

**Kuhnke Electronics
Instruction Manual**

Ventura touch 6.5" / 10.4" / 12.1" / 15.0"
Control and Display Monitor

E 675 GB

24.10.2005 / 105748



This instruction manual is primarily intended for use by design, project and development engineers. It does not contain any availability information. Data is only given to describe the product and must not be regarded as guaranteed properties in the legal sense. Any claims for damages - on whatever legal grounds - are excluded except for instances of deliberate intent or gross negligence on our part.

We reserve the rights for errors, omissions and modifications.

Reproduction even of extracts only with the editor's express and written prior consent.

Table of Contents

1 Introduction	5
2 Reliability, Safety	6
2.1 Intended Use	6
2.2 Target Group	6
2.3 Reliability	6
2.4 Symbols	6
2.4.1 Danger	6
2.4.2 Attention	6
2.4.3 Note	7
2.4.4 Under Construction	7
2.4.5 Instruction	7
2.5 Safety	7
2.5.1 Project Planning and Installation	8
2.5.2 Maintenance and Servicing	8
2.6 Electromagnetic Compatibility	9
2.6.1 Definition	9
2.6.2 Interference Emission	9
2.6.3 General Notes on Installation	9
2.6.4 Electrical Immission Safeguard	10
2.6.5 Cable Routing and Wiring	10
2.6.6 Location of Installation	10
2.6.7 Particular Sources of Interference	10
3 System Description	11
3.1 Overview	11
3.2 Application	12
3.3 Technical Properties	12
3.4 Front Film	14
3.5 Model Variant	14
3.6 Physical Design	15
3.7 Power Supply and Ports	16
3.7.1 24 VDC Power Supply	16
3.7.2 Earth	16
3.7.3 Graphics Adapter "DVI / VGA"	17
3.7.4 "USB 1", Out	18
3.7.5 "USB 2", In (Optional)	18
4 Mounting and Installation	19
4.1 Front Panel Opening	19
4.1.1 Installation	20
4.1.2 Attaching the Cables	20
5 Start-up	21
5.1 TFT Monitor Calibration	21
5.1.1 Adjusting the Resolution	21
5.1.2 Adjusting the Brightness	21
5.2 Configuring and Calibrating the Touch Screen	22
5.2.1 Windows CE	22
5.2.2 Windows 98se, ME, 2000, XP	22
6 Maintenance and Servicing	26
6.1 Cleaning the Control Panel	26
7 Appendix	27

Table of Contents

- 7.1 Technical Data27
 - 7.1.1 Basic Data27
 - 7.1.2 Chemical Resistance29
 - 7.1.3 Dimensions Ventura touch 6.5"30
 - 7.1.4 Dimensions Ventura touch 10.4"31
 - 7.1.5 Dimensions Ventura touch 12,1"32
 - 7.1.6 Dimensions Ventura touch 15"33
- 7.2 Order Specifications34
 - 7.2.1 Basic Units34
 - 7.2.2 Accessories35
- 7.3 References36
- 7.4 Sales & Service37
 - 7.4.1 Main Factory in Malente37
- 7.5 Index38

1 Introduction

Brilliant, fast and compact

Ventura touch is a new control and display monitor with a high-quality and long-life TFT display for industrial applications. The monitor features a digital DVI interface for image information interchange, thus making cumbersome video framing correction unnecessary. Touch screen input is transferred via USB.

Ventura touch is a range of built-in monitors of screen sizes 6.5", 10.4" and 12.1".

Robust industrial design

TFT monitors for industrial applications should be fail-safe, have a long life and be designed with industrial requirements in mind. Ventura touch is powered with 24 VDC. At the front it has IP65 protection. The units' extended temperature range gives operators a plus in safety.

2 Reliability, Safety

2.1 Intended Use

Kuhnke products are designed as resources for use in industrial environments.

All other applications need to be discussed with the factory first. The manufacturer shall neither be liable for any other than the intended use of our products nor for any ensuing damages. The risk shall be borne by the operator alone. The use as intended includes that you read and apply all information and instructions contained in this manual.

2.2 Target Group

This instruction manual contains all information necessary for the use of the described product (control device, control terminal, software, etc.) according to instructions. It is written for design, project planning, servicing and commissioning experts. For proper understanding and error-free application of technical descriptions, instructions for use and particularly of notes of danger and warning, extensive knowledge of automation technology is compulsory.

2.3 Reliability

Reliability of Kuhnke products is brought to the highest possible standards by extensive and cost-effective means in their design and manufacture.

These include:

- selecting high-quality components,
- quality agreements with our suppliers,
- actions to avoid static charges when handling MOS circuits,
- worst case planning and design of all circuits,
- visual inspections at various stages of fabrication,
- computer-aided tests of all assemblies and their interaction in the circuit,
- statistical assessment of the quality of fabrication and of all returned goods for the immediate taking of appropriate corrective actions.

2.4 Symbols

Despite the measures described in chapter 2.3 the occurrence of faults or errors in electronic control units - even if most highly improbable - must be taken into consideration.

Please pay particular attention to the additional notices which we have marked by symbols throughout this instruction manual. While some of these notices make you aware of possible dangers, others are intended as a means of orientation. They are described further down below in descending order of importance.

2.4.1 Danger



This symbol warns you of dangers which may cause death or grievous bodily harm if operators fail to implement the precautions described.

2.4.2 Attention



This symbol draws your attention to information you must take a look at to avoid malfunctions, possible material damage or dangerous states.

2.4.3 Note



This symbol draws your attention to additional information concerning the use of the described product. This may include cross references to information found elsewhere (e.g. in other manuals).

2.4.4 Under Construction



This symbol tells you that the function described was not or not fully available at the time this document went to press.

2.4.5 Instruction



Wherever you see these symbols in the left margin, you will find a list of steps instructing you to take the appropriate computer or hardware actions. They are intended as a means of orientation wherever working steps and background information alternate (e.g. in tutorials).



2.5 Safety

Our products normally become part of larger systems or installations. The information below is intended to help you integrate the product into its environment without dangers to humans or material/equipment.



To achieve a high degree of conceptual safety in planning and installing an electronic controller, it is essential to exactly follow the instructions given in the manual because wrong handling could lead to rendering measures against dangers ineffective or to creating additional dangers.

2.5.1 Project Planning and Installation

- 24 VDC power supply: generate as electrically safely separated low voltage. Suitable devices are, for example, split transformers constructed in compliance with European Standard EN 60742 (corresponds to VDE 0551).
- In case of power breakdowns or power fades: the program structure is to ensure that a defined state at restart excludes all dangerous states.
- Emergency switch-off installations must comply with EN 60204/IEC 204 (VDE 0113). They must be effective at any time.
- Safety and precautions regulations for qualified applications have to be complied with.
- Please pay particular attention to the notices of warning which, at relevant places, will make you aware of possible sources of dangerous mistakes or faults.
- Relevant standards and VDE regulations are to be complied with in every case.
- Install control elements such that unintended operation is excluded.
- Lay control cables such that interference (inductive or capacitive) is excluded if this interference could influence controller operation or its functionality.

2.5.2 Maintenance and Servicing

- Precautions regulation VBG 4.0 must be observed when measuring or checking a controller in a power-up condition. This applies to section 8 (Admissible deviations when working on parts) in particular.
- Repairs must be carried out by specially trained Kuhnke staff only (usually in the main factory in Malente). Warranty expires in every other case.
- Spare parts:
- Only use parts approved of by Kuhnke. Only genuine Kuhnke modules must be used in modular controllers.
- Modular systems: always plug or unplug modules in a power-down state. You might otherwise damage the modules or (possibly not immediately recognisably!) inhibit their functionality.
- Always dispose of any batteries and accumulators as hazardous waste.

2.6 Electromagnetic Compatibility

2.6.1 Definition

Electromagnetic compatibility is the ability of a device to function satisfactorily in its electromagnetic environment without itself causing any electromagnetic interference that would be intolerable to other devices in this environment.

Of all known phenomena of electromagnetic noise, only a certain range occurs at the location of a given device. These kinds of noise are specified in the applicable product standards.

The design and immunity to interference of programmable logic controllers are internationally governed by standard

IEC 61131-2 which, in Europe, has been the basis for European Standard EN 61131-2.



Refer to IEC 61131-4, User's Guideline, for general installation instructions to be complied with to ensure that hardware interface factors and the ensuing noise voltages are limited to tolerable levels.

2.6.2 Interference Emission

Interfering emission of electromagnetic fields, HF compliant to EN 55011, limiting value class A, Group 1



If the controller is designed for use in residential areas, high-frequency emissions must comply with limiting value class B as described in EN 55011. Fitting the controller into earthed metal cabinets and installing filters in the supply lines may produce a shielding compliant to the above standard.

2.6.3 General Notes on Installation

As component parts of machines, facilities and systems, electronic control systems must comply with valid rules and regulations, depending on their field of application.

General requirements concerning the electrical equipment of machines and aiming at the safety of these machines are contained in Part 1 of European Standard EN 60204 (corresponds to VDE 0113).



For safe installation of our control system please observe the information contained in the next chapters (→ 2.6.4 ff).

2.6.4 Electrical Immission Safeguard

Connect the control system to the protective earth conductor to eliminate electromagnetic interference. Practice best cable routing.

2.6.5 Cable Routing and Wiring

Keep power circuits separate from control circuits:

- DC voltages 60 V ... 400 V
- AC voltages 25 V ... 400 V

Joint laying of control circuits is allowed for:

- shielded data signals
- shielded analogue signals
- unshielded digital I/O lines
- unshielded DC voltages < 60 V
- unshielded AC voltages < 25 V

2.6.6 Location of Installation

Ensure that temperatures, contaminations, impact, vibration or electromagnetic interference are no impediment to the installation.

2.6.6.1 Temperature

Consider heat sources such as general heating of rooms, sunlight, heat accumulation in assembly rooms or control cabinets.

2.6.6.2 Contamination

Use suitable casings to avoid possible negative influences due to humidity, corrosive gas, liquid or conducting dust.

2.6.6.3 Impact and Vibration

Consider possible influences caused by motors, compressors, transfer lines, presses, ramming machines and vehicles.

2.6.6.4 Electromagnetic Interference

Consider electromagnetic interference from various local sources: motors, switching devices, switching thyristors, radio-controlled devices, welding equipment, arcing, switched-mode power supplies, converters / inverters.

2.6.7 Particular Sources of Interference

2.6.7.1 Inductive Actuators

Switching off inductances (such as from relays, contactors, solenoids or switching magnets) produces surge voltages. It is mandatory to throttle these noise voltages to an admissible dimension.

Throttling elements could be diodes, Z diodes, varistors or RC elements. To find the best adapted elements, we recommend that you contact the manufacturer or supplier of the corresponding actuators for the relevant information.

3 System Description

3.1 Overview

Ventura touch - brilliant operation...

- **Brilliant**
high luminous intensity of 400 cd/m²
1.5-fold pixel density
large reading angle
- **Fast**
DVI for rapid screen build-up
convenient start-up
easy-to-clean front without joints
- **Compact**
just 50 mm deep
large screen surface
lightweight design






3.2 Application



Ventura touch is an industry-scale TFT monitor with touch screen functionality.

If combined with the control PC Ventura, you get a powerful and flexible industry PC system for a wide range of practical applications, specifically in the fields of mechanical engineering and switching cabinet construction:

- operation and control of tool making and wood processing machines using standardised software
- operation and visualisation with the display terminal taken down for use in automatic machines and info terminals
- visualisation and realtime control of general-purpose machine systems

3.3 Technical Properties

	Ventura touch 6.5	Ventura touch 10.4	Ventura touch 12.1
			
Design	Control panel mounting at the front and held by screws at the back	Control panel mounting at the front and held by screws at the back	Control panel mounting at the front and held by screws at the back
Cooling	Passive	Passive	Passive
Controls	Touch film on screen surface	Touch film on screen surface	Touch film on screen surface
Display type	TFT 6.5", backlit	TFT 10.4", backlit	TFT 12.1", backlit
Display area (WxH)			
Resolution	VGA, 640x480	VGA, 640x480	SVGA, 800x600
Colours	262k	262k	262k
Brightness	350 cd/m ²	400 cd/m ²	350 cd/m ²
Aspect angle (t/b; l/r)		120; 140	120; 140
Response time		max. 50 ms	max. 50 ms
Life of backlighting	50,000H	50,000H	50,000H
Video port	DVI D	DVI D	DVI D
Touch type	4-wire analogue resistive	4-wire analogue resistive	4-wire analogue resistive
Touch screen port	USB	USB	USB
Protection (front)	IP 65	IP 65	IP 65
Protection (back)	IP20	IP20	IP20
Power supply	24 VDC -15%+20%	24 VDC -15%+20%	24 VDC -15%+20%
Ambient temperature	0 ... 50 °C	0 ... 50 °C	0 ... 50 °C
Housing made of	Stainless steel	Stainless steel	Stainless steel
Front film	polyester	polyester	polyester
Weight			
Power consumption			
Temp. storage/trans	-20 C° ... +70C°	-20 C° ... +80C°	-20 C° ... +70C°
Dimensions (WxHxD)	200mm x 165mm x 46mm	280mm x 232mm x 64mm	320mm x 265mm x 46mm

	Ventura touch 12.1 XGA	Ventura touch 15.0
		
Design	Control panel mounting at the front and held by screws at the back	Control panel mounting at the front and held by screws at the back
Cooling	Passive	Passive
Controls	Touch film on screen surface	Touch film on screen surface
Display type	TFT 12.1", backlit	TFT 15.0", backlit
Display area (WxH)		
Resolution	XGA, 1024x768	XGA, 1024x768
Colours	262k	262k
Brightness	350 cd/m ²	350 cd/m ²
Aspect angle (t/b; l/r)	100; 120	140; 160
Response time	max. 50 ms	max. 25 ms
Life of backlighting	50,000H	50,000H
Video port	DVI D	DVI D
Touch type	4-wire analogue resistive	4-wire analogue resistive
Touch screen port	USB	USB
Protection (front)	IP 65	IP 65
Protection (back)	IP20	IP20
Power supply	24 VDC -15%+20%	24 VDC -15%+20%
Ambient temperature	0 ... 50 °C	0 ... 50 °C
Housing made of	Stainless steel	Stainless steel
Front film	polyester	polyester
Weight		
Power consumption		
Temp. storage/trans	-20 C° ... +60C°	-20 C° ... +60C°
Dimensions (WxHxD)	320mm x 265mm x 46mm	394mm x 326mm x 46mm

3.4 Front Film

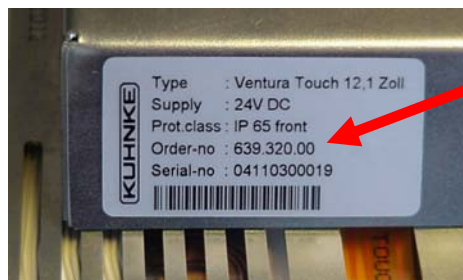
The uninterrupted layer of front polyester film is highly resistant to abrasion and provides excellent chemical resistance to cleaning agents and solvents.

The front film complies with DIN 42 115 Part 2 and withstands the following chemicals

- alcohols
- dilute acids
- dilute alkaline solutions
- esters (ethylacetate, solvents)
- hydrocarbons / oils
- ketones (acetone)
- household cleaners

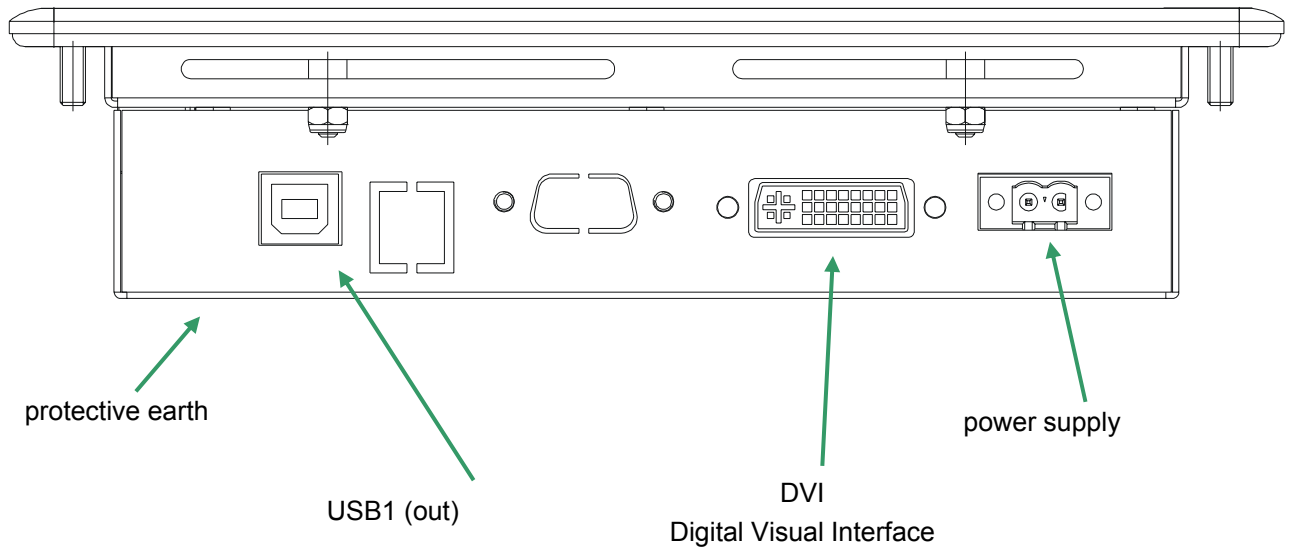
3.5 Model Variant

Ventura touch sells as various model variants, giving users a good chance of choosing the model that best matches the application. The features of a model can be derived from the part no. you order it by.



Part number

3.6 Physical Design



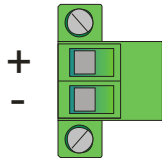
3.7 Power Supply and Ports

3.7.1 24 VDC Power Supply

Only attach the unit to a 24 VDC power supply source if the source is guaranteed to meet safe extra low voltage requirements (SELV).

Please use the connector from the package to attach the unit to the power supply.

The admissible diameter of the cord connecting the 24 VDC power is between 0.2 mm² and 2.5 mm².



Connector 2-pin, male, 2.5 mm²

Pin	Function
L+	Supply voltage +24 VDC
L	GND

3.7.2 Earth



The earth connector of Ventura touch is connected to the protective earth conductor of the cabinet or system / machine element. Use the flat plug (6.3 mm x 0.8 mm) at the back of the unit.

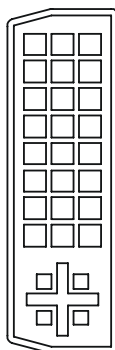
The minimum cross section must be no less than 2.5 mm². Try to keep the lead to the earthing terminal as short as possible.



A low-impedance earth conductor improves the dissipation of interference received via external power supply cables, signal cables or cables of peripheral units.

3.7.3 Graphics Adapter "DVI / VGA"

DVI
Digital Visual Interface



The DVI-D port transfers the digital screen data and can thus be used for both monitors with a digital DVI port and monitors with an analogue VGA port.

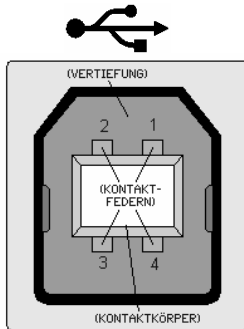
If attached to the Ventura controller PC, special leads support lengths of up to 20 m. To bridge larger gaps, a DVI signal repeater can be installed somewhere along the line.

Pin	Signal	Function
1	TMDS Data2-	DVI data line (A)
2	TMDS Data2+	DVI data line (A)
3	GND	shield
4	NC*	
5	NC	
6	DDC clock (SCL)	display data channel clock (I/O)
7	DDC data (SDA)	display data channel data (I/O)
8	Analogue vertical sync (VSYNC)	analogue vertical sync signal (A)
9	TMDS Data1-	DVI data line (A)
10	TMDS Data1+	DVI data line (A)
11	GND	shield
12	NC	
13	NC	
14	+5V power (VCC)	+5V power for DCC (A)
15	Ground (return for V, Hsync and Vsync)	analogue ground (GND)
16	hot plug detect	
17	TMDS Data 0-	DVI data line (A)
18	TMDS Data 0+	DVI data line (A)
19	GND	shield
20	NC	
21	NC	
22	GND	shield
23	TMDS clock+	DVI clock line (A)
24	TMDS clock-	DVI clock line (A)
C1	NC	
C2	NC	
C3	NC	
C4	NC	
C5	GND	



To ensure that the control and display monitor is correctly detected and actuated by the BIOS and operating system, it should be attached to the PC when the PC is switched on.

3.7.4 "USB 1", Out



The touch screen information is output to USB port "USB 1", type B. To properly process the input signals on the screen, attach the outlet with one of the controller PC's USB ports.

Connector USB port, type B

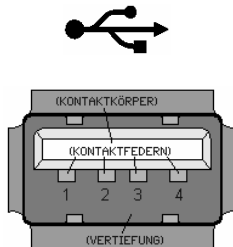
Pin	Signal	Function
1	VBUS (5 VDC)	+5V (fused) for external USB port
2	D-	data+, USB channel 0
3	D+	data-, USB channel 0
4	GND	GND for external USB port
Shell	Shield	shielding

If no other action is taken, the cable should be no longer than 5 m. Install an active or passive repeater to extend the USB cable to up to 30 m.



To find drivers for operating systems Windows® CE and Windows® XP Embedded, browse the web for www.kuhnke.com and go to the Downloads page.

3.7.5 "USB 2", In (Optional)



The USB Host adapter "USB" (USB port, type A) is the port for external peripherals such as CD-ROM drives, printers, modems or mouse and keyboard. The power supply to the units attached via USB provides up to 100 mA output current. Following short circuit or overload, the power supply is switched off.

Connector USB port, type A

Pin	Signal	Function
1	VBUS (5 VDC)	+5V (fused) for external USB port
2	D-	data+, USB channel 0
3	D+	data-, USB channel 0
4	GND	GND for external USB port
Shell	Shield	shielding



Peripherals with hot-plug capability can be attached to the USB port while the PC is running.



To find a range of various lengths of DVI and USB cables, browse the web for Reichelt Elektronik at www.reichelt.de.

Example: *USB cable:* *AK 672/2-5.0m*

DVI cable: *AK DVI 112-5.0m*

4 Mounting and Installation

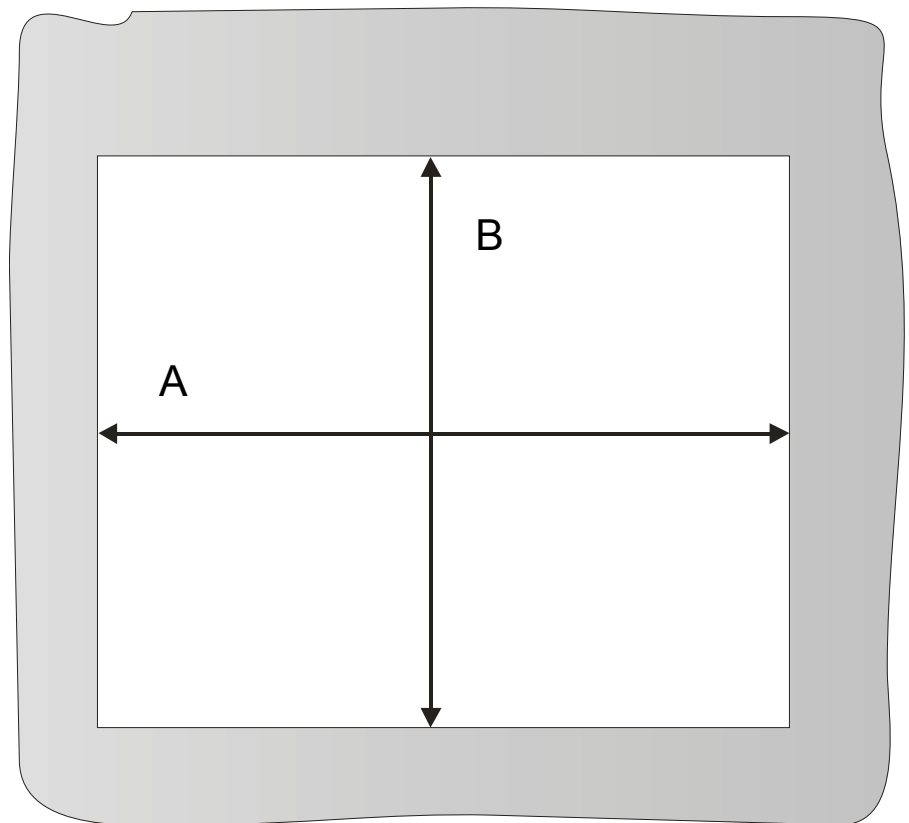
Control and display monitor Ventura touch is designed for installation into a front panel or HM interfaces for machine and systems engineering. One constraint is that the unit must not be used in explosive areas.

Heat dissipation

To enable sufficient heat dissipation through convection (heat exchange) at the housing surface, the air should be allowed to flow freely around the housing of Ventura touch. This specifically applies to the rear of the unit.

Please note that excessive temperature could shorten the life expectancy of the monitor.

4.1 Front Panel Opening



Type	Width	Height
Ventura touch 6,5"	175 mm	145 mm
Ventura touch 10,4"	258 mm	210 mm
Ventura touch 12,1"	298 mm	240 mm
Ventura touch 15"	351 mm	284 mm

4.1.1 Installation



- Control panel opening:
Mark the area on the control panel where you wish to install the unit, then cut a hole into the control panel. Refer to the drawing to find the correct dimensions.
- Again look at the drawing to know where the holes for the screws should be drilled.
- Place the monitor in the opening and put the nuts (included in package) on the screws. To obtain the specified degree of protection, the sealing around the monitor should be evenly pressed against the panel all the way around.



Nuts, washers and tooth lock washers for Ventura touch attachment are contained in the package.

4.1.2 Attaching the Cables

Refer to drawing XXXX to find where at the back of Ventura touch the connectors are locators. They are described in chapter 3.7 Power Supply and Ports.

Cables should be attached to the control and display monitor Ventura touch in the order described herebelow:



- Switch off the controller PC.
- Unplug the controller PC from the mains/power supply.
- Attach all cables to Ventura touch and any peripherals.
- Check that all cables are firmly attached at both ends!
- Plug all units back into the power supply unit.

5 Start-up



Danger of damage to the unit!

If the device was exposed to condensation, allow it to rest for about 12 hours before you start to use it.

5.1 TFT Monitor Calibration

5.1.1 Adjusting the Resolution

Mind that the Ventura touch monitor must be attached to the controller PC before you switch on the power supply to the system. At the boot-up stage, the monitor configuration stored by Ventura touch is read by the controller PC's BIOS and output to the graphics adapter board. This sets the operative resolution and transfer parameters for this session.

There is no need for video framing correction as it would be normally performed for a VGA interface.

In case the controller PC's BIOS does not support automatic download of the monitor configuration, you can choose the "Control Panels / Monitor" function of your operating system to change the settings manually.

5.1.2 Adjusting the Brightness

There is a potentiometer at the back of Ventura touch which you can use to adapt the brightness of screen backlighting. To change the potentiometer setting, put a screwdriver through the round hole in the cover over the interface board.



Brightness



Please use a flat-blade screwdriver max. 6 mm wide.

5.2 Configuring and Calibrating the Touch Screen

5.2.1 Windows CE

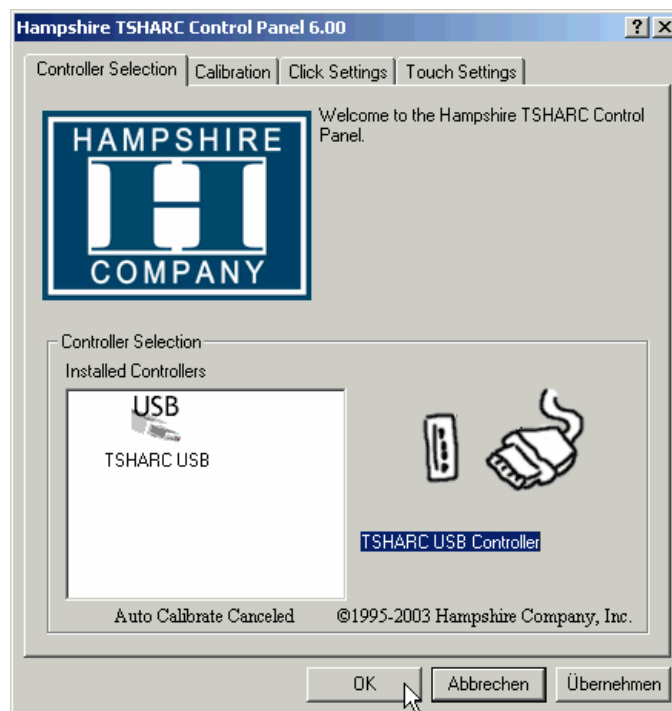
When you run Ventura on a CE platform for the first time, touch screen calibration will be performed automatically. Please follow the on-screen instructions. Afterwards you can start using your Ventura touch.

To recalibrate the touch screen at any later time, manually run HCECAL.exe. On KUHNE Ventura systems, the program is located in Start menu folder "Programs / Kuhnke".

5.2.2 Windows 98se, ME, 2000, XP

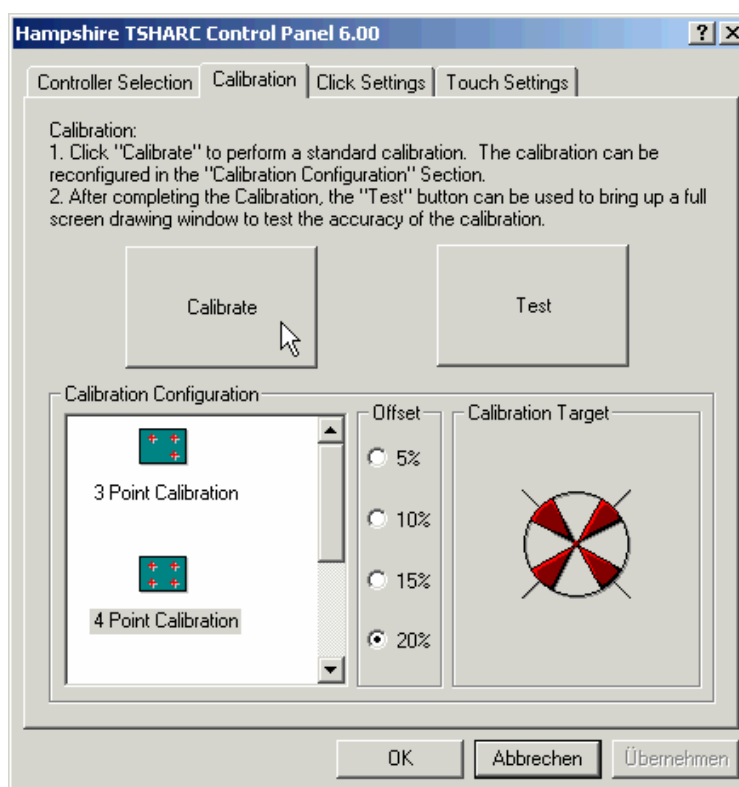
To calibrate and configure the Ventura touch screen monitor, run the "TSHARC Control Panel" application. If you chose the "Default Installation" option, browse the Start menu for folder "Programs / Hampshire TSHARC Control Panel".

Once the control panel is up and running, select the Controller Interface. The Ventura touch control and display monitor is always listed as a USB port device.



- Select "TSHARC USB Controller" and go to tab "Calibration".

5.2.2.1 "Calibration" Tab



This tab lets you select the options for touch screen calibration:

Calibration Configuration

On this panel, you define the number of calibration points.

Basically, the more points you calibrate, the better the accuracy of touch screen response. The "4 Point Calibration" default option yields very good results.

Offset

In the corners of the touch screen surface, some non-linear events may occur which can be compensated by a lower offset. The lower the values, the smaller the "Target" and the more accurate the setting.



- Click on "Calibrate" to start the touch screen calibration procedure.
- Touch the on-screen "Calibration Targets" using your finger or a blunt object.
- When all calibration points have been checked, control will be returned to the above dialog screen.. Clicking on "Test" runs a paint utility which lets you verify if the settings are ok.
- Re-run the calibration process if you think the result is not satisfactory. You should first adapt the "Calibration Configuration" and "Offset", though.

5.2.2.2 "Click Settings" Tab

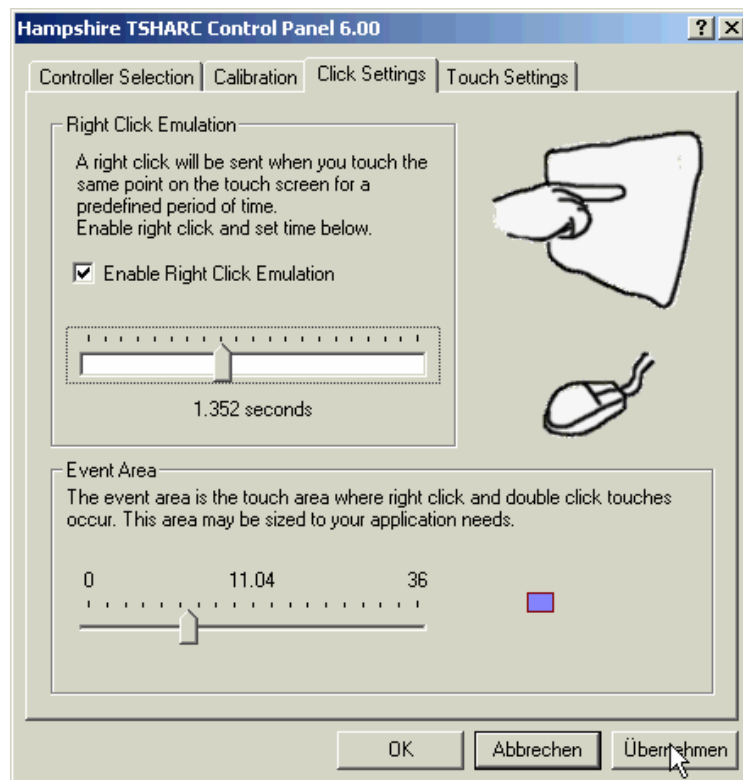
This tab allows you to enable and adapt the "Right Click" feature.

Right Click Emulation

You can instruct the touch screen to enable the right-click feature if a defined point on the screen is touched for a defined period of time. Go to the "Right Click Emulation" panel to enable the function and set the time.

Event Area

Since it may prove to be difficult to touch a screen at a minutely defined point, this panel allows you define a capture area around that point which will still be accepted as a touching of that point.



- Set the "Right Click Emulation" time to match your needs and preferences.
- Select an area for enabling the right-click function.
- Click on "Accept" to store your settings.

5.2.2.3 "Touch Settings" Tab

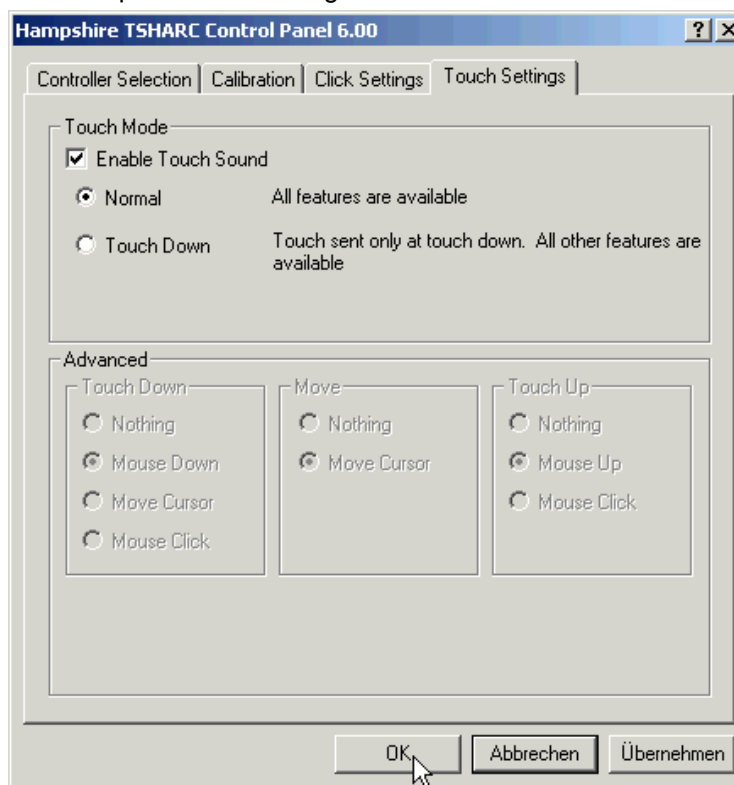
Touch Mode

If "**Enable Touch Sound**" is ticked the speaker will sound an acknowledge tone every time the screen is touched.

The "**Normal**" option supports "click", "double click", "drawing", drag and drop" and "right click" functionality.

"**Touch Down**" supports "click events" only, i.e. you can neither use "draw" nor "drag and drop".

"Touch Up" disables the "right click" and "double click" functions.



- Adapt the "Touch Mode" as appropriate.
- Click on "Accept" to store your settings.
- Click on "OK" to exit the utility program.

6 Maintenance and Servicing

6.1 Cleaning the Control Panel

Switch off the controller and all peripherals attached to it to prevent any touch commands from being processed unintentionally.

Use a soft, damp cloth to wipe the front of Ventura touch. Neither use aggressive cleaning agents, nor dilutions, abrasive cleaners or hard objects that might scratch the surface.



For chemical resistance information, please read ch. 7.1.2 Chemical Resistance.

Disposal

Troubleshooting help

Troubleshooting

Fault	Cause	Actions
No control panel function after booting the IPC	Cable not attached BIOS failed to find monitor data	Attach cable properly. Measure the voltage supplied, check pin wiring. Run Control Panel utility or KUHNKE tool to adjust the monitor resolution.
Some screen areas do not work or not all the time, e.g. no picture or picture very dark.	Fluorescent lamp defective in the display	Contact the KUHNKE Customer Service to get a replacement for the defective fluorescent lamp

7 Appendix

7.1 Technical Data

7.1.1 Basic Data

Function	industrial monitor with touch functionality
Design	control panel mounting at the front and held by screws at the back
Dimensions.....	see Technical Properties → 3.3 Technical Properties
Weight	see Technical Properties → 3.3 Technical Properties
Protection	IP 20 Front IP 67

Environment

Sound emission	<40dB (A) compliant to DIN 45635-1
Permits.....	CE

Power Supply

Supply voltage (DC)	24 VDC 1 (-15% / +20%)
Brief voltage interruption	min. 10 ms (at 19.2 V) recovery min. 1s
Max. power consumption	see Technical Properties → 3.3 Technical Properties

Electromagnetic compatibility (EMC)

Noise emission	EN 55022 Class B; FCC Class A
Susceptibility to noise	
noise voltage conducted by	
power supply lines.....	+/- 2 kV compliant to IEC 61000-4-4; burst +/- 1 kV compliant to IEC 61000-4-5; surge, symmetrical +/- 2 kV compliant to IEC 61000-4-5; surge, asymmetrical
signal lines.....	+/- 2 kV compliant to IEC 61000-4-4; burst; length > 3 m +/- 2 kV compliant IEC 61000-4-5; surge; length > 30 m
static electricity discharge	+/- 6 kV contact discharge compliant to IEC 61000-4-2 +/- 8 kV air discharge compliant to IEC 61000-4-2
HF interference.....	10 V/m 80 – 1000 MHz, 80% AM compliant to IEC 61000-4-3 10 V/m 900 MHz and 1.89 GHz, 50% on-time compliant to IEC 61000-4-3 10 V 9 KHz – 80 MHz, compliant to IEC 61000-4-6

Admissible ambient conditions

Storage and transportation

- Temperature..... see Technical Properties
→ 3.3 Technical Properties
- Relative humidity 5% to 95% at 25°C (no condensation)
- Vibration (not frequent) 5 Hz to 9 Hz: 3.5 mm, 9 Hz to 150 Hz: 9.8 m/s²
- Shock (not frequent)..... free fall from 1m height in original packaging

Operation

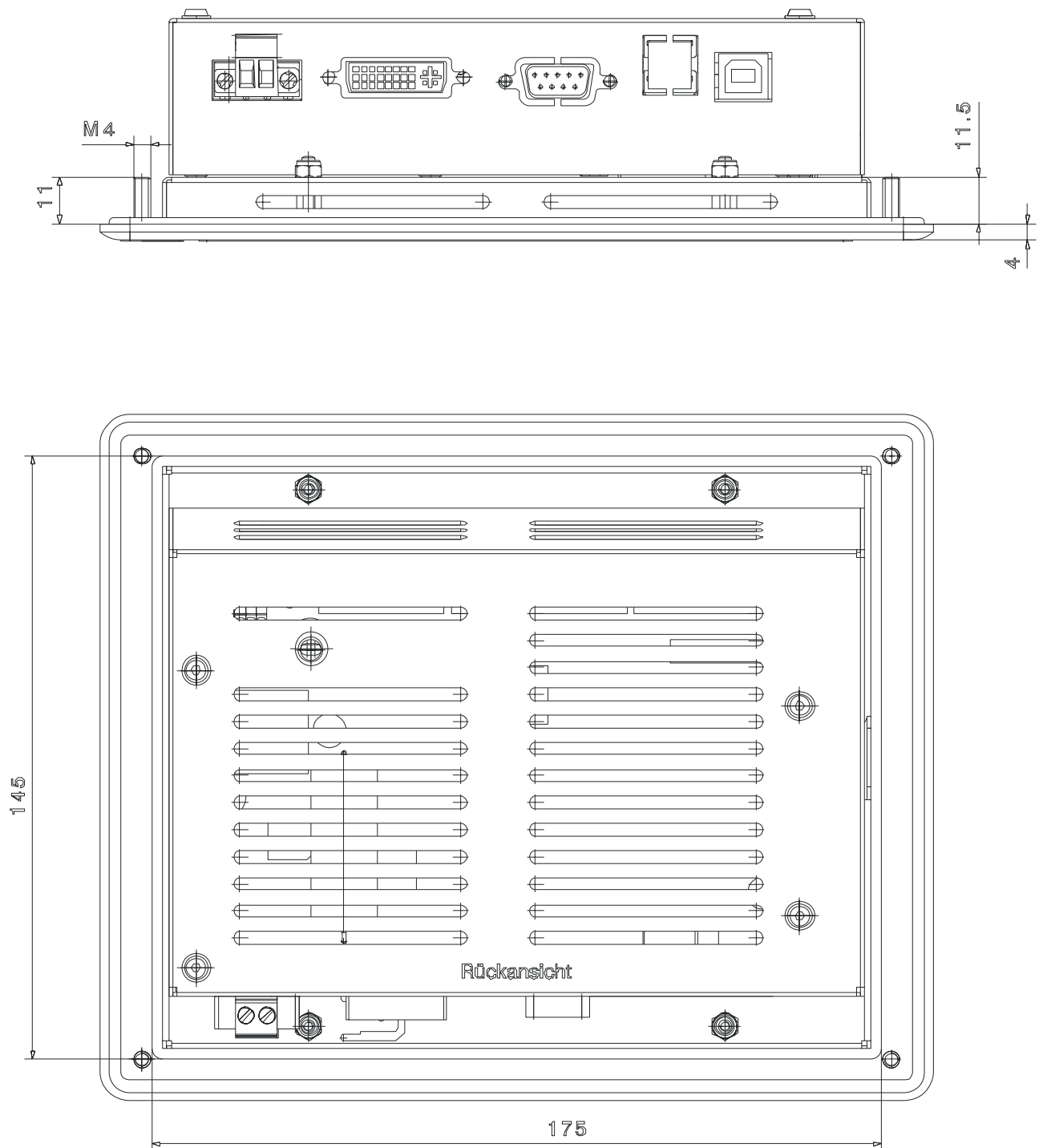
- Ambient temperature..... horizontal installation: 0...50 °C
vertical installation: 0 ... 50 °C
- Relative humidity 5% to 80% at 25°C (no condensation)
- Vibration (not frequent) 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 150 Hz: 9.8 m/s²
- Shock (not frequent)..... 15g for 11 ms

7.1.2 Chemical Resistance

The front film complies with DIN 42 115 Part 2 and withstands the following chemicals

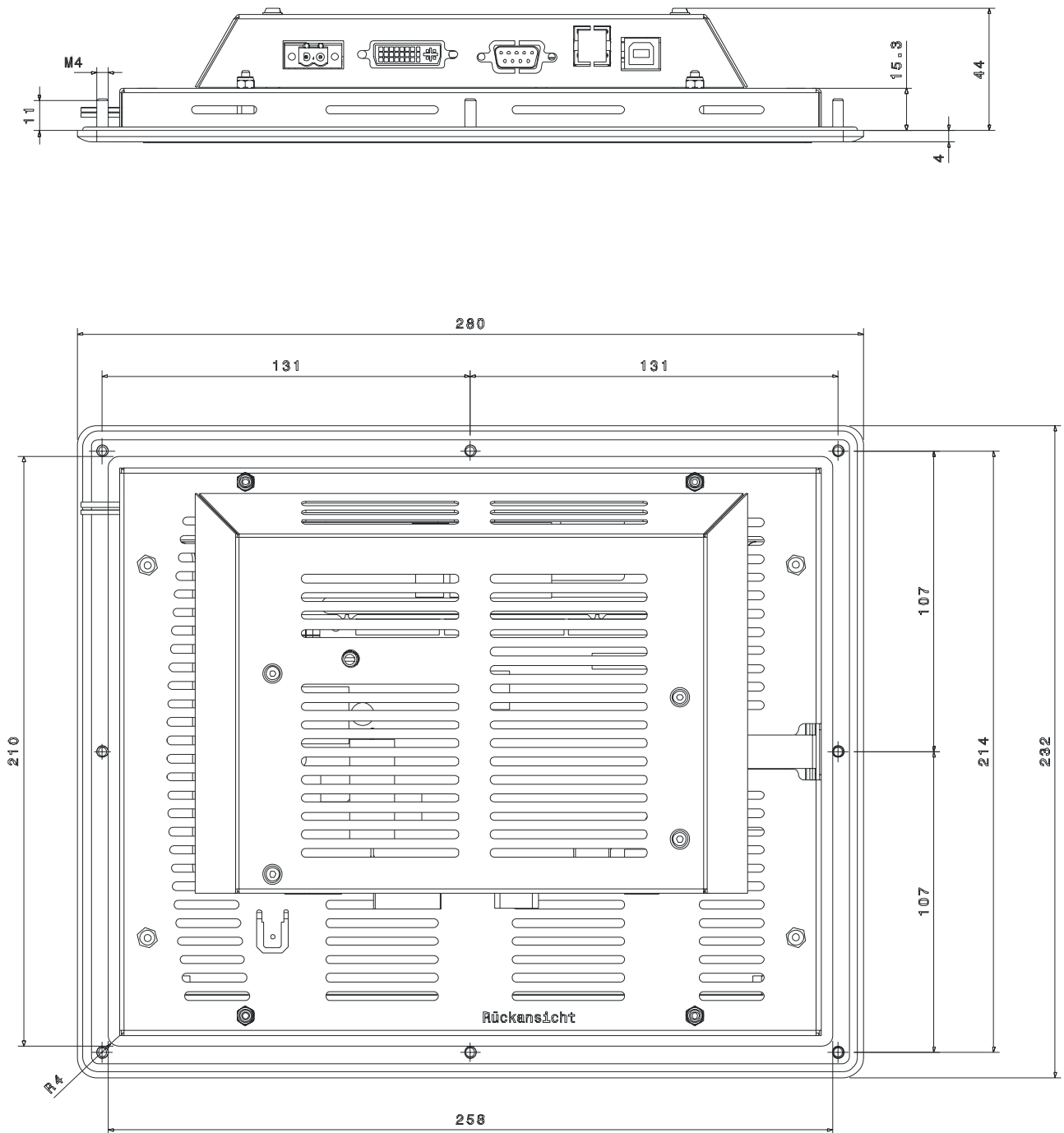
- alcohols
- dilute acids
- dilute alkaline solutions
- esters (ethylacetate, solvents)
- hydrocarbons / oils
- ketones (acetone)
- household cleaners

7.1.3 Dimensions Ventura touch 6.5"



You find a complete one building plan as PDF for "DOWNLOAD" in the internet under www.kuhnke.com . or in the product specifications in the area "electronics"

7.1.4 Dimensions Ventura touch 10.4"

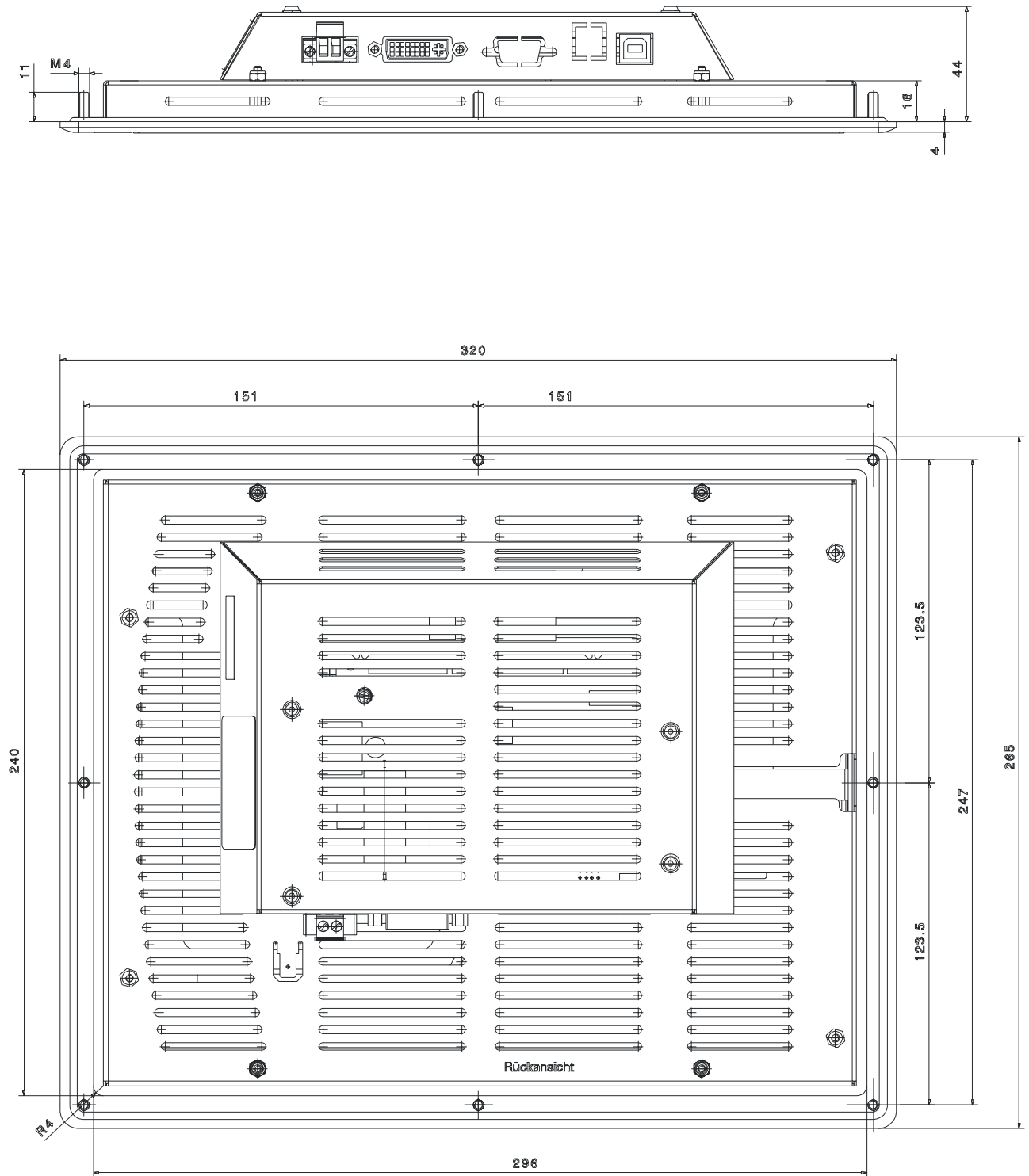


+



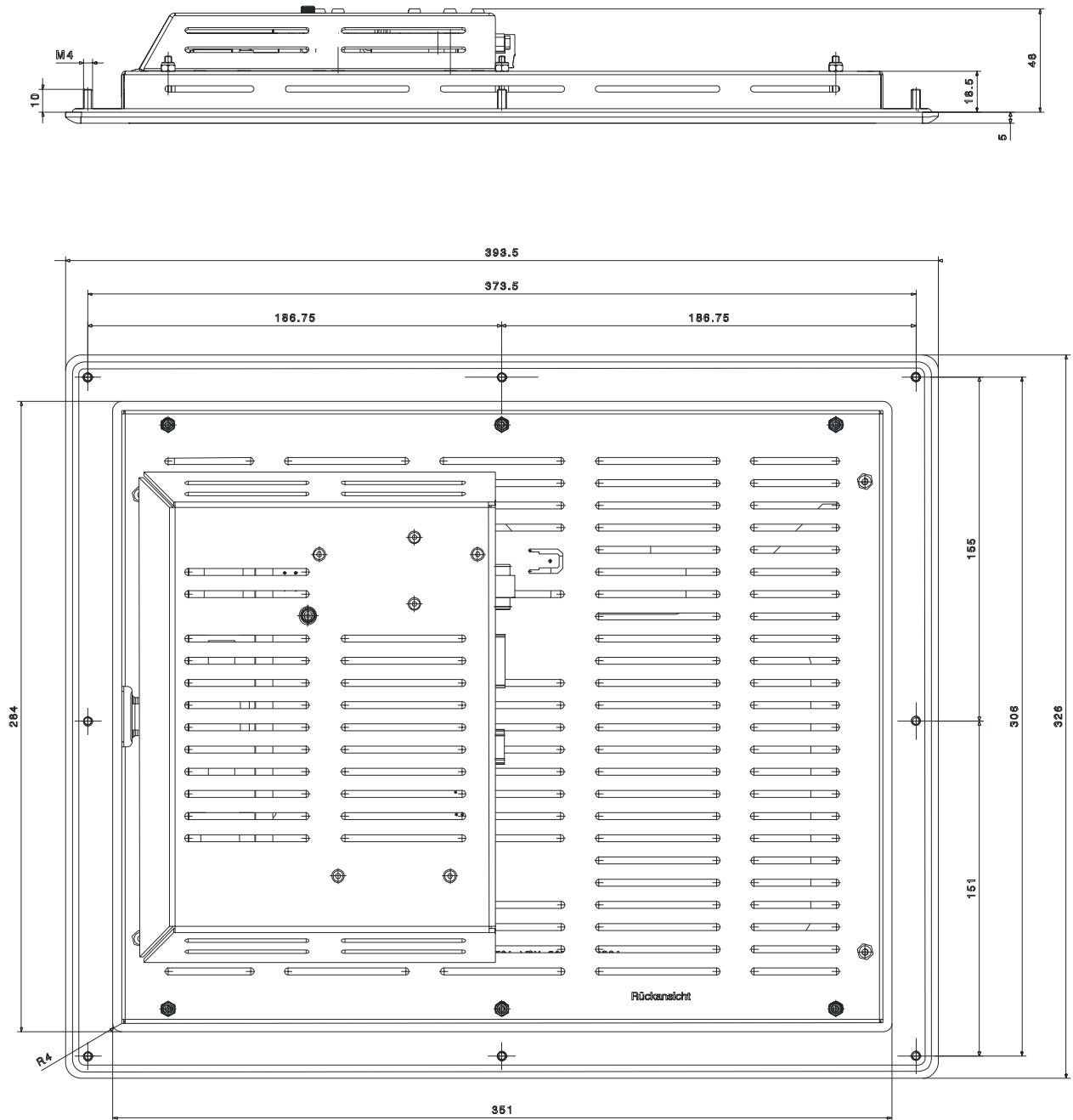
You find a complete one building plan as PDF for "DOWNLOAD" in the internet under www.kuhnke.com . or in the product specifications in the area "electronics"

7.1.5 Dimensions Ventura touch 12,1"



You find a complete one building plan as PDF for "DOWNLOAD" in the internet under www.kuhnke.com . or in the product specifications in the area "electronics".

7.1.6 Dimensions Ventura touch 15"



You find a complete one building plan as PDF for "DOWNLOAD" in the internet under www.kuhnke.com . or in the product specifications in the area "electronics"

7.2 Order Specifications

7.2.1 Basic Units

- Ventura touch 6.5"** **639.300.00**
TFT control and display monitor including touch screen functionality.
Interfaces: DVI, USB / RS232 touch
24 VDC power supply, resolution: 640x480 (VGA)
- Ventura touch 10.4"** **639.310.00**
TFT control and display monitor including touch screen functionality.
Interfaces: DVI, USB / RS232 touch
24 VDC power pack
Resolution: 640x480 (VGA)
- Ventura touch 12.1"** **639.320.00**
TFT control and display monitor including touch screen functionality.
Interfaces: DVI, USB / RS232 touch
24 VDC power pack
Resolution: 800x600 (SVGA)
- Ventura touch 12.1" XGA** **639.330.00**
TFT control and display monitor including touch screen functionality.
Interfaces: DVI, USB / RS232 touch
24 VDC power pack
Resolution: 1024x768 (XGA)
- Ventura touch 15.0"** **639.340.00**
TFT control and display monitor including touch screen functionality.
Interfaces: DVI, USB / RS232 touch
24 VDC power pack
Resolution: 1024x768 (XGA)



7.2.2 Accessories

Set of cables, Ventura touch

639.800.03

DVI and USB adapter cable connecting Ventura and Ventura touch, used for transferring monitor data and touch screen information.
5 m



7.3 References

Title / Subject	Number	Source
Ventura 100 / 300 / 700 PC-based Controller	E 674 GB	Kuhnke GmbH
Ventura SlotPLC PLC, PROFIBUS-DP and CANopen Master	E 697 GB	Kuhnke GmbH

7.4 Sales & Service

Please visit us on the Internet to find a comprehensive overview of our sales and service network including all the relevant addresses.

www.kuhnke.com

7.4.1 Main Factory in Malente

Kuhnke GmbH
Lütjenburger Str. 101
D-23714 Malente
Phone +49-45 23-4 02-0
Fax +49-45 23-40 22 47
Email sales@kuhnke.de
Internet www.kuhnke.de

7.5 Index

attention	6	limiting value class	9
cable routing and wiring	10	location of installation	10
chemical resistance	14	maintenance	8
contamination	10	note	7
danger	6	project planning	8
earth	16	reliability	6
electromagnetic compatibility	9	safety	7
electromagnetic interference	10	sales & service	37
impact and vibration	10	servicing	8
inductive actuators	10	symbols	6
installation	8	target group	6
installation instructions	9	temperature	10
instruction	7	under construction	7
interference emission	9	<i>working steps</i>	7