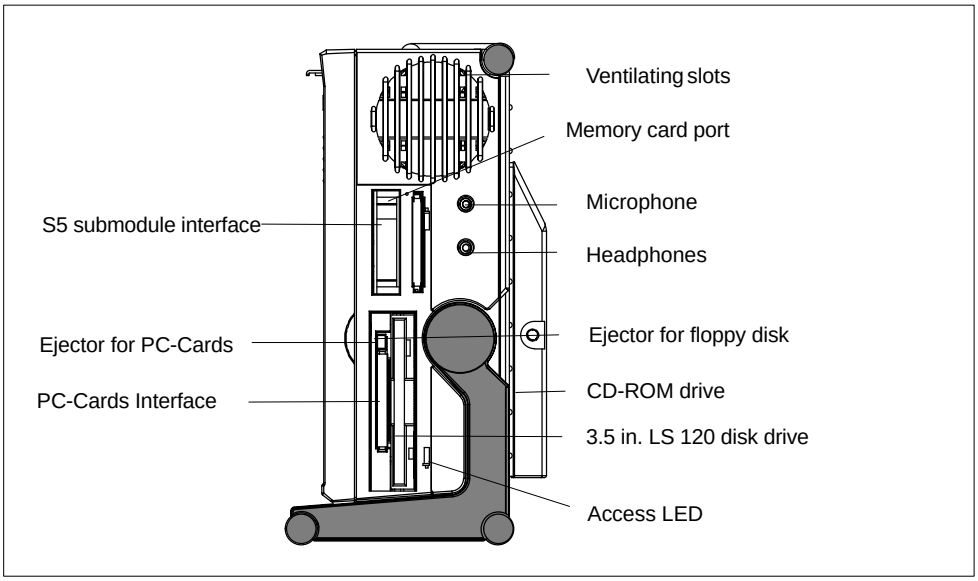
Disabled: Ethernet deactivated.
The Ethernet interface hardware is turned off. It is not possible to operate the interface within the operating system.

Enabled: Ethernet activated.
It is possible to plug in and operate the network cable at any time later during operation (hot plug).
If no cable is plugged in when the system starts up, the PG 740 PIII checks whether or not an Ethernet cable is inserted for about 30 seconds when it first boots and for about 40 seconds after returning from the suspend mode. If there is an active network connection, there are no noticeable delays.

Auto: When you boot, the system checks whether or not a network is attached. If a network is found, the Ethernet interface remains activated. If no network is found, the Ethernet interface is deactivated. When you boot, the status of the Ethernet hardware is displayed in the Summary Screen. If you plug in the cable later during operation, you must first reboot the system before you can use the network. A hot plug is not possible with this setting.

3.3 Right-Hand Casing Side Panel (Processing Side)

You access the slots for the S5 submodule interface, the memory card interface, the PC card interface, the disk drive, and the headphones and microphone connection from the right-hand side panel of the PG 740 PIII's casing (processing side).



The following table contains an overview of the various interface ports and connectors:

Interface Port	Function
Programming port for S5 submodules	Programming of SIMATIC S5 submodules
Programming port for memory cards	Programming of SIMATIC memory cards
PC card port	Connection for PC cards
Floppy disk drive	Processing of 3.5 in. diskettes
Headphones and microphone	Audio playback and recording

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 740 PIII will be damaged.

Do not place any objects over, or lay them on, the ventilating slots.

3.4 Color Display of the PG 740 PIII

The PG 740 PIII has a TFT (thin-film transistor) color display with a 13.3 in. diagonal (≈ 34 cm) and a maximum resolution of 1024 x 768 pixels (XGA).

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 Keyboard

Keyboard Layout

The keyboard is divided into the following three areas:

- Alphanumeric or typewriter keyboard
- Numeric keypad with cursor control keys
- Function keys

All keys on the keyboard are of the autorepeat type. That is, the relevant character is repeated as long as you keep the key pressed.

Keyboard Labeling

The keyboard has international labeling.

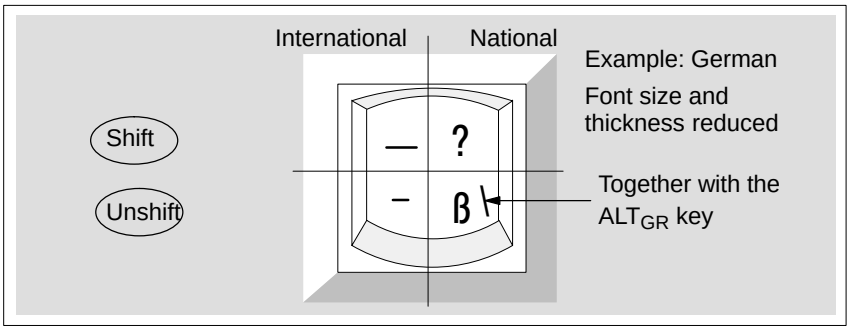


Figure 3-2 The Keyboard Labeling System

3.6 Drives

The PG 740 PIII is standardly equipped with a LS120 drive, a 3.5 in. hard disk drive and a CD-ROM drive.

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 20 seconds) before you move it.

LS120 Drive

The LS120 drive is compatible with previous 3.5”-disk drives. It also offers the possibility of using storage media with a capacity of 120 Mbytes. With the LS120 drive, you can save programs and data on diskettes and load data to the PG 740 PIII.

Types of Diskette

You can use the following diskettes:

LS120 SuperDISK	double sided high density diskette	double sided double density diskette
3.5 in.	3.5 in.	3.5 in.
120 Mbyte	1.44 Mbyte (135 TPI)	720 Kbyte

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

Information on the LS 120 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 LS 120 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.

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.

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

Recommended Superdisks:

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

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

These Superdisks can be obtained from the following 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

3.7 CD-ROM-Drive

The CD-ROM drive enables you to read CDs.

Opening the Drawer

Swing the PG 740 PIII into a horizontal position. The CD-ROM drive is now on the underside of 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

When you first open the CD-ROM drive, you will find a transparent film sheet in the drawer, to protect the drive during transport. Remove this film, since it is no longer required. 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

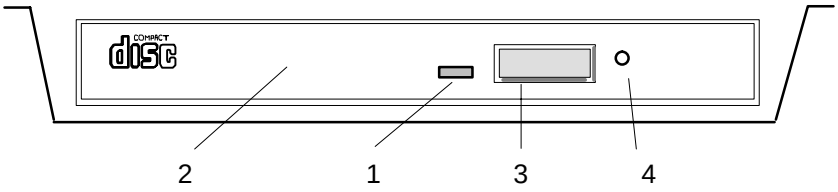
The EJECT function offered by various applications for opening the CD-ROM drawer does not work with this drive.

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 pen (or a paper clip) while the device is switched off, you can force the drawer to open.

3.8 S5 Submodules and Memory Cards

Please note the following instructions while working with S5 submodules.



Caution

Risk of damage to submodules!

If you plug the submodule in or take it out while its processing software is running, there is a danger that it will be damaged.

You must not take out the S5 submodule as long as its LED is lit. You cannot work simultaneously with S5 submodules and memory cards.

Before plugging in or taking out S5 submodules you must discharge the electrostatic charge of your body by briefly touching a grounded object. (ESD guideline).

Memory Cards

Please note the following instructions while working with memory cards.



Caution

When inserting cards, make sure that the orientation point is facing upwards.

Risk of damage to memory cards!

You must insert the memory card into a 68-pin connector with the type label pointing to the rear of the unit.

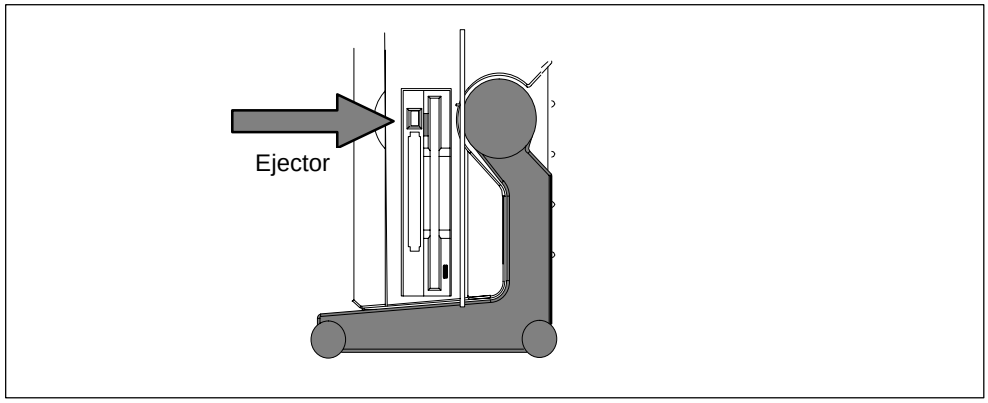
If you try to plug the memory card in the wrong way around, your programming device or memory card will be damaged!

You must not take out the memory card as long as its LED is lit. You cannot work simultaneously with S5 submodules and memory cards.

Before plugging in or taking out memory cards you must discharge the electrostatic charge of your body by briefly touching a grounded object (ESD guideline).

PC Cards

Proceed as follows while working with 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.

PC Cards must be inserted with the **type label** pointing towards the CD-ROM disk drive.

Caution

Before inserting or removing PC cards, you must discharge the electrostatic charge of your body by briefly touching a grounded object
(see ESD guidelines in the PG 740 PIII manual). Otherwise faults could occur.

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

3.9 Backup Battery

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



Warning

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

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

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

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

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

Installing System Expansions and Connecting Peripheral Devices

4

4.1 Connecting peripheral devices

It is possible to expand the PG 740 PIII's functionality by installing additional modules. Due to the rugged design and the high functionality the device is easy and economical to service. For information on how to proceed please refer to chapter 4 *(PG 740 PIII Expansions)* of the electronic manual. Please observe and follow the **Safety Instructions** given in the manual.



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 740 PIII.

Refer to chapter 4 of the electronic manual *(PG 740 PIII Expansions)* for more information on the following subjects:

- Opening the unit
- Functional units visible after opening the unit
- Installation of additional modules
- Installation of memory expansion cards
- Replace buffer battery
- Processor Upgrade
- Closing the unit

Hardware Options

Option	Order Number
Memory expansion 128 MByte	6ES7 791-0HS00-0XA0
PS/2 mouse	6ES7 790-0AA00-0XA0

Please contact your Siemens sales representative for further options.

4.2 Memory Expansions

Installing DIMM cards

Plug the DIMM memory cards in as follows:

1. First open the unit as described in Chapter 4 of the manual *PG 740 PIII Programming Device*. The manual is contained in electronic format on the CD “Backup PG720/740” shipped with the PG.



Caution

Risk of damage!

Note that only qualified personnel should be allowed to work on the open unit, so the warranty on the device is not affected. Authorized Siemens maintenance and repair centers offer you a specialist maintenance service. Contact the SIMATIC Customer Support Hotline for their addresses.

2. Plug the cards in vertically, making sure the cut-out on the connector end of the DIMM card engages properly.
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.

Installing ISA Modules and PCMCIA Cards

Note the following when installing these cards:

Note

Depending on the configuration of the PG 740 PIII, there may not be any free interrupts available for operating ISA modules or PCMCIA cards. In this case, you must reserve interrupts in the setup.

To reserve the interrupts, proceed as follows:

In the BIOS setup menu “Advanced,” set the interrupt required by the PCMCIA card or ISA module to “reserved” for “PCI/PNP ISA IRQ Resource Exclusion” in the line “PCI Configuration” (the default setting is “available”).

For more information on how to work with ISA Modules and PCMCIA Cards please refer to chapter 3.8.

Installing and Operating the PG 740 PIII

5

5.1 Preparing Start up

Setting up the PG (Desk-Top mounting)

Set up your programming device as follows:

1. Set the PG 740 PIII down on the desk-top
2. Open the keyboard lock by pulling up the anthracite-colored handle.
3. Swing the keyboard down into position.

Connecting to the Power Supply

You can operate the PG 740 PIII on120 V and 230 V power systems. The voltage is selected automatically.

1. Plug in the power supply cable supplied with the unit into the connector labeled ”Power”.
2. Connect the unit to a socket outlet with a grounded protective conductor.

Powering up the PG 740 PIII

Both the operating system and system software supplied with the PG 740 PIII 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 740 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.

- 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 chapter 2.3). When powering up the device you have to distinguish between the following:
  - **Initial start** to set up the PG 740 PIII’s software and a
  - **Complete restart** after initial start and authorization.

5.2 Cold Start of the PG 740 PIII

Installing the operating system

When powering up the PG 740 PIII 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 740 PIII.
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 a 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 for the installation, login, administrator account, password entry, creation of an emergency disk and startup of Windows 2000 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 740 PIII.

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 “.

5.3 Complete restart of the PG 740 PIII

Overview

Once the PG 740 PIII'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 chapter 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 programm 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 recomend 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 740 PIII on the CD “Backup PG720/740” 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 PG720/740”.

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

6

6.1 Cause / Remedy

In case of software errors reinstall your software using the Recovery Windows CD and CD “Backup PG720/740”.

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 chapter 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 unter Windows 98

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

Note

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

The hard disk is delivered with the following installed:

- a partition of 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.

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” (A is the CD-ROM drive).
   Select the dialog box for enable large disk support for installing
   – a FAT16 partition “activate support (Y/N)...? [N] ” for No
   – 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 an Extended Partition

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

Using ”A:\>FDisk” start the Microsoft Windows 98 hard disk configuration program.

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

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

6.2.2 Creating Partitions unter Windows 2000

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

Note

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

The hard disk is delivered with the following installed:

- a partition 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” (A: is the CD-ROM drive).
   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:”

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, BOOTDISK, CD SAMPLE, 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. After transferring the WIN98 folder, 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 harware icon in “Control panel”.

Installing Sound Drivers

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

- Insert the CD “Backup PG720/740” in the CD-ROM drive.
- At the command promt

  `copy manufacturer’s files from`

  type

  \DRIVERS\PG740P3\AUDIO.W98 and
- press “OK”. The recognized Sound system is displayed.
- Confirm with “Finish”.

Sound Driver Installation after Installing Windows

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

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

  C:\DRIVERS\AUDIO.W98 or located in the directory DRIVERS\PG740P3\AUDIO.W98 of the supplied CD “Backup PG720/740”.
- Please read the file Readme.txt before you start installation.
- Click “Start”, then “Settings” “Control Panel” and double-click “Add New Hardware”.
- Click “Next”, “Next” in Add New Hardware Wizard .
- Select “No, I want to select the hardware from a list” and press “Next”.
- Click “Sound, Video and Game controller” and press “Next“.
- Click “Have Disk”.
- At the command prompt “Copy manufacturer’s files from” type :

  \DRIVERS\PG740P3\ AUDIO.W98 on the CD “Backup PG720/740”, select the file “oemsetup.inf” and confirm with “OK”.
- Press “Finish”.

Windows 98 updates the system settings and asks you to restart the PG for these new settings to take effect. Confirm with “Yes”.

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 “Backup PG720/740” CD in the CD-ROM drive
- At the command promt

  `copy manufacturer’s files from`

  type
  \DRIVERS\PG740P3\DISPLAY.W98

  and press “OK”. The recognized display device is displayed.
- Confirm with “Finish”.

Display Driver Installation after Installing Windows

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\PG740P3\DISPLAY.W98 of the supplied “Backup PG720/740” CD.
- Please read the file Install.txt or 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 “Display a list of all the drivers in a specific location...“ in the Update Device Driver Wizard. Then click “Next ” and press “Have Disk”.
- At the command prompt “Copy manufacturer’s files from” type \DRIVERS\PG740P3\DISPLAY.W98 on the “Backup PG720/740” CD and select the file “chips98.inf”

  and press “OK”
- Select the installed Model in “Select Device”.
- A list of technical specifications displays the type of adapter installed. Confirm with “OK” and press “Next”.

  Windows 98 updates the system settings.
- Click “Finish” and close the Update Device Driver Wizard.
- Click “Close” to close all windows. When the system asks you to restart for the new settings to take effect confirm with “Yes”.

After restarting your system click “Control Panel” then “Display” and the ”Settings” tab 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.

Installation of the Network Driver

In the course of the WINDOWS 98 setup program, Windows 98 detects the network components. Proceed as follows to install the network component:

- If the window “New hardware component found” – “Intel ® 82559 Fast Ethernet LAN on Motherboard” is displayed, please insert the “Backup PG720/740” CD and actuate the “Ok” button in the “Insert data carrier” window.
- Select the option “Search” in the “Insert data carrier” window and navigate in the directory \Drivers\PG740P3\Network\IntE100b on the CD.
- Select the file e100b.cat and confirm your selection with “Ok”.
- Actuate the “Ok” button in the “Insert data carrier” window.

Subsequent Installation of the Network Driver

In order to be able to install the network driver without an inserted active network cable, you have to set the Onboard Ethernet network card from “Auto” to “Enabled” in the BIOS Setup.

- Copy the network driver files from the directory \Drivers\PG740P3\Network\IntE100b on the CD-ROM “Backup PG720/740” to the directory C:\Drivers\Network\IntE100b on the hard disk.
- Double click on “Network” in the control panel.
- Select the option “Add”, “Adapter” and confirm your selection with “Add”.
- Select the button “Have Disk” in the “Add network card” window.
- Using the option “Browse” in the following window, either go to the directory C:\Drivers\Network\IntE100b on the hard disk, or insert the “Backup PG720/740” CD and navigate in the subdirectory \Drivers\PG740P3\Network\IntE100b.
- Select the file “Oemsetup.inf” and confirm your selection with “Ok”.
- Actuate the “Ok” button in the “Install from floppy disk” window.
- Select the device “Intel (R) 82559 Fast Ethernet LAN on Motherboard” in the “Select Network Card” window and confirm with “Ok”.
- Confirm the “Network” window with “Ok”.
- Close all windows and carry out a restart.
- After the restart, insert the “Backup PG720/740” CD and confirm the “Insert disk” window with “Ok”.
- Input the path \Drivers\PG740P3\Network\IntE100b in the “Files being copied” window and confirm with “Ok”.
- After a restart, the network component is completely installed.

After the installation is complete, the network card “Intel(R) 82559 Fast Ethernet LAN on Motherboard” should be installed in **Control panel > Network**.

f the network settings are not correct, you can change them via **Control panel > Network**.

Note

When prompted to insert the data carrier labelled Intel PRO Adapter, insert the Backup CD in the CD drive and type the path \Drivers\PG740P3\Network\IntE100B for the source.

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 install Windows NT.

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\PG740P3\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\PG740P3\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\PG740P3\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 740 PIII. 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 programm packages insert the “Backup PG 720/740” 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 chapter 5.2 “Cold Start of the PG 740 PIII”.

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		
PG 740 PIII		
1 Power supply cable	W79079-N2025-A3	
1 MPI cable	6ES7901-0BF00-0AA0	
1 Connecting cable	6ES5734-2BF00	
1 carrying bag		
1 Manual incl. Licence and Windows operating sytem 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 Documentation package		

7.2 Technical Specifications PG 740 PIII

Dimensions (w x h x d)	395 x 270 x 145 mm (15.5 x 10.6 x 4.7 in.)
Weight	approx. 7 kg (14.3 lbs.)
Line voltage	120 VAC (85 to 132 VAC), or 230 VAC (187 to 264 VAC) (automatic switchover at 140 VAC)
Line voltage frequency	50 / 60 Hz (47 to 63 Hz)
Brief voltage interruption	max. 20 ms at 0.85 V_N (max. 10 times per hour; min. recovery time 1 s acc. to Namur)
Max. power consumption Standby power	330 W typically 4 W
Degree of protection	IP30 (covers closed)
Safety	
Requirements	VDE 0805≙EN 60950 and IEC 60950 protection class I to IEC 60536 Protective separation between supply and secondary circuit
Noise emission	<45 dB(A) to DIN 45635 Fan with speed control
Electromagnetic compatibility (EMC)	
Emitted interference limit value class	A to EN 55022≙ CISPR22
Noise immunity on AC supply lines	±2 kV (to IEC 61000-4-4; burst) ±1 kV (to IEC 61000-4-5; µs pulse/line to line) ±2 kV (to IEC 61000-4-5; µs pulse/line to ground)
Noise immunity on signal lines	±2 kV (to IEC 61000-4-4; burst; length > 3 m) ±2 kV (to IEC 61000-4-5; µs pulse asymetrical: length > 20 m)
Noise immunity to discharges of static electricity	±4 kV, Contact discharge (to IEC 61000-4-2; ESD) ±8 kV, Air discharge (to IEC 61000-4-2; ESD)
Immunity to high frequency noise	10 V at 80% amplitude modulation at 1 kHz, 9 kHz - 80 MHz (to IEC 61000-4-6) 10 V/m at 80% amplitude modulation at 1 kHz, 80 kHz - 1 GHz (to IEC 61000-4-3) 10 V/m pulse modulated, 50% duty cycle at 900MHz and 1,89 GHz (to IEC 61000-4-3)
Environmental conditions	
Temperature operation storage/transport	tested to DIN IEC 60068-2-1, DIN IEC 60068-2-2 +5° C to +40° C - 20° C to +60° C (Max. speed of temperature change 10° C/h (18° F/h) condensation not permitted)
Relative humidity operation storage/transport	tested to DIN IEC 60068-2-3 5% to 80% at 25° C (77° F) (no condensation) 5% to 95% at 25° C (77° F) (no condensation)
Mechanical specifications	
Vibration operation storage/transport	tested to DIN IEC 60068-2-6 10 to 60 Hz; amplitude 0.035 mm 60 to 500 Hz; acceleration 4.9 m/s^2 5 to 9 Hz: amplitude 3,5 mm 9 to 500 Hz; accelaration 9,8 m/s^2
Shock operation storage/transport	tested to DIN IEC 60068-2-27 half-sine: 50 m/s^2, 30 ms half-sine: 250 m/s^2, 6 ms

Mother board	
Integrated processor	Intel Pentium III / 800 MHz, 100 MHz FSB
Internal processor cache	16 Kbyte
Main memory	128 Mbyte up to a max. of 768 Mbyte,100 MHz SDRAM
Second level cache	256 Kbyte, on the processor card
Expansion slots	1 x shared PCI/ISA; max. 170 mm 1 x PCI, max. 170 mm
Max. permissible current consumption per ISA slot	5V 1.6 A; 12V 0.3 A; –12V 0.05A; –5V 0.05A
Drives	
LS 120 drive	3.5" (1.44 Mbyte / 120 Mbyte)
Hard disk drive	3.5" / 20.4 Gbyte
CD-ROM drive	IDE (ATA), 650 MB 24 x speed
Hard disk interface	IDE, Ultra DMA
Average access time	13 ms
LC display	
Type	active TFT (Thin Film Transistor)
Size	270 x 202 mm, equivalent to 13.3" (w x h)
Resolution	1024 x 768 (XGA)
Colors available	2^{18} colors available
Contrast	min. 150 : 1
Brightness	> 100 cd/m^2
Response time	30 / 50 ms (t_{rise} / t_{fall})
Faulty spots permitted	Bright dots: 15 max, Green Bright dots 6 max, join 5 max Black dots: 15 max, Join 2 max
Graphics	
Graphics	Super VGA with Windows accelerator
Graphics chip	C&T, 69000
Graphics memory	2 MByte ED0 DRAM
Interface to processor	AGP (Accelerated Grafics Port)
Resolutions / frequencies / colors	640 x 480 / 85 Hz / 16.7 Mio colors 800 x 600 / 85 Hz / 16.7 Mio colors 1024 x 768 / 85 Hz / 65535 colors 1280 x 1024 / 256 colors
Keyboard	
Type	MF2-compatible; with cursor block and numeric keypad; removable; 101 keys
Key spacing	19.05 mm
Key stroke	3 mm
Keytops	international / German
Integrated pointing device	16 mm trackball (PS/2-compatible)
Interfaces	
COM1	V.24 / V.28 (up to 30 m) or 20mA (TTY) (up to 1000 m) active or passive (25-way socket)
COM2	V24 (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

Interfaces	
PC card interface	interface for PC cards (type II) (Controller from TI: PCI1225)
Submodule interface	programming interface for SIMATIC S5 submodules
Memory card interface	programming interface for SIMATIC memory cards
MPI, I/O interface	for SIMATIC MPI or PROFIBUS-DP-networks (9-way socket); 1.2 – 12 Mbps, (CP5611-compatible)
Ethernet	RJ45, 10BaseT(100)
USB	Connection for Universal Serial Bus
LED Controls	
LEDs on the device	Power On (green) / Standby (red) Hard disk access Floppy disk access S5 submodule/memory card active MPI/DP token passing
LEDs on the keyboard	Caps Lock Scroll Lock Num Lock
Audio	
Audio controller	Solo1 ESS 1938 S
Headphones and microphone connection	Connection for 3.5 mm jack connector

Hotline Services

8

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.		

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.