
Introduction

Your new MCM 212V 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.:

- 21" (50 cm) high-resolution CRT (0.26 mm dot pitch)
- automatic scanning of all horizontal frequencies from 30 to 107 kHz and all refresh rates (vertical frequencies) from 50 to 160 Hz
- digital screen controller with microprocessor for storing 26 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 '95

This Operating Manual contains important information you require to start up and run your monitor. The monitor interworks 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 with the 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 office or our 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.



This symbol is followed by supplementary information, remarks and tips.

- ▶ 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.

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 office or our customer service.

- 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, 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 automatically sets itself to the correct voltage within the range from 100 V to 120 V and 200 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 grounded power outlet.
- 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.
- Please ensure that no objects (e. g. necklaces, paperclips etc.) or liquids can get into the interior of the device (electrical 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 office or our customer service.
- Only qualified technicians may repair the device. Unauthorized opening or 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 office or customer service.
- Keep this Operating Manual together with your device. If you pass on the device to third parties, you should also pass on this manual.

Cleaning notes MCM 212V

- 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

- The monitor weighs more than 25 kg. Get a second person to help you lift and carry it.
- 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 danger of implosion!

Manufacturer's notes

Energy Star



The Siemens multiscan color monitor MCM 212V is designed to conserve electricity by dropping to less than 15 W when it goes into suspend mode and to less than 5 W when it goes into OFF mode. With this new power management the MCM 212V 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, Siemens AG 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 $\mu\text{Sv/h}$ (micro-Sievert per hour) at a distance of 0.1m.

FCC Class B Compliance Statement

If there is an FCC statement on the device, then:

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.

Siemens AG 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 Siemens AG. The correction of interferences 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.

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.

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	10 Amps
	16 AWG	12 Amps
	14 AWG	12 Amps
SVT	18 AWG	10 Amps
	17 AWG	12 Amps

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 device is taken back after use, so that it can be recycled, provided that it is returned in a condition which is the result of normal use. Any components not recuperated 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 service department, or, directly:

Siemens AG
Recycling Center
D-33094 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 transport.
- ▶ Check whether the delivery agrees with the details in the delivery note.
The complete shipment comprises:
 - one monitor
 - one data cable
 - one power cable
 - a Guarantee Booklet
 - this Operating Manual

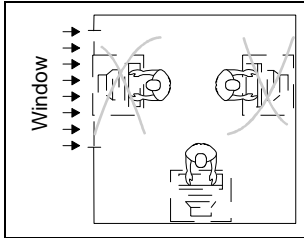
Should you discover that the delivery does not correspond to the delivery note, notify your local sales office immediately.



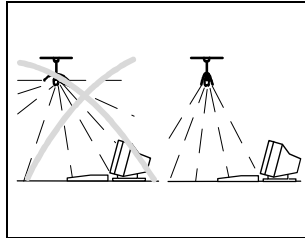
It is recommended not to throw away the original packing material. Keep it for future transportation of the drive.

Installing an ergonomic video workstation

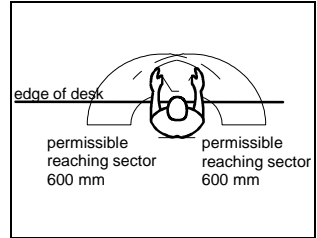
Before you set up your equipment you should select a suitable position for working at the monitor. Please observe the following advices when installing a video workstation.



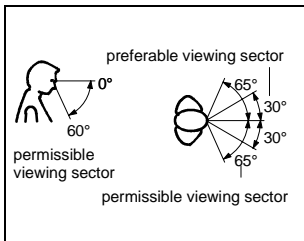
Avoid direct and reflected glare.



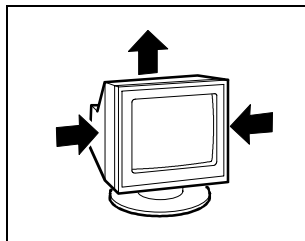
Avoid glare from electric lighting.



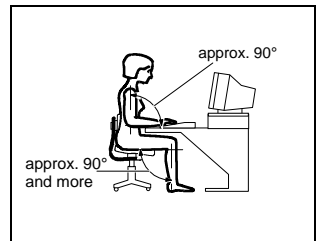
Position the keyboard where it is easiest to reach.



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.

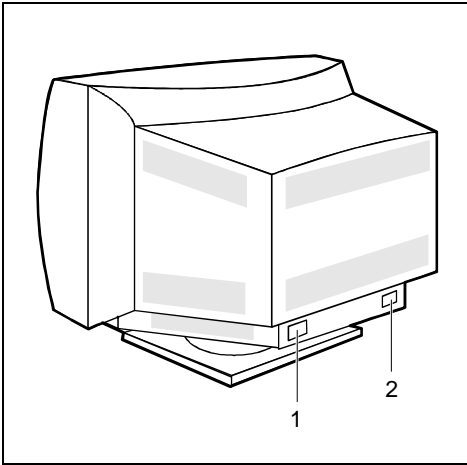


Please note the information provided in the "**Safety**" section in the chapter "**Important notes**" at the beginning of this manual.

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.

Because of its weight, the monitor must be placed on a stable surface. Do not place the monitor on your system unit.



1 = Power connector
2 = D-SUB connector (15-pin)

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



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

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



CE conformance and optimum picture quality are guaranteed only if you use the data cable supplied.

- ▶ Connect one of the connectors of the data cable to the D-SUB connector on the monitor and secure the connector by tightening the safety screws.
- ▶ Connect the other connector of the data cable to the (active) monitor port on the system unit and secure the connector by tightening the safety screws.



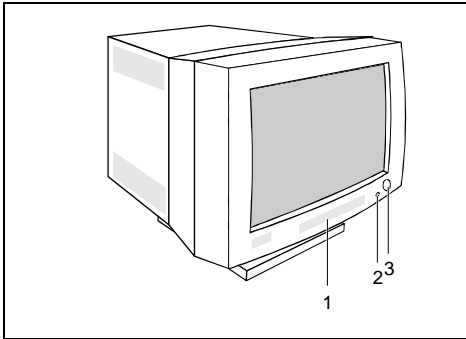
If your system unit has two monitor ports ("onboard" screen controller and separate graphics card), the monitor port for the separate graphics card is usually active.

- ▶ Plug the power cable supplied into the power connector 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.

Each time a mode change is made, the monitor briefly displays the new resolution and refresh rate. At system startup, it is normal that several changes of mode are made when various programs are called automatically. 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	glows yellow	glows yellow	glows orange
Function	Monitor operating normally	Monitor is dark	Monitor is dark	Monitor is dark
Power consumption	normal < 145 W	reduced to < 15 W	reduced to < 15 W	reduced to < 5 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). The power indicator glows orange.

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

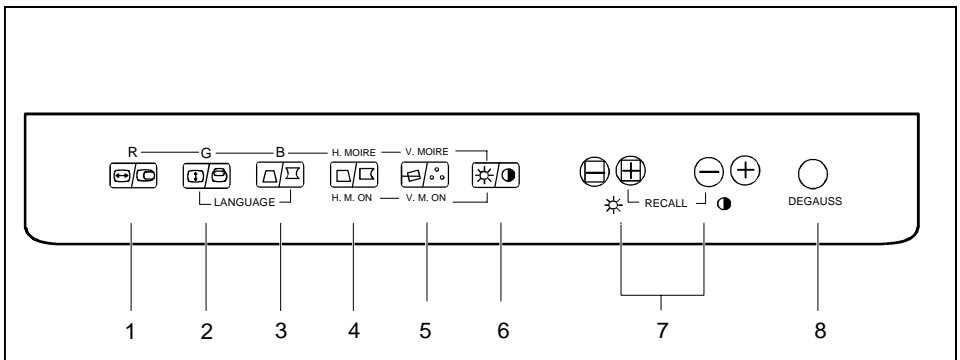
The length of the individual stages is determined by the power management system of the PC. For detailed information on how energy-saving mode operates refer to the Operating Manual or Technical Manual of your PC.

- 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 or in your PC's BIOS setup).
- When the monitor is switched to OFF mode by the power management system a power consumption of up to 5 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. The buttons are labeled with symbols and are explained below.

Of help to you when making the settings is the integrated OSD menu (On-Screen Display) which displays different setting windows on screen.



- | | |
|--|------------------------------------|
| 1 = Horizontal size and position | 5 = Rotation and color temperature |
| 2 = Vertical size and position | 6 = Brightness and contrast |
| 3 = Edges (pincushion/trapezoid) | 7 = Setting buttons (Plus/Minus) |
| 4 = Edges (right pincushion/trapezoid) | 8 = DEGAUSS |




To make a setting, perform the following steps:

- ▶ Press the selection button or button combination briefly for the function to be set, as specified below, until the OSD menu appears on screen. (In the case of a button combination, you must press the specified buttons simultaneously.)
- ▶ Press the appropriate setting button until you have achieved the result you require.

All values are stored automatically when OSD menu is disappeared.

Changing color of the OSD menu


If the OSD menu on your screen is unclear you can alter the color of the OSD menu.









- ▶ When the OSD menu is switched on, hold down the    keys simultaneously for about 10 seconds

Adjusting the brightness and contrast











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









As long as no window for the OSD menu is displayed, you can set the contrast and brightness directly using the relevant setting buttons. If a window for the OSD window is active, you must first press the  button briefly until the OSD menu appears on screen.

Function	Selection button	Setting button
Reducing the brightness		
Increasing the brightness		
Reducing the contrast		
Increasing the contrast		

Adjusting horizontal size and position

Function	Selection button	Setting button
Making the picture narrower		
Making the picture wider		
Shifting the picture to the left		
Shifting the picture to the right		









Adjusting vertical size and position

Function	Selection button	Setting button
Making the picture shorter		
Making the picture longer		
Shifting the picture down		
Shifting the picture up		

Correcting trapezoid/pincushion distortion





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.





i Orient yourself to the left side of the screen to begin with when making the settings. You can carry out fine setting of the right side of the screen separately (see "Correcting right trapezoid/pincushion distortion").

Function	Selection button	Setting button
Making the top edge narrower and the bottom edge wider		
Making the bottom edge narrower and the top edge wider		
Bending the sides inward		
Bending the sides outward		

Correcting right trapezoid/pincushion distortion





Right-hand pin balance is when the sides of the screen display are bent inward or outward on the right side. Right-hand trapezoid distortion is when the right top or bottom of the screen display is too wide or too narrow.

Function	Selection button	Setting button
Making the top right edge narrower and the bottom right edge wider		
Making the bottom right edge narrower and the top right edge wider		

Bending the right side inward		
Bending the right side outward		





Correcting rotation

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

Function	Selection button	Setting button
Rotating the picture in a counter-clockwise direction		
Rotating the picture in a clockwise direction		

Setting the color temperature

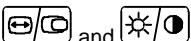

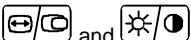

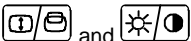

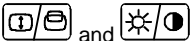

The "warmth" of the screen colors is set using the color temperature. The screen has two preset color temperatures, 9300 K and 6500 K, and one user-defined color temperature (USER), which is set by default to 5000 K (K = Kelvin).









Function	Selection button	Setting button
Select previous color temperature		
Select next color temperature		

Adjusting the colors

You can select any of these three color temperatures as the starting point for setting your color percentage values. 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 color balance will be saved as a user-defined color temperature (USER).


Function	Selection button	Setting button
Reducing the red percentage		
Increasing the red percentage		
Reducing the green percentage		
Increasing the green percentage		

























Reducing the blue percentage	 and 	
Increasing the blue percentage	 and 	
Resetting the color percentages	When one of the colors red, green or blue is selected	 and 

Setting moiré reduction





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.

- i** Set the picture size, brightness, etc. before you switch on moiré reduction. Only switch moiré reduction on if you can see light and dark stripes on your screen, or if the picture is dull and blurred. In some cases, moiré reduction may cause the picture quality to deteriorate (reduced picture definition, slight flickering.)

The symbol  with the letters H (horizontal) and/or V (vertical) is displayed in the window of the OSD menu when horizontal and/or vertical moiré reduction is switched on.

Function	Selection button	Setting button
Switching off horizontal moiré reduction	 and 	
Switching on horizontal moiré reduction	 and 	
Reducing horizontal moiré reduction	 and 	
Increasing horizontal moiré reduction	 and 	
Switching off vertical moiré reduction	 and 	
Switching on vertical moiré reduction	 and 	
Reducing vertical moiré reduction	 and 	
Increasing vertical moiré reduction	 and 	

Setting language for the OSD menu

Display and scroll through language selection	 and 	 and 
---	---	---

Activating the factory settings

Factory settings are provided for picture size, picture position, edges, rotation and colors in the predefined operating modes.

Activating the factory settings for the current operating mode (Recall)

- ▶ To activate the factory settings for the current operating mode, hold down the ⊕ and ⊖ keys simultaneously for approximately two seconds.

The user settings for the current operating mode are reset and can be entered again. Other user settings will not be deleted.

Activating the factory settings for all operating modes (Reset)

- ▶ To reset all user settings, switch on the monitor and press the ⊖ and ⊕ keys simultaneously.

All user settings for all the preset operating modules are reset and can be entered again.

Degaussing the screen


Magnetic fields can affect how colors are displayed on your monitor screen. The monitor is therefore degaussed every time you switch it on.

Only use the DEGAUSS button if you notice color distortions on the screen after switching on the monitor.


- ▶ Press the DEGAUSS button.

If you wish to repeat this procedure, wait about 10 minutes before pressing the button again.

Displaying monitor data

- ▶ Press the  button.

The horizontal frequency and refresh rate currently set for your monitor are displayed on screen. The accuracy of the display is ± 2 kHz for the horizontal frequency and ± 2 Hz for the refresh rate.

If the  symbol is displayed, this indicates that moiré reduction is activated.

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; light background colors are only suitable for devices which are operated with a refresh rate of at least 75 Hz.
- 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:	50 cm (21")
Visible diagonals:	50 cm
Dot pitch:	0.26 mm
Maximal resolution:	1600 x 1200 pixels
Preset display area:	380 mm x 285 mm
Dimensions (W x H x D):	488 mm x 482 mm x 470 mm
Weight:	27.5 kg
Accessories:	power cable (1.8 m) data cable (1.8 m)
Storable display modes:	26 (10 of which are preset)

Electrical data

Video:	analog, positive, $0.7 V_{pp}$, 75 Ohm
Synchronization:	Separate Sync. TTL
Line frequency:	30 kHz 107 kHz (multi-scanning)
Refresh rate:	50 Hz 160 Hz
Maximum pixel rate:	230 MHz
Power supply:	100 V - 120 V ($\pm 10\%$)
switches automatically	200 V - 240 V ($\pm 10\%$)
	50 Hz - 60 Hz
Power consumption:	< 145 W (ON, Normal mode)
(see power management):	< 15 W (Standby mode)
	< 15 W (Suspend mode)
	< 5 W (OFF mode)

CRT

Color characteristics (Color coordinates):	Red	x = 0.625	y = 0.340
	Green	x = 0.285	y = 0.605
	Blue	x = 0.150	y = 0.065
	White	x = 0.281	y = 0.311

Gamma value: 2.8

The CRT contains no cadmium

Environmental conditions

Environment class 3K2, IEC 721

Rated range of operation: 15 °C 35 °C

Humidity: 20 % 85 %

Limit range of operation: 5 °C 40 °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 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.



If the monitor MCM 212V is not yet displayed in the list of monitors, you can select one of the following monitors instead:

Siemens Nixdorf
Hitachi
Philips
MIRO

MCM 21T1, MCM 2106 NTD, MCM 2107 NTD, MCM 2103 ND
CM812, CM2198M, CM801
CMO700 (21B)
C2193

Preset operating modes

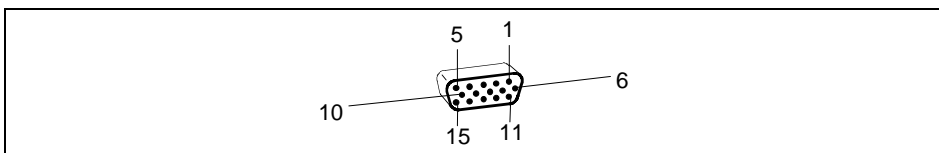


The display position and size have been set to optimum values at the factory for the operating modes listed above. Depending on the screen controller used, it may be necessary to adjust the display position and size. In this case, you can change and save the settings (see "[Operation of the monitor](#)").

Horizontal frequency:	Refresh rate	Screen resolution
31.5 kHz	70 Hz	720 x 400
31.5 kHz	60 Hz	640 x 480
63.9 kHz	100 Hz	800 x 600
68.7 kHz	85 Hz	1024 x 768
80.8 kHz	100 Hz	1024 x 768
100.3 kHz	110 Hz	1152 x 864
80.0 kHz	75 Hz	1280 x 1024
91.2 kHz	85 Hz	1280 x 1024
107.0 kHz	100 Hz	1280 x 1024
106.3 kHz	85 Hz	1600 x 1200

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

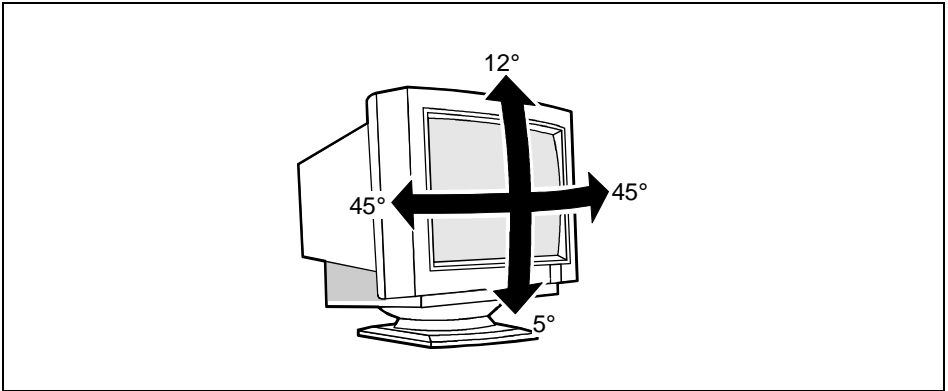
Pin assignment D-SUB (15-pin)



Pin	Meaning
1	Red video input
2	Green video input
3	Blue video input
4	not assigned
5	not assigned
6	Red video ground
7	Green video ground
8	Blue video ground

Pin	Meaning
9	no pin
10	Logic ground
11	not assigned
12	DDC data (SDA)
13	H. sync
14	V. sync
15	DDC 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 and/or with another data cable.

If you cannot solve the problem, contact customer service.

The 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  button. The accuracy of the display is ± 2 kHz for the horizontal frequency and ± 2 Hz for the refresh rate.

- ▶ Adjust the position and the size of the display and save your settings (see "[Operation of the monitor](#)").

Color displacements, color distortions

- ▶ Degauss the monitor (see "[Operation of the monitor](#)").

Striped picture or dull, blurred picture

- ▶ Switch the moiré reduction function on (see "[Operation of the monitor](#)").

Flickering picture

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

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 mains socket is live.

No display (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.
- ▶ Press any key on the PC keyboard - the PC may be in energy saving mode.
- ▶ Alter the brightness and/or contrast until you get a picture.

Error messages on the screen

Power Save

The device does not recognize synchronous signals.

- ▶ 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.

Invalid Scan Freq

Synchronous signals are outside the permitted range.

Contents

Introduction.....	1
Notational conventions.....	1
Important notes.....	2
Safety.....	2
Manufacturer's notes.....	3
Note on X-ray radiation.....	4
FCC Class B Compliance Statement.....	4
Important note on power cable.....	4
Disposal and recycling.....	6
Checking the contents of the consignment.....	6
Installing an ergonomic video workstation.....	7
Connecting the monitor.....	7
Operation of the monitor.....	9
Switching the monitor on.....	9
Switching the monitor off.....	9
Notes on power management.....	9
Changing the monitor settings.....	10
Activating the factory settings (Reset).....	15
Degaussing the screen.....	15
Displaying monitor data.....	15
Notes on ergonomic color adjustment.....	16
Technical data.....	16
VESA-DDC-compatible VGA interface.....	17
Preset operating modes.....	18
Pin assignment D-SUB (15-pin).....	18
Tilting and turning area.....	19
Error handling.....	19

A26361-K539-Z100-2-5E19

MCM 212V

Operating Manual

September 1998 edition

VESA, DDC and DPMS are registered trademarks of Video Electronics Standards Association.

Copyright © Siemens AG 1998.

All rights, including rights of translation, reproduction by printing, copying or similar methods, even of parts are reserved.

Offenders will be liable for damages.

All rights, including rights created by patent grant or registration of a utility model or design, are reserved.

Delivery subject to availability. Right of technical modification reserved.