

■ ***ELSA ECOMO™ 20LCD99***

User Manual

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Preface

Thank you for placing your trust in this ELSA product. With the *ECOMO 20LCD99* you have selected one of ELSA's high-end monitors. ELSA products are subject to the highest of standards in production and quality control which are the foundation for consistently high product quality. This monitor was especially designed for the demands of professional users, and distinguishes itself with an extraordinary degree of reliability.



If you have questions to the topics covered in this manual or require additional help, our online services are at your disposal around the clock. The complete range of support and services provided by ELSA can be found in the "Advice and Help" chapter.

In very urgent cases the ELSA Hotline can be reached under the following number:

+49-241-606-6135

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Introduction

In order to give you a quick overview, this chapter provides you with important operational advice and general information about your new LCD monitor.

Monitor Features

- The *ECOMO 20LCD99* is compatible with most analog RGB signals (red, green, blue). It displays text and graphics in conjunction with VGA, SVGA, XGA (non-interlaced) and the common Macintosh-compatible color graphics boards.
- Auto-Scanning is performed digitally by a microprocessor. The monitor automatically synchronizes itself to any horizontal frequencies between 31.0kHz and 80.5kHz and vertical frequencies between 30.0Hz and 85.0Hz. The micro-processor-based control mechanism allows the monitor to operate in any frequency mode with the precision of a fixed frequency monitor.
- In addition to the preprogrammed monitor display standards, the *ECOMO 20LCD99* also provides the option of saving user-specific settings for these and other timings.
- The *ECOMO 20LCD99* supports a maximum resolution of 1280 horizontal pixels by 1024 vertical lines on IBM-based systems. Therefore, it is ideal also for window-orientated user interfaces such as Windows.
- The *ECOMO 20LCD99* includes the DDC1 and DDC2B functions. DDC (Display Data Channel) is a transmission channel by which the monitor can automatically inform the computer of its capabilities (e.g. supported graphics modes with the corresponding timings). The system can only perform this function if both the monitor and the computer (the graphics board) are support with the DDC function.
- The *ECOMO 20LCD99* has a multilevel power save function which reduces power consumption when the monitor is not in use.

Operating Instructions

Setup and Operation

Please keep the following in mind when setting up and using the monitor:

- To avoid straining your eyes, do not place the monitor in front of a bright background or where sunlight or other light sources shine directly onto the monitor. To ensure the best ergonomical position, the monitor should be below eye-level.
- Do not cover the monitor's air vents. Make sure that there is sufficient ventilation so that heat from the monitor can properly dissipate.
- Avoid exposing the monitor to damp and dust as this can cause fire or electric shock hazard.
- Ensure that neither the monitor, nor any other heavy item is placed on the power supply cord. A damaged power supply cord can cause fire or short circuits.
- When transporting the monitor, handle it with care.
- Do not shake or scratch the monitor because it is fragile.

Cleaning the Monitor

Please follow these guidelines when cleaning the monitor:

- Always remove the power plug from the socket before cleaning.
- Clean the display and the casing with a soft cloth.
- If the monitor requires more than dusting, clean it with a mild cleaning solution and a soft cloth.



Do not clean the device with benzene, thinner or other volatile substances because the surface could get damaged. Never leave the monitor in contact with rubber or vinyl products for an extended time period.

CE Conformity and FCC Radiation Standard

CE

This equipment has been tested and found to comply with the limits of the European Council Directive on the approximation of the laws of the member states relating to electromagnetic compatibility (89/336/EEC) according to EN 55022 class B.

FCC

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the Federal Communications Commission (FCC) Rules.

CE and FCC

These limits are designed to provide reasonable protection against radio frequency interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. It may interfere with radio communications if not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception (this can be determined by turning this 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 distance between this equipment and the receiver.
- Connect the equipment to an outlet on a circuit other than that to which the receiver is connected.
- Consult your dealer or an experienced radio/TV technician.
- Caution: To comply with the limits for an FCC Class B computing device, always use the signal cable which is supplied to the *ECOMO 20LCD99*.

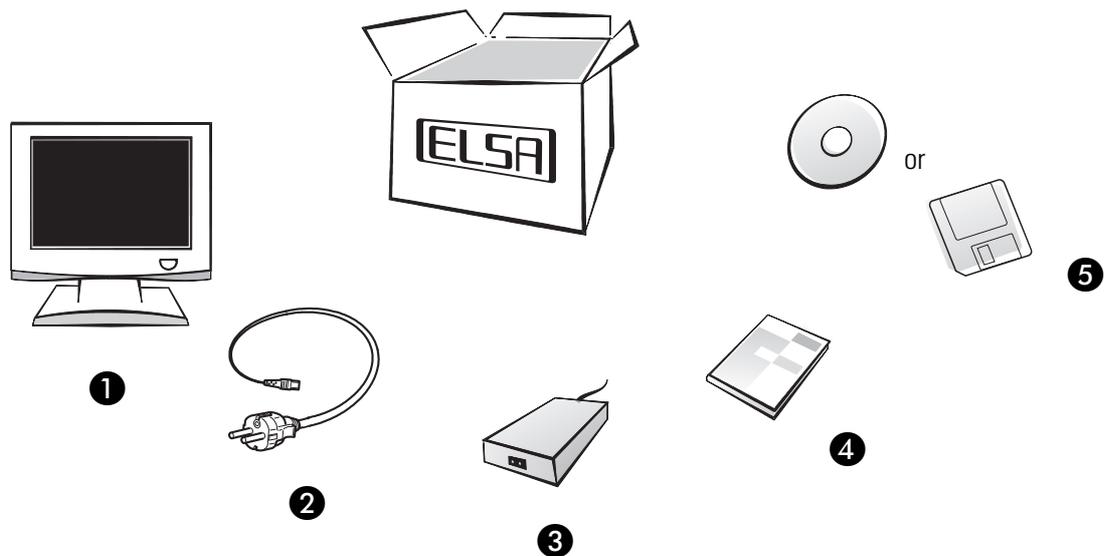


Caution to the user: The Federal Communications Commission warns the user that changes or modifications to the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Unpacking and Connecting

Is it all There?

Once you have unpacked the *ELSA ECOMO 20LCD99* you should check if anything is missing. The scope of supply includes:

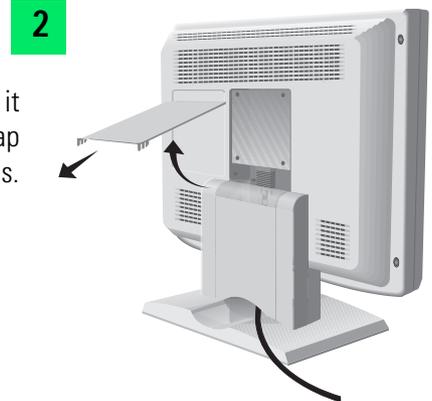


- ❶ Monitor *ELSA ECOMO 20LCD99*
- ❷ Power supply cord
- ❸ Power supply adapter
- ❹ User's Guide
- ❺ Data media

Cable Connections



1 Position the monitor so that you can view the rear of the device.

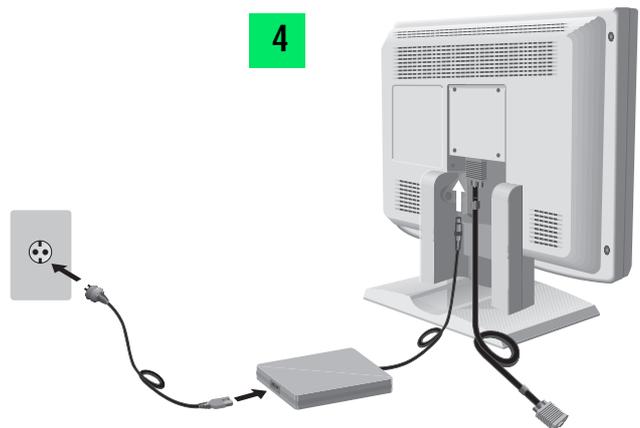


2 Release the upper flap, pull it upwards and remove the flap from its hinges.



3 Now remove the lower flap by slightly pressing it.

4 Connect the power supply cord with the power supply adapter and the power socket.



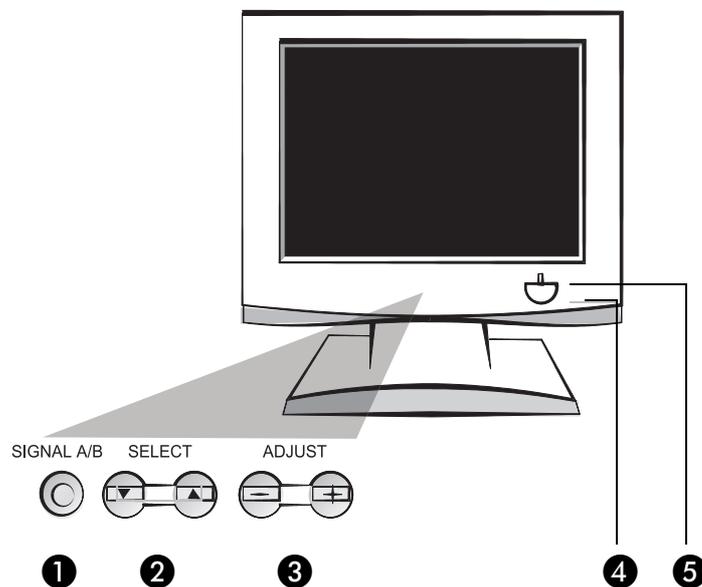
The monitor's power supply adapter remains active when the device is switched off. Therefore, the power socket should be close to the device and easily accessible. Do not use the power supply adapter for other devices as this can cause damage or fire!

Operating and Adjusting

Due to its LCD technology the *ECOMO 20LCD99* generates a geometrically perfect image that normally does not require correction after Auto-Setup (→page 11) has been run. If you wish to perform manual adjustments use the controls on the *ECOMO 20LCD99*.

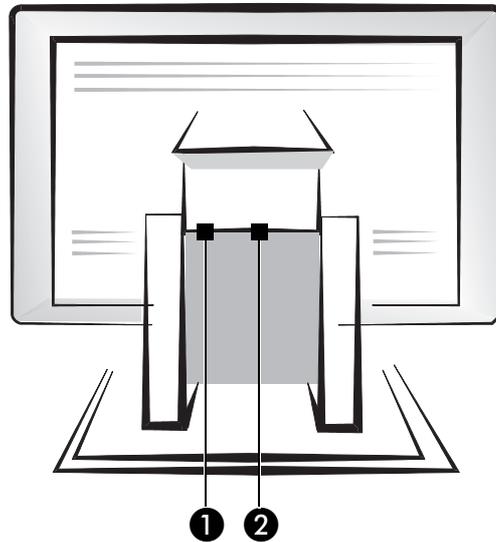
Controls on the Front

There is a row of keys on the front of your monitor with which you can perform the fine adjustment of the display in the OSD menu.



	Function
①	Signal A/B – Switch the signal input between two connected computers.
②	Select – You can select the individual positions on the OSD menu with these keys.
③	Adjust – You can modify the settings on the selected OSD menu page with these keys.
④	Power switch – Switches the monitor on and off.
⑤	Power indicator – This indicator lights up when the monitor is switched on.

The Connections at the Rear



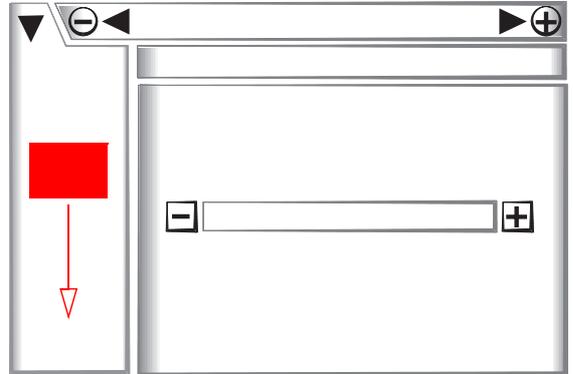
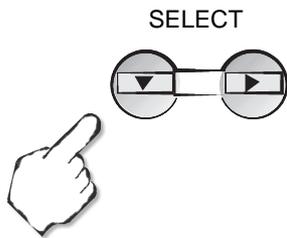
	Function
❶	Power socket – Plug the power supply cord in here.
❷	Graphics port 2 – Use this socket to connect the monitor to an additional connector.

The On Screen Display Menu

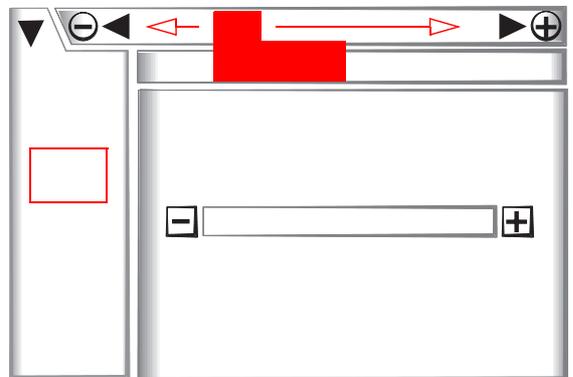
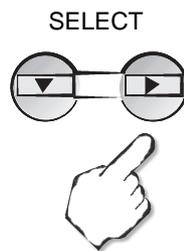
The On Screen Display menu— On Screen Display (OSD) menu – is a useful utility for the precise configuration and adjustment of the display on your monitor. If you press one of the SELECT keys on the monitor's keypad, the OSD menu will appear on the screen. Use the keys to access the individual menu pages within the OSD menu.

How to navigate the OSD

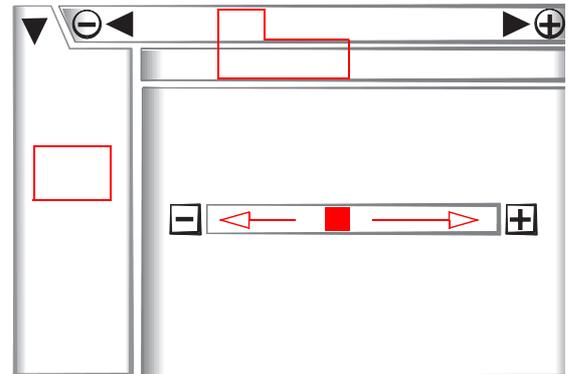
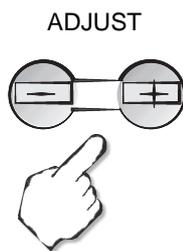
- ① Press one of the SELECT buttons to display the OSD screen.
- ② Select the group icon within the main menu by pressing the ▼ button.



- ③ Select the item within the sub menu by pressing the ► button.



- ④ Adjust values and functions by pressing the +/- buttons.



After ten seconds of inactivity, the OSD screen automatically disappears. Press the following button combination to switch the OSD off immediately.



Registration and Configuration

You learnt how to operate the keypad and the On Screen Display menu on page 8, 'The On Screen Display Menu'. This chapter will explain how you should continue.

Registration with the Operating System

The monitor can be registered with some operating systems. The advantage is that the system can be supplied with the monitor's particulars, thereby enabling an optimum interaction between the computer system and the monitor.

Registration under Windows 95 and Windows 98

After you connect the monitor and start Windows the system normally detects the new device and requests the manufacturer's driver diskette. Place the enclosed diskette in the disk drive and follow the instructions in the Windows dialog boxes. Select the diskette drive where the corresponding information file (INF) for the *ECOMO 20LCD99* is located.



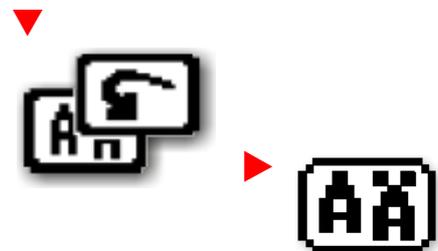
If the monitor is not recognized or an error message is displayed, switch the computer off. Let Windows boot in 'Safe Mode'. Refer to your graphics board's manual for instructions on configuring the system settings for your graphics board.

Adjusting the Display

Because different graphics boards have different signal characteristics it is usually necessary to adjust the display settings. The *ECOMO 20LCD99* has an auto setup function so that you do not have to bother about the adaption of the picture. This function can be called within the OSD menu.

Language

The *ECOMO 20LCD99* can display its on-screen menus in a variety of languages. To change the language used for the on-screen menu, simply call up the menu page illustrated here and select the language you want.



Overview of all pages

The following overview has been drawn up to help you navigate your way through the nine menu pages and their contents.

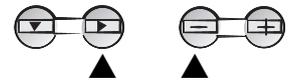
Group Icon	Symbol	Function	Key '-'	Key '+'	
		Brightness	To decrease the brightness	To increase the brightness	
		Contrast	To decrease the contrast	To increase the contrast	
		Black Level	To be deep of black color.	To be light of black color.	
		Color	STANDARD: To set the color to the factory standard.	CUSTOM: To adjust to favorite COLOR	
		Color temperature	To decrease the color temperature	To increase the color temperature	
		Clock	To narrow the width of the image on the screen to the left.	To expand the width of the image on the screen to the right.	
		Clock phase	To change the snow noise of the image		
		Horizontal Position	To move the image to the left.	To move the image to the right.	
		Vertical Position	To move the image down.	To move the image up.	
		H-Resolution	To narrow the width of the image on the screen.	To expand the width of the image on the screen.	
		V-Resolution	To narrow the height of the image on the screen.	To expand the height of the image on the screen.	
			Auto Setup	–	To conduct Auto Setup.
		Auto adjust	To switch off the auto adjust function.	To turn on the auto adjust function.	
		Display mode	To display by TEXT mode.	To display by GRAPHIC mode.	
		Full screen	To off the fullscreen mode.	To on the fullscreen mode.	
		Auto select	To off the auto select function.	To on the auto select function.	
			All reset	–	To restore to the factory preset mode.

Group Icon	Symbol	Function	Key '-'	Key '+'
		OSD position	To move the OSD position for 5 places.	
		Power safe	To select the constant power mode.	To select the power save mode.
		Language	To choose the language used on OSD. ENG...English, DEU...German, ESP...Spanish FRA...French, ITA...Italian, JPN...Japanese	

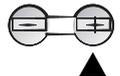
Locking the On Screen Display menu

You can block access to the pages of the OSD menu. You can then only regulate the brightness of the monitor display.

To remove the lock, press the minus key first and then one of the SELECT or ADJUST keys. When the OSD menu is removed from the display, you can access the CONTROL-LOCK page again and remove the lock by pressing the minus key.



Press both these keys simultaneously to access the 'CONTROL LOCK' page.



Then press the '+' key to lock the OSD menu.

Technical Data

LCD monitor	Monitor	38cm / 18,1"
	Display area	359.0mm x 287.2mm
	Panel	Active matrix
	Resolution	1280 pixels x 1024 lines
	Pixel pitch	0.2805mm
	Color depth	64 per color
	Color filters	R, G, B vertical stripe type
	Face finish	anti-reflective, antistatic coating
	Viewing angle	approx. 140° horizontal, 110° vertical
Input signal	Video	0.7V RGB analog
	Synchronization	2.5 – 5,0V separate horizontal/vertical synchronization
	Input impedance	75Ω (video) 1 kΩ (sync)
Frequency range	Horizontal: 31.0 – 80.5kHz, vertical: 30.0 – 85.0Hz	
Brightness	200cd/m ² for full white video signal, contrast ratio 300:1 (typ.)	
Input connector	Integrated cable connection with VGA D-Sub connector, 15-pin and an additional plug for VGA D-Sub connector, 15-pin.	
Voltage	Power plug, AC 100–120V/220-240V ±10%, 50-60Hz, 55W (max.)	
Operating conditions	Temperature	5° – 35°C
	Humidity	10 – 90% relative humidity
Cabinet	460 x 481 x 220mm (width x height x depth)	
Weight	approx. 9kg, excluding power supply and connection cords	
Tilt base	Tilt angle	-5° – +35°
Approvals/	Safety (CE)	EN 60950 (TÜV GS), IEC 950, UL 1950 (UL), CSA C22.2 No.950 (C-UL)
	Regulations	EMV (CE/FCC)
	Others	TCO '99 VESA DPMS EPA Energy Star * MPR-II CE logo ISO 9241-3, ISO 9241-8 (TÜV Ergonomics approved) ZH1/618 (TÜV/GS) NUTEK Spec. 803299/94

* As an Energy Star Partner, ELSA AG has determined that this product meets the Energy Star guidelines for energy efficiency.

The Power Save Function

The *ECOMO 20LCD99* corresponds to the VESA and EPA Energy Star guidelines and the strict NUTEK requirements. If the monitor is connected to a graphics board that meets the VESA DPMS requirements the *ECOMO 20LCD99* automatically reduces power consumption to three levels. The power save function must be enabled by means of the OSD menu (→page 17).

The following table provides an overview:

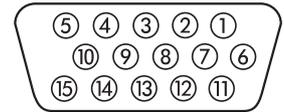
Mode	Synchronization signal		Reactivation	Power indicator (ratio)
	Horizontal	Vertical		
Standby	no	yes	immediate	On/Off (3:1)
Suspend	yes	no	approx. 3seconds	On/Off (3:1)
Power Off	no	no	approx. 3seconds	On/Off (3:1)

Factory Default Settings

To minimize the user's configuration effort, some display standards were already preset by the factory. If the monitor detects one of these standards, the position and size of the display will be adjusted automatically. Up to 15 more timings can be saved in addition to the factory-set timings (PRESET). To be recognized as a new timing, a video signal must differ from all timings already saved in terms of horizontal frequency by a minimum of 1 KHz, vertical frequency by a minimum of 5Hz or synchronization signal polarity.

Preset timing	Horizontal frequency (kHz)	Vertical frequency (Hz)	Polarity	
			H	V
640 x 480	35,0	66,7	-	-
832 x 624	49,7	74,6	-	-
1152 x 870	68,7	75,0	-	-
640 x 350	31,4	70,0	+	-
640 x 480	31,5	59,9	-	-
640 x 480	37,5	75,0	-	-
640 x 480	43,3	85,0	-	-
800 x 600	35,1	56,0	+	+
800 x 600	37,9	60,3	+	+
800 x 800	48,1	72,2	+	+
800 x 600	46,9	75,0	+	+
800 x 600	53,7	85,0	+	+
1024 x 768	48,4	60,0	-	-
1024 x 768	56,5	70,1	-	-
1024 x 768	58,1	72,1	-	-
1024 x 768	60,2	75,0	+	+
1024 x 768	68,7	85,0	+	+
1280 x 1024	64,0	60,0	-	-
1280 x 1024	80,0	75,0	+	+

The VGA-D-Sub Socket

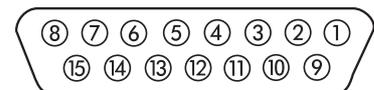


Pin Assignments

Pin	Signal	Pin	Signal
1	red	9	+5V
2	green	10	Sync ground
3	blue	11	ground
4	ground	12	bi-directional data (SDA, DDC1/2B)
5	DDC ground	13	horizontal synchronization
6	red ground	14	vertical synchronization
7	green ground	15	Data clocking rate (SCL, DDC2B)
8	blue ground		

The *ECOMO 20LCD99* produces analog signals according to the RS-170 regulation. Synchronization information is transmitted separately.

Graphics connector of the Apple-Macintosh computer



Pin assignments

Pin	Signal	Pin	Signal
1	Ground RED	9	Video BLUE
2	Video RED	10	Sense 2
3	C-Sync	11	C & V Sync. ground
4	Sense 0	12	V-Sync.
5	Video GREEN (mono video)	13	Ground BLUE
6	Ground GREEN	14	H-Sync. ground
7	Sense 1	15	H-Sync.
8	unused		

H-Sync. = line frequency, V-Sync. = refresh frequency

Troubleshooting

Before you refer to ELSA support please check the connections and settings below.

Problem		Check	What should I do?
No picture	LED on	Are contrast and brightness set to minimum levels?	Increase brightness and contrast values or press the reset button
	LED off	– Is the power switch on? – Is the power supply cord correctly connected?	Check indicator on front of device and power supply cord connection
	LED blinking	– Is the video signal cable connected? – Is the computer switched on?	Check display on front of device and power supply cord connection
Abnormal display	Unstable display	Is the input signal frequency outside the permissible range?	Check specifications of the graphics board and the monitor.
	Flickering	Perform the Auto-Setup function You can use the test picture on the floppy disk, which enables you to easily proof the picture adjustments.	Check the individual pages in the On Screen Display menu.
	The diskette cannot be read	Is PC Exchange installed on your Macintosh?	Installing PC Exchange

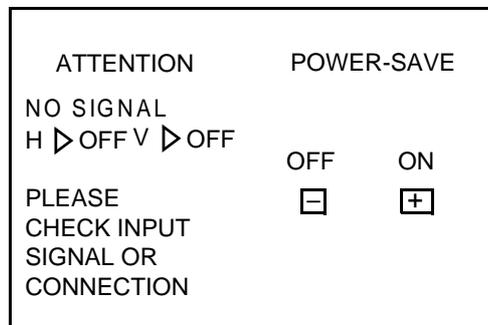
Messages on Display

If the monitor detects no synchronization signal, an incorrect input connection or an input frequency outside its frequency range, the following warnings will be displayed on the display.

In such a case please check the connections of the video signal cable and the settings of your graphics board. These should lie within the permissible ranges.

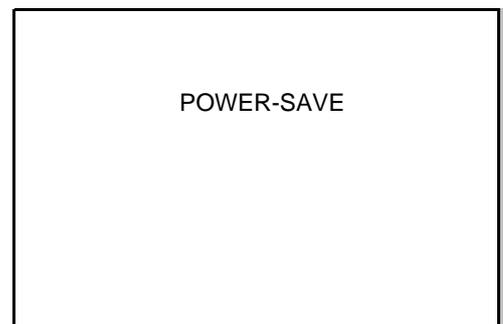
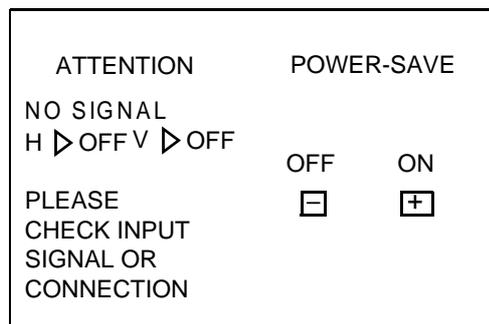
POWER-SAVE Function is 'Off'

If the POWER-SAVE function is off and there is no synchronization signal, the following message is displayed:



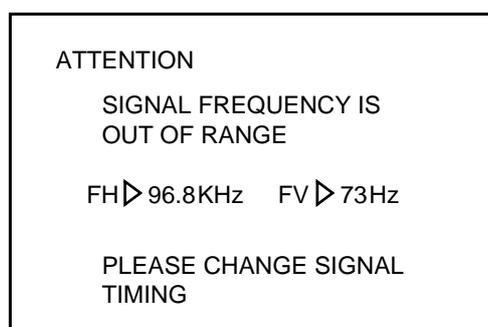
POWER-SAVE Function is 'On'

The first message is displayed if you press any key while the POWER-SAVE function is active. The second message is displayed two seconds before the POWER-SAVE function is activated.



POWER-SAVE Function either 'On' or 'Off'

If the signal frequency is outside the possible range the following message is displayed:



Appendix



TCO '99

Congratulations! You have just purchased a TCO'99 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also to the further development of environmentally adapted electronics products.

Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during their manufacture. Since it is not so far possible to satisfactorily recycle the majority of electronics equipment, most of these potentially damaging substances sooner or later enter nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (internal) and natural (external) environments. Since all methods of electricity generation have a negative effect on the environment (e.g. acidic and climate-influencing emissions, radioactive waste), it is vital to save energy. Electronics equipment in offices is often left running continuously and thereby consumes a lot of energy.

What does labelling involve?

This product meets the requirements for the TCO'99 scheme which provides for international and environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation) and Statens Energimyndighet (The Swedish National Energy Administration).

Approval requirements cover a wide range of issues: environment, ergonomics, usability, emission of electric and magnetic fields, energy consumption and electrical and fire safety.

The environmental demands impose restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons) and chlorinated solvents, among other things. The product must be prepared for recycling and the manufacturer is obliged to have an environmental policy which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, physical and visual ergonomics and good usability.

Below you will find a brief summary of the environmental requirements met by this product. The complete environmental criteria document may be ordered from:

- TCO Development
SE-114 94 Stockholm, Sweden
Fax: +46 8 782 92 07
Email (Internet): development@tco.se

Current information regarding TCO'99 approved and labelled products may also be obtained via the Internet, using the address:

- <http://www.tco-info.com/>

Environmental requirements

Flame retardants Flame retardants are present in printed circuit boards, cables, wires, casings and housings. Their purpose is to prevent, or at least to delay the spread of fire. Up to 30% of the plastic in a computer casing can consist of flame retardant substances. Most flame retardants contain bromine or chloride, and those flame retardants are chemically related to another group of environmental toxins, PCBs. Both the flame retardants containing bromine or chloride and the PCBs are suspected of giving rise to severe health effects, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative* processes. Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.

The relevant TCO'99 demand requires that plastic components weighing more than 25 grams must not contain flame retardants with organically bound bromine or chlorine. Flame retardants are allowed in the printed circuit boards since no substitutes are available.

Cadmium* * Cadmium is present in rechargeable batteries and in the color-generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses. The relevant TCO'99 requirement states that batteries, the color-generating layers of display screens and the electrical or electronics components must not contain any cadmium.

Mercury* * Mercury is sometimes found in batteries, relays and switches. It damages the nervous system and is toxic in high doses. The relevant TCO'99 requirement states

that batteries may not contain any mercury. It also demands that mercury is not present in any of the electrical or electronics components associated with the labelled unit.

CFCs (freons) The relevant TCO'99 requirement states that neither CFCs nor HCFCs may be used during the manufacture and assembly of the product. CFCs (freons) are sometimes used for washing printed circuit boards. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on earth of ultraviolet light with e.g. increased risks of skin cancer (malignant melanoma) as a consequence.

Lead* * Lead can be found in picture tubes, display screens, solders and capacitors. Lead damages the nervous system and in higher doses, causes lead poisoning. The relevant TCO'99 requirement permits the inclusion of lead since no replacement has yet been developed.

* Bio-accumulative is defined as substances which accumulate within living organisms

** Lead, cadmium and mercury are heavy metals which are bio-accumulative.

ELSA-ServiceDirect for *ELSA ECOMO*[™] Monitors

3-Year Warranty Including ELSA-Onsite

As of the purchase date 01.01.1998, ELSA grants a three-year warranty on *ELSA ECOMO*¹ monitors including ELSA-ServiceDirect. ELSA strives to offer its customers top product quality with its extensive quality assurance measures. If, however, the customer makes a complaint, this service program guarantees perfect support and repair procedures to minimize any inconvenience. As well as repairs carried out free of charge, the following ServiceDirect services are offered within the extended scope of the warranty.

ELSA-Onsite: 3 years of onsite service for ELSA monitors—free of charge

You can avail of the numerous advantages of our onsite services for *ELSA ECOMO* monitors throughout Europe². If you discover a fault with your monitor, you first contact our support team. If your monitor requires repairs within the warranty period of three years, you are provided with a replacement unit within 24 hours³ which we deliver to your workplace. Your repaired monitor will be returned to you as soon as possible. The advantage of this offer is that you have no downtime or transport expenses. ELSA's customer service ensures that all transporting procedures are dealt with in the correct manner.

Your direct contact partner at ELSA-ServiceDirect

As an ELSA customer, you will receive support and advice from ELSA's customer service at all stages of the warranty services being carried out.

The ELSA support hotline is the first number to dial if you discover a malfunction or fault on your monitor.

If you have general questions on ServiceDirect, on the progress of repair work, contact the ELSA service hotline.

ELSA Monitor Support Hotline
+49-(0)241-606-6135

ELSA Service Hotline
+49-(0)241-606-5112

1) Applies to all *ELSA ECOMO* monitors purchased after January 1, 1998.

2) For *ELSA ECOMO 21H97*, a 4 week DoA warranty is granted outside of Germany instead.

3) Provided that the complete documentation reaches the ELSA support team by 11.00 a.m. by mail or directly via the computer graphics faxline—Tel.: +49-(0)241-606-6399. Please note that warranty services are only granted for faults which are covered within the framework of our General Terms of Warranty, valid for the Federal Republic of Germany (refer to our Internet site: www.elsa.com).

If the ELSA service cannot find fault with the unit claimed to be defective, we will invoice you for DM 200 plus V.A.T. to cover inspection costs and replacement of the unit.

Warranty conditions

The ELSA AG warranty, valid as of June 01, 1998, is given to purchasers of ELSA products in addition to the warranty conditions provided by law and in accordance with the following conditions:

1 Warranty coverage

- a) The warranty covers the equipment delivered and all its parts. Parts will, at our sole discretion, be replaced or repaired free of charge if, despite proven proper handling and adherence to the operating instructions, these parts became defective due to fabrication and/or material defects. Also we reserve the right to replace the defective product by a successor product or repay the original purchase price to the buyer in exchange to the defective product. Operating manuals and possibly supplied software are excluded from the warranty.
- b) Material and service charges shall be covered by us, but not shipping and handling costs involved in transport from the buyer to the service station and/or to us.
- c) Replaced parts become property of ELSA.
- d) ELSA are authorized to carry out technical changes (e.g. firmware updates) beyond repair and replacement of defective parts in order to bring the equipment up to the current technical state. This does not result in any additional charge for the customer. A legal claim to this service does not exist.

2 Warranty period

The warranty period for ELSA products is six years. Excepted from this warranty period are ELSA color monitors and ELSA videoconferencing systems with a warranty period of 3 years. This period begins at the day of delivery from the ELSA dealer. Warranty services do not result in an extension of the warranty period nor do they initiate a new warranty period. The warranty period for installed replacement parts ends with the warranty period of the device as a whole.

3 Warranty procedure

- a) If defects appear during the warranty period, the warranty claims must be made immediately, at the latest within a period of 7 days.
- b) In the case of any externally visible damage arising from transport (e.g. damage to the housing), the transport company representative and ELSA should be informed immediately. On discovery of damage which is not externally visible, the transport company and ELSA are to be immediately informed in writing, at the latest within 7 days of delivery.
- c) Transport to and from the location where the warranty claim is accepted and/or the repaired device is exchanged, is at the purchaser's own risk and cost.
- d) Warranty claims are only valid if the original purchase receipt is returned with the device.

4 Suspension of the warranty

All warranty claims will be deemed invalid

- a) if the device is damaged or destroyed as a result of acts of nature or by environmental influences (moisture, electric shock, dust, etc.),
- b) if the device was stored or operated under conditions not in compliance with the technical specifications,

- c) if the damage occurred due to incorrect handling, especially to non-observance of the system description and the operating instructions,
- d) if the device was opened, repaired or modified by persons not authorized by ELSA,
- e) if the device shows any kind of mechanical damage,
- f) if in the case of an ELSA Monitor, damage to the cathode ray tube (CRT) has been caused especially by mechanical load (e.g. from shock to the pitch mask assembly or damage to the glass tube), by strong magnetic fields near the CRT (colored dots on the screen), or through the permanent display of an unchanging image (phosphor burnt),
- g) if, and in as far as, the luminance of the TFT panel backlighting gradually decreases with time, or
- h) if the warranty claim has not been reported in accordance with 3a) or 3b).

5 Operating mistakes

If it becomes apparent that the reported malfunction of the device has been caused by unsuitable software, hardware, installation or operation, ELSA reserves the right to charge the purchaser for the resulting testing costs.

6 Additional regulations

- a) The above conditions define the complete scope of ELSA's legal liability.
- b) The warranty gives no entitlement to additional claims, such as any refund in full or in part. Compensation claims, regardless of the legal basis, are excluded. This does not apply if e.g. injury to persons or damage to private property are specifically covered by the product liability law, or in cases of intentional act or culpable negligence.
- c) Claims for compensation of lost profits, indirect or consequential detriments, are excluded.
- d) ELSA is not liable for lost data or retrieval of lost data in cases of slight and ordinary negligence.
- e) In the case that the intentional or culpable negligence of ELSA employees has caused a loss of data, ELSA will be liable for those costs typical to the recovery of data where periodic security data backups have been made.
- f) The warranty is valid only for the first purchaser and is not transferable.
- g) The court of jurisdiction is located in Aachen, Germany in the case that the purchaser is a merchant. If the purchaser does not have a court of jurisdiction in the Federal Republic of Germany or if he moves his domicile out of Germany after conclusion of the contract, ELSA's court of jurisdiction applies. This is also applicable if the purchaser's domicile is not known at the time of institution of proceedings.
- h) The law of the Federal Republic of Germany is applicable. The UN commercial law does not apply to dealings between ELSA and the purchaser.