

SIMATIC

Industrial PC, Industrial monitor
SIMATIC IPC277D 19" INOX PRO,
SIMATIC IFP1900 INOX PRO

Service Manual

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Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

DANGER

indicates that death or severe personal injury **will** result if proper precautions are not taken.

WARNING

indicates that death or severe personal injury **may** result if proper precautions are not taken.

CAUTION

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

WARNING

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Preface

Validity

This document applies to the following devices in combination with the Compact Operating Instructions of the same name:

- SIMATIC IPC277D 19" INOX PRO, article numbers 6AV7484-4AB00-xxxx
- SIMATIC IFP1900 Touch INOX PRO, article numbers 6AV7484-6AB00-xxxx

"xxxx" stands for the variant key of the article number.

Conventions

The term "device" is also used instead of the product designation in this document.

Figures

This document contains figures of the device described. The figures can deviate from the particularities of the delivered device.

Steps in the figures are identified with process numbers according to the sequence in which they have to be executed: ❶ , ❷ , ❸ , ...

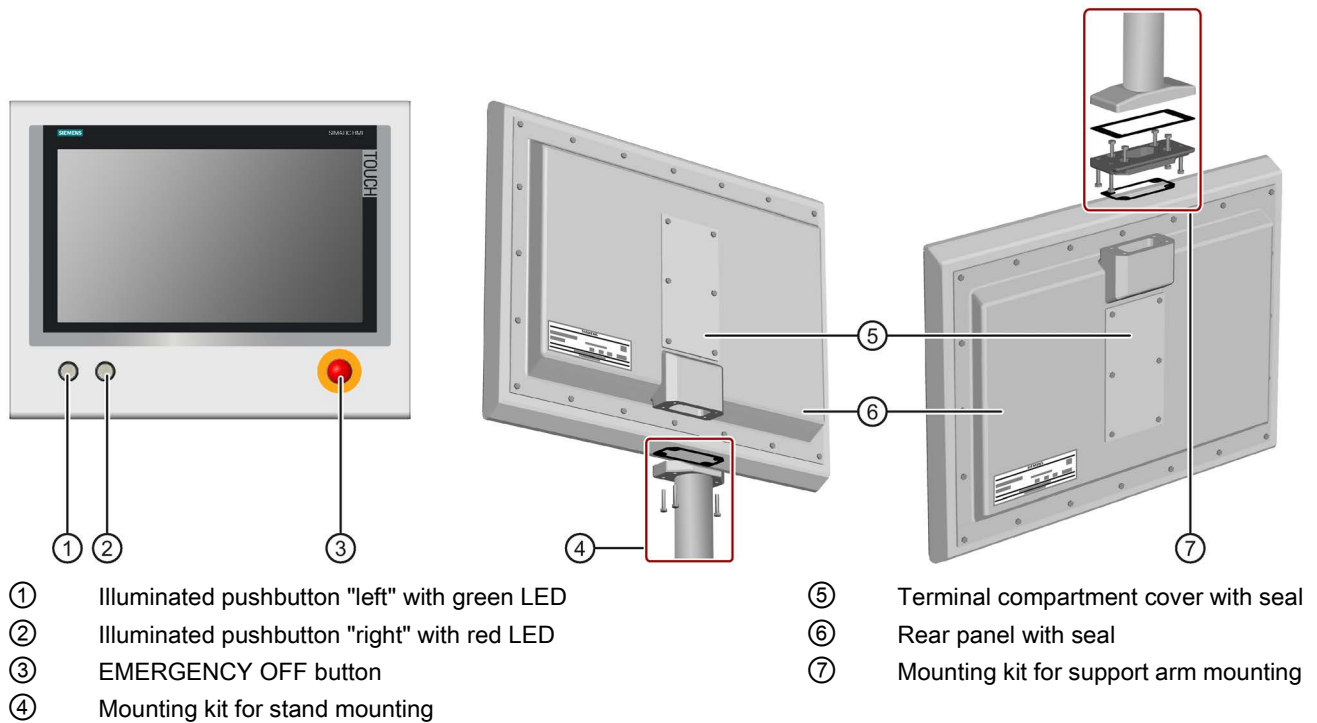
A device for stand mounting is shown as an example in the figures. The steps can be executed in the same way for a device for support arm mounting.

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Overview

The INOX PRO devices are equipped with operator controls on the front and are intended for "stand mounting" or "support arm mounting".



This document describes the following maintenance work:

- Replacing the seal of the compartment cover
- Replacing defective operator controls in the device front and LEDs
- Replacing the seal of the rear panel
- Changing the mounting type, which means converting a device for stand mounting into a device for support arm mounting and vice versa.

WARNING

Extended maintenance work may only be carried out by qualified and correspondingly trained personnel

The Service Manual describes extended maintenance work, among other things. The device is opened as part of the extended maintenance work with work to take place on the wiring or on electronic components inside the device. Injuries or material damage may result if the work is not carried out correctly.

The maintenance work described in the Service Manual may only be carried out by qualified specialist personnel who have been trained correspondingly by Siemens.

WARNING

IP66K degree of protection

The device has IP66K degree of protection when it is closed. If the seals are not inserted correctly during maintenance work or if the device is not closed properly, IP66K degree of protection is no longer guaranteed. Humidity may penetrate the device. The result may be damage to the device and personal injury.

Make sure you follow the instructions in this document precisely when replacing the seals. Make sure that the seals are inserted correctly and that the covers are fastened properly.

Storage and transport

NOTICE

Damage from condensation

If the device is subjected to extreme changes in temperature during transportation, for example, in the case of cold weather, moisture can build up on and in the device. Moisture can result in short-circuits in electrical circuits.

The device no longer works correctly.

In case of condensation, you need to store the device in a dry place and slowly warm it up to room temperature. However, do not expose the device to direct heat radiation. Wait 12 hours before you switch on the device.

Replacing the seal of the compartment cover

WARNING

IP66K degree of protection

The device has IP66K degree of protection when it is closed. If the terminal compartment seal is not inserted correctly or if the terminal compartment is not closed properly, IP66K degree of protection is no longer guaranteed. Humidity may penetrate the device. The result may be damage to the device and personal injury.

Make sure you follow the instructions in this document precisely when replacing the seal. Make sure that the seal is inserted correctly and that the terminal compartment cover is fastened properly.

Requirement

You need the service pack with article number 6AV7675-1JD20-0AA0.

Procedure

Note

The description below shows figures of a device that is not mounted on the stand.

You can replace the seal of the terminal compartment cover even when the device is mounted on a stand or support arm.

1. Remove the six screws of the terminal compartment cover.



2. Remove the terminal compartment cover.

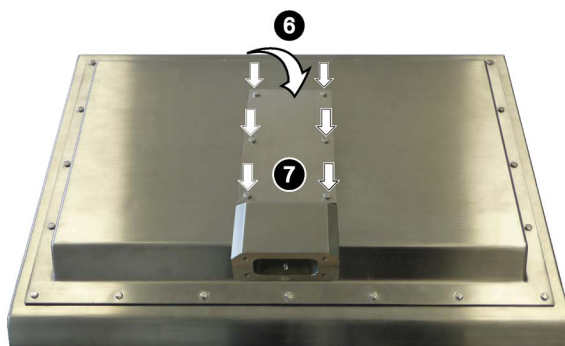
! CAUTION

Do not drop the terminal compartment cover

Dropping the terminal compartment cover may result in minor injuries or damages to the device.

Prevent the terminal compartment cover from dropping, especially when it is mounted on a stand or support arm.

3. Remove the seal of the terminal compartment cover.
4. Insert the spare seal as shown in the figure.
5. Check the seal for correct seat; make sure that the bore holes of the seal enclose the collar of the press-fit components, see marked locations.
6. Place the terminal compartment cover on the terminal compartment and reinsert the six screws.



7. Tighten all six screws with a torque of 3.5 Nm.

WARNING

Opening the device and working on the opened device may only be carried out by qualified and correspondingly trained personnel

The service manual describes, amongst other points, the opening of the device and working on the wiring or on electronic components in the inside of the device. Injuries or material damage may result if the work is not carried out correctly.

The work described in the service manual may only be carried out by qualified specialist personnel who have been trained correspondingly by Siemens.

WARNING

After opening the device, you must replace the seal of the rear panel

The device has IP66K degree of protection when it is closed. If the seal of the rear panel is not replaced after opening the device, the tightness of the device is not guaranteed. Humidity may penetrate the device. This can result in personal injury or material damage.

Always replace the seal of the rear panel when you open the device. Make sure you follow the instructions in this document precisely when replacing the seals. Make sure that the seals are inserted correctly and that the covers are fastened properly.

NOTICE

Placing the device on its front can damage operator controls

If you place the device on its front before or during the installation, the operator controls on the front can be damaged.

Place the device on a soft and elevated surface so that the front operator controls do not contact the working area and are not damaged.

NOTICE

Use only approved spare parts

Installation of spare parts which are not approved for this device can damage the device, machine or plant. The warranty becomes void if you use spare parts that are not approved.

Only use spare parts from a service pack, from a mounting kit or operator controls according to the specification in section "Accessories and spare parts (Page 23)".

Electrostatic sensitive devices are labeled with an appropriate symbol.



NOTICE

Electrostatic sensitive devices (ESD)

The device includes electrostatic sensitive devices. When you touch electrostatic sensitive devices, you can destroy them through voltages that are far below the human perception threshold.

When you open the device you must take appropriate ESD measures, for example:

- When handling electrostatic sensitive devices, make sure that persons, the workstation and devices, tools and packaging used are properly grounded. This way you avoid static charging.
- Discharge your body electrostatically before you take a measurement at a module. Do so by touching grounded metallic parts. Always use grounded measuring instruments.
- Avoid direct contact.
- As a general rule, do not touch electrostatic sensitive devices, except in the case of unavoidable maintenance work.
- Hold the modules at their edge so that you do not touch the connector pins or conductor paths. This way, the discharge energy does not reach and damage the sensitive components.

4.1 Overview

This section describes the following extended maintenance work:

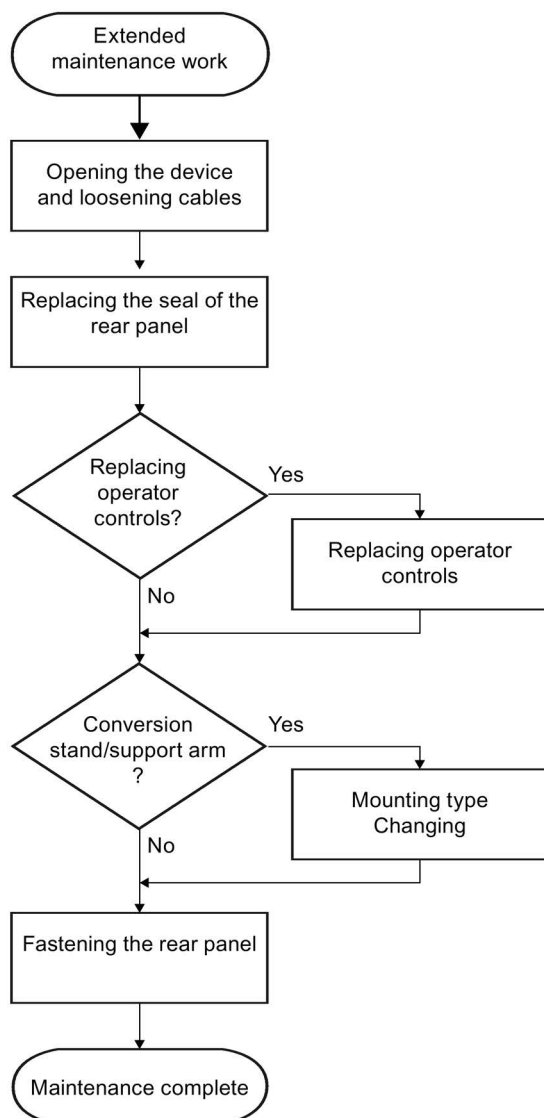
- Replacing the seal of the rear panel
You need service pack 2 with article number 6AV7675-1JD21-0AA0.
- Replacing defective operator controls in the device front and LEDs
You need the corresponding spare parts, see section "Accessories and spare parts (Page 23)".
- Changing the mounting type, which means converting a device for stand mounting into a device for support arm mounting and vice versa.
You need service pack 2 with article number 6AV7675-1JD20-0AA0.

Note

When you change the mounting type, you need the corresponding mounting kit for mounting, see section "Accessories and spare parts (Page 23)".

Flowchart

Perform the maintenance work according to the following flowchart:



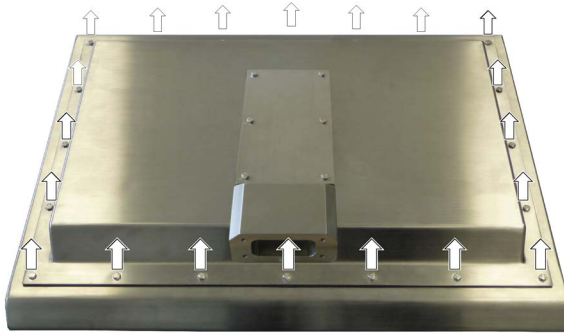
4.2 Opening the device and loosening cables

Requirement

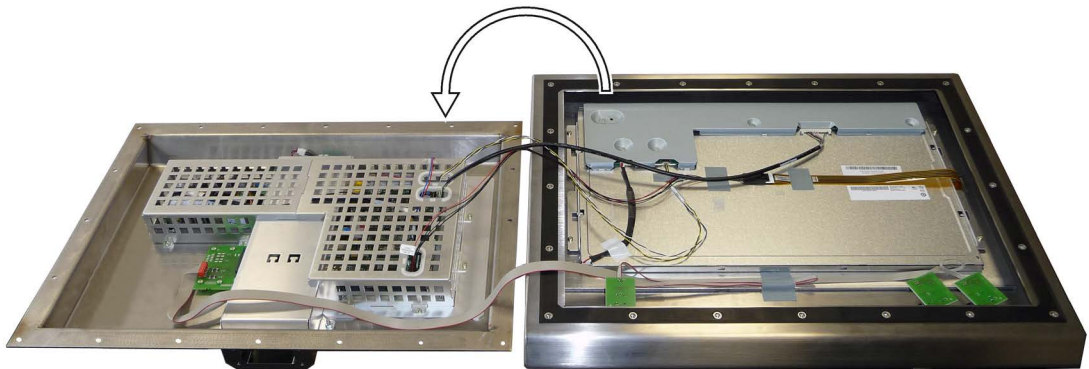
- The device has been removed from the stand or support arm.
- The connection cables have been removed from the device interfaces.
- Required tool: Allen wrench, size 8 mm

Procedure

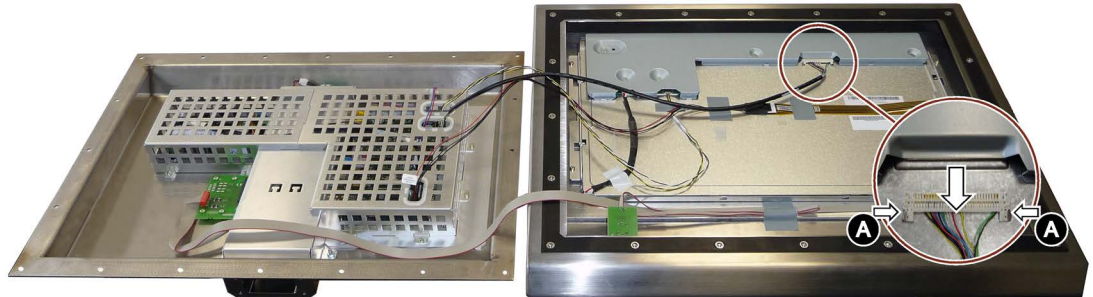
1. Place the device on its front. Use a soft and elevated surface so that the front operator controls do not contact the working area and are not damaged.
2. Remove the 20 screws that connect the rear panel with the device front.



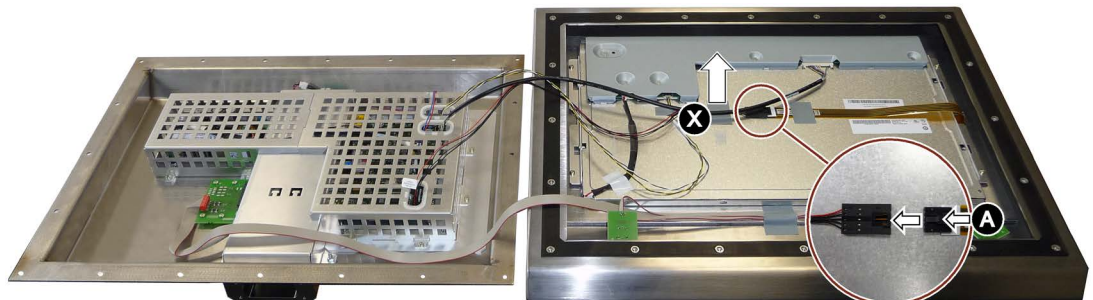
3. Lift the rear panel on the right and fold it back to the left, as shown in the figure below. Make sure that the rear panel seal remains in the device front.



4. Loosen the plug of the LVDS display cable from the front electronic. To do so, press the two locking mechanisms (A) on the side of the plug and pull out the plug as shown in the figure below.

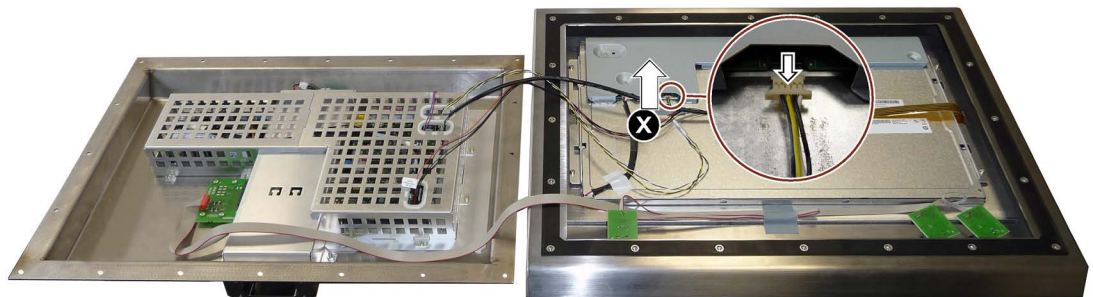


5. Remove the adhesive tape (X) and loosen the plug of the touch cable from the front electronic. To do so, press the locking mechanism (A) of the plug and pull out the plug as shown in the figure below.



Save the adhesive tape.

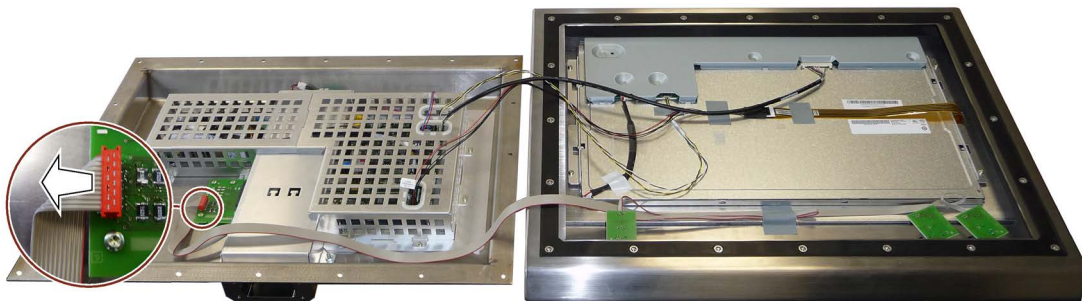
6. Remove the adhesive tape (X) and pull out the plug of the BLI cable from the front electronic as shown in the figure below.



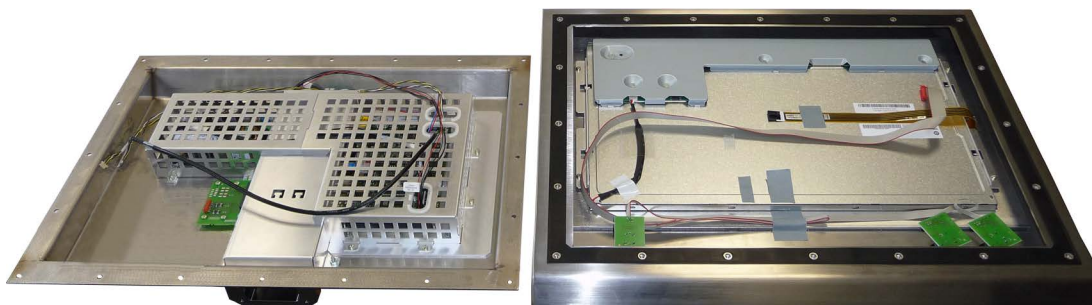
Save the adhesive tape.

4.3 Replacing the seal of the rear panel

7. Pull out the plug of the flat ribbon cable from the rear panel electronic as shown in the figure below.



8. Place all cables whose plugs you have removed on the rear panel and the front as shown in the figure below.



4.3 Replacing the seal of the rear panel

WARNING

IP66K degree of protection

The device has IP66K degree of protection when it is closed. If the rear panel seal is not inserted correctly or if the device is not closed properly, IP66K degree of protection is no longer guaranteed. Humidity may penetrate the device. The result may be damage to the device and personal injury.

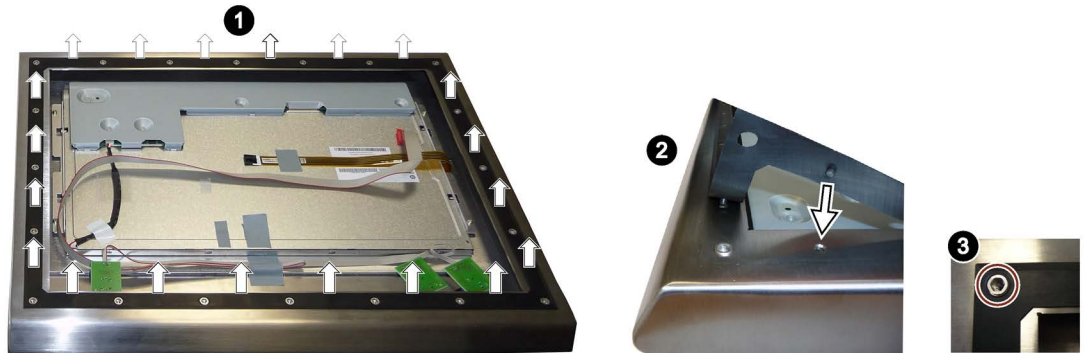
Make sure you follow the instructions in this document precisely when replacing the seal. Make sure that the seal is inserted correctly and that the rear panel is fastened properly.

Requirement

- The device is open.
- The cables between the front and the rear panel have been removed.

Procedure

1. Remove the seal from the front.

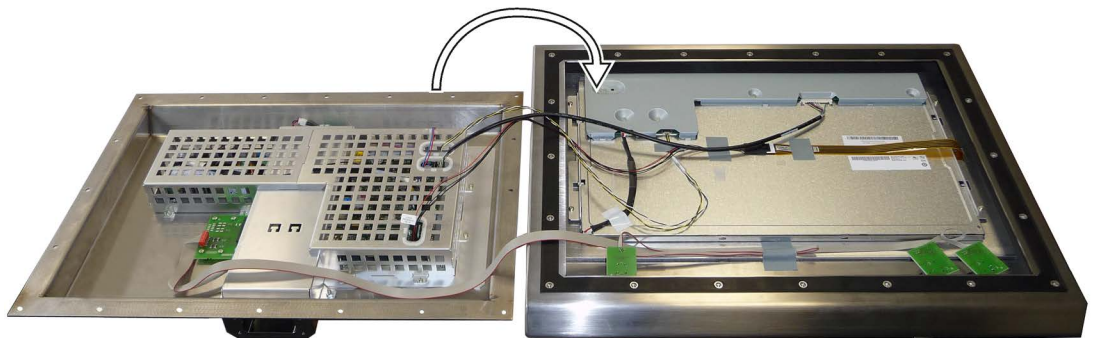


2. Insert the spare seal in the device front as shown in the figure. Make sure that the positioning tabs of the seal are fully inserted into the corresponding bore holes of the front.
3. Check the seal for correct seat, especially that the bore holes of the seal enclose the collar of the press-fit components.

Connecting the cables and closing the device

Close the device when you are done with the maintenance work:

1. Connect the cables between the front and the rear panel. Perform steps 4. to 7. in the section "Opening the device and loosening cables (Page 12)" in reverse order.
2. Close the device as shown in the figure below.



Make sure that you do not pinch the cables between the front and the rear panel.

3. Then fasten the rear panel according to the section "Fastening the rear panel (Page 21)".

4.4 Replacing operator controls

Note

Repairs, when modules are defective

The modules of the EMERGENCY OFF pushbutton and the illuminated pushbutton are not available as spare part.

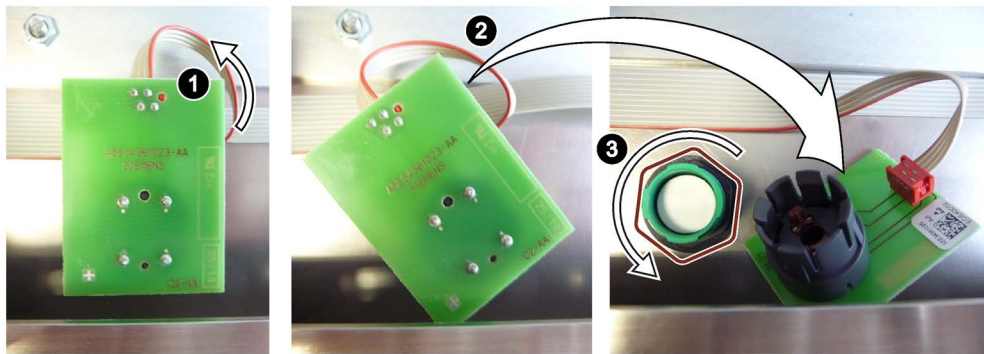
If one of the modules is defective, send in the device for repair.

Tool required

- Wrench, size 18 mm

Replacing the EMERGENCY OFF pushbutton

Removing the EMERGENCY OFF pushbutton



1. Carefully turn the module of the EMERGENCY OFF pushbutton to the left until it unlocks.
2. Remove the module from the EMERGENCY OFF pushbutton.
3. Loosen the highlighted nut and remove the EMERGENCY OFF pushbutton.

Installing the EMERGENCY OFF pushbutton

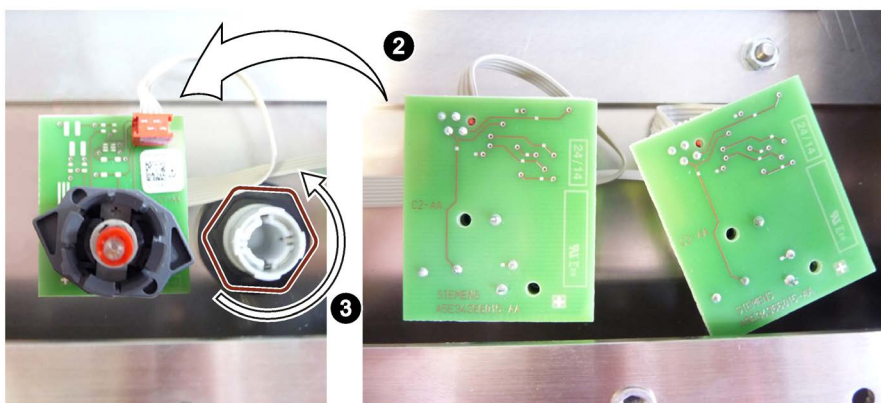
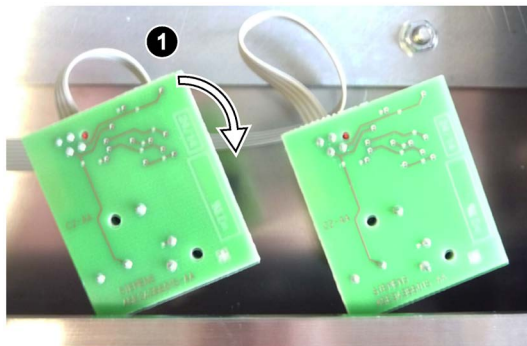
Proceed in the reverse order of the section "Removing the EMERGENCY OFF pushbutton".

1. Insert the new EMERGENCY OFF pushbutton from the outside through the opening on the front.
2. Fasten the EMERGENCY OFF pushbutton with the associated nut, 1.5 Nm torque.
3. Place the module on the EMERGENCY OFF pushbutton.
4. Carefully turn the module to the right until you hear it click in place.

Replacing the illuminated pushbutton

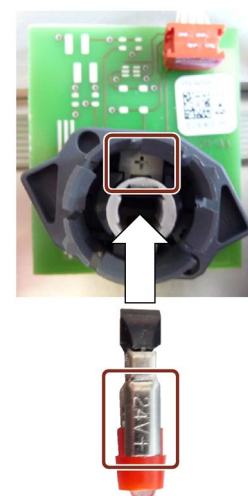
Removing the illuminated pushbutton

1. Carefully turn the module of the illuminated pushbutton you want to remove to the right until it is upright.
2. Remove the module from the illuminated pushbutton.
3. Loosen the highlighted nut and remove the illuminated pushbutton.



Replacing the LEDs of the illuminated pushbuttons

1. Remove the LED from its socket on the module.
2. Insert the new LED. Make sure that the "24V+" marking of the LED is aligned with the "+" marking on the module as shown in the figure on the right.



Installing the illuminated pushbutton

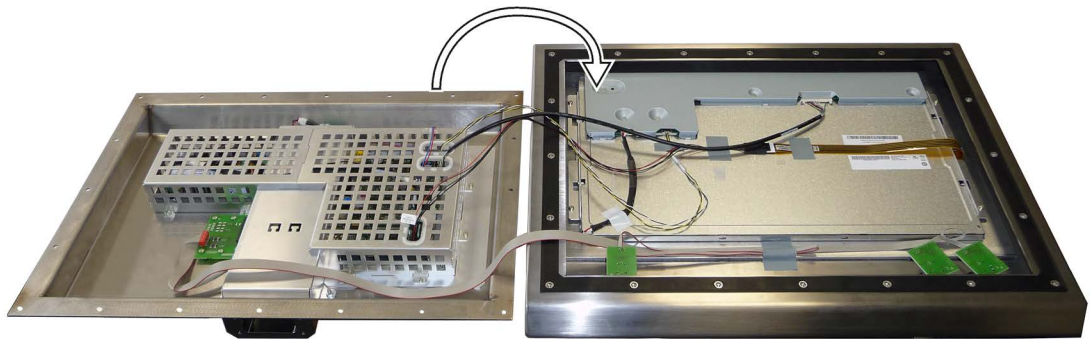
Proceed in the reverse order of the section "Removing the illuminated pushbutton".

1. Insert the new illuminated pushbutton from the outside through the opening on the front.
2. Fasten the illuminated pushbutton with the associated nut, 1.5 Nm torque.
3. Place the module on the illuminated pushbutton.
4. Carefully turn the module to the left until you hear it click in place.

Connecting the cables and closing the device

Close the device when you are done with the maintenance work:

1. Connect the cables between the front and the rear panel. Perform steps 4 to 7 in the section "Opening the device and loosening cables (Page 12)" in reverse order.
2. Close the device as shown in the figure below.



Make sure that you do not pinch the cables between the front and the rear panel.

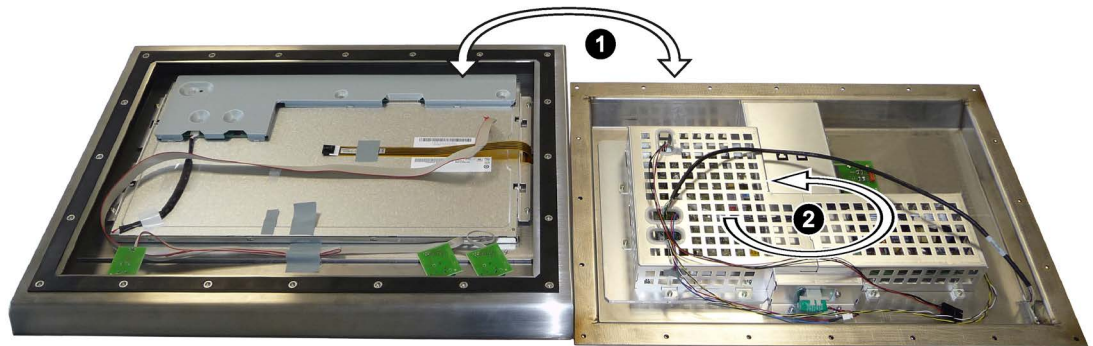
3. Then fasten the rear panel according to the section "Fastening the rear panel (Page 21)".

4.5 Changing the mounting type

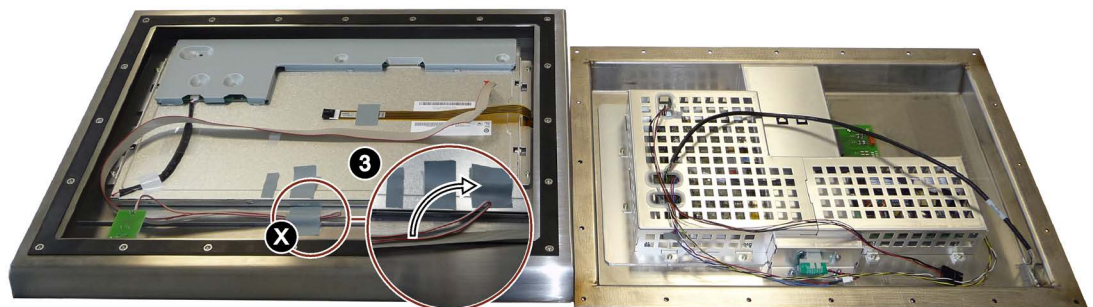
This section describes the conversion of a stand-mounted device into a support arm device. The conversion of a support arm device into a stand-mounted device takes place in the same manner.

Procedure

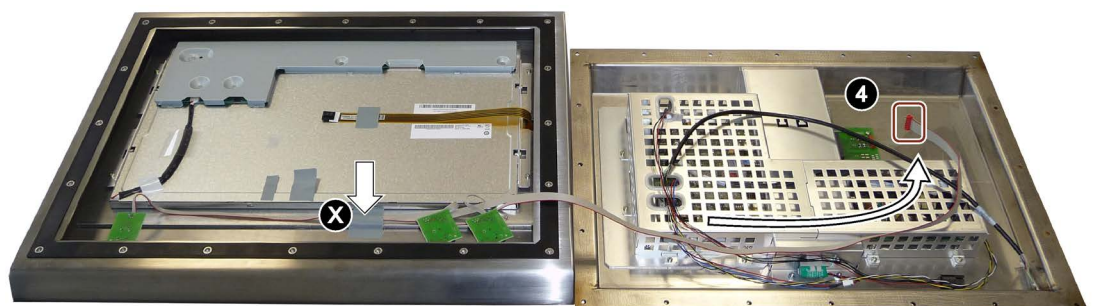
1. Swap the position of the front and rear panel as shown in the figure below.



2. Turn the rear panel by 180°.
3. Remove the adhesive tape (X) of the flat ribbon cable as shown in the figure below.

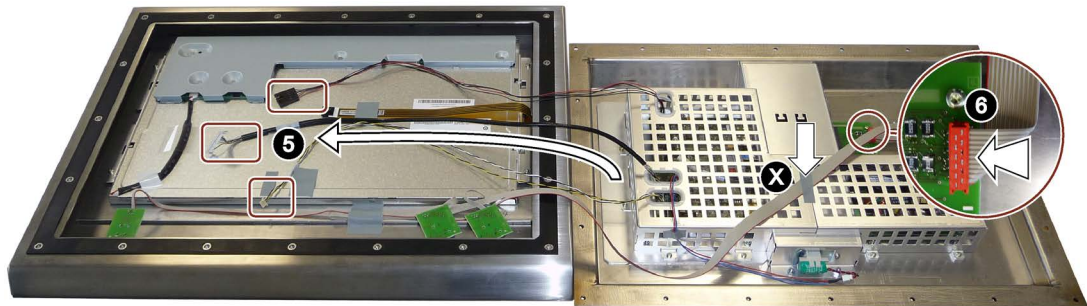


4. Place the flat ribbon cable from the front on the rear panel, and attach the adhesive tape (X) in its original position as shown in the figure below.

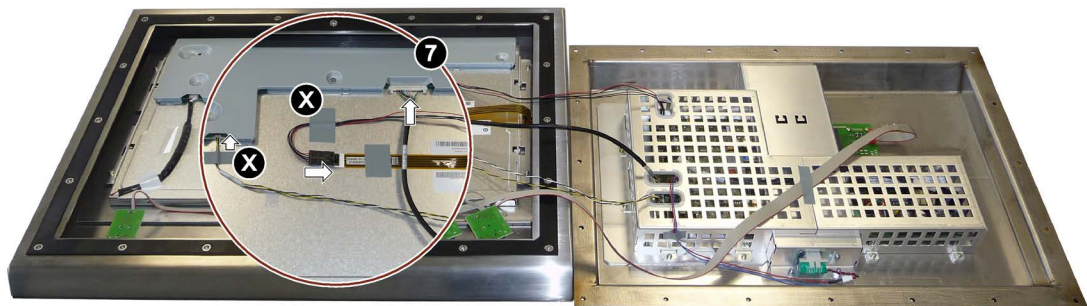


4.5 Changing the mounting type

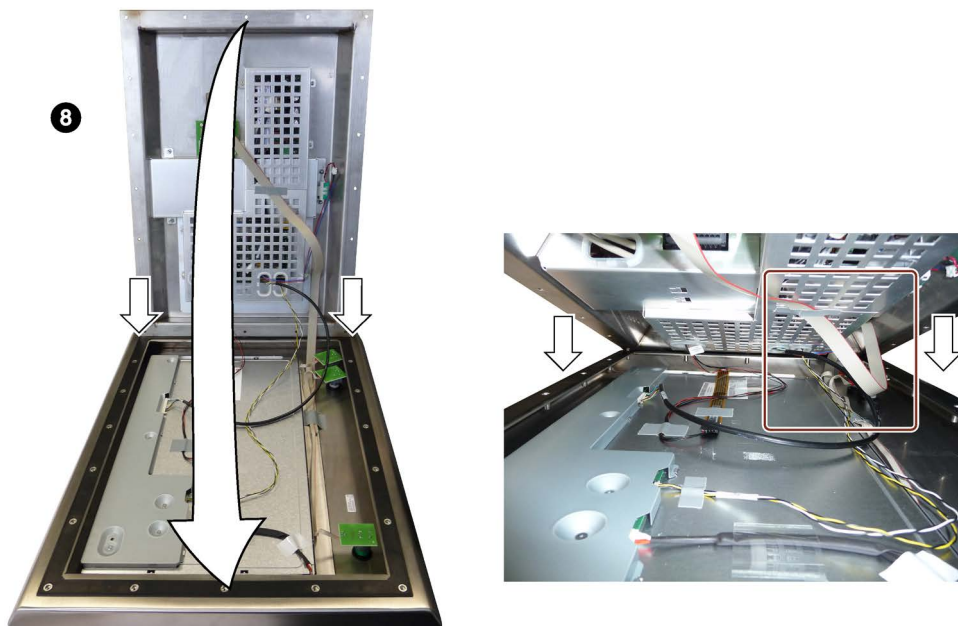
5. Reposition the LVDS display cable, the touch cable and the BLI cable from the rear panel to the front as shown in the figure below.



6. Connect the plug of the flat ribbon cable with the rear panel electronic. Make sure that you do not reverse the polarity. Secure the flat ribbon cable with a new piece of adhesive tape (X).
7. Connect the plugs of the LVDS display cable, the touch cable and the BLI cable with the corresponding interface of the front electronic. Secure the touch cable and the BLI cable with the adhesive tapes that you saved when you removed the cables as shown in the figure below.



8. Place the rear panel on the front, and carefully lower the rear panel as shown in the figures below.



Make sure that you do not pinch the cables, especially the flat ribbon cable that is highlighted in the figure.

4.6 Fastening the rear panel

When you are done with your maintenance work, screw the rear panel to the front.

CAUTION

IP66K degree of protection

If the seal is not inserted correctly prior to fastening the rear panel or if the device is not screwed together properly, IP66K degree of protection is no longer guaranteed. Humidity may penetrate the device. The result may be damage to the device and personal injury.

Make sure that the seal is inserted correctly in the front before you start tightening the screws. Follow the instructions in this section.

Tool required

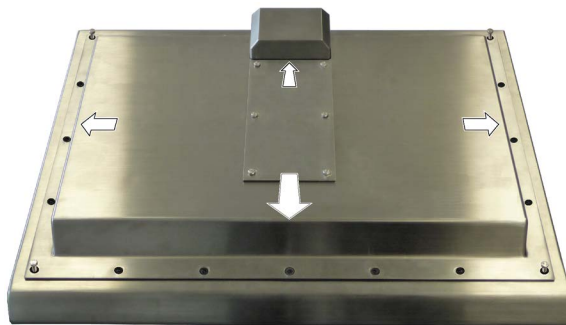
Allen wrench, size 8 mm

Procedure

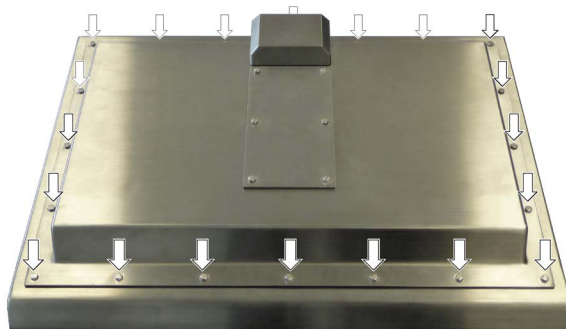
1. Make sure that the seal is flush with the rear panel and does not protrude between rear panel and front.
2. Screw in the four screws in the corners of the rear panel about halfway as shown in the figure below.



3. If necessary, correct the position of the rear panel.



4. Screw in all 20 screws of the rear panel completely.



5. Tighten the screws with a torque of 3.5 Nm.

Accessories and spare parts

Accessories

Mounting kit for stand mounting

A mounting kit is available for stand mounting of the device. Mounting kit contents:

- 1 stainless steel tube with flange: Length 500 mm, outer diameter 48.3 mm, inner diameter 40 mm.
The mechanical interface of the stainless steel tube with flange fits the mechanical interface of the device.
- 4 hexagon screws M5×25 made of stainless steel
- 1 flat seal

Article number 6AV7675-1GB00-0AA0

Mounting kit for support arm mounting

A mounting kit is available for support arm mounting of the device. Mounting kit contents:

- 1 stainless steel tube with flange: Length 500 mm, outer diameter 48.3 mm, inner diameter 40 mm.
The mechanical interface of the stainless steel tube with flange fits the mechanical interface of the device.
- 1 adapter support arm
- 8 hexagon screws M5×20 made of stainless steel
- 2 flat seals

Article number 6AV7675-1GB10-0AA0

Service pack

The service pack contains:

- 1 spare seal for the terminal compartment cover of the device
- 6 screws for the terminal compartment cover of the device
- 1 spare seal for the mechanical interface of the device
- 4 screws for fastening the stainless steel tube with flange from a mounting kit to the mechanical interface of the device
- 1 connecting terminal for the power supply
- 1 terminal block for the terminal strip in the terminal compartment
- Documentation

Article number 6AV7675-1JD20-0AA0

Service pack 2, use only in combination with this service manual

The service pack 2 contains:

- 1 spare seal for the rear panel of the device
- 4 spare screws for the rear panel of the device
- 1 spare seal for the mechanical interface of the device
- 4 screws for fastening the stainless steel tube with flange from a mounting kit to the mechanical interface of the device
- 1 connecting terminal for the power supply
- Documentation

Article number 6AV7675-1JD21-0AA0

Spare parts

The table below shows the order numbers of the operator controls on the front made by Schlegel (<http://www.schlegel.biz>).

Operator control	Schlegel order number
EMERGENCY OFF pushbutton	RXUVP_686
EMERGENCY OFF switching element	PTFPOO
Illuminated pushbutton	RRJVAFT_682
Illuminated pushbutton switching element	CZTLP_505
LED red	L5, 5K24UR
LED green	L5, 5K24UG

Technical support

A.1 Service and support

You can find additional information and support for the products described on the Internet at the following addresses:

- Technical support (http://www.siemens.de/automation/csi_en_WW)
- Support request form (<http://www.siemens.com/automation/support-request>)
- After Sales Information System SIMATIC IPC/PG (<http://www.siemens.com/asis>)
- SIMATIC Documentation Collection (<http://www.siemens.com/simatic-tech-doku-portal>)
- Your local representative
(<http://www.automation.siemens.com/mcms/aspa-db/en/Pages/default.aspx>)
- Training center (<http://sitrain.automation.siemens.com/sitrainworld/?AppLang=en>)
- Industry Mall (<https://mall.industry.siemens.com>)

When contacting your local representative or Technical Support, please have the following information at hand:

- MLFB of the device
- BIOS version for industrial PC or image version of the device
- Other installed hardware
- Other installed software

Tools & downloads

Please check regularly if updates and hotfixes are available for download to your device. The download area is available on the Internet at the following link:

After Sales Information System SIMATIC IPC/PG (<http://www.siemens.com/asis>)