MONITOR

463V FA

Deutsch - English

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A26361-K864-Z100-1-5E19

Deutsch

English

463V FA
LCD-Bildschirm
LCD monitor

Betriebsanleitung
Operating Manual

Ausgabe Mai 2002
May 2002 edition

Contents

Introduction

Your new LCD (Liquid Crystal Display) monitor 463V FA 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 (1280x1024) for displaying the information content of a conventional 21-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 82 kHz and refresh rates (vertical frequencies) from 56 to 76 Hz (absolutely flicker-free)
- digital screen controller with microprocessor for storing 26 different display modes
- 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 '99

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 graphics card (screen controller) with VGA interface or a digital graphics card with DVI interface is required to control the 463V FA 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 chapter "Important notes" 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.

Further 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.

i 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

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 power adapter automatically sets itself to a mains voltage in the range of 100 V to 240 V. Ensure that the local mains voltage lies within these limits.

- Ensure that the power socket on the power adapter 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 chapter "Connecting the monitor".

- 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 transmission cable 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).

- Only use the power adapter supplied or a power adapter of the same type: LSE9901B1260 (Li Shin) or UP06041120A (Potrans).

- The power adapter may only be opened by authorised specialist personnel.

- 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).

Energy Star Guidelines

The Fujitsu Siemens LCD colour monitor 463V FA is designed to conserve electricity by dropping to less than 3 W when it goes into standby, suspend and OFF mode. With this new power management the 463V FA 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 unauthorized 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 unauthorized 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.

Declaration of Conformity

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.

Product Name:	LCD Monitor
Trade Name:	Fujitsu Siemens Computers
Model Number(s):	463V FA
Name of Responsible Party:	Fujitsu Siemens Computers Inc. 598 Gibraltar Drive Milpitas, CA 95035-6315 U.S.A.
Contact Person:	Reiner Johannis
Phone No.:	(408) 571-6051
Fax No.:	(408) 571-6196

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.

Power cable for devices distributed in the US and Canada

In the United States and Canada the cord set must also be UL-listed and CSA-labelled. The voltage rating should be min. 250 volts a.c.

Please consult the following table for the selection criteria for power cables used in the United States and Canada.

Cable type	Size of conductors in cable	Maximum current rating of the device
SJT	18 AWG 16 AWG 14 AWG	10 Amps 12 Amps 12 Amps
SVT	18 AWG 17 AWG	10 Amps 12 Amps

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:

Fujitsu Siemens Computers GmbH
Recyclingcenter
D-33106 Paderborn
Tel.: +49 5251 / 81 80 10, Fax: +49 5251 / 81 80 15

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 data cable (DVI-D)
  – one power cable
  – a power adapter with power adapter cable
  – one floppy disk
 – 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.
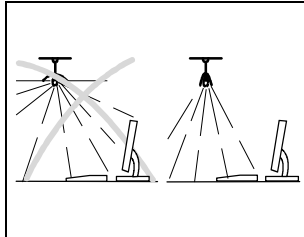
| i	It is recommended not to throw away the original packaging material. Keep it for future transportation.

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.
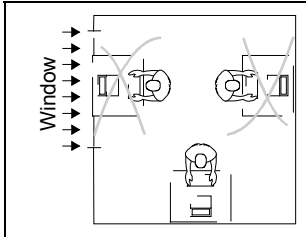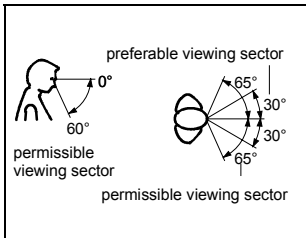

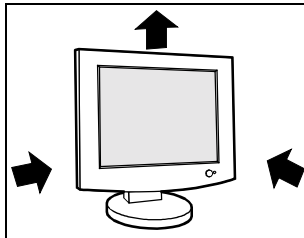Avoid direct and reflected glare.

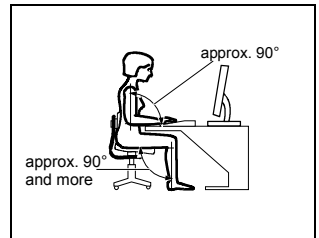Avoid glare from electric lighting.
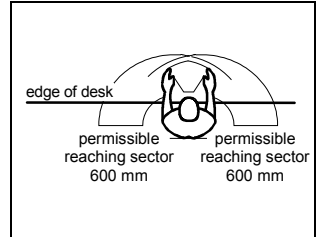
Position the keyboard where it is easiest to reach.

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

Keep ventilated areas clear.

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 chapter "Removing the monitor base".

Connecting the monitor

Please note the information provided in the "Safety" section in the chapter "Important notes" at the beginning of this manual.

CE conformance and optimum picture quality are guaranteed only if you use the data cable supplied.
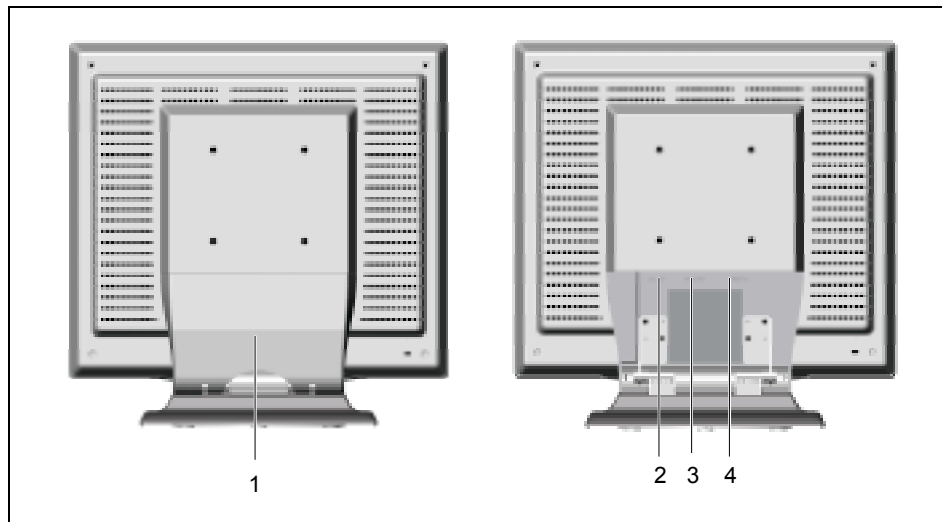
Do not cover the ventilation openings of the monitor.

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
2 = Connector for the power supply

3 = D-SUB connector (ANALOG)
4 = DVI-D connector (DIGITAL)

► Remove the cover (1).

The data cables provided have plugs for the D-SUB connector or the DVI-D connector on the monitor.

► Select the suitable data cable for your computer.

Digital graphics card with DVI interface: DVI connector
Graphics card with VGA interface: D-SUB connector

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

► Connect one of the D-SUB 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.

> **i** If you want to use the data cable with DVI-D connector or if you want to connect the monitor to a second computer, proceed as follows:
>
> ► Connect the DVI-D connector of the data cable to the DVI-D connector on the monitor (4) and secure the plug-in connection by tightening the safety screws.
>
> After switching on the monitor you must select the desired input with the OSD menu (*Input Select* function, see "Changing the monitor settings" chapter).

► Plug the power adapter cable into the power connector (2) of the monitor.

► Firmly insert the socket with the power cable supplied into the power cable connection of the power adapter and check whether the socket is securely seated.

► Mount the cover over the connections again.

Connecting cables to the computer

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

i	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.
► Connect the male receptacle of the power cable supplied to the monitor socket of the computer and ensure a secure connection.
► Plug the power connector of the computer into a properly grounded mains outlet.

i	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
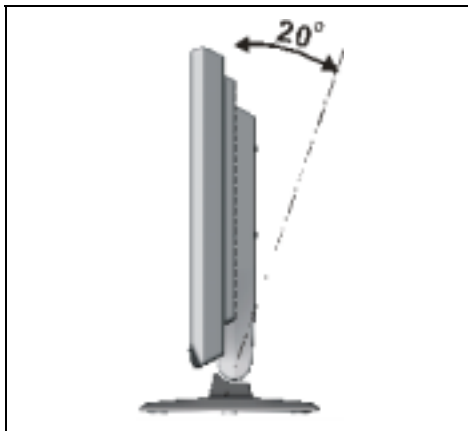
The rake of the monitor can be adjusted by –5° (forward) and +20° (back) from its vertical position.

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

The monitor can be rotated by ± 45° from its centre position.

► Grasp the monitor with both hands on the right and left edge of the casing and rotate it into the desired position.

Switching the monitor on/off
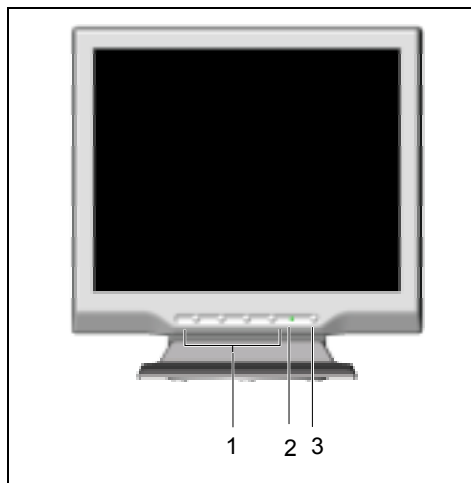
1 = Buttons for the OSD menu
(On-Screen-Display)
2 = Power indicator
3 = Power button

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 the LCD monitor on with the ON/OFF switch (3).

► Then switch on the computer.

i   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	Monitor operating normally	Monitor is dark
Power consumption	normal < 60 W	reduced to < 3 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.

> **i** When the monitor is switched to the energy-saving mode by the power management system a power consumption of up to 3 W is maintained to feed the circuit for redrawing the screen contents.
>
> To completely switch off the power consumption, switch off the computer or pull the plug of the monitor power cable out of the monitor socket of the computer.

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.

Monitor settings with the buttons of the control panel
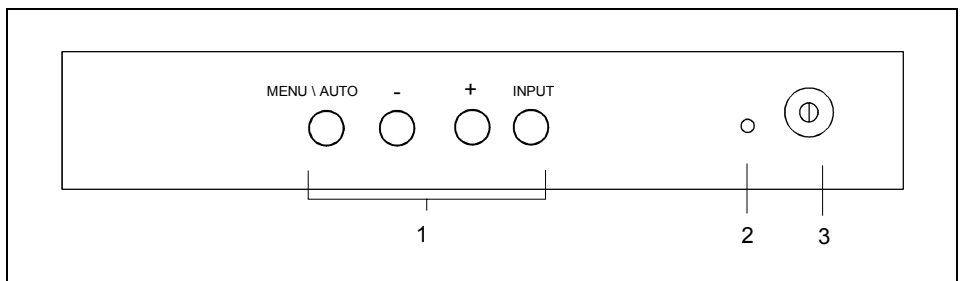
1 = Buttons for the OSD menu   2 = Power indicator
    (On-Screen-Display)   3 = Power button

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 MENU \ 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 contrast/background lighting

► Press the **+** or **–** button to call the *Contrast / Backlight* setting window.

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

Selecting input signal

The monitor can be operated with analogue or digital signals. You can switch between the analogue and the digital mode (depending on the graphics card you use).

► Press the INPUT button to change the mode of the input signal.

Locking the OSD menu

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

► Press the MENU \ AUTO button and the **+** button simultaneously and hold them until the status indicator on the screen is completely filled.

A message is displayed that the action has been performed.

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

Locking the ON/OFF button

The ON/OFF switch can be locked to prevent the monitor from being switched off inadvertently or by an unauthorised person.

► Press the MENU \ AUTO button and the **+** button simultaneously and hold them until the status indicator on the screen is completely filled.

A message is displayed that the action has been performed.

Please proceed in the same manner to release the locked ON/OFF switch 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 Select* in the *Setup Menu* you can select another language.

To set the OSD menu, perform the following steps:

► Briefly press the MENU \ AUTO button to activate the OSD menu.

The main menu appears on the screen with icons for the setting functions.
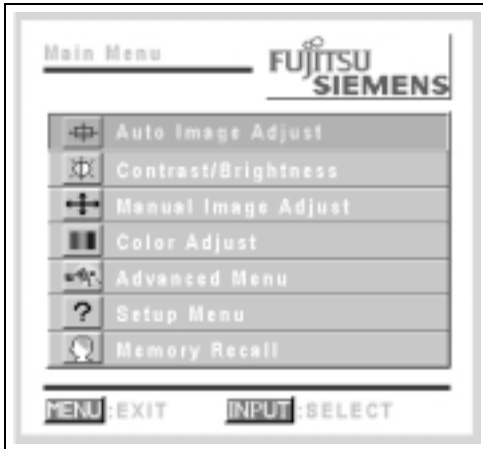
The first symbol (*Auto Image Adjust*) is highlighted. At the bottom of the OSD menu each button's function is displayed.

► Press the **-** or **+** button to highlight another icon if necessary (e.g. *Manual Image Adjust*).

► Press the INPUT button to select the highlighted icon.

The corresponding setting window (here: *Manual Image Adjust*) is displayed.

The first symbol (*H. / V. Position*) is highlighted.

► If necessary, press the **-** or **+** button to mark the next icon.

► Press the INPUT button to select the highlighted icon.

The icon's colour changes.

► Press the **-** or **+** button to adjust the selected function.

► Press the MENU \ AUTO button to save the settings.

The icon's colour changes.

► Press the **-** or **+** button to mark another symbol or press the MENU \ 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.

> **i** The OSD menu for analogue monitor operation is described in the following. During digital operation some functions are not available, as they are not required due to the digital transmission technology used.

Performing auto-adjustment

⊞	Performing auto-adjustment (*Auto Image Adjust*) The *Auto Processing* message is displayed.

Adjusting the brightness and contrast

◐	Calling the *Contrast / Brightness / Backlight* setting window.	
	◐	Setting the contrast of the display (*Contrast*) This function allows you to modify the contrast of bright colour tones.
	☀	Setting the brightness of the display (*Brightness*) This function allows you to modify the contrast of dark colour tones.
	💡	Setting the brightness of the background lighting (*Backlight*) This function allows you to change the brightness of the entire display.

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 *Manual Image Adjust* setting window	
	⊟	Adjusting picture position (*H./V.Position*) The INPUT button allows you to switch between the *H.Position* and the *V.Position*.
	↔	Adjusting the horizontal size (*H.Size*) There is an optimum setting for every resolution.
	⊔⊔	Eliminating picture interference (*Fine Tune*) This function enables the fine tuning of your monitor in case of picture interferences.
	🔍	Adjusting the *Zoom* This function allows you to enlarge a section of the display.

Setting colour temperature and colours

	Calling the *Color Adjust* setting window
	Selecting colour temperature (*Color 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 9300 K, 6500 K, 5400 K, 5000 K and *Native*.
	Native = original colour of the LCD display
	Setting user-defined colours (*User Color*)
	In the user-defined setting you can change the colour ratios of the basic colours (red, green, blue) as required.
	Adjusting the intensity of the grey levels (Gamma correction) (*Gamma*)
	This function allows you to optimise the display of multimedia applications.
	Linear = default setting
	Emphasize Brighter Level = Bright areas remain bright, dark areas become darker
	Emphasize Darker Level = Dark areas remain dark, bright areas become brighter

Setting functions in the "Advanced Menu" menu

	Calling the *Advanced Menu* setting window
	Setting scaling (*Scaling*)
	1:1 = full picture size (depending on the resolution)
	Fill All = switch on the full-screen mode. The display area is stretched to the full picture size (1,280 pixels, side ratio 5:4). As a result, the display may appear distorted.
	Fill Aspect Ratio = Switch on the proportional full-screen mode: The display area is expanded to the maximum picture size while maintaining the side ratio (either full picture width or full picture height).
	Adjusting the picture quality in case of interpolation (*Sharpness*)
	This function allows you to set the sharpness of the interpolation filter. Thus the display can be optimised for pictures or texts.
	Displaying the monitor information (*Information*)
	This function allows you to display e.g. the current resolution and refresh rate.

Setting functions in the "Setup Menu" menu

?	Calling the *Setup Menu* setting window	
	🖥️	Selecting input signal (*Input Select*) The monitor can be operated with analogue or digital signals. With this function you can (depending on the graphics card you use) switch over between the analogue and the digital mode.
	👤	Setting the language for the OSD menu (*Language Select*) You can choose from English (default setting), German, French, Italian and Spanish.
	🔲	Displaying note on resolution (*Resolution Notice*) The optimum resolution for this monitor is 1280 x 1024. With the function activated (*ON*), a message appears on the screen after approx. 30 seconds if a different resolution has been selected.
	⊞	Setting position for the OSD menu (*OSD Position*) You can shift the OSD menu up, down, to the left or to the right.
	🕐	Setting display time for the OSD menu (*OSD Time Out*) You can select a value from 5 to 60 seconds. If the adjusted time has run out without the settings being saved, the OSD menu is automatically closed.
	🔲	Mode Message ON/OFF If this function is enabled (*ON*) a message will be displayed on the screen after approx. 3 seconds when anther mode or another input has been selected.
	🖼️	Setting background for the OSD menu (*OSD Background*) *ON* = normal setting *OFF* = transparent

Activating the factory settings

👤	Activating the factory settings (*Memory Recall*) The *Auto Processing* message is displayed. All settings will be reset without questioning.

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.
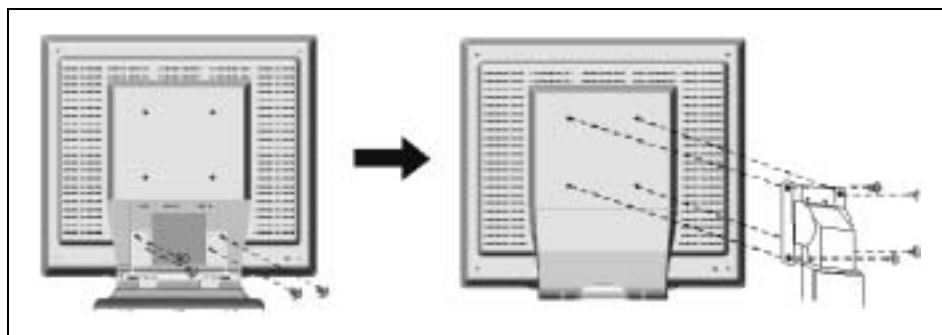
Removing the monitor base

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 four screws on the rear of the monitor.

You can now mount a swivel arm or a wall bracket as per VESA FPMPMI with 100 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:	46 cm
Dot pitch:	0.28 mm
Screen size:	359 mm x 287 mm
Maximal resolution:	1280 x 1024 pixels
Dimensions (W x H x D) incl. monitor base:	416.3 mm x 425 mm x 203.7 mm
Dimensions cardboard box (W x H x D):	540 mm x 531 mm x 280 mm
Weight:	7.3 kg

Accessories:	Power adapter with power adapter cable
	Power cable (1.8 m)
	D-SUB data cable (1.8 m)
	DVI-D data cable (1.8 m)
Storable display modes:	26

Electrical data

Video:	analogue, positive, 0.7 V_{pp}, 75 Ω
	digital: DVI-D
Synchronisation:	Separate Sync. TTL, positive or negative
	Composite Sync. TTL, positive or negative
	Sync. On Green
Horizontal frequency:	30 kHz .... 82 kHz (multi-scanning)
Refresh rate:	56 Hz .... 76 Hz
Maximum pixel rate:	135 MHz
Power supply:	switches automatically
	100 V - 120 V, 50 Hz - 60 Hz $\pm$ 2 Hz, 0.6 A
	220 V - 240 V, 50 Hz - 60 Hz $\pm$ 2 Hz, 0.3 A
Total power consumption:	< 60 W (ON, Normal mode)
	< 3 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.

| **i**	If the monitor 463V FA is not yet displayed in the list of monitors, you can select the following monitor instead:
	Fujitsu Siemens 462V FA, 461V FA, Fujitsu Siemens 4612 FA

Preset operating modes

> **i** 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
64.0 kHz	60 Hz	1280 x 1024
80.0 kHz	75 Hz	1280 x 1024

For ergonomic reasons, a screen resolution of 1280 x 1024 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.
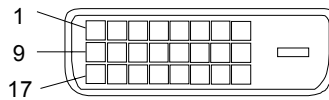
Pin assignment D-SUB
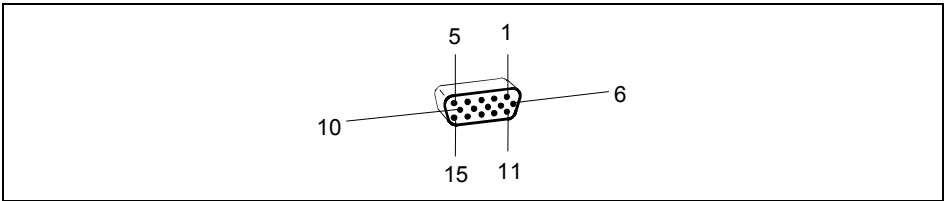
Stylus	Meaning
1	Video input red
2	Video input green
3	Video input blue
4	Ground
5	Ground
6	Red video ground
7	Green video ground
8	Blue video ground

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

Monitor port DVI-D

Stylus	Meaning
1	TMDS Data2-
2	TMDS Data2+
3	TMDS Data 2/4 Shield
4	not connected
5	not connected
6	DDC Clock
7	DDC Data
8	Analogue Vertical Sync

Stylus	Meaning
9	TMDS Data1-
10	TMDS Data1+
11	TMDS Data 1/3 Shield
12	not connected
13	not connected
14	+5V Power
15	Ground
16	Hot Plug Detect
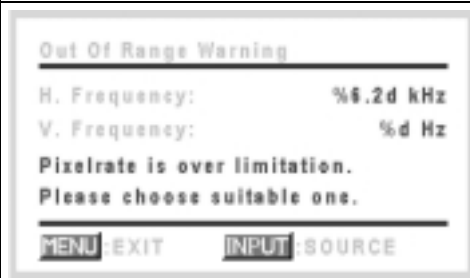
Stylus	Meaning
17	TMDS Data0-
18	TMDS Data0+
19	TMDS Data 0/5 Shield
20	not connected
21	not connected
22	TMDS Clock Shield
23	TMDS Clock-
24	TMDS Clock+

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)	► Check whether the monitor is switched on. ► Check whether the power cable on the monitor is connected correctly. ► Check whether the computer is switched on.

Having this problem?	Check the following points:
No display (power indicator lights)	► 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.
  No Signal Going to Sleep!	► 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.
Out Of Range Warning H. Frequency: %6.2d kHz V. Frequency: %d Hz Pixelrate is over limitation. Please choose suitable one. MENU:EXIT INPUT:SOURCE	The input signal (horizontal frequency and refresh rate) at the displayed input does not correspond to the technical monitor data. ► Adjust the video frequency range using the computer software (see documentation for your computer or your graphics card).
Picture position is not correct	The monitor recognises an undefined mode (see "Technical data"). ► Press the AUTO \ AUTO button to perform the auto-adjustment of the screen. ► Set the picture position with the OSD menu (see "Operation of the monitor").
Picture is shaking	► Check whether the data cable for the monitor is correctly attached to the monitor port on the computer.

Having this problem?	Check the following points:
Picture disturbances (vertical lines)	► Press the AUTO \ AUTO button to perform the auto-adjustment of the screen.
Picture disturbances (horizontal lines, picture noise)	► Press the AUTO \ AUTO button to perform the auto-adjustment of the screen.
The screen becomes darker	The background lighting has a limited lifetime. If your monitor display should become too dark, the background lighting will have to be exchanged. ► Please contact our Help Desk.
Image of last screen display still visible	If you switch from a high-contrast display (for example black lines/characters on a white background) to a picture of medium brightness, you may be able to see a faint image of the previous display for a time. This phenomenon is not due to a monitor defect but to the technology used (IPS display with large viewing angle, IPS = In Plane Switching).

Permanently unlit or lit pixels	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).
	Example: a 17" or 18" flat-screen monitor with a resolution of 1280 x 1024 has 1280 x 1024 = 1310720 pixels. Each pixel consists of three subpixels (red, green and blue), so there are almost 4 million dots in total. According to ISO 13406-2 (Class II), a maximum of 6 pixels and 7 subpixels may be defective, i. e. a total of 25 faulted dots. This corresponds to approx. 0.0006 % of the entire screen surface!