# SIEMENS

## SIMATIC HMI

## HMI device
## MP 377 15" Touch daylight readable (WinCC flexible)

Operating Instructions (Compact)

This Operating Instruction applies to the HMI device with the Order no. 6AV6644-8AB20-0AA0

The following supplement is part of this documentation:

| No. | Designation | Drawing number | Edition |
|-----|-------------|----------------|---------|
| 1 | Product Information | A5E02341631-03 | 06/2009 |

04/2009
A5E02532357-01

## 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 |
| --- |
| with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken. |

| CAUTION |
| --- |
| without a safety alert symbol, indicates that property damage can result if proper precautions are not taken. |

| NOTICE |
| --- |
| indicates that an unintended result or situation can occur if the corresponding information is not taken into account. |

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 device/system may only be set up and used in conjunction with this documentation. Commissioning and operation of a device/system may only be performed by **qualified personnel**. Within the context of the safety notes in this documentation qualified persons are defined as persons who are authorized to commission, ground and label devices, systems and circuits in accordance with established safety practices and standards.

### 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 adhered to. The information in the relevant documentation must be observed. |

### Trademarks

All names identified by ® are registered trademarks of the 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

## Purpose of this manual

This manual provides information based on the requirements defined by DIN 62079 regarding mechanical engineering documentation. This information relates to the place of use, transport, storage, mounting, use and maintenance.

This manual is intended for:

- Installation personnel
- Operators
- Maintenance personnel

Read especially the information in the section "Safety instructions".

## Required knowledge

General knowledge in the field of automation engineering is required to understand this manual.

## Scope of the manual

This manual applies to the "MP 377 15" Touch daylight readable" HMI device, order number 6AV6644-8AB20-0AA0.

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### Note

This manual is an amendment to the operating instructions "MP 377 (WinCC flexible)" and is valid only in connection with the operating instructions "MP 377 (WinCC flexible)". This manual includes the differences to the operating instructions "MP 377 (WinCC flexible)".

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## Style conventions

The following text notation will facilitate reading this manual:

| Notation | Scope |
|---|---|
| "Add screen" | • Terminology that appears in the user interface, for example dialog names, tabs, buttons, menu commands<br>• Required input, for example, limits, tag values.<br>• Path information |
| "File > Edit" | Operational sequences, for example, menu commands, shortcut menu commands. |
| <F1>, <Alt+P> | Keyboard operation |

Please observe notes labeled as follows:

#### Note

A note contains important information about the product and its use or a specific section of the manual to which you should pay particular attention.

## Naming conventions

The following naming conventions apply:

| Term | This also applies to | |
|---|---|---|
| Control cabinet | • Mounting cabinet<br>• Enclosure | • Console<br>• Switchboard |
| Plant | • Machining centers<br>• Machines | • Systems |

## Illustrations in this manual

This manual contains illustrations of the described devices. The illustrations may differ from devices actually delivered.

## Trademarks

The following designations marked with the symbol ® are registered trademarks of Siemens AG:

• HMI®

• SIMATIC®

• WinCC®

MP 377 15" Touch daylight readable (WinCC flexible)
Operating Instructions (Compact), 04/2009, A5E02532357-01

## Additional information

You can find additional information about products described in the manual under "Contact" in the following table:

| Request | Contact |
|---|---|
| Contact persons and office locations | "http://www.siemens.com/automation/partner" |
| Additional technical documentation | "http://www.automation.siemens.com/simatic/portal/html_76/techdoku.htm" |
| Training Center | "http://sitrain.automation.siemens.com/sitrain" |
| Technical Support | "http://support.automation.siemens.com" |
| Online support request form | "http://www.siemens.com/automation/support-request" |
| Service | "http://www.siemens.com/automation/service" |

## Recycling and disposal

The HMI devices described in these operating instructions can be recycled due to the low levels of pollutants. Contact a certified disposal service company for environmentally sound recycling and disposal of your old devices.

## Used batteries and rechargeable batteries

Used batteries and lithium ion batteries are hazardous waste. Always dispose of used batteries and lithium ion batteries in accordance with the regulations in effect. Identify the transport packaging with a "Used batteries and accumulators" label.

# Table of contents

# Overview 1

## 1.1 Product overview

The SIMATIC HMI device "MP 377 15" Touch daylight readable" offers a special display and touch technology. This technology offers a brighter display that lets operators monitor and operate even under very bright light conditions. Good readability is ensured even in direct sunlight due to the transflective properties of the display. You can dim the backlighting of the display on the display itself as well as externally and centrally via process value (tag), for example by means of a potentiometer via the PLC. This means you can use the panel in control cabins for drilling rigs and in control stations onboard ships.

You can operate the HMI device outdoors if it is installed in a suitable control cabinet. The necessary, extended ambient temperature range during operation can be created with the help of active heating and cooling in the control cabinet. We recommend that you consult an experienced control cabinet designer for appropriate sizing. Intelligent control of heating and cooling is available with the retrofit panel option "TEK - Temperature Extension Kit".

Certifications are in preparation for operation in the Oil&Gas industry as well as applications in shipbuilding. These include ATEX Zone 2/22, Class I, Div. 2 as well as country-specific shipbuilding certificates.

The display offers a large viewing angle that makes for fatigue-free operating and monitoring. Mounted fans make it possible that you can install the HMI device vertically as well as inclined in a control cabinet.

**Advantages of the MP 377 15" Touch daylight readable**

- Device front is suitable for rough environmental conditions
    - Front frame made of aluminum coated with impact-resistant paint
    - Decorative foil with UV protection
    - Hardened glass – Mohs 7
    - High resistance against commercial cleaning agents and chemicals
    - Certifications for potentially explosive atmospheres (in preparation)
    - Certifications for control stations onboard ships (in preparation)
- Daylight readable display with LED backlighting
    - High brightness, up to 560 cd/m²
    - Energy-saving LED backlighting, dimming range from 0 to 100 %
    - High contrast, up to 700 : 1
    - Suitable for daylight applications

        The transflective technology combines the advantages of reflective and transmissive displays. The reflective properties of the display offer good readibility even in direct sunlight. The transmissive component ensures good readibility even in dark environments.
    - High saturation and brightness as well as a large viewing angle of up to 160 degrees
- Sturdy touch surface for rough environmental conditions
    - Surface of hardened glass – Mohs 7
    - Excellent optical properties
    - No drift, no recalibration required
    - Can be operated even with gloves
    - Touch operation even with dust, humidity, rain, snow, ice

## 1.2 Design

### Front view and side view
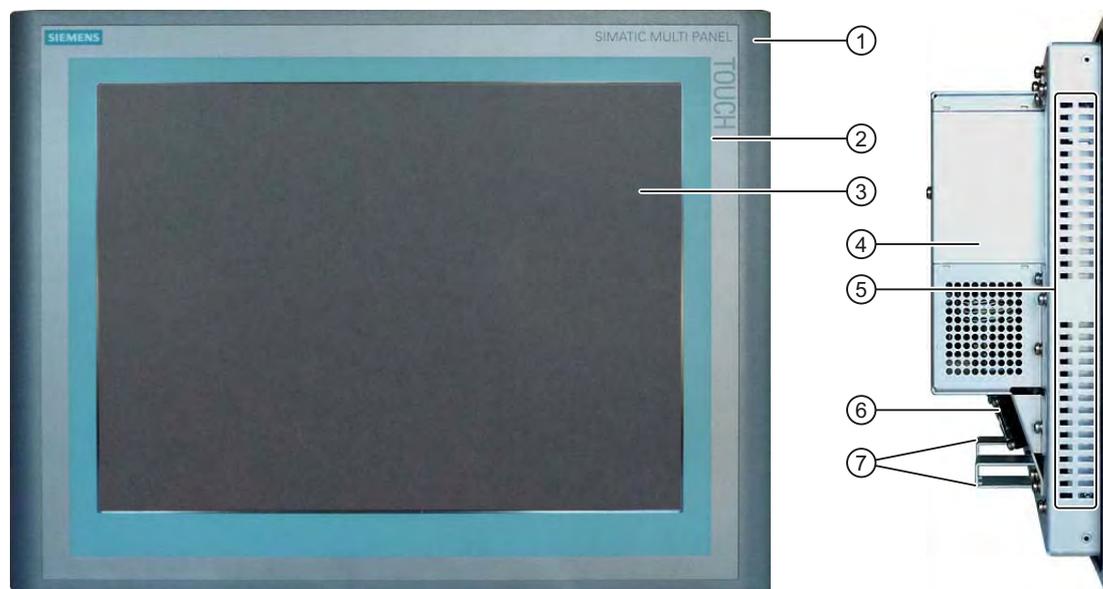


| | |
|---|---|
| ① | Housing frame |
| ② | Front membrane |
| ③ | Display/touch screen |
| ④ | Protection for memory cards |
| ⑤ | Oblong holes for mounting clamps/air vents |
| ⑥ | Fans |
| ⑦ | Fixing element for strain relief |

The term "front operating panel" as used in this manual corresponds to the front view with operating elements.

### Bottom view
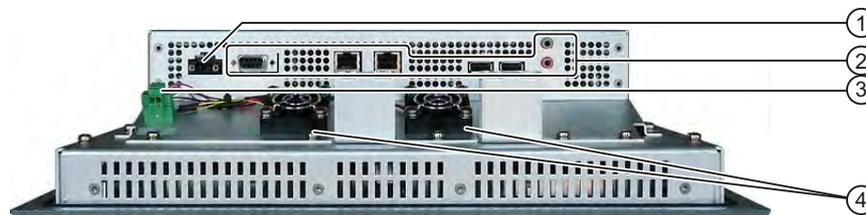


| | |
|---|---|
| ① | Mains terminal for power supply of HMI device |
| ② | Interfaces |
| ③ | Mains terminal for power supply of fans |
| ④ | Fans |

**Rear view**
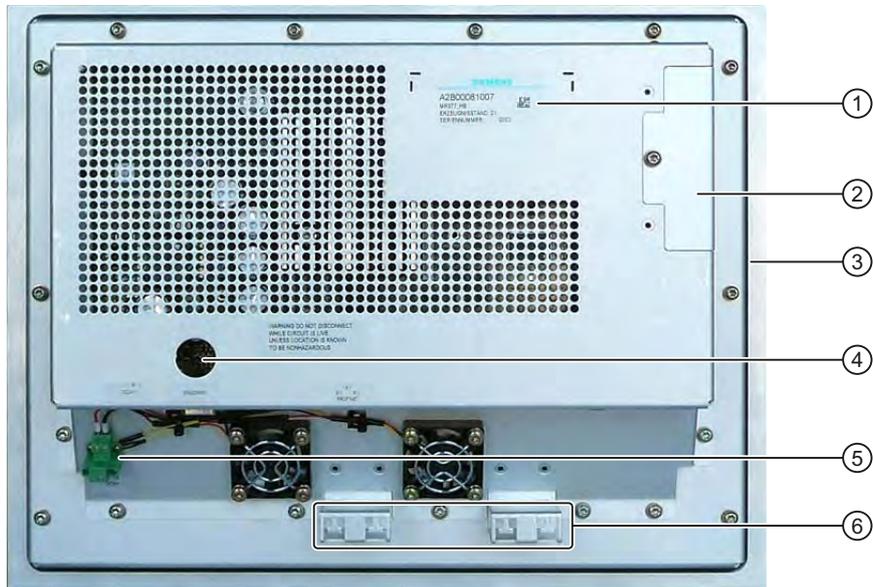


①       Rating plate

②       Protection for memory cards

③       Mounting seal

④       DIP switch

⑤       Mains terminal for power supply of fans

⑥       Fixing elements for strain relief

## 1.3 Scope of delivery

The following components are included in the scope of delivery:

- An HMI device
- A CD with the following content:
    - HMI device image for "MP 377 15" Daylight readable"
    - Installation file "MP377 SetBrightness" for the add-on "SetBrightness" (.msi-Format)
    - Readme file
- A pouch with the following content:
    - Mounting clamps for mounting the HMI device
    - One mains terminal for power supply of HMI device
    - One mains terminal for power supply of fans
    - One product information "Installing HMI device"

## 1.4 Service pack

A service pack is available for the MP 377 15" daylight readable.

The service pack includes the following components:

- A mounting seal
- A pouch with the following content:
    - Mounting clamps for mounting the HMI device
    - One mains terminal for power supply of HMI device
    - One mains terminal for power supply of fans
    - One product information "Installing HMI device"

The service pack can be ordered with the order number 6AV6675-4CA00-0AX0.

# Safety instructions and approvals

<div align="right">

# 2

</div>

## 2.1    Validity

This manual includes important information on the operation of the MP 377 15" Touch daylight readable in potentially explosive atmospheres of zones 2 and 22.

| ⚠ WARNING |
|---|
| Read all sections of this manual. Please observe all safety guidelines contained within the sections. These safety instructions apply to all HMI devices that have an "Ex protection" identifier on their type plates. |

## 2.2    Safety notes

**Working on the control cabinet**

| ⚠ WARNING |
|---|
| **Open Equipment** |
| The HMI device is an open equipment. This means that the HMI device may only be installed in a control cabinet, whereby the device can be operated from the front panel. |
| Access to the control cabinet in which the HMI device is installed should only be possible by means of a key or tool and only for trained and authorized personnel. |
| **Dangerous Voltage** |
| Opening the control cabinet will expose high voltage parts. Contact with these parts could be fatal. |
| Switch off the power supply to the cabinet before opening it. |

**High frequency radiation**

| NOTICE |
|---|
| **Unintentional operating situations** |
| High frequency radiation, e g. from a cellular phone, can cause unintentional operating situations. |

## Intended purpose

> ⚠ WARNING
>
> Commissioning of the HMI device is forbidden until it has been absolutely ensured that the machine in which the HMI device is to be installed complies with Directive 98/37/EC or Directive 2006/42/EG as of 29 December 2009.

## 2.3 Standards, certificates and approvals

> **Note**
>
> The following overview shows possible approvals. The HMI device itself is certified as shown on the label on its rear panel.

### Ex approval

For the HMI device

- EN 60079-0
- EN 60079-15
- EN 61241-0
- EN 61241-1

the following approvals are in place:

| | | |
|---|---|---|
| ⟨Ex⟩ | II 3 G | Ex nA II T**x** |
| | II 3 D | Ex tD A22 IP6X T **xx** °C |
| | | **x** ... Temperature values, see design examination certificate |

The design examination certificate is available at the following Internet address:

"http://support.automation.siemens.com"

### CE approval

The HMI device meets the general and safety-related requirements of the following EC directives and conforms to the harmonized European standards (EN) for programmable logic controllers published in the official gazettes of the European Union:

- 2004/108/EC "Electromagnetic Compatibility Directive" (EMC Directive)
- 2006/95/EC "Electrical Equipment Designed for Use within Certain Voltage Limits" (Low-Voltage Directive)
- 94/9/EU "Devices and protection systems for use in potentially explosive areas" (Guidelines for Explosion Protection)

## EC Declaration of Conformity

The EC Declarations of Conformity are available to the relevant authorities at the following address:

Siemens AG
Industry Sector
I IA AS R&D ST
PO Box 1963
92209 Amberg
Germany

## UL approval

Underwriters Laboratories Inc., to

- UL 508 (Industrial Control Equipment)
- CSA C22.2 No. 142 (Process Control Equipment)

or

Underwriters Laboratories Inc., to

- UL 508 (Industrial Control Equipment)
- CSA C22.2 No. 142 (Process Control Equipment)
- UL 1604 (Hazardous Location)
- CSA-213 (Hazardous Location)

Approved for use in

- Class I, Division 2, Group A, B, C, D Tx
- Class I, Zone 2, Group IIC Tx or
- non-hazardous locations

## FM approval

Factory Mutual Research (FM) conforming to

- Approval Standard Class Number 3611, 3600, 3810

Approved for use in

- Class I, Division 2, Group A, B, C, D Tx
- Class I, Zone 2, Group IIC Tx

## Tick mark for Australia

The HMI device fulfills the requirements of standard AS/NZS 2064 (Class A).

## IEC 61131

The HMI device meets the requirements and criteria conforming to IEC 61131-2, Programmable Logic Controllers, Part 2, equipment requirements and testing.

## Requesting certificates

Copies of the certificates and reports can be requested from the following address:

Siemens AG
Industry Sector
I IA AS R&D ST
PO Box 1963
92209 Amberg
Germany

Certificates are also available at the following Internet address:

"http://support.automation.siemens.com"

Select "Product Support".

## 2.4 Notes about Usage

### Operation in industrial environments

The HMI device is designed for industrial use, limit class A. The following standards are met:

- Requirements for emissions EN 61000-6-4: 2007
- Requirements for interference immunity DIN EN 61000-6-2: 2005

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**Note**

**Operation in residential areas**

The HMI device is not suitable for operation in residential areas: Operation of an HMI device in residential areas can have a negative impact on radio and TV reception.

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If the HMI device is used in a residential area, you must take measures to achieve Limit Class B conforming to EN 55011 for RF interference.

Suitable measures for achieving the required RF interference level for Limit Class B include for example:

- Installation of the HMI device in a grounded control cabinet
- Use of filters in electrical supply lines

Individual acceptance is required.

### Operation in potentially explosive atmosphere, zone 2 and 22

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⚠ **DANGER**

**Degree of hazard**

There is an explosion hazard when operating an HMI device that does not have explosion protection.

Operate the HMI device in potentially explosive zones 2 and 22 only if it has been approved and certified for such environments.

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If an HMI device is operated in potentially explosive atmospheres of zone 22, pay attention to the product information "Use in potentially explosive atmospheres of zones 2 and 22." The product information is available at the following Internet address:

"http://support.automation.siemens.com/WW/view/en/291285"

| ⚠ WARNING |
|---|
| **Personal injury and damage to property** |
| Personal injury and property damage can occur in potentially explosive atmospheres if an electric plug is disconnected from the HMI device while the system is in operation. |
| In potentially explosive atmospheres, always turn off power to the HMI device before disconnecting any connectors. |

## Potentially explosive atmosphere zones 2 and 22

Areas subject to explosion hazard are divided into zones. The zones are differentiated according to the probability of the existence of an explosive atmosphere.

| Zone | Degree of hazard | Example |
|---|---|---|
| 2 | Explosive gaseous atmosphere occurs only seldom and for a short period | Areas around flanged pipe joints with flat gaskets in closed rooms |
| 22 | Area in which a potentially explosive atmosphere in the form of a cloud in the air containing flammable dust does not usually occur or occurs only briefly during normal operation . | – |
| Safe zone | No | • Outside zone 2<br>• Outside zone 22<br>• Standard applications of distributed I/Os |

## Operating conditions for Zones 2 and 22

The following operating conditions apply for Zones 2 and 22:

- The HMI device must be installed in a control cabinet. The control cabinet must meet the following in accordance with EN 60529:

    - Protection type IP54 or higher for Zone 2

    - Protection type IP5x or higher for Zone 22 in case of **non** conductive dust

    - Protection type IP6x or higher for Zone 22 in case of conductive dust

    You must install the HMI device so that you provide at least protection type IP54 or IP5x to EN 60529 on the front of the device. Consult the operating instructions of control cabinet and HMI device for this purpose.

    Make allowances for the operating and ambient conditions under which you operate the HMI device. A manufacturer's declaration must be provided for the control cabinet in accordance with EC Directive 94/9, stating it is fit for purpose.

- The ambient temperature range is 0 °C ≤ T ≤ 50 °C. Under these conditions, the HMI device will satisfy temperature class T**x** for category 3G and support a maximum surface temperature of **xx** °C for category 3D. (**x** ... Temperature value, see design examination certificate).

    Refer to the operating instructions for details of limitations resulting from the ambient temperature range.

- In situations where the temperature on the cable at the cable inlet of the control cabinet exceeds a temperature of 70 °C, or where the temperature on the wire branching point exceeds 80 °C under operating conditions, the temperature specifications of the cables must match the actually measured temperatures.

- Put measures in place to ensure the rated voltage is not exceeded.

    Any transient interference voltages above the rated value must not exceed 40 %.

- Protect the HMI device from mechanical loads > 7 J and the display from mechanical loads > 4 J.

- Ensure that the atmosphere is not explosive during servicing.

    Measures that impair or remove the protection type of the HMI device are not permitted while the system is in operation.

- If the HMI device was dismantled, check the mounting seal for damage before reassembling the HMI device. A damaged, porous or used mounting seal no longer meets the requirements of the protection type. In this case, the mounting seal must be replaced.

- Turn off the HMI device and the entire electrical installation in the control cabinet, if the film on the front of the HMI device or the glass of the display on the HMI device are damaged by a tear or hole or if the front film starts to peel off.

    Exchange the HMI device. Restart the system again after the device has been exchanged.

**Approved HMI device**

The HMI devices with approval for operation in potentially explosive atmospheres are listed at the following Internet address:

"http://support.automation.siemens.com/WW/view/en/291285"

## 2.5 Electro-Magnetic Compatibility

**Introduction**

The HMI device fulfils, among other things, the requirements of the EMC laws pertaining to the European domestic market.

**EMC-compliant Mounting of the HMI Device**

EMC-compliant mounting of the HMI device and the use of interference-proof cables will ensure trouble-free operation. The "Directives for interference-free installation of PLCs" and the "PROFIBUS Networks" manual also apply for the installation of the HMI device.

**Pulse-shaped Interference**

The table below shows the electromagnetic compatibility of modules in relation to pulse-shaped interference. This requires the HMI device to meet the specifications and directives for electrical installation.

| Pulse-shaped interference | Tested with | Corresponds to severity |
|---|---|---|
| Electrostatic discharge in accordance with IEC 61000-4-2 | Air discharge: 8 kV<br>Contact discharge: 6 kV | 3 |
| Burst pulses (high-speed transient interference) conforming to IEC 61000-4-4 | 2 kV power supply cable<br>2 kV signal cable, > 30 m<br>1 kV signal cable, < 30 m | 3 |
| High-power surge pulses conforming to IEC 61000-4-5, external protective circuit required (refer to the manual, Programmable Controller S7-300, Installation, chapter "Lightning and Overvoltage Protection"). | | |
| Asymmetric coupling | 2 kV power cable<br>DC voltage with protective elements<br><br>2 kV signal/data cable, > 30 m,<br>with protective elements as required | 3 |

## Sinusoidal disturbance

The table below shows the EMC properties of the modules with respect to sinusoidal interference. This requires the HMI device to meet the specifications and directives for electrical installation.

| Sinusoidal interference | Test values | Corresponds to severity |
|---|---|---|
| HF radiation (electromagnetic fields) according to IEC 61000-4-3 | • 80% amplitude modulation at 1 kHz<br>with 10 V/m in the range of 80 MHz to 1 GHz<br>with 3 V/m in the range 1.4 GHz to 2 GHz<br>with 1 V/m the range 2 GHz to 2.7 GHz<br>• 10 V/m with 50 % pulse modulation at 900 MHz<br>10 V/m with 50 % pulse modulation at 1.89 GHz | 3 |
| HF interference current on cables and cable shielding conforming to IEC 61000-4-6 | Test voltage 10 V at 80% amplitude modulation of 1 kHz in the range from 9 kHz to 80 MHz | 3 |

## Emission of radio interference

Emission from electromagnetic fields according to EN 55011, limit value Class A, Group 1, measured at a distance of 10 m:

| | |
|---|---|
| 30 to 230 MHz | < 40 dB (µV/m) quasi-peak |
| 230 to 1 000 MHz | < 47 dB (µV/m) quasi-peak |

# Planning application

<div style="text-align: right; font-size: 2em;">3</div>

## 3.1     General information

Proper transport and storage, installation and assembly as well as careful operation and maintenance are required to ensure trouble-free and safe operation of the HMI device.

The warranty for the HMI device will be deemed void if these stipulations are not heeded.

## 3.2     Mounting positions and type of fixation

### Permitted mounting positions

The HMI device is designed for mounting in stationary cabinets, for example for mobile drilling rigs and ships.

The HMI device is approved for horizontal mounting. The HMI device can be installed as follows:

- Vertical
- Inclined at an angle between 0° and 90°
- Horizontal

### Temperature Extension Kit

The "Temperature Extension Kit" lets you use the HMI device relatively independent of the actual ambient conditions. You accomplish this feat because the "Temperature Extension Kit" creates an environment in the cabinet that is within the limits permitted for operation of the MP 377 15" Touch daylight readable.

If you are going to equip the HMI device with the "Temperature Extension Kit" option, you need to select a cabinet of the appropriate size. Make allowances for the fact that the thermal conductivity of control cabinets made of stainless steel is not as good as that of an aluminum cabinet, for example.

You will find additional information in the "Temperature Extension Kit" operating instructions.

# 3.3 Preparation for mounting

## Selecting the mounting location for the HMI device

Points to observe when selecting the mounting location:

- Position the HMI device so that it is not subjected to direct sunlight.

  The display was designed for operation in direct sunlight.

- Position the HMI device such that it is ergonomically accessible for the user.

  Choose a suitable mounting height and mounting angle.

- Make sure that you do not cover the fan and the air vents of the HMI device during installation.

## Ensuring degree of protection

The degree of protection according to the information in the chapter "Technical Specifications (Page 54)" can only be ensured if the HMI device is installed with the supplied mounting clamps. Additional fastening bore holes or threaded bolts are not required for the mounting cutout.

The front material has to consist of sheet steel or material of a strength that corresponds to at least the stability of sheet steel.

## Mounting cutout

The following conditions apply to the mounting cutout:

| Mounting cutout | Dimensions |
|---|---|
| Material thickness with IP66 degree of protection | 1.5 to 5 mm |
| Material thickness with enclosure type 4X/type 12 (indoor use only) | 3 to 5 mm |
| Permitted deviation from plane<br><br>This condition must be fulfilled for the mounted HMI device. | ≤ 0.5 mm |
| Permitted surface roughness in the area of the mounting seal | ≤ 120 µm ($R_z$ 120) |

The following table shows the dimensions of the mounting cutout:

| Dimensions | HMI device |
|---|---|
| Width | $367^{+1}$ mm |
| Height | $289^{+1}$ mm |
| Depth | 105.5 mm |

## Maintaining clearances

The HMI device must be installed with the following clearances:

| Where | Clearance |
|---|---|
| Observe a clearance above and below the mounting cutout for ventilation of | 50 mm |
| Right and left of the mounting cut-out for the mounting clamps | 18 mm |
| At the rear in addition to the mounting depth of the HMI device at least | ≥ 10 mm |

### Note

Ensure that the maximum ambient temperature is not exceeded when mounting the device in a control cabinet.

You can install the option "TEK – Temperature Extension Kit", if necessary.

# Mounting and connecting the HMI device

# 4

## 4.1 Mounting the HMI device

### Requirement

These are the requirements:

- All packaging components and protective foils should be removed from the HMI device.
- The HMI device comes equipped with a mounting seal.
- 10 mounting clamps from the accessory kit
- The mounting cut-out is burr-free.

To ensure the necessary degree of protection on the front of the HMI device, you will have to observe the mounting clamp positions listed below.

### Position of the mounting clamps

The following figure shows the positions for installation of the mounting clamps.

## Procedure

| CAUTION |
| --- |
| **Degree of protection on front at risk** |
| If the mounting seal is damaged, if it does not fully rest in the groove for the mounting seal or if the ends of the mounting seal do not meet in the groove, then the degree of protection is not guaranteed for the front of the HMI device. |
| Check the mounting seal and its proper seat. |
| **Damage due to overheating** |
| If the vents are covered on the HMI device or if the air does not flow freely to the fans, the HMI device may be damaged. The approvals and warranties for the HMI device will become void. |
| Ensure unblocked ventilation of the HMI device. |

**Note**

Always mount the HMI device according to the instructions in this manual.

Tighten the threaded pins of the mounting clamps until the HMI device is flush with the front of the control cabinet. You have the option to tighten the mounting clamps with a maximum torque of 0.2 Nm.

Proceed as follows:

1. Check the mounting seal and its proper seat.

2. Insert the HMI device into the mounting cutout from the front and secure the HMI device to prevent it falling out.

3. Insert a mounting clamp into the HMI device.

   Begin with the top center mounting clamp.



4. Fasten the mounting clamp ① by tightening the threaded pin ②.

   Repeat steps 3 and 4 for all mounting clamps.

5. Check the installation.

   If necessary, repeat steps 1 to 5.

## Result

The HMI device is mounted and the relevant level of protection is ensured at the front.

## 4.2 Connecting the HMI device

### 4.2.1 Overview

**Requirement**

These are the requirements:

- The HMI device must be mounted according to the specifications of these operating instructions.
- Always use shielded standard cables.

  Standard cables are also available at the following Internet address:

  "http://mall.automation.siemens.com"

  There you select "Products".

**Connection sequence**

| NOTICE |
|---|
| **Observe the connection sequence** |
| Failure to do so may result in damage to the HMI device. |
| Note the connection sequence for the HMI device. |

Connect the HMI device in the following sequence:

1. Equipotential bonding
2. Connecting the power supply of the fans
3. Connecting the power supply of the HMI device
4. PLC
5. Configuring PC as necessary

Disconnect the HMI device from the terminals in reverse order of connection.

| NOTICE |
|---|
| **Do not switch on the HMI device in case of condensation** |
| Humidity can show up as condensation on or in the HMI device when the HMI device is transported at low temperatures or in case of extreme variations in temperature. |
| The HMI device must have acquired ambient temperature before it is put into operation. Do not expose the HMI device to direct radiation from a heater in order to warm it up. If condensation has developed, wait approximately four hours until the HMI device has dried completely before switching it on. |

### Interfaces

The following figure shows the interfaces of the HMI device.
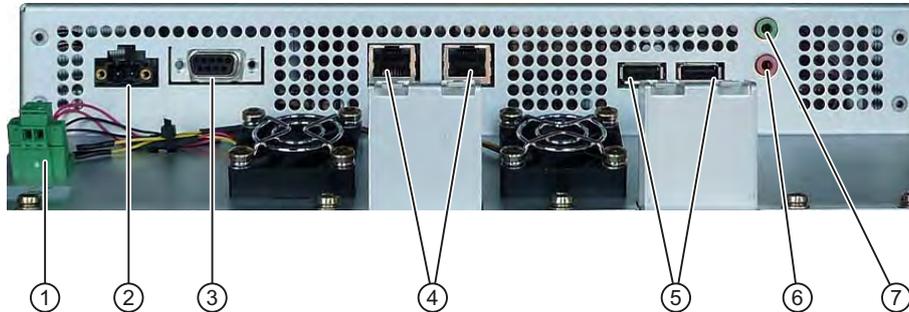


①      Connection for power supply of fans
②      Connection for power supply of HMI device
③      RS 422 / RS 485 port X10/IF 1B
④      PROFINET, ports X1 P1 and X1 P2
⑤      USB ports X20 and X21
⑥      Line in and micro
⑦      Line out

You connect the PROFIBUS DP or MPI to the X10 / IF 1B interface.

### Connecting the cables

When connecting the cables, ensure that the contact pins are not bent. Secure the connectors with screws. Use cable ties to secure the cables at the fixing element for strain relief. The following illustration shows how a cable is tied to one of two fixing elements using cable ties.
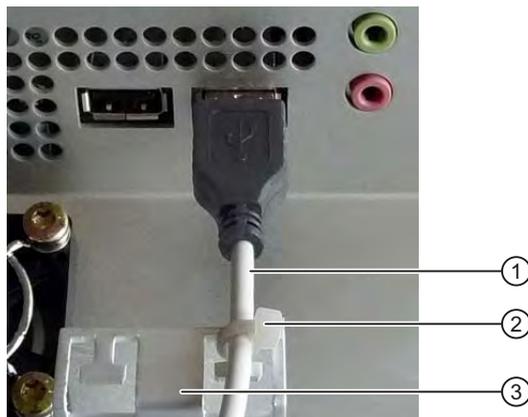


①      Cable
②      Cable tie
③      Fixing element

## 4.2.2 Connecting the Fan

The fans have the following purpose:

● To dissipate heat generated by the higher power loss compared to "MP 377".

● To ensure proper cooling in case of inclined installation.

The fans are designed for continuous operation. If the fans are not connected to the same power supply as the HMI device, you will have to turn them on separately.

Maintain the connection sequence for the HMI device. For a description of the connection sequence, refer to chapter "Overview (Page 31)".

Please note the "Maintenance and Care (Page 51)" chapter.

## 4.2.3 Connecting the power supply

### Configuration graphic

The following figure shows the connection between the power supply and HMI device.
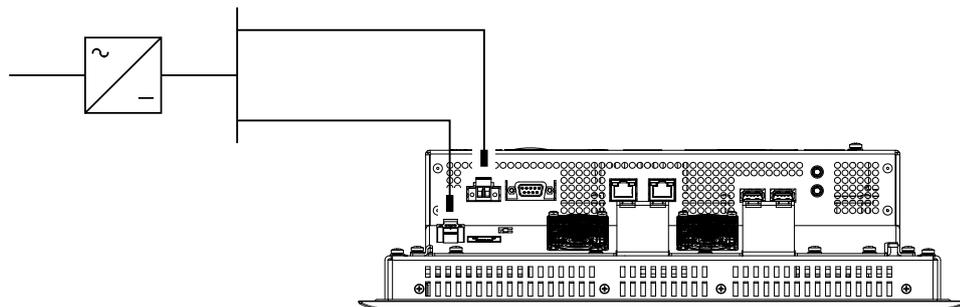


### Reverse polarity protection

The HMI device is equipped with a reverse polarity protection circuit. This protection does not apply to the connection of the fans.

### Connecting the power supply

| CAUTION |
| --- |
| **Safe electrical isolation required** |
| Use only 24 VDC power supply units with safe electrical isolation in accordance with IEC 60364-4-41 or HD 384.04.41 (VDE 0100, Part 410), for example, in accordance with the PELV standard. |
| The supply voltage must be within the specified voltage range. Otherwise, malfunction at the HMI device cannot be ruled out. |

---

**Note**

Applies to non-isolated plant configurations:

Connect the "GND" terminal of the 24 VDC power supply to the equipotential bonding. You should always select a central point of termination.

---

## Requirement

These are the requirements:

● The HMI device is assembled.

● 2 connection terminals

The connection terminals are included in the accessory kit and are designed for cables with a cross-section of ≤ 1.5 $mm^2$.

## Procedure

Proceed as follows:

| NOTICE |
|---|
| **Damage possible** |
| If the mains terminal is plugged into the HMI device and the cable is connected, then pressure on the screwdriver can damage the HMI device socket. |
| Connect the cable only to the mains terminal that is currently not plugged in. |

1. Connect the wires on the mains terminal as shown in the following illustration.

   Ensure that the wires are connected properly to the correct terminals. Refer to the label of the sockets on the rear of the HMI device.

   

   GND

   +24 VDC
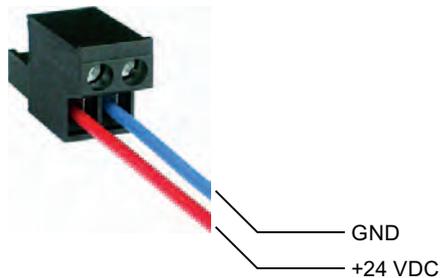
2. Plug in the mains terminal for the power supply of the HMI device into the socket ②.

   

   ①      ②
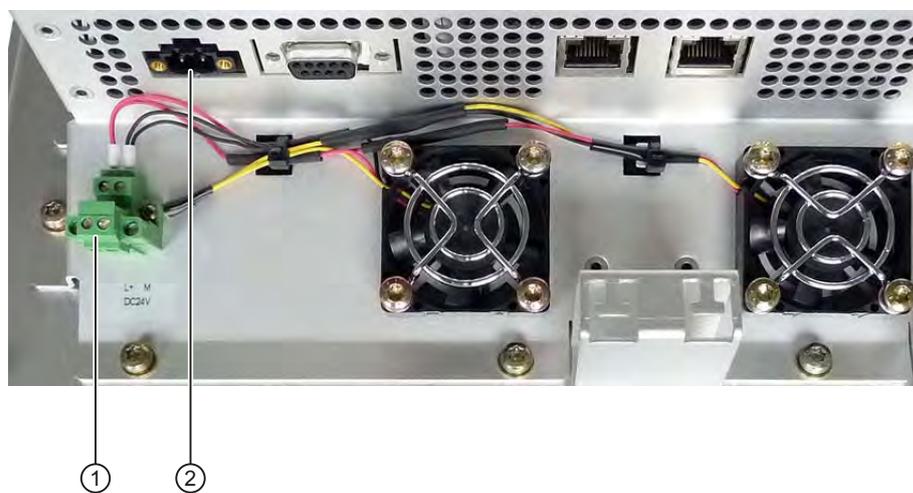
3. Connect the mains terminal for the power supply of the fans.

4. Plug in the mains terminal into the socket ①.

## 4.2.4    Switching on and testing the HMI device

Conduct a power-up test according to the operating instructions "MP 377 (WinCC flexible)", chapter "Turning on and testing the HMI device".

Check whether the fan is connected with the correct polarity. If the fans are not connected properly, they will not start.

# Operator controls

# 5

## 5.1     Front operator controls

The MP 377 15" Touch daylight readable comes equipped with a transflective display with higher contrast. This makes objects on the display visible even in direct sunlight and easy to monitor and operate.

The comprehensive dimming range with 256 settings makes for fatigue-free reading in very bright and very dark ambient lighting.

**Note**

Please observe the notes on the touch screen in the operating instructions "MP 377".

You operate the touch screen as follows:

* Touching it directly with a finger
* Touching it with a finger, protected by a thin glove

You cannot operate the touch screen with other devices, such as a touch pen.

Incorrect operation due to dirt particles is not possible. Incorrect operation due to flying insects has not occurred so far.

## 5.2    Removing the memory card cover

### Introduction

Installed memory cards are secured and protected in their slots by a slot cover.

---

**Note**

Please observe the notes on the memory card in the operating instructions "MP 377".

---

### Procedure

Proceed as follows:

1. Remove the screw in the slot cover.
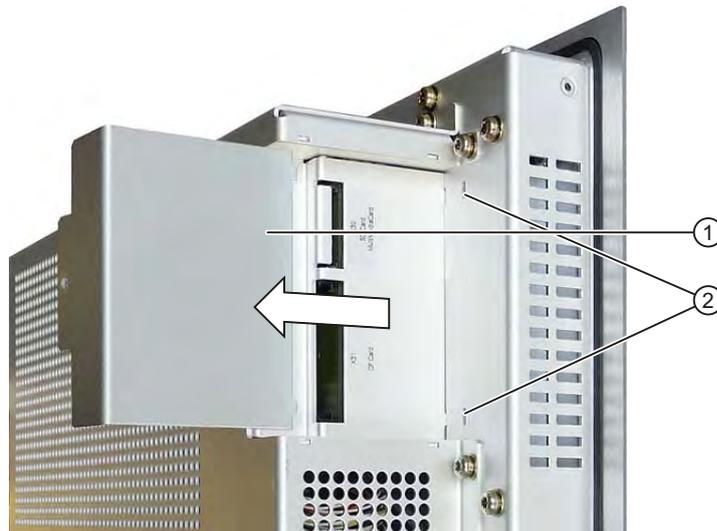


2. Remove the slot cover ① from the HMI device rear panel.
3. Install a memory card or remove it from the slot.
4. Insert the slot cover into the slots ②.
5. Tighten the screw in the slot cover.

# Configuring the operating system

<div style="text-align: right; font-size: 2em;">6</div>

## 6.1 Introduction

For a description on how to configure the operating system, see the section "Configuring the operating system" in the operating instructions "MP 377 (WinCC flexible)" as of edition 09/2007.

The following section includes the differences and amends the section of the same name in the operating instructions listed above.

## 6.2 Calibrating the touch screen

### Introduction

Depending on the mounting position and viewing angle, it is possible that parallax may occur when operating the touch screen. To prevent any resulting operating errors, you may need to calibrate the touch screen during the startup phase or while in runtime.

Nine calibration crosshairs are displayed during calibration of the touch screen. This setup makes for extremely accurate calibration.

### Requirement

These are the requirements:

You have opened the "OP Properties" dialog, "Touch" tab with the "OP" icon.

**Procedure**

---

**Note**

You have to touch the calibration crosshairs and the buttons one after the other in 5 s intervals. Otherwise the "OP Properties" dialog will be displayed again.

---

Proceed as follows:
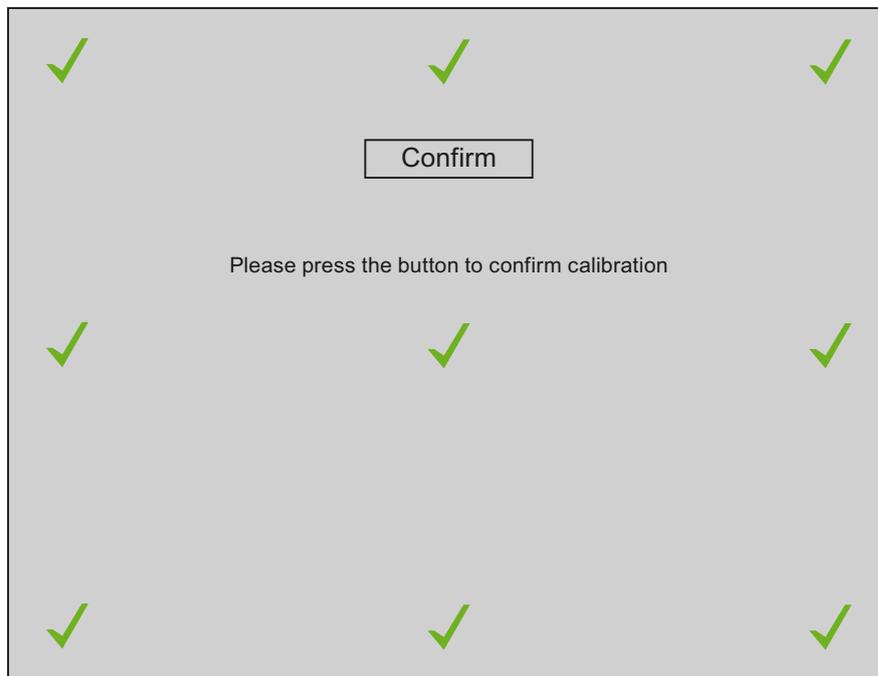
1.  Click on the "Recalibrate" button.

    The following dialog opens:

    

    Device 1 on Whole Desktop

2.  Briefly touch the middle of the calibration crosshairs ①.

    Confirm the calibration with a green check mark at this location; the next calibration crosshairs will be displayed.

3. Touch the "Confirm" button.



The calibration is saved. The "OP Properties" dialog, "Touch" tab is displayed again. If you do not touch the "Confirm" button within 5 s, your original calibration will be retained.

4. Close the dialog.

## Result

The HMI device touch screen is calibrated.

# 6.3    Setting the display brightness

## Introduction

The brightness of the display can be set in 256 levels. Dimming takes place based on a gradual curve and is perceived by the eye as linear.

You change the brightness as follows:

● Single-stage by using a button.

● Multi-stage by using the slider control.

You can limit the number of brightness settings. You can also enter a value for the brightness with which the HMI device is to start.

You can change the brightness of the display during the startup phase or while in runtime. Pay particular attention to the section "Configure "SetBrightness" function (Page 61)".

## Requirement

These are the requirements:

You have opened the OP Properties dialog, "Display" tab with the OP icon.
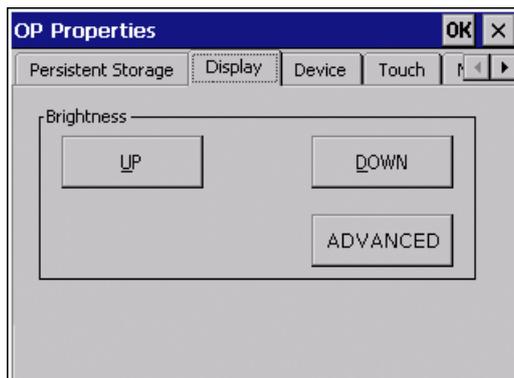
**Procedure**

Proceed as follows:

1.   Click on the "ADVANCED" button.

The following dialog opens:
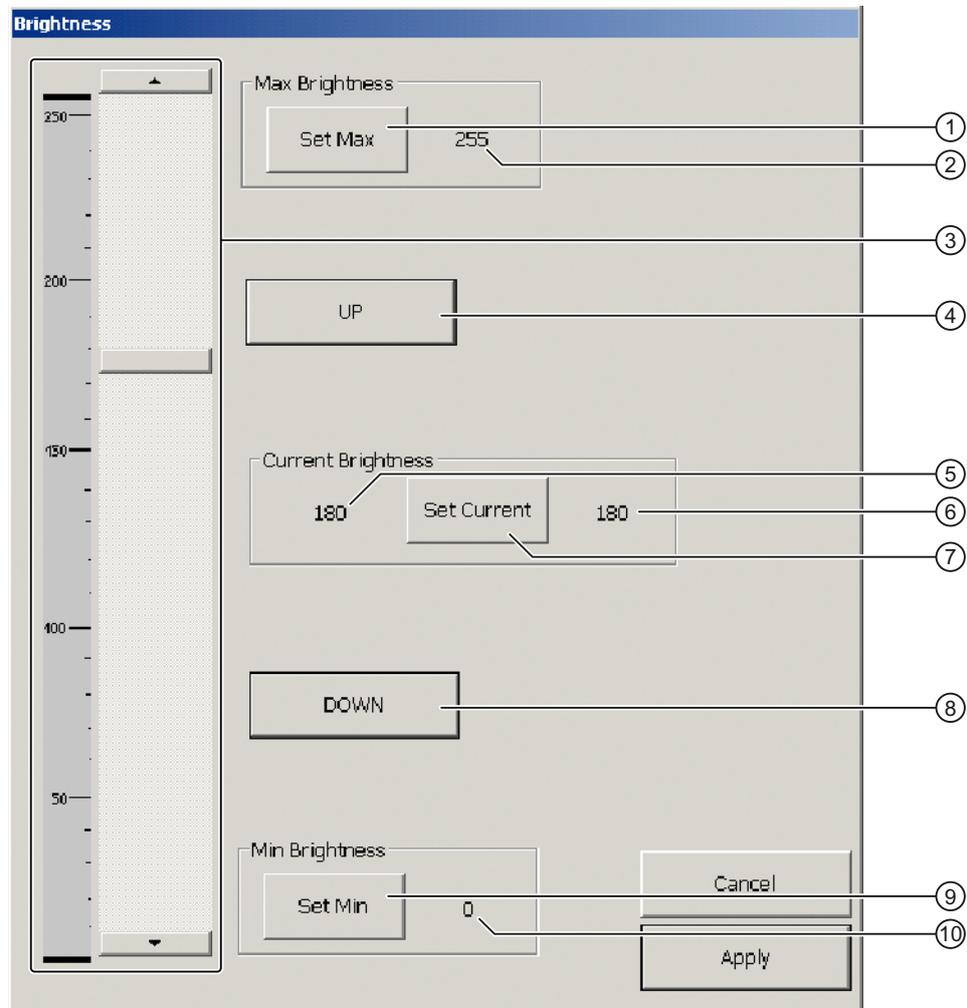


| ① | Button for entry of value for maximum display brightness |
|---|---|
| ② | Value for maximum display brightness |
| ③ | Slider control |
| ④ | Button for increase in brightness<br>Increment – increase brightness by one increment |
| ⑤ | Currently selected brightness |
| ⑥ | Saved brightness |
| ⑦ | Button for setting currently selected brightness |
| ⑧ | Button for decrease in brightness<br>Increment – decrease brightness by one increment |
| ⑨ | Button for entry of value for minimum display brightness |
| ⑩ | Value for minimum display brightness |

---

**Note**

If you do not operate the "Brightness" dialog for 25 seconds, the following message will appear:

"You did not operate the dialogue for more than 25 seconds! The brightness was put back to the default value!"

This means the altered values will not be entered in the registry. All values altered in the dialog will be reset.

Once you close this message, the "Brightness" dialog will be active once again.

---

2. Set the value for maximum display brightness in the group "Max Brightness".

   You can set any value between the saved brightness value ⑥ and 255. Use the slider control or one of the two "UP" and "DOWN" buttons for this purpose. The brightness of the display changes while you are operating these buttons.

   The change in the group "Current Brightness" will be displayed with the currently selected brightness ⑤.

---

**Note**

If you enter a value for "Max Brightness" that is smaller than the saved brightness value ⑥, the message "Max < Cur" will be displayed.

Select a smaller value or operate the "Set Current" button. It is then possible to accept the altered value.

---

3. Click on the "Set Max" button.

4. Set the current value for brightness in the group "Current Brightness".

   Use this value to set the display brightness that the HMI device assumes at startup or when the screen saver has been deactivated.

---

**Note**

If you enter a value for "Current Brightness" that is greater than the maximum display brightness ②, the message "Cur > Max" will be displayed. If you enter a value for "Current Brightness" that is greater than the value for the minimum display brightness ⑩, the message "Cur < Min" will be displayed.

Select a smaller value or operate the "Set Max" button. It is then possible to accept the altered value.

---

5. Click on the "Set Current" button.

6. Set the value for minimum display brightness in the group "Min Brightness".

---

**NOTICE**

---

**Display can no longer be read**

You can reduce the display brightness to a level that is so low that you cannot see the screen objects in the display in case of poor lighting conditions or darkness.

If the brightness is accidentally reduced to a level that prevents you from seeing screen objects, you will have to interrupt operation. The brightness will be reset to the last saved value after 25 seconds.

---

You can set any value between the saved brightness value ⑥ and 0.

---

**Note**

If you enter a value for "Min Brightness" that is smaller than the saved brightness value ⑥, the message "Min > Cur" will be displayed.

Select a smaller value or operate the "Set Cur" button. It is then possible to accept the altered value.

---

7. Click on the "Set Min" button.
8. Click on the "Apply" button.

   The following message is displayed:

   "Do you really want to leave the dialogue and secure the values in the Registry?"

9. The set values will be applied when you press the "OK" button.

   The "Brightness" dialog box closes. When you press "Cancel", the dialog will be closed without saving the values. The current values for display brightness will be retained.

**Result**

The brightness of the display will match the set value once you start the HMI device.

# 6.4 Setting the screen saver

## Introduction

You can set the following time intervals on the HMI device:

- For the automatic activation of the screen saver
- For automatically turning off the backlighting of the screen

When you do not undertake an operation within the configured interval, the configured function will be activated automatically.

The screen saver will turn off with the following actions or backlighting will turn on once again:

- By pressing any key
- By touching the touch screen

The function associated to the key or button will not be executed by this.

| NOTICE |
| --- |
| **Turning off backlighting** |
| The brightness of the backlighting decreases incrementally during its operational life. |
| You will increase the service life of the display considerably by turning off backlighting rather than by reducing backlighting or using a screen saver. |
| **Activating the screen saver** |
| Screen contents may occasionally leave a burn-in effect in the background if they appear too long. |
| This burn-in effect will automatically disappear after a certain amount of time if the screensaver is activated, for example. The longer the same content is displayed on the screen, the longer it will take for the burn-in effect to disappear. |
| Generally, you should always activate the screen saver. |
| When the screen saver is active, the backlighting is reduced at the same time. |

## Requirement

These are the requirements:

You have opened the Screensaver dialog with the ScreenSaver icon.
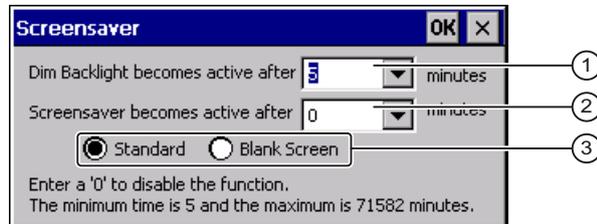
① Time interval in minutes until backlighting is turned off

② Period of time in minutes before the screen saver is activated

③ Radio buttons for the screensaver

## Procedure

Proceed as follows:

1. Enter the interval in minutes after which the backlighting is to be turned off.

   Entering "0" will deactivate option for turning off backlighting.

2. Enter the number of minutes before the screen saver is to be activated.

   The minimum time is 5 minutes and the maximum time is 71582 minutes. Entering "0" disables the screen saver.

3. Select either the screen saver or an empty screen.

   – If you want the screen saver to function, activate the "Standard" radio button.

   – If you do not want the screen saver to function, activate the "Blank Screen" radio button.

4. Confirm your entries.

   The dialog closes.

## Result

The screen saver and the deactivation of backlighting for the HMI device have been set.

# 6.5 Restarting the HMI device

## Introduction

You can restart the HMI device or reset the factory settings before rebooting. Additional information is available in the section "Reset the factory settings" in the operating instructions "MP 377, edition 09/2007".

The HMI device must be restarted in the following cases:

● You have activated or deactivated the PROFINET IO direct keys.

● You have changed the time zone setting.

● You have changed the automatic daylight savings and standard setting

| NOTICE |
|---|
| **Data loss when the HMI device is restarted** |
| All volatile data is lost when the HMI device is restarted. |
| Check the following: |
| • The project on the HMI device is complete. |
| • No data is being written to the flash memory. |

## Requirement

These are the requirements:

● You have opened the "OP Properties" dialog, "Device" tab with the OP icon.



● If you want to start the HMI device with "Reset to factory settings", you will have to connect the HMI device via PROFINET to a configuration PC.

## Procedure

Proceed as follows:

1. Click on the "Reboot" button.

   The following dialog appears:
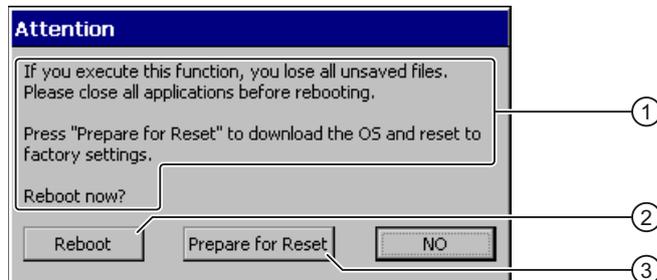


   ① If you run this function, all data which has not been backed up will be lost. Please close all applications before restarting.
   ② Button for restart
   ③ Button for reset to factory settings and subsequent restart

2. If you want to restart the HMI device, press the "Reboot" button.

   The HMI device restarts without delay.

3. If you want to reset the HMI device to the factory settings and then restart, press the "Prepare for Reset" button.

   You are given the option of resetting the HMI device to the factory settings through ProSave. The HMI device then restarts.

4. If you do not want to restart the HMI device, press the "No" button.

   The dialog box closes. There will be no restart.

## Result

The HMI device starts.

# Service and maintenance

# 7

## 7.1    Maintenance and Care

### Scope of maintenance

The HMI device is designed for maintenance-free operation. The scope of maintenance includes:

- Checking fans for proper operation

    Check fans regularly for proper operation. The fans are not monitored electronically.

- Cleaning the front operating panel

    Clean the front operating panel at regular intervals. Proper handling and regular cleaning will extend the service life of the front operating panel. The front operating panel consists of:

    – Housing frame

    – Front membrane

    – Display

    Housing frame, front membrane and display have different resistance levels to chemical and mechanical influences.

### General information on cleaning

| NOTICE |
| --- |
| **Damage to the front operating panel possible** |
| You can damage the front operating panel if you clean the display with aggressive, solvent-containing, greasing or abrasive detergents, acids or caustic solutions, scratching cleaning rags or equipment. <br><br> The same applies if you clean the front operating panel with chlorine or chlorides, laser, ultrasound or dry ice. <br><br> Do not use a high-pressure cleaner and vapor for thermal cleaning. Use commercial glass or plastic cleaners to clean the front operating panel. |

The front of the system is protected against the ingress of water according to the degree of protection. Additional information is available in the section "Ambient conditions (Page 56)".

**Procedure**

---

⚠ **WARNING**

**Triggering functions unintentionally**

You may trigger a function unintentionally when you touch the touch screen for cleaning purposes.

Clean the operating front only when the HMI device is turned off or you have activated a clean screen. The clean screen avoids the risk of triggering functions unintentionally when you touch the screen or when a water jet contacts the screen.

---

Proceed as follows:

1. Switch off the HMI device.

   When the system provides such an operator control, you can also activate a clean screen on the touch screen during operation.

2. Apply the cleansing agent to the front operating panel.

3. Clean the front operating panel with a window wiper or cloth.

4. Wipe off the edges of the front operating panel.

## 7.2 Repair

If the unit needs to be repaired, you will have to ship the HMI device to the Return Center in Fürth.

The address is:

Siemens AG
Industry Sector
Returns Center
Siemensstr. 2
90766 Fürth
Germany

For additional information, refer to the Internet at Spare parts and repairs "http://support.automation.siemens.com/WW/view/en/16611927".

# Technical specifications

## 8.1 Dimension drawing
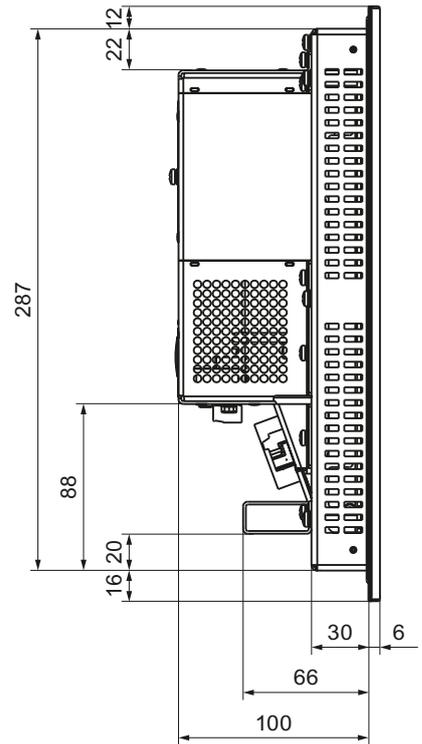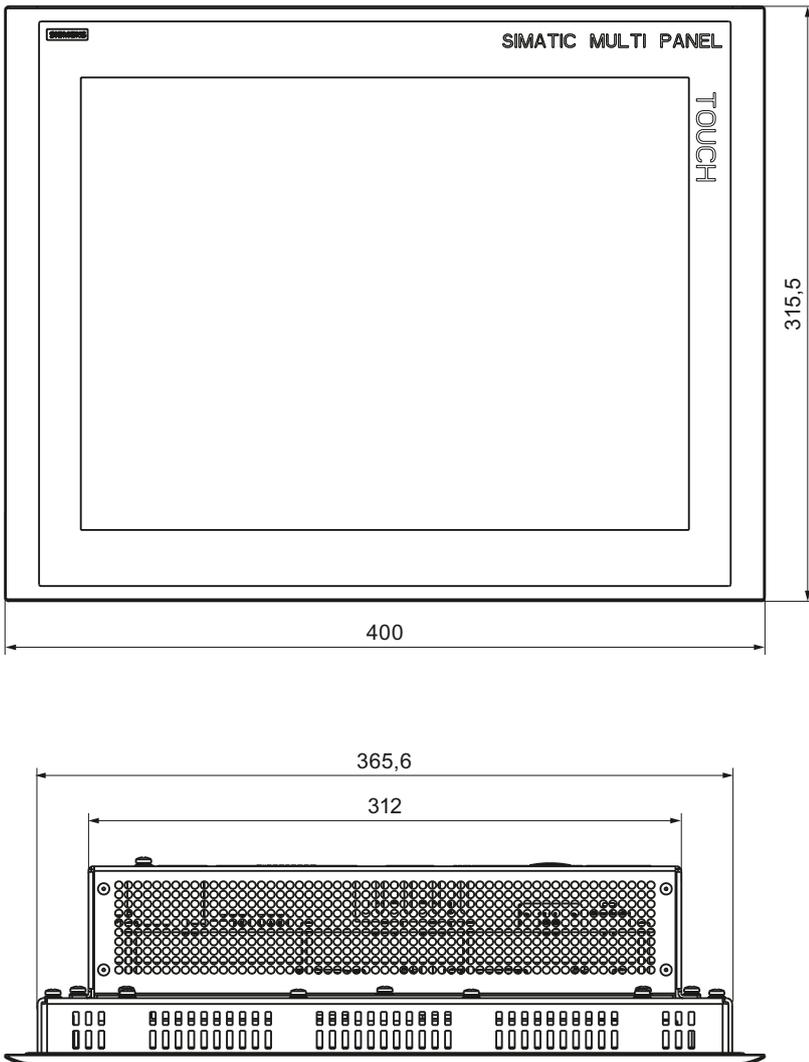


All dimensions in mm.

## 8.2 Technical Specifications

### Weight

| Weight | Approx. 4.6 kg |
|---|---|

### Degree of protection

| Front | IP66 |
|---|---|
| Rear | IP20 |

### Display

| Type | LCD TFT |
|---|---|
| Material | Glass |
| Glass thickness | 3 mm |
| Hardness to Mohs | 7 |
| Colors, displayable | 16 million |
| Backlighting<br>Half brightness lifetime, typical | LED<br>50 000 h |
| Display area, active | 304.1 mm x 228.1 mm (15") |
| Resolution | 1024 x 768 pixels |
| Dimming range | 256 increments from 0 to 560 cd/m$^2$<br>The brightness values are recommended values. |
| Dimming range, limitable | Yes |
| Contrast | • 700 : 1 typically<br>• 480 : 1, minimum |
| Response time | < 20 ms |

### Input unit

| Type | Touchscreen, projected capacitive |
|---|---|
| Operability | • Finger<br>• Finger with thin glove |
| Calibration points | 9 |

### Memory

| Application memory | 12 MB |
|---|---|

### Supply connection HMI device

| Rated voltage<br>Valid range | +24 V DC<br>19.2 V to 28.8 V (–20 %, +20 %) |
|---|---|
| Transients, maximum permissible | 35 V, 500 ms |
| Time between two transients, minimum | 50 s |
| Fuse, internal | Electronic |
| Current consumption<br>• Typical<br>• Constant current, maximum<br>• Power on current surge $I^2t$ | <br>approx. 1 500 mA<br>Approx. 2 800 mA<br>Approx. 5.0 $A^2s$ |

### Supply connection fan

| Rated voltage<br>Valid range | +24 VDC<br>19.2 V to 28.8 V (–20 %, +20 %) |
|---|---|
| Current consumption<br>• Constant current, typical<br>• Inrush current | For the two fans in sum.<br>Approx. 50 mA<br>Approx. 200 mA |

### Fans

| Service life L10/MTBF [h] | 95000/280000 @20°C |
|---|---|

# 8.3    Ambient conditions

## Mechanical ambient conditions

The following table provides information on the type and scope of tests for mechanical ambient conditions.

| Test | Test Standard | Release values |
|---|---|---|
| Vibration | IEC 60068, Part 2–6 (sinusoidal) | 10 Hz ≤ f ≤ 58 Hz<br>constant amplitude: 0.075 mm<br><br>58 Hz ≤ f ≤ 150 Hz<br>constant acceleration: 1 g |
| • Type of vibration:<br>  Transitional rate of the frequency: 1 octave/minute.<br>• Vibration duration:<br>  10 frequency cycles per axis in each of the three mutually vertical axes | | |
| Shock | IEC 60068, Part 2–29 | 15 g peak value, 11 ms duration |
| • Shock type: Half-sine<br>• shock direction:<br>  in each of the three mutually vertical axes always with 3 shocks in ± direction | | |

## Climatic ambient conditions

The following table shows the climatic conditions for operation of the HMI device.

| Ambient conditions | Permitted range | Remarks |
|---|---|---|
| Temperature | 0 to 50 °C | – |
| Temperature shock | 0 to 50 °C, cycling time >= 3 Kelvin/min | – |
| Humidity, relative | 10 to 90 % | Without condensation, corresponds to a relative humidity, exposure level 2 conforming to IEC 61131, part 2 |
| Atmospheric pressure | 1 080 hPa to 795 hPa | Corresponds to an elevation of –1 000 to 2 000 m |
| Pollutant concentration | $SO_2$ < 0.5 ppm<br>Relative humidity < 60 %<br>No condensation | Test 10 $cm^3/m^3$; 10 days |
| | $H_2S$ < 0.1 ppm<br>Relative humidity < 60 %<br>No condensation | Test 1 $cm^3/m^3$; 10 days |

# 8.4 Transport and Storage Conditions

## Climatic transport and storage conditions

The transport and storage conditions of this HMI device exceed requirements conforming to IEC 61131-2. The following specifications apply to the transport and storage of an HMI device in its original packing.

The climatic conditions comply to the following standards:

- IEC 60721-3-3, Class 3K7 for storage
- IEC 60721-3-2, Class 2K4 for transport

## Mechanical transport and storage conditions

The mechanical conditions correspond to IEC 60721-3-2, Class 2M2.

| Type of condition | Permitted range | |
|---|---|---|
| Drop test (in transport package) | ≤ 1 m | |
| Temperature | –40 to +80 °C | |
| Atmospheric pressure | 1 140 hPa to 660 hPa, corresponds to an elevation of –1000 to 3500 m | |
| Relative humidity | 10 to 90 %, without condensation | |
| Sinusoidal vibration conforming to IEC 60068-2-6 | 5 to 8.4 Hz: 8.4 to 150 Hz: | 3.5 mm 9.8 m/s$^2$ |
| Shock conforming to IEC 60068-2-29 | 250 m/s$^2$, 6 ms, 1,000 shocks | |
| Temperature shock | –40 to +80 °C, cycling time <= 3 min | |

# Appendix

<div align="right">

# A

</div>

## A.1 ESD guideline

### What does ESD mean?

All electronic modules are equipped with large-scale integrated ICs or components. Due to their design, these electronic components are highly sensitive to overvoltage and thus to the discharge of static electricity. Such electronic components are labeled as Electrostatic Sensitive Device.

### Short description

The following abbreviations are commonly used for electrostatic sensitive devices:

- EGB – Elektrostatisch Gefährdete Bauteile/Baugruppen (Germany)
- ESD – Electrostatic Sensitive Device (internationally recognized term)

### Electrostatic charge

| CAUTION |
| --- |
| **Electrostatic charge** |
| ESDs may be destroyed by voltages far below the level perceived by human beings. Voltages of this kind develop when a component or an assembly is touched by a person who is not grounded against static electricity. Usually, it is unlikely that damage to an ESD as a result of overvoltage is detected immediately but may become apparent only after a longer period of operation. Avoid electrostatic charge to your body before you touch the ESD. |

Anyone who is not connected to the electrical potential of their surroundings is subject to electrostatic charge.

The following figure indicates the maximum electrostatic charge anyone is subjected to when coming into contact with the materials shown. These values correspond to IEC 801-2 specifications.
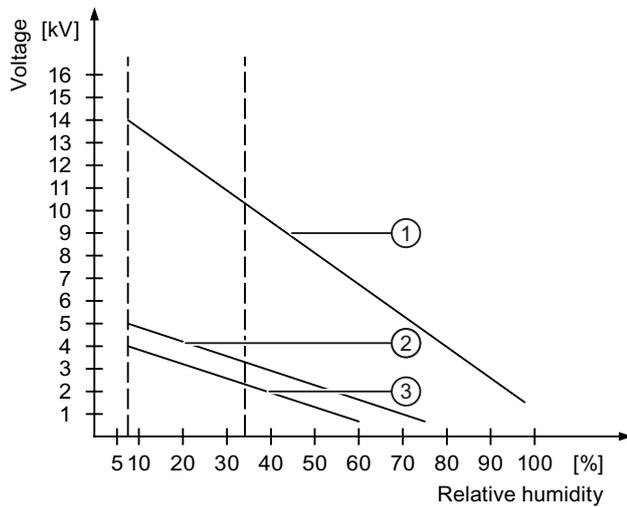


① Synthetic materials

② Wool

③ Antistatic materials such as wood or concrete

## Protective measures against discharge of static electricity

| CAUTION |
| --- |
| **Grounding measures** |
| No equipotential bonding is possible without ground. Electrostatic charges will not be discharged and may damage the ESD. |
| When working with electrostatic sensitive devices, make sure that the person, the workplace and the packaging are properly grounded. |

As a rule, only touch the ESD if this is unavoidable. This may be the case for maintenance. When you touch ESD modules, avoid touching the pins or the PCB tracks. This measure prevents discharged energy from reaching and damaging components sensitive to voltage.

Discharge electrostatic electricity from your body if you are performing measurements on an ESD. Do so by touching grounded metallic parts.

Always use grounded measuring instruments.

# A.2 Configure "SetBrightness" function

## A.2.1 Overview

The add-on "SetBrightness" expands the configuration options under WinCC flexible 2008 and is also available for the MP 377 15" Touch daylight readable.

The "SetBrightness" function gives you the option to alter the display brightness of several HMI devices at the same time, for example.

For this purpose, you will have to expand WinCC flexible 2008 with the add-on "MP377 SetBrightness". The associated installation file in ".msi" format is available on the CD in the accessory kit. Double-click the file for installation.

**Note**

No information is available on this topic in the online help for WinCC flexible 2008.

The following section describes the configuration of the function "SetBrightness" at an operator control in WinCC flexible 2008.

## A.2.2 Add-on "SetBrightness"

### Introduction

This section describes the configuration of the function "SetBrightness" based on an example, how to set the brightness of displays with a potentiomenter "externally" for a panel and "centrally" in a control room. The following picture shows the structure of such a system.
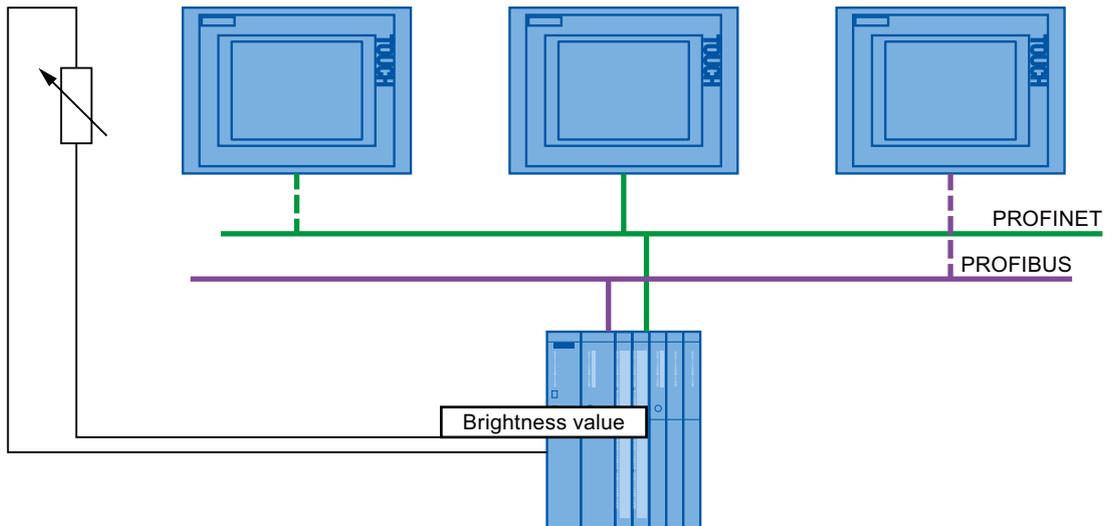


The following section describes how to configure "SetBrightness" function. It explains which parameters are available and how you operate them. Please note the "Setting the display brightness (Page 42)" chapter.

---

**NOTICE**

**Project transfer to an MP 377 15" Touch daylight readable only**

If the "SetBrightness" function is part of a project, then the project transfer can only take place to an HMI device of the type "MP 377 15" Touch daylight readable".

Transfer to an HMI device of the type "MP 377" will fail.

Delete the "SetBrightness" function from the project before you transfer the project to an HMI device of the type "MP 377".

---

### Requirement

These are the requirements:

- WinCC flexible 2008 is installed on a configuration computer.
- The "SetBrightness" add-on is installed.
- You have created a project.

## Procedure

Proceed as follows:

1. Add an operator control to the project.

2. Open the properties of the operator control.

3. Select "Events".

4. Select "System functions > Brightness > SetBrightness" from the function list.

   "SetBrightness" includes the following three parameters:

   – Input parameter "Brightness"

   – Input parameter "Mode"

   – Output parameter "Current brightness value"

5. Configure "Mode".

   The "Mode" parameter has the following two properties:

   – Relative

   The entered value is added to or subtracted from the "current brightness value", depending on the fact if you have entered a negative or positive value.

   – Absolute

   The entered value will be accepted directly.

6. Configure "Brightness".

   You can enter this parameter as a constant or as a variable, for example, a variable that is read out centrally from a PLC.
   The following applies for constant values:

   – The valid range of values in "Relative" mode is between -255 and +255.

   – The valid range of values in "Absolute" mode is between 0 and 255.
   Values of less than 0 will internally be set to 0 in "Absolute" mode.

7. Configure the "current brightness value".

   You can only enter this parameter as a variable; it supplies the current brightness value.

8. Save the entry.

## Result

An operator control with the "SetBrightness" function is configured in the project.

---

### Note

You cannot use the "SetBrightness" function to set the brightness beyond the limits set according to chapter "Setting the display brightness (Page 42)".

To use the "SetBrightness" function on an HMI device, the image of the MP 377 15" Touch daylight has to be available on the HMI device.

---

# Abbreviations

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| | |
|---|---|
| CFR | Code of Federal Regulations |
| CSA | Canadian Standards Association |
| DC | Direct Current |
| DIN | German Institute for Standardization |
| DNV | Det Norske Veritas |
| DP | Distributed I/O |
| EC | European Union |
| ESD | Components and modules endangered by electrostatic discharge |
| EMC | Electromagnetic Compatibility |
| EN | European standard |
| EPDM | Ethylene Propylene Diene Monomer |
| ES | Engineering System |
| ESD | Components and modules endangered by electrostatic discharge |
| FDA | Food and Drug Administration |
| GND | Ground |
| HMI | Human Machine Interface |
| IACS | International Association of Classification Societies Ltd. |
| IEC | International Electronic Commission |
| IEEE | Institute of Electrical and Electronics Engineers |
| IP | Ingress Protection |
| NK | Nippon Kaiji Kyokai |
| NTC | Negative Temperature Coefficient |
| n. c. | Not connected |
| PC | Personal Computer |
| PELV | Protective Extra Low Voltage |
| SELV | Safety Extra Low Voltage |
| UL | Underwriter's Laboratory |
| VDE | Verband Deutscher Elektrotechniker (Association of German Electrical Engineers) |

# Glossary

### Degree of protection

The degree of protection specifies a standard of electronic equipment for a variety of environmental conditions – and the protection of persons against potential danger when using this equipment.

The degree of protection specified by IP differs from the protection class. But both involve protection against touching dangerous electric voltage. The degree of protection also classifies the protection of equipment against dirt and moisture.

### Electromagnetic compatibility

Electromagnetic compatibility (EMC) refers to a usually desirable state, in which technical equipment does not disturb one another with unwanted electrical or electromagnetic effects. Electromagnetic compatibility deals with technical and regulatory questions of undesired, mutual influence in electrical engineering.

### PLC

A PLC influences the workflow of a plant or a process according to a specified plan. The output variables are set depending on the input variables and the status variables. An HMI device usually monitors these variables and communicates with the PLC.

### Protection class

The protection class is used in electrical engineering to classify and identify electrical equipment in relation to existing safety measures designed to prevent electric shock.

There are four protection classes for electrical equipment.

# Index

MP 377 15" Touch daylight readable (WinCC flexible)
Operating Instructions (Compact), 04/2009, A5E02532357-01

# SIEMENS

# SIMATIC HMI
# Bediengerät
# MP 377 15" Touch daylight readable

**Produktinformation**

# Gültigkeit

Die vorliegende Produktinformation gilt für das Bediengerät MP 377 15" Touch daylight readable, Bestellnummer 6AV6644-8AB20-0AA0.

Diese Produktinformation enthält wichtige Hinweise. Diese Hinweise ergänzen die Betriebsanleitung für das Bediengerät und sind den Aussagen in der Betriebsanleitung, in den Release Notes und in der Online-Hilfe in der Verbindlichkeit übergeordnet.

Beachten Sie insbesondere Zulassungen und Zertifikate.

---

**Hinweis**

Für das Bediengerät gelten die auf dessen Rückseite angegebenen Zulassungen.

---

**Weiterführende Informationen**

Weiterführende Informationen zu den im Handbuch beschriebenen Produkten finden Sie unter Kontakt in der folgenden Tabelle:

| Anforderung | Kontakt |
|---|---|
| Vertretungen und Geschäftsstellen | http://www.automation.siemens.com/partner |
| Weiterführende technische Dokumentation | http://www.automation.siemens.com/simatic/portal/html_00/techdoku.htm |
| Trainingscenter | http://sitrain.automation.siemens.com/sitrain/ |
| Technical Support | http://support.automation.siemens.com |
| Web-Formular für eine Supportanfrage | https://support.automation.siemens.com |
| Service | http://www.siemens.com/automation/service |

# Einsatz planen

## Zulässige Einbaulagen

Das Bediengerät ist für den Einbau in Schaltschränke vorgesehen.

Das Bediengerät ist für den Einbau im Querformat zugelassen.

In der Vertikalen sind folgende Einbaulagen zulässig:
- Senkrecht
- Geneigt zwischen 0° und 90°
- Waagerecht

## Einsatz im erweiterten Temperaturbereich

Das "Temperature Extension Kit" ermöglicht es, das Bediengerät weitestgehend unabhängig von den tatsächlichen Umgebungsbedingungen einzusetzen. Dies wird dadurch verwirklicht, indem das "Temperature Extension Kit" abweichend von den tatsächlichen Umgebungsbedingungen im Schaltschrank Umgebungsbedingungen erzeugt, die innerhalb der zulässigen Grenzen für das MP 377 15" Touch daylight readable liegen.

Wenn Sie das Bediengerät mit der Option "Temperature Extension Kit" ausrüsten wollen, sollten Sie einen Schaltschrank wählen, der dementsprechend dimensioniert ist. Berücksichtigen Sie auch, dass ein Edelstahlschaltschrank einen schlechteren Wärmeleitwert hat als z. B. ein Schaltschrank aus Aluminium.

Weiterführende Informationen finden Sie in der Betriebsanleitung "Temperature Extension Kit für MP 377 15" Touch daylight readable".

# Einbau vorbereiten

## Einbauausschnitt

Folgende Bedingungen gelten für den Einbauausschnitt:

Die Einbaufront muss aus Stahlblech oder einem Material mit einer Festigkeit, die mindestens der Festigkeit von Stahlblech entspricht, bestehen.

| Einbauausschnitt | Maß |
|---|---|
| Materialdicke bei Schutzart IP65 | 1,5 bis 5 mm |
| Materialdicke bei Enclosure Typ 4X/Typ 12 (indoor use only) | 3 bis 5 mm |
| Zulässige Abweichung von der Ebenheit<br>Diese Bedingung muss auch bei eingebautem Bediengerät eingehalten werden. | ≤ 0,5 mm |
| Zulässige Oberflächenrauigkeit im Bereich der Einbaudichtung | ≤ 120 µm ($R_z$ 120) |

Die folgende Tabelle beinhaltet die Maße des Einbauausschnitts:

| Maße | Bediengerät |
|---|---|
| Breite | $367^{+1}$ mm |
| Höhe | $289^{+1}$ mm |
| Tiefe | 105,5 mm |

## Freiräume sicherstellen

Um das Bediengerät sind folgende Freiräume erforderlich:

| Ort | Freiraum |
|---|---|
| Oberhalb und unterhalb des Einbauausschnitts zur Belüftung | 50 mm |
| Rechts und links des Einbauausschnitts für die Spannklemmen | 18 mm |
| Rückseitig zusätzlich zur Einbautiefe des Bediengeräts mindestens | ≥ 10 mm |

# Bediengerät einbauen

## Voraussetzung

Folgendes wird vorausgesetzt:

- Alle Verpackungsbestandteile und Schutzfolien am Bediengerät wurden entfernt.
- Am Bediengerät ist die Einbaudichtung vorhanden.
- 10 Spannklemmen aus dem Beipack
- Der Einbauausschnitt ist gratfrei.

Damit die Schutzart an der Vorderseite des Bediengeräts erreicht wird, ist es erforderlich, dass die nachfolgend aufgeführten Positionen für die Spannklemmen eingehalten werden.

## Positionen der Spannklemmen

Das folgende Bild zeigt die Positionen, an denen die Spannklemmen einzusetzen sind.
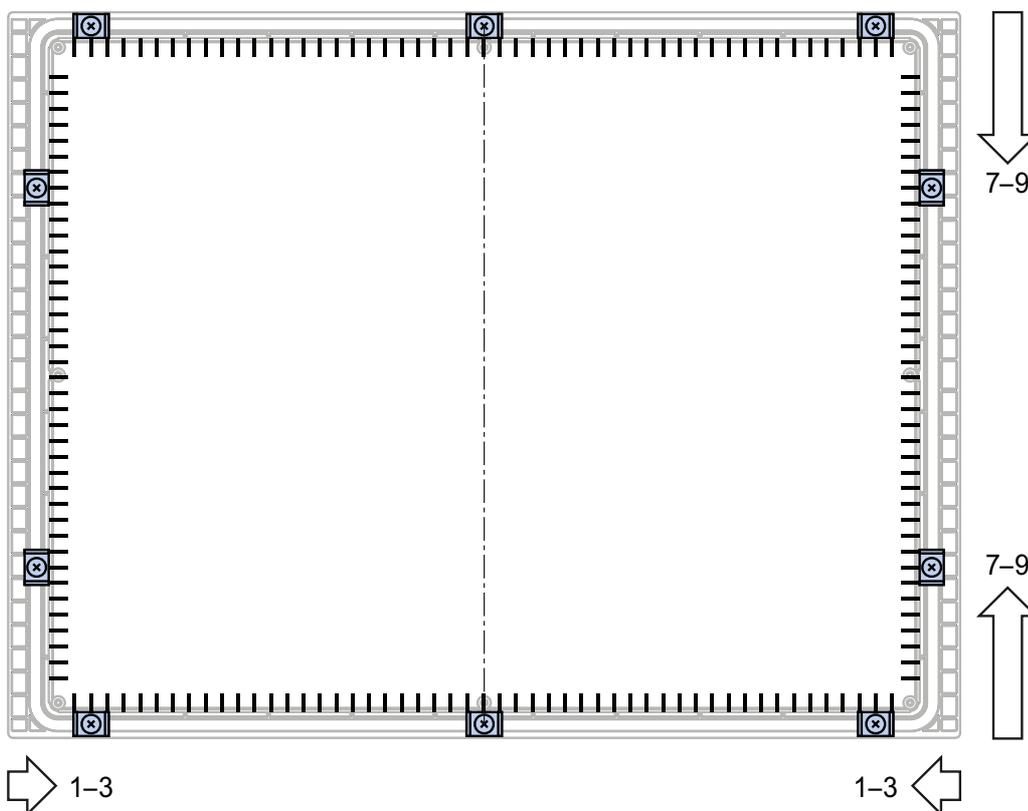


## Vorgehensweise

| VORSICHT |
| --- |
| **Frontseitige Schutzart gefährdet** |
| Wenn die Einbaudichtung beschädigt ist, nicht vollständig in der Nut für die Einbaudichtung liegt oder die Enden der Einbaudichtung sich in der Nut nicht berühren, ist die Schutzart für die Vorderseite des Bediengeräts nicht gewährleistet. |
| Kontrollieren Sie die Einbaudichtung und deren Sitz. |
| **Schädigung durch Überhitzung möglich** |
| Wenn Lüftungsschlitze am Bediengerät verdeckt sind oder der Luftstrom zu den Lüftern behindert ist, kann das Bediengerät durch Überhitzung beschädigt werden. Die Zulassungen und die Gewährleistung für das Bediengerät erlöschen. |
| Stellen Sie die ungehinderte Belüftung des Bediengeräts sicher. |

Bauen Sie das Bediengerät nur nach den Vorgaben des vorliegenden Handbuchs ein.

Ziehen Sie die Gewindestifte der Spannklemmen nur so weit an, bis das Bediengerät bündig an der Einbaufront des Schaltschranks anliegt. Alternativ können Sie die Spannklemmen mit einem Drehmoment max. 0,2 Nm anziehen.

Gehen Sie wie folgt vor:

1. Kontrollieren Sie die Einbaudichtung und deren Sitz.

2. Setzen Sie das Bediengerät von vorn in den Einbauausschnitt ein und sichern Sie das Bediengerät gegen Herausfallen.

3. Setzen Sie eine Spannklemme am Bediengerät ein.

   Beginnen Sie mit der oberen mittleren Spannklemme.
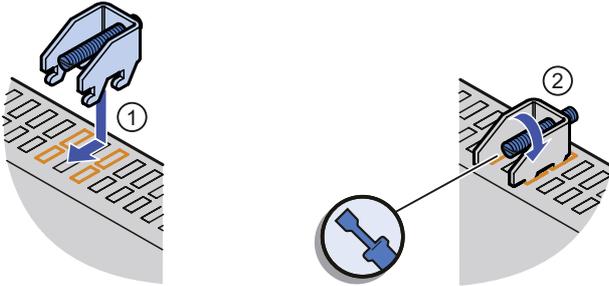


4. Fixieren Sie die Spannklemme ① durch Anziehen des Gewindestifts ②.

   Wiederholen Sie die Arbeitsschritte 3 und 4, bis alle Spannklemmen befestigt sind.

5. Kontrollieren Sie den Einbau.

   Wenn nötig, wiederholen Sie die Arbeitsschritte 1 bis 5.

**Ergebnis**

Das Bediengerät ist eingebaut und die Schutzart wird frontseitig gewährleistet.

# Touch-Screen bedienen

Der kapazitive Touch-Screen des Bediengeräts unterscheidet sich in seinem Verhalten grundlegend von einem resistiven Touch-Screen, z. B.:

- Der Touch-Screen reagiert auf Berührungen seiner Oberfläche, nicht auf Druck.
- Der Touch-Screen kann ausschliesslich mit der Fingerspitze bedient werden.

  Der Finger kann durch einen dünnen Handschuh, z. B. einen sterilen Handschuh, geschützt sein.

  Die Bedienung mit einem Touch-Stift ist nicht möglich.
- Berührungen, die länger als 30 Sekunden andauern, werden als Störung erkannt und ignoriert.

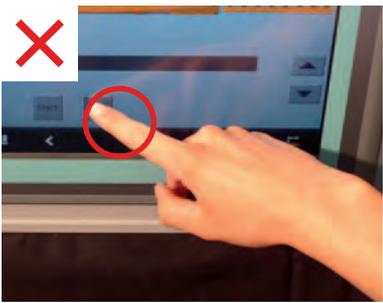| ACHTUNG |
| --- |
| **Auslösen unbeabsichtigter Funktionen** |
| Die falsche Bedienung des kapazitiven Touch-Screen kann unbeabsichtigte Funktionen auslösen. |
| Beispiele für falsche Bedienung: |
| • Bedienung mit einem Touch-Stift oder mit dem Fingernagel.<br>• Bedienung mit einem dicken Handschuh, z. B. einem Arbeitshandschuh.<br>• Berührung des Touch-Screen schräg zur Oberfläche.<br>• Berührung des Touch-Screen für länger als 30 Sekunden, z. B. mit den Fingerknöcheln oder durch Anlehnen oder Abstützen am Display. |
| Beachten Sie unbedingt die Hinweise zur richtigen Bedienung des kapazitiven Touch-Screen in diesem Kapitel. |

**Bedienung des kapazitiven Touch-Screen**

So bedienen Sie den kapazitiven Touch-Screen richtig:

- Berühren Sie den Touch-Screen ausschliesslich mit der Fingerspitze.
  Der Finger kann durch einen dünnen Handschuh, z. B. einen sterilen Handschuh, geschützt sein.
- Berühren Sie den Touch-Screen senkrecht zur Oberfläche.
- Führen Sie eine Bedienaktion innerhalb von 30 Sekunden aus.

Die folgende Tabelle enthält eine Zusammenfassung der richtigen und falschen Bedienung des kapazitiven Touch-Screen.

| Richtig | Falsch | |
|---|---|---|
| Bedienen mit der Fingerspitze | Bedienen mit einem Touch-Stift | Bedienen mit dem Fingernagel |
|  |  |  |
| Bedienen senkrecht zur Oberfläche | Bedienen schräg zur Oberfläche | |
|  |  | |
| Bedienen nur mit einem Finger | Aufstützen mit der freien Hand | Unbeabsichtigte Mehrfachberührungen |
|  |  |  |

# Touch-Screen kalibrieren

## Einleitung

In Abhängigkeit von Einbaulage und Betrachtungswinkel kann beim Touch-Screen eine Parallaxe auftreten. Um daraus resultierende Bedienungsfehler zu vermeiden, kalibrieren Sie den Touch-Screen während der Inbetriebnahme oder während des laufenden Betriebs.

Die Kalibrierung des Touch-Screen erfolgt über 25 Kalibrierpunkte. Dadurch ist eine sehr genaue Kalibrierung möglich.

## Voraussetzung



Sie haben mit dem Symbol "OP" den Dialog "OP Properties", Register "Touch" geöffnet.



## Vorgehensweise

Sie kalibrieren den Randbereich des Touch-Screen über Kalibrierpfeile und den mittleren Bereich des Touch-Screen über Kalibrierkreuze. Mit der Schaltfläche "Confirm" schließen Sie den Kalibriervorgang ab.

| ACHTUNG |
| --- |
| **Timeout nach fünf Sekunden** |
| Kalibrierpfeile, Kalibrierkreuze und die Schaltfläche "Confirm" müssen innerhalb eines Zeitraums von fünf Sekunden berührt werden. Anderenfalls bricht die Kalibrierung ab und der Dialog "OP Properties" wird wieder angezeigt. |
| **Exakte Berührung erforderlich** |
| Die Kalibrierpfeile reagieren genau an ihrer Spitze und Kalibrierkreuze reagieren genau in ihrer Mitte auf Berührung. |
| Achten Sie bei der Kalibrierung darauf, dass Sie die genau die Spitze der Kalibrierpfeile und genau die Mitte der Kalibrierkreuze treffen. |
| **Immer den selben Finger benutzen** |
| Achten Sie darauf, daß Sie die Kalibrierpunkte immer mit dem selben Finger der selben Hand betätigen. Andernfalls ist der Touch-Screen falsch kalibriert. |

Gehen Sie wie folgt vor:

1. Betätigen Sie die Schaltfläche "Recalibrate".
   Der erste Kalibrierpfeil wird auf dem Display angezeigt.
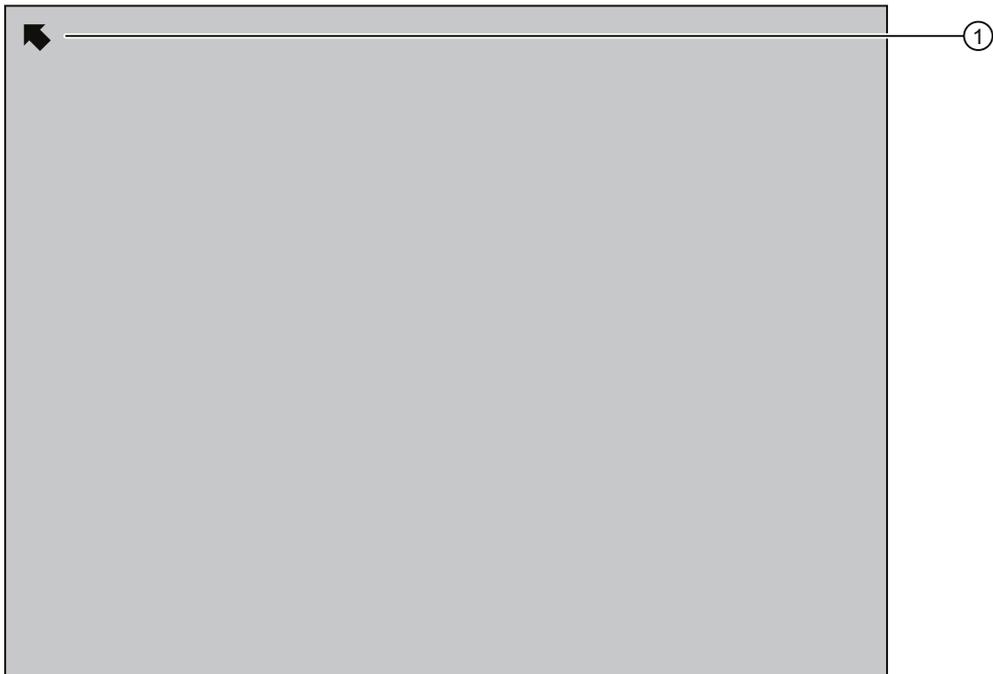


2. Berühren Sie kurzzeitig und innerhalb von fünf Sekunden genau die Spitze des Kalibrierpfeils ①.
   Mit einem grünen Haken wird die Kalibrierung an dieser Stelle quittiert und ein weiterer Kalibrierpfeil wird angezeigt.

3. Berühren Sie alle weiteren Kalibrierpfeile, die auf dem Display angezeigt werden.
   Im mittleren Bereich des Touch-Screen werden Kalibrierkreuze angezeigt.
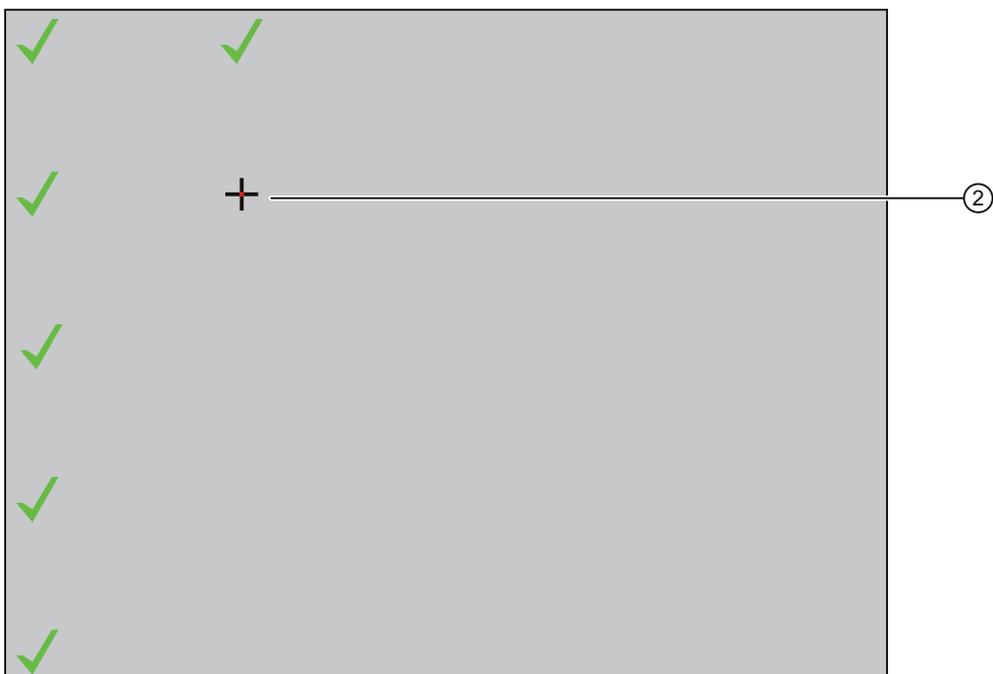


4. Berühren Sie kurzzeitig und innerhalb von fünf Sekunden genau die Mitte des Kalibrierkreuzes ②.
   Mit einem grünen Haken wird die Kalibrierung an dieser Stelle quittiert.

5. Fahren Sie mit der Kalibrierung fort, bis allen 25 Kalibrierpunkte mit einem grünen Pfeil quittiert sind.

   Zum Abschluss des Kalibriervorgangs wird die Schaltfläche "Confirm" angezeigt.
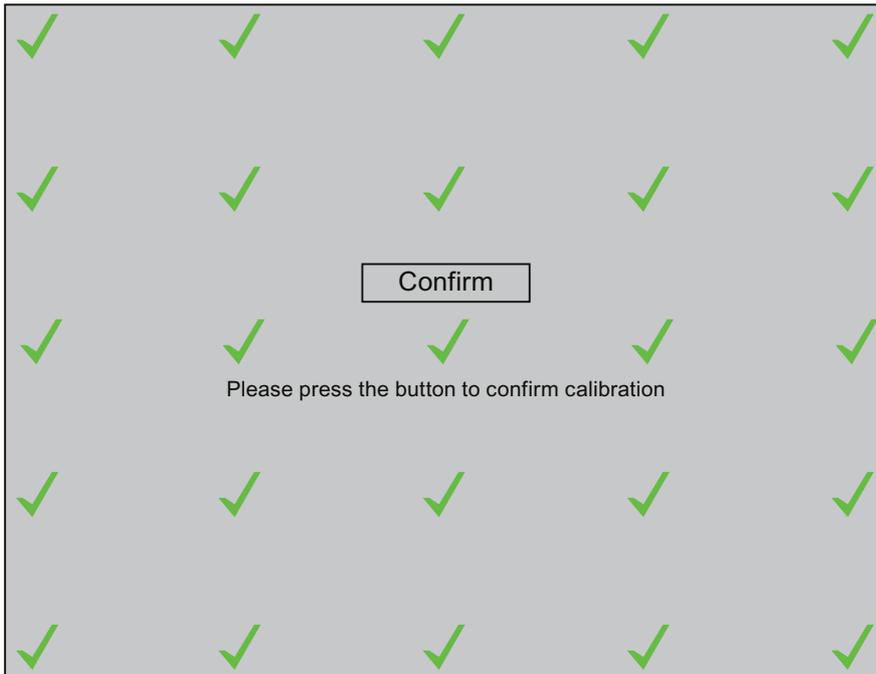


6. Berühren Sie innerhalb von fünf Sekunden die Schaltfläche "Confirm".

   Die Kalibrierung wird gespeichert.

7. Schließen Sie den Dialog "OP Properties".

**Ergebnis**

Der Touch-Screen des Bediengeräts ist kalibriert.

# Funktionsumfang mit WinCC flexible

| ACHTUNG |
| --- |
| **Bediengerät ausschliesslich mit WinCC flexible 2008 SP1 kompatibel** |
| Das Bediengerät wird mit der Software WinCC flexible Runtime 2008 SP1 ausgeliefert. |
| Verwenden Sie zur Projektierung des Bediengeräts ausschliesslich die Software WinCC flexible 2008 SP1. |

**Hinweis**

**Unterstützung von Direkttasten**

Das Bediengerät wird in der ersten Lieferstufe ohne Unterstützung von Direkttasten geliefert.

# SIEMENS

# SIMATIC HMI
# HMI device
# MP 377 15" Touch daylight readable
**Product Information**

## Validity

This product information applies to the "MP 377 15" Touch daylight readable HMI device, order number 6AV6644-8AB20-0AA0.

This product information contains important information. These notes supplement the operating instructions for the HMI device and take precedence over statements in the operating instructions, the release notes, and in the online help.

Observe the approvals and certificates.

---

**Note**

The HMI device itself is certified as shown on the label on its rear panel.

---

**Additional information**

You can find additional information about products described in the manual under "Contact" in the following table:

| Request | Contact |
|---|---|
| Contact persons and office locations | http://www.automation.siemens.com/partner |
| Additional technical documentation | http://www.automation.siemens.com/simatic/portal/html_76/techdoku.htm |
| Training center | http://sitrain.automation.siemens.com/sitrain/ |
| Technical support | http://support.automation.siemens.com |
| Online support request form | http://www.siemens.com/automation/support-request |
| Service | http://www.siemens.com/automation/service |

# Planning application

## Permitted mounting positions

The HMI device is designed for mounting in control cabinets:

The HMI device is approved for horizontal mounting.

The following vertical mounting positions are permissible:
- Vertical
- Inclined at an angle between 0° and 90°
- Horizontal

## Use in extended temperature range

The "Temperature Extension Kit" lets you use the HMI device relatively independent of the actual ambient conditions. You accomplish this feat because the "Temperature Extension Kit" creates an environment in the cabinet that is within the limits permitted for operation of the MP 377 15" Touch daylight readable.

If you are going to equip the HMI device with the "Temperature Extension Kit" option, you need to select a cabinet of the appropriate size. Make allowances for the fact that the thermal conductivity of control cabinets made of stainless steel is not as good as that of an aluminum cabinet, for example.

You can find additional information in the "Temperature Extension Kit for MP 377 15" Touch daylight readable"" operating instructions.

# Preparation for mounting

## Mounting cut-out

The following conditions apply to the mounting cutout:

The front material has to consist of sheet steel or material of a strength that corresponds to at least the stability of sheet steel.

| Mounting cutout | Dimensions |
|---|---|
| Material thickness with IP65 degree of protection | 1.5 to 5 mm |
| Material thickness with enclosure type 4X/type 12 (indoor use only) | 3 to 5 mm |
| Permitted deviation from plane<br>This condition must be fulfilled for the mounted HMI device. | ≤ 0.5 mm |
| Permitted surface roughness in the area of the mounting seal | ≤ 120 µm ($R_z$ 120) |

The following table shows the dimensions of the mounting cutout:

| Dimensions | HMI device |
|---|---|
| Width | $367^{+1}$ mm |
| Height | $289^{+1}$ mm |
| Depth | 105.5 mm |

## Maintaining clearances

The HMI device must be installed with the following clearances:

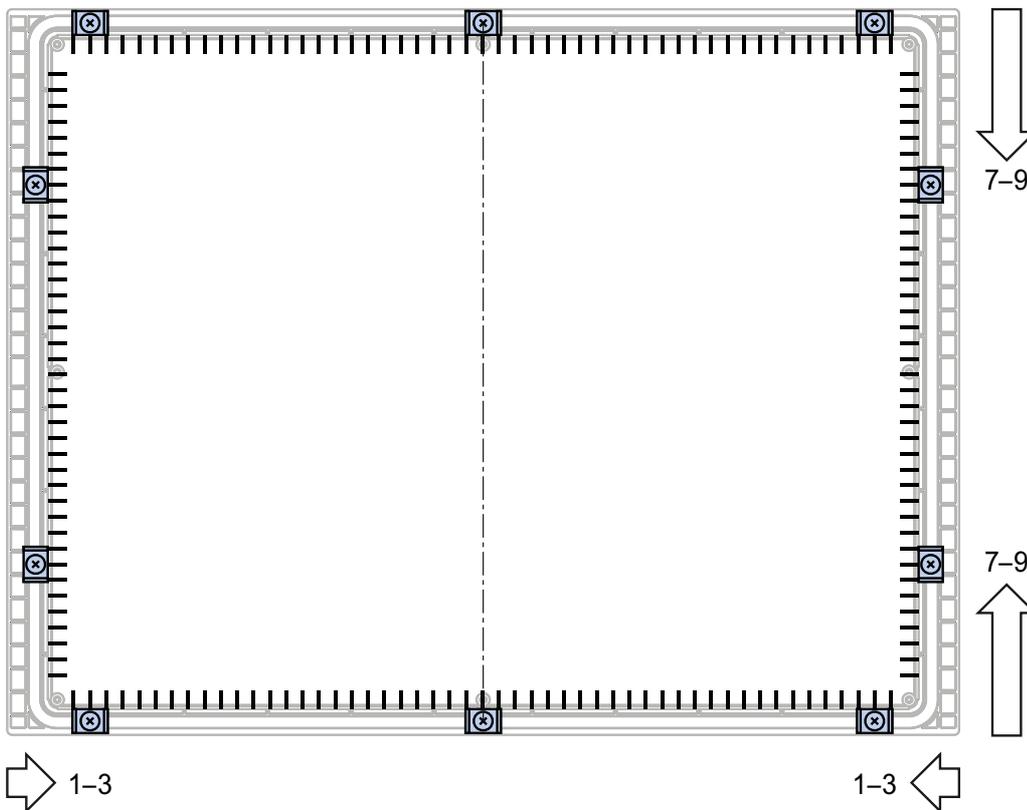| Where | Clearance |
|---|---|
| Observe a clearance above and below the mounting cutout for ventilation of | 50 mm |
| Right and left of the mounting cut-out for the mounting clamps | 18 mm |
| At the rear in addition to the mounting depth of the HMI device at least | ≥ 10 mm |

# Mounting the HMI device

## Requirement

These are the requirements:

- All packaging components and protective foils should be removed from the HMI device.
- The HMI device comes equipped with a mounting seal.
- 10 mounting clamps from the accessory kit
- The mounting cut-out is burr-free.

To ensure the necessary degree of protection on the front of the HMI device, you will have to observe the mounting clamp positions listed below.

## Position of the mounting clamps

The following figure shows the positions for installation of the mounting clamps.



## Procedure

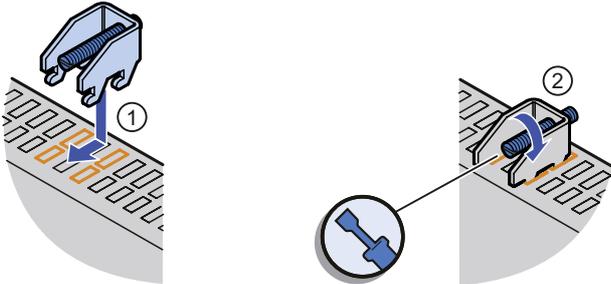| CAUTION |
| --- |
| **Degree of protection on front at risk** |
| If the mounting seal is damaged, if it does not fully rest in the groove for the mounting seal or if the ends of the mounting seal do not meet in the groove, then the degree of protection is not guaranteed for the front of the HMI device. |
| Check the mounting seal and its proper seat. |
| **Damage due to overheating** |
| If the vents are covered on the HMI device or if the air does not flow freely to the fans, the HMI device may be damaged. The approvals and warranties for the HMI device will become void. |
| Ensure unblocked ventilation of the HMI device. |

**Note**

Always mount the HMI device according to the instructions in this manual.

Tighten the threaded pins of the mounting clamps until the HMI device is flush with the front of the control cabinet. You have the option to tighten the mounting clamps with a maximum torque of 0.2 Nm.

Proceed as follows:

1. Check the mounting seal and its proper seat.

2. Insert the HMI device into the mounting cutout from the front and secure the HMI device to prevent it falling out.

3. Insert a mounting clamp into the HMI device.

   Begin with the top center mounting clamp.



4. Fasten the mounting clamp ① by tightening the threaded pin ②.

   Repeat steps 3 and 4 for all mounting clamps.

5. Check the installation.

   If necessary, repeat steps 1 to 5.

**Result**

The HMI device is mounted and the relevant level of protection is ensured at the front.

# Operating the touch screen

The capacitive touch screen of the HMI device differs fundamentally in its behavior from a restive touch screen, for example:

- The touch screen reacts to touches of its surface, not to pressure.
- The touch screen can only be operated with the fingertips.

  The finger can be protected by a thin glove, such as a sterile glove.

  Operation with a touch pen is not possible.

- Touches that last longer than 30 seconds are recognized as faults and ignored.

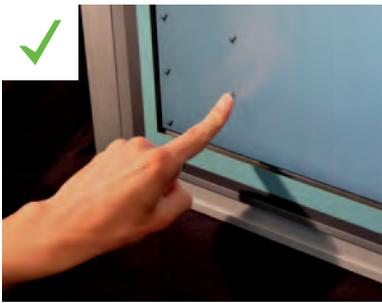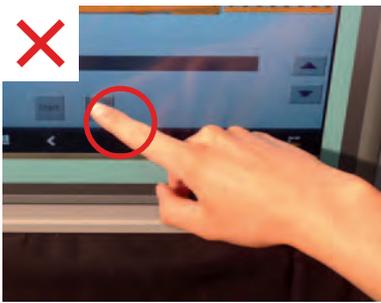| NOTICE |
| --- |
| **Triggering functions unintentionally** |
| The faulty operation of the capacitive touch screen can trigger unintentional functions. |
| Examples of faulty operation: |
| • Operation with a touch pen or with the fingernail. |
| • Operation with a thick glove, such as a work glove. |
| • Touching the touch screen at a slant to the surface. |
| • Touching the touch screen for longer than 30 seconds, for example with the knuckle or by leaning against or propping free hand on display. |
| Read carefully the instructions on the proper operation of the capacitive touch screen in this section. |

**Operation of the capacitive touch screen**

To operate the capacitive touch screen properly, follow these steps:

- Touch the touch screen only with the fingertips.

  The finger can be protected by a thin glove, such as a sterile glove.
- Touch the touch screen vertically to the surface.
- Complete the touch operation within 30 seconds.

The following table shows a summary of the correct and incorrect operation of the capacitive touch screen.

| Correct | Incorrect | |
|---|---|---|
| Operation with the fingertip  | Operation with a touch pen  | Operation with the fingernail  |
| Operation vertically to the surface  | Operation at a slant to the surface  | |
| Operation with only one finger  | Propping your free hand on device  | Unintentional multiple touching of screen  |

# Calibrating the touch screen

## Introduction

Depending on the mounting position and viewing angle, it is possible that parallax may occur when operating the touch screen. To prevent any resulting operating errors, you may need to calibrate the touch screen during the startup phase or while in runtime.

The touch screen is calibrated using 25 calibration points. This setup makes for extremely accurate calibration.

## Requirement

You have opened the "OP Properties" dialog, "Touch" tab, with the "OP" icon.

## Procedure

You use the calibration arrows to calibrate the edge area of the touch screen and calibration crosses to calibrate the central area. To complete the calibration process, press the "Confirm" button.

| NOTICE |
| --- |
| **Timeout after five seconds** |
| Calibration arrows, calibration crosshairs and the "Confirm" button must be touched within a period of five seconds. Otherwise the calibration is cancelled and the "OP Properties" dialog appears again. |
| **Precise contact is necessary** |
| The calibration arrows react to contact precisely at their tips and the calibration crosshairs react to contact precisely at their center. |
| When calibrating, make sure that you touch exactly the tip of the calibration arrows and exactly the center of the calibration crosshairs. |
| **Always use the same finger** |
| Make sure that you always touch the calibration points with the same finger of the same hand. Otherwise the touch screen is incorrectly calibrated. |

Proceed as follows:

1. Click on the "Recalibrate" button.
   The first calibration arrow appears on the display.



2. Touch it briefly and within five seconds exactly on the tip of the calibration arrow ①.
   Confirm the calibration with a green check mark at this location; the next calibration crosshairs will be displayed.

3. Touch all the other calibration arrows that are shown on the display.
   Calibration crosshairs are displayed in the central area of the touch screen.
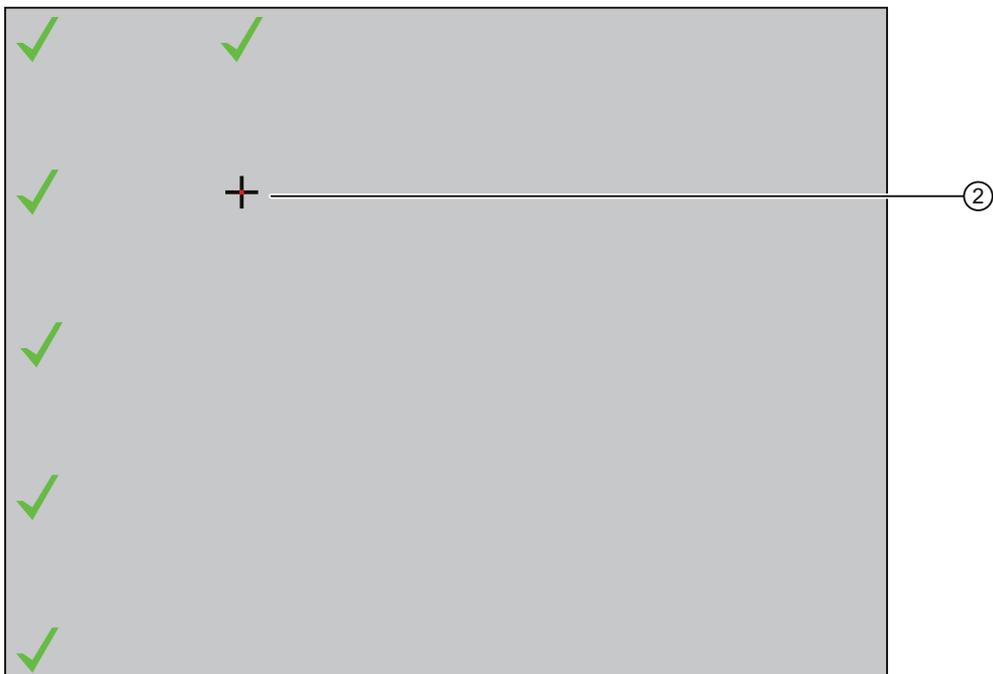


4. Touch exactly the center of the calibration crosshairs ② briefly and within five seconds.
   Confirm the calibration with a green check mark at this position.

5. Continue with the calibration until all 25 calibration points are confirmed with a green check mark.

   The "Confirm" button appears at the end of the calibration process.
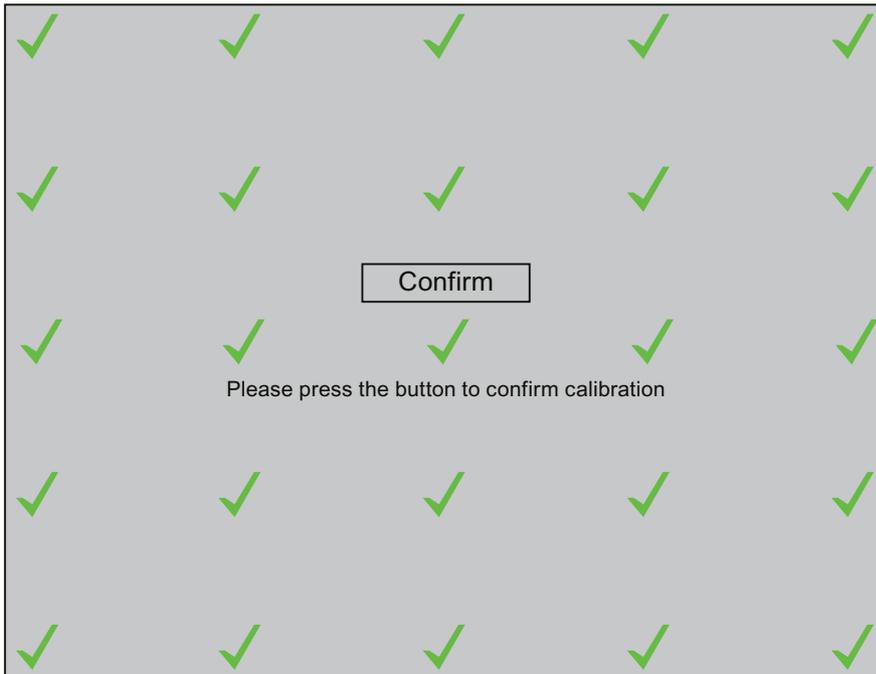


6. Touch the "Confirm" button within five seconds.

   The calibration is saved.

7. Close the "OP Properties" dialog.

**Result**

The HMI device touch screen is calibrated.

# Functional scope with WinCC flexible

| NOTICE |
| --- |
| **HMI device exclusively compatible with WinCC flexible 2008 SP1** |
| The HMI device is supplied with the WinCC flexible Runtime 2008 SP1 software. |
| To configure the HMI device, use only the WinCC flexible 2008 SP1 software. |

**Note**

**Support of direct keys**

The HMI device will be supplied in the first delivery stage without support of direct keys.

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MP 377 15" Touch daylight readable
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