Translation of the original instruction manual
Version 1.0



Instruction manual

Industrial monitors

MED9000 series

adstec
Industrial IT

Last changed: 2024-05-21

Read these instructions carefully before using and store for future reference. These instructions contain important information about the product, in particular about its intended use, safety, installation, utilisation, maintenance and disposal.

Hand over the instructions to the user following installation of the product, and pass the manual on to the new user if the product is resold.

These instructions can be downloaded from: https://www.ads-tec-iit.com in the download area.

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1 General information about documentation

1.1 General information

The purpose of this instruction manual is to ensure the safe and efficient use of type MED9000 – industrial monitors, hereinafter referred to as the "device".

All of the safety instructions and handling instructions given in the manual must be obeyed in order to ensure that work is carried out safely.

All users must read this instruction manual and have access to it at all times.

The original version of this instruction manual was written in German. All non-German versions of this instruction manual are translations of the German instruction manual.

1.2 Explanation of safety instructions

1.2.1 Structure of safety instructions

The signal word classifies the hazard.
Reference to the type/consequences and source of the hazard is made underneath the signal word.
Information on how to avoid the hazard is indicated by an arrow (➡).

DANGER



Type and source of the hazard!

Possible consequences if the hazard is disregarded

➡ Measures for avoiding the hazard

1.2.2 Explanation of signal words

DANGER



Indicates an imminent danger. If not avoided, death or severe injury will result.

WARNING



Indicates a possible danger. If not avoided, death or severe injury could result.

CAUTION



Indicates a possible danger. If not avoided, light or minor injuries could result.

ATTENTION

Indicates a possibly damaging situation. If not avoided, the system or something in its surroundings could be damaged.



Recommendation for use:

Indicates terms and/or conditions that strictly need to be observed to ensure optimised and/or zero-defect operation. Tips and suggestions for the efficient use of the device and software optimisation are also provided.

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1.3 Relevant device documentation

The following documents are decisive to device setup and operation:

- This instruction manual:
  contains information for installation, commissioning and operation of the device along with technical data.
- Website:
  You can download the instruction manual as well as drivers, software, user manuals, leaflets and flyers from the Download area of our website https://www.ads-tec-iit.com

1.4 Symbols

Symbol	Meaning
	Label on batteries and electronic devices. They may not be disposed of with household waste, but must rather be disposed of separately. Used batteries and electronic devices must be returned to the point of sale or a disposal system.
	Symbol for the protective earth connection (PE)
	Symbol for the functional earth connection (FE)
	Symbol for hot surface

1.5 Data, figures and modifications

All data, text and figures were prepared to the best of our knowledge. They do not represent any assurance for the properties themselves. Despite taking utmost care, no liability can be assumed for accuracy, completeness and actuality of the information. Subject to changes.

1.6 Trademarks

It is noted that any software and/or hardware trademarks and any company brand names mentioned in this documentation are all subject to the general trademark protection rights.

Big-LinX® and X-Remote® are registered trademarks of ADS-TEC.

All other used third-party trademarks are hereby acknowledged.

In the case of trademark infringement, ADS-TEC reserves the right to exercise all rights.

1.7 Copyright

This instruction manual is protected by copyright. For the authorised user, simple usage rights are granted within the scope of the intent of the contract. Any modified use or exploitation of the provided content, particularly duplication, modification or publishing in whatever form is permitted only with the prior consent of ADS-TEC. In the case of copyright infringement, ADS-TEC reserves the right to exercise all rights.

2 General device information

2.1 Manufacturer and contact details

The manufacturer of the device is ads-tec Industrial IT GmbH. The company is referred to in the following as ADS-TEC.

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Germany

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Web: https://www.ads-tec-iit.com

2.2 Intended use

The device is used for the visualisation of a wide range of processes on systems and machines in various application environments.

In combination with the optional **IP65 kit** or the also optional **support arm adapter**, the device can also be used in wet and dusty production environments.

The operator alone shall be responsible for ensuring that all **operator obligations** are observed and for complying with any technical or statutory amendments that may arise.

Installation, commissioning and operation may only be performed by **qualified and trained personnel**.

Intervention by the user is required only for performing the actions described in this document. Should any further modifications be required, it is necessary to consult either with the manufacturer directly or with service personnel authorised by the manufacturer.

The device must be **de-energised** during service work. Appropriate measures must be taken to prevent **electrostatic discharges** on components.

The device is **only** to be assembled, installed and operated **within the permissible specifications**. Use in non-specified environments is prohibited.

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2.3 Improper use

Operation other than or beyond that described for the device shall be deemed improper use.

The device is not allowed to be used to control vehicles or for applications for which further approvals beyond the manufacturer's declaration are necessary, e.g. applications with explosion hazard, medical technology and shipping industry.

The product does not support any safety functions of functional safety. Do not use the product to evaluate safety-relevant data in order to bring a system to a safe state.

The device must not be put into operation in the case of transport damage or nonconformity with the specifications and must be taken out of operation in the case of changing conditions.

In the case of improper use, ADS-TEC shall not accept responsibility or liability for injury or damage that is directly or indirectly attributable to the handling of the device.

If the device is opened up by an unauthorised person, the user may be subject to hazards and the warranty is invalidated.

Should the device have evident signs of damages caused, e.g., by improper operation or storage conditions or due to improper use or handling, it must be shut down immediately. Ensure that it is secured against being started up accidentally.

The device can be damaged as a result of unauthorised mechanical modifications. Make sure that the device is not drilled, chiselled or perforated and its exterior shape and design is not modified in any way!

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2.4 Environmental conditions

ATTENTION

Damage caused by heat

If the device is exposed to sunlight or any other light or heat source, it can overheat and suffer damage.

➡ Do not expose the device to direct radiation by sunlight or any other light or heat source.

ATTENTION

Damage caused by condensation

If the device is colder than its surroundings, condensation may form.

➡ Switch on the device only after it has acclimated to the ambient temperature.

The device must be operated under the environmental conditions specified in the **technical data**. Failure to observe any one of these conditions will invalidate the warranty of the device. ADS-TEC cannot be held liable for any damages arising from improper use and handling.

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2.4.1 Vibration/shock resistance

The vibration/shock resistance tests were performed as follows:

Vibration near machines or conveyor belts

- DUT: functional device
- Test standard: EN 60068-2-6
- Deflection shape: sinusoidal
- Test axes: X / Y / Z
- Frequency: 2…200 Hz
- Change in frequency: ± 1 octave/min
- Deflection: 3 mm
- Amplitude: 10 m/s²
- Test duration: 2 h per axis
- DUT status: DUT electrically in operation
- Test criterion: Visual inspection after the test and functionality of the DUT during and after the test

Shock resistance near machines or conveyor belts

- DUT: functional device
- Test standard: EN 60068-2-27
- Shock form: semi-sinusoidal
- Test axes: +X / -X / -Y / +Y / +Z / -Z
- Amplitude: 250 m/s²
- Duration: 11 ms
- Test duration: 10 shocks per direction and axis
- DUT status: DUT electrically in operation
- Test criterion: Visual inspection after the test and functionality of the DUT during and after the test

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2.5 Conformity

The manufacturer hereby declares that the product described in this instruction manual complies with all relevant stipulations of the following European directives:

- 2011/65/EU, RoHS Directive
- 2014/30/EU, EMC Directive
- 2014/35/EU, Low Voltage Directive
- EC 1907/2006, REACH Regulation

CE

The device is a Class A device (industrial sector). Class A may cause interference when used in residential environments.

The EU conformity declaration can be requested at http://www.ads-tec.de/support/support-anfrage.html and is available for download at http://www.ads-tec.de/support/download/eg-konformitaetserklaerung.html.

Recommendation for use:

For full compliance with the EMC legislation, all components and cables used for device connection must also be compliant with these requirements. It is therefore necessary to employ BUS and LAN cables with shielded connectors and these must be installed as per the instructions contained in the respective instruction manuals.

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2.6 Warranty / repairs

During the device warranty period, any repairs must only be performed by the manufacturer or by service personnel that has been authorised by the manufacturer.

2.7 Limitation of liability

ADS-TEC shall not be liable for personal injury, property damage or damage caused to the device as well as consequential damage that is/was the result of non-compliance with this instruction manual, improper use of the device, repairs and other actions on the device by unqualified electricians and electricians not certified by ADS-TEC, or that is/was the result of using unapproved replacement parts. Failure to observe the maintenance intervals shall also result in exclusion from liability. Furthermore, it is strictly forbidden to make any unauthorised alterations or technical modifications to the device.

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3 Scope of delivery

Check that the contents of the package are intact: If there are signs of damage, please contact the manufacturer immediately. The device must not be put into operation.

Check that the contents of the package are complete and match your order:

- 1 x device
- 1 x 3-pin connector for power supply
- Accessories according to order/delivery note

4 Mechanical installation

4.1 Requirements

The **external device dimensions** are given in chapter **9 Dimensional drawings**.

4.2 Attaching to a VESA 100 interface

The device can be attached to the VESA 100 interface on the rear side.

- Horizontal and vertical distance between the screw holes: 100 mm
- Thread: M6, torque: 3.5 Nm (recommended)
- Screw-in depth in the threaded bushings: max. 7 mm

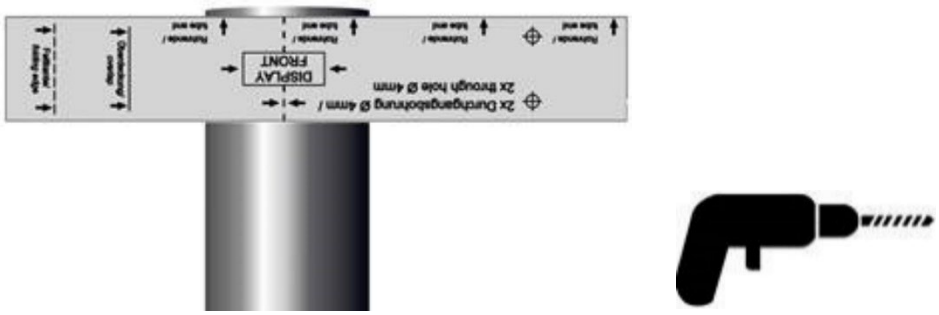


The optional scanner holder is also attached to the VESA interface, see section 4.6.

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4.3 Attaching using a tube adapter

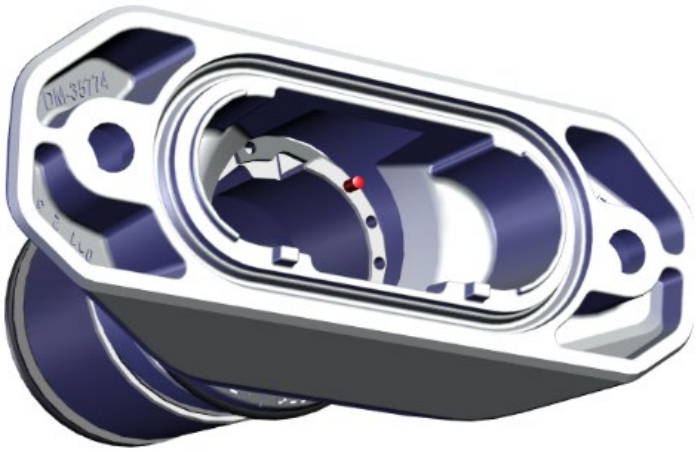
1. **Deburr** the end of your support tube (diameter 48.3 mm).
2. Stick the **drilling template** around the end of the support tube so that the holes to be drilled are located on the rear side of the tube. Next, drill two **4-mm holes**:



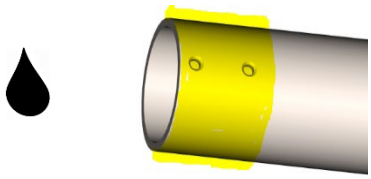
3. Twist off the sealing sleeve:



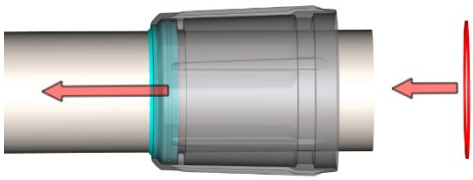
4. If necessary: Insert one or two cylindrical pins from the scope of delivery into the holes in the tube stub to limit the swivel angle. See section 4.3.1 Swivel angle limitation.



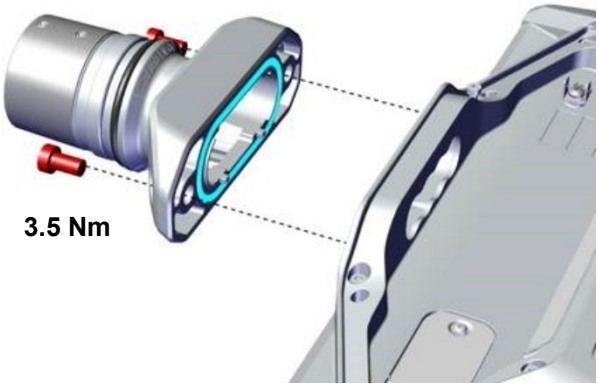
5. Apply a suitable **lubricant** to the seal and the tube end to make it easier to slide on the sealing sleeve (e.g. penetrating oil, soap or fitting grease, depending on the application type).

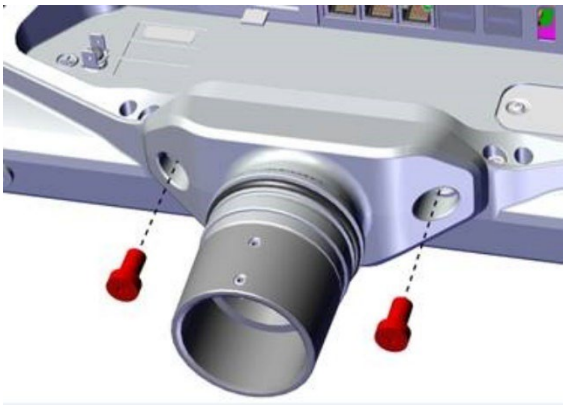


6. Slide the sealing sleeve onto the tube and check again that the **seal** is seated correctly. Then, add the spacer ring.

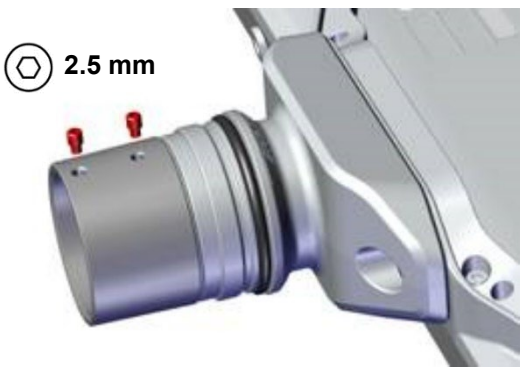


7. Check that the **seal**, which is marked in turquoise in the figure, is seated correctly. Next, screw the flange onto the device:

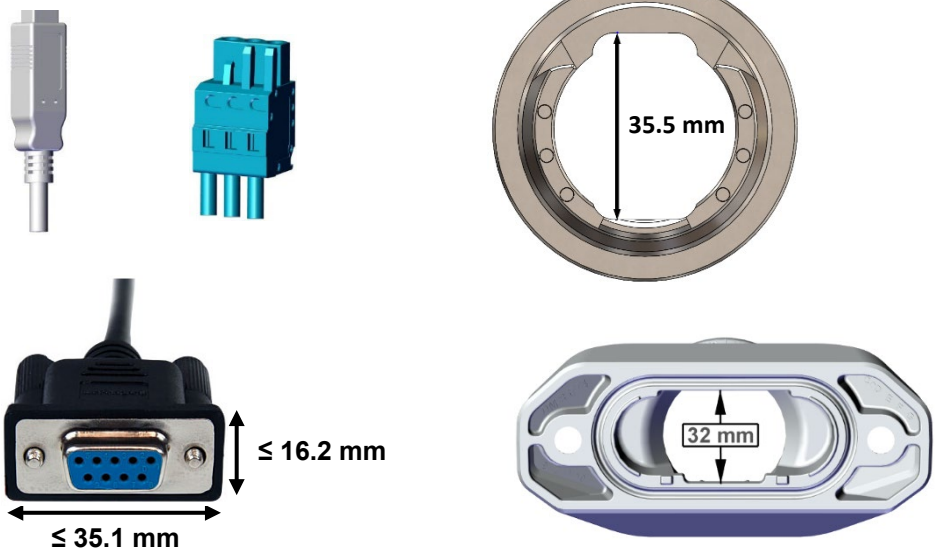




8. Remove the threaded pins:



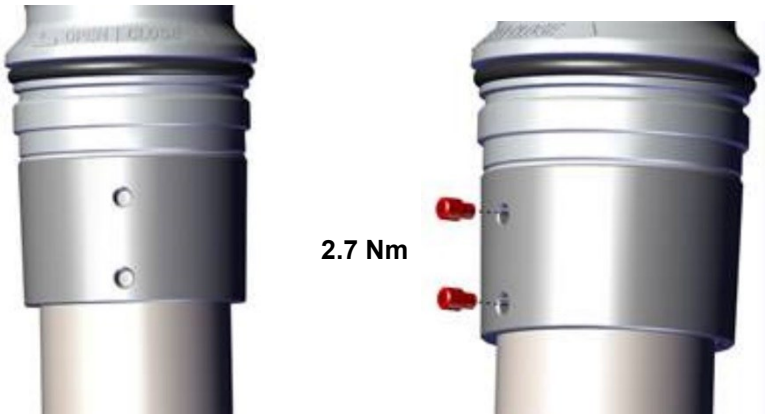
9. Route all of the required cable lines through the tube adapter and the tube.



10. Attach the tube adapter to the tube:



11. Align all of the parts so that the holes in the tube and in the tube adapter are positioned on top of one another and the threaded pins can be screwed in again.



12. Lubricate the upper seal with a thin layer of a suitable **lubricant** (e.g. penetrating oil, soap or fitting grease, depending on the application).



13. Slide on the sealing sleeve:



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… and turn it until it is sufficiently tight:



Recommendation:

In the first step, the nut is used to eliminate any remaining play (looseness).

It is turned until the tube adapter sits on the device **without any play**.

The nut can then be turned further to adjust the **turning resistance**.

The process for attaching the **service slot cover** is described in section 4.5.

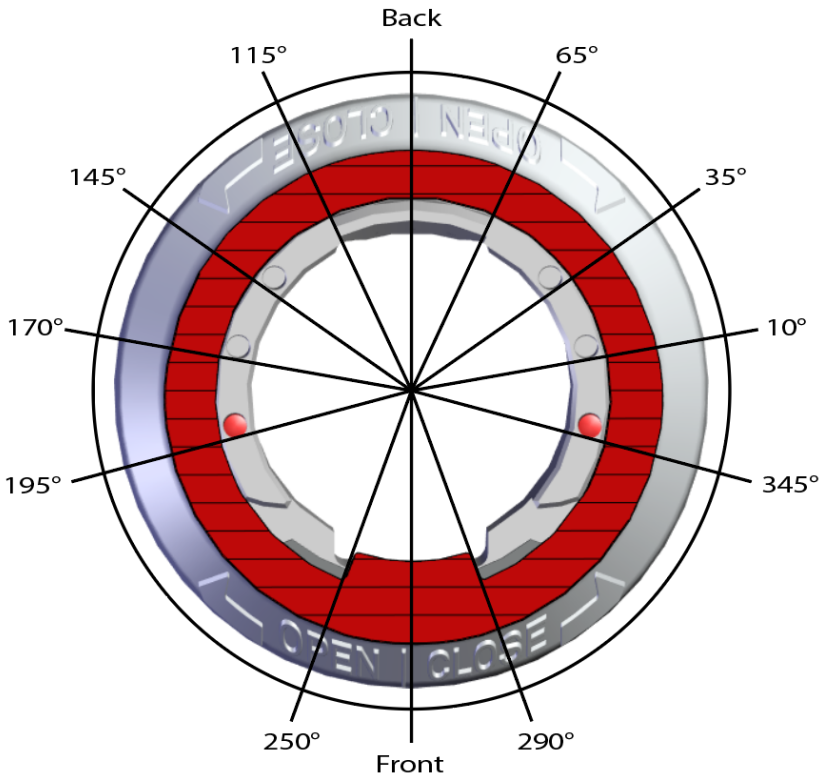
4.3.1 Swivel angle limitation

Without pins, the screen can be swivelled by 270°.
With the cylindrical pins (2.5 x 10 mm) from the scope of delivery, this angle can be limited.

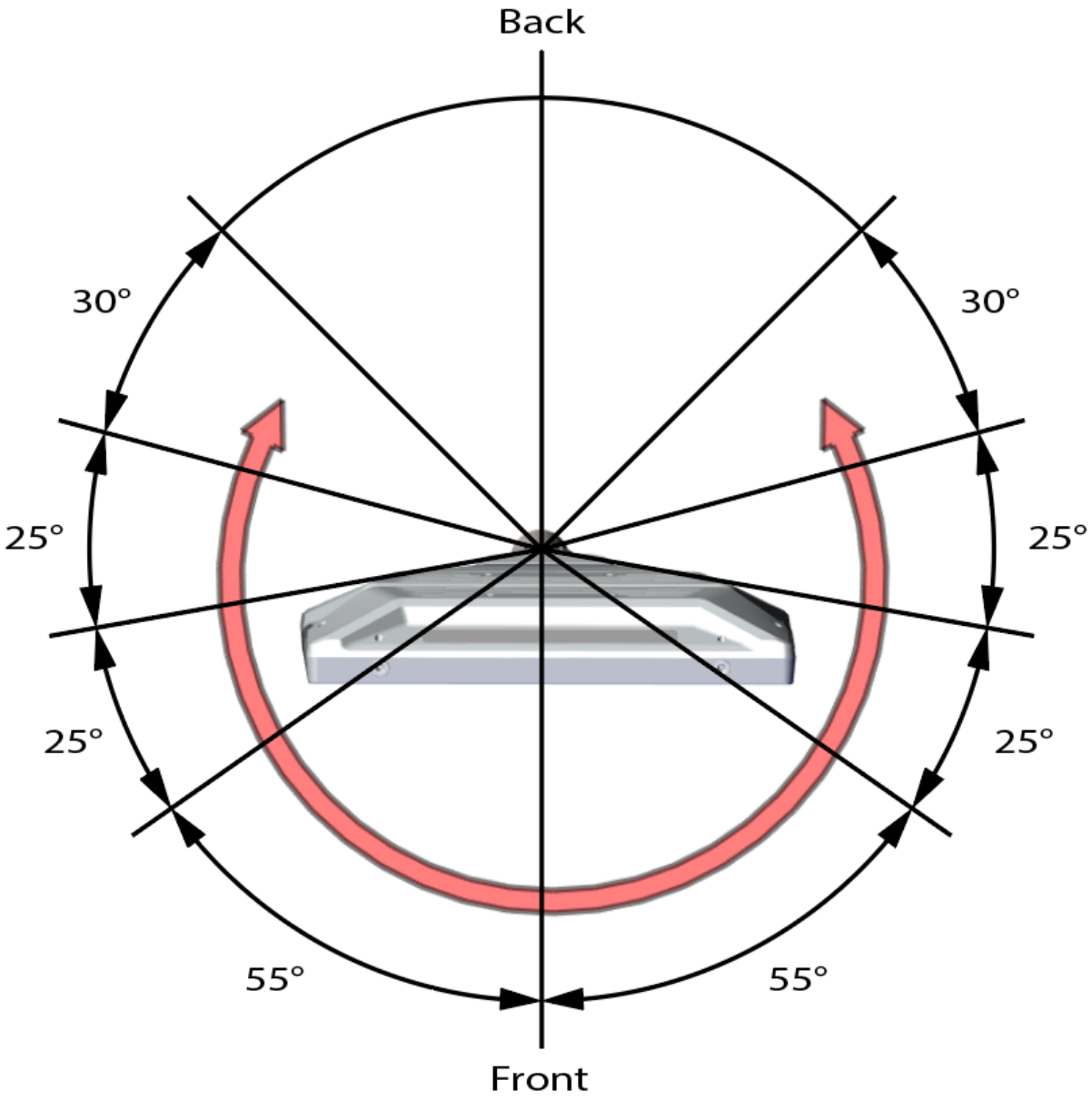




The following graphic shows the positions of the cylindrical pins and the internally specified angles:



This results in the following **swivel angles** for the monitor:



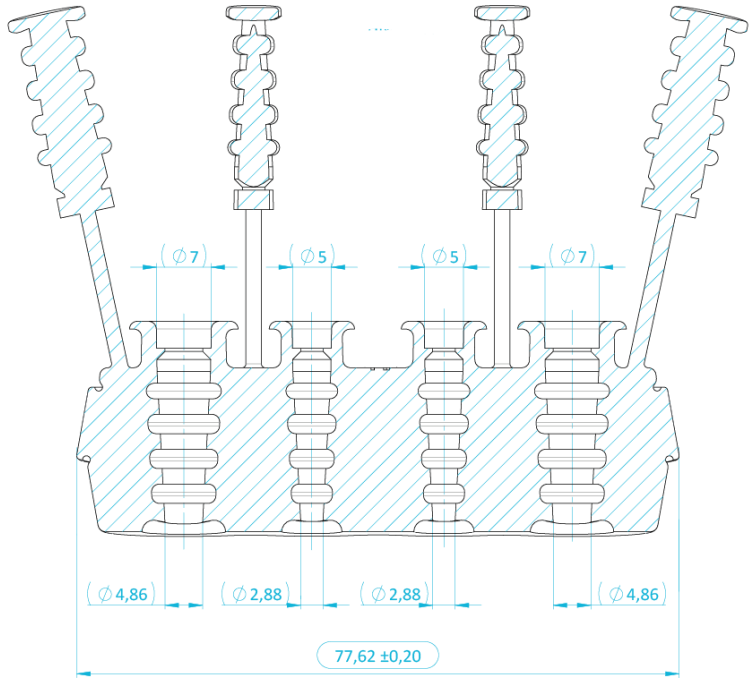
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4.4 Attaching the IP65 kit

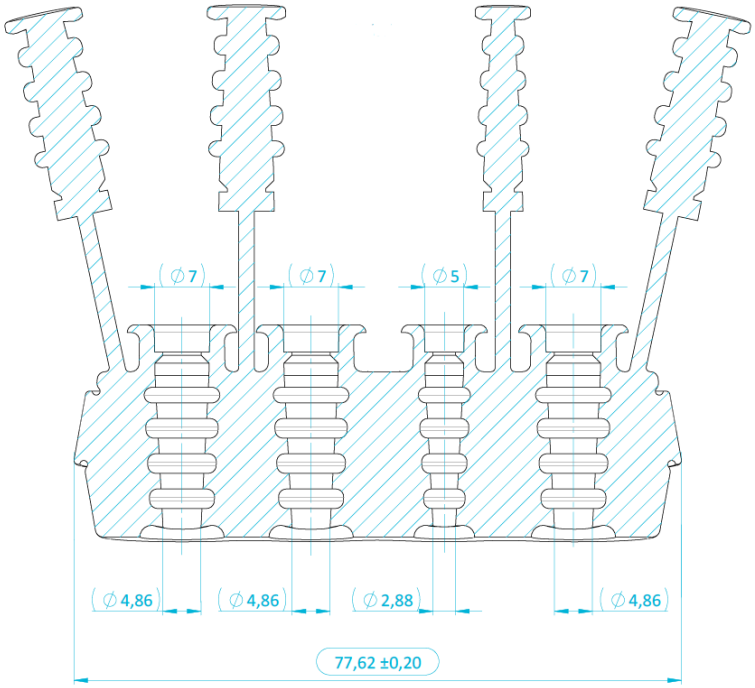
4.4.1 Dimensions of the grommets

The IP65 kit includes two grommets through which cables can be routed. The grommets have different hole diameters and should be used as required.

Type 1: 2 x hole 5…7 mm; 2 x hole 3…5 mm

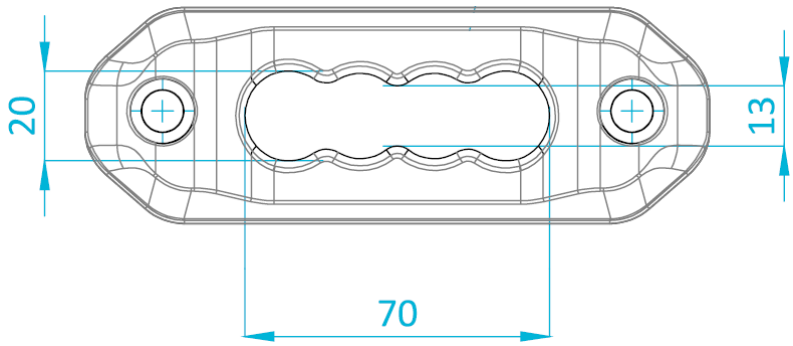


Type 2: 3 x hole 5…7 mm; 1 x hole 3…5 mm



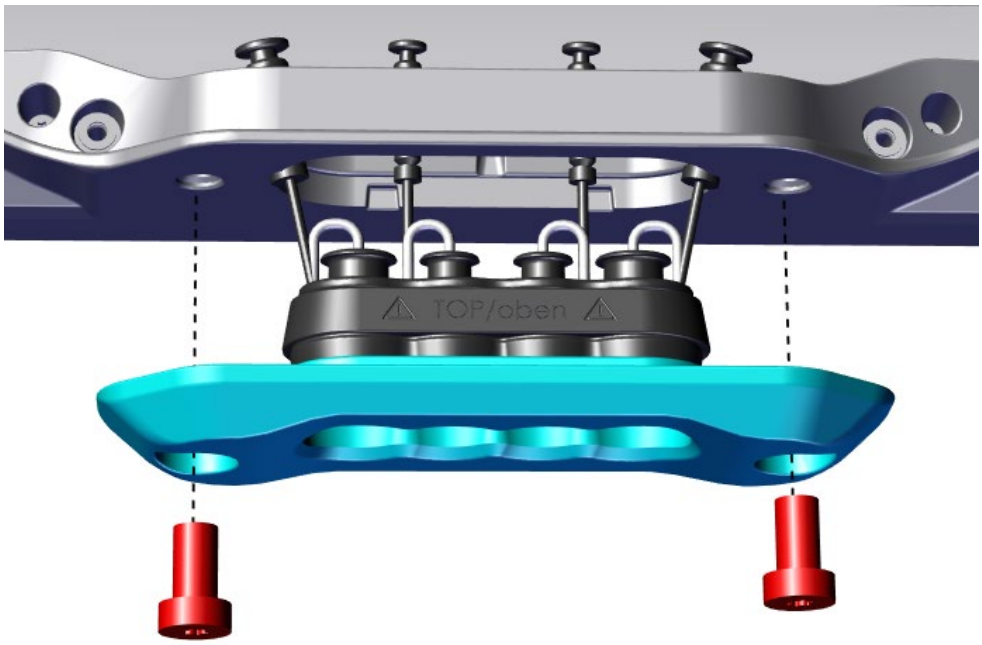
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4.4.2 Dimensions of the retainer



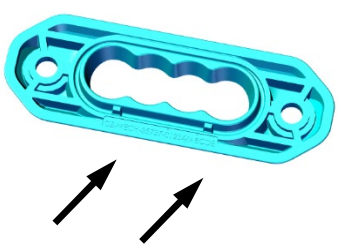
4.4.3 Attaching the grommets

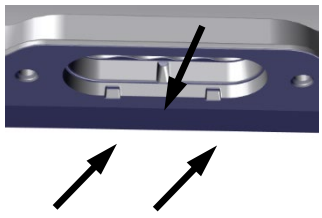
1.) Route all of the required cable lines through the opening in the device, the cable grommet and the retainer.



2.) When doing so, pay attention to

- the different hole diameters in the supplied grommets as specified in section 4.4.1,
- the **top/bottom** marking on the grommets,
- the correct alignment of the retainer and the grommets: the **protrusions** must sit in the **grooves** of the device opening.







3.) Insert the appropriate **rubber plugs** into any holes that are not required.

4.) Press the grommet into the opening in the device.

5.) Press the retainer against the grommet and tighten the two screws.
Torque **M = 3,5 Nm**

4.5 Opening and closing the service slot

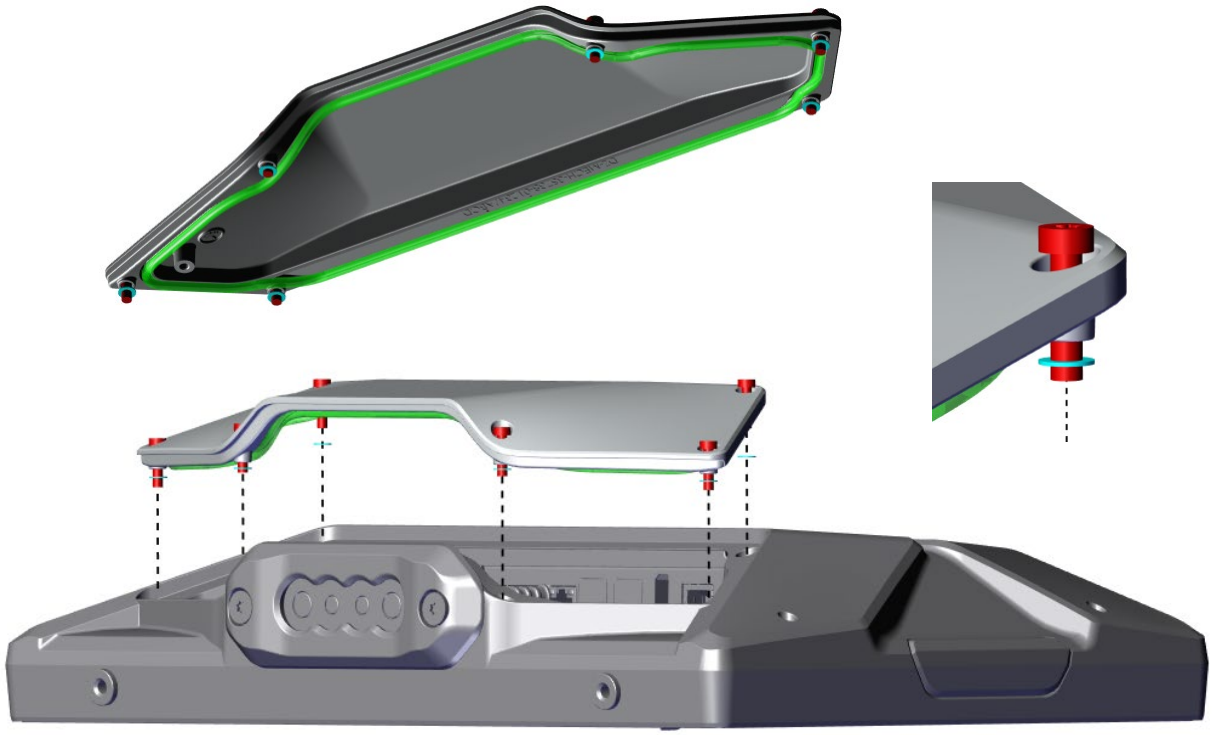
ATTENTION

Damage due to electrostatic discharge

Damage to the device can be caused by electrostatic discharge.

- Always adhere to the safety measures applicable when handling components at risk of being damaged by electrostatic discharge.

On devices with a service slot cover, the cover is removed and attached as follows:



Notes:

- The plastic washers (**turquoise** in the figure) act as a loss-prevention device for the screws.
- The seal (**green** in the figure) must be inserted levelly into the groove of the service slot cover.

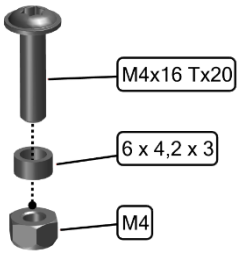
Torque for the screws: **M = 2 Nm**

The retainer and the cable grommet are removed as described in section 4.4.3.

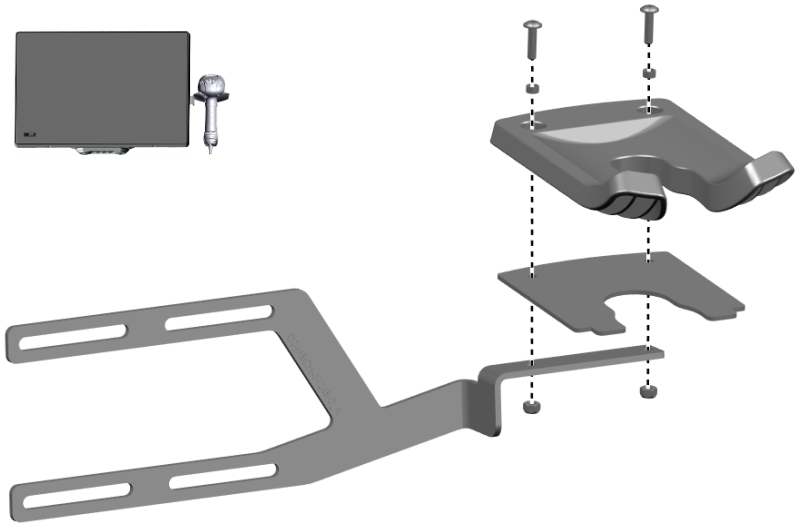
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4.6 Attaching the scanner holder

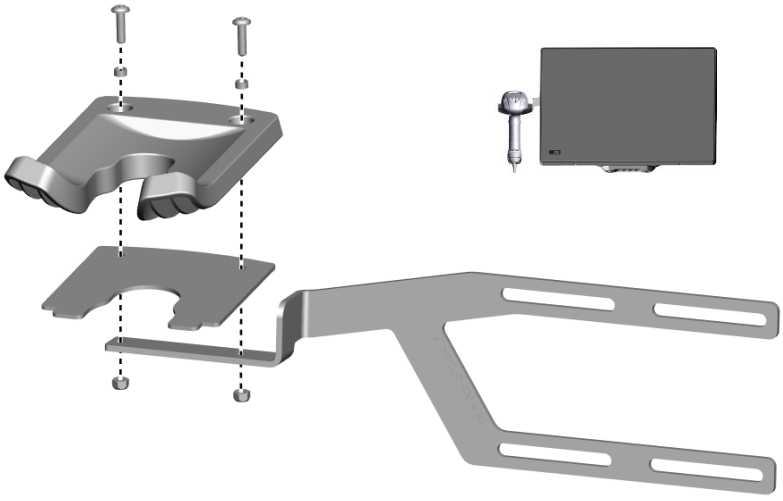
4.6.1 Pre-assembly



Mounting on the **right-hand side** (seen from the front):

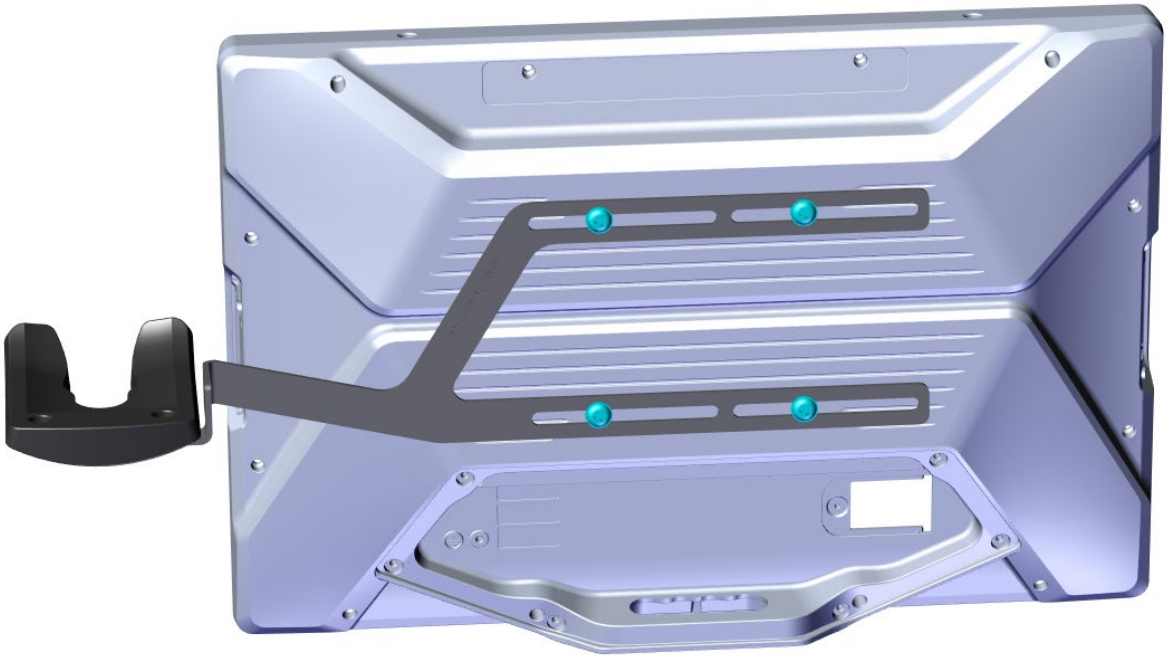


Mounting on the **left-hand side** (seen from the front):



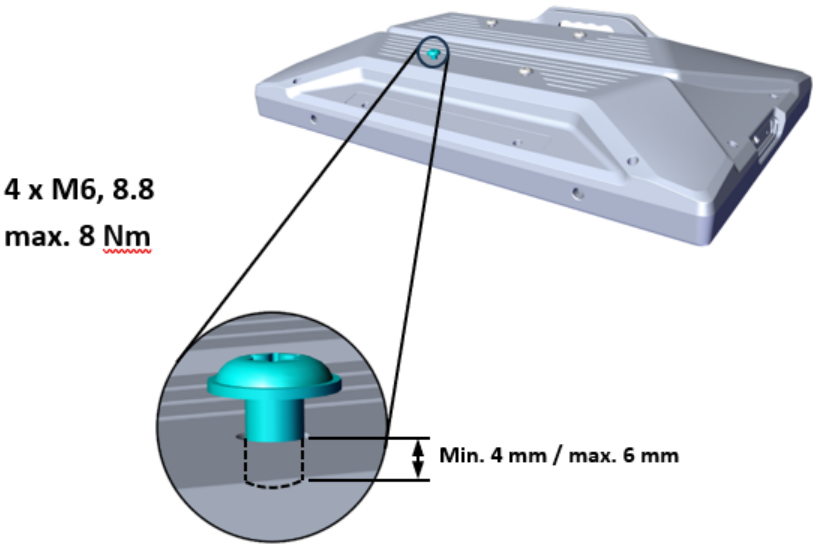
4.6.2 Attaching to the VESA interface

The scanner holder is attached to the VESA 100 interface, cf. section 4.2.



The **screw length** must be selected taking into account the material thickness of the brackets used and the screw-in depth in the threaded bushes on the back of the device.

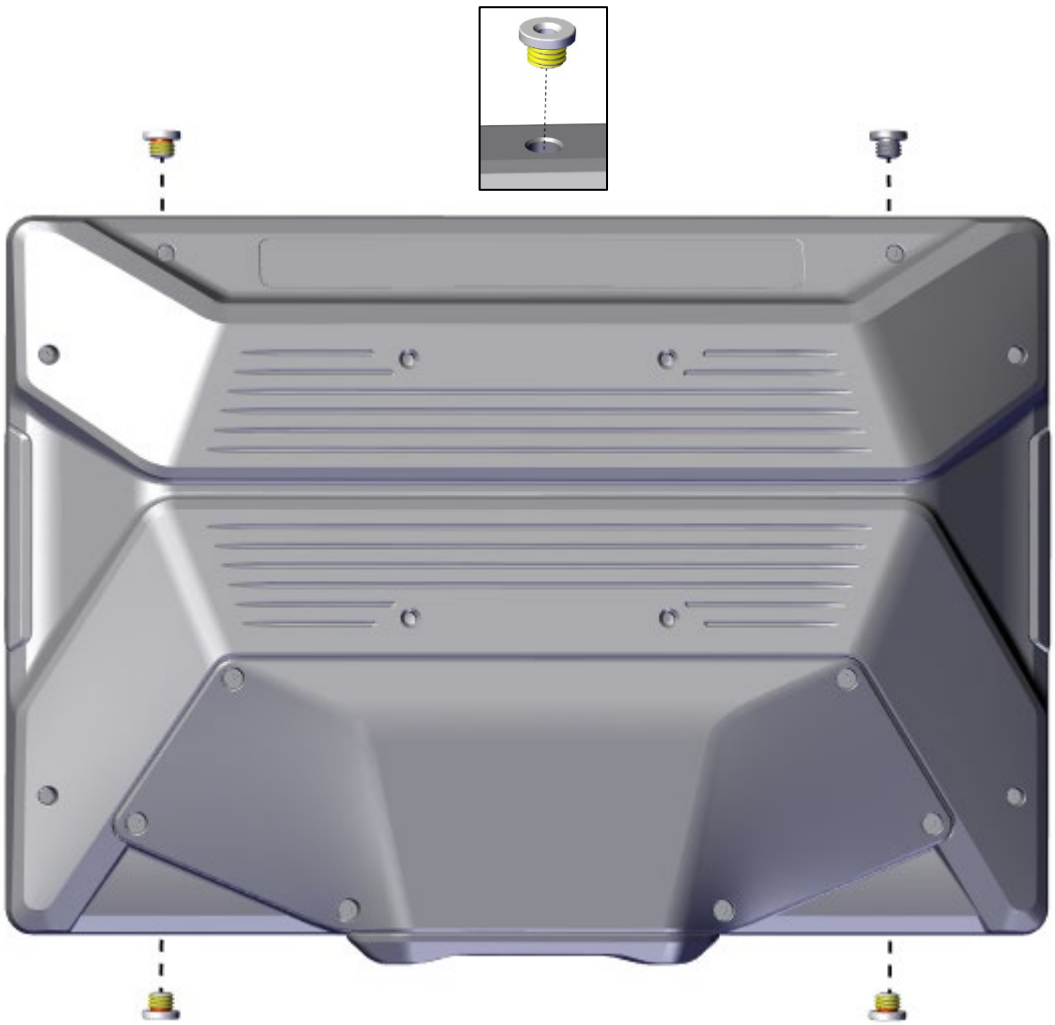
- The **minimum screw-in depth is 4 mm** due to the mechanical load capacity.
- The **maximum screw-in depth** due to the depth of the threaded bushes is **6 mm**.



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4.7 Attaching other accessories

On the top and bottom of the device, there are threaded holes into which the optional screw-in sleeves can be screwed if required.



Installing the screw-in sleeves:

The sleeves must be screwed into the housing with a torque of **M = 8.5 ± 0.5 Nm**. The external thread has an encapsulated adhesive coating that ensures lasting hold. Once the adhesive has cured, the part is not intended to be removed.

Using the internal thread of the sleeves to attach accessories:

- Internal diameter: M6
- Max. screw-in depth in the sleeve: 7 mm
- Torque: **M = 8 Nm**

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5 Electrical connections

5.1 Requirements

ATTENTION

Damage due to electrostatic discharge

Damage to the device can be caused by electrostatic discharge.

- Always adhere to the safety measures applicable when handling components at risk of being damaged by electrostatic discharge.

ATTENTION

Damage to the electronics

The electronics can be damaged if connectors are connected or disconnected while power is still being applied.

- Make sure that no power is being applied when connecting and disconnecting connectors.

5.2 Earthing concept

The earthing concept essentially depends on the installation site and must be planned and implemented by a specialist electrical engineer.

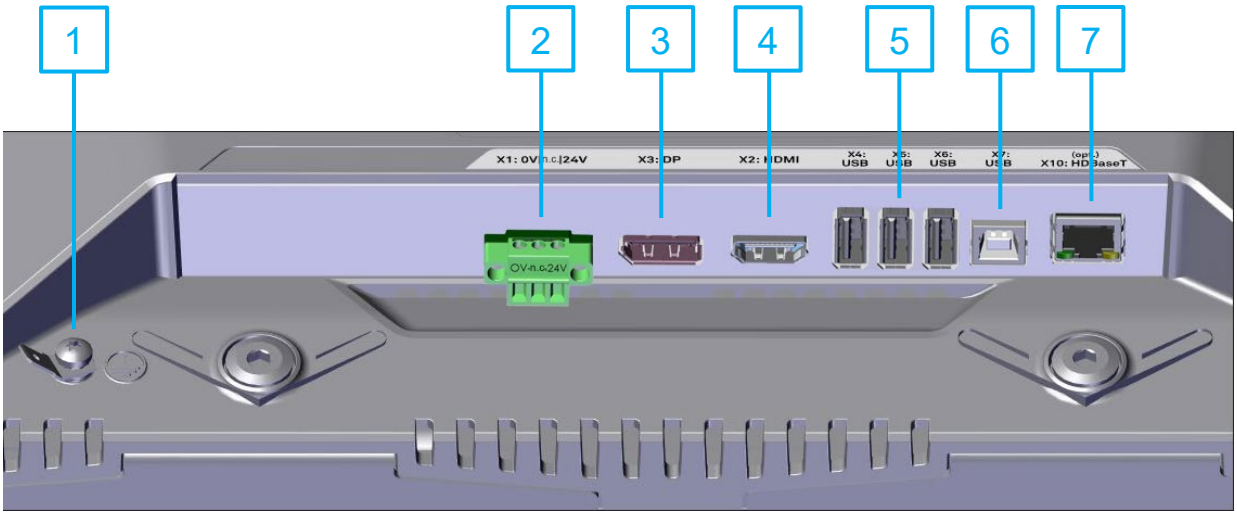
A **PE** earthing lug is provided **in the service slot** on the side of the device

Conductor cross sections:

- **PE**: ≥ AWG 16 (≙ 1.5 mm^2), optimal: AWG 13 (≙ 2.5 mm^2). The cable colour must be green-yellow.

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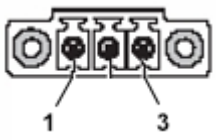
5.3 Interface overview



1	Protective earth (PE) connection, see section 5.2
2	Power supply, see section 5.4
3	DisplayPort 1.2
4	HDMI
5	3 x USB 2.0 type A
6	1 x USB 2.0 type B
7	Optional: HDBaseT extender (RJ45)

5.4 Power supply

1	Reference potential GND
2	n.c.
3	+24 VDC ± 25%



(The figure shows the socket inside the device)

Conductor cross sections: V+ / 0V: AWG 18 (≙ 0.75 mm²)

The permissible voltage ranges and the maximum values for the current and power consumption can be found in Section 10 Technical Data.

5.5 Maximum cable lengths

Recommendation for use:
Note the maximum cable lengths for the respective application type.

The maximum length of cables which can be used to connect the monitor and computer is:

- **HDMI** up to max. 15 m
- **DisplayPort** up to max. 10 m
- **USB 2.0** up to max. 15 m (with active hubs, otherwise 5 m)

For long distances between the display and the computer, you will need the HDBaseT version:

- **HDBaseT™** up to max. 100 m, see also Section 7.2

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6 Commissioning

6.1 Requirements

ATTENTION

Hazard due to condensation

Damage to electronic components caused by condensation resulting from temperature fluctuations.

- Switch on the device only after it has acclimated to the ambient temperature.

6.2 Switching the device on

The monitors start immediately after the power supply is switched on.

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7 Features

7.1 DisplayPort™

The devices have a receiver module that conforms to DisplayPort 1.2.

7.2 HDBaseT™

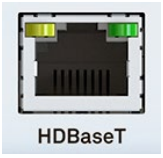
With HDBaseT™, the connection between the computer and monitor is established using a LAN cable with RJ45 plugs. The distances that can be bridged depend on the network infrastructure used:

- with a CAT6a patch cable without sockets etc.: maximum 70 m
- with a Cat. 7 or 7a LAN installation cable + sockets + two 1 m patch cables: maximum 100 m

Status indicators of the receiver module

The two LEDs in the connector indicate various system states:

	LED signal	Action
HDCP	Flashing red	No active encryption
HDBT	On	Connection present
	Off	No connection present



HDCP = High-bandwidth Digital Content Protection; HDBT = HDBaseT™

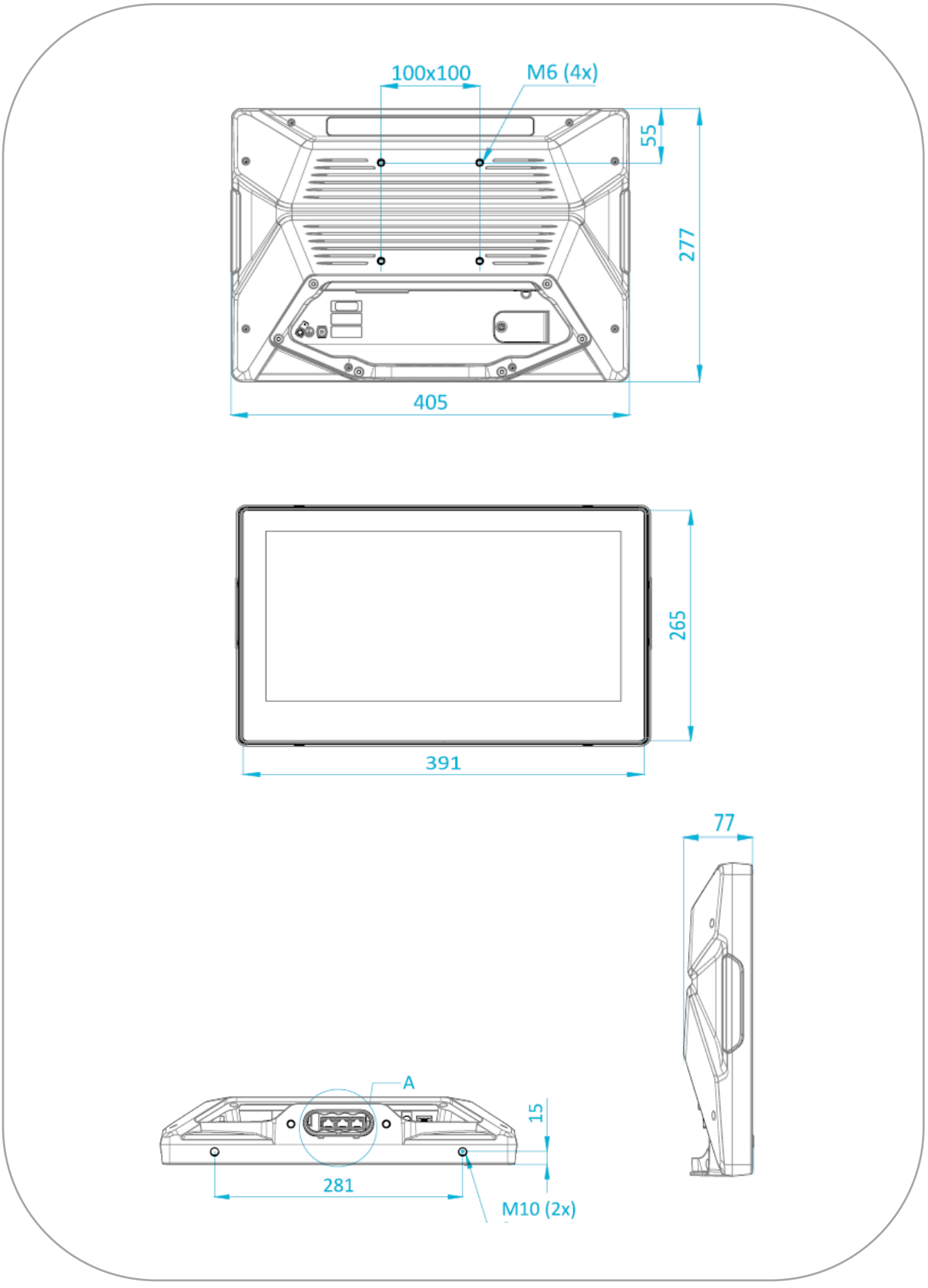
8 Cleaning

Clean the device using some glass cleaner on a soft cloth.

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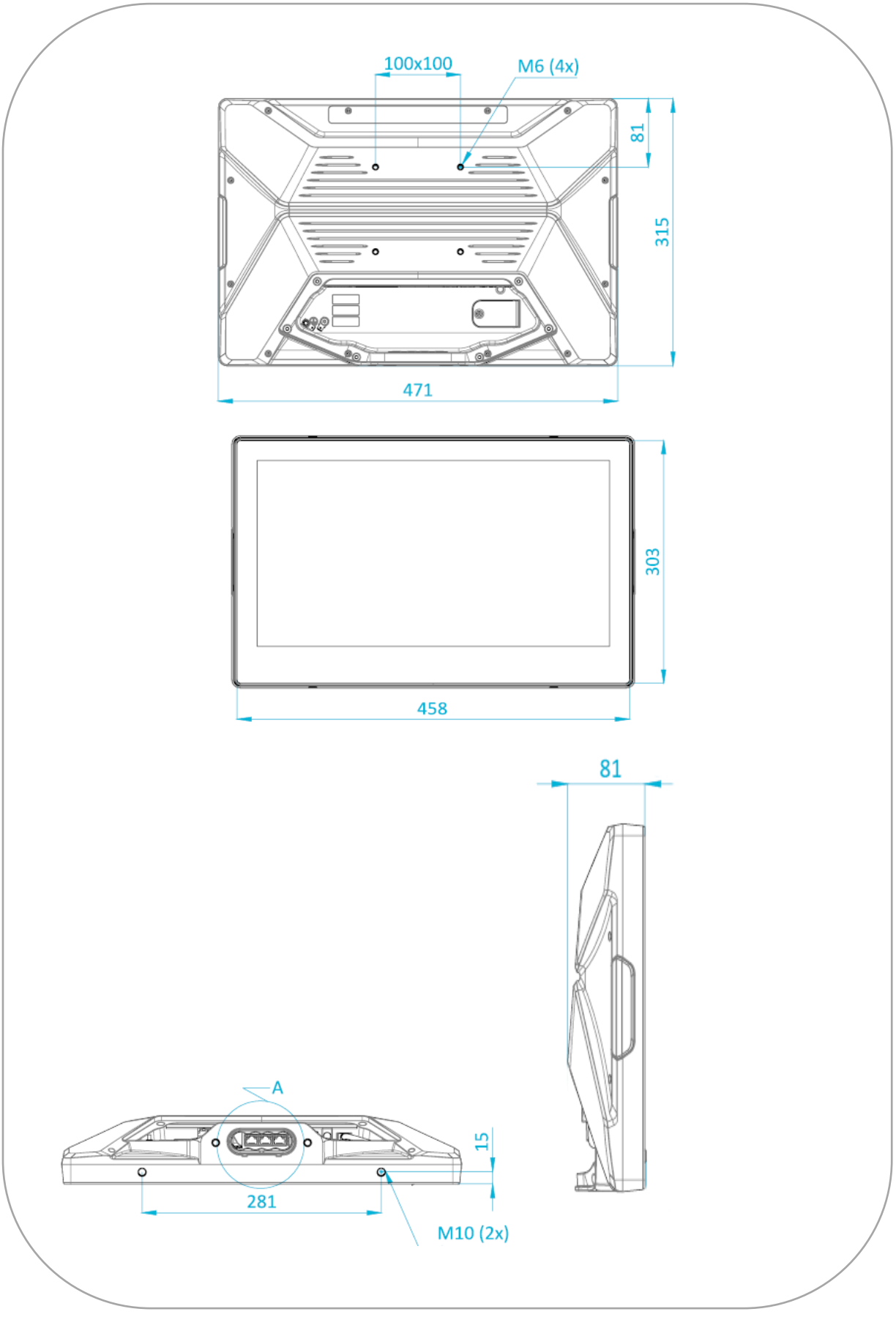
9 Dimensional drawings

9.1 MED9016



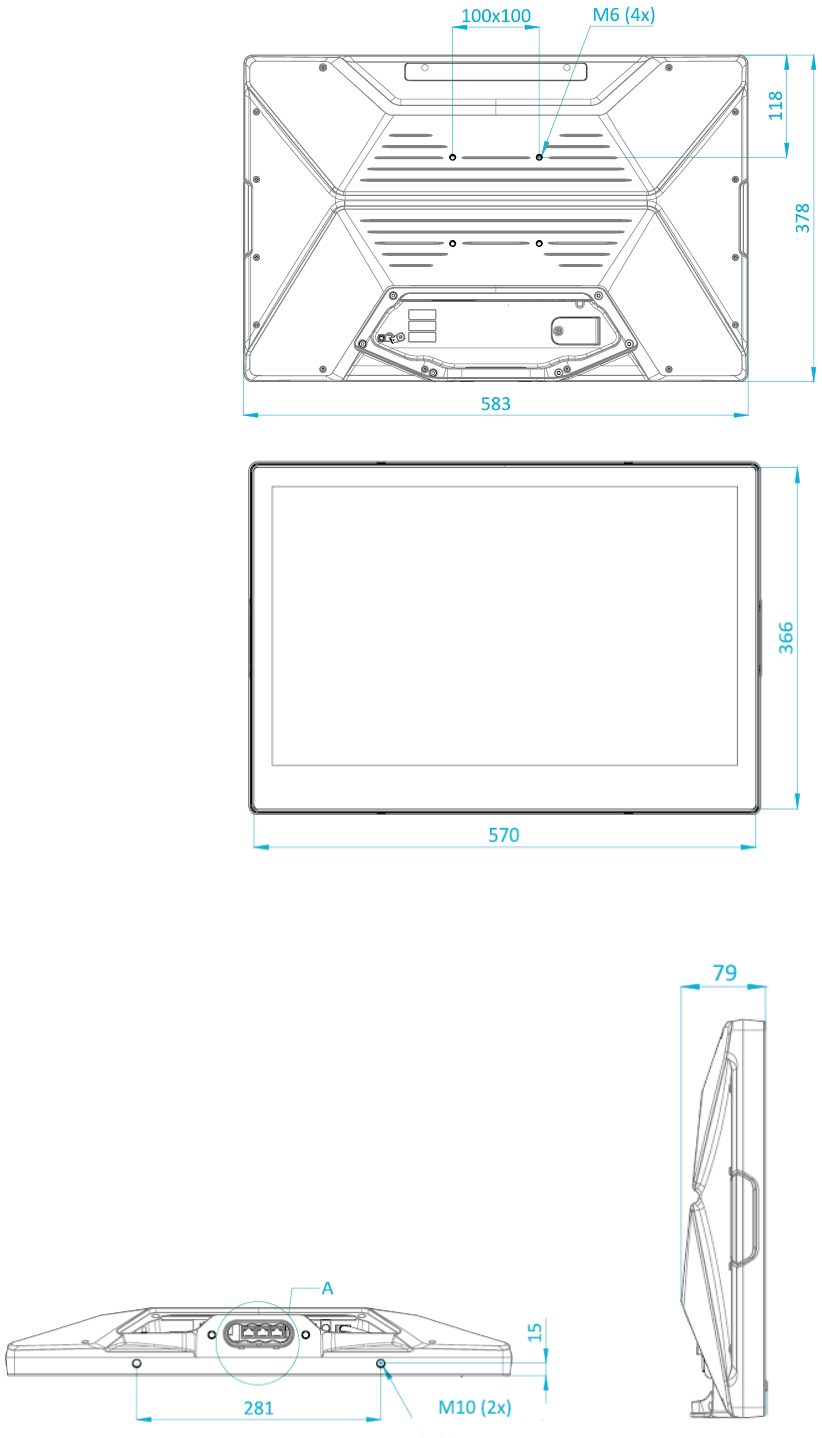
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9.2 MED9019



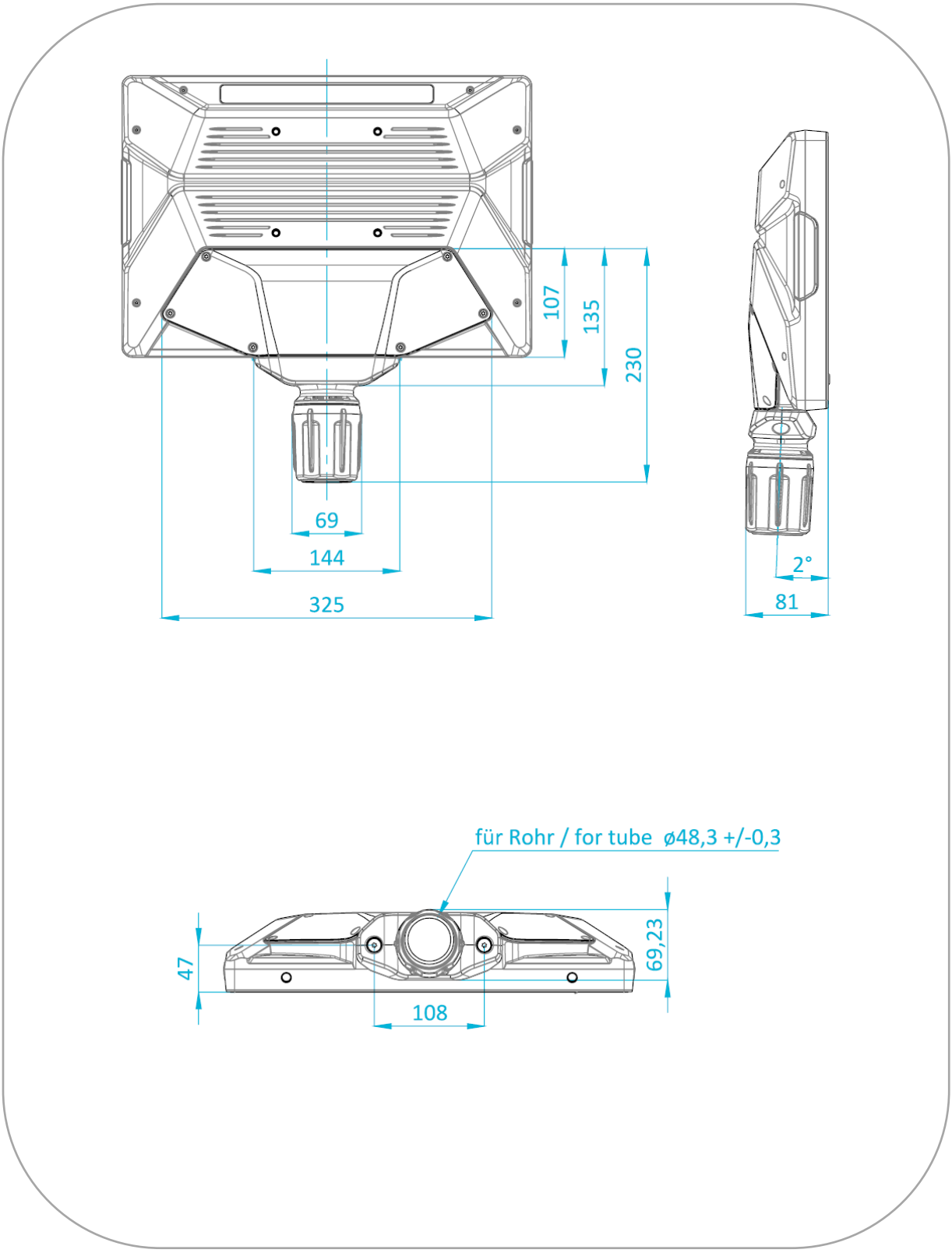
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9.3 MED9024



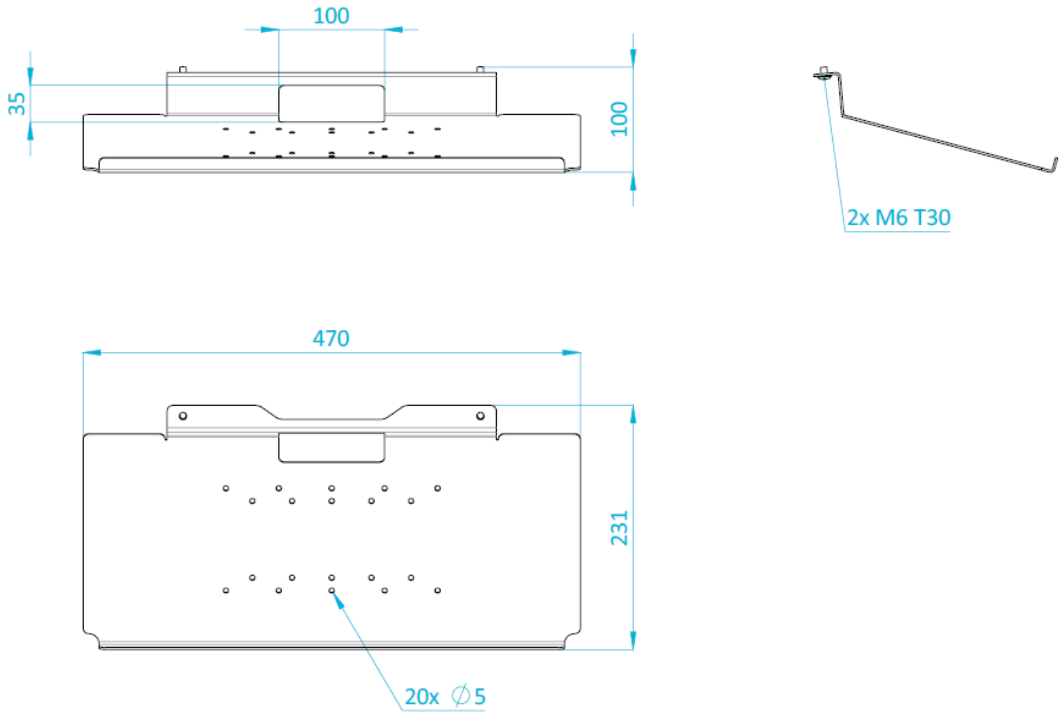
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9.4 Support arm



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9.5 Keyboard holder



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10 Technical data

	MED9016	MED9019	MED9024
Display	15.6“ TFT Full HD	18.5“ TFT Full HD	23.8“ TFT Full HD
Brightness	450 Nits (typ.)	500 Nits (typ.)	250 Nits (typ.)
Contrast ratio	800:1 (typ.)	1000:1 (typ.)	1000:1 (typ.)
Colours	16.2 Mio.	16.7 Mio.	16.7 Mio.
LED backlight	50 000 h	50 000 h	30 000 h
Touch	PCAP multi-touch (can be operated with gloves)		
Housing	Die-casting aluminium, powder-coated		
Cooling	Passive Cooling, fanless		
Interfaces	1 x HDMI 1 x DisplayPort 1.2 3 x USB 2.0 1 x USB slave		
Optional interfaces	1 x HDBaseT™ interface (receiver)		
Power supply	24 VDC ± 25% max. 45 W max. 2.5 A	24 VDC ± 25% max. 55 W max. 3 A	24 VDC ± 25% max. 45 W max. 1.8 A
Permiss. ambient temperature	In operation: 0 to +45°C For storage: -25 to +70°C		
Protection class	IP65 (with IP65 kit) / humidity: 5 to 95%, non-condensing		
Vibration/shock resistance	See Section 2.4.1 "Environmental conditions"		
EMC	Class A (industrial sector) as per EN 61000-6-2/4		
Dimensions	See section 9 "Dimensional drawings"		
Weight	Approx. 4.7 kg	Approx. 5.6 kg	Approx. 7.9 kg

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11 Service & support

ADS-TEC and its partner companies offer you comprehensive maintenance and support services, ensuring quick and competent support should you have any questions or concerns with regard to ADS-TEC products and equipment.

Because ADS-TEC products are also used by partner companies, these devices may have customised configurations. Should any questions arise with regard to these specific configurations and software installations, please contact them as ads-tec will not be able to answer such questions.

ADS-TEC does not provide support services for any device that was not purchased directly from ADS-TEC. In this case, maintenance and support is provided by the partner company.

11.1 ADS-TEC support

The ADS-TEC support team is available for inquiries from direct customers between 8:30am and 5:00pm, Monday to Friday. The support team can be reached via phone, fax or e-mail:

Phone: +49 7022 2522-202

Email: support.iit@ads-tec.de

Alternatively, you can contact us by completing a support form on our website www.ads-tec.de. Our Support team will then get in touch with you as soon as possible.

11.2 Company address

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