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Introduction

Your new LCD (Liquid Crystal Display) monitor B15-1 offers numerous features and functions, for example:

- TFT display (Thin Film Transistor; active matrix)
- minimal space requirements thanks to slim casing
- optimum ergonomic characteristics (totally distortion-free, excellent picture definition and colour purity right into the corners)
- high degree of brightness and good contrast
- high resolution (1024 x 768) for displaying the information content of a conventional 17-inch screen with CRT (Cathode Ray Tube)
- presentation of up to 16.7 million colours (in conjunction with an appropriate graphics card)
- automatic scanning of horizontal frequencies from 30 to 61 kHz and refresh rates (vertical frequencies) from 56 to 76 Hz (absolutely flicker-free)
- digital screen controller with microprocessor for storing 22 different display modes (7 display modes are preset at the factory)
- freely adjustable colour alignment for matching the screen colours to the colours of various input and output devices
- convenient operation via integrated OSD (On-Screen-display) menu
- VESA-DDC compatibility
- VESA-FPMPMI compatibility (Flat Panel Monitor Physical Mounting Interface) - mechanical interface to swivel arm and wall bracket)
- plug&play capability
- power management for reducing power consumption when the computer is not in use
- compliance with the recommendations in accordance with TCO'03

In normal screen mode (dark characters against a light background) the monitor satisfies the ergonomic requirements for the GS symbol.

This operating manual contains important information you require to start up and run your LCD monitor.

A screen controller with VGA interface is required to control the B15-1 LCD monitor. The monitor processes the data supplied to it by the screen controller. The screen controller/the associated driver software is responsible for setting the modes (resolution and refresh rate).

When putting the monitor into operation for the first time, the screen display should be optimally adapted to the screen controller used and adjusted in accordance with your needs (see the "Changing the monitor settings" section in the "Operation of the monitor" chapter).

Target group

You don't need to be an "expert" to perform the operations described here. Do, however, read the "Important notes" chapter in the operating manual of the computer and in this operating manual.

In the event of any problems occurring, please contact your sales outlet or our help desk.

Additional information

Details of how you set the resolution and refresh rate are provided in the documentation on your screen controller/the associated driver software.





Notational conventions

The meanings of the symbols and fonts used in this manual are as follows:



Pay particular attention to text marked with this symbol. Failure to observe this warning endangers your life, destroys the device, or may lead to loss of data.



Supplementary information, remarks, and tips follow this symbol.

► Text which follows this symbol describes activities that must be performed in the order shown.

"Quotation marks" indicate names of chapters or terms.

Texts in italics indicate filenames and menu items.

Important notes



In this chapter you will find information regarding safety which is essential to take note of with your monitor.

Safety notes

This device complies with the relevant safety regulations for data processing equipment, including electronic office machines for use in an office environment. If you have any questions, contact your sales outlet or our help desk.

- The display surface of the LCD monitor is sensitive to pressure and scratches. You should therefore be careful with the display surface so as to avoid lasting damage (Newton rings, scratches).
- If the device is brought into the installation site from a cold environment, condensation can form. Before operating the device, wait until it is absolutely dry and has reached approximately the same temperature as the installation site.
- During installation and before operating the device, please observe the instructions on environmental conditions in the "Technical data" chapter as well as the instructions in the "Installing an ergonomic video workstation" chapter.
- To ensure sufficient ventilation, the intake and exhaust air openings of the monitor must never be blocked.
- The device automatically sets itself to the correct voltage within the range from 100 V to 240 V. Ensure that the local mains voltage lies within these limits.
- Ensure that the power socket on the device or the grounded mains outlet is freely accessible.
- The ON/OFF switch does not disconnect the device from the mains voltage. To completely disconnect the mains voltage, remove the power plug from the socket.
- Lay all cables so that nobody can stand on them or trip over them. When attaching the device, observe the relevant notes in the "Connecting the monitor" chapter.



- If you use a different data cable from the one supplied, ensure that it is adequately shielded. CE conformance and optimum picture quality are guaranteed only if you use the data cable supplied.
- No data transfer cables should be connected or disconnected during a thunderstorm.
- Make sure that no objects (e.g. jewellery chains, paper clips, etc.) or liquids get inside the device (danger of electric shock, short circuit).
- In emergencies (e.g. damaged casing, elements or cables, penetration of liquids or foreign matter), switch off the unit, disconnect the power plug and contact your sales outlet or our help desk.
- The screen background lighting contains mercury. You must observe the applicable handling and disposal safety regulations for fluorescent tubes.
- Only qualified technicians should repair the device. Unauthorised opening and incorrect repair may greatly endanger the user (electric shock, fire risk).
- You may set only those resolutions and refresh rates specified in the "Technical data" chapter. Otherwise you may damage your monitor. If you are in any doubt, contact your sales outlet or our help desk.
- Keep this operating manual together with your device. If you pass on the device to third parties, you should include this manual.

Cleaning

- Always pull out the power plug before you clean the monitor.
- Do not clean any interior parts yourself, leave this job to a service technician.
- Do not use any cleaning agents that contain abrasives or may corrode plastic.
- Ensure that no liquid will run into the system.
- Ensure that the ventilation areas of the monitor are free.
- The display surface of the LCD monitor is sensitive to pressure and scratches. Clean it only using a soft, slightly moistened cloth.

Wipe the monitor casing with a dry cloth. If the monitor is particularly dirty, use a cloth which has been moistened in mild domestic detergent and then carefully wrung out.

Transport

- Transport the monitor with care and only in its original packaging or another corresponding packaging fit to protect it against knocks and jolts.
- Never drop the LCD monitor (danger of glass breakage).



Power cable

To guarantee safe operation, use the cable supplied. Use the following guidelines if it is necessary to replace the original cable set.

- The female/male receptacles of the cord set must meet CEE-22 requirements.
- The cable has to be HAR-certified or VDE-certified. The mark HAR or VDE will appear on the outer sheath or on the insulation of one of the inner conductors.
- For devices which are mounted on a desk or table, type SVT or SJT cable sets may be used. For devices which sit on the floor, only SJT type cable sets may be used.
- The cable set must be selected according to the rated current for your device.

Energy Star Guidelines



The Fujitsu Siemens LCD colour monitor B15-1 is designed to conserve electricity by dropping to less than 1 W when it goes into standby, suspend and OFF mode. With this new power management the B15-1 qualifies for the U.S. Environmental Protection Agency's (EPA) Energy Star Computers award.

The EPA estimates that computer equipment uses 5 % percent of all business electricity and that this is growing rapidly. If all desktop computers and peripherals enter a low-power mode when not in use, the overall savings in electricity could amount to \$ 2 thousand million annually. These savings could also prevent the emission of 20 million tons of carbon dioxide into the atmosphere - the equivalent of 5 million automobiles.

As an Energy Star Partner, Fujitsu Siemens Computers GmbH has determined that this product meets the Energy Star guidelines for energy efficiency.

CE marking



The shipped version of this device complies with the requirements of the EEC directives 89/336/EEC "Electromagnetic compatibility" and 73/23/EEC "Low voltage directive".

FCC Class B Compliance Statement

The following statement applies to the products covered in this manual, unless otherwise specified herein. The statement for other products will appear in the accompanying documentation.

NOTE:

This equipment has been tested and found to comply with the limits for a "Class B" digital device, pursuant to Part 15 of the FCC rules and meets all requirements of the Canadian Interference-Causing Equipment Regulations. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in strict accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.



If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Fujitsu Siemens Computers GmbH is not responsible for any radio or television interference caused by unauthorised modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Fujitsu Siemens Computers GmbH. The correction of interference caused by such unauthorised modification, substitution or attachment will be the responsibility of the user.

The use of shielded I/O cables is required when connecting this equipment to any and all optional peripheral or host devices. Failure to do so may violate FCC rules.

Disposal and recycling

This device has been manufactured to the highest possible degree from materials which can be recycled or disposed of in a manner that is not environmentally damaging. The device may be taken back after use to be recycled, provided that it is returned in a condition that is the result of normal use. Any components not reclaimed will be disposed of in an environmentally acceptable manner.

If you have any questions on disposal, please contact your local office, our help desk, or:

Germany	Belgium	Switzerland
Fujitsu Siemens Computers GmbH Remarketing und Recycling D-33106 Paderborn Tel.: +49 5251 / 81 80 10 Fax: +49 5251 / 81 80 15 <i>http://www.fujitsu-siemens.de/wvm</i>	RECUPEL Boulevard Reyers, 80 B-1030 Brussels Tel.: +32 2 / 706 86 16 Fax: +32 2 / 706 86 13 E-Mail: info@recupel.be <i>http://www.recupel.be</i>	SWICO Schweizerischer Wirtschaftsverband der Informations-, Kommunikations- und Organisationstechnik A list of the SWICO Acceptance places can be found at: <i>http://www.swico.ch</i>
USA	USA	
Environmental Affairs Electronic Industries Alliance Jason Linnell, Manager 2500 Wilson Blvd Arlington, VA 22201 Tel.: 703-907-7573 Fax: 703-907-7501 E-Mail: jlinnell@eia.org	North East Recycling Council Lynn Rubinstein suite 401 139 Mainstreet Brattleboro VT 05301 (T 802-254-3636) (F 802-254-5870) E-Mail: Lynn@nerc.org	

Checking the contents of the consignment

- ▶ Unpack all the individual parts.
- ▶ Check the delivery for damage incurred during transportation.
- ▶ Check whether the delivery agrees with the details in the delivery note.
The complete LCD monitor package includes:
 - one monitor
 - one data cable (D-SUB)
 - one audio cable
 - one power cable
 - one floppy disk for the monitor picture calibration
 - one Warranty Booklet
 - this operating manual

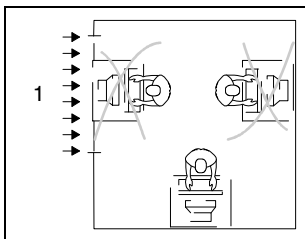
Should you discover that the delivery does not correspond to the delivery note, notify your local sales outlet immediately.



It is recommended not to throw away the original packaging material. Keep it for future transportation.

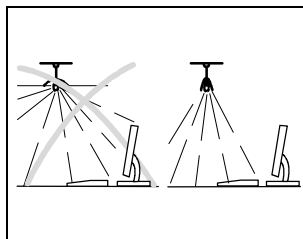
Installing an ergonomic video workstation

Before you set up your equipment, you should select a suitable position for working at the monitor. Please observe the following advice when installing a video workstation.

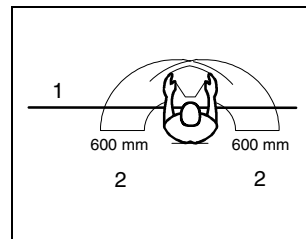


1 = Window

Avoid direct and reflected glare.



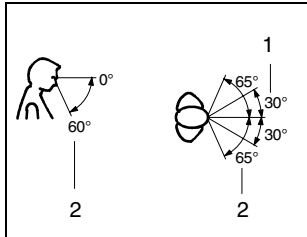
Avoid glare from electric lighting.



1 = Edge of desk

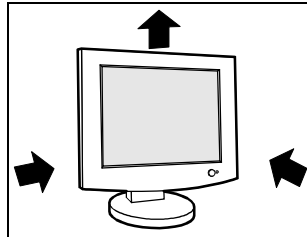
2 = Permissible reaching sector

Position the keyboard where it is easiest to reach.

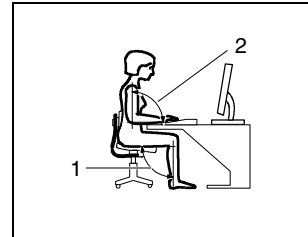


1 = Preferable viewing sector
2 = Permissible viewing sector

Position the monitor for optimum viewing. The viewing distance to the monitor should be approximately 50 cm.



Keep ventilated areas clear.



1 = approx. 90° and more
2 = approx. 90°

Remember to maintain correct posture.

Depending on the situation, the use of a swivel arm or wall bracket (VESA FPMPMI), are available from specialised dealers, may be advisable. For this purpose the monitor base must be removed beforehand as described in "Removing the monitor base" chapter.

Connecting the monitor

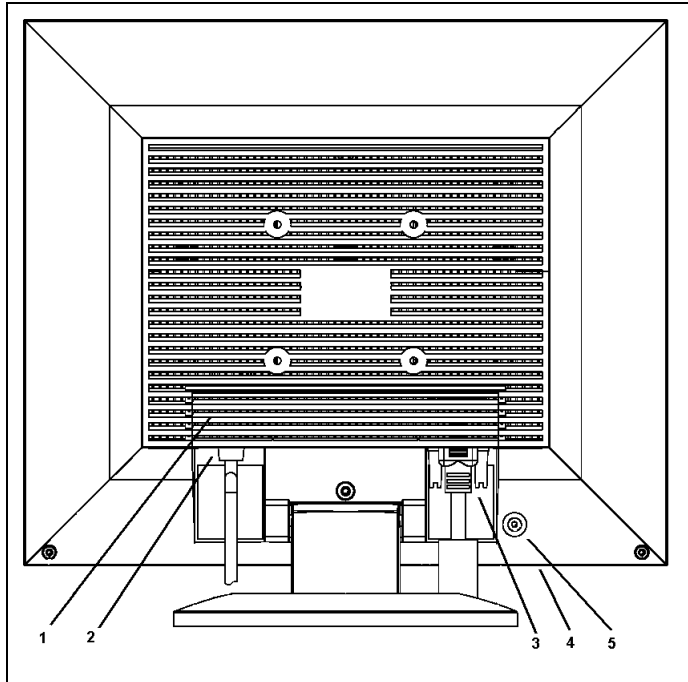


Observe the "Safety notes" in the "Important notes" chapter in this operating manual.
CE conformance and optimum picture quality are guaranteed only if you use the data cable supplied.
Do not cover the ventilation openings of the monitor.
The computer power plug must be pulled out!

- Be sure that the monitor and the computer are switched off.

Connecting cables to the monitor

The monitor ports are protected by a cover.



- | | |
|------------------------------|------------------------|
| 1 = Cover | 4 = AUDIO-IN connector |
| 2 = Power connector | 5 = Headphones port |
| 3 = D-SUB connector (ANALOG) | |

- ▶ Remove the cover (1).

The data cable supplied has two 15-pin D-SUB connectors for connection to the monitor and to the system unit.

- ▶ Connect one of the connectors of the data cable to the D-SUB connector on the monitor (3) and secure the plug-in connection by tightening the safety screws.
- ▶ Insert one plug of the audio line in the AUDIO IN (5) socket on the monitor and make sure it is properly engaged.
- ▶ Plug the power cable supplied into the power connector (2) of the monitor.

Connecting cables to the computer

Information on the computer connections and interfaces is contained in the operating manual for your computer.



If your computer has two monitor ports ("onboard" screen controller and separate graphics card), the monitor port for the separate graphics card is usually active.

- ▶ Connect the data cable to the (active) monitor port on the computer and secure the plug-in connection by tightening the safety screws.
- ▶ Insert the other plug of the audio line in the audio input of the computer.
- ▶ Connect the connector of the power cable supplied into a properly grounded mains outlet and ensure a secure connection.
- ▶ Plug the power connector of the computer into a properly grounded mains outlet.



When you start working with your monitor for the first time you should install the appropriate graphics drivers for your application software. Details of how to do this are provided in the documentation on your screen controller/the associated driver software.

Operation of the monitor

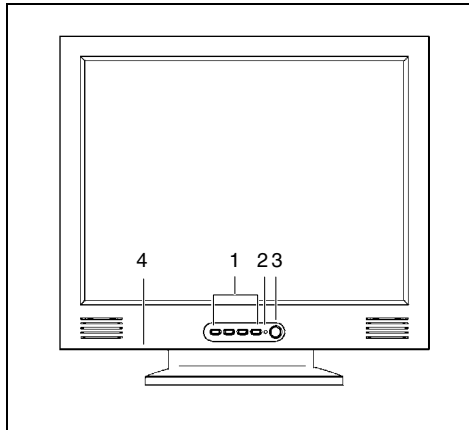
The monitor offers the following possibilities that enable it to be optimally adjusted for the respective user and the respective situation.

Adjusting rake and rotation

The rake of the monitor can be adjusted by -5° (forward) and $+15^\circ$ (back) from its vertical position.

- ▶ Grasp the monitor with both hands on the right and left edge of the casing and adjust it to the desired rake.

Switching the monitor on/off



- 1 = Buttons for the OSD menu (On-Screen-display)
- 2 = Power indicator
- 3 = ON/OFF switch
- 4 = Headphones port

The ON/OFF switch (3) is used for switching the monitor on and off.

The power indicator (2) glows green when the monitor and computer are switched on. The power indicator glows orange when the monitor does not receive a video signal or is in the energy-saving mode. The power indicator goes off when the monitor is switched off.

When you switch the computer system on, you must proceed in the following order:

- ▶ First switch on the LCD monitor with the ON/OFF switch (3).
- ▶ Then switch on the computer.



If your computer has a power management function (energy-saving mode), you should read the "Notes on power management" section in this chapter.

Notes on power management

If your computer is equipped with power management, the monitor can support this function fully. Here the monitor does not distinguish between the individual energy-saving modes of the computer (standby mode, suspend mode and OFF mode), as it is capable of immediately switching into the mode with the highest energy-saving effect.

Stage	ON	Energy-saving mode
Power indicator	lights green	glows orange
Function	the monitor is working normally	the screen is dark
Power consumption	normal < 30 W	reduced to < 1 W

If your computer detects inactivity (no input) it sends an appropriate signal to the monitor to reduce the power consumption (energy-saving mode). The power indicator of the monitor changes colour to indicate the status change.

Once an input is made at the computer the screen contents are redrawn and full power is restored. For detailed information on how energy-saving mode operates refer to the operating manual or technical manual of the computer.



When the monitor is switched to the energy-saving mode by the power management system a power consumption of up to 1 W is maintained to feed the circuit for redrawing the screen contents.

To completely switch off the power consumption, pull the plug of the monitor power cable out of the mains outlet.

Changing the monitor settings

When putting the monitor into operation for the first time, the screen display should be optimally adapted to the screen controller used and adjusted in accordance with your needs.

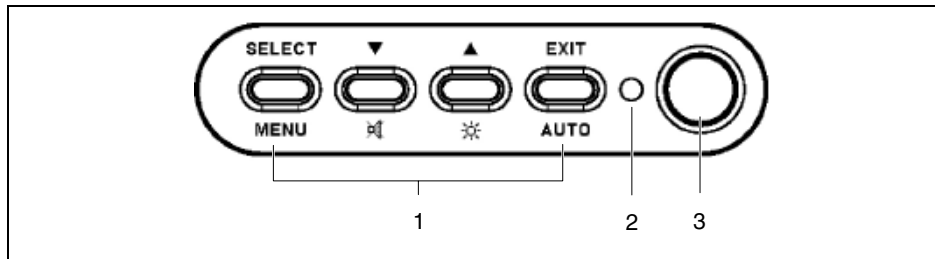
Basic monitor settings with the floppy disk supplied

If one of the operating systems Windows 95/98, Windows NT, Windows Me, Windows 2000, Windows XP or OS/2 (with Windows emulation installed) is used, the basic monitor settings can be set with the floppy disk supplied.

- ▶ Insert the supplied floppy disk into the floppy disk drive.
- ▶ Open the *Readme* file on the floppy disk and follow the instructions in the file.

Your monitor should now already be properly adjusted. If none of the above operating systems is used or minor corrections are to be made to the screen display, then change the monitor settings with the OSD menu.

Changing the monitor settings with the buttons of the control panel



1 = Buttons for the OSD menu
(On-Screen-display)

2 = Power indicator
3 = ON/OFF switch

Use the buttons of the control panel to make the following monitor settings directly while the OSD menu is switched off.

Performing auto-adjustment of the monitor

- ▶ Press the AUTO button for approx. 1 second while the OSD menu is switched off.

The *Auto Processing* message is displayed.

Picture quality and position are set to optimum values for your system.

Adjusting background lighting

- ▶ Press the ☀ button for calling the *Brightness* setting window.
- ▶ Press the ▼ or ▲ button to adjust the brightness.

This setting window can also be called, when the OSD menu is locked.

Activating/deactivating muting

- ▶ Press the 🔇 button to switch the sound off and on again.

A message is displayed that the action has been performed.

Locking the OSD menu

The OSD menu can be locked to prevent accidental or unauthorised changes to the monitor settings.

- ▶ Press and hold the SELECT/MENU button for a few seconds while you switch on the monitor with the ON/OFF switch.

A message is displayed that the action has been performed.

Please proceed in the same manner to release the locked OSD menu again.

Monitor settings using the OSD menu

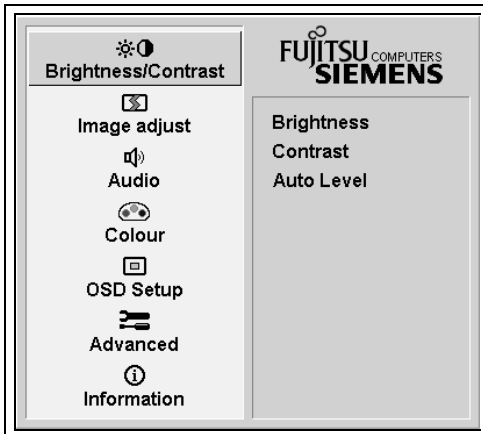
With the buttons on the control panel, call up and use the integrated OSD (On-Screen display) menu.

i The OSD menu is available in different languages. The English menu names are used in the following description (default setting). With the OSD function *Language* in the *OSD Setup* you can select another language.

To set the OSD menu, perform the following steps:

- ▶ Briefly press the SELCT/MENU button to activate the OSD menu.

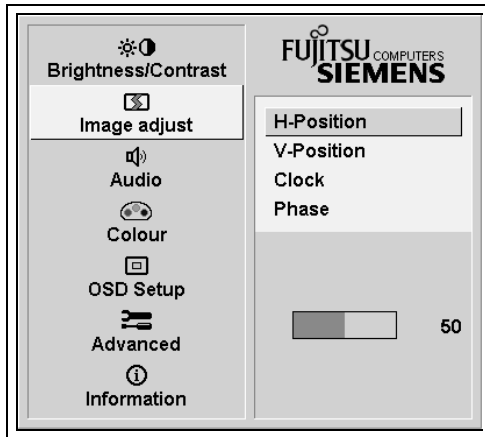
The main menu appears on the screen (on the left-hand side) with icons for the setting functions.



The first symbol (*Brightness/Contrast*) is highlighted. In the righthand part of the display the associated functions are shown.

- ▶ If necessary, press the ▼ or ▲ button to mark another icon (e.g. *Image adjust*).
- ▶ Press the SELECT/MENU button to select the highlighted icon.

The corresponding setting window (here: *Image Adjust*) is displayed (on the right-hand side).



The first function (*H-Position*) is highlighted.

- ▶ If necessary, press the ▼ or ▲ button to mark the desired icon.
- ▶ Press the SELECT/MENU button to select the highlighted function.
- ▶ Press the ▼ or ▲ button to adjust the value for the selected function.
- ▶ Press the EXIT/AUTO button to exit the function.
- ▶ If necessary, press the button ▼ or ▲ to mark another function or press the EXIT/AUTO button to return to the main menu.

All changes are stored automatically.

If you want to change other settings, select the corresponding function from the OSD main menu. All possible adjustments of the main menu are described in the following.

Adjusting the brightness and contrast

	Calling the <i>Brightness / Contrast</i> setting window.
Brightness	Setting the brightness of the display With this function you change the brightness of the background lighting.
Contrast	Setting the contrast of the display With this function you modify the contrast of bright colour tones.
Auto Level	Setting the brightness of the display With this function you can automatically set the contrast. Press the SELECT/MENU button to activate the function.

i If the contrast is set too high, bright surfaces can no longer be distinguished from very bright surfaces. If the contrast is set too low, the maximum brightness will not be achieved.


Adjusting size and position

	Calling the <i>Image adjust</i> setting window
H-Position	Adjusting the horizontal position With this function you move the picture to the left or to the right.


Colour monitor B15-1

V-Position	Adjusting the vertical position With this function you move the picture up or down.
Clock	Setting synchronisation With this function you adjust the picture width to eliminate vertical picture disturbances.
Phase	Eliminating picture interference With this function you fine-tune your monitor to eliminate picture interference.


Adjusting the volume

	Calling the <i>Audio</i> setting window
Volume	Setting the volume for playback with the integrated loudspeakers
Mute	Switching the loudspeakers off or on

Setting colour temperature and colours


	Calling the <i>Colour</i> setting window
	Selecting the colour temperature The "warmth" of the screen colours is set using the colour temperature. The colour temperature is measured in K (= Kelvin). You can select from <i>6500 K</i> , <i>9300 K</i> , <i>Native</i> and <i>Custom Colour</i> . <i>Native</i> = Original colour of the LCD display <i>Custom Colour</i> = User-defined colours In the user-defined setting you can change the colour ratios of the basic colours (red, green, blue) as required.

Setting display of the OSD menu


	Calling the <i>OSD Setup</i> setting window
Language	Setting language for the OSD menu With this function you choose between English (default setting), French, German, Italian and Spanish as the language for the OSD menu.
OSD H-Position	Setting the horizontal position of the OSD menu With this function you move the OSD menu to the left or to the right.
OSD V-Position	Setting the vertical position of the OSD menu With this function you move the OSD menu up or down.

OSD Timeout	<p>Setting the display duration of the OSD menu</p> <p>With this function you select a value from 10 to 120 seconds.</p> <p>If the set time expires without a setting being made, the OSD menu is automatically faded out.</p>
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Setting functions in the "Advanced " menu

	<p>Calling the <i>Advanced</i> setting window</p>
Resolution Notifier	<p>Displaying monitor data</p> <p>The optimum resolution for this monitor is 1024 x 768 pixels. With the function activated (<i>On</i>), a message appears on the screen after approx. 30 seconds if a different resolution is set.</p> <p>Change the resolution to 1024 x 768 to achieve optimum picture quality. With the function deactivated (<i>Off</i>), no message appears.</p>
Factory Recall	<p>Activating the factory settings</p> <p>With this function all settings are reset to the factory settings without prompting for confirmation.</p> <p>Press the SELECT/MENU button to activate the function. The <i>Auto Processing</i> message is displayed.</p>

Displaying information

	<p>Calling the <i>Information</i> setting window</p> <p>With this function the model designation, serial number, resolution, H/V frequency, input signal and polarity of the synchronisation signal are displayed.</p>
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Notes on ergonomic colour adjustment

If you select colours for the display in your application programmes, take note of the information below.

The primary colours blue and red on a dark background do not produce the minimum required contrast of 3:1 and are therefore not suitable for continuous text and data entry.

When using several colours for characters and background and giving the primary colours full modulation, you can obtain very suitable colour combinations (see the following table):

Background	Characters							
	black	white	purple	blue	cyan	green	yellow	red
black		+	+	-	+	+	+	-
white	+		+	+	-	-	-	+
purple	+	+		-	-	-	-	-
blue	-	+	-		+	-	+	-
cyan	+	-	-	+		-	-	-
green	+	-	-	+	-		-	-
yellow	+	-	+	+	-	-		+
red	-	+	-	-	-	-	+	

- + Colour combination very suitable
- Colour combination not suitable because colour locations are too close together, thin characters are not identifiable or rigorous focusing is demanded of the human eye.



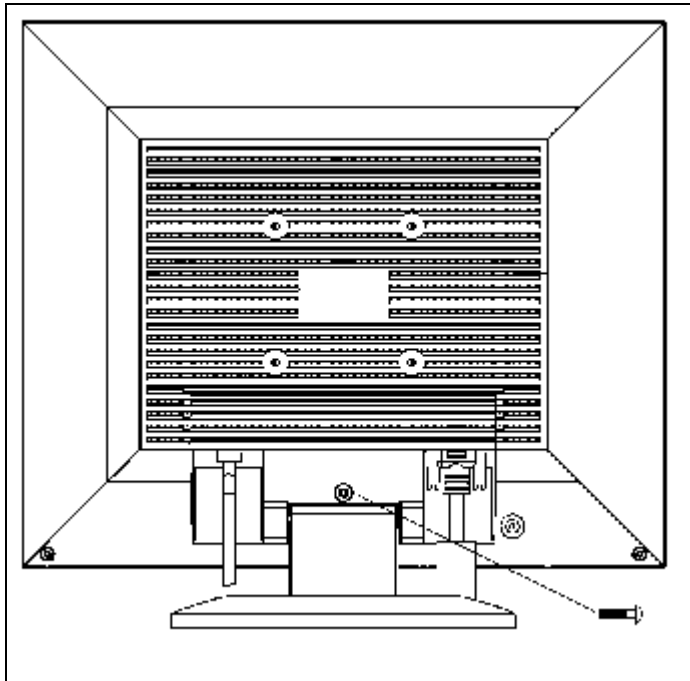
Removing the monitor base

Before you can use a swivel arm or a wall bracket, you must remove the monitor base:



The monitor surface is susceptible to scratching!

- ▶ Switch off the monitor and pull the power plug out of the power socket.
- ▶ Lay the monitor on its face on a soft surface.
- ▶ Remove the cover and disconnect all cables.



- ▶ Remove the screw on the rear of the monitor.

You can now mount a swivel arm or a wall bracket as per VESA FPMPMI with 75 mm hole spacing.

For instructions on how to mount the swivel arm or wall bracket, please see the documentation for the swivel arm or wall bracket.

Technical data

Dimensions and weight (LCD monitor)

Visible diagonals:	38 cm
Dot pitch:	0.297 mm
Screen size:	304 mm x 228 mm
Maximal resolution:	1024 x 768 pixels
Dimensions (W x H x D):	354 mm x 350 mm x 190 mm 354 mm x 350 mm x 96 mm (monitor base folded up)
Dimensions cardboard box (W x H x D):	412 mm x 404 mm x 160 mm
Weight:	3.25 kg, 4.3 kg including packaging

Accessories:	Audio cable (1.8 m) Power cable (1.8 m) D-SUB data cable (1.8 m)
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Storable display modes:	22
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Electrical data

Video:	analogue, positive, $0.7 V_{pp}$, 75Ω
Synchronisation:	Separate Sync. TTL, positive or negative
Horizontal frequency:	30 kHz 61 kHz (multi-scanning)
Refresh rate:	56 Hz 76 Hz
Maximum pixel rate:	100 MHz
Power supply:	switches automatically 100 V -240 V, 50 Hz - 60 Hz ± 2 Hz, 0.6 A
Total power consumption:	< 30 W (ON, Normal mode) < 1 W in the energy-saving mode (standby mode, suspend mode and OFF mode)

Environmental conditions

Environment class 3K2, IEC 721	
Rated range of operation:	15 °C 35 °C
Humidity:	20 % 85 %
Limit range of operation:	5 °C 35 °C
Humidity:	20 % 85 %

Condensation must be avoided.

VESA-DDC-compatible VGA interface

Your monitor is equipped with a VESA-DDC-compatible VGA interface. VESA-DDC (Video Electronics Standard Association, Display Data Channel) is used as the communications interface between the monitor and the computer. If your computer is equipped with a VESA-DDC-compatible VGA interface, it can automatically read the data for ensuring optimum operation from your monitor and select the appropriate settings.



If the monitor B15-1 is not yet displayed in the list of monitors, you can select the following monitor instead:

Fujitsu Siemens 3815 FA, 3814 FA, 382V, 381V
Siemens or Siemens Nixdorf MCF 3511 TA, MCM 1405 ND

Preset operating modes



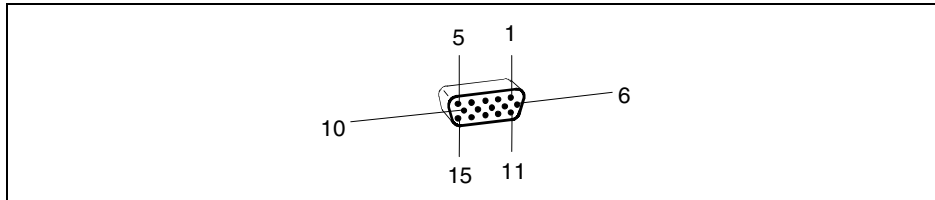
The picture position and size have been set to optimum values at the factory for the operating modes listed above. Depending on the screen controller used, it may be necessary to adjust the display position and size. In this case, you can change and save the settings (see "Operation of the monitor").

The following are the most frequently used of the preset operating modes:

Horizontal frequency	Refresh rate	Screen resolution
31.5 kHz	70 Hz	720 x 400
31.5 kHz	60 Hz	640 x 480
37.5 kHz	75 Hz	640 x 480
37.9 kHz	60 Hz	800 x 600
46.9 kHz	75 Hz	800 x 600
48.4 kHz	60 Hz	1024 x 768
60.0 kHz	75 Hz	1024 x 768

For ergonomic reasons, a screen resolution of 1024 x 768 pixels is recommended. Because of the technology used (active matrix) an LCD monitor provides a totally flicker-free picture even with a refresh rate of 60 Hz.

Pin assignment D-SUB



Pin	Meaning
1	Video input red
2	Video input green
3	Video input blue
4	Ground
5	Ground
6	Red video ground
7	Green video ground
8	Blue video ground



Pin	Meaning
9	+5 V (DDC)
10	Sync. ground
11	Ground
12	DDC-Data
13	H. sync
14	V. sync
15	DDC Clock

Trouble shooting

Should an error occur, first check the following points. If the distortion is still not eliminated, the monitor should, if possible, be checked on another computer and/or with another data cable.

If you are unable to solve the problem, please inform our help desk.

Having this problem?	Check the following points:
No display (power indicator does not light)	<ul style="list-style-type: none"> ▶ Check whether the monitor is switched on. ▶ Check whether the power cable on the monitor is connected correctly.
No display (power indicator lights)	<ul style="list-style-type: none"> ▶ Check whether the computer is switched on. ▶ Check whether the data cable for the monitor is correctly attached to the monitor port on the computer. ▶ Press any key on the computer keyboard - the computer may be in energy saving mode. ▶ Alter the brightness and/or contrast until you get a picture.
Message: No Signal Going to Sleep!	<ul style="list-style-type: none"> ▶ Check whether the data cable for the monitor is correctly attached to the monitor port on the computer. ▶ Check whether the computer is switched on.

<p>Message: Frequency out of range: ## kHz / ## Hz Please change the display mode to 1024x768 with 60 Hz.</p>	<p>The input signal (horizontal frequency and refresh rate) at the displayed input does not correspond to the technical monitor data.</p> <ul style="list-style-type: none"> ▶ Adjust the video frequency range using the computer software (see documentation for your computer or your graphics card).
<p>Picture position is not correct</p>	<p>The monitor recognises an undefined mode (see "Technical data").</p> <ul style="list-style-type: none"> ▶ Press the EXIT/AUTO button to perform the auto-adjustment of the screen. ▶ Set the picture position with the OSD menu (see "Operation of the monitor").
<p>Having this problem?</p>	<p>Check the following points:</p>
<p>Picture is shaking</p>	<ul style="list-style-type: none"> ▶ Check whether the data cable for the monitor is correctly attached to the monitor port on the computer.
<p>Picture disturbances (vertical lines)</p> 	<ul style="list-style-type: none"> ▶ Press the EXIT/AUTO button to perform the auto-adjustment of the screen.
<p>Picture disturbances (horizontal lines, picture noise)</p> 	<ul style="list-style-type: none"> ▶ Press the EXIT/AUTO button to perform the auto-adjustment of the screen.
<p>The screen becomes darker</p>	<p>The background lighting has a limited lifetime. If your monitor display should become too dark, the background lighting will have to be exchanged.</p> <ul style="list-style-type: none"> ▶ Please contact our help desk.



Colour monitor B15-1

<p>Permanently unlit or lit pixels</p>	<p>The standard of production techniques today cannot guarantee an absolutely fault-free screen display. A few isolated constant lit or unlit pixels may be present. The maximum permitted number of pixels faults is stipulated in the stringent international standard ISO 13406-2 (Class II).</p> <p>Example: a 15" flat-screen monitor with a resolution of 1024 x 768 has $1024 \times 768 = 786432$ pixels. Each pixel consists of three subpixels (red, green and blue), so there are about 2.4 million dots in total.</p> <p>According to ISO 13406-2 (Class II), a maximum of 4 pixels and 5 subpixels may be defective, i. e. a total of 17 faulted dots. This corresponds to approx. 0,002% of the entire screen surface!</p>
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