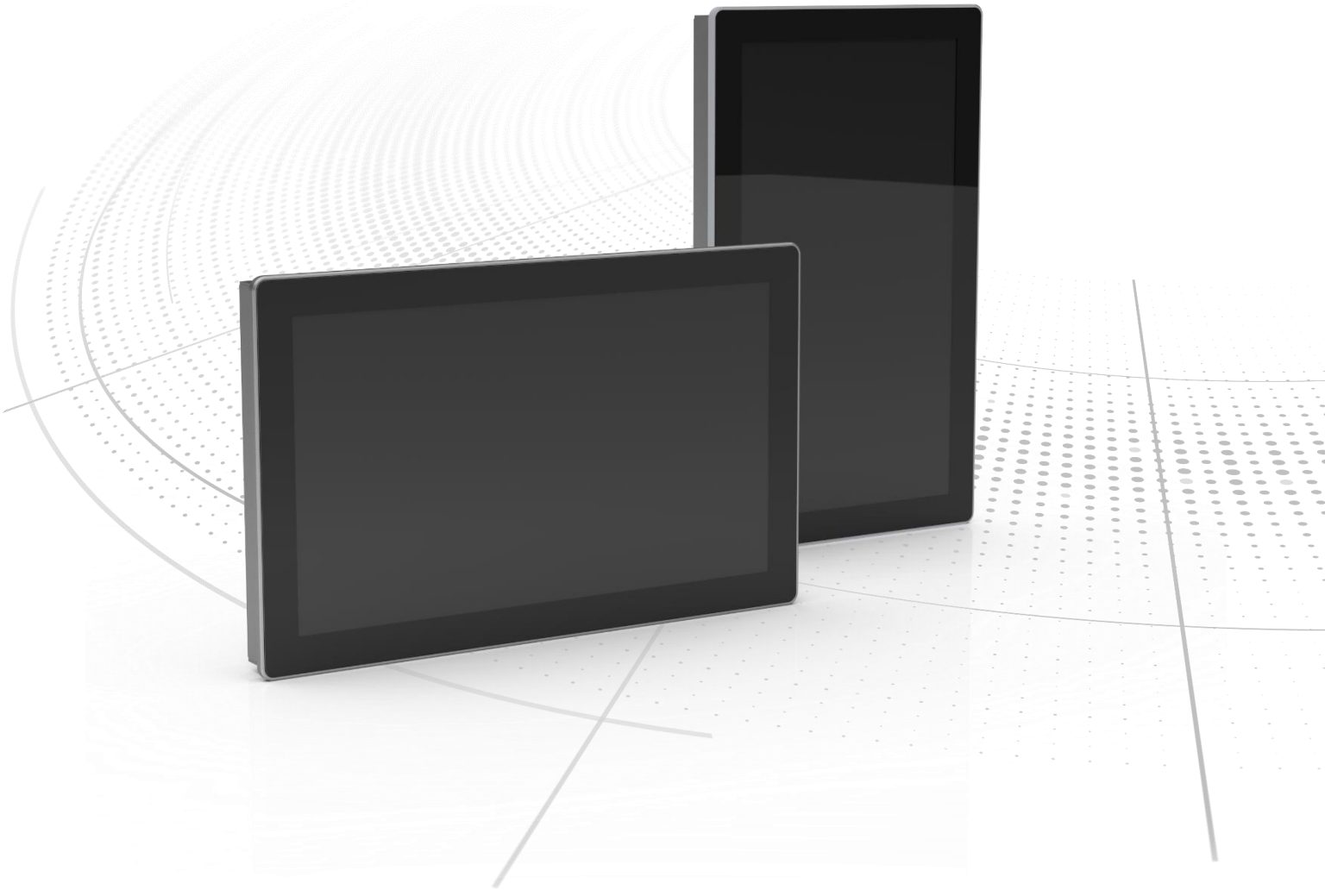
Operating instructions

notion.D.computer 21.5



Original manual | eng
Industry computer

Series: notion.D.computer 21.5
Universal HMI system

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1. About this guide

This description is intended exclusively for trained specialists in control and automation technology who are familiar with the standards and laws applicable at the place of operation. For installation and commissioning of the components it is absolutely necessary to observe the following notes and explanations. The qualified personnel must ensure that the application or use of the described products meets all safety requirements, including all applicable laws, regulations, provisions and standards.

1.1. Copyright, disclaimer, reservation of right of modification

This documentation has been carefully prepared. However, the products described are subject to continuous further development. For this reason, the documentation has not in every case been fully checked for conformity with the performance data, standards or other features described. If it contains technical or editorial errors, we reserve the right to make changes at any time without notice.
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1.3. Delivery state

The entire components are delivered in specific hardware and software configurations depending on the application regulations. Changes to the hardware or software configuration are permitted insofar as they are within the permissible system limits. Limits for e.g. power consumption can be found in the data sheet.

1.4. Topicality

Check that you are using the current and valid version of this document. On the TRsystems website (www. trsystems.de) you will find the latest version for download. If in doubt, contact technical support.

1.5. Delivery conditions

The GTC (General Terms and Conditions) as well as the Terms and Conditions of Sale and Delivery of the company TRsystems apply.

1.6. Release

Aim of the instruction		The intended use of the product	
Author	**Creation date**	RAB	05.06.2023
Release by	**Release on**	SCS	05.06.2023
Document number		TRS-DOC-001842	

1.7. Change index

On this page of the document, the current version status is noted with the associated date and author. Drawings that may be in the appendix are provided with their own change index.

Version	Change	Reason for change	Date	Author
00	Created	Demand	05.06.2023	RAB

1.8. Basic

Read these instructions carefully before use and keep them.
After assembly, pass the instructions on to the user and with the product in case of resale.

1.8.1 Target group

These instructions are intended for persons who commission, configure, operate and maintain a product.

1.8.2 Explanation of terms

The table (Tab. 1) lists terms and briefly explains them to get you started. Some terms are described in detail in the chapter "System overview".

Term	Explanation
Users	Users are persons who are created in the system.

Table 1 Definition of terms

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2. For your safety

The safety chapter explains the safety symbols used and their meanings. They
receive basic safety instructions that are necessary to prevent personal injury and property damage.
are essential.

Disclaimer

In case of non-observance of this documentation and thus the use of the devices outside the documented operating conditions, TRsystems GmbH is excluded from liability.

2.1. Safety instructions

The basic safety instructions precede the instructions. The chapter "Safety instructions" warns of basic hazards that can occur in several phases of the product application and must always be observed by the product user.

Warning sign	Meaning
⚠ GEFAHR	DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠WARNUNG	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠VORSICHT	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
ACHTUNG	CAUTION indicates a situation which, if not avoided, may result in property damage.
HINWEIS	NOTE indicates general notes.

Table 2.1: Type of safety note

2.2. Classification of the hints

These operating instructions contain information that you must observe for your personal safety and to avoid damage to property. A distinction is made between basic safety instructions and warning instructions.

Misapplication	Nature and source of the hazard
Warning sign	Warning signs according to the following table.
Reasons for misapplication	Describes possible reasons for misapplication.
Possible consequences of misuse	Describes the consequences of non-compliance.
Security measure	Indicates how to avoid the hazard.

Table 2.2: Structure of a safety note

2.3. Warnings

Warnings are placed within the documents at the specific danger points. They are placed immediately before the action where there is danger. The warnings are highlighted by a warning triangle and are displayed as follows, depending on the degree of danger:

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2.4. Warning structure

The SAFE method is a procedure for the systematic design of safety instructions.

⚠WARNUNG **Danger of cutting due to sharp-edged metal sheets.** It can lead to cuts. ► Wear cut resistant gloves ► If possible, deburr the sharp edges of the sheets.	_ Severity of the hazard (signal word) _ Nature and source of the hazard _ Consequences of disregarding the danger _ Escape (measures to avert the danger)

2.5. Additional notes

Example ESD area:

	ESD protection measures according to DIN EN 61340-5-1 must be observed.

Example reference:

	Refer to chapter X.X. corresponding structure.

2.6. Intended use

The product is designed exclusively for industrial use in machine and plant engineering.

Use not in accordance with the intended purpose

Do not use the system outside the documented operating conditions

2.7. Basic safety method

The following safety instructions must be observed when handling the device.

Conditions of use

- Do not use the device in extreme ambient conditions. Protect the device from:

Humidity and heat.

- Never use the device in potentially explosive atmospheres.
- Do not carry out any work on the device while it is live. Always switch off the always switch off the supply voltage for the device before mounting it, replacing device components or troubleshooting. This does not apply to the replacement of hard disks in a RAID array.
- Never connect the device during a thunderstorm. There is a risk of electric shock.
- Ensure protective grounding and functional grounding of the device.

Property damage, data loss and functional impairment

- When making independent changes to the hardware and software configurations, keep to the Power consumption and power dissipation limits (refer to the data sheet on power consumption and power dissipation).
- Ensure that only trained specialists in control and automation technology operate the device. operate the device. Use by unauthorized persons may result in damage to property and loss of data.
- Fuse the power supply line with max. 16 A. The fuse serves to protect the the supply line in the event of a short circuit.
- In case of fire, extinguish the unit with powder or CO2 fire extinguisher.

2.8. Duty of care of the operator

The operator must ensure that

- the products are only used for their intended purpose (see chapter 2.2 Intended use Usage).
- the products are only operated in perfect, functional condition.
- only sufficiently qualified and authorized personnel operate the products.
- regularly train these personnel in all applicable matters of occupational safety and environmental protection is instructed, knows the operating instructions and in particular the safety instructions contained therein.

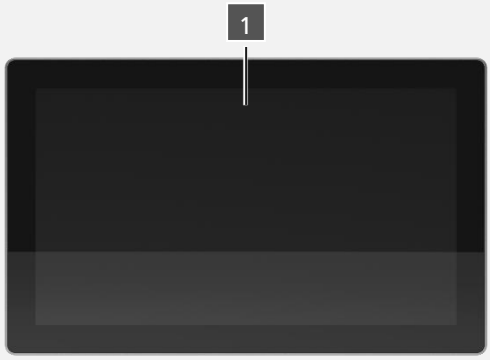
2.9. Note on information security

The user is responsible for preventing unauthorized access by third parties to its equipment, systems, machines and networks. The latter should only be connected to the corporate network or the Internet if appropriate protective measures have been set up.

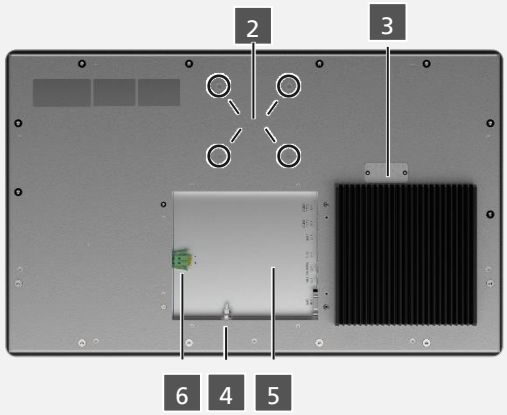
3. Structure and interfaces

notion.D.computer 21.5

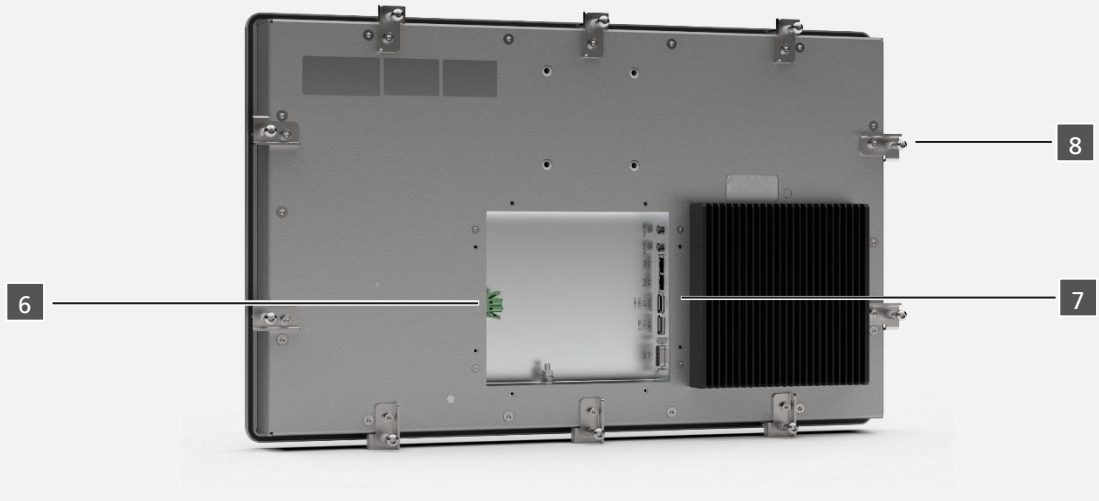
Front view



Rear view



No.	Position	Description
1	Display and touch screen	Input/output unit
2	VESA mount	Support arm mounting (VESA75)
3	Battery cover	Access to the battery (Battery SL-350/S 3.6V 1.2Ah 1/2AA; Art.-No.: 63100456A)
4	Ground connection	Earth
5	Connection room	Installation space for electrical connections
6	Power supply	24 VDC (-15 / +20 %)
7	Interfaces	Connection for periphery
8	Panel mounting	Mounting accessories for control cabinet mounting



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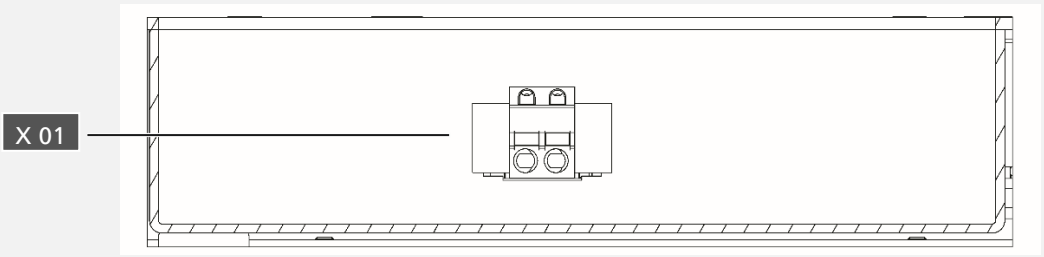
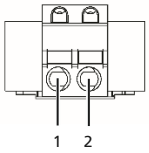
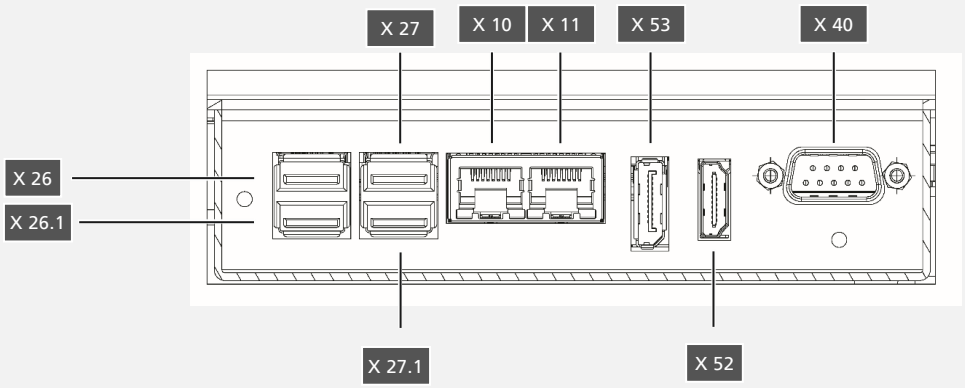
3.1.1 Interfaces: Pin assignment

Interface position 6



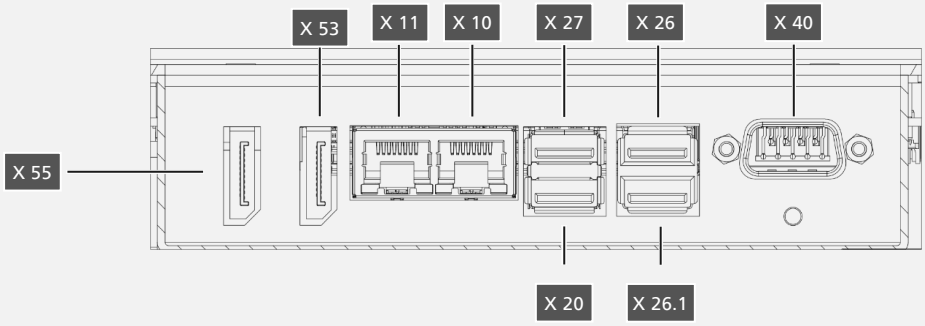
X01 Power supply / Power		
Note the orientation of the interface on the system		
	Pin	Signal
	1	24 VDC (+20 / -15 %)
		CPUps: 24 VDC approx. 2 A
		CPU11: 24 VDC approx. 4 A
	2	GND

Interface position 7 (CPUps)



Interface - Pos.	Naming	Function
7 (CPUps)	X10	Ethernet0 (eth0)
	X11	Ethernet1 (eth1)
	X26	USB 3.0
	X26.1	USB 3.0
	X27	USB 3.0
	X27.1	USB 3.0
	X40	COM1
	X52	HDMI
	X53	DisplayPort

Interface position 7 (CPU11)



Interface - Pos.	Naming	Function
7 (CPU11)	X10	Ethernet0 (eth0)
	X11	Ethernet1 (eth1)
	X20	USB2.0
	X26	USB3.1
	X26.1	USB3.1
	X27	USB2.0
	X40	COM1
	X53	DisplayPort
	X55	DisplayPort

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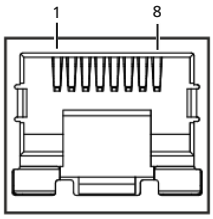
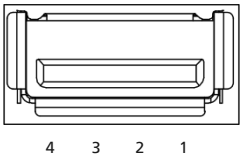
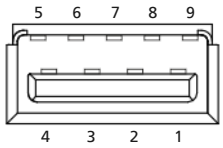
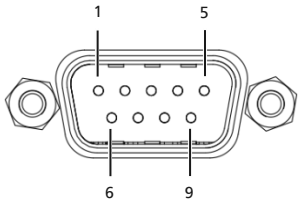
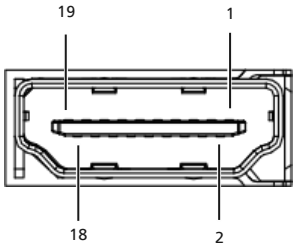
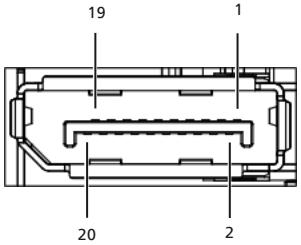
X10, X11 (LAN)		
Note the orientation of the interface on the system		
	**Pin**	**Signal**
	1	T2 +
	2	T2 -
	3	T3 +
	4	T1 +
	5	T1-
	6	T3 -
	7	T4 +
	8	T4 -

X20 (USB2.0)		
Note the orientation of the interface on the system		
	**Pin**	**Signal**
	1	Ground
	2	Data+
	3	Data-
	4	Power (5VDC)

X26, X26.1, X27 (USB 3.0)		
Note the orientation of the interface on the system		
	**Pin**	**Signal**
	1	VBUS
	2	D-
	3	D+
	4	GND
	5	StdA_SSRX -
	6	StdA_SSRX +
	7	GND_DRAIN
	8	StdA_SSTX -
	9	StdA_SSTX +

X40 (COM1)		
Note the orientation of the interface on the system		
	**Pin**	**Signal**
	1	TXD-
	2	TXD+
	3	RTS-
	4	RTS+
	5	GND
	6	RXD-
	7	RXD+
	8	CTS
	9	CTS+

X52 (HDMI)		
Note the orientation of the interface on the system		
	**Pin**	**Signal**
	1	TMDS Data 2+
	2	TMDS Data 2 Shielding
	3	TMDS Data 2-
	4	TMDS Data 1+
	5	TMDS Data 1 Shielding
	6	TMDS Data 1-
	7	TMDS Data 0+
	8	TMDS Data 0 Shielding
	9	TMDS Clock 0-
	10	TMDS Clock +
	11	TMDS Clock Shielding
	12	TMDS Clock -
	13	CEC
	14	Occupied
	15	SCL
	16	SDA
	17	DDC/CED grounding
	18	+5V voltage
	19	Hot plug detection

X53, X55 (DisplayPort)		
Note the orientation of the interface on the system		
	**Pin**	**Signal**
	1	LVDS - Line 0+
	2	Mass
	3	LVDS - line 0-
	4	LVDS - Line 1+
	5	Mass
	6	LVDS - Line 1-
	7	LVDS - Line 2+
	8	Mass
	9	LVDS - Line 2-
	10	LVDS - Line 3+
	11	Mass
	12	LVDS - line 3-
	13	Config 1
	14	Config 2
	15	AUX channel +
	16	Mass
	17	AUX channel -
	18	Hot Plug - Detection
	19	Power supply: ground
	20	Power supply +3.3 V / 0.5 A

4. Commissioning

To be able to use the system, you must first put the system into operation. This includes in the first step is the transport and unpacking of the device. This is followed by the assembly of the device on the support arm or in a corresponding cutout. This is followed by the connection of the grounding wires, other connections and the power supply, which completes the commissioning of the system.

4.1. Transport and unpacking

Despite the robust design, the installed components are sensitive to strong shocks and shocks. Therefore, protect the device from large mechanical loads during transport. Through suitable packaging of the system, such as the original packaging, can reduce the vibration resistance at the Transport to be improved.

ACHTUNG

Material damage due to dew.
Unfavorable weather conditions during transport can cause damage to the device.

- ► Protect the device from moisture (condensation) when transporting it in cold weather or during extreme temperature fluctuations.
- ► Do not start the device until it has slowly adjusted to the room temperature.
- ► In case of condensation, switch on the device only after a waiting time of approx. 12 hours.

4.1.1 Unpacking

Proceed as follows when unpacking the device:

- _ Check the packaging for transport damage.
- _ Remove the packaging.
- _ Keep the packaging for possible re-transportation.
- _ Check the completeness of your delivery against your order.
- _ Check the package contents for visible transport damage.
- _ In the event of discrepancies between the contents of the package and the order or damage in transit, inform TRsystems Service (see chapter Service and Support).

4.2. Assembly and weight

⚠VORSICHT

Falling damage, risk of injury
During assembly, the device may fall on the foot.

- ► Wear safety shoes
- ► Secure the device against falling out during installation
- ► Use transport aids to the final assembly site

ACHTUNG

Damage to property due to incorrect handling
The device may be mechanically damaged during installation.

- ► Do not place the system on the display side.
- ► Always place the system horizontally
- ► Use transport aids even on short routes
- ► Before installation, check the mounting situation for damage or foreign bodies

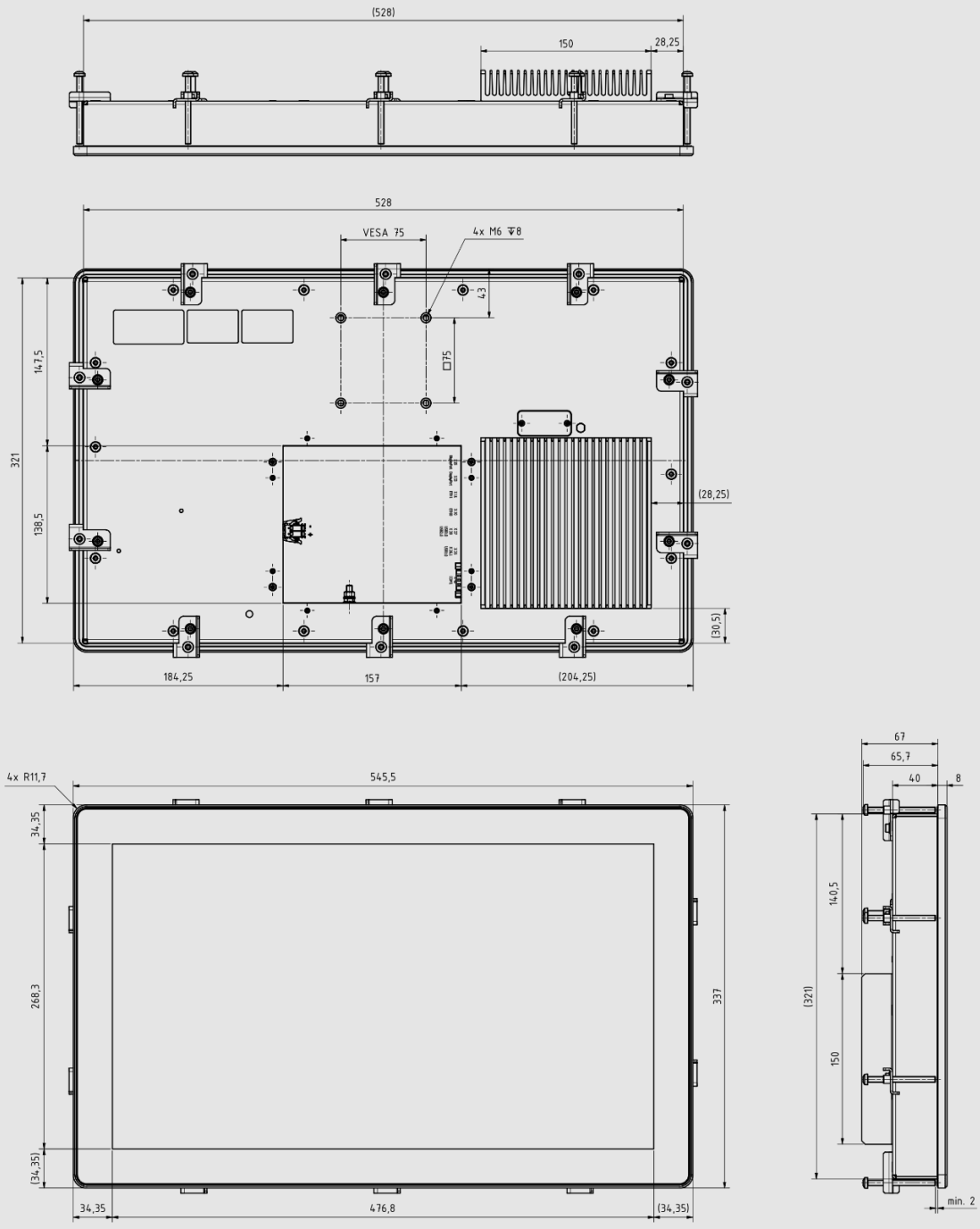
When mounting the "notion.D.computer 21.5" on a support arm (VESA), make sure that the support arm is suitable for the static and dynamic load.

Weight: approx. 6,5 Kg

5. Technical drawings

5.1. notion.D.computer 21.5

Structural dimensions for recessed mounting



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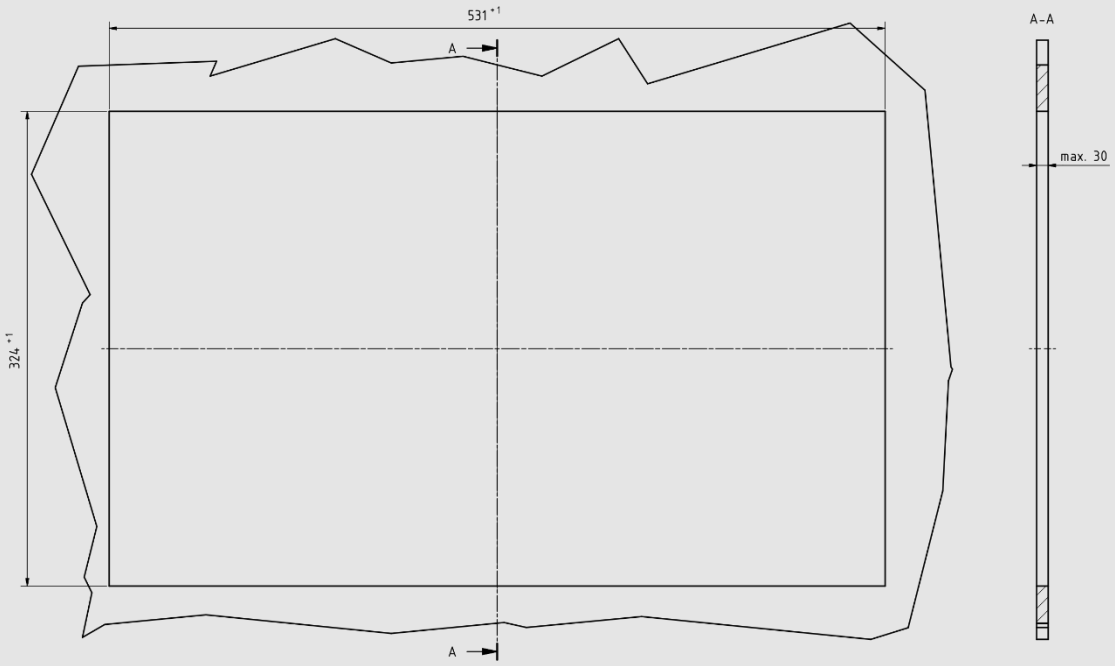
Mounting cutout for recessed mounting



5.2. Switching the Panel PC on and off

5.2.1 Grounding the system

Grounding or equipotential bonding of electronic devices minimizes different electrical potentials (potential differences) and discharges electrical currents into the ground. This is to avoid dangerous touch voltages and electromagnetic interference. The grounding bolt, via which the functional grounding of the system is ensured, is located in the interface shaft. Use cables with a cross-section of at least 4 mm^2 for the ground connection. The potential equalization must be connected!

5.2.2 Connect cables and power supply

ACHTUNG

Incorrect procedure for connection
Incorrect procedures when connecting the cables and the power supply can cause damage to property.

- ► Follow the documented procedure for connecting the lines and the power supply.
- ► Always connect all lines first and only then switch on the power supply.
- ► Read the documentation for the external devices before connecting them.

The connections are located on the back of the system in the terminal compartment.

Connect lines
Make sure that you ground the system first (see chapter Grounding the system) and then plug in all data transmission lines.

Connect power supply
For the connection of the power supply, you can use cables with a maximum cable cross-section of of 1.5 mm . ^{2}

To connect the 24 VDC power supply, proceed as follows:

- _ Check or measure the correct voltage at the connector X01 (power supply / power).
- _ Insert the X01 connector plug into the connection socket.
- _ Switch on the power supply.

After you have connected all data transmission lines and power supply, make sure that the cables are not under tension.

6. Decommissioning

⚠VORSICHT

Falling damage, risk of injury
During disassembly, the device may fall onto the foot.

- ► Wear safety shoes
- ► Secure the device against falling out when removing it
- ► Use transport aids to the final storage location

ACHTUNG

Damage to property due to incorrect handling
The device may be damaged during disassembly.

- ► Disconnect the power supply from the device before starting disassembly.
- ► Check that all connections have been released before removing the device from the mounting situation.
- ► Do not place the system on the display side.
- ► Always place the system horizontally
- ► Use transport aids even on short routes
- ► Before dismounting, check the mounting situation for damage or foreign bodies

To be able to remove the panel PC from the support arm, you must have disconnected the power supply and the cables beforehand (see chapter Disconnecting power supply and cables).
As part of decommissioning the system, you must first disconnect the power supply and
Disconnect the cables. You can then dismantle the device from the support arm or remove it from the assembly. If you do not want to continue using the system, refer to the chapter Disassembly and disposal,
Information on the correct disposal of the device.

6.1. Disconnect power supply and lines

⚠WARNUNG

Risk of electric shock
Disconnecting the Panel PC during a thunderstorm can cause electric shocks.
- ► Never disconnect the cables of the Panel PC during a thunderstorm.

Before disassembling the Panel PC, you must disconnect the power supply and the cables.
To do this, follow the steps below:

- _ Shut down the Panel PC.
- _ Gain access to the connection compartment of the system (see chapter Interface description).
- _ Disconnect the system from the power supply.
- _ Pull the power supply cable out of the socket.
- _ Make a note of the wiring of all data transmission lines if you are wiring with on another device.
- _ Disconnect all data transmission lines from the system.
- _ Finally, disconnect the ground connection.

They have disconnected the power supply and the lines.

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6.2. Dismantling and disposal

In order to be able to dismantle the system from a support arm, you must first disconnect the power supply and have disconnected the lines (see chapter Disconnecting power supply and lines).

6.2.1 Repair

Repairs to the device may only be carried out by the manufacturer. In case of repair, contact TRsystems "Service and Support".

6.3. Cleaning

ACHTUNG

Unsuitable cleaning agents.
The use of unsuitable cleaning agents can lead to property damage.

- ► Only clean the Panel PC as specified.

Be sure to observe the following aspects when cleaning the PC:

- Adhere to the general conditions of the protection class.
- Never use compressed air to clean the PC.
- Adhere to the ambient temperature range of 0 °C to 45 °C.

6.3.1 Detergent

To avoid damaging the front of the Panel PC during cleaning, you must use suitable Pay attention to cleaning agents. Examples are:

- Glass cleaner (pay attention to environmental aspects when selecting the cleaning agent)

6.4. Maintenance

ACHTUNG

Use of incorrect spare parts
The use of spare parts not ordered through TRsystems Service may result in unsafe and incorrect operation.

- ► Only use spare parts that you have ordered via TRsystems Service.

TRsystems GmbH systems are manufactured, selected and tested from components of the highest quality and robustness for best interoperability, long-term availability and reliable function under the specified environmental conditions. Nevertheless, some components of the system may be subject to a limited lifetime when operated under certain conditions, such as, among others, increased environmental conditions during operation or during storage or long periods of storage out of service. That is why TRsystems GmbH recommends using only original spare parts to ensure optimum operation of the system

7. ESD protection for work on the battery

ACHTUNG

Electrostatic discharge
The use of spare parts not ordered through TRsystems Service may result in unsafe and incorrect operation.

- ► If possible, apply ESD protection measures during maintenance work.

When working (e.g. replacing the battery) on electronic devices, there is a risk of damage due to ESD (electrostatic discharge), which can result in functional impairment or destruction of the device.
Protect the Panel PC and create an ESD-protected environment in which existing electrostatic charges are discharged against the ground in a controlled manner and charging is prevented.

You can best create an ESD-protected environment by setting up ESD protection zones create. The following measures serve this purpose:

- _ ESD-compatible floors with sufficient conductivity with respect to the reference potential PE;
- _ ESD-safe work surfaces such as tables and shelves;
- _ Wrist grounding strap, especially sedentary activities;
- _ Grounded and electrostatically dissipative equipment and operating materials (e.g. tools) within the ESD protection zone.

If you do not have the possibility to create an ESD protection zone, you can still protect the device against Protect against ESD damage. The following measures, for example, serve this purpose:

- _ Use conductive mats connected to the ground potential as a shelf.
- _ Divert any charges from your own body by touching grounded metal (e.g., control cabinet door).
- _ Wear wrist grounding strap.
- _ First with wrist grounding strap new electronic components from ESD packaging (tinted plastic bag).
- _ No walking around with electronic components without ESD packaging in hand.

7.1. Battery replacement

⚠WARNUNG

Wrong battery type
Using any other battery may cause fire or explosion.

- ► Replace the battery only with a replacement battery (battery SL-350/S 3.6V 1.2Ah 1/2AA) from TRsystems Service (part number 63100456A).
- ► When replacing the battery, make sure that the polarity is correct.

⚠WARNUNG

Battery damage
Incorrect handling of the battery can damage it.

- ► Do not recharge the battery.
- ► When replacing the battery, make sure that the polarity is correct.
- ► Do not throw the battery into a fire.
- ► Do not open the battery.
- ► Protect the battery from direct sunlight and moisture.

The system contains a lithium thionyl chloride battery. It is used to supply power to the clock integrated on the mainboard. If the battery is empty or missing, the date and time are displayed incorrectly and boot times may be extended.

7.1.1 Professional disposal of hazardous materials

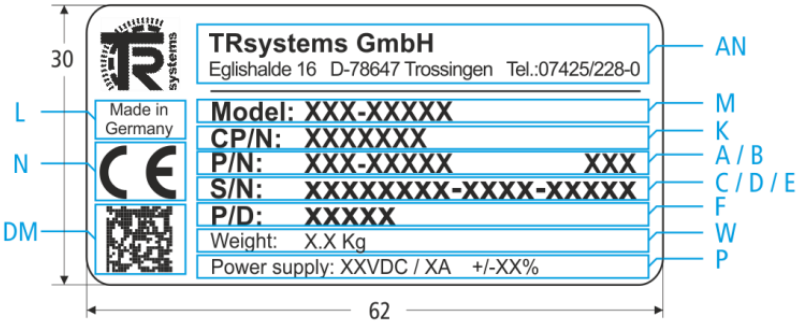
Attention: Lithium is a hazardous material.
Please observe the proper disposal as well as the proper UN labeling when shipping.

Device With battery service cover
See also chapter "ESD protection for working on the battery".

- _ Loosen and remove cover screws
- _ Remove the battery from the socket below or
- _ Disconnect battery together with cable (glued), remove battery and disconnect plug
- _ Insulate battery (without / with cable) short-circuit-proof
- _ Dispose of the battery properly.

7.2. Nameplate

Exemplary nameplate



Index	Description	
AN	Address	TRsystems GmbH Eglishalde 16
		D-78647 Trossingen 07425/228-0
M	Model	notion.D
K	CP/N	Custom Product Number (Customer number, if available)
A	P/N	Product Number (item / product number)
B	Version	Article version (Note: will be inserted as necessary).

Index	Description		
S/N	Serial Number	C	Production order number (8 digits)
		D	Consecutive number within the production lot, refers to production order (4 digits), set as variable
		E	Consecutive number of the article (5 digits), via the master number of the article, set as variable

Index	Description	
F	P/D	Production Date Year/ Calendar week/ Weekday(1-7) (will be set automatically) JJWWT
W	Weight	Weight without packing
P	Power Supply	If the information differs, then it must be changed on the label
L	Made in Germany	Country of manufacture
N	CE	Symbol 1 number 65
DM		Data Matrix Code

8. Appendix

8.1. Service and support

TRsystems offers comprehensive service and support, providing fast and competent assistance for all questions regarding TRsystems products and system solutions.

TRsystems Service and Support

The service supports you around the after-sales service:

- On-site service
- Repair service
- Spare parts service
- Telephone support

The support offers you a comprehensive technical support, which will help you not only with the application individual TRsytem products, but also for other comprehensive services:

- Worldwide support
- Planning, programming and commissioning of complex automation systems
- Comprehensive training program for TRsystems system components

Phone: +49 (0) 7425 / 228 - 0
E-Mail: info(at)trsystems.de

In case of service, please state the article number and serial number of your device, which you can find on the type plate.

8.2. Approvals

The Panel PC has the following approvals:

- CE
- UKCA

You will find all other applicable approvals on the nameplate of your device.

8.3. Take back WEEE

ElektroG3 Take-back offer

For more information, please refer to the website at:
https://trsystems.de/unternehmen/elektrog3/

Source: https://www.stiftung-ear.de/de/themen/elektrog/hersteller-bv/glaubhaftmachung-ruecknahmekonzept