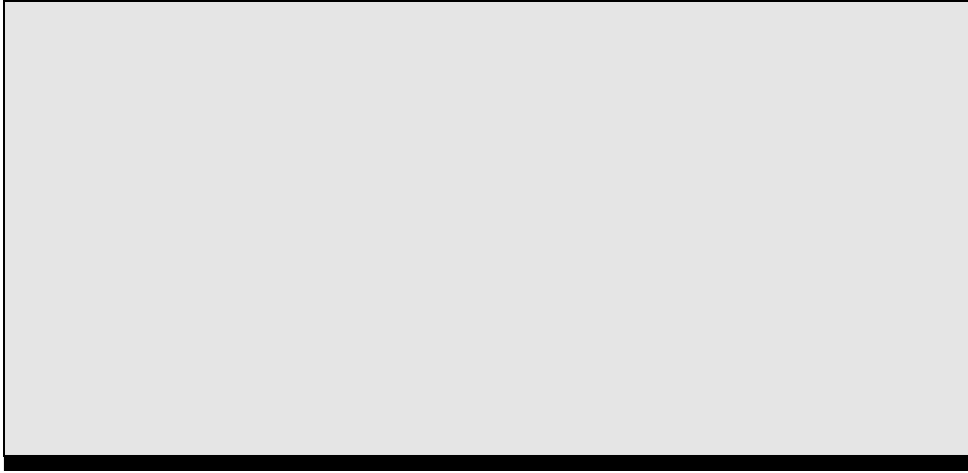


WINCOR
NIXDORF



BA72R

12" TFT LCD Monitor

Operating Manual

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12" TFT LCD Monitor

Operating Manual

Edition Oct 2009

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Manufacturer's Declaration and Approval

General Authorization



This device fulfills the requirements of Electromagnetic Compatibility (EEC) standards, 2004/108/EC and 2006/95/EC "Low Voltage Directive". Therefore, you will find the CE mark on the device or packaging.

FCC-Class A Declaration

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Modifications not authorized by the manufacturer may void users authority to operate this device.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NBM-003 du Canada.

Tested Safety



The BA72R has been awarded the GS symbol for "Geprüfte Sicherheit" (test safety). BA72R fulfills the requirements for ergonomics according to ISO13406-2



Additionally, the BA72R has also been awarded to cUL- and UL-symbol.

User Information

Wincor Nixdorf (WN) does not accept responsibility for radio and TV interference and faults that are caused by unauthorized changes that have been made to the devices. Furthermore, cables or other devices that have not been approved by WN may not be connected to the device. The user is responsible for any faults and interference that are caused as a result.



Repair work on the devices should only be carried out by authorized and specially trained personnel. Improper repairs will lead to the loss of any guarantee and liability claims.

Extension boards with electrostatically endangered components can be identified with this label.



If this monitor is to be used for office tasks, it's required a specially controlled luminous environment.

Safety Instructions

This device conforms to the corresponding safety regulations for information technology devices, including electronic office machines for use in the office environment.

- ❑ If the device is moved from a cold environment to a warmer room where it is to be operated, condensation could occur. The device must be completely dry before being put into operation. Therefore an acclimatization time of at least two hours should be accounted for.
- ❑ Lay all cables and supply lines so that nobody can tread on them or trip over them.
- ❑ Data cables should neither be connected nor removed during electrical storms.
- ❑ Protect the device from vibrations, dust, moisture and heat, and only transport the device in its original packaging (to protect it against impact and blows).
- ❑ Take care to ensure that no foreign objects (e.g. paper clips) or liquids can get into the inside of the device, as this could cause electrical shocks or short circuits.
- ❑ In case of emergencies (e.g. damaged housing, liquid or foreign objects getting into the device), the device should be switched off immediately, the mains plug of the BEETLE or PC should be removed, and the Wincor Nixdorf customer service should be contacted.
- ❑ If the LCD display element is broken and the liquid crystal solution leaks out of the display and onto your hands, clothing etc, wash your hands or clothing immediately with soap or alcohol, holding them under running water for at least 15 minutes. If the liquid comes into contact with your eyes, please consult a doctor immediately.
- ❑ Generally you should connect IT-devices only to power supply systems with separately guided protective earth conductor (PE), known as TN-S networks. **Do not use PEN conductors!** Please also observe the recommendations of the norm DIN VDE 0100, part 540, Appendix C2, as well as EN50174-2, §5.4.3.

Instructions for Maintenance

Clean your BA72R regularly with an appropriate surface cleaning product. Make sure that the device is switched off, connector cables are unplugged and that no moisture is allowed to get into the inside of the device.

Please observe the maintenance and cleaning instructions for each of the BA72R components. These instructions can be found in their respective chapters.

Warranty

Wincor Nixdorf guarantees a limited warranty engagement for 12 months beginning with the date of delivery. This warranty engagement covers all those damages that occur despite a normal use of the product.

Damages because of

- improper or insufficient maintenance,
- improper use of the product or unauthorized modifications of the product,
- inadequate location or surroundings

will not be covered by the warranty. All parts of the product which are subject to wear and tear (e.g. backlight of the LED) are not included in the warranty engagement. Please order spare parts at the Wincor Nixdorf customer service.

Recycling

Environmental protection does not begin when the time has come to dispose of the BA72R; it begins with the manufacturer. This product was designed according to our internal norm "Environmental conscious product design and development".

The BA72R is manufactured without the use of CFCs and CCHS and is produced mainly from reusable components and materials. The processed plastics can, for the most part, be recycled. Even the precious metals can be recovered, thus saving energy and costly raw materials.

Please do not stick labels onto plastic case parts. This would help us to re-use components and material. You can protect our environment by only switching on your equipment when it is actually needed. If possible, even avoid the stand-by-mode as this wastes energy, too. Also switch your equipment off when you take a longer break or finish your work.

Currently at present, there are still some parts that are not reusable. Wincor Nixdorf guarantees the environmentally safe disposal of these parts in a Recycling Center, which is certified pursuant to ISO 9001.

So don't simply throw your BA72R on the scrap heap when it has served its time, but take advantage of the environmentally smart up-to-date recycling methods!

Please contact your competent branch or the Recycling Centre Paderborn (for European countries) for information on how to return and re-use devices and disposable materials under the following fax number:

Fax. +49 (0) 5251 8- 26709

Or send us an email to:

referat.umweltschutz@wincor-nixdorf.com

We look forward for your fax or message.

Introduction

The BA72R is a new addition to our range of flat-panel display. This display features a standard analog RGB interface allowing connection to PC's CRT output. There is no need to add a digital graphics adapter. Using the BA72R provides you with a terminal-orientated, ergonomic and customer-friendly cashier's workplace. The BA72R can also be optionally equipped with a Touch Screen.

The display can be applied in all trade market segments like specialist retailers, departmental stores, self-service stores, petrol stations or in restaurants. There is indeed a great deal of scope for implementing a BA72R.

They can be used, for example, as:

- an ordering terminal
- an information terminal
- a lottery terminal
- a point-of-sale terminal
- a training terminal.

The low-energy, flicker-free and low radiation colour monitor of the BA72R is an Active-Matrix-Display in TFT-technology (Thin Film Transistor). Therefore, it is especially suited for multimedia applications as it offers brilliant colour representation, a better contrast ratio and a high display speed.

The screens can be installed directly on the cashier's desk or fastened to a tubular stand. Furthermore, they can also be set up on the central unit of a modular BEETLE system.

Advantages at a Glance

- low footprint
- ergonomic terminal workplace
- key to customer service
- basis for animation and multimedia
- flicker-free and low radiation
- high resolution
- high brightness
- very good contrast ratio
- high brilliant colours (up to 16 millions)
- wider viewing angle (less glare through crosslight)

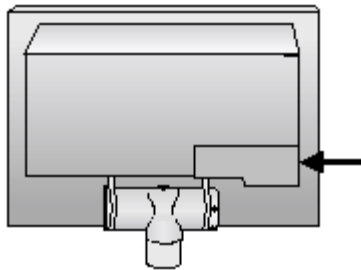
Unpacking and checking the Delivery Unit

Unpack the parts and check to see whether the delivery matches the information on the delivery note. The delivery comprises of the respective screen module. Controllers and data cables, necessary for operation, can be ordered separately. If damage has occurred during shipping or if the package contents do not match the delivery note, promptly inform your Wincor Nixdorf sales outlet. Transport the device only in its original packaging (to protect it against impact and shock).

BA72R Components

Screen Module

The screen module represents the main unit of the BA72R. It comprises of a TFT-LCD colour screen, the auto-scaling display Controller and an inverter that generates the voltage for backlighting the screen. As an option the screens are available with Touch Screen.



Remove the cable cover by pushing it in the direction of arrow (see picture) and then taking it off upwards.

Back of the screen

The TFT LCD flat screen is an SVGA 12.1" that is flicker-free and free of radiation and has only a low heat emission. The BA72R has a native resolution of 800 x 600, but it features high-quality advanced auto-scaling display controllers that allow scaling from VGA to SVGA.

WARNING:

If the display element is damaged and the liquid crystal solution leaks out onto your hands or clothing, please wash your hands or clothing immediately under running water for at least 15 minutes, using soap or alcohol. If the liquid comes into contact with your eyes, consult a medical doctor immediately.

Power adapter and power cord

If the AC power adapter and power cord are not provided with the display, user has to ensure that a certified AC power adapter and power cord are used as required by the Safety Regulation of the country. The power requirement of the display is shown under the section "Display Specification". Please refer to this when selecting a suitable AC power Adapter.

Countries	Safety Approvals
USA	UL
Canada	CSA
Germany	VDE
Japan	PSE
Taiwan	BSMI
China	CCC

For other countries not mentioned in the above list, please check with the local authority.

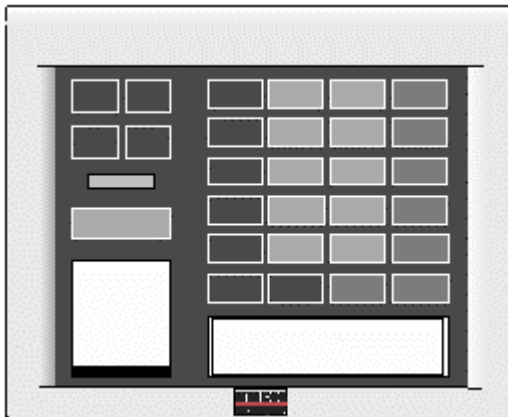
Cables

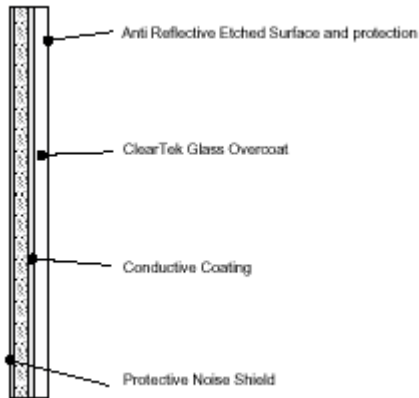
- Standard VGA cable, 1.8m
- Touch Cable, 1.8m (option)

Capacitive Touch Screen (Option)

General

The TFT Touch Screen works according to the principle of a change in analog capacitance. It has a glass screen with a transparent, thin-film overlay on the surface. This is fully sealed and protected by a further layer of clear glass. Electrodes on the edges of the screen provide a uniform low-voltage field. As soon as you touch the screen with your finger the contact point is "recognized" by the change in capacitance. Because this takes place very quickly - 15 milliseconds after being touched - the Touch Screen is optimally equipped for a number of different requirements and applications.





The programming interface of the screen is identical to the mouse interface.

Touch Screen and Sleep Mode

Using the Touch Screen with a BEETLE Pentium CPU, an entry via touch during sleep mode may lead to a faulty input. During sleep mode nothing can be read from the LCD flat screen. Entries via touching the screen will still be processed by the system, but without the system “waking up”.



For these reasons it is not recommended to set the sleep mode. For details please read the chapter “BIOS Setup” in the BEETLE User Guide.

How to Operate

The Touch Screen responds to the slightest contact, therefore you do not have to apply much pressure when working with the screen. This not only saves time, but is also kind to your joints! Touching the touch glass has the same effect as clicking the left mouse button. You need only apply a little pressure with the fingertip. In this capacitive process only fingertip contact is recognized. The screen does not re-act in any way if touched, for example, with a pencil or a glove.

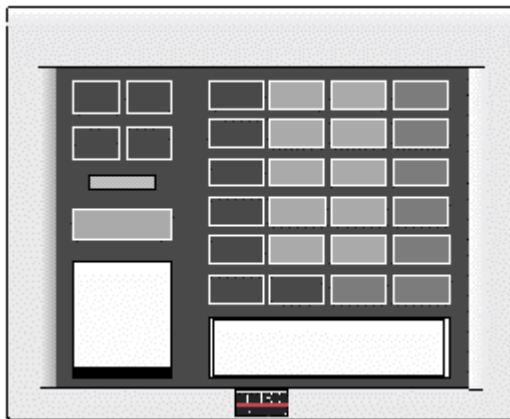
Cleaning Instructions

The glass surface should be cleaned from time to time. Always turn off the system before cleaning. The glass surface of your Touch Screen should be cleaned with a mild, commercially available glass cleaning product without any scrubbing material. All pH neutral materials (pH 6 to 8) are good for cleaning. Cleaners with pH values 9 to 10 are not recommended. Cleaning with water and isopropyl alcohol is as well possible. Do not use solvents containing acetic acid. Use a soft, fine-meshed cloth to clean the surface. Dampen the cloth slightly and then clean the screen.

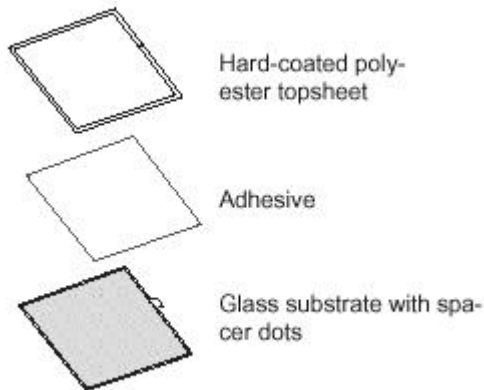
Resistive Touch Screen (Option)

General

The resistive TFT Touch Screen is constructed of a hard-coated polyester top sheet that is overlaid on a conductively coated glass layer. Voltage is applied to the top sheet. As the user touches the screen, the top sheet compresses into contact with the glass layer, and current flows to the four corners in proportion to the distance from the edge. The controller then calculates the position of the finger or stylus, based on the current flow. Because the controller derives both the "X" and "Y" touch coordinates from the stable glass layer, the accuracy and operation of the touch screen is unaffected by damage to the top sheet caused by extended use or neglect.



Construction of the resistive Touch screen



How to Operate

Touching the touch screen has the same effect as clicking the left mouse button. You only need to apply a little pressure with the fingertip. In this resistive process not only fingertip contact is recognized. The screen does react in any way if touched, for example, with a stylus. The recommended **material for a stylus** is polyacetal. The stylus should have a minimum spherical radius of 0.8 mm and contain no sharp edges or burrs that may cause damage to the top sheet.

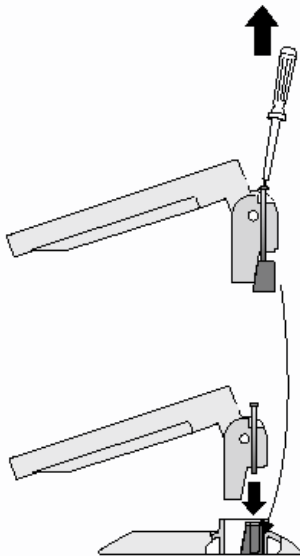
Cleaning Instructions

Always **turn off the system** before cleaning. The surface of your Touch Screen should be cleaned with a water-based solvent or a non-abrasive cleaner. Do not use solvents containing acetic acid or methylene chloride. Use a soft, fine-meshed cloth to clean the surface. Dampen the cloth slightly and then clean the screen.

Installation and Securing the Screen into Place

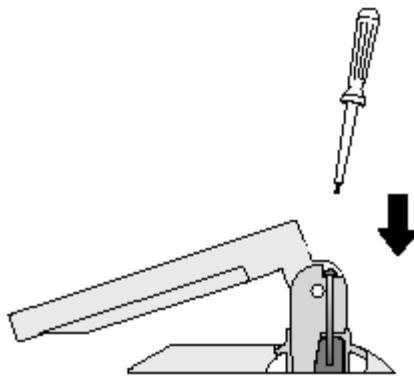
The screens can be installed either with or without attached operating elements, as a table-top terminal or on a tubular stand.

Installing the BA72R (Table Top version)



Remove the footed stand and screen element from the cardboard packaging. Tilt the screen backwards. Turn the fastening screw on the screen with a cross-tip screw-driver until the connecting part is loosened. Then insert it into the footed stand. Insert the joint of the screen element into the footed stand.

Insert the joint of the screen element into the footed stand.

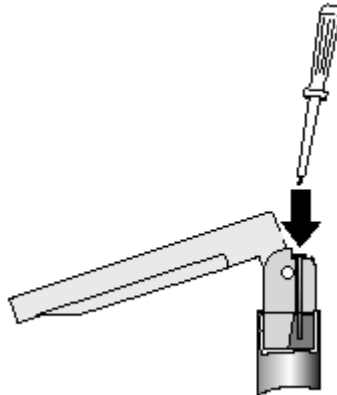


Now fasten the screw on the footed stand into place again using the crosstip screwdriver. Ensure that the screw is in the correct position.

Ensure that the screw is in the correct position.

Securing the screens (Tubular Stand Version)

The system has been designed for securing into place on a tubular stand, with a tube with $35.2 \pm 0.2\text{mm}$ inner diameter. The tube length can be varied. The tube on which the system is secured is not included in the scope of delivery. Below, you will find assembly instructions on how to attach the screen to the mounting stand.



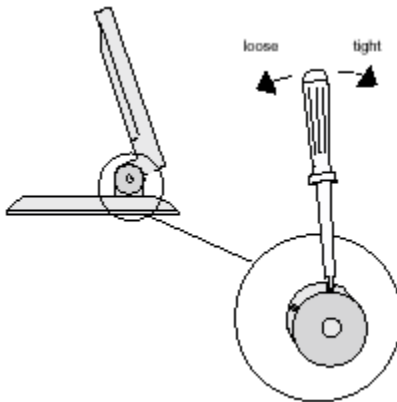
Insert the joint of the screen element into the mounting stand.

Do not remove the connecting part!

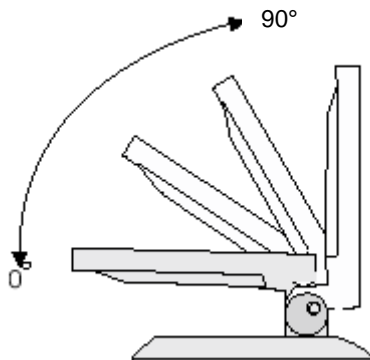
Tighten the screw using the crosstip screwdriver.

Adjustable Screen Angle

The BA72R is fitted with a joint on the rear. You can optimize the angle of the screen depending on the viewing and lighting conditions.



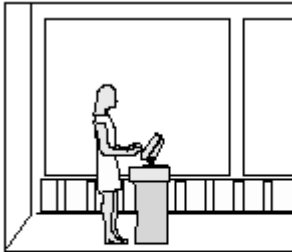
Use a screwdriver to set the twisting force of the BA72R on the adjusting nut.



The angle of the screen can be adjusted from a horizontal position to a vertical position of max. 90°, without any tools.

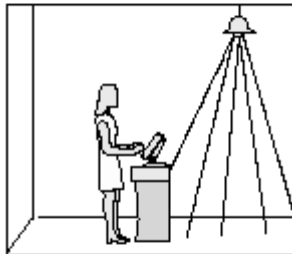
Ergonomic Terminal Workplace

Please observe the following when setting up your terminal workplace:

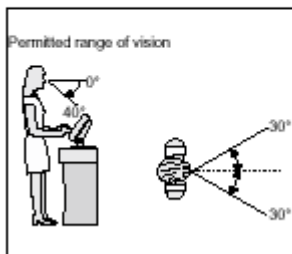


Avoid direct glaring and reflective glaring.

Install the device with a viewing direction that is parallel to the windows.



Avoid reflective glaring caused by electric light sources.

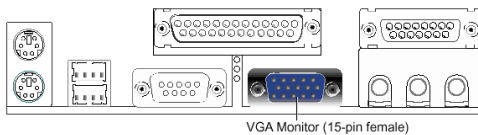


Position the screen within a preferred and permitted range of vision, so that you can look vertically into the screen.

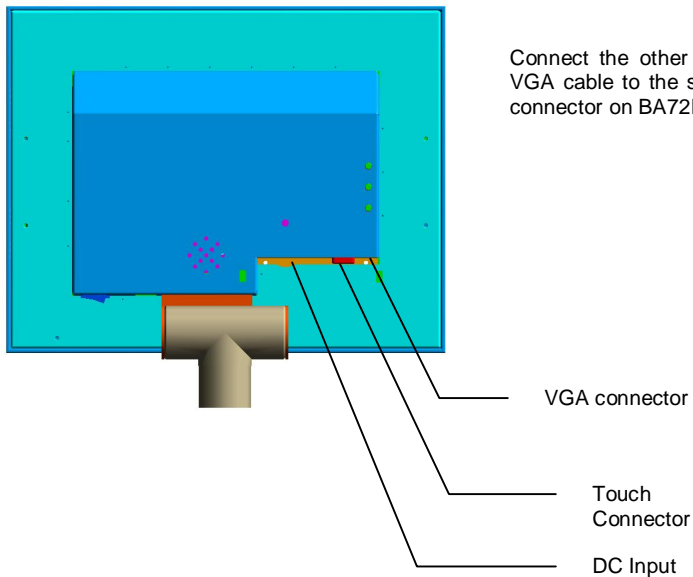
Installation

Before commencing the installation, please ensure that the main supply to the computer unit is disconnected.

Connecting the VGA cable



Locate the VGA connector a back panel of the computer and connect one end of the VGA cable to the VGA connector. Secure it by tightening the thumb-screw.



Connect the other end of the VGA cable to the similar VGA connector on BA72R.

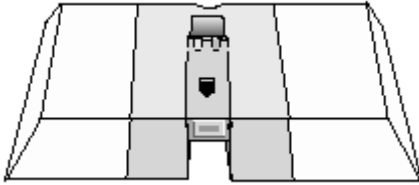
Connecting the Touch cable (option)

Locate a free female COM port at back of the BEETLE system. If there is no available COM port, you can install an AT-COM board or a PCICOM board. Connect the 9-pin DSUB of the touch cable to the selected COM port of the Beetle system. Secure it by tightening the 2 screws on the DSUB connector.

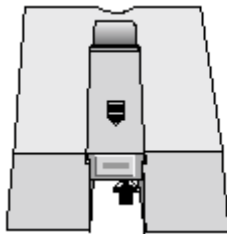


Connect the mini-DIN connector of the touch cable to the BA72R.

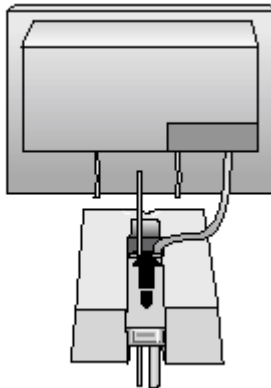
Cable routing



The cable cover is located in the base plate.



Lift the cable cover. Pull the cable cover forward in the direction of the arrow, and then remove it from the guide rail.



Insert the cable of the keyboard. The VGA / touch cables will be carried in a curve from the small cover of the screen module to the cable cover. Replace the cable cover in the guide rail. Pay attention to the openings. Slide the cable cover back into place. When you hear a click, the cover is locked into place.

Software Installation

Install the appropriate device driver for the graphic controller installed in the system. Select the resolution of 800x600.

The installation of the touch screen comprises the allocation of resources for the COM interfaces, too. For this, corresponding diskettes are available.

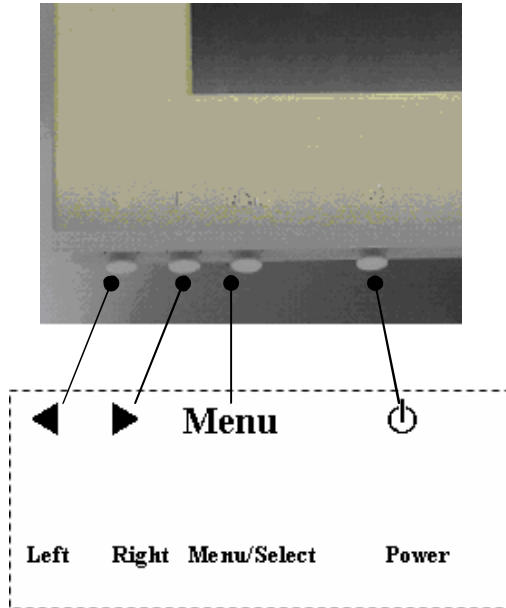
When installing the touch screen software and resource allocation (I/O address; interrupt) for the COM interfaces, mind the following: During the installation there may be conflicts in the I/O addresses and the interrupt. So take note of the resources already allocated and read the instructions in the files, e.g. readme file, of the installation diskettes very carefully. Then you can allocate the resources and set the corresponding jumper configuration on the COM board.

NOTE:

Though the BA72R generally offers good display performance, the types and quality of the display adapter used in the host system can affect the display quality.

On-Screen Display (OSD)

Located on the bottom left side of the BA72R are a set of 4 buttons.



Pressing the “Menu” button will activate the OSD.

The function of the OSD can be selected by first using the Left or Right button. Press the Select Button to select the function. Depending on function selected, a sub-menu options will be available for selection on the same screen.

Locking and Unlocking OSD Menu

Pressed and Hold MENU button for 15s to Lock or Unlock OSD Menu.

The sub-menu options available in the OSD menu for selection include:

- Input source
- Display setting
- Colour setting
- Image setting
- Tools menu
- Audio setting
- Exit OSD menu

There are several ways to exit the OSD menu:

1. Hold down the SELECT key (*saves* changes and exits).
2. Wait for the OSD to time-out (*saves* changes and exits).

The menu will disappear after 10 seconds (factory default) if there is no user activity on the Left, Right or Select buttons.

There are a number of parameters that can set via the OSD menu. The following shows all the selectable parameters that can be set via the various OSD sub-menus.

Input source



Analog input

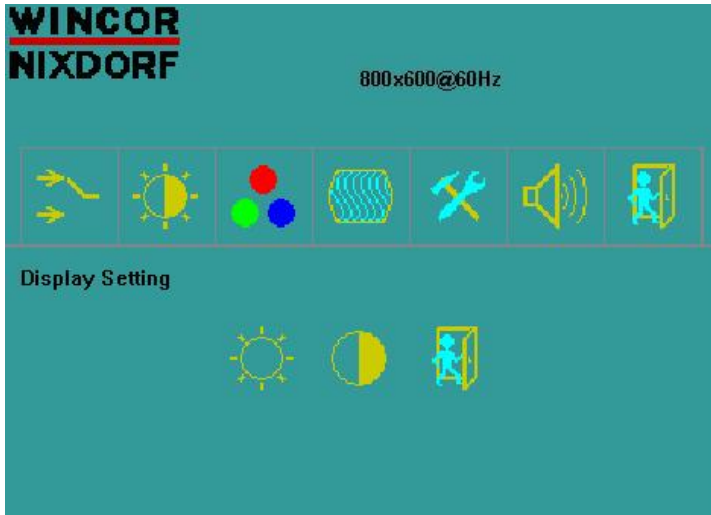


Digital input (not applicable for BA72R)



Exit sub-menu

Display setting



Brightness

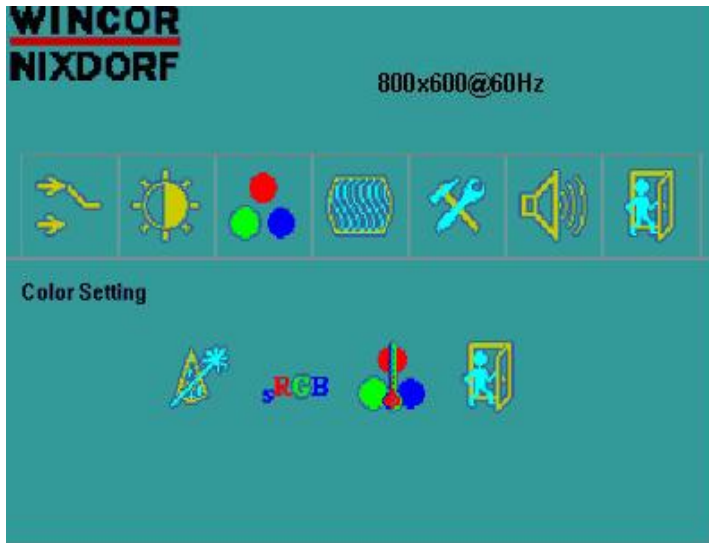


Contrast



Exit sub-menu

Color setting



Auto colour



sRGB



Colour temperature



Exit sub-menu

Selecting colour temperature

When the 'colour temperature' option is selected, the following sub-menu options will be available for selection:



RGB setting



4200K



5000K



6500K



7500K

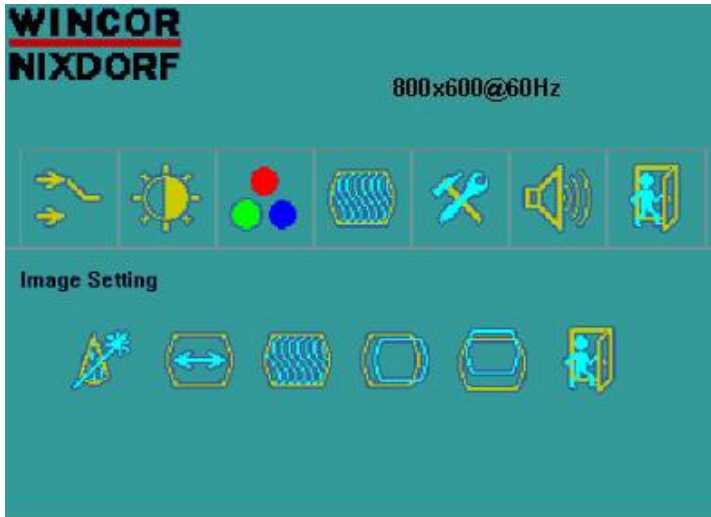


9300K



Exit sub-menu

Image setting



Auto-adjust



Width



Phase



Horizontal position

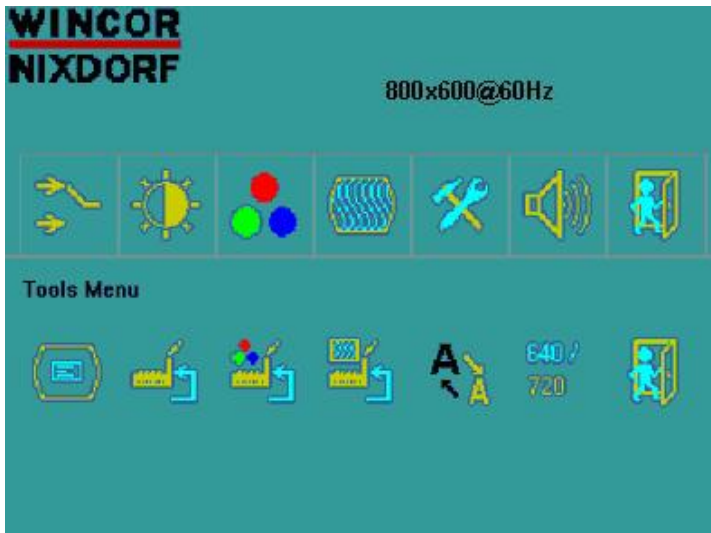


Vertical position



Exit sub-menu

Tools menu



OSD



Factory reset



Colour reset



Position reset



Sharpness



Overlapped mode



Exit sub-menu

Selecting OSD

When the 'OSD' option is selected, the following sub-menu options will be available for selection:



OSD Time Out



OSD Horizontal Position



OSD Vertical Position



OSD Direction



Exit sub-menu

Selecting OSD Direction

When the 'OSD Direction' is selected, it will prompt for the following sub-menu options for selection:



Normal



Mirror



Left



Right

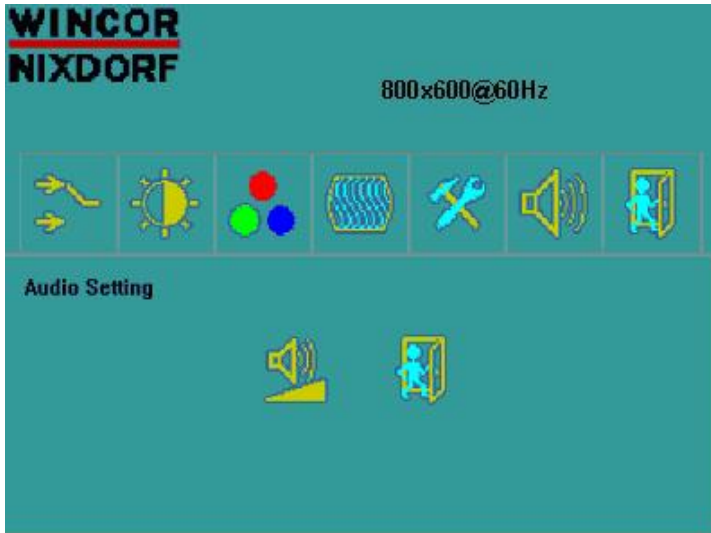


Up Down



Exit sub-menu

Audio setting



Volume

Volume setting:



Buzzer ON



Buzzer OFF



Exit sub-menu

Exit OSD Menu



Exit sub-menu

Technical Data

Models

The BA72R family of display is available in a several configurations.

BA72R-Y /X

Where:

Y: blank, 1 to n (where n is an incremental number)

/X: Blank - with protective glass (no touch)
/n - without touch and protective glass
/cTouch - with Capacitive touch
/rTouch - with Resistive touch

Operating Conditions

The following operating conditions are valid for a BA72R that is fitted with all the available modules (LCD flat screen, touch screen):

Climate class	IEC 721 3/3 Class 3K3
Operating Temperature	+5° C to +40° C
Humidity	5% - 85% Absolute humidity 1g/m ³ -25g/m ³ Condensation is not permitted

Touch Screen (optional)

Resolutions	Horizontal	999 pixels
	Vertical	999 pixels
Power supply	5V from Interface	
Technology	Analogue capacitive / analogue resistive	
Surface	Glass protective layer, anti-reflection (capacitive); polyester top sheet (resistive)	
Data transfer	Bi-directional, asynchronous, Xon-Xoff protocol, RS232 8 bit, 2400 Baud (Capacitive), 9600 Baud (Resistive)	

Display Specification

LCD Panel		
Size	12.1" diagonal	
Display Area	246.0 (W) x 184.5 (H)	mm
Pixel Pitch	0.3075 x 0.3075	mm
Screen Resolution	800 (H) x 600 (V)	pixels
Type	TFT active matrix	18 bits
Synchronization		
Horizontal	30 ~ 50	KHz
Vertical	60 ~ 75	Hz
Colour		
Number of colour	262,144	
Resolution		
Optimum	800 (H) x 600 (V)	@ 60 Hz
Backlight		
Type §	Dual-lamp, CCFL	
Lifetime	50,000 hrs	

§ The backlight is not part of the warranty or part of a possible service agreement. Only trained technical personnel is authorized to replace the backlight.

Interface connectors		
Video Signal	RGB Analog	15-DSUB (male)
Touch (optional)	RS232	Mini-DIN 6-position
Power Input		
Input	12VDC, 3A (max)	DC Jack, Ø 2.5 mm
Consumption	On Mode	15W
	Sleep Mode	< 2W
	Off Mode	< 1W
Dimensions		
Display w/o stand (W x H x D)	315 x 248 x 53	mm
Display with stand (W x H x D)	315 x 292 x 200	mm
Stand (W x D)	280 x 190	mm
Weight		
Incl. Stand	5.0	kg
Stand	1.5	kg
Plug and Play		
DDC2B (VESA standard)		
Accessories <small>optional</small>		
AC Power Adapter	Input AC 100~240V, Output DC 12V, 3.33A	
VGA Cable	15-Dsub to 15-Dsub, shielded, 1.8 metre	
Touch cable	9-Dsub to 6pin mini-DIN, shielded, 1.8 metre	

Display Mode

Display Mode	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
VESA, 640 x 480	31.469	59.940	25.175	-/-
VESA, 800 x 600	37.879	60.317	40.000	+/+

Interface Definition

VGA interface

Pin	Signal
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND (Red)
7	GND (Green)
8	GND (Blue)
9	DDC +5V Supply (fused)
10	GND (Sync)
11	NC
12	SDA
13	HYSNC
14	VSYNC
15	SCL

Touch Interface

Pin	Signal (Reference to Touch Controller)
1	Chassis GND
2	RXD (in)
3	TXD (out)
4	NC
5	GND
6	NC

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