SIEMENS

SIMATIC

PC FI25

Product Information Bulletin   C79000-Z7076-C811-02

This bulletin contains important information
on your PC FI25

Safety Guidelines

This product information bulletin 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 Technical Description.

Only **qualified personnel** should be allowed to install and work on this equipment using the Technical Description. 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 technical description, and only in connection with devices or components from other manufacturers which have been approved or recommended by Siemens.

This product can only function correctly and safely if it is transported, stored, 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.

Safety Instructions

1

Chapter Overview

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

This device corresponds to the relevant safety measures according to IEC, EN, VDE, UL and CSA. If you have questions about the permissibility of the installation in the designated environment, please confer with our service reference partner. Chapter 5 contains the service address locations.

1.1 General Notes

Transport

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

Installation

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

When installing and operating the unit it is essential to observe the following notes on environmental conditions discussed in the section "Technical specifications" and the notes on installing the unit in Chapter 2.

The technical description is part of the electronic manual and is stored on the harddisk drive of the unit. Installation is described in Chapter 3.

The device has to be installed according to safety rules i.e it must not cause any damages or danger (e.g. by upsetting).

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

If the PC is permanently installed (for example, in a rack), the drive protecting cover in front of the drives on the front side must be kept closed for safety reasons (fire protection according to UL 1950/ EN 60950). You may open the drive protecting cover only to service the drives. You must not remove the drive protecting cover.

Power Connection

The mains lead for this unit is packed separately. It is selected specially for the country concerned and must be used to avoid danger. Please observe the following notes if it is necessary to replace the original cable.

The socket connector coupling of the cable must meet the CEE-22 requirements.

Please make sure that the mains voltage set on the voltage selector corresponds to the local mains voltage. The voltage selector is located on the left-hand side of the system unit under the fan grid. The works setting is 230V.

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

Make sure that the socket outlet on the device or the grounding contact for the building wiring system remain uncovered and always accessible.

The PC FI25 has no power supply connector, therefore you have to unplug the power plug of the device in order to disconnect it completely from the power supply. This plug must also be easily accessible. For cabinet mounting, a central power switch must be provided.

Make sure that all cables are installed as safe as possible, to avoid that any person could step on them or even fall over them. When connecting the device, refer to the relevant instructions given in Chapter 2.

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

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

The PC must be switched off, before you connect or disconnect any peripheral devices (keyboard, mouse, printer, etc.). You can damage the PC if you ignore these instructions.

Country-Specific Notes

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

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

For 120 V devices
A flexible cable with UL approval and CSA marking and the following features must be used: SJT design with three conductors, at least 18 AWG cross-section, a maximum length of 4.5 meters and parallel grounding-type plug (15 A, at least 125 V).

For 240 V devices (used in Germany)
A flexible cable with UL approval and CSA marking and the following features must be used: SJT design with three conductors, at least 18 AWG cross-section, a maximum length of 4.5 meters and Tandem ground-type plug (15 A, at least 250 V).

For 230 V devices (outside the USA)
A flexible cable with the following features must be used: At least 18 AWG cross-section and grounding-type plug (15 A, 250 V). The cables must conform to the relevant safety guidelines of the country in which they are installed and bear the specified markings.

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

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

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

Repairs

The device must be repaired only by authorized personnel. Unauthorized opening and improper repair work on the device can result in significant danger to the user.

Always disconnect the power plug before you open the device.

Do not install any system expansion devices which are not provided for this computer. Other expansion devices, could cause damages to the system or violate the safety requirements and regulations for radio interference suppression. Contact your technical customer service or your local sales representative to find out which system expansion devices can be installed.

If you install or exchange system expansions and cause defects to your PC, the warranty becomes void.

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

Battery

This device incorporates one battery each on the motherboard and the monitoring module (for version with buffered RAM only, optional). It may be replaced by authorized personnel only. Please note the comments in the documentation of the CPU module!

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

Caution

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

ESD Guidelines

Electrostatically Sensitive Devices (ESD) can be identified bythe following label:

If you handle ESD modules, you must absolutely refer to the following guidelines and follow the instructions implied:

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

1.2   Notes on the CE Symbol

CE

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

EC Directive

This product fulfills the requirements of EC directive 89/336/EEC on "Electromagnetic Compatibility", and is designed for the following fields of application as per the CE marking:

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

Low Voltage Directive

This product fulfills the requirements of EC directive 73/23/EEC on "Low Voltage Directive". Observance of this standard was tested to EN60950.

Declarations of Conformity

In accordance with the above-mentioned EU directives, the EC declarations of conformity and the associated documentation are held at the disposal of the competent authorities at the address below:

Siemens Aktiengesellschaft
Bereich Automatisierungs- und Antriebstechnik
A&D AS E4
Postfach 1963
D-92209 Amberg

Products which do not carry the CE marking fulfill the requirements and standards as described in the chapter entitled "Technical Specifications".

Observing the Installation Guidelines

The installation guidelines and safety instructions discussed in the manual must be observed on startup and during operation.

1.3   Approvals for the USA and Canada

UL/CSA
Approval

Important for the USA and Canada:

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

Unterwriters Laboratories (UL) to the UL 1950 standard.

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

UL Recognition Mark

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

Canadian Standard Association (CSA) to American standard UL 1950.

1.3.1 FCC Approval for USA and Canada

**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.

Canadian Notice

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

Avis Canadien

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

1.4 Technical Specifications

Dimensions	(W x H x D in mm) 483 x 310 x 180
Weight	Approx. 14 kg
Line Voltage (U_N)	120 V / 240 V ± 10 % ; 4 A / 2 A (voltage selector switch on the exterior of the unit)
Line voltage frequency	50/60 Hz (47 bis 63 Hz)
Brief voltage interruption acc. to NAMUR	max. 20 ms at 150 W load (max. 10 events per hour, recovery time 1 s)
Max. power consumption	310 W

Max. current delivery	5V	12V	-5V	-12V
+12V can be loaded to 8A for up to 10s	19 A	4.2 A	0.5 A	0.5 A

Degree of protection	IP 65 (front), IP 20 (complete unit)
Safety	
Protection class	Protection class I according to VDE 0106 T1: 1982 (IEC 536)
Safety requirements	IEC 950/09.91 according to DIN VDE 0805/11.93
Electromagnetic Compatibility (EMC)	
Emitted interference	EN 55022 Class B
Noise immunity: Line-fed interference on supply lines	+- 2 kV (to IEC 1000-4-4:1995; burst) +- 1 kV (to IEC 1000-4-5:1995; surge symm) +- 2 kV (to IEC 1000-4-5:1995; surge unsymm)
Noise immunity on signal lines	+- 1 kV (to IEC 1000-4-4:1995; burst;length < 3m) +- 2 kV (to IEC 1000-4-4:1995; burst;length > 3m) +- 1 kV (to IEC 1000-4-4:1995; surge symm; length > 3m) +- 2 kV (to IEC 1000-4-4:1995; surge unsymm; length > 3m)
Noise immunity to discharges of static electricity	+- 6 kV contact discharge (to IEC 1000-4-2:1995) +- 8 kV air discharge (to IEC 1000-4-2:1995)
Noise immunity to high-frequency radiation	10 V/m 80-1000 Mhz, 80% AM (to ENV 50140:1993) 10 V/m 900 Mhz, 50% ED (to ENV 50204:1995)
Noise immunity to high-frequency currents	10 V 9 KHz - 80 MHz 80% AM (to ENV 50141:1993)
Noise immunity to magnetic fields	30 A/m 50 Hz (to IEC 1000-4-8:1993)

Ambient Conditions	
Temperature	Tested to DIN EN 60068-2-2, DIN IEC 68-2-1, DIN IEC 68-2-14
- operation	+ 5°C to +45°C
- storage/transport	- 20°C to +60°C
- gradient	Max. 10 degrees C/h (no condensation)
Relative humidity	Tested to DIN IEC 68-2-3, DIN IEC 68-2-30, DIN IEC 68-2-56
- operation	5 % to 85 % at 25°C (no condensation)
- storage/transport	5 % to 95 % at 25°C (no condensation)

Mechanical Specifications	
Vibration	Tested to DIN IEC 68-2-6
- operation	10 to 58 Hz: 0.075 mm, 58 to 500 Hz: 9,8 m/s^2
- transport	5 to 9 Hz: 3.5 mm, 9 to 500 Hz: 9.8 m/s^2
Shock	Tested to DIN IEC 68-2-29
- operation	50 m/s^2, 30 ms
- storage	250 m/s^2, 6 ms

Mother Board		
	FI25 (Variant 1)	**FI25 (Variant 2)**
Processor	see Information leaflet	
Internal processor cache	see Information leaflet	
Main memory	see Information leaflet	
Second level cache	see Information leaflet	
Free expansion slots	4 ISA long/1 ISA short	4 ISA long/1 ISA short (1 ISA occupied by SafeCard)

Drives	
Floppy disk drive	3,5" (1.44 MB)
Hard disk drive	see Information leaflet

LC-Display		
	FI25 (Variant 1)	**FI25 (Variant 2)**
Display type	passive DSTN, color	active TFT, color
Display size	211 x 158 mm (10,4 in.)	211 x 158 mm (10,4 in.)
Resolution	640 x 480 (VGA)	800 x 600 (SVGA)
Available colors	256	65536 (from 162.144)
Contrast	30:1	60:1
Brightness	70cd/m^2	120 cd/m^2
Response time	270 ms (t_{rise}/t_{fall})	30/50 ms (t_{rise}/t_{fall})
Permissible error locations	-	high/low level: <12/25 spots green high level: <5 spots

Keyboard	
Keyboard type	Membrane keyboard, full keyboard functionality
Key size/key distance	14 mm / 14 mm
Labelling	US/international
Keyboard controller	Freely programmable, parallel operation with external keyboard
Graphics	
Graphics chip	SVGA LCD controller Cirrus GD7543 on the PCI bus with Windows accelerator
Graphics memory	1 MB DRAM
Resolutions/frequencies/ colors	CRT: up to 1024x768/75 Hz/256 colors
Interfaces	
COM1	Serial port 1 (V.24/RS232C), 25-pin sub D socket connector NS 16550-compatible
COM2	Serial port 2 (V.24/RS232C), 9-pin sub D plug connector NS 16550-compatible
LPT1	Parallel port (standard, EPP and ECP mode)
	Interface for printer with parallel port
VGA	VGA interface, for external monitor
Keyboard	PS/2 keyboard connection (on the front panel) DIN keyboard connector on side
Mouse	PS/2 mouse port

MPI/DP Interface, optically isolated *
 Data signalling rate
 Operating mode
 	
 Physical interface
	9-pin sub D socket connector, screw-type locking
	 9.6 Kbaud to 1.5 Mbaud, software-selectable
	 Isolated*: Data lines A, B
	
	          Control lines RTS_AS, RTS_PG
	
	          5V supply voltage
	          (max. 90 mA)
	 Ground connection: MPI/DP connector cable shield
	 RS485, optically isolated

Relay interface	Connection of a signalling device in conjunction with monitoring module SafeCard (serial feature on FI25 Variant 2)
	Switching voltage DC : max. 60 V
	Current voltage DC : max. 1 A
	Switching capacity DC : max. 30 W
	Limiting continuous current DC : max. 1 A

Function Displays		
	FI25 (Variant 1)	**FI25 Variant 2)**
LEDs on device	Power	Power
	Disk	Disk
	Run (only with Safecard)	Run
	Temp (only with Safecard)	Temp
	Appl. (only with Safecard)	Appl.
Status display (2x seven-segment)	(only with SafeCard)	Yes

*   Optically isolated within the SELV circuit

Starting up your PC

<div style="text-align: right"># 2</div>

Chapter Overview

In this chapter, you learn:

- what you should consider when you set up your PC,

- which interface you use to connect the standard peripherals,

- how to connect your PC to the supply voltage.

2.1　Unpacking and Checking the Delivered Components

Unpacking the PC FI25

Proceed as follows to unpack your PC:

1. Remove the packing.

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

3. Keep the enclosed documentation which is needed for the first startup of your PC. (See chapter 3).

Checking

Proceed as follows:

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

2. Check the packing and its contents for any shipping or transport damages apparent.

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

For the exact configuration data of your PC refer to the log book included inside your PC's casing, if necessary.

Setting up

Your SIMATIC PC FI25 is designed for 19" mounting and flush mounting. Chapter 2.2 provides more information about this topic.

2.2   Mounting the SIMATIC PC FI25

Please note the following, when mounting your SIMATIC PC :

• Place your PC in an appropriate position which avoids any reflections on the screen.

• The position of your monitor should always be comfortable and optimal in sight for the user and therefore determine the mounting heigth of your PC.

• Do not expose your PC to direct sunlight.

• Make sure not to cover the ventilating slots of the housing when mounting the device.

• The cabinet or switchboard mounting should always provide enough space to guarantee a sufficient air ventilation for your PC.
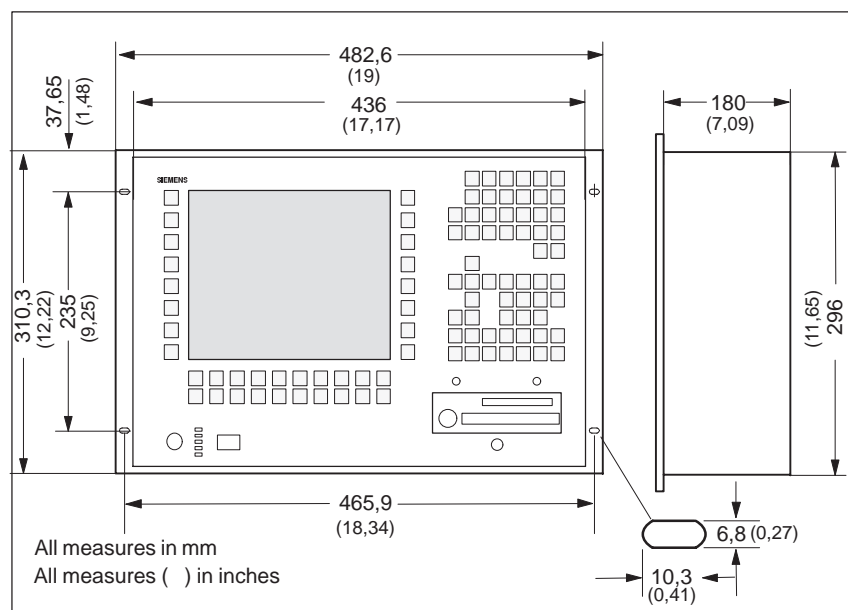

Figure 2-1   Mounting dimensions of the PC FI25

Installing your PC in a 19"Cabinet

Please proceed as follows:

- Two 19"angle brackets have to be mounted to each side of the unit.

- Release the 3 screws at the system unit (figure 2-2).

- Install your SIMATIC PC in the 19" cabinet.

- Open the front of your PC and screw the angle brackets above the covered pairs of holes in the 19"cabinet.

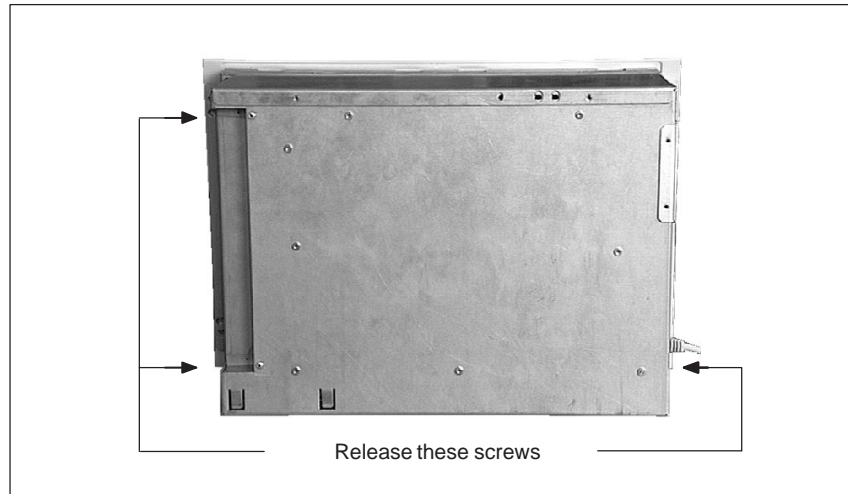- Close front of the unit and screw the front above the visible pairs of holes in the 19"cabinet.

Release these screws

Figure 2-2   Opening the system unit

Flush Mounting   Please proceed as follows:

- Insert the device into the prepared cut out of the switchboard and secure it against falling out of the board until it is finally mounted.

- Make sure that the seal is properly mounted!

- Fasten the device using the included screw rod (screw spindle) in the switchboard: first engage the screw rod in the front frame of the PC and then turn the screw spindle backwards to the switchboard.

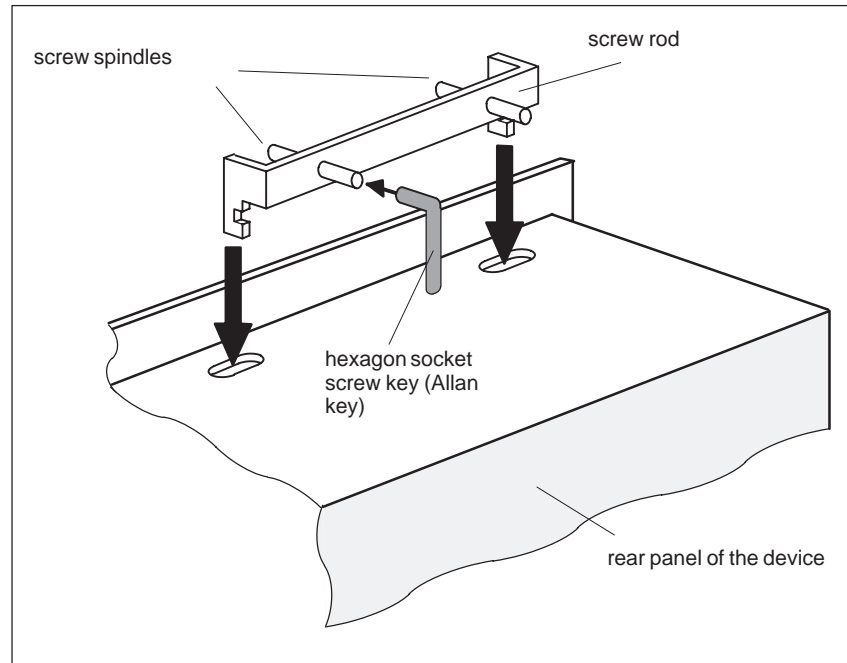Figure 2-3   Mount screw spindle

⚠ **Warning**

Avoid extreme environmental conditions, where possible. Protect your SIMATIC PC from dust, moisture, and heat. (see chapter "System Unit" of the Technical Description.)

The clearance around the system unit must be at least 100 mm at the side and rear,in order to sufficiently ventilate the system unit.

Do not cover the system unit's ventilating slots.

2.3   Connecting Components

The PC FI25 already provides a keyboard and a flat screen that have been integrated in the PC's casing, therefore peripheral devices that have to be connected are few.

The standard port for connecting peripheral devices is located on the **right side of the system's casing** (figure 2-4):

- VGA port for an external monitor

- *s*erial ports COM1 and COM2

- MPI port (Multipoint Interface)

- one parallel port (LPT 1)

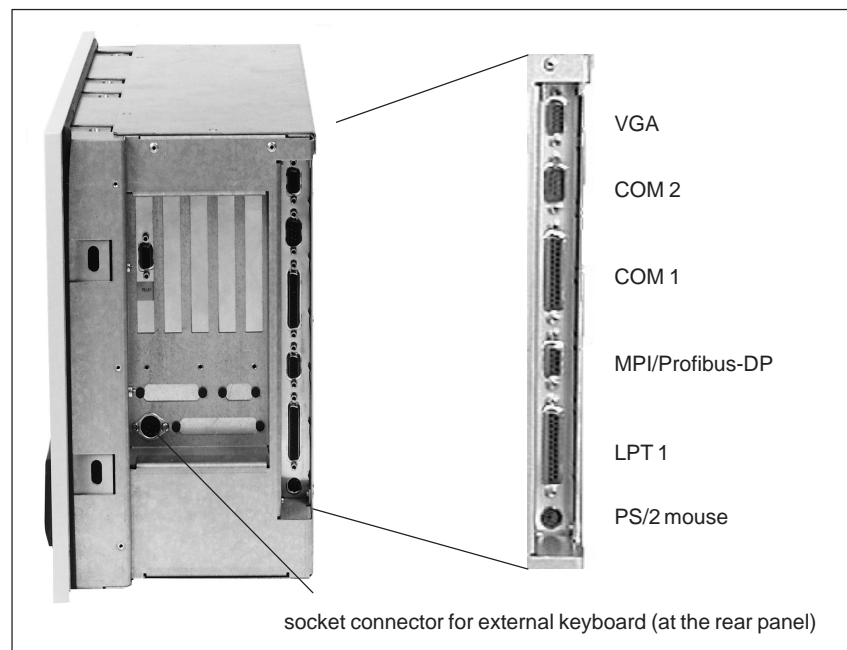- PS/2 connection for a PS/2 mouse

Figure 2-4   Connections on the right–hand panel of the SIMATIC PC FI25

Connecting ports/interfaces are added, if expansion modules are connected in the PC. Their function is described in the corresponding description of the individual module.

Table 2-1   Connections on the right-hand side

Connections	Function
VGA	VGA port Connection for an external monitor
COM1	Serial port 1 (V24) 25-pin D-Sub socket connector
COM2	Serial port 2 (V24) 9-pin D-Sub connector (standard)
Mouse	Connection for PS/2 mouse
Keyboard	Connection for PS/2 keyboard
LPT1/Printer	Parallel printer port Connection for parallel printer
MPI/PROFIBUS DP	Multi-Point-Interface Connection for SIMATIC S7 PLC
Connector for power supply input	Power supply (115/230V AC)
Connector for power supply output	Power supply for external monitor (115/230V AC)
Relay output (FI25 with SafeCard only)	Connection for signalling device on SafeCard monitoring module. See description of SafeCard in chapter "Monitoring module SafeCard" in the Technical Description. **Technical Data:** DC switching voltage : max. 60 V DC switching current : max. 1 A DC switching capacity : max. 30 W Permanent DC current : max. 1 A

Note

Use shielded cables and metal connectors for connecting peripheral devices! In case you do not use them, the operating license for your PC will become invalid! Use a screwdriver to fasten the interface cable connectors on the PC casing, to improve electrical shielding.

2.4 Connection of External Keyboards

No errors occurred during testing the SIMATIC PCs FI25 in connection with the following external keyboard:

- PG760 keyboard (S26381-K205-V576)

2.5 Grounding Measures

Low-impedance ground connections protect the user against electric shocks (e.g. in the case of short-circuits or system faults). Moreover, grounding connections are intended to divert electrical interference conducted via external power supply cables, signal cables or cables connected to peripheral devices.

Therefore, you should establish a low-impedance connection between the grounding point at the systems housing (large surface, large contact area) and the central grounding point of the cabinet or the plant, in which the PC is to be installed. The minimum diameter should not be below 5 mm^2.

The ground connection is on the left-hand side of the housing, on the right of the fan for the power supply.

2.6 Connecting the Supply Voltage

Changing the Supply Voltage

The standard power supply for the SIMATIC PC is set for 115/230V networks. The voltage selection switch is located at the rear of the system unit below the ventilation slots.

You must ensure that the supply voltage set at the voltage selection switch matches the local supply voltage.

Selecting the Supply Voltage

If the voltage specified at the selection switch does not match the local supply voltage, you must change the voltage selection switch so that you can read the voltage value set below the green triangle on the right. Use a small, flat screwdriver to lever out the part with the voltage values and reinsert it in the appropriate position.
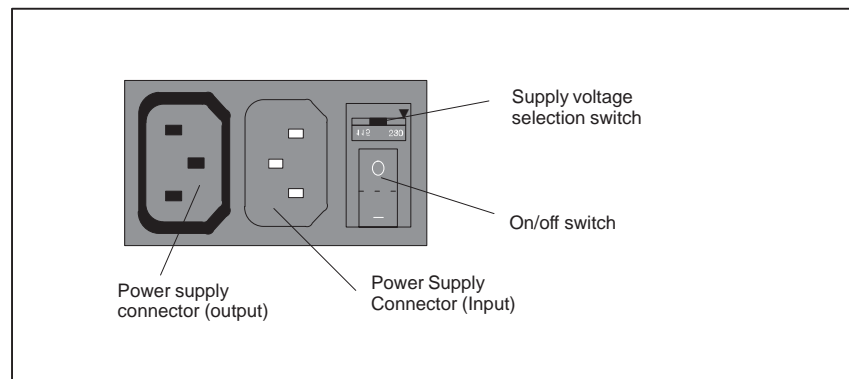
Figure 2-5   Connecting the Supply Voltage

⚠ **Warning**

Damage may be caused to the device!

Operating the PC with the wrong supply voltage setting may damage the device. The same voltage is applied to the supply voltage output and the supply voltage input.

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

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

Input voltage	120 V / 240 V ± 10%
Input current	8A / 4A
Output voltage	Equal to input voltage
Max. output current	3A / 1.5A

2.7   Keypads

The keypads of the SIMATIC PC can be divided into:

- Function keys F1 to F20 and S1 to S16 (see 2.6)
- Alphanumeric-/special character keypad
- Numeric keypad with cursor- and control keys

All keys of the keypads (except for control keys) have an auto-repeat function i.e. the respective character is repeated as long as the key is hit.
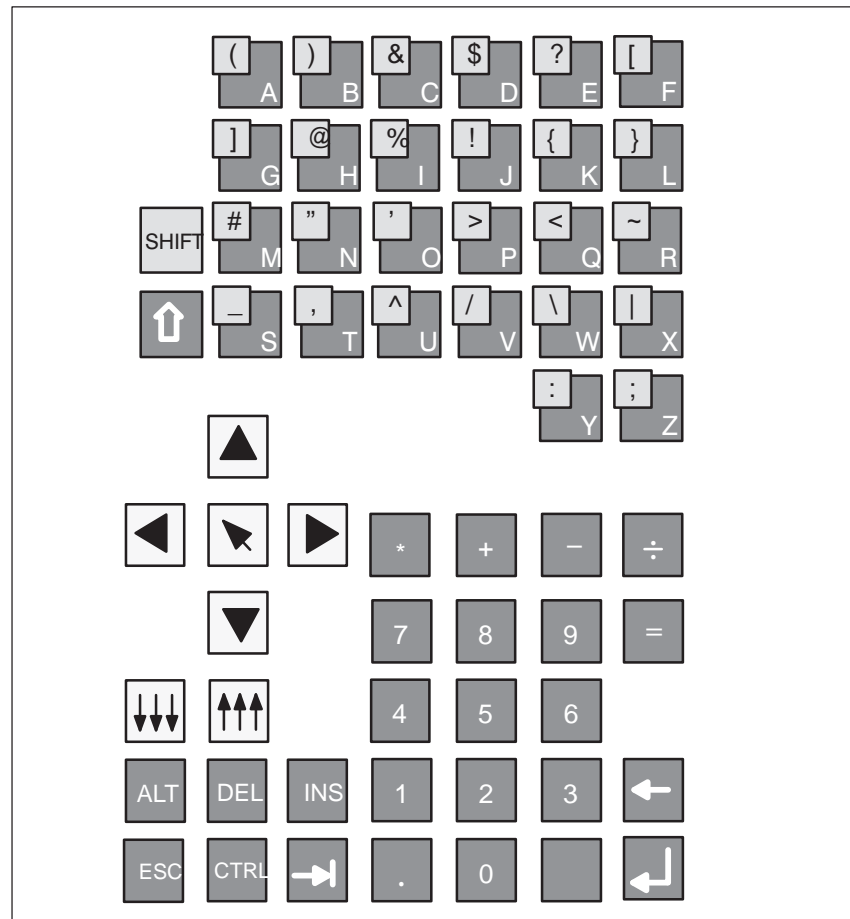
Figure 2-6   Overview of the keypads

2.7.1 Function Keys

The assignment of the function keys depend on the operating system / user program used.
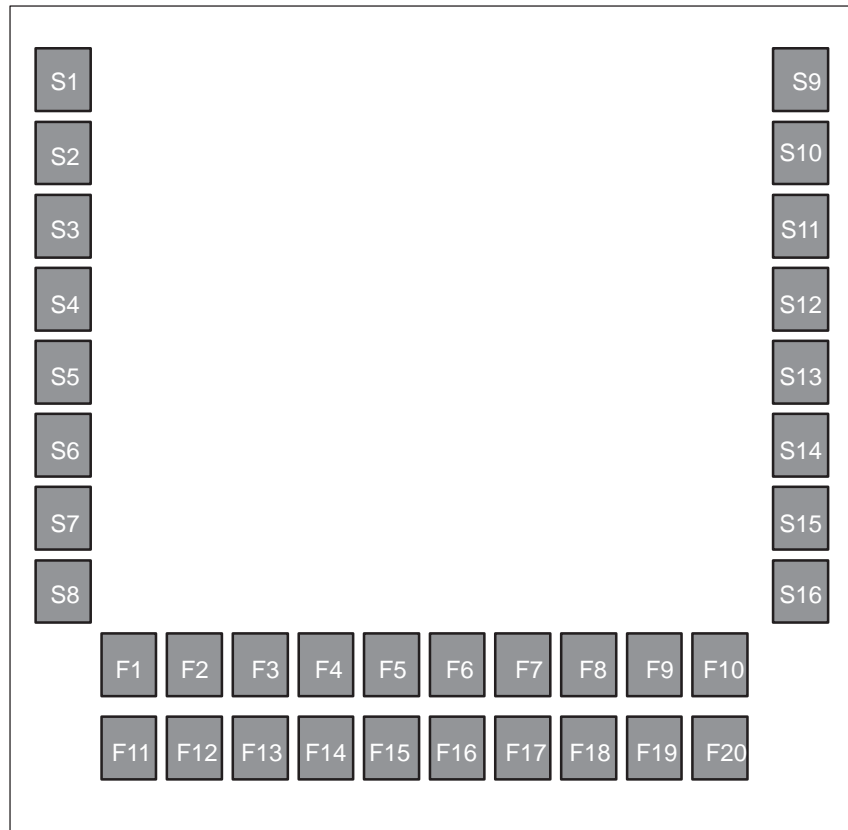
Figure 2-7   Function keys

2.7.2 Alphanumeric / Special Character Keypad

This keypad contains alphanumeric and special characters in alphabetic order in a matrix (see fig. 2-8):
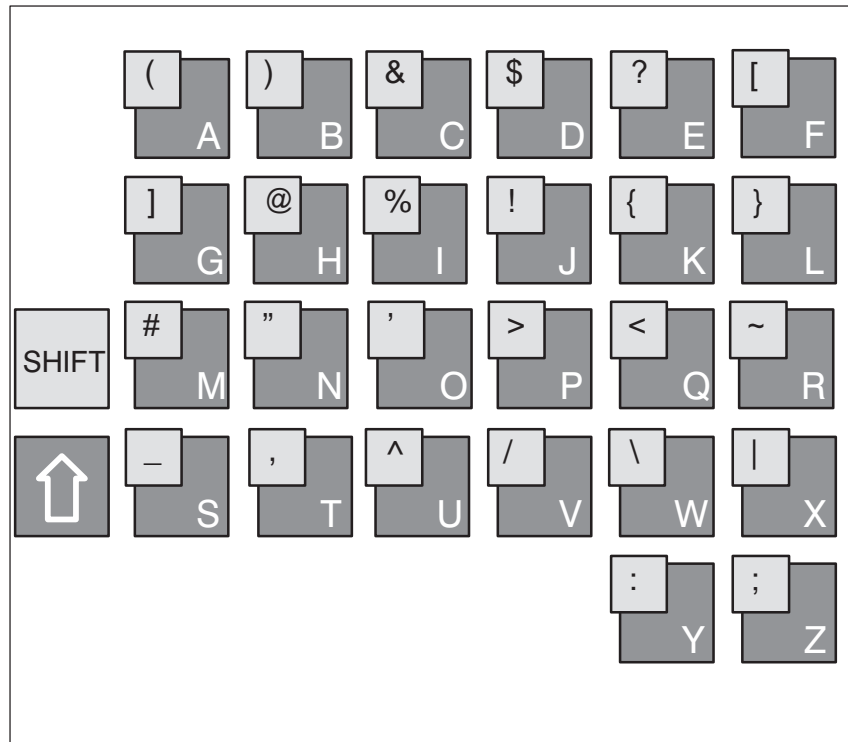
Figure 2-8   Alphanumeric / special character keypad

Note

Key combinations: SHIFT + KEY = special character

⇑ + KEY   = upper-case letters

2.7.3 Numeric Keypad, Cursor and Control Keys

A function is assigned to the following keys of the numeric keypad: space bar, decimal point, symbols of the four basic arithmetic operations, tabulator, backspace and enter key. The control keys are located on the left side of the numeric keypad.
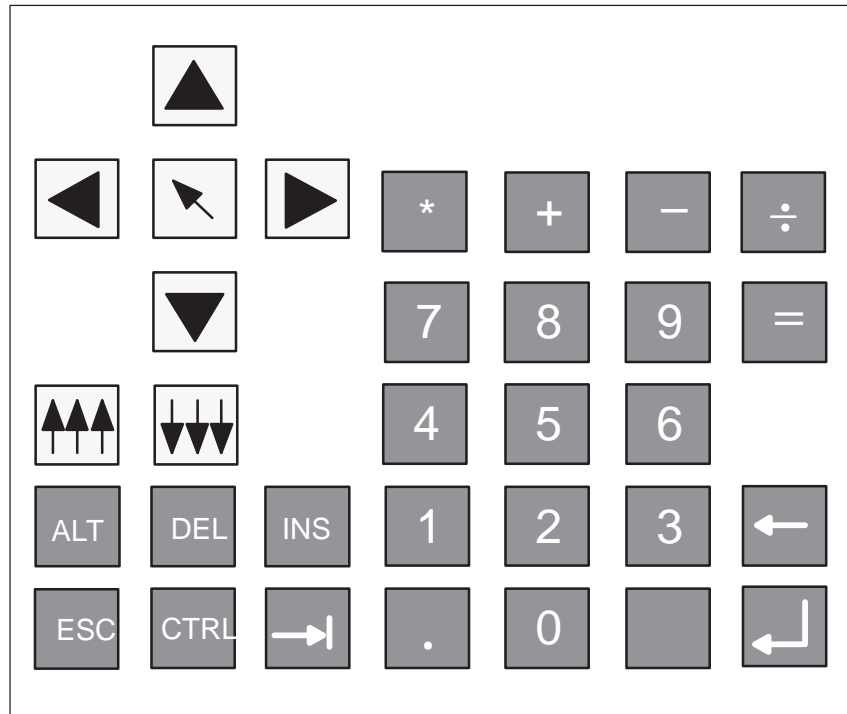
Figure 2-9   Numeric keypad, cursor and control keys

Important Key Combinations

With the keys `CTRL` or/and `Alt` you activate other key codes for specific applications with these keys. Proceed as follows:

- Press the key `CTRL` or/and `Alt` .
- Press the second key which is required for the specific function.

`Ctrl` + `C`
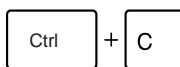
Abort current operation
This key combination aborts an ongoing operation without clearing the line buffer.

`Ctrl` + `Alt` + `Del`

Warm restart Reset
This key combination resets your PC.

Note

For further key combinations please refer to the information given in your operating system's or user program's documentation.

Setting up and Operating your PC FI25   **3**

Chapter Overview   This chapter

- introduces you to the operator elements for the SIMATIC PC FI25.
- describes the first startup and
- describes how to use the electronic manual.

3.1 Operator Elements of the System Unit

Diagnostics Display

The diagnostics display provides the following functions:

- LEDs for
    - Power
    - Hard disk
    - Run (Watchdog) (only when equipped with SafeCard module)
    - Temperature (only when equipped with SafeCard module)
    - User status (only when equipped with SafeCard module)
- Status display (only when equipped with SafeCard module)

Before starting up your SIMATIC PC you should get familiar to its operator elements which are located on its front panel (figure 3-1).
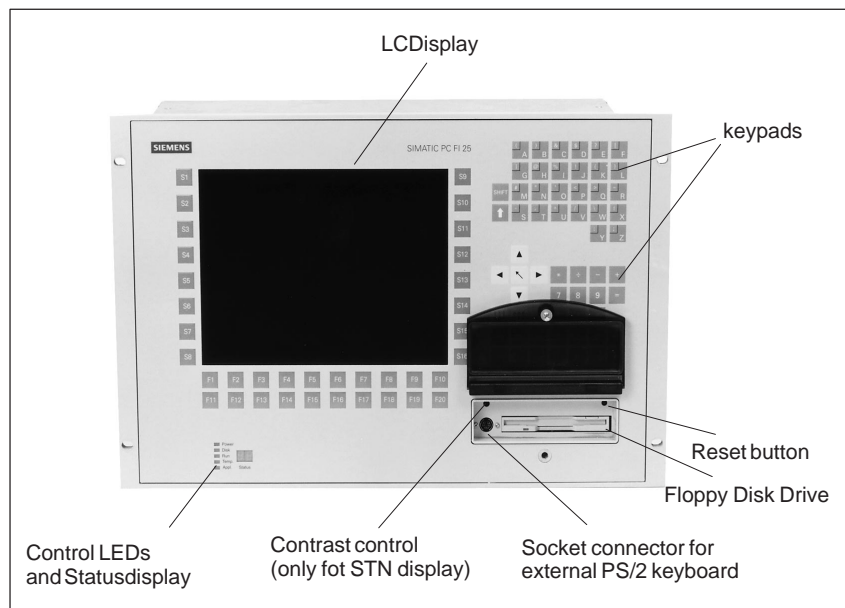
Figure 3-1   Operator elements of the SIMATIC PC FI25

Table 3-1   Control LEDs

Power LED	green	Power supply ON
	off	Power supply OFF
Disk LED	green	lights up during hard disk access
Run LED	green	Watchdog monitoring *ON* (FI25 with SafeCard module only)
	red	Monitoring time ran out.
Temp. LED	green	Normal temperature inside the device (FI25 with SafeCard module only)
	red	Internal temperature critical
Appl. LED	green	LED can be controlled via application program (FI25 with SafeCard module only)
	red	

Status Display (7 Segment Display)	After switching on your PC, it performs an automatic self-test, that checks any important component for its correct function. The diagnostics display informs you about the individual test steps. In case of an error, the display provides information on troubleshooting.. An explanation of the possible error messages is given in the register "CPU Module" of the Technical Description.
Reset Button	If you press the reset key with a pointed object (for example, the tip of a ballpoint pen or the end of an opened paper clip), you trigger a hardware reset i.e. your PC is completely restarted.
External Keyboard	Connection for an external PS/2 keyboard.
Contrast Control	The contrast control helps you to set the display contrast (only for DSTN displays).

3.2   Starting up your PC

Switching ON	After having connected the peripheral devices and the system unit, your PC is ready for system operation.
	Connect the PC to the power supply.
Switching OFF	Disconnect your device from the power supply.

Note

The SIMATIC FI25 is not equipped with an ON/OFF switch. Unplug the power plug, to disconnect your device from the power supply.

When your PC is switched on the POWER LED lights green.

3.3 Setting up the PC

Overview

The pre-installed operating system and system software on the hard disk drive of your PC are either the English version of MS-DOS or the multi-language version of Windows 95.

Please differentiate the two following operations:

- Startup
- Restart

Startup

Your PC software is set up during startup. Proceed as follows:

1. Switch on your PC.

2. Set the monitor's brightness control switch to bright (refer to the monitor's operating instructions) and switch on the monitor.

The PC executes a self-test. The following message occurs during the self-test:

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

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

Your operating system starts up after the self-test has been finished. The loading procedure depends on the operating system used (Chapter 3.4 and 3.5).

Restart

Once your PC has been set up, the DOS prompt or the Windows 95 user interface appears on the screen after the setup routine has been completed. This occurs each time you switch your device on or reset it.

3.4 Loading the MS-DOS Operating System

MS-DOS

After having completed the self-test, your operating system is loaded. When this procedure is terminated, you are prompted to back up all the hard disk data on diskettes.

3.5 Loading the Windows 95 Operating System

Windows 95

After the self-test has been completed, Windows 95 prompts you to perform Setup guiding you with step-by-step information.

```
┌─────────────────────────────────────────────────┐
│              Windows 95 – Setup                 │
├─────────────────────────────────────────────────┤
│  ┌───────────┐   Installing Windows             │
│  │           │                                   │
│  │           │                                   │
│  │           │                                   │
│  │           │                                   │
│  │           │                                   │
│  │           │      Progress                     │
│  │           │   ┌──────────────────────────┐    │
│  └───────────┘   └──────────────────────────┘    │
│                                                   │
│         ┌──────┐  ┌────────┐  ┌──────┐           │
│         │ Back │  │ Cancel │  │ Next │           │
│         └──────┘  └────────┘  └──────┘           │
└─────────────────────────────────────────────────┘
```
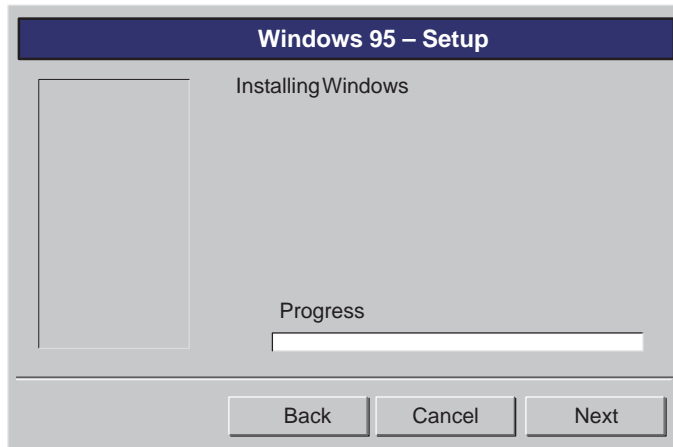
Your inputs determine how the following procedures are carried out:

1. Language selection
2. Hardware installation
3. Restart

Language selection

Inputs	Confirmation
Choose the desired language and confirm with:	Next
Information on Setup execution appears on the screen. Confirm your selection with:	Next
Confirm your language selection and acknowledge your confirmation with:[1]	Next

[1] You can alter your first language selection. After having confirmed with *continue*, your language selection is irreversible.

User Specifications

Inputs	Confirmation
After the language selection, the menu for *user specifications* appears. Enter the user's name, company, and confirm your entries with: [2]	Next

[2] You can not correct your entries at a later time.

License Agreement

Inputs	Confirmation
After the menu for user specifications, the *license agreement* menu appears. Please, read the information carefully. By confirming it, you accept the contract.	Next

Certificate of Authenticity

Inputs	Confirmation
After having accepted the license agreement, the Certificate of Authenticity (CoA) appears on screen.	
Enter the registration number of your Certificate of Authenticity and confirm with: 3)	Next

3) The registration number is located on the *Certificate of Authenticity* above the bar code. The Certificate of Authenticity is a part of your documentation package and is included with your PC.

Hardware Identification

Inputs	Confirmation
After having correctly entered the registration number, the menu *hardware identification* appears.	
Makesure that all devices and modules have been correctly connected or installed and confirm with:	Next

Installation of Windows 95

Inputs	Confirmation
After hardware identification, Windows 95 is installed. The installation takes a few minutes.	
After you have been prompted to remove all diskettes from the disk drive, confirm with:	OK

System Restart

Inputs	Confirmation
A complete system restart occurs after the confirmation with OK. You are requested to create MSCSD system diskettes during this restart.	
We recommend to create the complete set of data diskettes right away, in order to provide immediate re-installation in case of any damages to your hard disk. If you cannot create the backup diskettes now, confirm with *abort* and specify the number of Windows 95 startups after which you want to be requested again to create back-ups.	Abort

Reinstall   If any major software problems occur, you can reinstall it using the backup diskettes. (see chapter 4.7).

3.6   Electronic Manual

Overview

Your PC is equipped with an electronic manual. This Product Information Bulletin consists of two parts:

– The Product Information Bulletin (the document you are reading now) in four languages (German, English, French, and Italian) and

– the Technical Description in two languages (German and English)

User's Guide

The Product Information Bulletin is contained in the following directory:

`c:\docu` in the `U_MANE.PDF` file

Technical Description

The Technical Description is located in the following directory:

`c:\docu` in the `T_DESE.PDF` file

ADOBE Acrobat Reader

You need the ADOBE Acrobat Reader to read and print out the Product Information Bulletin and the Technical Description. The ADOBE Acrobat Reader software is located in the following directory:

`c:\acrodos or c:\acroread`

Due to license agreements, the software is not pre-installed. The user is obliged to install it.

3.7 Installing the Adobe Acrobat Reader

Installing the Acrobat Reader

We recommend to connect a mouse and install the mouse driver, before installing the Acrobat Reader. Operating the Acrobat Reader by means of a keyboard is possible, but it becomes much easier with the help of the mouse.

To install the Adobe Acrobat Reader, proceed as follows:

1. Start:

- `Install.exe` in the `c:\acrodos` directory (MS-DOS 6.22) or.
- `acroread.exe` in the `c:\acroread` directory (Windows 95).

The following message appears:
```
Adobe Acrobat Reader for DOS Installation, version
    x.y or
Adobe Acrobat Reader for WINDOWS Installation,
    version x.y
```

2. Use any key to confirm your entry.

The following license agreement appears:
```
Adobe Systems Incorporated License Agreement
```

3. Confirm your answer with `Accept`.
4. You are prompted to enter your name.Use the `ENTER` key to confirm your answer.
5. Your are prompted to enter your company.
Use the `ENTER` key to confirm your answer.
6. You are prompted to specify the directory for installation. Use the suggested directory.
Use the `ENTER` key to confirm your answer.

Windows 95 now automatically performs the installation, which is completed with the Acrobat Reader icon appearing in a window.

For MS-DOS only   The following additional steps are required for MS-DOS:

1. You are prompted to specify a directory for printing fonts. Use the suggested directory and confirm with the `ENTER` key.
2. You are prompted to choose if you want to install the Reader Tour, a tutorial which requires approx. 0.5 MB on the hard disk. Choose one option and use the `ENTER` key to confirm your answer.
3. You are prompted to specify your working directory (temporary directory). Use the suggested directory and confirm with the `ENTER` key.
4. You are prompted to specify a directory for the swap file.
Use the suggested directory and confirm with the `ENTER` key.
5. You are prompted to decide whether the installation program should perform modifications in the CONFIG.SYS and AUTOEXEC.BAT files or to perform them yourself. We recommend to select the suggested option:
`Go ahead and modify`
and to confirm your selection with the `ENTER` key.
6. If you have not connected a mouse and installed a mouse driver, a message is displayed. This can still be done after the installation of Adobe Acrobat has been completed. Confirm with ENTER.
7. If the software has been successfully installed, you are prompted to reboot your PC. Confirm with ENTER and reboot your PC (hit CTRL-ALT-DEL or reset key).

3.8   Working with the Adobe Acrobat Reader

Working with the Acrobat Reader

Proceed as follows to work with the Acrobat Reader:

1. Start the Acrobat Reader by typing in **acrobat** (MS-DOS 6.22) or clicking on the Acrobat Reader Icon under Windows 95. You can start the Acrobat Reader from any directory, if you followed the recommendations given during installation.

    An interface similar to the MS-DOS shell appears. Use the TAB key or the mouse **to change** between windows. Use the cursor keys of the keyboard (or use the mouse) to move the cursor between windows. (Important: your selection is only valid until the line is highlighted i.e. white characters on a dark background.).

2. Open the file you want to read

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

    These files are stored under `c:\docu`

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

3.9   Installing the SafeCard Driver (only for PC Equipped with SafeCard)

Please take information on the SafeCard module from the Technical Description. To install the SafeCard driver for different operating systems, see the **ReadMe.TXT** file in the **C:\SAFECARD** directory.

3.10   Touch Screen Display

For notes on installing and operating the touch screen display, please refer to the Technical Description. To install the drivers for the touch screen, change to directory **C: \Touch**. The **ReadMe.TXT** files for the various operating systems can be found in the DOS, Win311, Win95, WinNT and OS2 subdirectories.

3.11   Backing-up Hard Disk Data on Diskettes

Overview

The IPC is delivered with a hard disk, containing important data and software (e.g. the operating system), which have to be stored in any case on diskettes, in order to save these data in case of an operator error or a defective hard disk

Backingup under MS-DOS 6.22

Your industrial PC is delivered with a batch routine that significantly simplifies data backup during the initial installation. Backingup the hard drive data is menu-driven:

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

Backingup under Windows 95

During the initial installation of the operating system, you are prompted to make backups. You need 40 formatted, empty diskettes (1.44 MB) for the backups.

Refer to Chapter 4.7 for reinstallation.

3.12   Authorizing Functions

Use passwords under Setup in order to hinder unauthorized persons from modifying Setup. For further information on Setup passwords, refer to the chapter "CPU module" of the Technical Description.

Error Diagnostics

4

Chapter Overview This chapter provides you with hints about how to localize and troubleshoot frequently occurring problems.

- Refer to your operating system documentation for operating system error messages.

- For error messages caused by the CPU, refer to the Technical Description, chapter "**CPU Module**". This chapter also includes error messages occurring during the self-test (LEDs and screen messages).

Note

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

4.1　PC Does not React

Error Display　　After switching on, the PC remains dead, the power LED does not light up.

Cause　　Wrong power supply.

Remedy　　Please proceed as follows:

- Check whether the power supply cable has been plugged in.
- Check whether the power supply connector has been correctly connected.

Note

Contact your technical customer service (Chapter 5), if the power LED still remains dark, after you have executed the proposed remedy measures.

4.2　Problems when Using Non-Siemens Modules

Error Display　　PC crashes during power up.

Cause　　The following causes are possible:

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

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

- If the current configuration corresponds to the original configuration of your PC, please contact your technical customer service (Chapter 5).
- If the computer configuration has been modified, restore the original configuration, remove any non-Siemens modules and perform a complete restart of your PC:
  - If the PC still crashes, contact your technical customer service.
  - If the error disappeared, the non-Siemens module was the cause of the malfunction. Replace this module with a Siemens module, or contact the module supplier.

4.3 The External Monitor Remains Dark

Cause and remedy The following causes are possible:

The monitor has been switched off.

- Switch on the monitor.

The monitor has been set to dark.

- Press any key on the keyboard.

The brightness control has been set to dark.

- Set the screen's brightness control to "bright". Refer to the Operator's Guide of your monitor for detailed information.

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

- Switch off the monitor and the system unit.
- Check whether the power supply cable has been connected correctly to the monitor and to the system unit or to the grounding outlet.
- Check whether the monitor cable has been connected correctly to the system unit and to the monitor (if a connector exists).
- Switch on the monitor and the system unit.

Note

Contact your technical customer service (Chapter 5), if the monitor still remains dark, after you have executed the proposed remedy measures.

4.4 The External Monitor Does not Display any Objects/only Display Drifting Objects

Cause and Remedy

Either the incorrect line frequency and/or the incorrect resolution has been set for the monitor or for the application program.

- Abort the application program. If the error still occurs after having terminated, switch off the monitor and wait at least three seconds until you switch it on again.

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

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

- Select the correct screen driver for your user program.

4.5 Mouse Pointer Does not Appear on the Screen

Cause/Remedy

The following reasons are possible:

No mouse driver loaded

- Check whether the mouse driver is correctly installed and whether it exists during start-up of your application program. For detailed information on the mouse driver, please refer to the mouse manual or to the manual of the application program.

Mouse not connected

- Switch off your PC.

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

- Switch on your PC.

Note

Contact your technical customer service (Chapter 5), if the mouse pointer does still not appear on the screen, after you have executed the proposed remedy measures.

4.6 PC indicates incorrect Clock Time or Date

Remedy

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

Press <F2> to enter Setup while booting your computer.

Note

If clock time and date are still incorrect, after you switched your PC ON and OFF, the battery is low. In this case contact your technical customer service (Chapter 5).

4.7 Reconfiguring your Hard Disk after Data Loss

Cause and remedy

If you have created a system diskette and a back-up copy of the hard disk, you can reboot your hard disk again. The directories and files that were current during the backing-up procedure are then restored.

1. Start your PC with the inserted system diskette.

2. Partition your hard disk with the FDISK MS-DOS command. (In any case, you should not perform this procedure without the required system know-how)

3. Format the hard disk using the FORMAT MS-DOS command and the /s option (for example, FORMAT c: / s). The system files, which are required to start the operating system, are copied to the hard disk by the /s option.

Under MS-DOS 6.22

Recreate your files on the hard disk. Use the XCOPY MS-DOS command and your back-up diskettes, which have been created as specified in chapter 3.11.. Insert the first back-up diskette.

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

```
A: <CR>
XCOPY *.* C:\ /s<CR>
```

2. After the first diskette has been copied, insert the next diskette. Repeat this procedure until all diskettes have been copied. Now you have reestablished the hard disk's original delivery status.

3. If your hard disk still works incorrectly after you have carried out these steps, it needs to be exchanged.

Under Windows 95   Follow the instructions given in the chapter *Installing Windows 95* of the User's Guide **Introduction to Microsoft Windows 95**. Some additional information in the following:

Starting SETUP for Windows 95

1. Start SETUP.EXE.

2. Confirm with **Enter** when the first message appears.

3. Quit SCANDISK, after it has ckecked your drives, confirming with **Exit.**.

4. The Welcome screen form of the Setup appears. Confirm with **Continue**. Setup performs checking routines on your PC and prepares the Setup assistant.

5. You are requested to insert further diskettes and to confirm with **OK**.

License agreement for Windows 95

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

Windows 95 Setup assistant

7. First the *request of system information* occurs, which is started by **Continue**. Then you have to select the directory. Select **C:\Windows** and confirm with **Continue**.

8. The Setup mode Standard is suggested. Confirm with **Continue**.

Hardware identification

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

Communication beyond limits

10. Activate the check boxes of the communication software, you want to install. Confirm your choice with **Continue**.

Windows components

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

Create start diskette

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

Start copying the Windows 95 files

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

System restart

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

The first start-up of Windows 95 is prepared and the configuration files are updated. The system control is generated, the software is entered in the start menu, the Windows help files are prepared and the MS-DOS software is configured.

Time zone

15. You can now select the time zone of your country/state, selecting the country/state by means of the mouse. Confirm your choice with **Close**.

The Windows 95 installation has now been completed.

4.8   An Error Message Appears on the Screen

Error Messages   Error messages output by the BIOS system are described in the following. Error messages output by the operating system or program are described in the respective software manuals.

Press <F2> to enter Setup while booting.

Error messages on the screen	Description / Suggestion
Address conflict	Plug & Play problem Please contact your technical customer service
Combination not supported	Plug & Play problem Please contact your technical customer service
IO device IRQ conflict	Plug & Play problem Please contact your technical customer service
Invalid System Configuration Data	Plug & Play problem Set the option RESET CONF...DATA in Setup. Please contact your technical customer service
Allocation Error for	Plug & Play problem Please undo the last hardwaremodification. Please contact your technical customer service
System battery is dead Replace and run SETUP	Battery on the CPU module is defective or low. Please contact your technical customer service
System CMOS checksum bad run SETUP	Enter SETUP and save. If this message always appears while booting, contact your technical customer service.
Incorrect Drive A type run SETUP	Check SETUP settings for floppy disk drive A
Incorrect Drive B type run SETUP	Check SETUP settings for floppy disk drive B
Diskette drive A error	Error occurs during access to drive A: Please contact your technical customer service
Diskette drive B error	Error occurs during access to drive:B Please contact your technical customer service
Failure Fixed Disk	Error occurs during access to hard disk drive. Please contact your technical customer service
Keyboard error	Check if keyboard is correctly connected.
Stuck Key	Check if a key on the keyboard is stuck.
K System RAM Failed at offset:	Memory error Please contact your technical customer service
K Shadow RAM Failed at off-set:	Memory error Please contact your technical customer service
K Extended RAM Failed at off-set:	Memory error Please contact your technical customer service

Error messages on the screen	Description / Suggestion
Failing Bits:	Memory error
	Please contact your technical customer service
Operating system not found	Possible causes:
	No operating system loaded
	Incorrect drive addressed (diskette in drive A/B)
	Incorrect active boot partition
	Incorrect entries in SETUP for the BOOT drive
Previous boot incomplete	Abortion of the previous BOOT procedure, e.g., due to a power failure.
Default configuration used	Correct the entries in SETUP.
System cache error	Error in the CPU's cache module.
Cache disabled	Please contact your technical customer service
Monitor type does not match CMOS	SETUP entries do not correspond to the monitor.
Run SETUP	Adapt SETUP entries to the monitor.
System timer error	Hardware error
	Please contact your technical customer service
Real time clock error	Clock module error
	Please contact your technical customer service
Keyboard controller error	Keyboard error
	Please contact your technical customer service

4.9   Diagnostic Messages (Port 80)

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

In addition, the individual self-test steps are output at I/O port 80h. The optional SafeCard allows these outputs to be displayed in hex code at the front of the device.

Conversion table for the beep codes to hexadecimal representation:

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

Example:

B	BBBB	BBB	BBB	Beeps
3		6		Hex Code
Check shutdown code				Meaning

The POST Codes in order of occurrence:

Display (hex)	Meaning	Description
02	TP_VERIFY_REAL	Test whether the CPU is in real mode
1C	TP_RESET_PIC	Reset the interrupt controller
12	TP_RESTORE_CRO	Restore the controller register
13	TP_PCI_BM_RESET	Reset the PCI bus master
36	TP_CHK_SUTDOWN	Check the shutdown code
24	TP_SET_HUGE_ES	Switch the ES to special mode
03	TP_DISABLE_NMI	Switch off the NMI
0A	TP_CPU_INIT	Initialize the CPU
04	TP_GET_CPU_TYPE	Determine the CPU type
AE	TP_CLEAR_BOOT	Edit the boot flag
06	TP_HW_INIT	Initialize the main hardware
18	TP_TIMER_INIT	Initialize the timer
08	TP_CS_INIT	Initialize the chip set
C4	TP_PEM_SIZER_INIT	Reset system error
0E	TP_IO_INIT	Initialize IO
0C	TP_CACHE_INIT	Initialize the cache
16	TP_CHECKSUM	EPROM checksum test
28	TP_SIZE_RAM	Determine the RAM size
3A	TP_CACHE_AUTO	Determine the cache size
2A	TP_ZERO_BASE	Set 512k base RAM to 0
2C	TP_ADDR_TEST	Test the base RAM address cables
2E	TP_BASERAML	Check the 1.64k base RAM
38	TP_SYS_SHADOW	BIOS shadow
20	TP_REFRESH	Refresh circuit test
29	TP_PMM_INIT	Initialize the post memory manager
33	TP_PDM_INIT	Initialize the dispatch manager
C1	TP_7xx_INIT	Initialize the PG 7xx I/Os
09	TP_SET_IN_POST	Start power ON self-test
0A	TP_CPU_INIT	Initialize the CPU
0B	TP_CPU_CACHE_ON	Switch on the cache
0F	TP_FDISK_INIT	Initialize the hard disk
10	TP_PM_INIT	Initialize the power management
14	TP_8742_INIT	Initialize the 8742 circuit
1A	TP_DMA_INIT	Initialize the DMA circuits
1C	TP_RESET_PIC	Reset the interrupt controller
32	TP_COMPUTE_SPEED	Determine the clock pulse speed
C1	TP_740_INIT	Initialize the PG 740 I/Os
34	TP_CMOS_TEST	Test the CMOS RAM
3C	TP_ADV_CS_CONFIG	Configure the advanced chip set
42	TP_VECTOR_INIT	Initialize the interrupt vectors
46	TP_COPYRIGHT	Test the copyright
49	TP_PCI_INIT	Initialize the PCI interface
48	TP_CONFIG	Check the configuration
4A	TP_VIDEO	Initialize the video interface
4C	TP_VID_SHADOW	Copy the video BIOS to RAM

Display (hex)	Meaning	Description
24	TP_SET_HUGE_ES	Switch the ES to special mode
22	TP_8742_TEST	Test circuit 8742
52	TP_KB_TEST	Keyboard available?
54	TP_KEY_CLICK	Switch the keyboard click on/off
76	TP_KEYBOARD	Check the keyboard
58	TP_HOT_INT	Test for unexpected interrupts
4B	TP_QUIETBOOT_START	Switch off any boot messages
4E	TP_CR_DISPLAY	Display the copyright notice
50	TP_CPU_DISPLAY	Display the CPU type
5A	TP_DISPLAY_F2	Display the F2 message for "SETUP"
5B	TP_CPU_CACHE_OFF	Switch off the cache if applicable (SETUP setting)
5C	TP_MEMORY_TEST	Test the system memory
60	TP_EXT_MEMORY	Test the extended memory
62	TP_EXT_ADDR	Test the A20 address line
64	TP_USERPATCH1	Area for own initializations
66	TP_CACHE_ADVNCD	Determine and enable the cache size
68	TP_CACHE_CONFIG	Configure and test the cache
6A	TP_DISP_CACHE	Display the cache configuration
6C	TP_DISP_SHADOWS	Configuration and size of the shadow Display RAM
6E	TP_DISP_NONDISP	Display nondisposable segment
70	TP_ERROR_MSGS	Display post error
72	TP_TEST_CONFIG	Check SETUP irregularities
7C	TP_HW_INTS	Set the IRQ vectors
7E	TP_COPROC	Check whether the CO processor is present
96	TP_CLEAR_HUGE_ES	Switch the ES back
80	TP_IO_BEFORE	Disable IO circuits
88	TP_BIOS_INIT	Initialize the BIOS data area
8A	TP_INIT_EXT_BDA	Initialize the external BIOS data area
85	TP_PCI_PCC	Determine the PCI circuits
82	TP_RS232	Determine the serial interfaces
84	TP_LPT	Determine the parallel interface
86	TP_IO_AFTER	Reenable the IO circuits
83	TP_FDISK_CFG_IDE_CTRLR	Configure the IDE controller
89	TP_ENABLE_NMI	Enable the NMI
8C	TP_FLOPPY	Initialize the floppy controller
90	TP_FDISK	Initialize the hard disk controller
8B	TP_MOUSE	Test the internal mouse interface
95	TP_CD	Test the CP
92	TP_USERPATCH2	Area for own initializations
98	TP_ROM_SCAN	Search for BIOS expansions
69	TP_PM_SETUP	Initialize the power management
9E	TP_IRQS	Enable the hardware IRQ
A0	TP_TIME_OF_DAY	Set the clock time and date
A2	TP_KEYLOCK_TEST	Preset the keylock
C2	TP_PEM_LOCK	Stop the error manager
C3	TP_PEM_DISPLAY	Display any possible errors
A8	TP_ERASE_F2	Delete the F2 message

| Display (hex)	Meaning	Description
AA	TP_SCAN_FOR_F2	Check whether to activate setup
AC	TP_SETUP_CHEK	Output any F1/F2 message
AE	TP_CLEAR_BOOT	Cancel the self-test flag
B0	TP_ERROR_CHECK	Check for any possible errors
B2	TP_POST_DONE	End of the self-test
BE	TP_CLEAR_SCREEN	Clear the screen
B6	TP_PASSWORD	Password query (option)
BC	TP_PARITY	Cancel the parity memory bit
BD	TP_BOOT_MENU	Display the boot menu (option)
B9	TP_PREPARE_BOOT	Prepare the boot
C0	TP_INT19	Boot via Interrupt 19
00		Message after startup is complete

Service for SIMATIC PC

5

Chapter Overview This chapter provides you with the addresses of the authorized maintenance and repair centers. It also illustrates the use of the logbook.

5.1   Authorized Maintenance and Repair Centers

Please contact the authorized regional service department or repair centers (service shop) for all of your service needs. The two following pages contain their addresses.

SIMATIC Customer Support Hotline

Open round the clock, world-wide:

SIMATIC Hotline
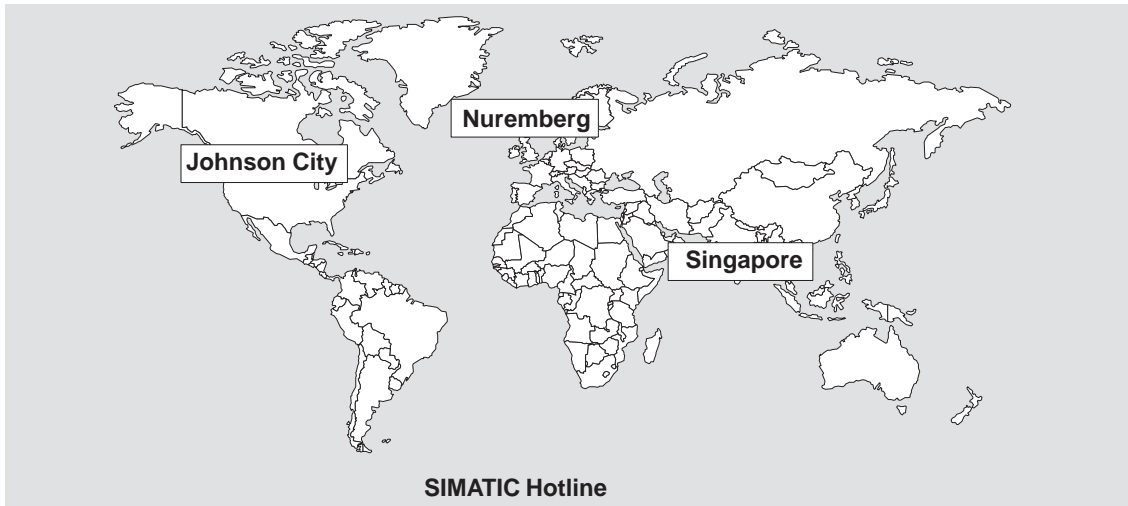
Nuremberg	Johnson City	Singapore
SIMATIC BASIC Hotline	**SIMATIC BASIC Hotline**	**SIMATIC BASIC Hotline**
Local time: Mo.-Fr. 7:00 to 17:00	Local time: Mo.-Fr. 8:00 to 17:00	Local time: Mo.-Fr. 8:30 to 17:30
Phone: +49 (911) 895-7000	Phone: +1 423 461-2522	Phone: +65 740-7000
Fax: +49 (911) 895-7002	Fax: +1 423 461-2231	Fax: +65 740-7001
E-Mail: simatic.support@ nbgm.siemens.de	E-Mail: simatic.hotline@ sea.siemens.com	E-Mail: simatic@ singnet.com.sg
GMT: +1:00	GMT: −5:00	GMT +8:00

Nuremberg	Nuremberg
SIMATIC Authorization Hotline	**SIMATIC Premium Hotline**
Local time:Mo.-Fr. 7:00 to 17:00	(Calls charged, only with
Phone: +49 (911) 895-7200	SIMATIC Card)
Fax: +49 (911) 895-7201	Time: Mo.-Fr. 0:00 to 24:00
E-Mail: authorization@ nbgm.siemens.de	Phone: +49 (911) 895-7777
	Fax: +49 (911) 895-7001
GMT +1:00	GMT +01:00

The working languages of the SIMATIC Hotlines are generally English and German; the Authorization Hotline can also be contacted in French, Italian, or Spanish.

SIMATIC Customer Support Online Services

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

- General current information can be obtained from:
  - the **Internet** under `http://www.ad.siemens.de/ simatic-cs`
  - the **Fax-Polling** number 08765-93 02 77 95 00
- Current product information leaflets and downloads which you may find useful are available:
  - on the **Internet** under `http://www.ad.siemens.de/support/html_00/`
  - 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).

5.2 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
Cologne Ossendorf	+49 (221)576 6633	+49 (221)576 6630
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
Hanover Laatzen	+49 (511)877 2241	+49 (511)877 1320
Karlsruhe	+49 (721)595 4183	+49 (721)595 6667
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
Austria	+43 (1) 1707 29886	+43 (1) 1707 53730
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
England	+44 (161) 446 5760	+44 (161) 446 5772
Finland	+358 (9) 5105 3303	+358 (9) 5105 3661
France	+33 1 49 22 31 60	+33 1 49 22 29 42
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
Poland	+48 (22) 670 9166	+48 (22) 670 9169
Portugal	+351 (1) 75 73234	+351 (1) 75 89333
Singapore	+65 (740) 7150	+65 (740) 7196
South Africa	+27 (12) 309 0149	+27 (12) 309 0142
South Korea	+82 (2) 3420 4880	+82 (2) 3420 4889
Spain	+34 (91) 514 8400	+34 (91) 514 9217
Sweden	+46 (8) 728 1462	+46 (8) 728 1703
Switzerland	+41 (1) 749 1304	+41 (1) 749 1284
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

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

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Automation & Drives:
Siemens