



BA72A-2

Flat Panel Display

User Manual

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Introduction

From Point-of-Sale to Point-of-Service

By using the BA72A-2 you are provided with a terminal-orientated, ergonomical and customer-friendly cashier's workplace.

The BA72A-2 is equipped with the new highlights: cable distance support up to 5m, flexible All-in-One cable for Touch Screen, beeper and supply voltage.

The display can be applied in all trade market segments like specialist retailers, department stores, self-service stores, petrol stations or in restaurants. There is indeed a great deal of scope for implementing the BA72A-2.

They can be used, for example, as:

- a point-of-sale terminal
- an ordering terminal
- an information terminal
- a desk terminal.

The low-energy, flickerfree and low radiation colour monitor of the BA72A-2 is a LCD in TFT-technology (Thin Film Transistor).

Therefore, it is well suited for multimedia applications as it offers brilliant colour representation, an excellent contrast ratio and a high display speed.

Advantages at a Glance

- low footprint
- power saving mode
- flickerfree and low radiation monitor
- LCD TFT-technology

ABOUT THIS MANUAL

- digital interface
- simple installation via plug and play feature
- very good contrast ratio, adjustable loudness and brightness
- no need for LCD adjustments
- flexible all-in-one cable for touch function, LCD, PanelLink and supply voltage
- cable length up to 5m (16 ft)

Optional available

- touch version capacitive, resistive or infrared
- 3 track magnetic swipe card reader

About this Manual

This manual informs you about everything you might need to know for the installation (software and hardware), the operation and the maintenance of your BA72A-2.

Some parts of this book require familiarity and experience in working with operating systems and installation and configuration procedures.



Notes in the manual are marked by this symbol.

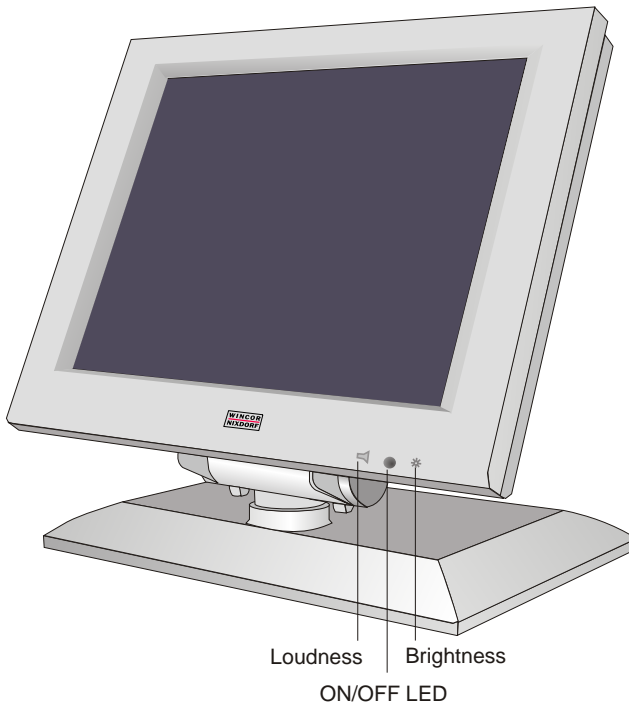


This symbol is used for warnings.

The Flat Panel Display BA72A-2

General

The TFT LCD flat panel display is an SVGA-compatible 12-inch flat panel display which is absolutely flickerfree and low radiation. It is designed for a resolution of 800 x 600 pixel. Application programs should be used with this resolution!



The screen module represents the main unit of the BA72A-2. It comprises of a TFT-LCD colour screen, the TFT-interface and an inverter that generates the voltage for backlighting the screen. As an option the screens are available with Touch Screen including a beeper.

GENERAL

Brightness and Loudness

You can adjust the **brightness** and the **loudness** with the thumb wheels located down to the right of the front of the screen.

LED

dark	power off
green	power on
yellow	power save

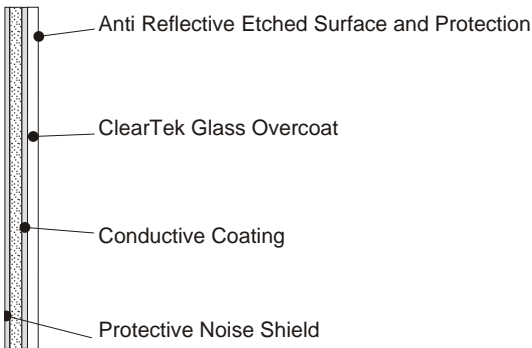
Capacitive Touch Screen (Option)

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 an 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 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.



When you connect your new BA72A-2 to your BEETLE for the first time you have to calibrate the Touch Screen. Details depend on the operating system that you are using.

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 does not only save time, but is also kind to your joints!

Touching the touch glass has the same effect as clicking the left mouse button. You only need to apply a little pressure with the fingertip. In this capacitive process only fingertip contact is recognized. The screen does not react in any way if touched, for example, with a pencil or a glove.

CAPACITIVE TOUCH SCREEN (OPTION)

You can adjust the **brightness** and the **loudness** with the thumb wheels located down to the right of the front of the screen.

Cleaning Instructions

Always **turn off the system** before cleaning.



The glass surface of your Touch Screen should be cleaned with a mild, abrasive free, commercially available glass cleaning product. 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 possible as well. 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.



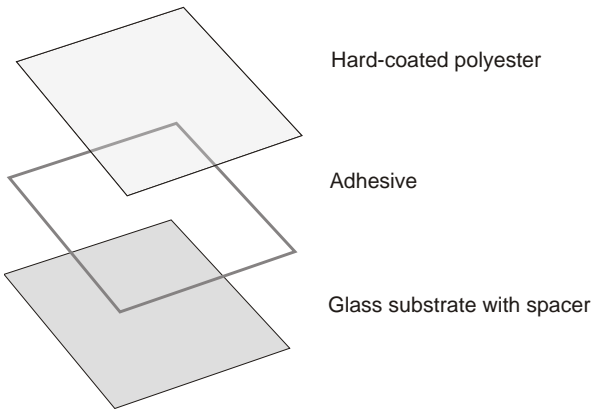
A wrong maintenance may cause damages to the screen, which are not covered by guarantee or warranty.

Resistive Touch Screen (Option)

General

The resistive TFT Touch Screen is constructed of a hard-coated polyester topsheet that is overlaid on a conductively-coated glass layer. Voltage is applied to the topsheet. As the user touches the screen, the topsheet 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 topsheet caused by extended use or neglect.

Construction of the resistive Touch Screen



When you connect your new BA72A-2 to your BEETLE for the first time you have to calibrate the Touch Screen. Details depend on the operating system that you are using.

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

RESISTIVE TOUCH SCREEN (OPTION)

spherical radius of 0.8 mm and contain no sharp edges or burrs that may cause damage to the topsheet.

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.



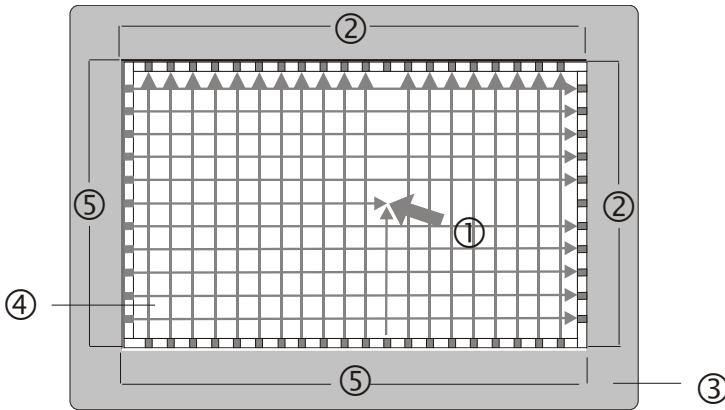
Do not use solvents containing acetic acid or methylene chloride. Use a soft, fine-meshed cloth to clean the surface. Dampen the cloth slightly and then clean the screen.

Infrared Touch Screen (Option)

General

The infrared (IR) technology is based on the interruption of a grid of IR light beams before the surface of a screen. The touch frame contains a row of infrared light emitting diodes (LEDs) and photo transistors, each mounted on two opposite sides to create a grid of invisible infrared light. The screen is made of frames. The electronic is concealed behind an infrared-transparent bezel, which allows the infrared beams to pass through.

How to operate



1	Touch Activation
2	Photo Transistors
3	Infrared-transparent Bezel
4	Active Display Area
5	IR- LEDs

IR light beams are produced and transmitted over the surface of the screen, the photo sensors accept the beams. When an object (min. 7mm Ø), such as a finger, enters the grid, it obstructs the beams. One or more photo

INFRARED TOUCH SCREEN (OPTION)

sensors detect the absence of light and transmit a signal, that identifies the x and y coordinates.

Breaking through the grid has the same effect as clicking the left mouse button.



To avoid malfunctions: Do not fix labels or stickers on the frame and do not put pencils or the like on the inner frame.

Cleaning Instructions

Always **turn off the system** before cleaning.



The glass surface of your Touch Screen should be cleaned with a mild, abrasive free, commercially available glass cleaning product. 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 possible as well. 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.



A wrong maintenance may cause damages to the screen, which are not covered by guarantee or warranty.

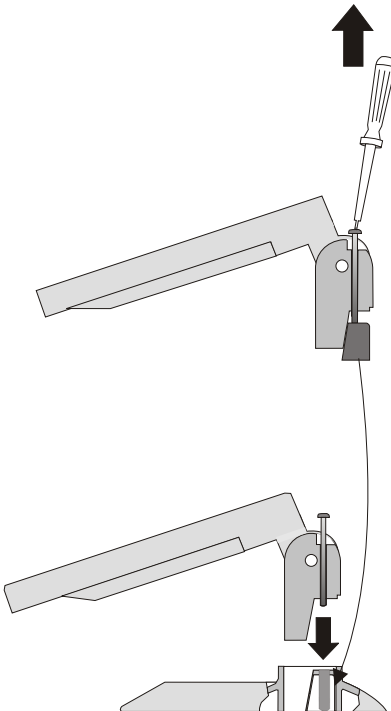
Installing and Securing

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, immediately inform your Wincor Nixdorf sales outlet.

Transport the device only in its original packaging (to protect it against impact and shock).

Installing into Footed Stand

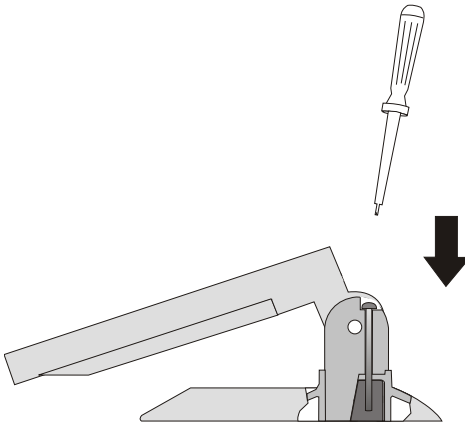


Remove the footed stand and screen element from the cardboard packaging.

Tilt the screen backwards. Turn the fastening screw on the screen with a crosstip screwdriver until the connecting part is loosened. Then insert it into the footed stand.

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

SECURING THE SCREEN INTO TUBE VERSION



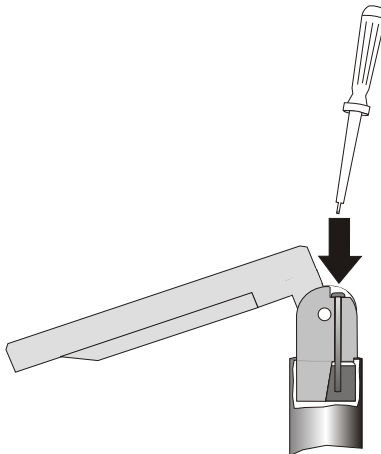
Now fasten the screw on the footed stand into place again using the crosstip screwdriver.

Ensure that the screw is in the correct position.

Securing the screen into Tube 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.



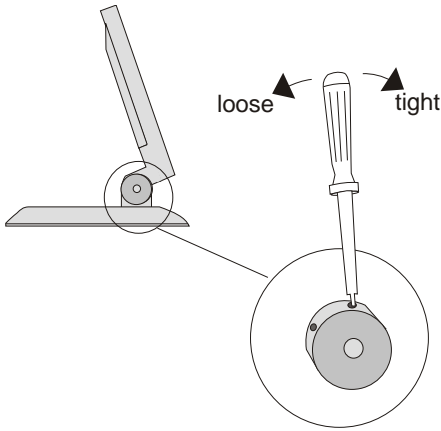
Insert the joint of the screen element into the mounting stand.

Do not remove the connecting part!

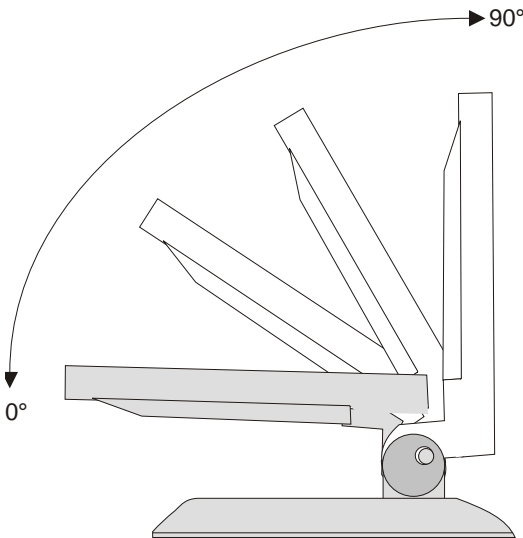
Tighten the screw using the crosstip screwdriver.

Adjustable Screen Angle

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



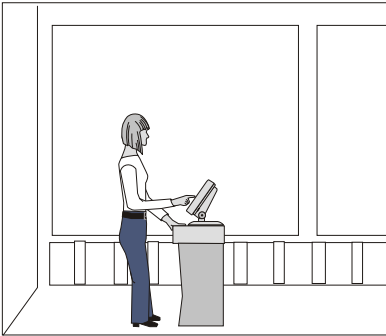
Use a screwdriver to set the twisting force of the display on the adjusting nut.



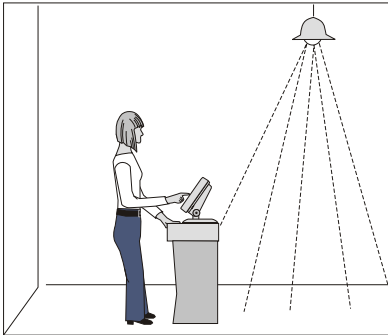
The angle of the screen can be adjusted from a horizontal position to a vertical position to the stop (max. 90°), without any tools.

Ergonomic Terminal Workplace

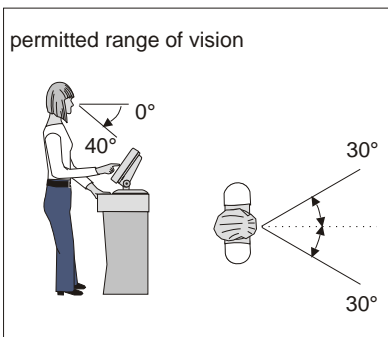
Please observe the following when setting up your terminal workplace:



Avoid direct glaring and reflective glaring. Use the screen only in a controlled luminance surrounding. 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 onto the screen.

permitted range of vision

preferred range of vision

Installing an Adapter or a Controller

The flat panel display is either connected to the BEETLE system via a LCD adapter (submodule of the CPU) or via a graphic PCI controller. Further informations on the controller see in the user manual "Graphic PCI Controller".

LCD-Adapter

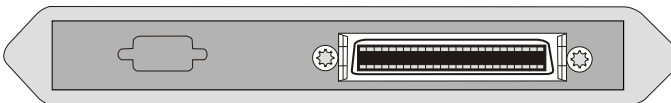
Equivalent adapters are available for the different BEETLE central processing units. Plug&Play features are possible as of the D2 version/DDC of the CPU.

The optional touch function is to be realized internally via the COM2 interface. When applying the touch function the COM2 interface (D-sub connector on the motherboard) cannot be used.



LCD adapter

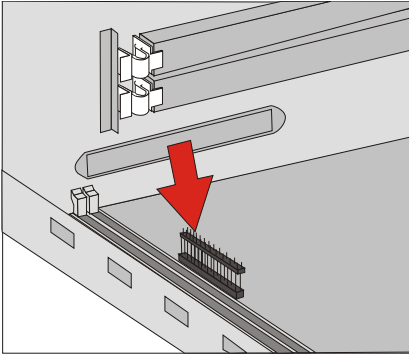
The TFT adapter can optionally be connected to a 40-pin MDR connector for the touch screen, beeper, power supply and the LCD.



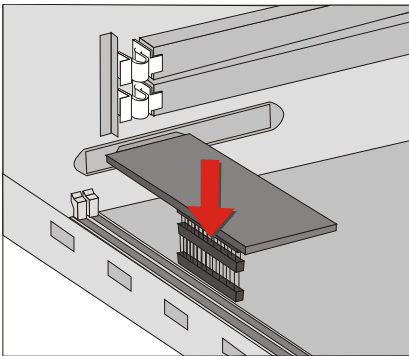
Cover of the adapter

Installing a LCD-Adapter

First ensure that the controller **is switched off** and the **mains supply plug has been pulled out**. Open the BEETLE system.

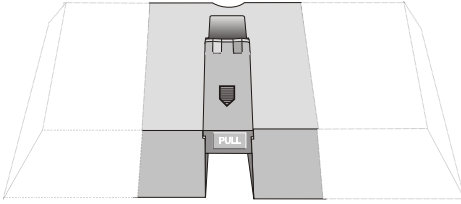


Plug in the TFT adapter on the CPU module as shown in the illustration.

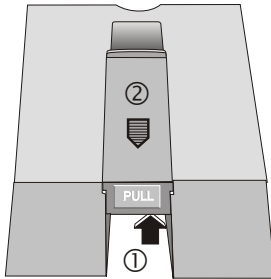


You will find more information in your BEETLE user guide.

Inserting the Cable

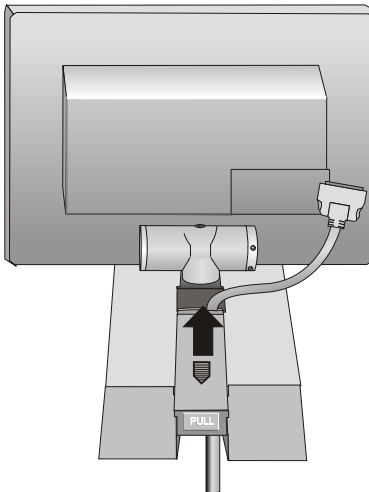


The cable cover is located in the base plate.



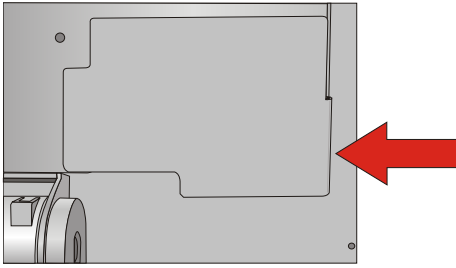
Lift the cable cover ①.

Pull the cable cover forward in the direction of the arrow ②, and then remove it from the guide rail.

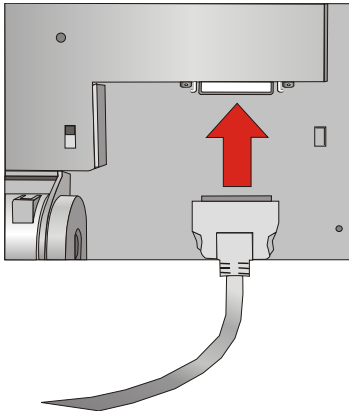


Insert the 40-pin BA72A-2 cable. The cable will be carried in a curve from the small cover of the screen module to the cable cover. Replace the cable cover in the guide rail. Pay attention to the openings. Slide the cable cover back into place. When you hear a click, the cover is locked into place.

RELEASING THE CABLE CONNECTION



Press the cover of the cable connection (see arrow).



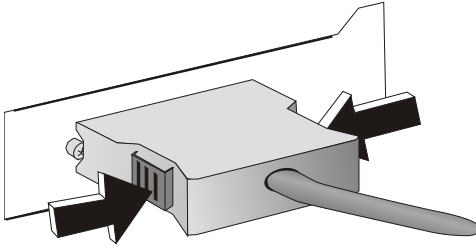
Open the cover and connect the cable to the screen.

Releasing the Cable Connection

Never remove a cable from a connector socket by simply pulling on the cable. Always remove the cable by the connector housing. Please follow the instructions below when removing cables:

- Turn off all switches to the mains and electrical equipment.

RELEASING THE CABLE CONNECTION



Press the plastic latches of the MDR connector together and then remove the connector from the socket.

Technical Data

BA72A-2

Dimensions	Screen size	12.1" (30.7 cm)
	Active screen size (horizontal x vertical)	246 mm x 185 mm
	Cable length	up to 5m
	Dimensions Display Housing (w/o foot. Stand/Hinge (WxHxD in mm)	310 x 251 x 55
	Dimensions Display Housing (with foot. Stand/Hinge (WxHxD in mm)	310 x 297 x 232
	Footed stand	280 x 191
Weight	incl. Footed stand	appr. 4.9 kg
	Footed stand	1.4 kg

The following operating conditions are valid for a BA72A-2 that is fitted with all the available modules.

BA72A-2 w/o Touch/ capacitive Touch

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

BA72A-2 resistive Touch, long time Operation

Climate class	IEC 721 3/3 Class 3K3
Operating temperature	+5°C - +40° C
Humidity	20% - 50% rel. humidity, non condensed

BA72A-2 resistive Touch, short time Operation

Climate class	IEC 721 3/3 Class 3K3
Operating temperature	+5°C - +40° C
High Humidity	with 80% rel. humidity for max. 2 weeks continuous operation

BA72A-2 Infrared Touch

Climate class	IEC 721 3/3 Class 3K3
Operating temperature	+5°C - +40°C
Humidity	10% - 90% non condensed
Altitude	Operating: 3.048 m Storage/Transport: 15.240m

TFT/LCD Screen

Frequencies	Horizontal (KHz)	37,9
	Vertical (Hz)	60
Solutions	Horizontal	800 pixel
	Vertical	600 pixel
	Colour depth	LCD adapter/graphic PCI controller: RGB 16, 256, 64k
Pixel Format		approx. 0.30 mm x 0.30 mm
Interface		RGB (3x6 bit)
Power Supply		3.3 V from interface
Power Consumption		Standby 1.5 W Power on 15 W
Reading Angle right/left top/bottom		+/- 60° 60°/40°
Backlight		Twin lamps CCFL, Inverter, Life time: 50.000 h



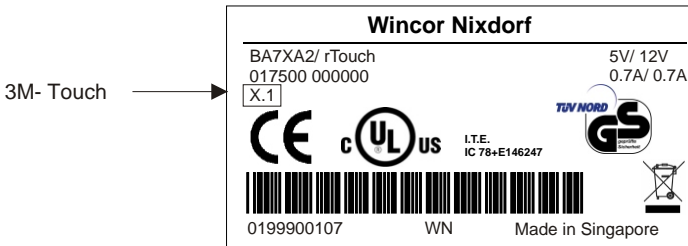
The backlight is a wearing part and therefore not part of the warranty engagement or part of a possible service agreement. Only trained technical personnell is authorized to replace the backlight.
Dispose of the backlight according to the regulations of your country.

3M Touch Screen (optional)

Resolutions	Horizontal	999 pixel
	Vertical	999 pixel
Power supply		5V from interface
Power consumption		Standby 1.5 W Power on 15 W
LCD technology		Analog capacitive/analog resistive
Surface		Glass protective layer, anti-reflection (capacitive), Polyester topsheet (resistive)
Data transfer		Bi-directional, asynchronous, Xon-Xoff-protocol, RS 232, COM5/COM2 2400, Bd 8 bit

Identification of 3M Touch

The picture shows a sample of a BA7x type label. The last digit in the marked field indicates the technology. The "1" signifies a product of 3M. The digit "2" or "3" means a touch of ELO. When the digits "X.X" are missing on the type label and the display has a touch screen, it is a matter of 3M technology.



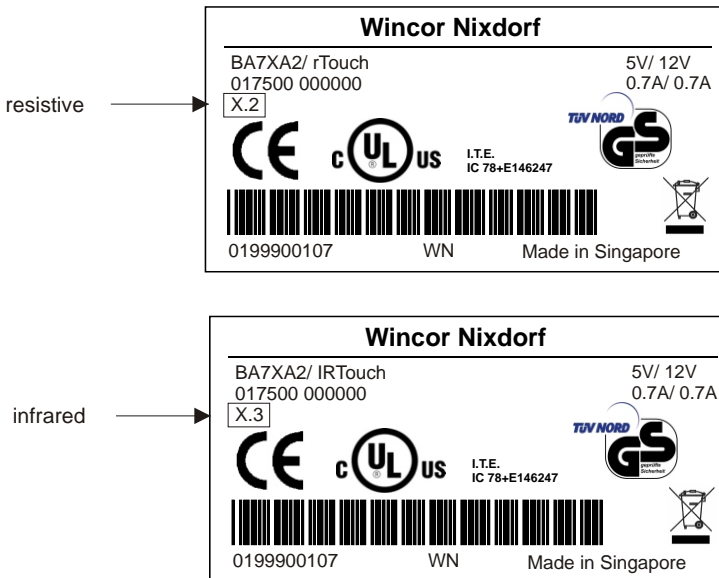
You can refer the meaning of the digits "2" and "3" on the following page.

ELO IR Touch Screen, ELO R- Touch (optional)

Resolutions	Horizontal	4096
	Vertical	4096
Power supply		5V from Interface
Power consumption		Standby 1.5 W Power on 15 W
LCD Technology		Infrared
Surface		Glass protective layer, anti-reflection (IR); Polyester topsheet (resistive)
Data transfer		Bi-directional, RS 232, 9600 baud, Bd 8 bit

Identification of ELO resistive and infrared Touch

The pictures show samples of BA7x type labels. The last digit in the marked field indicates the touch technology. A “2” means a resistive and a “3” an infrared screen.



Screen Driver Installation

When installing drivers for the screen pay attention to the following:

- There are substantial differences between drivers for 3M and ELO.
- 3M drivers are available for the following operating systems:
Windows: Windows XP, WEPOS
Linux: WNLPOS.
- ELO drivers are available for the following operating systems:
Windows: Windows XP, WEPOS
Linux: WNLPOS (FC4) + RedHat9.
- You can either install ELO drivers or 3M drivers. A combined installation of both kinds of drivers is not possible, as parallel operation of both drivers is not feasible.

You can find detailed information about the driver installation in the "Read me" file on the internet.

Graphic PCI Controller

Interface	PCI, 32 Bit
Mode	SVGA/XGA
Resolution	800 x 600, 1024 x 768 (High Colour)
Image Repeat Memory	4 MB
Screen Memory Text mode Page mode Linear mode	B800H-BFFFH A000H-AFFFH according PCI
BIOS	48 kB, Address C000H-CBFFFH
Connections	1) 40-pin MDR-connector for LCD, Touch Screen and beeper 2) 9-pin socket for COM6 or Touch in
TFT cable	40-pin connector

POWER SAVE MODE

Power Consumption	2.5 W	
Current Consumption	5V 12V	480 mA 50 mA/ 30 mA

Power Consumption of the Screen Module

Consisting of an LCD display, Touch Screen incl. controller, inverter, interface.

700 mA	+ 12V (Normal Mode)
0 mA	+ 12V (Standby Mode)
700 mA	+ 5V (Normal Mode)
300 mA	+ 5V (Standby Mode)

Power Save Mode

The flat screen dispose of a power save mode.

Operating System	Power Save
MS DOS	VESA function, control by application program
WIN xx	WIN Power Save Mode
Linux BEETLE CPU E1	VESA function, control by application program

The wake up from Power Save Mode is possible by Touch or keyboard entry.

Plug & Play Feature

The flat panel display is featured with the Plug and Play property. This property is a subset of the EDID specification. The Plug and Play feature is only possible if all components are equipped with this property:

- BA72A-2,
- TFT signal cable A (This cable with this add-on of Plug and Play is delivered for a fairly long time),
- LCD adapter or controller
 - ◆ E1 LCD/TFT adapter A or
D2 LCD/TFT adapter A DDC (DDC allows the data transfer between monitor and graphic card and provides the realisation of Plug and Play)
 - ◆ graphic PCI controller (Plug and Play Feature for the LCD pixel solution and timing).



By using the components without Plug and Play property the values are setting automatically onto the LCD pixel solution or timing via jumper setting of the CPU ONBOARD GRAPHIC or the graphic PCI controller.

Programming the MSR

Two kinds of magnetic card readers (MSR) are possible. In the first version the MSR is programmable and in the last edition it is non-programmable. By programming the magnetic card reader you have the possibility to flexibly adjust the MSR to your special needs.

- Define special start codes and end codes for the files of the tracks of the MSR, in which the datas of the tracks have been retained the format ISO 7811,
- port your existing software application with less effort, as you can keep up the interface of the MSR.

Files

The following files are available on the internet:

KBUTI.EXE	Dialogue utility for programming the keyboard
KBUTIHLP.HLP	Help file for the dialogue utility
SENDKBT.EXE	To send a table to the MSR from a file
RCVKBT.EXE	To receive a table of the MSR and save it in a file
KB2DEF.EXE	To reset a MSR to the default state
KBCHKDEF.EXE	To check for state of the MSR (default or programmed)
README.TXT	Readme file for programming keyboards and the MSR.

Programming the magnetic card reader is described in detail in the Readme file.

Mode

The magnetic card reader can work in different modes:

“Windows Mode”	This is the default state of the MSR (not programmed)
----------------	---

“DOS Mode”	This state is used by the Retail Device Interface (RDI), it is entered by rsp. commands from Windows Mode
“Programmed”	In this state a table has been sent to the MSR and is stored in Flash memory; the table controls what codes are sent for magnetic card reader

Moreover there are mixed modes possible:

“Programmed”	for the magnetic card reader
“Windows” or	
“DOS-Modus”	

The DOS Mode is primarily used by RDI, the Windows Mode is used by the OPOS components. A description of this protocol can be sent to you by Wincor Nixdorf on request. When developing new software you should generally use the Windows Mode.

Main functions

The dialogue utility KBUTI.EXE serves to:

- programming the codes for the magnetic card reader
- send a table of the MSR out of a file
- receive a MSR table and save it into a file
- reset the MSR into the default state, i.e. Windows Modus and Default codes for the MSR
- check for state of the MSR

So the functionality of the programs

- SENDKBT.EXE
- RCVKBT.EXE
- KB2DEF.EXE
- KBCHKDEF.EXE

KEYBOARD CONNECTION

is part of the dialogue utility KBUTI.EXE. These 4 programs therefore are intended to be used in conjunction with .BAT files. They return values that can be checked using ERRORLEVEL. You will find the values returned together with an example in the Readme file.

Files containing tables for the MSR have by convention the extension .KBT.

Keyboard Connection

To program a MSR connect it directly to the BEETLE system (or a PC with Mini-DIN connector). This interface is named the primary keyboard interface.

A standard PC keyboard or TA58, then is connected to the secondary keyboard interface of the MSR. So the controller of the MSR has a keyboard wedge, whose inputs are not equivalent. Commands from the system are sent to the primary interface and may then be transferred to the secondary interface. A reaction of the system to a key stroke is transmitted to the keyboard, which key has been pressed or released.

Note



You must only connect one keyboard-MF- keyboard, TA85 or TA58 without MSR to the secondary keyboard interface of the controller.

You must not connect the controller (primary keyboard interface) to the secondary keyboard interface of the TA85P or TA58.

Help

The dialogue utility KBUTI.EXE has a context sensitive help, which is activated as usual with the F1 key.

Creating Tables

Tables can be created with the utility KBUTI.EXE

- under DOS
- in DOS Mode of Windows 9x

- in a DOS window of Windows 9x
- and in a DOS window of Windows NT, Windows 2000 and Windows XP.

Sending and Receiving tables, however, is only possible under MS DOS or Windows 9x. The restrictions of Windows NT/ 2000/ XP do not allow this.

- a
- A
- *
- 00
- {Ctrl+F5}
- {Shift+F8}
- {Alt+F1}
- {Alt+#123}
- {Ctrl+f}{Alt+#240}

For a number of codes symbolic names are available, like F1, ..., F12, Shift, Ctrl, Alt, AltGr, Enter, Return, Left, PgUp etc.

Specification of codes not only may be done in symbolic form like above, but also as hexadecimal 8042 scan codes. This, however, is only in a few cases required and will make sense!

Specifying hexadecimal scan codes should be avoided at all, unless there are good reasons! A fairly good knowledge of their structure and all their details is required!

Before programming the following is to be defined:

- Target MSR (can not be changed later)
- Keyboard language, e.g. US for USA, GR for Germany etc.

Specification of the language is required to allow the MSR to deliver such codes, that can be interpreted later correctly by the language keyboard

SENDING AND RECEIVING TABLES

driver for the rsp. country. The target configuration is important, not the configuration at the time when the table is created.

For the codes of the data of the various tracks of the swipe card reader and insertion rsp. removal of a waiter key, header and trailer codes can be programmed. This allows the application to distinguish those from normal key strokes.

The codes assigned can be viewed with the help of KBUTI.EXE. They also can be shown in a more compact form on the screen or for documentation purposes can be written into a file with extension .TXT or directly be sent to a printer (LPT1).

Sending and Receiving Tables

The codes assigned are stored in a file with default extension .KBT. Such files can be loaded by the dialogue utility KBUTI.EXE and the tables sent to the MSR. They also can be sent directly from such files by the batch utility SENDKBT.EXE. Accordingly KBUTI.EXE may receive a table from the MSR, which then can be viewed or stored in a .KBT file. This, however, can also be done using RCVKBT.EXE by specifying the file name as a parameter.

During transmission of tables no keyboard activity is allowed, such as be key presses, key position change, or changing state of waiter key, otherwise the transmission may be influenced badly!

Useful Hints

Programming keyboards by tables of MSR allows a very flexibility. However, one should bear in mind about the task of a technician in the field! From logistics point of view it should be ensured that:

- Spare keyboards are delivered always loaded with customer specific tables
- with starting the system the tables are loaded automatically.

The batch utilities

- SENDKBT.EXE

- RCVKBT.EXE
- KB2DEF.EXE
- KBCHKDEF.EXE

are provided especially for this situation to allow support of the technicians. However, the programs alone are not helpful for a technician!

Instead they should be available dependent on the solution on disks together with rsp. tables at the site. Also they should be executable with the resources available there!

Take care, that there must not be any keyboard activity when they are executed! This has to be strongly observed, if such a utility is run automatically at start of the system! This at least requires proper error handling resp. retries in the execution of .BAT files.

Manufacturer's Declaration and Approval

General Authorization



This device fulfills the requirements of the EEC standard 89/336/EEG "Electromagnetic Compatibility". 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 NMB-003 du Canada.

Tested Safety



The BA72A-2 has been awarded the GS symbol for "Geprüfte Sicherheit" (tested safety). BA72A-2 fulfills the requirements for ergonomics according to ISO 13406-2.



Additionally, the BA72A-2 has been awarded the cUL- and UL- symbol.

Accessory LCD monitor BA72A-2 for use with UL-listed computers.

User Information

Wincor Nixdorf International GmbH 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 Wincor Nixdorf 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.

Safety Information

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.

INSTRUCTIONS FOR MAINTENANCE

- 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 BA72A-2 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 BA72A-2 components. These instructions can be found in their respective chapters.

Warranty

Wincor Nixdorf guarantees generally a warranty engagement for 12 months beginning with the date of delivery. This warranty engagement covers all those damages which 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

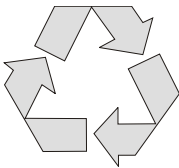
will not be covered by the warranty.

For further information of the stipulation look at your contract.

All parts of the product which are subject to wear and tear 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 BA72A-2; it begins with the manufacturer. This product was designed according to our internal norm “Environmental conscious product design and development”.

The BA72A-2 is manufactured without the use of CFCs und 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 und 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 BA72A-2 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 for information on how to return and re-use devices and disposable materials.

Abbreviation Index

ASCII	American Standard Code for Information Interchange
AT	Advanced Technology
BIOS	Basic Input Output System
CFL	Cold cathode Fluorescent Lamp
COM	Communication Port
CPU	Central Processing Unit
CRT	Cathode Ray Tube
DDC	Display Data Chanel, VESA standard
DSTN	Double Super Twisted Nematic, LCD Technology
H	Hexadecimal Value
HW	Hardware
ISA	Industrial Standard Architecture
ISO	International Standards Organisation
LAN	Local Area Network
LPT	Line Printer
LCD	Liquid Crystal Display
LVDS	Low Voltage Differential Interface
MDR	Mini Delta Ribbon
POS	Point of Sale/ Point of Service
RAM	Random Access Memory
SMD	Surface Mounted Device
STN	Super Twisted Nematic, LCD Technology
SVGA	Super Video Graphic Array
SW	Software
TFT	Thin Film Transistor Technology
UART	Universal Asynchronous Receiver/Transmitter
VESA	Video Electronics Standards Association