

Version 2.2

Translation of the original  
instruction manual



# Instruction manual

## Industrial PCs

### OPC8000 series



Industrial IT

Effective as of:  
02.02.2017

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# 1 Notes

## 1.1 General remark

This instruction manual is intended to ensure safe and efficient handling of the device. It must be accessible to all persons who are involved in installation and commissioning of the device and must be read and understood before any work is started.

The instruction manual must be passed on to the device/system operator after commissioning has been completed.

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

Figures used in this instruction manual are provided for basic understanding and may differ from the actual design.

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 Limitation of liability

ADS-TEC GmbH 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.

## 1.3 Manufacturer

The manufacturer of the product is ADS-TEC GmbH. The company is referred to in the following as ADS-TEC.

## 1.4 Relevant device documentation

The following documents are decisive to device setup and operation:

Instruction manual (this documentation):

Contains information for installation, commissioning and operation of the device along with technical data of the device hardware.

Website

You can download drivers, software, user manuals, leaflets and flyers about the product from our website [www.ads-tec.de](http://www.ads-tec.de).

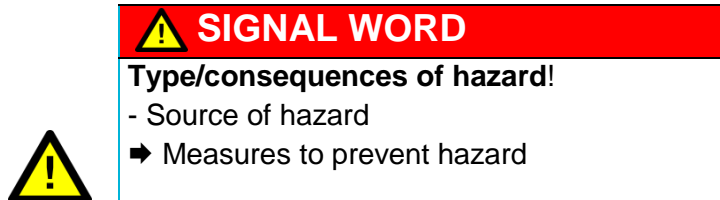
## 2 Safety instructions

### 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.

Instructions for preventing the hazard are identified by an arrow (➡).

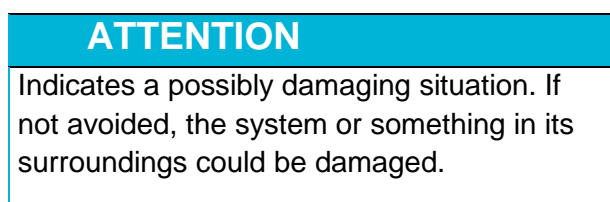
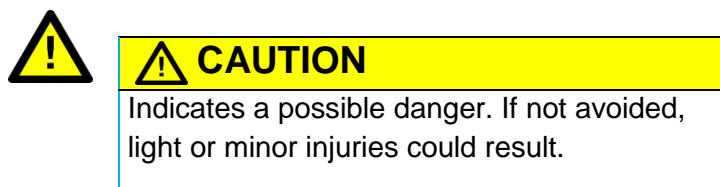
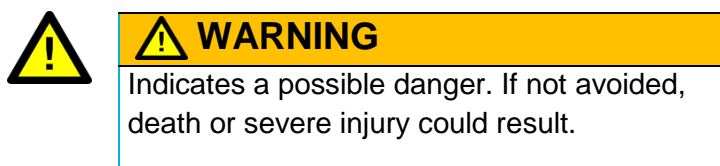


### 2.2 Graduation of risk level

The signal word classifies the hazard.

Instructions for preventing the hazard are identified by an arrow (➡).

### 2.3 Explanation of used symbols








### Recommendation for use:

The symbol "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.

## 2.4 Symbols

Symbol	Meaning
	Designation of batteries in accordance with § 13 of the German Battery Act (BattG). Batteries may not be disposed of with household waste, but must rather be disposed of separately. Used batteries must be returned to the point of sale or a disposal system.
	Labelling of electrical and electronic devices in accordance with § 7 of the German Electrical and Electronic Equipment Act (ElektroG). Electrical and electronic devices must not be disposed of with household waste, but must rather be taken to a collection point for waste electrical equipment. Such a collection point is generally operated by public waste management authorities, i.e., by municipalities.
	Symbol for the protective earth connection

## 2.5 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.

## 2.6 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. StoraXe® and Big-LinX® are registered trademarks of ADS-TEC.

All other third-party trademarks used are hereby acknowledged.

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

## 2.7 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.



## 2.8 Environmental conditions

The device can be put into operation and used under the following conditions. Failure to observe any one of these conditions will invalidate the warranty. ADS-TEC cannot be held liable for any damages arising from improper use and handling.

- Temperature for OPC8008
  - in operation           0 to +55°C\*
  - (\*only with Flash SSD)
  - for storage           -20 to +55°C
  
- Temperature for OPC8013/8015 devices
  - in operation           +5 to +45°C
  - in operation           -20 to +60°C\*
  - (\*only with Flash SSD, automotive hard disk or 2.5" Industrial SSD)
  
  - for storage           -30 to +65°C
  - for storage           -30 to +75°C\*
  - (\*only with Flash SSD, automotive hard disk or 2.5" Industrial SSD)
  
- Temperature for OPC8022 device
  - in operation           +5 to +45°C
  - for storage           -20 to +60°C
  
- Humidity
  - in operation           10 to 85% without condensate
  - for storage           10 to 85% without condensate
  
- Vibration
  - in operation           1 G, 10 to 500 Hz
  - (DIN EN 60068-2-6)
  
- Shock resistance
  - in operation           5 G, with a 30 ms half-cycle
  - (DIN EN 60068-2-27)

## 2.9 Standards

The manufacturer hereby declares that this device has been marked with the CE mark in accordance with the basic requirements and other relevant conditions of the following European Directives:

- 2011/65/EU, RoHs Directive
- 2014/30/EU, EMC Directive
- 2014/53/EU, RED Directive
- 2014/35/EU, Low Voltage Directive



A corresponding EU conformity declaration is available for competent authorities at the manufacturer and can be viewed upon request.

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 instruction manual.

## 2.10 Scope of delivery

Please check that all of the following components are contained in the packaging:

- 1 x device
- 1 x 3-pole lead-through connector from Phoenix Contact; 3-pole screwable 3.81 OPC7 (already plugged into device socket)
- QuickStartGuide

Optional scope of delivery:

- Operating system

## 2.11 Device features

Proven many times over in rough environments, Panel PCs from ADS-TEC create clarity and precision in a new form. Optimised in every detail - with multi-touch operation and rear service access for simple and safe replacement of all components. In wide-screen format in four different sizes, reduced to the essential without compromise, powerful and with long-term availability.

Front side



Fig. 1:

No.	Description
1	Display with touch screen
2	Front keys with lighting
3	Status indicator

## Rear side

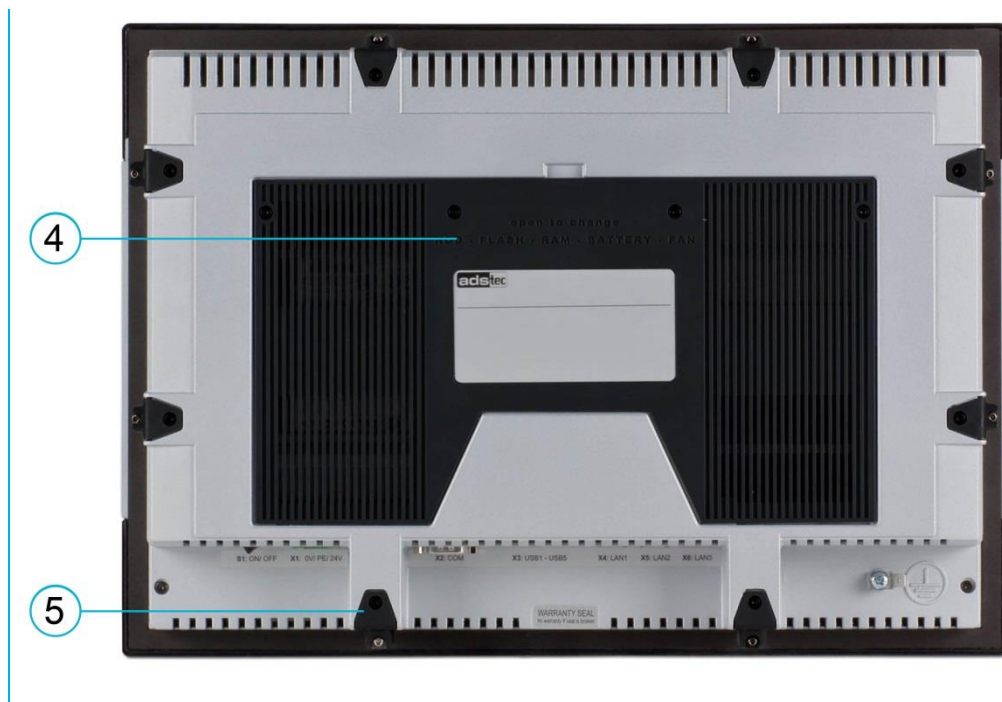


Fig. 2:

No.	Description
4	Service slot
5	Tensioners for installation purposes

## Rear side

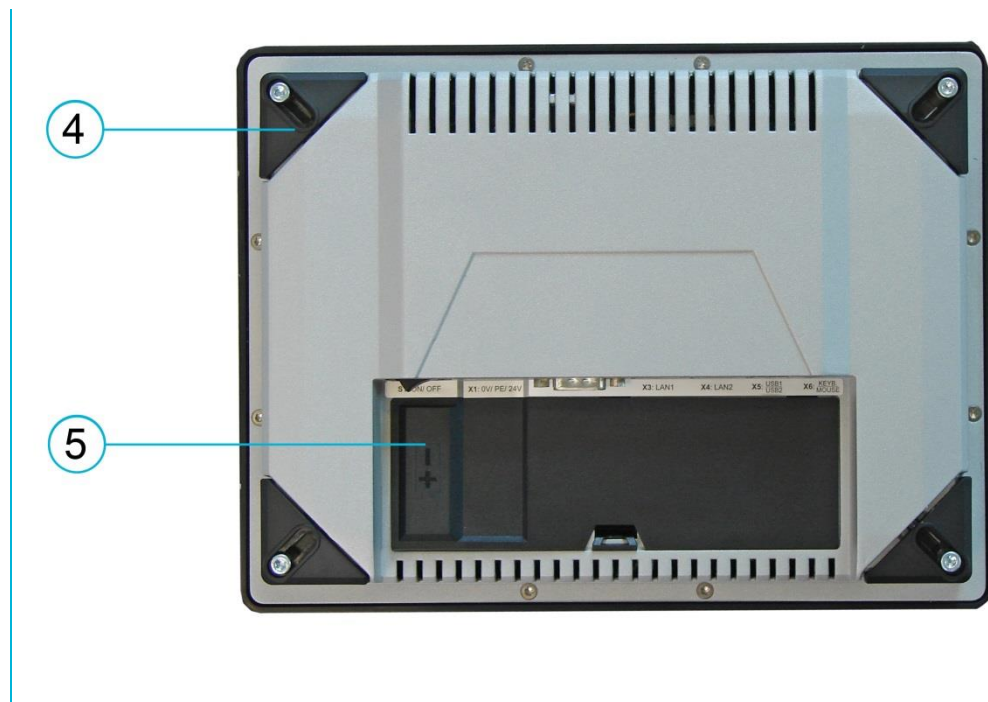


Fig. 3:

No.	Description
4	Tensioners for installation purposes
5	Service slot

### 3 Operating and safety instructions

The device operates under electrical voltage and contains highly sensitive components. Intervention by the user is required only for connecting the power supply lines. 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 work. Appropriate measures must be taken to prevent electrostatic discharges on components. If the device is opened up by an unauthorised person, the user may be subject to hazards and the warranty is invalidated.

#### General information

- All users must read this manual and have access to it at all times.
- Installation, commissioning and operation may only be performed by qualified and trained personnel.
- The safety notices and the manual itself must be observed by all persons who work with this device.
- At the installation site the valid guidelines and regulations for accident prevention must be observed.
- The manual contains the most important instructions on how to use this device in a safe way.
- Appropriate storage, proper transport, installation and commissioning, as well as careful operation are prerequisites for ensuring safe and proper operation of the device.
- The device can be cleaned by using a soft cloth and a commercially available glass cleaning agent (e.g. Sidolin) with low alcohol content.

#### ATTENTION

To prevent damage to the device, all cable lines (power supply, interface cables) must be only be connected while the device is switched off.

### 3.1 Operating location

The control system is designed for use inside a switching cabinet. Make certain that the specified environmental conditions are maintained at all times. Use in non-specified environments, i.e., on board ships, in explosive atmospheres or at extreme elevations, is prohibited.

#### ATTENTION

##### **Hazard due to condensation**

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

- ➡ The device should only be switched on after it has acclimated to the ambient temperature!
- ➡ To avoid overheating in operation: The device must not be exposed to direct radiation by sunlight or any other heat source.

### 3.2 Damage due to improper use

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

### 3.3 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.

### 3.4 Intended use

The Panel PCs are designed for the control and monitoring of machines and equipment. The unit is intended for installation in electrical panels, consoles and cabinets.

The device has to be assembled, installed and operated within the permissible specifications.

Use in non-specified environments is prohibited.

### 3.5 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, shipping industry.

The device must not be put into operation in the case of transport damage or nonconformity with the specifications and, if necessary, 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.

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.



### 3.6 Treatment and disposal of lithium batteries

This device contains a lithium battery for supplying the system clock with power as long as the supply voltage is not connected. The battery has a life cycle of 3 - 5 years depending on which load is applied.

#### ATTENTION

##### Hazard due to thermal loads

The more the battery is exposed to higher temperatures, the faster it ages.

➔ Avoid thermal loads.

#### WARNING

##### Hazard due to explosion

Danger of explosion if using incorrect battery types.



➔ Use the battery type recommended by the manufacturer.

Lithium batteries may only be replaced by the same type, or by a type recommended by the manufacturer.

The used lithium battery should be disposed of in accordance with local legal regulations.

The battery type to be used is:

Lithium battery 1/2AA 3V (e.g. ADS-TEC part number: DZ-SONS-04100-0)

The used lithium battery should be disposed of in accordance with local legal regulations.

## 3.7 Safety instructions

### ATTENTION

#### **Damage due to electrostatically sensitive components**

Damage to the device can be caused by electrostatically sensitive components.

➡ All installation and service work performed on the device must be performed only under safe, secure and de-energised conditions.



#### **Recommendation for use:**

Always adhere to the safety measures applicable when handling components at risk of being damaged by electrostatic discharges. The provisions of DIN EN 61340-5-1 / DIN EN 61340-5-2 apply

## 4 Installation

### 4.1 Installation option

This device is designed for integration. For installation and operation reasons (connector access), the installation location must be accessible from the rear. The wall thickness of the installation location must be between 2 and 13 mm. We recommend at least 3 mm for proper installation with IP65 on the front.

#### ATTENTION

To avoid overheating in operation: The device must not be exposed to direct radiation by sunlight or any other light source.

If the device is installed in a panel, casing or similar, it must be ensured that no heat accumulation occurs. The maximum permissible ambient temperature must not be exceeded.

Devices with data drives must only be installed vertically. Any deviation must be arranged with ADS-TEC GmbH.

IP 65 on the front is only achieved with proper installation.

#### ATTENTION

When selecting the enclosure for integration, the total power dissipation of the system including installed PCBs must be taken into account. The housing must be dimensioned so that the max. permissible ambient temperature is not exceeded.

## 4.2 External device dimensions OPC8008

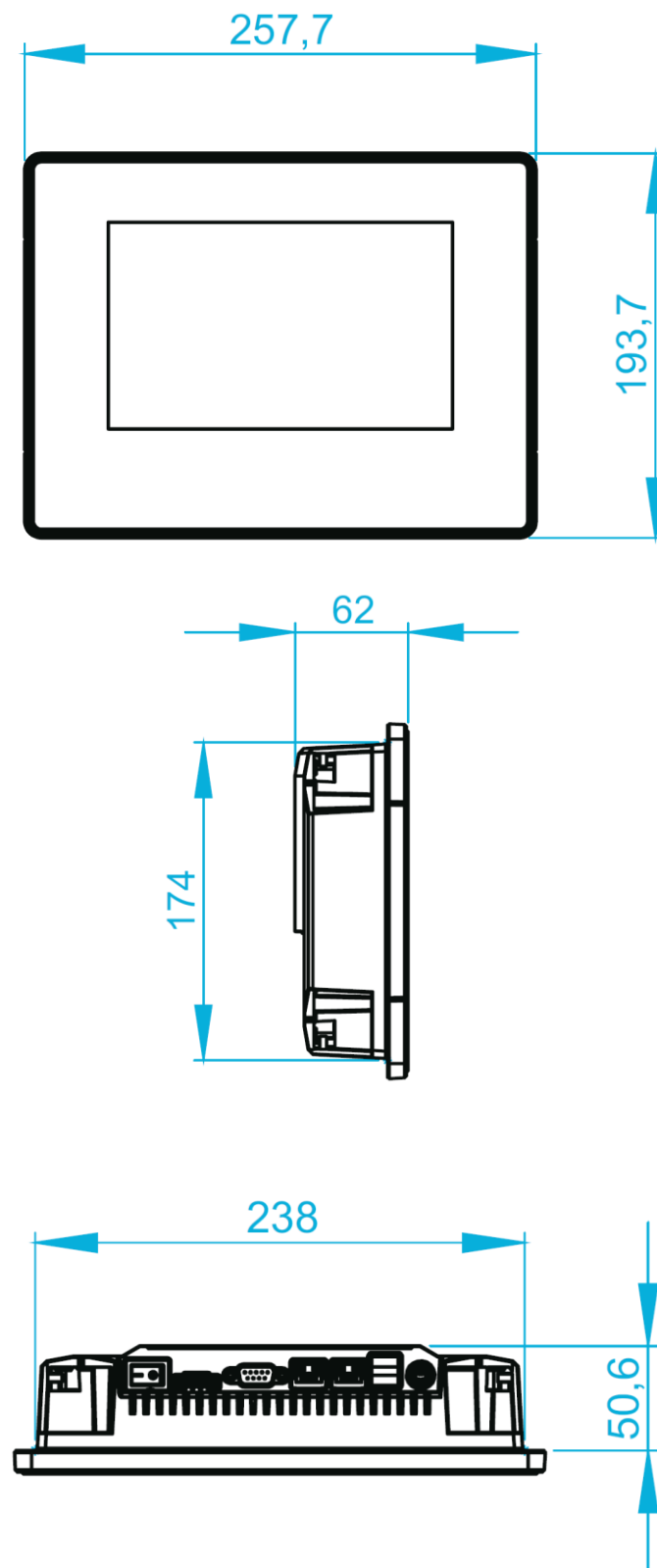
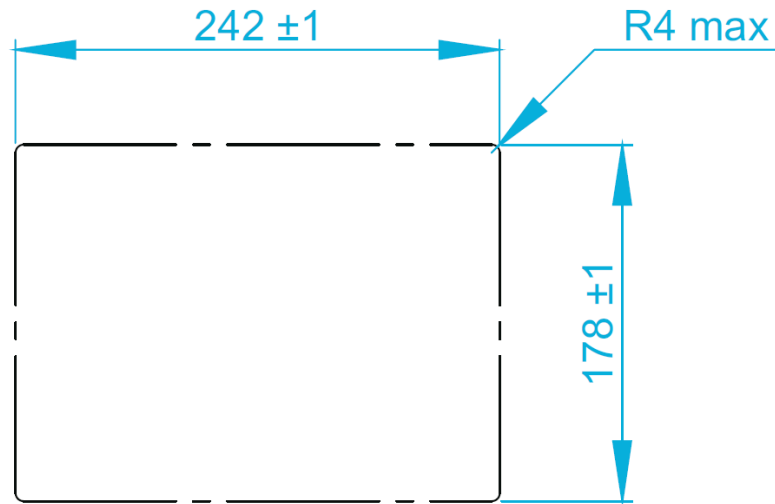


Abb. 4:

### 4.3 External device dimensions OPC8008

Einbau-Ausschnitt OPC8008  
Mounting-Cutout OPC8008



#### 4.4 External device dimensions OPC8013

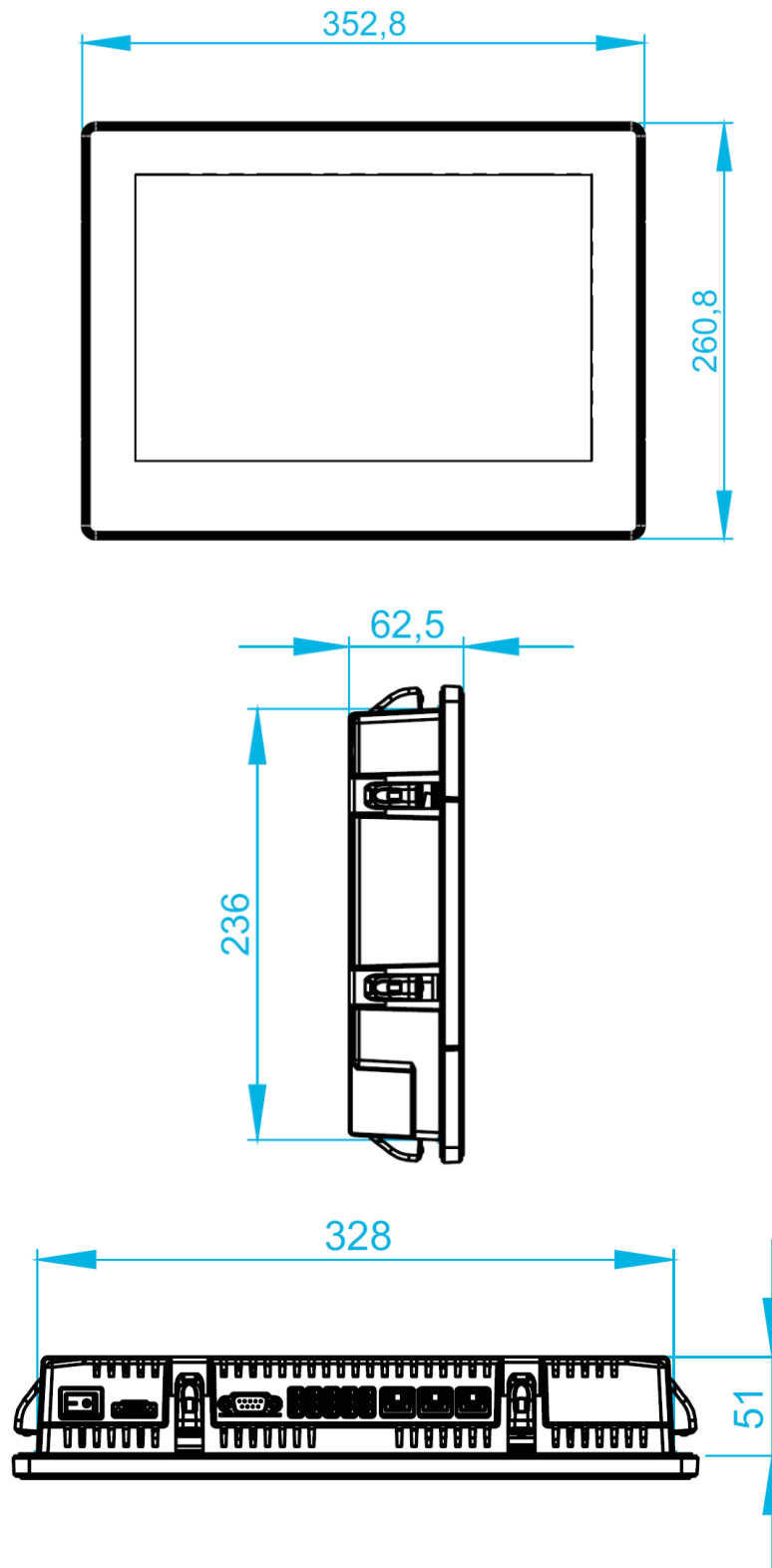
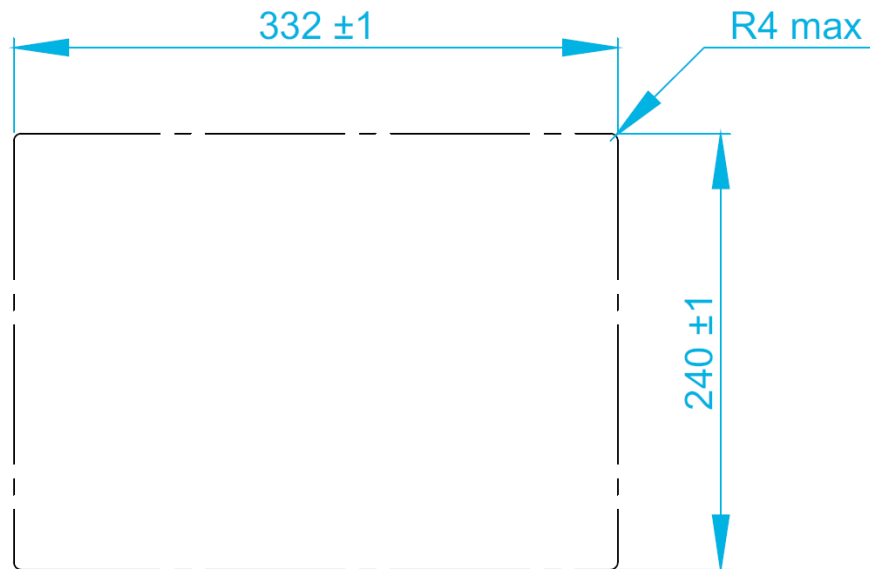


Fig. 5:

## 4.5 Installation layout OPC8013

Einbau-Ausschnitt OPC8013  
Mounting-Cutout OPC8013



## 4.6 External device dimensions OPC8015

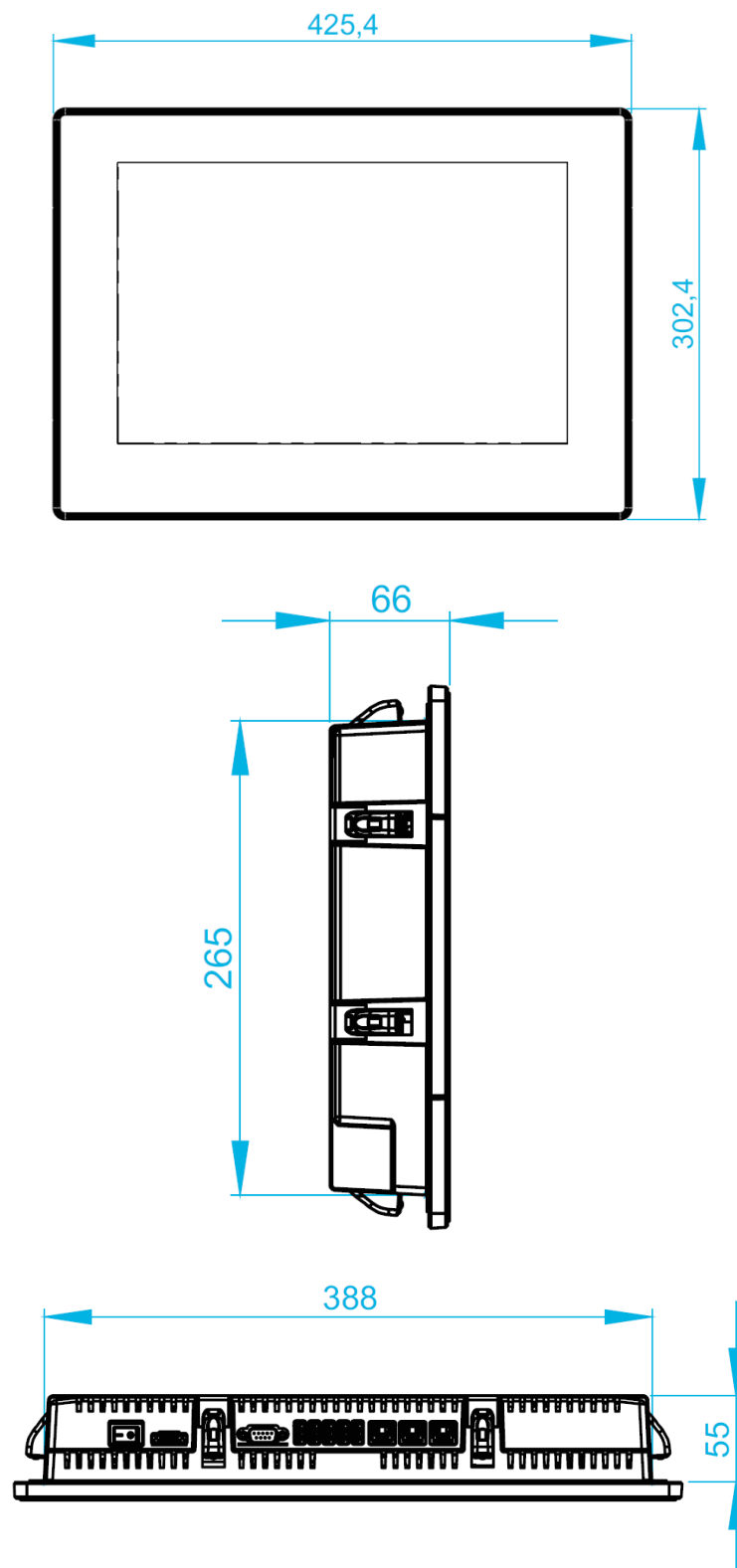
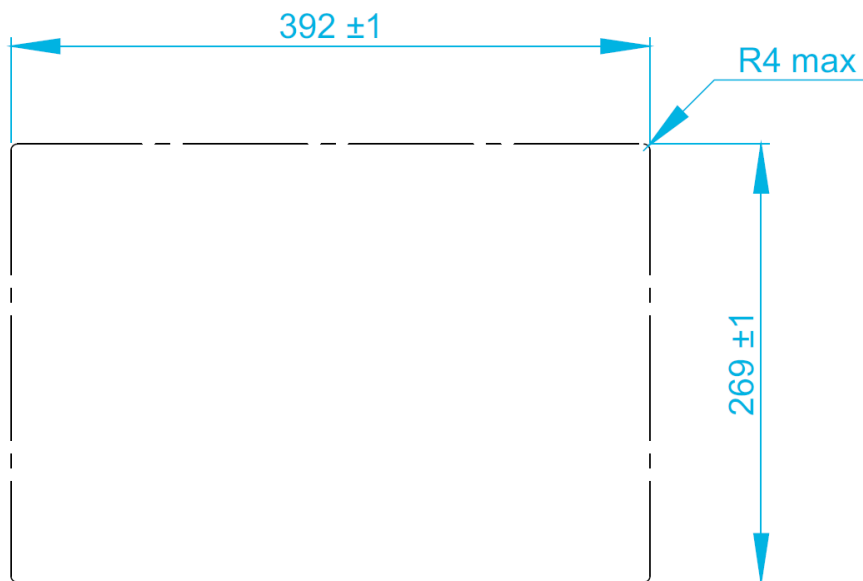


Fig. 6:



## 4.7 Installation layout OPC8015

Einbau-Ausschnitt OPC8015  
Mounting-Cutout OPC8015



## 4.8 External device dimensions OPC8022

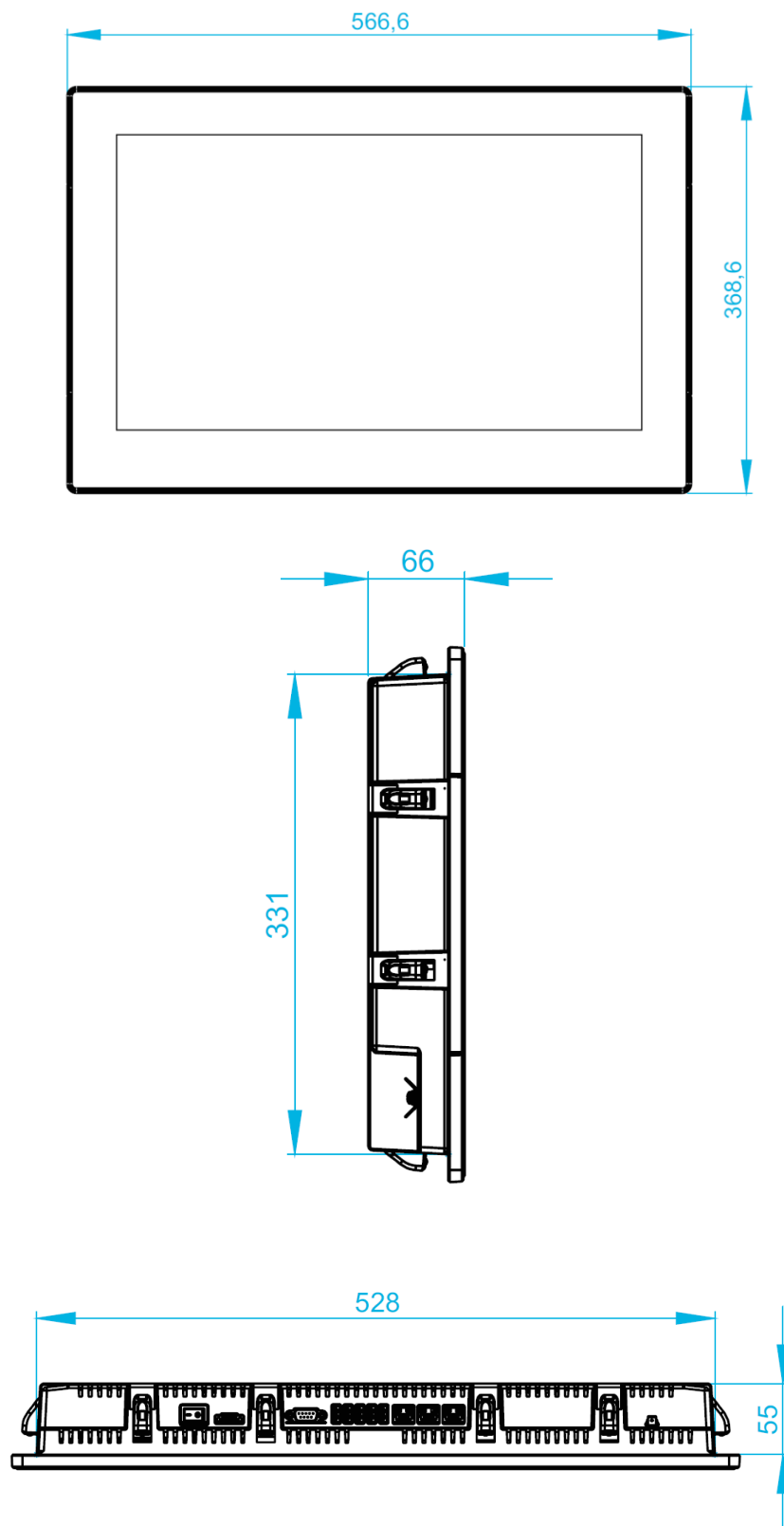
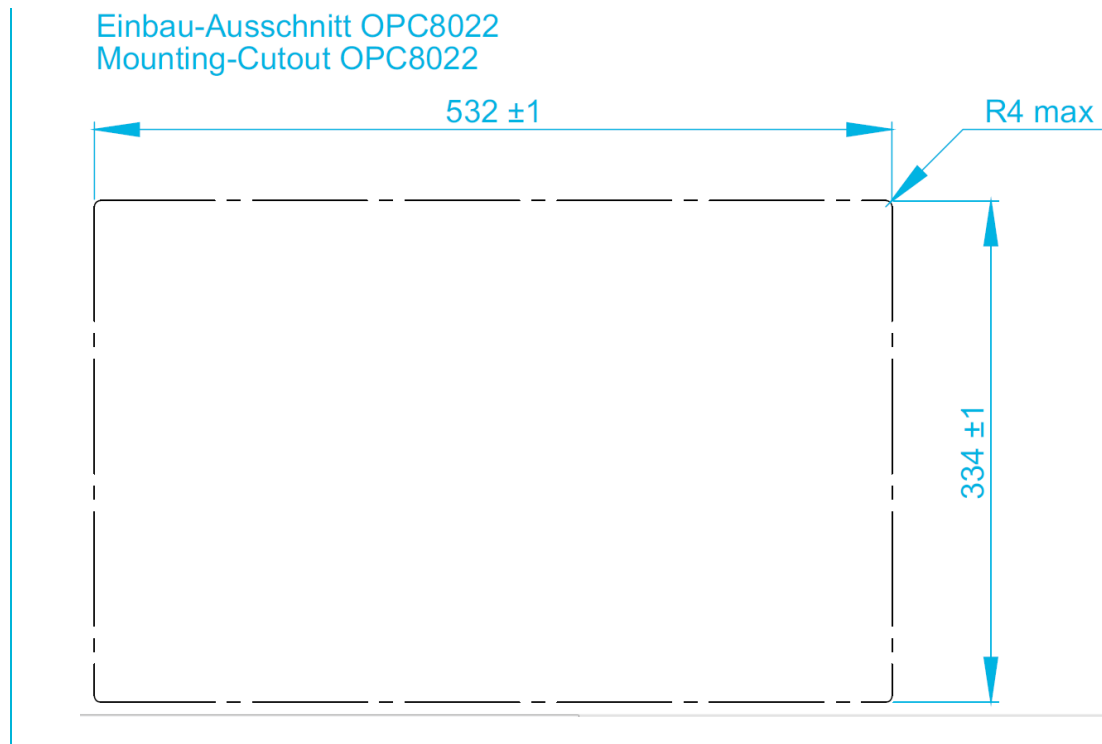


Fig. 7:

## 4.9 Installation layout OPC8022



## 4.10 Safety notices prior to beginning installation

### ATTENTION

The grub screw of the Quick Snap element must not protrude when folding in, but must rather be flush with the tensioner!

→ Non-compliance may result in damage to the device!



### ATTENTION

The grub screws must not be screwed in while folded in!

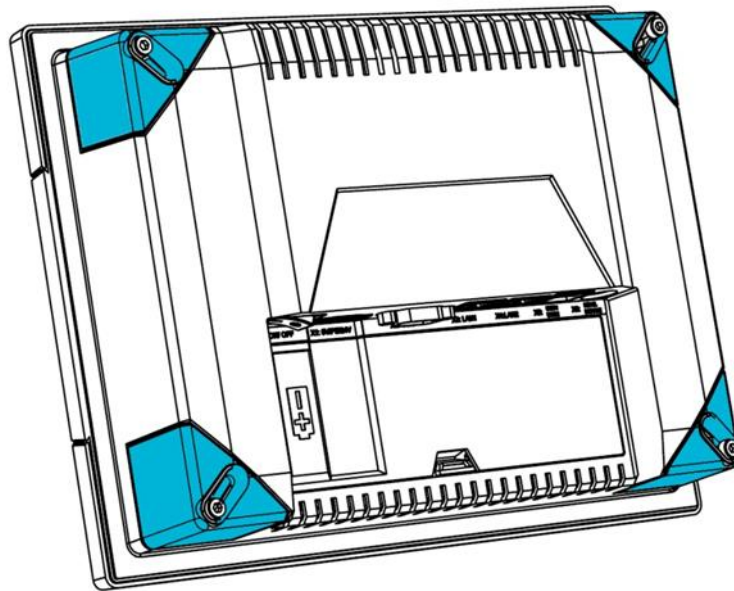
→ Non-compliance may result in damage to the touch-screen of the device!



## 4.11 Order of installation (OPC8008)

### ACHTUNG

The screws have to be tighten with a torque of 0.25 NM

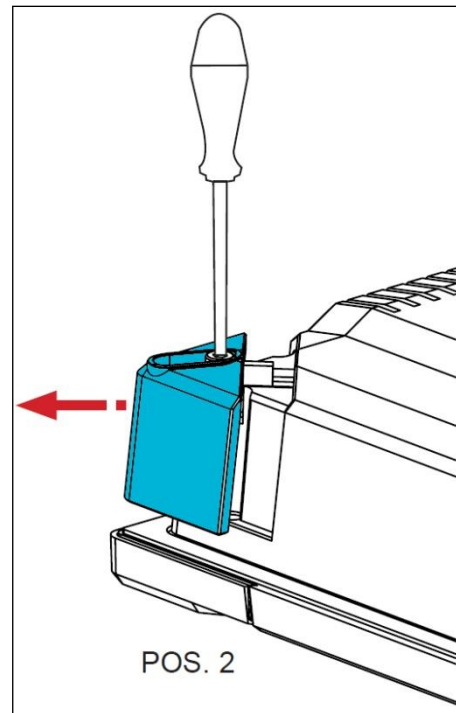
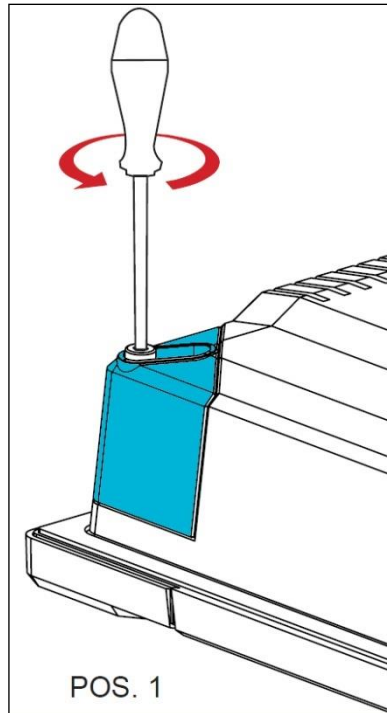


- 1) Before the device can be integrated in the panel, the tensioner fixing screws must be loosened until the tensioners open.  
(Item 1 - item 2).



#### Information:

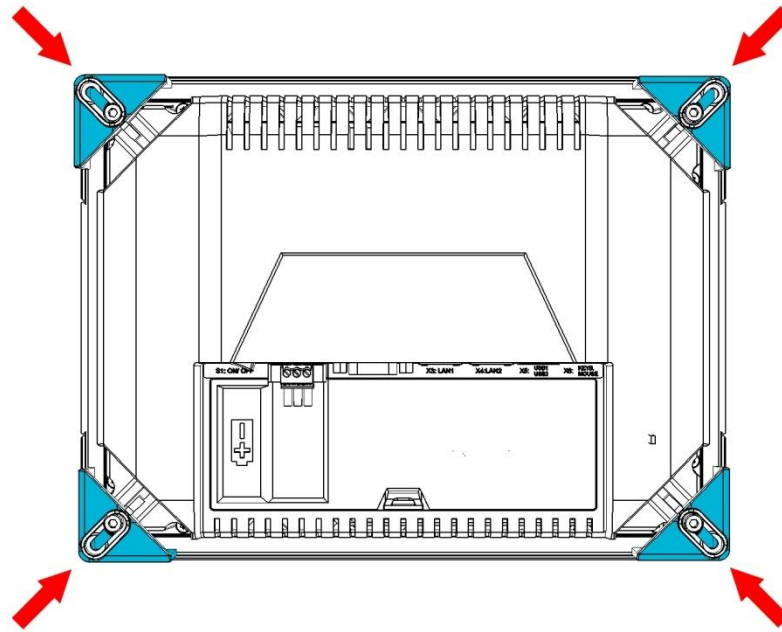
Tensioners can be opened by using an Allen key of 3 mm size.



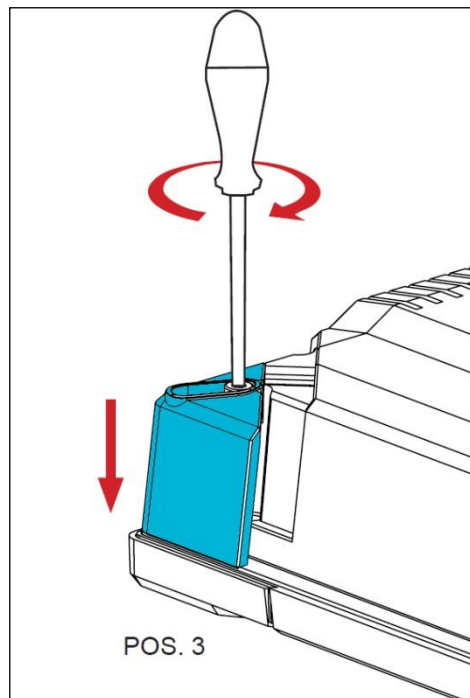
2) Now, position the device inside the installation recess.

### ATTENTION

In order to position the device correctly, the opened tensioners should be held back by hand while inserting the device in the installation recess.



- 3) Fasten the tensioner screws with 0.25 NM until once the device is installed in the recess.  
(Item 3)



## 4.12 Order of installation (OPC8013-8022)

### ACHTUNG

The screws have to be tighten with a torque of 0.25 NM



#### Information:

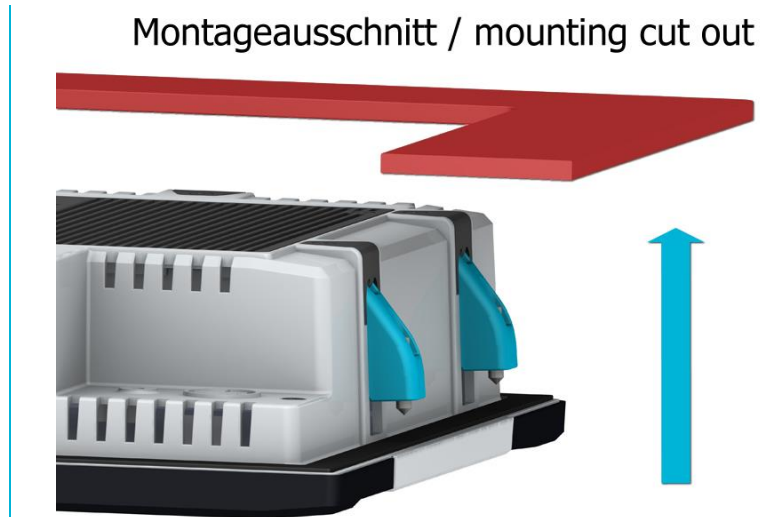
The connection to the power supply network is established via the included power cable or lead-through terminal with screw connection. No earthing connection needs to be established as earthing takes place via the protective earth of the device plug / power supply connection. In the event of additional earthing on the earthing screw, use wire cross section with at least 2.5 mm<sup>2</sup>.



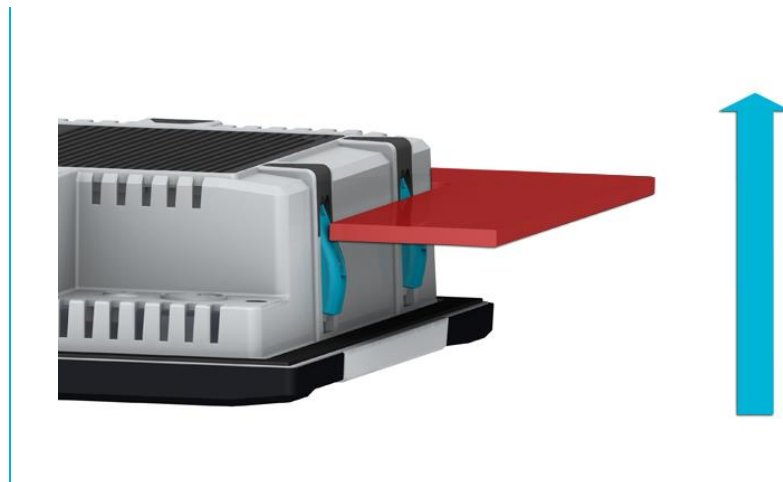
- 1) Cut out recess in the switch board or switching cabinet door according to the installation layout.

The fixing screws for the tensioners must be screwed in.

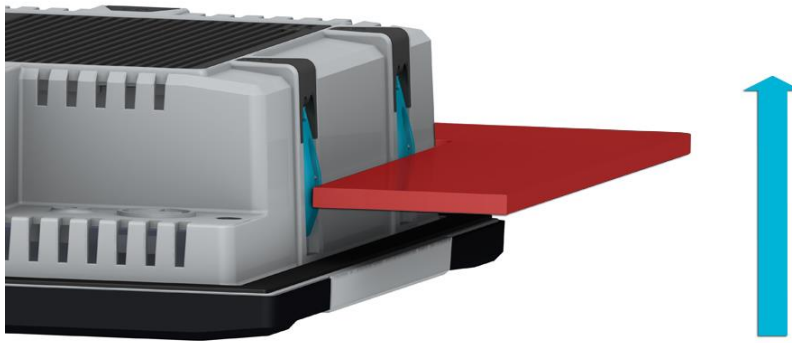
The screws can be unscrewed with a size TX8 screwdriver.



- 2) The device is placed in the created recess. The tensioners snap back.



- 3) The device must be carefully pushed into the cabinet. Then the tensioners snap forward again. The device is now secured in the installation recess.



- 4) The tensioners must be fastened with 0,25 NM.



## 5 Commissioning

The interfaces for the device are located under protective covers. It has to be removed in order to connect the power supply lead and the interface cables.

All supply leads and all required data leads have to be connected before commissioning.

### ATTENTION

The device must be switched off before connecting or disconnecting any cables in order to prevent damage to the electronics!

The device may only be switched on after acclimatising to the ambient temperature in order to avoid condensate accumulation. Make sure to meet the permissible voltage for this device.

After switching off and before switching on you must wait for at least 5 seconds.



### Information:

The shielding of a data cable must always be connected with the connector housing (EMC).

For embedded operating systems, the interfaces must be explicitly enabled and the necessary drivers installed in order to use them.

## 5.1 Available Interfaces (OPC8008)

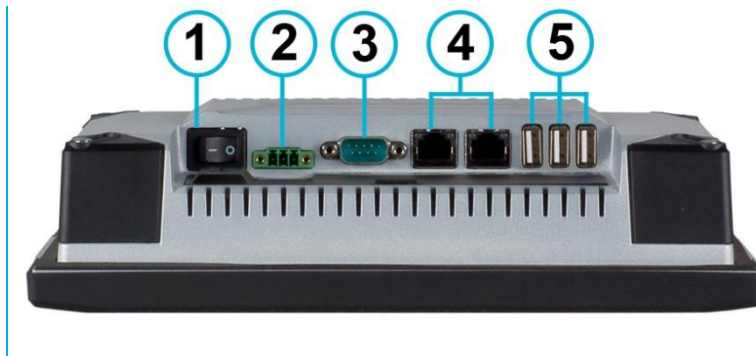


Abb. 8: Variante 1

Nr.	Description
1	On-/Off Switch
2	Power Supply 24 V DC
3	1 x COM-Port
4	2 x LAN
5	3 x USB 2.0

## 5.2 Available interfaces (OPC8013-8022)

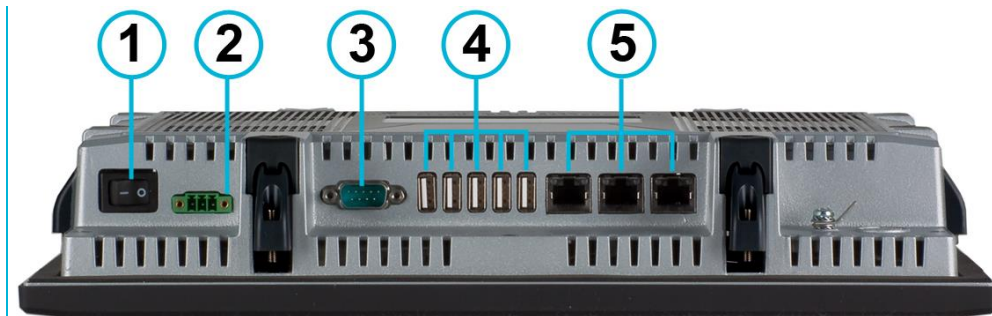


Abb. 9: Variante 1

Nr.	Description
1	On-/Off Switch
2	Power Supply 24 V DC
3	1 x COM-Port
4	5 x USB 2.0
5	3 x LAN

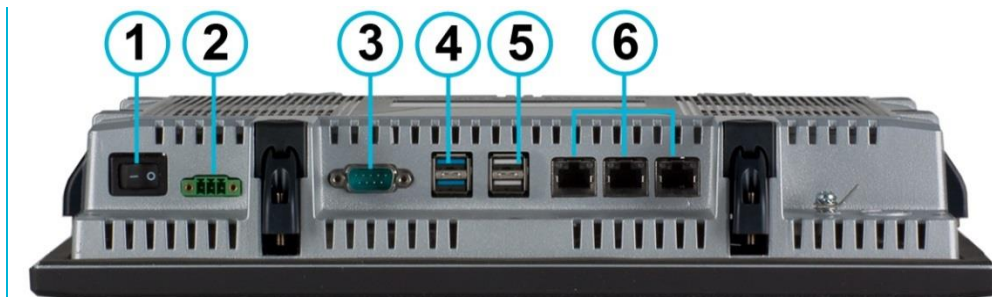


Abb. 10: Variante 2

Nr.	Description
1	On-/Off Switch
2	Power Supply 24 V DC
3	1 x COM-Port
4	2 x USB 3.0
5	2 x USB 2.0
5	3 x LAN

## 5.3 Cable installation

The interfaces and the device power supply plug are located at the bottom of the device.

## 5.4 Order of steps during commissioning

- 24V DC device: insert cable for power supply with cable end sleeves into terminals
- Connect cable for serial / parallel data transmission and fasten the plugs to the sockets
- Plug in all other required cables and secure against slipping out.

## 5.5 Check for operational readiness

Check the device for hidden damages caused by improper transport, incorrect operation/storage conditions or improper use (e.g., smoke emissions from the device, etc.). If damages are found, immediately shut down the device and protect it against unintentional startup.

## 6 Operation






### 6.1 Front panel operation keys

#### 6.1.1 Functions while the operating system is running



Fig. 11:

The keys can be assigned or deactivated according to customer needs. The keys on the front are assigned the following functions ex works:

	<p><u>Level 1:</u> Activate and deactivate the soft keyboard for letter/character input by using the touch screen.</p> <p><u>Level 2:</u> Decrease display brightness.</p>
	<p><u>Level 1:</u> Change task (Alt+ESC) in Windows.</p> <p><u>Level 2:</u> Increase display brightness.</p>
	<p><u>Level 1:</u> F2 on keyboard</p> <p><u>Level 2:</u> -</p>
	<p><u>Level 1:</u> Right mouse-key function</p> <p><u>Level 2:</u> -</p>
	<p><b>SHIFT</b> key for activating the second keyboard level. The key has to be pressed shortly and is activated permanently (it can be recognized via the blue highlighted keys). By pressing the Fn-key again, the Fn-function is disabled.</p>



If the soft keyboard is not installed, level 1 of the ABC key has no function. Furthermore, no graphical feedback is provided when changing the display brightness.

## 6.1.2 Switching-on function



Devices without POWER button on the front side: With these two keys **simultaneously**, the devices can be powered ON.



**Please note:**

This functionality is only available with the following types of processors:

- Intel® Celeron® 2002E 1,50 GHz
- Intel® Core™ i5-4400E 2,70 GHz
- Check in your BIOS or in the System control of the operating system to see which type of processor your mainboard uses.




### 6.1.3 Activating the front keys for the boot menu and BIOS

You can use the front keys to enter the boot menu and the BIOS, to navigate in these menus and to make settings. In order to do so, you have to activate this function in the BIOS:






**Advanced → EC-Firmware Configuration → Frontkey Navigation = [Enabled]**

How to enter the BIOS:

1. Connect a hardware keyboard to your computer.
2. Switch the computer on.
3. Immediately after switching on, press several times the **Del** key until the BIOS setup opens up.

After having activated the front keys, you can enter the **boot menu** immediately after switching the computer on by pressing several times the key with the two rectangles . Via the boot menu, you can also enter the **BIOS** setup (choose “Enter setup”).

Then, the front keys have the following functions:

	This key reacts like the <b>Enter</b> key on a real keyboard.
	While booting: opens the Boot menu. In the BIOS setup: leave a menu ( $\triangle$ <b>Esc</b> ).
	<u>Level 1</u> : reacts like the <b>Up</b> key <u>Level 2</u> : reacts like the <b>Left-Key</b>
	<u>Level 1</u> : reacts like the <b>Down</b> key <u>Level 2</u> : reacts like the <b>Right-Key</b>
	<b>SHIFT</b> key for activating the second keyboard level. The key has to be pressed shortly and is activated permanently (it can be recognized via the blue highlighted keys). By pressing the Fn-key again, the Fn-function is disabled.

## 6.2 Soft keyboard

If an operating system is installed ex works, the soft keyboard is also preinstalled. If the operating system is delivered separately with the device, the soft keyboard still needs to be installed. By using the soft keyboard, data can be entered via the touch screen like with an external keyboard.

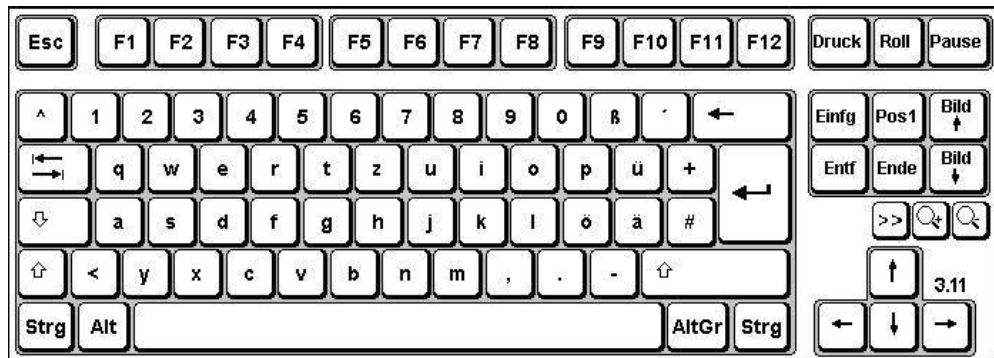

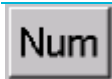

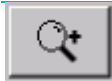
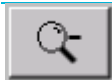


Fig. 12:

### Operating the soft keyboard for version 3.11 and higher:

	Activate and deactivate the soft keyboard for letter/character input using the touch screen
	Switches numeric keys on and off (only if numeric keys are visible)
	Switching between different representations (Alphanumeric keys → Numeric keys → Function key bar)
	Soft keyboard representation, zoom in
	Soft keyboard representation, zoom out



### Information:

If functions are to be called for which two keys must be pressed simultaneously on a standard keyboard (e.g., Alt + F4), these keys are to be pressed in sequence on the soft keyboard. The Shift, Alt and Ctrl special keys must always be pressed first.

Due to differences in programming of a large variety of software

programmes, we cannot ensure that the soft keyboard works properly with all available software.

When deactivating the soft keyboard, the previously active state (alphanumeric / numeric keys or function keys) will be stored and will be displayed when re-activating the keyboard. This setting can be configured.

## 6.3 Touch screen

The control system is equipped with a touch screen monitor. The touch screen is internally connected via the USB interface. The driver software necessary for use is already integrated in the respective operating system.



### Note:

The corresponding driver can be downloaded <http://www.ads-tec.de/industrial-it/download/treiber.html> in the device series.

## 6.4 Status displays

### SYS LED

Depending on the type of flashing different device states are displayed by the SYS LED. The following signals are displayed:

- LED off                      Device is switched off (POWER OFF)
- LED green                  Device is ready for operation (POWER ON)
- LED yellow flashing      Adaption of Volume /
- LED yellow                Min-/Max value of brightness has been reached

## 7 Interfaces

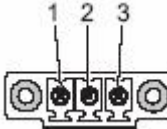
### 7.1 Interface setup

Interface	IRQ	Address
COM1	4	3F8h

### 7.2 Voltage supply 24V DC

The supply voltage is fed to the device via a lead-through terminal with screw connection. (The figure shows the socket inside the device).

PIN number	Signal name
1	24V DC
2	PE
3	0 V DC



Technical data of the power adapter

- Input voltage: 19 to 29V DC
- Max. switch-on current: 7A(10ms)

### 7.3 USB connections

The USB interfaces are used for connecting peripherals with USB connection. These interfaces comply with the USB 2.0 e.g. USB 3.0 standard requirements.

#### USB 2.0

Pin-Number	Signal-Name
1	VDC
2	D -
3	D +
4	GND



#### USB 3.0

Pin-Number	Signal-Name
1	VBUS
2	D -
3	D +
4	GND
5	StdA_SSRX-
6	StdA_SSRX+
7	GND_DRAIN
8	StdA_SSTX-
9	StdA_SSTX+

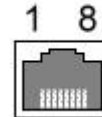


## 7.4 Network connection (RJ45)

If the drivers required for functioning are installed on the device, the control system may be integrated in an Ethernet network supporting the 10/100/1000Mbit standard by using the Ethernet 10/100/1000BaseT network connector. The specifications of this network topology must be observed. If the drivers required for function are not installed, they can be installed from the website ([www.ads-tec.de](http://www.ads-tec.de)).

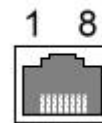
### 10/100Mbit

Pin-Number	Signal-Name
1	TX +
2	TX -
3	RX +
4	NC
5	NC
6	RX -
7	NC
8	NC



### 1000 BaseT

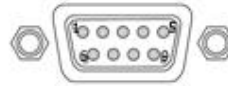
Pin-Number	Signal-Name
1	D1+
2	D1-
3	D2+
4	D3+
5	D3-
6	D2-
7	D4+
8	D4-



## 7.5 Serial interface COM (RS232)

The serial interface is used for digital data transmission. The RS232 interface can be connected by using a commercially available 9-pin SUB-D cable.

PIN number	Signal name
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

**Information:**

This interface is not electrically isolated.

## 8 Drives

### 8.1 Hard disk / Flash SSD

The storage medium is selected according to the customer requirements. The following options are available for storage:

2,5" HDD SATA

2,5" SSD SATA

mSATA-Formfaktor SSD

Its capacity depends on the desired operating system and the additional programmes to be installed.

### 8.2 External drives

External storage media can be connected via USB interfaces.  
Note here the connecting lines in chapter Interfaces.

#### ATTENTION

Connecting or disconnecting external drives in operation is not admissible, since it cannot be excluded that the drive might be in use while connecting or disconnecting it. Data loss might result in the event of non-compliance!

## 9 Software

The device will be delivered with a pre-installed operating system depending on what the customer wants. The drivers required for this, are already installed and the operating system will be enabled by entering the licence information. Should an initial installation be required, please follow the following steps. With a newer operating system, the network card and graphics card will properly be recognised during the initial installation, so that only the touch screen driver and the soft keyboard must be installed separately.

**Information:**

If the hard drive was formatted, the operating system can be reinstalled by using one of the existing interfaces.

An external keyboard is required for installation.

### Installing the operating system

The device does not have any integrated CD drive. The installation of the operating system can therefore only be carried out by using the USB interface.

Procedure for installation:

- The boot drive in the system Bios must be switched to USB in order to boot the device from the USB interface.
- Restart the device and insert a Windows CD.
- Install Windows and set up the basic data.
- With devices including touch screens, the touch screen driver as well as the soft keyboard should be installed in order to ensure their full functionality.

## 9.1 Configuration Center

If a pre-installed operating system is available on your device, ADS-TEC provides software modules. These software modules are specifically designed for each device and can be accessed in the Configuration Center.

**Information:**

Additional information and a detailed instruction manual for the Configuration Center, can be found on our website.

<http://www.ads-tec.de/support/download/>



# 10 Technical details

	OPC8008	OPC8013	OPC8015	OPC8022
Housing	Die-cast aluminum, powder-coated			
Front panel	3mm glass, thermally hardened and anti-reflective treatment			
Display	8" TFT	13.3" TFT	15.4" TFT	21.5" TFT
	Resolution	800 x 480 pixels	1280 x 800 pixels	1280 x 800 pixels
	Represented colours	max. 16.1 million	max. 16.2 million	max. 16.2 million
	Manual display brightness adjustment			
Touch	PCAP multi-touch function			
Processor	Intel®	Intel® Atom™ N2600 1,6 Ghz	Intel® Celeron® 847E 1,10 GHz Intel® Core™ i5-2515E 2,50 GHz Intel® Core™ i7-2655LE 2,20 GHz Intel® Celeron® 2002E 1,50 GHz Intel® Core™ i5-4400E 2,70 GHz	
RAM		4 GB DDR3	4 bis 8 GB DDR3	
Graphics controller**	Intel®	Intel GMA3600	Intel HD Graphics (bei Celeron 847E)	
		DirectX 9.0 and OpenGL 3.0 Support	DirectX 10.1 and OpenGL 3.1 Support	
			Intel HD Graphics 3000 (bei i5-2515E / i7-2655LE)	
			DirectX 10.1 and OpenGL 3.1 Support	
			Intel HD Graphics (bei Celeron 2002E)	
			DirectX 11.1 and OpenGL 4 Support	
			Intel HD Graphics 4600 (bei i5-4400E)	
			DirectX 11.1 and OpenGL 4 Support	
Mass storage	mSATA-Form Factor SSD	2,5" HDD SATA		
	(opt.: with extended temperature range)	mSATA-Form Factor SSD (opt.: with extended temperature range)		
Interfaces	1 x COM 1 (RS232)			
	Rear sided:	Rear sided:		
	3 x USB 2.0	5 x USB 2.0 or  2 x USB 2.0 & 2 x USB 3.0 ****		
Network		2 x Ethernet (10/100/1000Mbit) RJ 45	3 x Ethernet (10/100/1000Mbit) RJ 45	

<b>Power adapter</b>	24 V DC +/- 20% (19 to 29 V)			
<b>Operating system</b>	Windows Embedded Standard 7 (32 Bit)  Windows 7 Ultimate (32 Bit)	Windows Embedded Standard 7 (32 Bit / 64 Bit)  Windows 7 Ultimate [for Embedded Systems] (32 Bit / 64 Bit)  Windows Embedded 8.1 Industry Pro (32 Bit / 64 Bit)		
<b>Protection class</b>	Front-side IP65			Optional casing IP65
<b>Operating temperature</b>	0°C to +55°C*  -20°C to +55°C*	5°C to +45°C  -20°C to +60°C*	5°C to +45°C	
<b>Dimensions (W x H x D)</b>	258 x 194 x 62 mm	353 x 261 x 63 mm	426 x 303 x 66 mm	567 x 369 x 66 mm
<b>Installation depth</b>	50 mm	51 mm	54 mm	54 mm
<b>Installation recess ***</b>	240 x 176 mm	332 x 240 mm	392 x 269 mm	532 x 334 mm
<b>Weight</b>	Approx. 1.8 kg	Approx. 3.6 kg	Approx. 4.9 kg	Approx. 8.6 kg
<b>Vibration</b>	DIN EN 60068-2-6			
<b>Shock resistance</b>	DIN EN 60068-2-27			
<b>Humidity</b>	10 to 85% non-condensing			

\* Only for versions with mSATA-Form factor SSD with extended temperature range

\*\* Shared memory

\*\*\* Tolerance + / - 1 mm

\*\*\*\* only with processors of the 4th generation (i5-2002E, Celeron 4400E)

## 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 such specific configurations and software installations, please contact the system supplier in question 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:

Tel: +49 7022 2522-202

Fax: +49 7022 2522-400

E-Mail: [support@ads-tec.de](mailto:support@ads-tec.de)

### 11.2 Company address

ADS-TEC GmbH

Heinrich-Hertz-Str.1

72622 Nürtingen

Germany

Tel: +49 7022 2522-0

Fax: +49 7022 2522-400

E-Mail: [mailbox@ads-tec.de](mailto:mailbox@ads-tec.de)

Web: [www.ads-tec.de](http://www.ads-tec.de)

## 12 Component replacement

### ATTENTION

Make certain that all cables are disconnected and that no voltage is connected to the device!

### 12.1 Opening the service slot (OPC8008)

Remove the four screws for the service slot on the rear of the device.

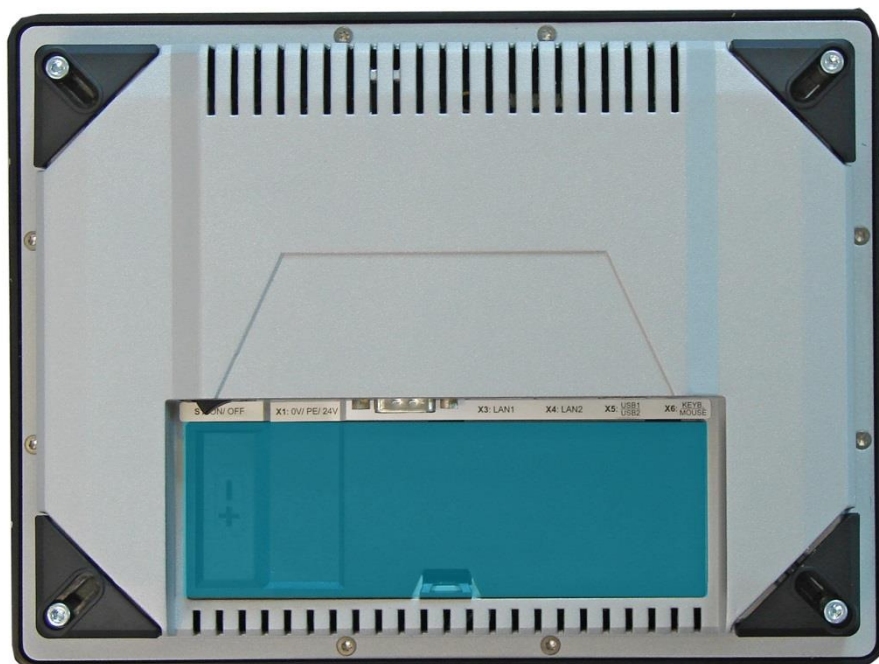


Fig. 13:



Fig. 14:

By removing the service slot cover, it is possible to replace the following components.

- 1 Lithium battery
- 2 mSATA connection

## 12.2 Opening the service slot (OPC8013-8022)

Remove the four screws for the service slot on the rear of the device. The screws can be removed with a size Tx 10 screwdriver. The rear cover can be tilted forward and removed using the groove on the top side of the service slot.

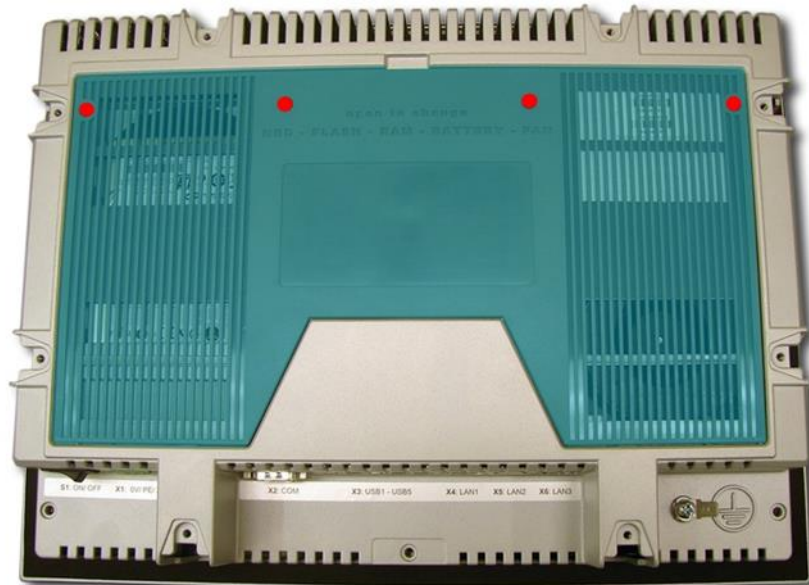


Fig. 15:

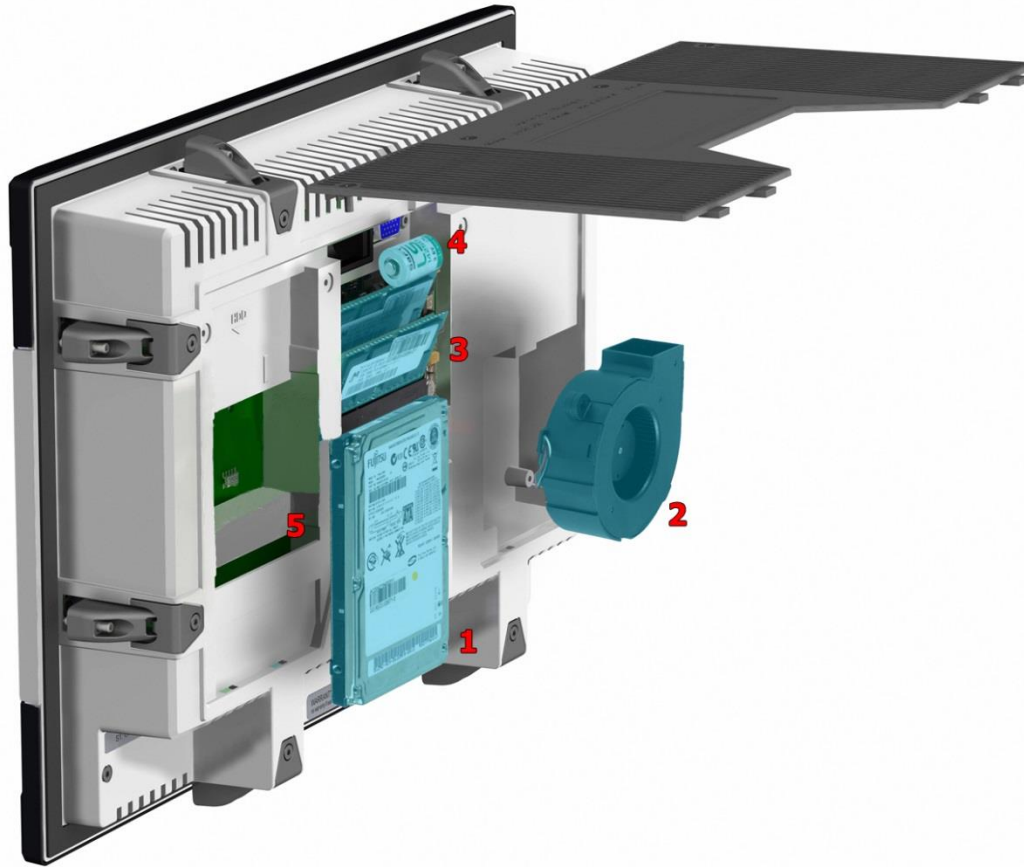


Fig. 16:

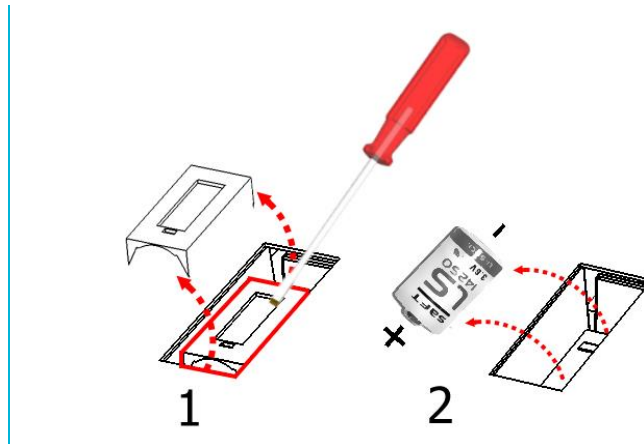
By removing the service slot cover, it is possible to replace the following components.

- 1 HDD
- 2 Fan
- 3 RAM
- 4 Lithium battery
- 5 mSATA connection

## 12.3 Replacing the lithium battery (OPC8000 series)

### Loosening / removing the retaining bracket

This battery is secured by a plugged-in retaining bracket. The retaining bracket can be removed from the battery holder by carefully lifting the external tabs with a flat tool (screwdriver).



### Installing / replacing the battery

The lithium battery can now be removed. It may only be replaced with a battery of the same type. The type of battery to be used is:

Lithium battery 1/2AA 3V (e.g., ADS-TEC part number: DZ-SONS-04100-0)

Ensure the correct polarity when inserting the battery

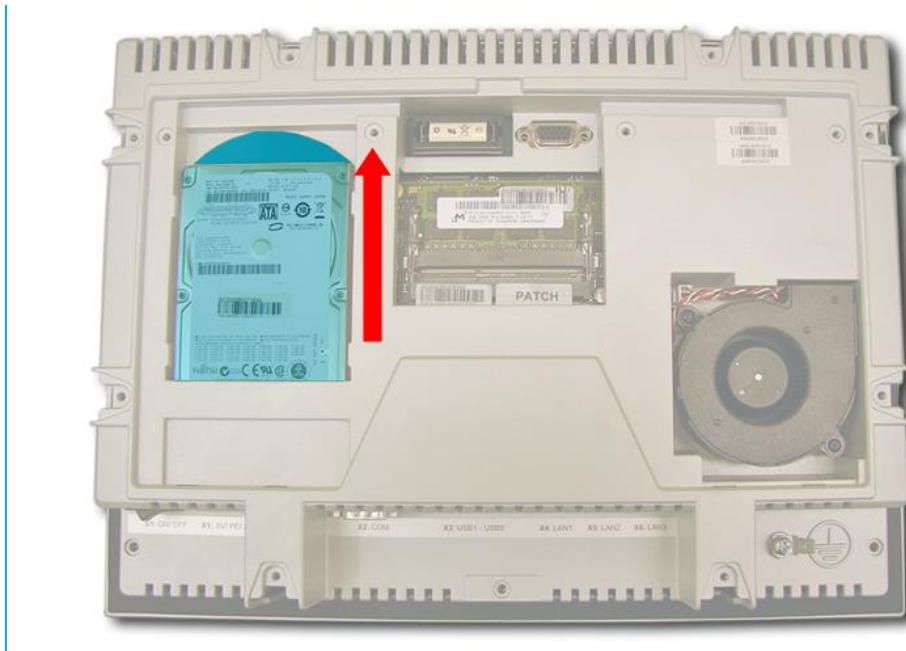


#### **WARNING**

There is a risk of explosion if the battery is replaced with the wrong type or with the wrong polarity. Observe the regulations for environmentally sound disposal of used batteries.



## 12.4 Replacing the HDD (hard disk) (OPC8013-8022)



### Removal

The extraction aid provided on the HDD should be used for removing the HDD. Carefully pull out the HDD.

### Installation

The HDD must be carefully inserted into the slot and should noticeably engage.

## 12.5 Replacing the fan (OPC8013-8022)



### ATTENTION

Before the device fan can be replaced, the fan cable must be unplugged!

#### Removal

Use a size Tx 10 screwdriver to remove the fan screws. The fan can then be lifted out and replaced with a new one.

#### Installation

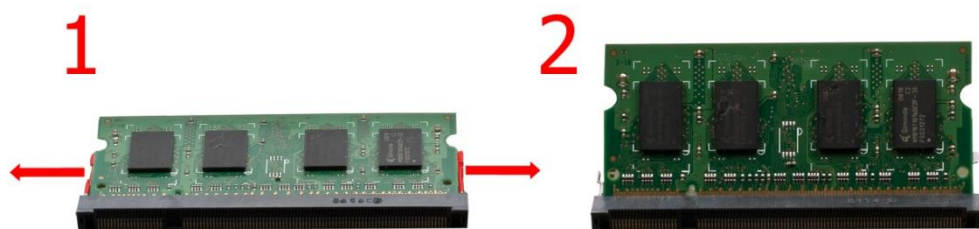
Screw the previously removed screws back in and plug the fan cable in again.

## 12.6 Replacing the working memory (RAM) (OPC8013-8022)



### Removal

The RAM memory is released by carefully pulling apart the retaining clips (1+2). It can now be replaced with new RAM memory.



### Installation

Insert the new RAM memory in the designated slot and push the RAM memory to the back until the retaining clips engage.

## 12.7 Replacing the mSATA modules (OPC8000 series)

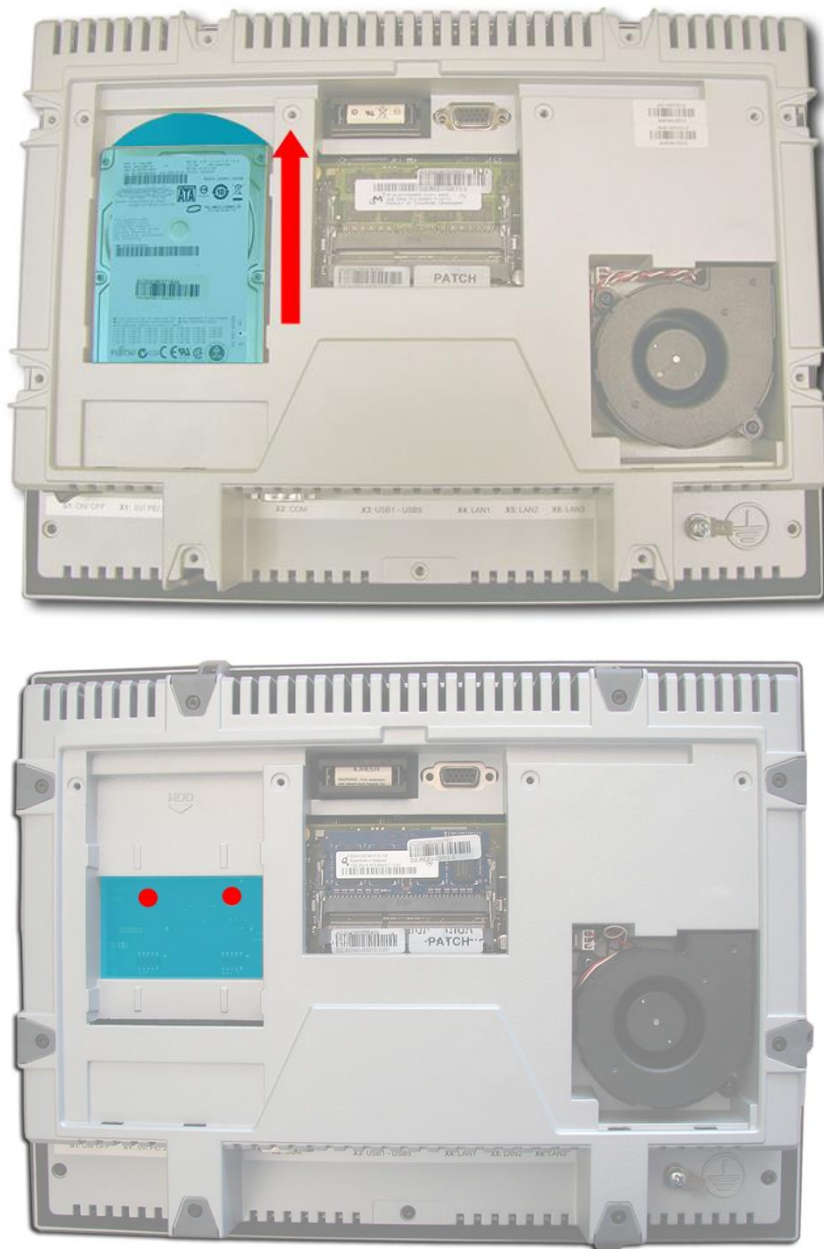


### Information:

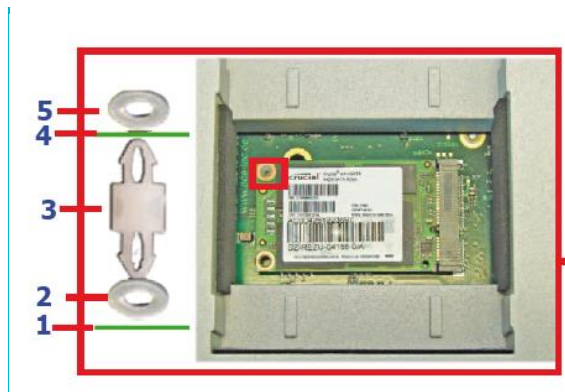
For the devices OPC8013-8022, the HDD (hard disk) must be removed before the SSD Flash Modules can be installed or replaced.

### Remove the HDD (OPC8013-8022)

Remove the screw(s) of the spacer bolt by using a Tx10 screw driver.



# Mounting (OPC8000 Serie)



1 Mainboard

2 plastic disc

3 plastic distance holder

4 mSATA Card

5 plastic disc