19T2

Bildschirm / Moniteur / Monitor / Skärm / Beeldscherm

BETRIEBSANLEITUNG
OPERATING MANUAL

FUJITSU COMPUTERS
SIEMENS

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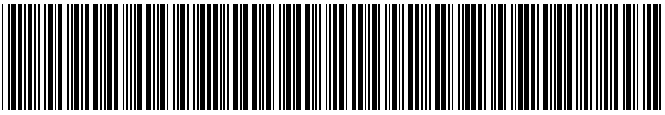


A26361-K616-Z100-1-5E19

Deutsch

English

Français

Español

Italiano

Svenska

Nederlands

TCO'99

19T2
Farbbildschirm
Color monitor
Moniteur couleur
Monitor de color
Monitor a colori
Färgskärm
Kleurenbeeldscherm

Betriebsanleitung
Operating Manual

Ausgabe Juli 2000
July 2000 edition

Contents

Introduction

Your new 19T2 monitor supplies you with a high-quality color image with high resolution and ergonomic refresh rates. It possesses a whole range of useful features and functions, e. g.:

- 19" (46 cm) high-resolution Trinitron CRT (0.24 - 0.25 mm dot pitch of the slot mask)
- automatic scanning of all horizontal frequencies from 30 to 107 kHz and all refresh rates (vertical frequencies) from 48 to 120 Hz
- digital screen controller with microprocessor for storing 25 different display modes
- freely adjustable color alignment for matching the screen colors to the colors of various input and output devices
- VESA-DDC compatibility
- power management for reducing power consumption by up to 95 % when the PC system is not in use
- compliance with the latest ergonomic standards (ISO 9241-3)
- compliance with the recommendations in accordance with TCO '99

This Operating Manual contains important information you require to start up and run your monitor. The monitor interacts closely with the screen controller (graphics card) of your PC. It 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).

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 your PC and in this Operating Manual.

In the event of any problems occurring, please contact your sales outlet or our customer service center.

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 texts marked with this symbol. Failure to observe this warning endangers your life, destroys the system, or may lead to loss of data.

Supplementary information, remarks and tips follow this symbol.

► Texts which follow this symbol describe activities that must be performed in the order shown.

"Quotation marks" indicate names of chapters and terms that are being emphasized.

Important notes

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

The chapter also contains information on the licenses issued for your equipment.

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 customer service center.

- 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 chapter entitled "Technical data" as well as the instructions in the chapter "Installing an ergonomic video workstation".
- To ensure adequate ventilation the monitor may only be operated with the monitor foot installed.
- The color monitor must not be exposed to strong magnetic fields (e. g. caused by magnetic paper clip holders or loudspeakers). Strong magnetic fields could result in a permanent blotchy image.
- The monitor is automatically degaussed when switched on. This results in a magnetic field around the metal edge of the picture tube, which may damage the data on data carriers nearby. Therefore, never keep magnetic data carriers near the monitor.
- The device is designed for a mains voltage in the range from 220 V to 240 V. Ensure that the local mains voltage lies within these limits.
- The device must be installed in such a way that the user has good access to the appliance socket.
- The ON/OFF switch does not disconnect the device from the line voltage. To disconnect the line voltage completely, 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".
- No data transmission cable should be connected or disconnected during a thunderstorm.
- Please ensure that no objects (e. g. necklaces, paperclips etc.) or liquids can get into the interior of the device (this may cause an electrical shock or 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 customer service center.
- Only qualified technicians should repair the device. Unauthorized opening and incorrect repair may greatly endanger the user (electric shock, fire risk).
- Tampering with the device, in particular adjusting the high voltage or installing a different type of CRT tube, may result in a large amount of X-ray radiation being emitted. Devices modified in this way no longer comply with their license and may not be used.

- 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 customer service center.
- Keep this Operating Manual together with your device. If you pass on the device to third parties, you should include this manual.

Cleaning note19T2

- 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.
- When cleaning the surface of the screen, always use a soft, slightly damp cloth in order to avoid scratching the glass.

Wipe the monitor housing 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 notes

- When transporting the monitor ensure that it is not exposed to strong magnetic fields.
- Transport the monitor with care and only in its original packaging or another corresponding packaging fit to protect it against knocks and jolts.
- Above all, never drop the monitor. If the CRT is damaged, there is a risk of implosion!

Manufacturer's notes

Energy Star

The Fujitsu Siemens color monitor 19T2 is designed to conserve electricity by dropping to less than 15 W when it goes into suspend mode and to about 3 W when it goes into OFF mode. With this new power management the 19T2 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 it is growing rapidly. If all desktop PCs and peripherals enter a low-power mode when not in use, the overall savings in electricity could amount to $ 2 billion 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 certificate

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".

Note on X-ray radiation

This device complies with the German X-ray regulations (Röntgenverordnung - RöV). The local dosage emitted is less than 1 µSv/h (micro-Sievert per hour) at a distance of 0.1m.

Important note on 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 current rating for your device.

For the United Kingdom

Should the plug on the flexible cord not be of the type for your socket outlets, do not use an adapter but remove the plug from the cord and discard. Carefully prepare the end of the supply cord and fit a suitable plug.

WARNING

THIS APPLIANCE MUST BE EARTHED

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Green and Yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

- The wire which is coloured Green and Yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol or coloured Green or Green and Yellow.
- The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black.
- The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Red.

Disposal and recycling

This device has been manufactured to the greatest possible degree from materials which can be recycled or disposed of in a manner that is not environmentally damaging. The CRT contains no cadmium

The device is 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.

We herewith declare that it will be possible to repair any device marked with the eco-label for at least 5 years after production of that device has discontinued.

If you have any questions on disposal, please contact your local office, our customer service center, or:

Fujitsu Siemens Computers GmbH
Recyclingcenter
D-33106 Paderborn
Tel.: ++ 49 5251 - 818 010/ Fax: ++ 49 5251 - 818 015

Checking the contents of the consignment

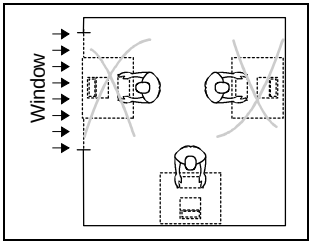
- ► Unpack all the individual parts.
- ► Remove any plastic caps from the plugs for the cables in the consignment.
- ► Check the delivery for damage incurred during transportation.
- ► Check whether the delivery agrees with the details in the delivery note.
  The complete shipment comprises:
  - one monitor with data cable
  - one power cable
  - this Operating Manual

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

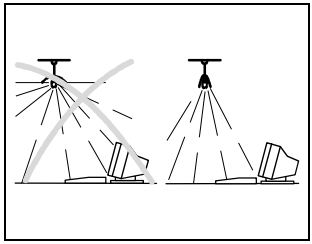
i It is recommended not to throw away the original packing material. Keep it for future transportation.

Installing an ergonomic video workstation

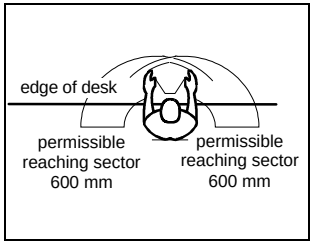
Before you set up your equipment you should select a suitable position for working at the monitor. Please observe the following advices when installing a video workstation.



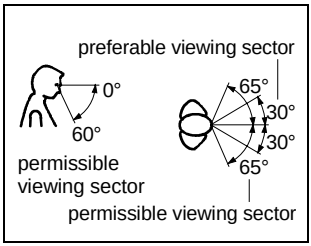
Avoid direct and reflected glare.



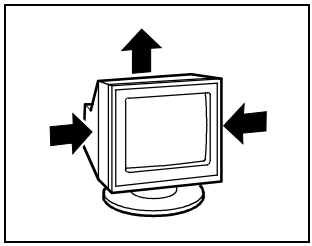
Avoid glare from electric lighting.



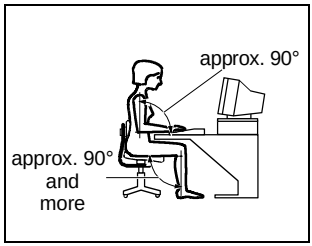
Position the keyboard where it is easiest to reach.



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.

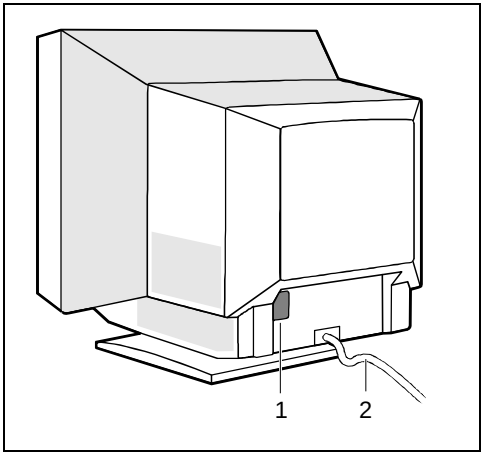
Connecting the monitor

See your PC's operating manual for details of the ports on the system unit.

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

Do not cover the ventilation openings of the monitor.

If you are assembling monitors beside each other, there must be a minimum distance of 30 cm between monitors of the same constructional type, to avoid image distortion. With different monitors, the distance must be increased, if necessary.



1 = Power connector
2 = Data cable

► Be sure that the monitor and the system unit are switched off.

The system unit's power plug must be pulled out!

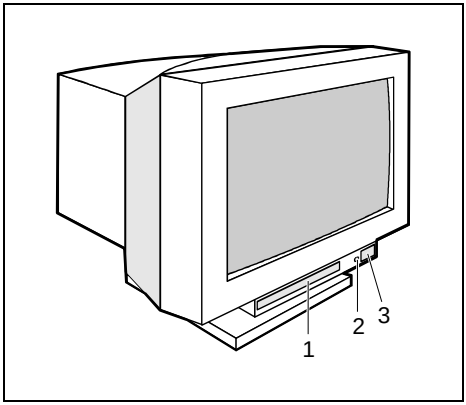
► Connect the connector of the data cable to the (active) monitor port on the system unit and secure the plug-in connection by tightening the safety screws.

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

► Plug the power cable supplied into the power connector (1) of the monitor.
► Plug the power connector of the monitor into a properly grounded power outlet.
► Plug the power connector of the system unit into a properly grounded power 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



1 = Control panel with buttons for screen setting
2 = Power indicator
3 = ON/OFF switch

Switching the monitor on

► Press the ON/OFF switch (3).

The power indicator (2) lights up green when the system unit is turned on.

i

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

When you start your system, several mode changes will usually be carried out when various programs are called automatically (different settings for resolution and image refresh rate). Do not be confused by the unusual displays. They are not error messages.

Switching the monitor off

► Press the ON/OFF switch (3).

The power indicator (2) is dark.

Notes on power management

If your PC has a VESA DPMS (Video Electronics Standard Association, Display Power Management Signaling) power management function (energy-saving mode), your monitor will fully support this function. The monitor has a four-stage power management system.

Stage	ON	Standby mode	Suspend mode	OFF mode
Power indicator	glows green	flashes green/orange	flashes green/orange	glows orange
Function	Monitor operating normally	Monitor is dark	Monitor is dark	Monitor is dark
Power consumption	normal < 140 W	reduced to < 15 W	reduced to < 15 W	reduced to < 3 W

If your PC detects inactivity (no input) it sends an appropriate signal to the monitor to reduce the power consumption. The power indicator of the monitor changes color to indicate the status change. If there is still no input, power consumption is further reduced (OFF mode).

Once an input is made at the PC the screen contents are redrawn and full power is restored.

The length of the individual stages is determined by the power management system of the PC. For detailed information on how energy-saving mode operates refer to the Operating Manual or Technical Manual of your PC.

i

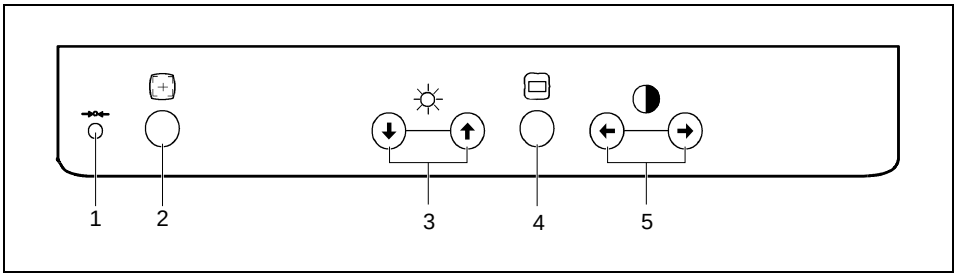
The service life of your monitor will be extended if the OFF mode is switched to after 30 minutes at the earliest (setting in screen saver, in your PC's BIOS setup or in the OSD menu).
When the monitor is switched to OFF mode by the power management system a power consumption of about 3 W is maintained to feed the circuit for redrawing the screen contents.
To cut off power consumption totally, press the ON/OFF switch on the front of the monitor.

Changing the monitor settings

With the buttons on the control panel, you can change the monitor settings. Most settings are carried out via an integrated OSD menu (On-Screen Display).

i

The OSD menu is available in different languages. The English menu names are used in the following description (default setting). How you set a different language for the OSD menu is described in the section "Setting the language for the OSD menu (LANGUAGE)".



1 = Factory settings button
2 = Picture size/position button (automatic setting)
3 = Brightness/arrow up/down button
4 = Menu button
5 = Contrast/arrow left/right button

The factory settings button (1) is used to reset the values to the factory settings.

With the picture size/position button (2) the screen display can be automatically adjusted so that it fits on the screen. This function is especially intended for computers with graphic user interfaces (software) which fills the entire screen.

The brightness/arrow up/down buttons (3) are used to set the brightness and to operate the OSD menu.

The menu button (4) switches the OSD menu on and off.

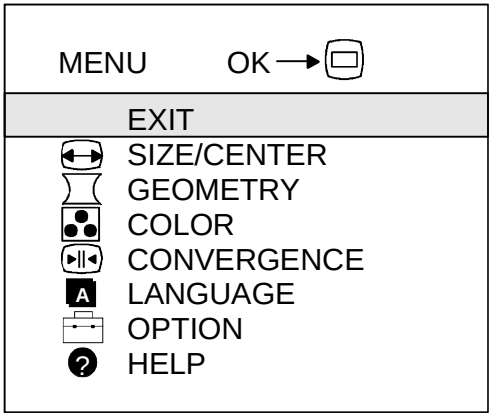
The contrast/arrow left/right buttons (5) are used to set the contrast and to operate the OSD menu.

Operating the OSD menu

To set the OSD menu, perform the following steps:

► Briefly press the Menu button to activate the OSD menu.

The main menu appears on the screen with icons for the setting functions.



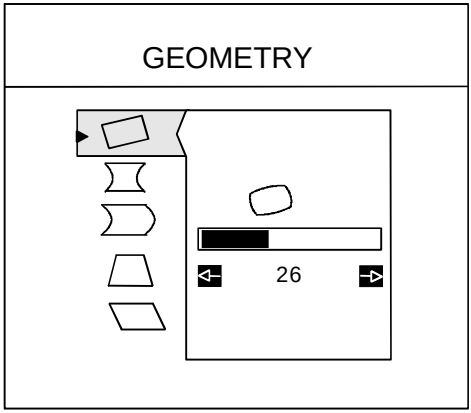
► Select the desired symbol with the arrow buttons ↓ ☼ ↑ and ← ◑ →, e. g. *GEOMETRY*.

(If you wish to exit the OSD menu, select *EXIT*.)

The selected symbol has a colored marking.

► Press the Menu button to display the appropriate options window.

Depending on what options window is involved (here: *GEOMETRY*.), further icons are offered.



► If necessary, select a different symbol with the arrow buttons ↓ ☼ ↑.

► Make the required setting using the arrow buttons ← ◑ →.

All changes are stored automatically.

The OSD menu disappears after approx. 30 seconds. The OSD menu can be hidden beforehand by pressing the menu button (possibly several times).

Adjusting the contrast and brightness

The contrast and brightness can be adjusted directly with the arrow buttons ← ◑ → and ↓ ☼ ↑ of the control panel when the OSD menu is hidden. The set values are saved for all input signals.

i

You will increase the life of your screen if you adjust the contrast and brightness to medium.

In the setting window for contrast and brightness, the horizontal frequency and refresh rate of the current input signal are displayed as additional information.

	Setting the brightness of the background
	Setting the contrast between the foreground and background

Setting picture position and size (SIZE/CENTER)

The set values for the picture position and size are only saved for the current input signal.

	Calling the *SIZE/CENTER* setting window
	Horizontal picture position (*H CENTER*): Shifting the picture to the left or to the right
	Vertical picture position (*V CENTER*): Shifting the picture down or up
	Horizontal picture size (*H SIZE*): Making the picture narrower or wider
	Vertical picture size (*V SIZE*): Making the picture shorter or longer
	Proportional picture size (*ZOOM*): Increasing or reducing picture size while retaining the side ratios The picture zoom adjustment will stop as soon as either the horizontal or vertical size reaches its maximum or minimum value.

Setting the picture geometry (GEOMETRY)

Tilt distortion must be set when the screen display is not axially symmetrical.

Pincushion distortion is when the sides of the screen display are bent inward or outward. Trapezoid distortion is when the top or bottom of the screen display is too wide or too narrow. Parallelogram distortion means that the sides of the picture bend to the left or right.

The set value for the picture rotation is saved for all input signals. All other values of the picture geometry are only saved for the current input signal.

	Calling the *GEOMETRY* options window
	Picture rotation (*ROTATION*): Rotating the picture in a clockwise or counter-clockwise direction
	Vertical pincushion distortion (*PINCUSHION*): Bending the right and left side inward or outward
	Asymmetrical pincushion distortion (*PIN BALANCE*): adjusting right and left side symmetrically

	Trapezoid distortion (*KEYSTONE*): Making the bottom edge narrower and the top edge wider or making the top edge narrower and the bottom edge wider
	Parallelogram distortion (*KEY BALANCE*): Reducing the angle of the left and right sides

Setting color temperature and colors (COLOR)

The "warmth" of the screen colors is set using the color temperature. The monitor has two fixed color temperatures (K = Kelvin). In addition, a user-defined fine calibration of the colors can also be carried out.

If you have reached the maximum value for one of the primary colors (red, green, blue), this will affect the settings for the other primary colors.

The set value for the color setting is saved for all input signals.

	Calling the *COLOR* setting window
9300 K	Selecting color temperature 9300 K (more blue)
5000 K	Selecting color temperature 5000 K (more red)
	Setting a user-defined color temperature (0 = more red, 100 = more blue)
sRGB	Setting the sRGB color mode The sRGB color mode can only be used when your PC and other connected devices (e.g. printer) are sRGB-compatible. The sRGB color mode is an industry standard protocol designed to correlate the displayed and printed colors of sRGB compliant devices. In order to display the sRGB colors correctly (γ_o = 2.2; 6500 K), you must set your PC to the sRGB profile and adjust the brightness and contrast to the values shown in the menu.

Setting convergence (CONVERGENCE)

If objects on the screen have red or blue shadows, the vertical or horizontal convergence of the monitor is incorrectly adjusted.

	Calling the *CONVERGENCE* setting window
	Horizontal convergence (*H CONVERGENCE*): Shifting red and blue shadows to the right/to the left
	Vertical convergence (*V CONVERGENCE)*: Shifting red and blue shadows up or down

Setting language for the OSD menu (LANGUAGE)

A	Setting language for the OSD menu You can choose from English (default setting), German, French, Spanish, Italian, Swedish, Dutch, Russian and Japanese.

Setting monitor options (OPTION)

You can degauss the monitor in the settings window *OPTION*, you can set the Moiré correction, change the OSD position, lock/release the buttons for monitor settings and restore original monitor colors.

The set value for the Moiré correction is only saved for the current input signal. The other values are independent of a change in the input signal.

	Calling the *OPTION* setting window
	Degaussing the monitor (*MANUAL DEGAUSS*) The monitor is degaussed every time you switch it on. When color shifts occur in the screen display due to the influence of magnetic fields, the screen must be degaussed manually. Press the button ➔. The monitor is degaussed for approximately 3 seconds. If the monitor is to be degaussed a second time, please wait approximately 20 minutes before executing the function again.
	Correcting the Moiré effect (*MOIRE ADJUST*) If the picture you see on screen has light and dark stripes or appears dull and blurred, this may be due to what is known as the moiré effect. This effect usually has physical causes, being triggered by interference between the pixels in the matrix and the video signal. The intensity of the moiré effect is dependent on the screen resolution and horizontal frequency.
	Setting horizontal position of the OSD menu (*OSD H POSITION*) You can change the OSD position, for example, when you want to adjust the picture behind an OSD window.
	Setting vertical position of the OSD menu (*OSD V POSITION*) You can change the OSD position, for example, when you want to adjust the picture behind an OSD window.
	Lock/unlock buttons for adjusting the monitor (*CONTROL LOCK*) With this option all buttons on the front of the monitor (with the exception of the menu button ▭ and the on/off switch) can be locked and unlocked again. *OFF* = unlocked *ON* = locked If *ON* has been selected, only the symbols *OPTION* or *EXIT* can be selected in the main menu. If - with the OSD menu hidden - a button other than the menu button ▭ or the on/off switch is pressed, the key symbol appears on the screen.

	Restore original monitor colors (*COLOR RETURN*) After a number of years of operation the color brightness of your monitor may decrease slowly. With this function you can reset the monitor colors to manufacturer's default values. (Due to the natural aging process this function may no longer work after a certain period of time.) Prior to being able to use this function, the monitor must have been in standard operation for at least 30 minutes (power indicator is green). If the monitor changes over into energy saving mode, switch it back to normal mode and wait for 30 minutes. You may have to change the energy saving settings of your computer in order to keep the monitor in standard operating setting for 30 minutes. If the monitor is not ready, a respective message will appear. Press the button ◑ →. While the original screen colors are being restored the screen remains dark. This process takes about 2 seconds.

Open Help menu (HELP)

The most frequent questions and problems are covered here.

	Calling the *HELP* window
RETURN TO MAIN MENU	Return to main menu
RECOMMENDED RESOLUTION	Recommended resolution: 1280 x 1024 at 85 Hz
FLICKER	Flickering: Display of current refresh rate and reference to recommended refresh rate >75 Hz
THIN HORIZONTAL LINE	Thin horizontal line: There is no malfunction.
DISTORTED SHAPE	Picture distorted: Setting the picture geometry (*GEOMETRY*)
OUT OF FOCUS	Picture is blurred: Setting convergence (*CONVERGENCE*)
DISCOLORATION	Discoloration: Check data cable degauss monitor (*MANUAL DEGAUSS*)

Activating the factory settings

With the factory settings button on the front of the monitor, either the adjustment of a selected function can be specifically reset to the factory setting, all settings for the current input signal can be reset or all input signals reset.

Resetting a selected function to the factory setting

- ► Select the function in the OSD menu to be reset.
- ► Press the factory settings button →O←.

Resetting all settings for the current input signal

► Press - with the OSD menu hidden - the factory settings button .

All settings for the current input signal are reset.

i With this method those settings are not reset which are not influenced by a change in the input signal (language and position of the OSD menu, color setting, locking of the buttons for monitor adjustment).

Resetting all settings for all input signals

► Press and hold down the factory settings button - with the OSD menu hidden - for at least 2 seconds.

All settings including brightness and contrast are reset to the factory values.

Notes on ergonomic color adjustment

If you select colors for the display in your application programs, take note of the information below. The primary colors 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 colors for characters and background and giving the primary colors full modulation, you can obtain very suitable color combinations (see the following table):

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

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

Technical data

Dimensions and weight

CRT:	46 cm (19")
Visible diagonals:	46 cm
Dot pitch:	0.24 - 0.25 mm (slot mask)
Maximal resolution:	1600 x 1200 pixels
Preset display area:	352 mm x 264 mm
Dimensions (W x H x D):	449 mm x 463 mm x 463 mm
Weight:	26 kg
Accessories:	Power cable (1.8 m)
Storable display modes:	25 (10 of which are preset)

Electrical data

Video:	analog, positive, 0.7 V_{pp}, 75 Ohm
Synchronization:	Separate Sync. TTL Composite Sync. TTL/ Sync. on Green
Horizontal frequency:	30 kHz .... 107 kHz (multi-scanning)
Refresh rate:	48 Hz .... 120 Hz
Maximum pixel rate:	230 MHz
Power supply:	180 V -264 V, 50 Hz - 60 Hz ± 3 Hz, < 1 A max. at 220 V
Power consumption: (see power management):	< 145 W (ON, Normal mode) < 15 W (Standby mode) < 15 W (Suspend mode) < 3 W (OFF mode)

Environmental conditions

Environment class 3K2, IEC 721

Rated range of operation: Humidity:	15 °C .... 35 °C 20 % .... 85 %
Limit range of operation: Humidity:	5 °C .... 40 °C 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 PC. If your PC 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.

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If the monitor 19T2 is not yet displayed in the list of monitors, you can select one of the following monitors instead:

Siemens or Siemens Nixdorf MCM 21T1, MCM 2106, MCM 212V

Preset operating modes

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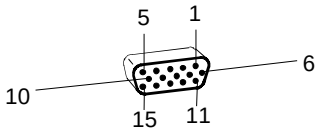
The display position and size have been set to optimum values at the factory for the operating modes listed above. Depending on the screen controller used, it may be necessary to adjust the display position and size. In this case, you can change and save the settings (see "Operation of the monitor").

Horizontal frequency	Refresh rate	Screen resolution
31.5 kHz ±0.5 %	70 Hz ± 0.5 %	720 x 400
31.5 kHz ±0.5 %	60 Hz ± 0.5 %	640 x 480
53.7 kHz ±0.5 %	85 Hz ± 0.5 %	800 x 600
63.9 kHz ±0.5 %	100 Hz ± 0.5 %	800 x 600
68.7 kHz ±0.5 %	85 Hz ± 0.5 %	1024 x 768
80.8 kHz ±0.5 %	100 Hz ± 0.5 %	1024 x 768
93.1 kHz ±0.5 %	100 Hz ± 0.5 %	1152 x 864
91.1 kHz ±0.5 %	85 Hz ± 0.5 %	1280 x 1024
107.0 kHz ±0.5 %	100 Hz ± 0.5 %	1280 x 1024
106.3 kHz ±0.5 %	85 Hz ± 0.5 %	1600 x 1200

For ergonomic reasons we recommend a refresh rate of at least 75 Hz and a maximum resolution of 1024 x 1280 pixels.

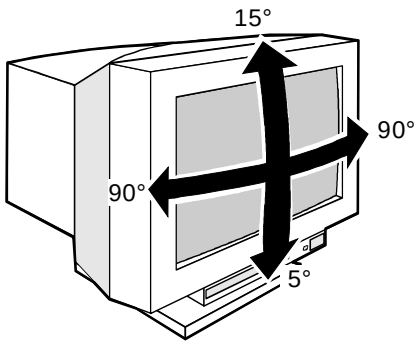
Pin assignment D-SUB (15-pin)



Pin	Meaning
1	Video input red
2	Video input green / Sync. on green
3	Video input blue
4	Monitor ground
5	DDC ground
6	Red video ground
7	Green video ground
8	Blue video ground

Pin	Meaning
9	+ 5 V
10	Logic ground
11	Monitor ground
12	Bi-directional Data (SDA)
13	H. sync
14	V. sync
15	Data Clock (SCL)

Tilting and turning area



Error handling

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 PC.

Self-diagnosis

The monitor is equipped with a self-diagnosis function. If the monitor recognizes a fault, the screen display remains dark and the power indicator glows green or flashes orange.

The power indicator glows green

- ► Switch the connected PC off.
- ► Press and hold down the ➔ button on the front of the monitor for 2 seconds.

If all four color bars (white, red, green, blue) are shown, the monitor is operating properly. In this case, check the PC.

If the color bars do not appear, this may be due to a fault in the monitor. Please contact our customer service center with a description of the problem.

The power indicator flashes orange

- ► Switch the monitor off and on again.

If the power indicator continues to flash orange, there may be a fault in the monitor. Determine the interval at which the indicator flashes (in seconds) and contact our customer service center with a description of the problem.

Possible malfunctions

If you cannot solve the problem, contact our customer service center.

The screen is blank (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 mains socket is live.

The screen is blank (power indicator lights)

- ► Check whether the system unit is switched on.
- ► Check whether the data cable for the monitor is correctly attached to the monitor and the monitor port on the system unit.
- ► Check whether the monitor connection of the system unit used is active.
- ► Press any key on the PC keyboard - the PC may be in energy saving mode.
- ► Change the brightness and/or the contrast; the monitor may be adjusted to the maximum dark setting.

Two fine horizontal lines (wires) are visible

Your monitor is equipped with a Trinitron picture tube, which enables more light to reach the screen with a vertical slot mask, and therefore produces more intense colors. The thin lines visible with a white background are shadows of the damper wires, which stabilize the vertical slot mask. They are characteristic of picture tubes with a vertical slot mask. There is no malfunction.

The screen display is too small or not centered

The monitor recognizes an undefined mode (see "Technical data").

To display the current mode (horizontal frequency and refresh rate), press the ↓ ☼ ↑ or ← ◑ → buttons.

- ► Press the picture size/position button ⊡ to automatically adjust the screen display.
- ► Correctly adjust the picture size and position with the OSD menu (see "Operation of the monitor", section "Setting picture position and size (SIZE/CENTER)").

Picture geometry is defective

- ► Correctly adjust the picture geometry with the OSD menu (see "Operation of the monitor", section "Setting picture geometry (GEOMETRY)").

Colors are impure or shifted

- ► Degauss the monitor (see "Operation of the monitor", section "Setting monitor options (OPTION)").
- ► Set the convergence (see "Operation of the monitor", section "Setting convergence (CONVERGENCE)").

White does not look white

- ► Set the color temperature (see "Operation of the monitor", section "Setting color temperature and colors (COLOR)").

Screen display has lines, is dull or blurred

- ► Set the brightness and contrast (see "Operation of the monitor").
- ► Degauss the monitor (see "Operation of the monitor", section "Setting monitor options (OPTION)").
- ► Set the convergence and reduce the Moiré correction (see "Operation of the monitor", section "Setting monitor options (OPTION)").

The screen display is flickering

- ► Set an ergonomic refresh rate (≥ 75 Hz) using the PC software (see documentation for your PC or your screen controller/graphics card).

Monitor adjustment buttons do not react

The buttons have probably been locked with the OSD menu.

- ► Unlock the monitor adjustment buttons (see "Operation of the monitor", section "Setting monitor options (OPTION)").

A humming noise is heard after switch-on

The monitor is degaussed every time you switch it on. This produces the humming noise. There is no malfunction.

Error messages on the screen

`MONITOR IS WORKING OUT OF THE SCAN RANGE`

The input signal (horizontal frequency and refresh rate) does not correspond to the technical monitor data.

► Adjust the video frequency range using the PC software (see documentation for your PC or your screen controller/graphics card).

`MONITOR IS WORKING - CHECK SIGNAL CABLE`

The monitor does not recognize an input signal.

► Check whether the system unit is switched on.

► Check whether the data cable for the monitor is correctly attached to the monitor and the monitor port on the system unit.

► Check whether the power cable on the system unit is connected to a power outlet with earthing contact.