

19" COLOR MONITOR

18" max. viewable screen size

USER'S MANUAL

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We warrant to the end user that each product, including related software, accessories, media and supplies, shall be free from defects in materials and workmanship for the warranty time from date of purchase. This warranty covers only those defects that arise as a result of normal use of the product. This warranty does not cover any other problems, including problems that arise as a result of improper maintenance or modification; software, accessories, media or supplies not provided or supported by us; or operation outside the manufacturer's specifications.

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SAFETY INSTRUCTIONS

Please read through this section carefully and follow all the instructions given. In this way you will guarantee reliable operation and a long life for your monitor.

Always keep these instructions handy and close by your monitor.

Keep this Instruction Manual and the packaging safe so that in the event that you sell the PC you can pass it on to the new owner.

OPERATIONAL SAFETY



- **Never open the housing** of the Monitor. When the housing is open there is a **danger of injury** from electric shock!
- Do not insert any **objects** through the slots and openings **into the inside of the monitor**. This may lead to an electrical short-circuit or even fire resulting in damage to your monitor.
- The slots and openings in the monitor casing are for ventilation purposes. **Do not cover over these openings**, as otherwise this may lead to overheating.
- Do not allow **children** to play **unattended** on electrical equipment. Children may not always correctly recognize danger.
- This monitor is intended for personal use only. It **is not** intended for commercial use in a **heavy industry environment**.
- Monitors usually produce x-rays. **This monitor is properly shielded** and meets all safety guidelines required.

Please proceed as outlined in the "Customer Service" section:

- ◆ if the mains lead is worn or damaged
- ◆ if liquid is spilled on the unit
- ◆ if the monitor fails to work properly
- ◆ if the monitor is dropped or the housing is damaged

REPAIRS

- Leave all repairs of this monitor to **authorized and qualified service personnel** only.
- Should a repair be necessary, please consult one of our authorized **service partners** only.

NOTES FOR SERVICE ENGINEERS

- Before opening the housing, **disconnect the monitor from all power sources and remove any connecting cables**. If the monitor has not been disconnected from the power outlet before being opened, there is a **danger to life** through electric shock. There is also a risk of damage to the components.
- Internal components of the monitor may be damaged by **electrostatic discharge (ESD)**. Carry out system upgrades and changes in an **ESD-protected workshop**. If no such workshop is available, wear an **antistatic wrist strap** or touch a highly conductive metal object. We can repair damage sustained by inappropriate handling for a fee.
- Use only **original spare parts**.

POINT OF USE

- Keep your monitor and all units connected to it, away from **moisture** and avoid **dust, heat** and **direct sunlight**. Failure to observe these instructions can lead to malfunctions or damage to the monitor.
- Place and operate all units on a **stable, even** and **vibration-free surface** in order to avoid the monitor falling.
- **Never** position **vases or similar objects containing fluids** on the monitor. If liquid should get into the housing may cause short circuit and even cause fire.

ENVIRONMENTAL CONDITIONS

- The monitor can be operated at an ambient temperature of between **+41°** and **+95° F** (5° C and +35° C), up to the maximum height of 9800ft (3000 m) above sea level at a relative humidity of between 10% - 85% (without condensation).
- When switched off, the monitor can be stored at between **+32°** and **+104° F** (0° C - +40° C), up to the maximum height of 39,000 ft (12,000 m) above sea level at a relative humidity of between 5% - 85% (without condensation).

- After transporting your monitor please wait until it has assumed the ambient temperature before connecting and switching it on. Extremely high variations in the **temperature or humidity** may result in condensation forming on the inside of the monitor which could cause an **electrical short-circuit**.

CONNECTING

Observe the following instructions to connect your monitor properly:



- To interrupt the monitor from mains disconnect the plug from the socket.
- Please only use the power connection cable **provided**.
- For additional safety we recommend use of **an excessive voltage protection device** to protect your monitor from damage resulting from **voltage surges** or **lightning**.
- **Unplug** the unit during a **lightning storm** or when it will not be used for long periods of time. This will protect the monitor from damage due to power surges.
- The power socket must be in the vicinity of the monitor and within reach of the power cables. **DO NOT stretch the power cables tightly to reach a power socket.**
- If you use an **extension cable**, ensure that it fulfills the **requirements**. Please ask your electrician.
- Now carefully plug in the 15-pin plug of the signal cable **straight** into the VGA socket of your computer with **slight pressure**. Please pay attention that plug and socket exactly match. Due to the asymmetrical shape there is only one way to fit the plug into. If the alignment fails don't use excessive force. Excessive force may damage some pins and destroy the plug may be destroyed. Please tighten both screws of the plug by hand.
- You should lay the monitor cables in a manner that no one will trip or step on it.
- To avoid damage of cable **do not place any objects or furniture on the cable.**
- **Monitors are heavy items.** Please consider to ask another person's help.

STANDARDS/ELECTRO-MAGNETIC COMPATIBILITY

Your monitor fulfils the requirements for electro-magnetic compatibility and electrical safety specified in the following standards:

**EN 55022, EN 55024, EN 60950, EN 61000-3-2, EN 61000-3-3
UL60950 / CAN CSA 22.2 No 60950, FCC**

- When connecting ensure that *Guidelines for Electro-Magnetic Compatibility (EMC)* are observed.
- Provide an interval of at least one meter from **high-frequency and magnetic sources of interference** (television sets, loudspeakers, mobile telephones, etc.) in order to avoid malfunctions and data loss.

ERGONOMICS

- This monitor complies with all relevant regulations such as DIN EN ISO 9241-3, DIN EN ISO 9241-7 and DIN EN ISO 9241-8.
- For ergonomic reasons we suggest not to use the base-color blue on dark subfonds. This would cause bad readability and would increase eye strain.
- While working with screens you should **take breaks periodically** to avoid tension and fatigue.
- In order to save your eyes and to assure a convenient working area you should **avoid glare, reflections** and **strong contrasts** on the screen. For more detailed information on workplace ergonomics, see page 15.

ELECTRICAL SAFETY

EN 60950 Safety of information technology equipment.

- The connection of devices is limited to equipment that complies with EN60950 "Safety of information technology equipment" or EN60065 "Audio, video and similar electronic apparatus. Safety requirements"
- For U.S. / Canadian purposes:
The PC should only be connected to equipment which complies with UL 60950 / CAN CSA 22.2 No 60950

TRANSPORT AND RECYCLING

- Keep the original packaging and use it to protect the monitor during transport or storage.
- Packing materials and product are recyclable.

PRECAUTIONS

You can increase the service life of your monitor by observing the following precautions:

- **Warning!** There are no user-serviceable or user-cleanable parts inside the Monitor housing.
- Before cleaning **always disconnect the power line** and all connection cables.
- Do **not use any solvents**, caustic or gaseous cleaning agents.
- Clean the display with a soft, lint-free cloth.

IMPORTANT ADDITIONAL SAFETY INSTRUCTIONS

When using any electronic equipment, basic safety precautions should always be taken. Following the guidelines below can reduce the risk of fire, electric shock and injury to person:

- Do not use this product near water (e.g., near a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool).
- Avoid using a telephone/modem (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the telephone/modem to report a gas leak in the vicinity of the leak.
- Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
- Keep batteries away from children at all times.
- **Caution:** To reduce the risk of fire, use only No. 26 AWG or larger telecommunication cords (applies to American Standards).
- **Caution:** Lithium batteries can not handle intense pressure, high temperatures or fire. Danger of explosion if replaced incorrectly. Replace batteries with a compatible type as recommended by the manufacturer. Lithium batteries are **hazardous waste** and require proper disposal. Contact the your **Service Center** for additional information on battery disposal.

FCC COMPLIANCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. 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 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 the equipment and 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 technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Shielded interface cables, if any, must be used in order to comply with the emission limits.

DECLARATION OF CONFORMITY

According to 47CFR, Parts 2 and 15 for
Class B Personal Computers:

We: Medion Aktiengesellschaft
(Name of the Responsible Party)

Located at: Gänsemarkt 16 – 18
D-45127 Essen
Germany
(Address, City, State, Zip Code)

Fax : 0 201 / 81 081 – 227
(Facsimile Number **for conformity issues only**)

Declare under sole responsibility that the product identified herein, complies with 47CFR Parts 2 and 15 of the FCC rules as a Class B digital device. Each product marketed, is identical to the representative unit tested and found to be compliant with the standards. Records maintained continue to reflect the equipment being produced can be expected to be within the variation accepted, due to quantity production and testing on a statistical basis as required by 47CFR §2.909. 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. The above named party is responsible for ensuring that the equipment complies with the standards of 47CFR §§15.101 to 15.109.

Trade Name: Medion

Type or
Model Number: MD 1998 OF

Party Responsible: MEDION AG

Executed on (Date), at (Place): 15th of August 2002, Essen

INTRODUCTION

NOTES ON THESE INSTRUCTIONS

We have arranged these instructions so that you can quickly find the subject related information in the table of contents.

An index is located at the end of this manual.

The purpose of these instructions is to help you operate your monitor safely, quickly and easily.

OUR TARGET GROUP

Thank you for purchasing our 19" color monitor. We thank you for your confidence in our products and are pleased to greet you as a new customer. These instructions are intended for initial users as well as advanced users. Regardless of the possible professional utilization, this display is intended for private use only.

QUALITY

We focused on great features, ease of use, safety and reliability in manufacturing our monitor. The balanced hardware and software concept offers you an advanced display design which will provide you a great deal of pleasure for your work and entertainment.

SERVICE

Service and support will be available every time you use your new monitor. Contact us, we will be glad to help you.

This manual contains a separate chapter on the subject of service beginning on page 23.

INCLUDED EQUIPMENT

Please check your new monitor for completeness. Notify us within 14 days after purchase if it is not complete. With your monitor you receive:

1- Monitor

1- Monitor base

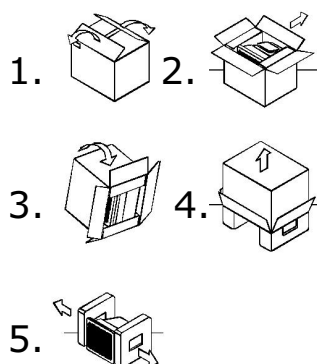
1- Mains power cable

1- Operating instructions

1- Guarantee card

START-UP

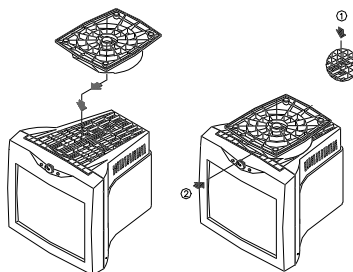
UNPACKING PROCEDURE



Before unpacking and set-up please read the Chapter "**Safety instructions**" on page 1 by all means.

Save the original box and all packing material for future shipping needs.

FIXING THE MONITOR BASE



(diagram the same)

1. Lay the monitor on its side or up side down.
2. Locate the slots at the bottom of the monitor and feed the hooks of the base into the slots.
3. Slightly push the base towards the monitor's screen side until it clicks into place.
4. To remove the base, hold the bottom of the base then push it out.

PREPARATIONS ON YOUR COMPUTER

If you have operated your computer previously with another monitor, it might be necessary for you to make a few preparations. This is required when your previous monitor was operated with settings which are not supported by your new monitor.

FACTORY PRESET TIMING TABLE

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
640 x 480	31.5	60
640 x 480	43.3	85
720 x 400	31.5	70
800 x 600	46.8	75
800 x 600	53.6	85
800 x 600	63.0	99
1024 x 768	60.0	75
1024 x 768	68.6	85
1024 x 768	80.5	100
1280 x 960	85.9	85
1280 x 1024	80.0	75
1280 x 1024	91.1	85
1600 x 1200	93.8	75

DISPLAY PROPERTIES

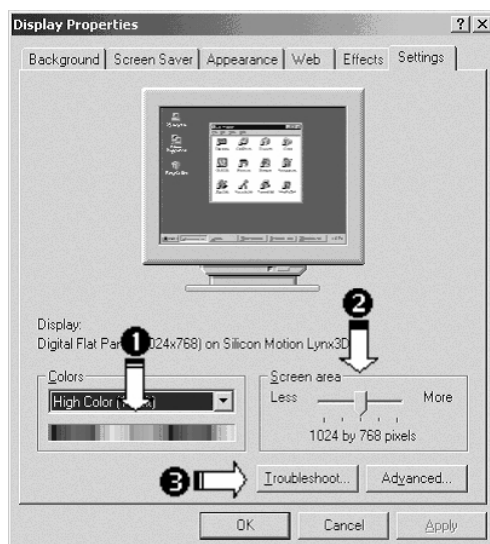
This Windows program offers you the capability of adapting the display to your monitor. This includes items such as the background image, the screen saver, the Active Desktop (Web) as well as other settings for your monitor and video card.

The program can be started as follows:

- Right mouse click on Windows desk top and left mouse click on **"Properties"**.

Or

- Start the **"Display"** program in **"System control"**



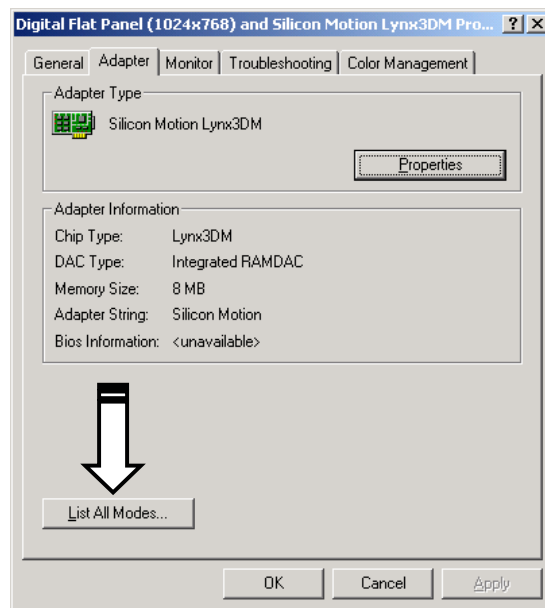
(Diagram the same)

Then click **"Colors"** to set the color depth (number of colors displayed). Your monitor supports a maximum color depth of 16 million colors corresponding to 32 bit or "True Color".

The resolution can be set under **"Screen area"**. Your monitor can display a maximum of 1600 x 1200 image dots.

The image repeat frequency can be set under **"Other options"**. A window with the characteristics of your video card appears depending on the configuration of your computer.

Under "**Video card**" you can change the desired value in the selection field "**Image refresh frequency**".

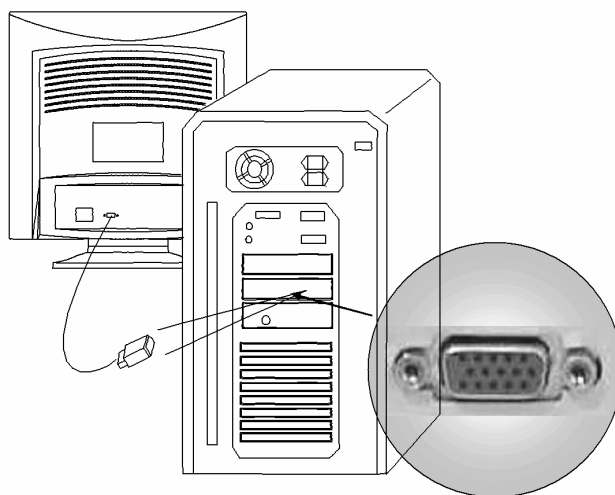


(Diagram the same).

⇒ **Caution!** If your setting does not coincide with the values supported by your display, you may not see any image.

CONNECTING VGA SIGNAL CABLE

1. Ensure that the monitor is not yet connected to the power line (The power cord should not be plugged in) and neither the monitor nor the computer should be switched on.
2. Prepare your computer for the monitor if necessary (see previous pages) with the correct settings for your monitor.
3. Plug the signal cable of the monitor into the matching VGA socket on the computer.

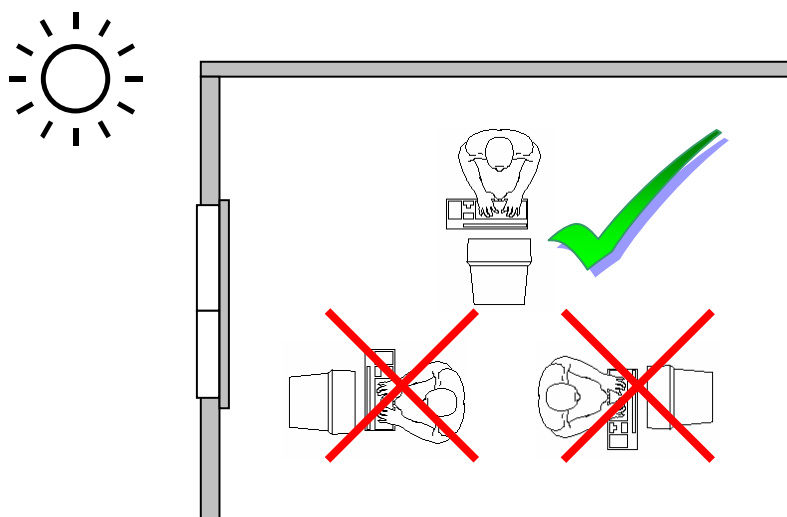


(Diagram the same)

4. Now connect the mains socket of the monitor using the mains cable supplied with a properly configured mains outlet. The outlet should be near the monitor and ease to access.
5. Switch on the monitor with the On/Off switch (see next page for details).
6. Now turn on the computer.

POSITIONING OF THE MONITOR

Please ensure that the monitor is set up in such a way that reflections, glare and light-dark contrast are avoided (as this will make the screen less attractive to look at).



WORKING ERGONOMICS

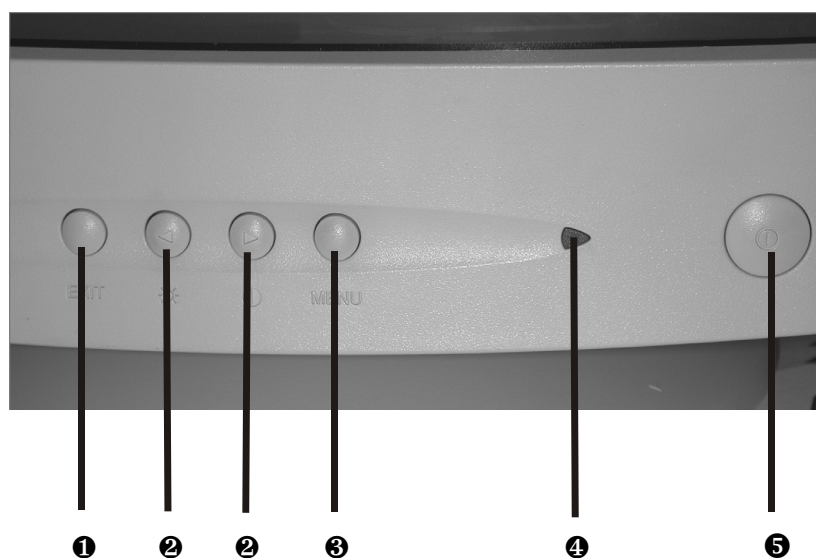


- Hand's support rest: 2" – 4" (5 - 10 cm)
- Top line of screen should be kept at eye level or slightly beneath a eye level
- Viewing distance: 20" – 27.5" (40 - 70 cm)
- Legroom (vertical): at least 25.5" (65 cm)
- Legroom (horizontal): at least 23.6" (60 cm)

The illustration above gives you a guideline for an ergonomic workplace.

OPERATING INSTRUCTIONS

FRONT PANEL CONTROL

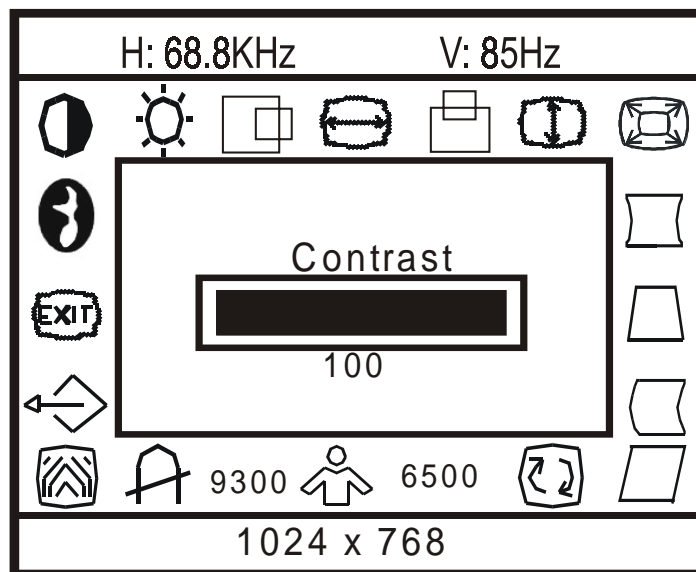


(Diagram the same)

- ❶ Enter and exit the OSD window;
save the settings.
- ❷ Select the functions;
increase / decrease the values.
- ❸ Enter the OSD window; confirm
the settings and selections.
- Power indicator:
 - ❹ Green = power on mode
Orange = Stand-by-mode
- ❺ Mains switch

THE OSD (ON SCREEN DISPLAY)

You can adjust certain parameters of the screen display via the OSD menu (On Screen Display).



Press button ❶ or ❸ to enter the OSD-menu. Keep pressing the buttons ❷ until the desired icon (and the function associated with it) is highlighted.

Use button ❹ to confirm your entry, or to activate the associated function.


Press button ❶ again to save the changed values. If you do not press any button within 10 seconds, the On Screen Menu will exit automatically, and your changes will be saved.

On the following pages, main functions or adjustment options via the OSD are explained.

ADJUSTMENT OPTIONS



CONTRAST / BRIGHTNESS

Increase and decrease the brightness or the contrast. With the button  you can access the related functions directly.



VERTICAL / HORIZONTAL SCREEN SIZE

Enlarges or reduces the displayed screen image.



HORIZONTAL AND VERTICAL SCREEN POSITION

Adjustment of horizontal or vertical screen position



HORIZONTAL / VERTICAL PINCUSHION

Controls the curvature of the screen edge.



PARALLELOGRAM

Adjust the picture to be a rectangle.



TRAPEZOID

Controls the ratio of the upper horizontal width to the lower screen edge.



ROTATION

Adjust the picture tilt to horizontal position



HORIZONTAL / VERTICAL MOIRÉ

To reduce horizontal or vertical moiré patterns on the screen display.



ZOOM

Adjust the picture's horizontal and vertical size simultaneously.



COLOR TEMPERATURE

The color temperature for 6500°K is $x=0.313$, $y=0.329$ and 9300°K is $x=0.283$, $y=0.297$. You can select 9300°K or 6500°K by pressing **2**. If the 9300°K normal white or 6500°K warmer white do not satisfy your desire, properly adjust R . B GAIN controls to obtain your optimum whiteness level.



MANUAL DEGAUSSING

When this function is selected, button **2** must be pressed.

➤ **Note:** During degaussing a sharp click sound can be heard. This is normal, and should not worry you.



RETRIEVING STANDARD VALUES

The factory setting can be retrieved again.



LANGUAGE

The language selection of the OSD-menu.



EXIT

Close OSD window.

SAVING ENERGY

This monitor can be switched into various states of energy saving by the respective computer or operating system. This meets the current requirements for reduction of power consumption.

The monitor supports the following states of low energy consumption:

Status	Power consumption	Indicator	Standby
ON STAND-BY OFF	< 120 W < 5 W < 1 W	Green Orange OFF	- 10 Seconds

The monitor remains – depending on the operating system – in the state of low power consumption, until you press a button of the keyboard or move the mouse (if available). It takes less than 10 seconds for the monitor to switch from **standby mode** to normal operation.

TECHNICAL SPECIFICATION

Model	MD 1998 OF	
Screen size	19" (46 cm) diagonal, 18" (45.7 cm) visible screen	
Dot pitch	0.26 mm	
Dimensions	446 x 436 x 455 (mm)	
Video input	15-pol Sub-D connector	
Max. resolution	1600 x 1200	
Pixel frequency	202.5 MHz	
Synchronization	Horizontal: 30 to 98 kHz Vertical: 50 to 120 Hz	
Input signal	RGB – Video, analog synch., TTL separate	
Weight	40.78 lbs / 18.5 kg	
Power Source Operating voltage Frequency Nominal current Power consumption	Europe / USA/Canada ~ 200 to 240 V / 100 to 120 V 50 / 60 Hz max. 2.5 A max. 120 Watt	
	Operation	Storage
Temperature	+41°F – +95°F +5°C - +35°C	+32°F - +104°F 0°C - +40°C
Humidity*	10%-85%	5%-85%
Altitude (above sea level)	9.800 ft 3000 m	3.9000 ft 12.000 m
Regulations	meets TCO 99, CE, VDE	
* not condensing		
Specifications are subject to change without notice.		

CUSTOMER SERVICE

TROUBLESHOOTING

If your Monitor should have problems please check if it is properly installed and plugged according to the information given in the "Start-Up" section beginning on page 7. If the problems can not be solved read the following chapter for a possible solution.

FINDING THE PROBLEM

Many times, problems have simple causes. We would like to give you some tips to solve some common problems. Should these tips not help, please call us!

CHECK CABLES AND CONNECTIONS

Visibly check all cables and connections. Should all lights be off, check whether all equipment is supplied with power.

ERRORS AND POSSIBLE CAUSES

The monitor is blank:

Please check:

- ☐ Image refresh frequency. The current Image refresh frequency must be supported by the monitor.
- ☐ Energy Star mode. Press any key or move the mouse to deactivate the mode.
- ☐ Signal connector pins. If pins are bended or damaged, please contact customer service.
- ☐ Please set correct values supported by your monitor (see "Preparations on Your Computer", page 8).

Colors are displayed incorrect:

- ☐ Check the signal connector pins. If pins are bended or damaged, please contact customer service.
- ☐ Adjust the related settings (see chapter "Using the On-Screen-Menu", page 17).

- ☐ Avoid using signal extensions cords.

Picture is unstable or scrolling:

Please check:

- ☐ Signal connector pins. If pins are bended or damaged, please contact customer service.
- ☐ Video card. Are all settings correct?
- ☐ Image refresh frequency. Please choose values valid for your system.
- ☐ Please remove interfering devices (cordless phones, speaker boxes etc.) near your monitor.
- ☐ Avoid using signal extensions cords.

Characters look too dark, the picture is too small or too big, not centered etc.:

- ☐ Adjust the related settings (see chapter "Using the On-Screen-Menu", page 16)

DO YOU NEED ADDITIONAL HELP?

Should our suggestions not solve your problem, please contact our hotline. We will try to help you over the phone. However, before you contact our support center, it would be helpful to have the following information available:

- What is your computer configuration?
- What additional peripheral devices do you use?
- Which error messages are displayed?
- Which program(s) were active when the error occurred?
- What did you do so far to solve the problem?
- If you've received a customer number before, please refer to this number when you call.