

SIEMENS

SIMATIC HMI

Industrial Flat Panels Basic IFP Basic

Operating Instructions

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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

These operating instructions contain all the information you need for commissioning and operation of the SIMATIC Industrial Flat Panels (IFP) Basic.

It is intended both for programming and testing personnel who commission the device and connect it with other units (automation systems, programming devices), as well as for service and maintenance personnel who install add-ons or carry out fault/error analyses.

Basic knowledge required

A solid background in personal computers and Microsoft operating systems are required to understand this manual. General knowledge in the field automation control engineering is recommended.

Scope of the operating instructions

These operating instructions apply to the following Industrial Flat Panels:

Product name	MLFB
SIMATIC IFP1200 Basic	6AV7862-2BC00-0AA0
SIMATIC IFP1500 Basic	6AV7862-2BD00-0AA0
SIMATIC IFP1900 Basic	6AV7862-2BE00-0AA0
SIMATIC IFP2200 Basic	6AV7862-2BF00-0AA0

Scope of this documentation

The SIMATIC IFP Basic is supplied with the following documents:

- In printed form: Quick Install Guide which includes the device description, installation and commissioning Instructions.
- Electronically as PDF file on the "Tools, Drivers, and Documentation" DVD: SIMATIC IFP Basic operating instructions.
- Electronically as PDF that can be download from Product Support in SIOS. The updates of the document will be published in SIOS.

Conventions

In these operating instructions, the SIMATIC IFP Basic is also referred to as "IFP Basic" or "device".

A touch device generally refers to a device with a touch screen, as opposed to a pure "display device". Touch screen is the general term for a capacitive multi-touch screen and resistive single touch screen.

At some places in these operating instructions, the general term "Windows Embedded Standard" is used to refer to "Windows Embedded Standard 7" . "Windows 7" is used as an abbreviation for "Windows 7 Ultimate".

Figures

This manual contains figures of the described devices. The supplied device may differ in some details from the figures. Within some of the figures, one device is used to represent all SIMATIC IFP Basic.

History

Edition	Comment
03/2019	First Edition

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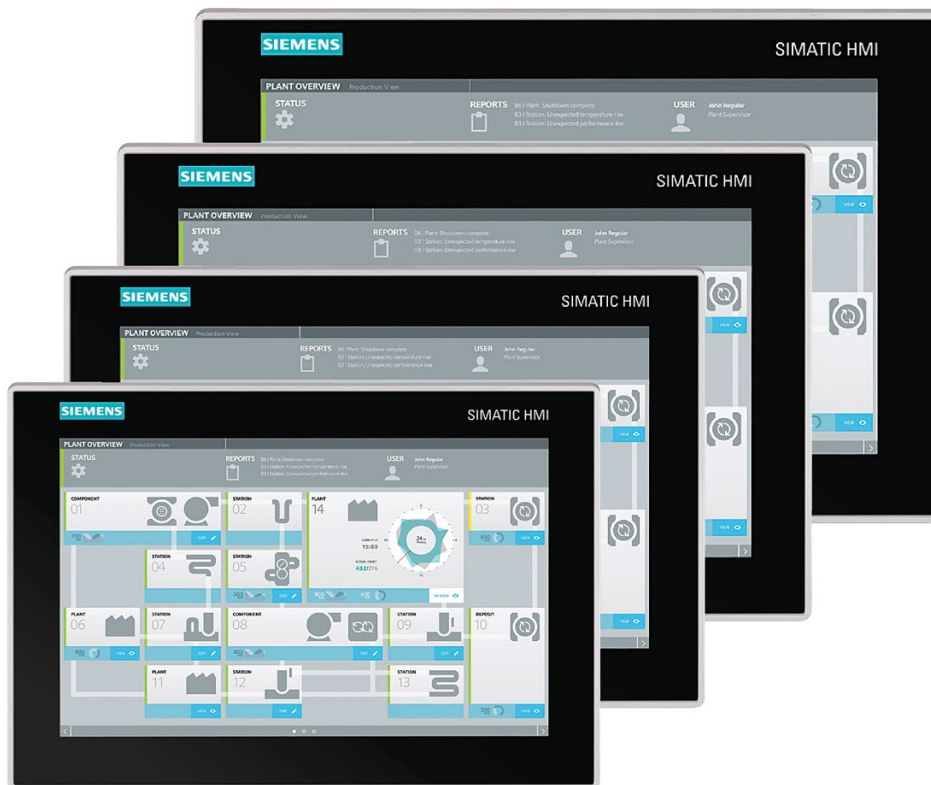
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Overview

1.1 Product description

SIMATIC IFP Basic are touch monitors suitable for industrial use with a brilliant TFT (Thin Film Transistor) display which can be connected to all SIMATIC IPCs as well as almost all generally available PCs.



Features

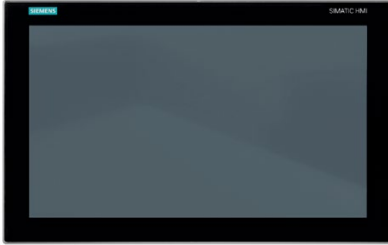


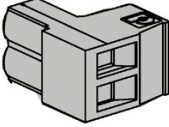
- Rugged front
- Brilliant TFT display with a wide reading angle;
Resistive single touch screen in sizes 12", 15", 19" and 22"
- Can be placed up to 5 m from the IPC
- VGA and DisplayPort V1.2 interface
- Backlighting can be dimmed through software
- 24 VDC power supply

1.2 Scope of delivery

- Degree of protection IP65 for cabinet installation
- Up to 16 million colors

1.2 Scope of delivery

The product package includes the following components:

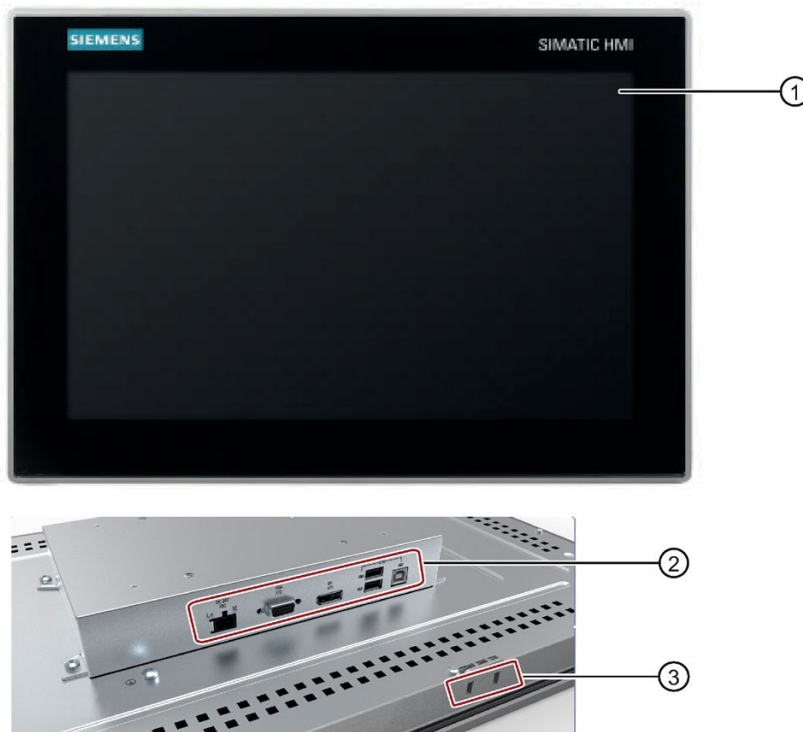
Name	Figure	Number
SIMATIC IFP Basic		1
Installation instructions (Quick Install Guide)		1
Accessory kit "Mounting clips and power supply connector"		20
		1
"Tools, Drivers and Documenta- tion" DVD		1

1.3 Exterior design

1.3.1 IFP Basic

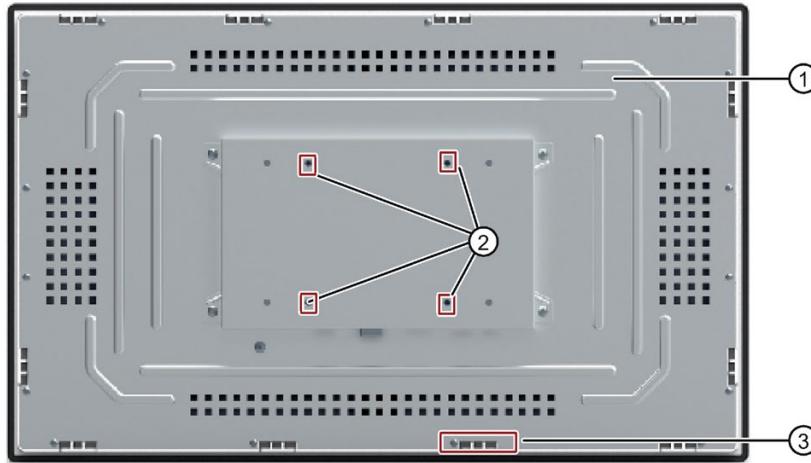
This section describes the design of the monitor and touch devices, using the IFP1500 Basic as an example.

Front view and side view



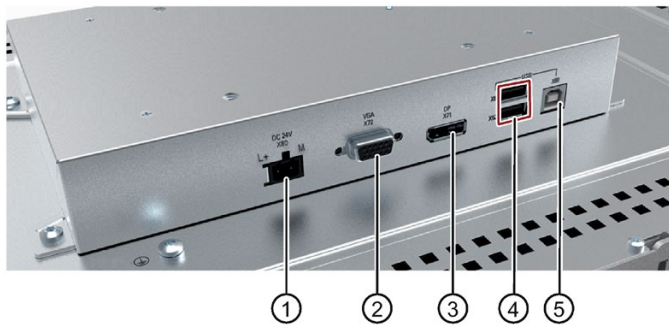
- ① Display/touch screen
- ② Interfaces
- ③ Recesses for mounting clips

Rear view



- ① Rating plate
- ② Holes for VESA mounting
- ③ Recesses for mounting clips

1.3.2 Interfaces



- ① X80 connector for 24 VDC power supply
- ② X72 VGA interface
- ③ X71 DisplayPort interface
- ④ X61, X62 USB 2.0 Type A
- ⑤ X60 USB 2.0 Type B

1.4 Accessories

This section contains the number of accessories available at the time of publication of the operating instructions. You will find additional accessories on the Internet at: Industry Mall (<https://mall.industry.siemens.com/>)

Name	Specification	Article number
DisplayPort line	3 m long	6AV7860-0DH30-0AA0
	5 m long	6AV7860-0DH50-0AA0
USB line	3 m long	6AV7860-0CH30-0AA0
	5 m long	6AV7860-0CH50-0AA0

Safety information

2.1 General safety instructions

The device is designed for use in the industrial sector for operating and monitoring plant processes.

Machinery Directive

 **WARNING**

The device may only be used in machines which comply with the Machinery Directive

The Machinery Directive specifies precautions to be taken when commissioning and operating machinery within the European Economic Area.

Failure to follow these precautions is a breach of the Machinery Directive. Such failure may also cause personal injury and damage depending on the machine operated.

The machine in which the HMI device is to be operated must conform to Directive 2006/42/EC.

Observe the safety and accident prevention instructions applicable to your application in addition to the safety information given in the device documentation.

Strong high-frequency radiation

NOTICE

Observe immunity to high-frequency radiation

The device has an increased immunity to high frequency radiation according to the specifications on electromagnetic compatibility in the technical specifications.

Radiation exposure in excess of the specified immunity limits can impair device functions and result in malfunctions and therefore injuries or damage.

Read the information on immunity to high frequency radiation in the technical specifications.

Additional notes for built-in units

NOTICE

The rear of the device constitutes open equipment.

The rear of the device constitutes open equipment. This means that the device may only be installed in an enclosure or cabinet which provides front access for operating the device. The enclosure, the cabinet or the electrical operating rooms must provide protection against electric shock and the spread of fire. The requirements regarding the mechanical strength must also be taken into account.

Access to the enclosure or cabinet in which the device is installed should only be possible by means of a key or tool and for trained and authorized personnel.

Electrocution risk when control cabinet is open

When you open the control cabinet, there may be a dangerous voltage at certain areas or components.

If you touch these areas or components, you may be killed by electric shock.

Always disconnect the control cabinet from the mains before opening it. Do not plug in or pull out the system component during operation.

ESD

An electrostatically sensitive device is equipped with electronic components. Due to their design, electronic components are sensitive to overvoltage and thus to the discharge of static electricity. Note the corresponding regulations when handling ESD.

Industrial Security

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. use of firewalls and network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit (<http://www.siemens.com/industrialsecurity>).

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under (<http://www.siemens.com/industrialsecurity>).

Disclaimer for third-party software updates

This product includes third-party software. Siemens AG only provides a warranty for updates/patches of the third-party software, if these have been distributed as part of a Siemens software update service contract or officially released by Siemens AG. Otherwise, updates/patches are undertaken at your own risk. You can find more information about our Software Update Service offer on the Internet at Software Update Service (<http://www.automation.siemens.com/mcms/automation-software/en/software-update-service>).

Notes on protecting administrator accounts

A user with administrator privileges has extensive access and manipulation options in the system.

Therefore, ensure there are adequate safeguards for protecting the administrator accounts to prevent unauthorized changes. To do this, use secure passwords and a standard user account for normal operation. Other measures, such as the use of security policies, should be applied as needed.

2.2 Data protection

Siemens observes the data protection guidelines, especially the requirements regarding data minimization (privacy by design). This means the following for this SIMATIC product: The product does not process / save any personal information, but only technical functional data (e.g. time stamps). If the user links this data to other data (e.g. shift plans) or if the user saves personal information on the same medium (e.g. hard disk) and therefore creates a personal reference in the process, the user has to ensure meeting the guidelines regarding data protection.

2.3 Notes about usage

Note

Operate the device only in a normal atmospheric environment

The technical characteristics of the device described in the operating instructions are guaranteed if you operate the device in normal ambient air conditions with usual air composition.

Industrial applications

The device is designed for industrial applications. It conforms to the following standards:

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

Use in mixed-use zone

Under certain circumstances you can use the device in a mixed-use zone. A mixed-use zone is used for housing and commercial operations that do not have a significant impact on residents.

When you use the device in a mixed-use zone, you must ensure that the limits of the generic standard EN 61000-6-3 regarding emission of radio frequency interference are observed. Suitable measures for achieving these limits for use in a mixed-use zone include:

- Installation of the device in grounded control cabinets
- Use of filters in electrical supply lines

Individual acceptance is required.

Use in residential areas

Note

IFP Basic is not intended for use in residential area

The device is not intended for use in residential areas. Operation of a device in residential areas can have a negative influence on radio or TV reception.

Use with additional measures

The device should not be used at the following locations unless additional measures are taken:

In locations with a high degree of ionizing radiation

- In locations with severe operating conditions, for example, due to:
 - Corrosive vapors, gases, oils or chemicals
 - Strong electrical or magnetic fields of high intensity
- In systems that require special monitoring, for example, in:
 - Elevators
 - Systems in especially hazardous rooms

Reducing vibrations

If the device is subjected to greater shocks or vibrations, you must take appropriate measures to reduce acceleration or amplitudes.

We recommend mounting the device on damping materials, such as rubber-metal vibration dampers.

Risk analysis and measures

WARNING

Hazards emanating from unprotected machines or plants

The results of a risk analysis can reveal any hazards emanating from unprotected machinery. Such hazards may pose a risk of personal injury.

You can prevent personal injury caused by hazards as specified in the risk analysis by taking the following measures:

- Installing additional protective devices on machinery and plants. In particular, it must also be ensured that the programming, configuration and wiring of all I/Os used takes place in accordance with the safety performance (SIL, PL or Cat.) identified by the requisite risk analysis.
- Use of the device in accordance with its intended purpose, which can be verified by means of a system function test. This test can detect programming, configuration and wiring errors.
- Documentation of the test results, which must be entered in the relevant safety reports if required.

Environment

NOTICE

Ambient conditions and chemical resistance

Ambient conditions not suited for the device can adversely affect operation. Chemical agents, such as detergents or operating material, can change the color, shape and structure of the device surface. The device may be damaged. This may lead to malfunctions.

For this reason, the following precautionary measures should be taken:

- Only operate the device in closed rooms. Failure to comply with these instructions will render the warranty null and void.
- Only operate the device in the ambient conditions specified in the technical specifications.
- Protect the device against dust, moisture and heat.
- The device may not be used in harsh operating environments, such as areas subject to acidic vapors or gases, without additional protective measures (for example, a clean air supply).
- Only use suitable detergents. Read the information about Chemical resistance of the devices and industrial PCs <http://support.automation.siemens.com/WW/view/en/39718396> on the Internet.

See also

Operating conditions (Page 61)

Technical specifications (Page 58)

Installing and connecting the device

3.1 Preparing for installation

3.1.1 Checking the delivery package

Procedure

1. When accepting a delivery, please check the packaging for visible transport damage.
2. If any transport damage is present at the time of delivery, lodge a complaint at the shipping company in charge. Have the shipper confirm the transport damage immediately.
3. Unpack the device at its installation location.
4. Keep the original packaging in case you have to transport the unit again.

Note

Damage to the device during transport and storage

If a device is transported or stored without packaging, shocks, vibrations, pressure and moisture may impact the unprotected unit. Damaged packaging indicates that ambient conditions have already had a massive impact on the device and it may be damaged.

This may cause the device, machine or plant to malfunction.

- Keep the original packaging.
- Pack the device in the original packaging for transportation and storage.

-
5. Check the contents of the packaging and any accessories you may have ordered for completeness and damage.

6. Please inform the delivery service immediately if the package contents are incomplete or damaged or do not correspond with your order.

 **WARNING**

Electric shock and fire hazard due to damaged device

A damaged device can be under hazardous voltage and trigger a fire in the machine or plant. A damaged device has unpredictable properties and states.

Death or serious injury could occur.

Make sure that the damaged device is not inadvertently installed and put into operation. Label the damaged device and keep it locked away. Send off the device for immediate repair.

NOTICE

Damage from condensation

If the device is subjected to low temperatures or extreme fluctuations in temperature during transportation, as is the case in cold weather, for example, moisture can build up on or inside the device (condensation).

Moisture causes a short circuit in electrical circuits and damages the device.

In order to prevent damage to the device, proceed as follows:

- Store the device in a dry place.
- Bring the device to room temperature before starting it up.
- Do not expose the device to direct heat radiation from a heating device.
- If condensation develops, wait until the device is completely dry before switching it on.

7. Keep the enclosed documentation in a safe place. You need the documentation when you commission the device for the first time.
8. Write down the identification data of the device.

3.1 Preparing for installation

3.1.2 Identification data of the device

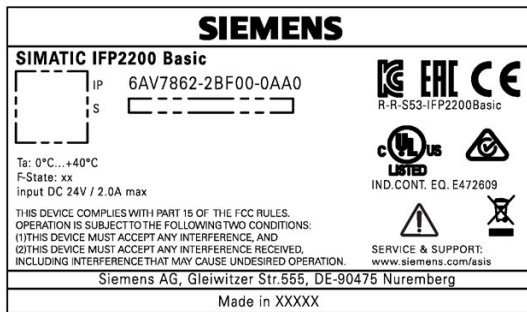
The device can be clearly identified with the help of this identification data in case of repairs or theft.

Enter the identification data in the following table:

Order number	6AV...
Serial number	S V
Product version	FS

Procedure

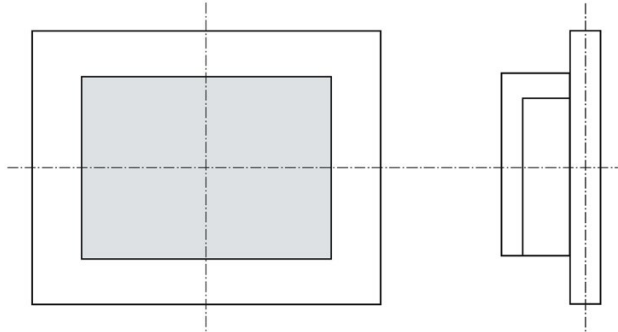
Get the information of order number, serial number, and production version (FS) from the product label. Below is an example of a product label.



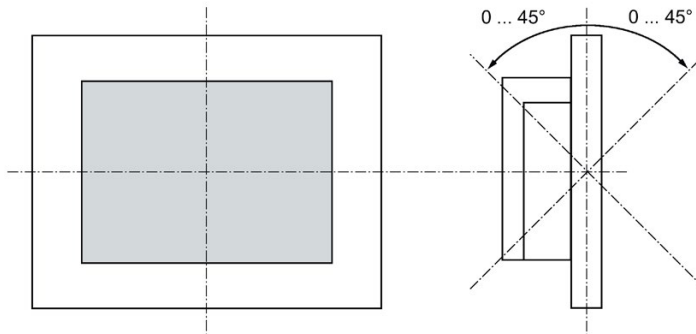
3.1.3 Permitted mounting positions

The device may be mounted in the following positions:

- Standard position: horizontal



- Inclined installation in horizontal format with a vertical inclination of maximum $\pm 45^\circ$

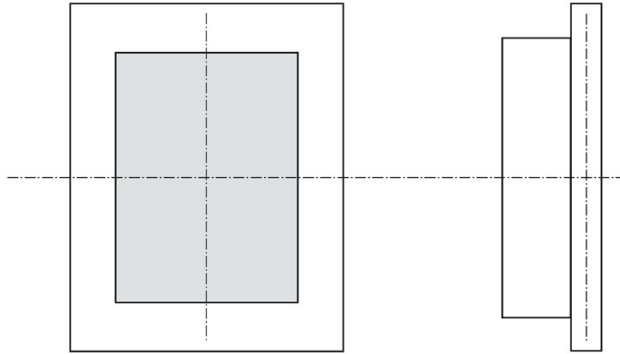


For horizontal installation, the following ambient temperatures are permitted:

Maximum ambient temperature at the device	Comment
45 °C (IFP1200 Basic, IFP1500 Basic, IFP1900 Basic) 40 °C (IFP2200 Basic)	The device enclosure fulfills the requirement of a fire protection enclosure.

3.1 Preparing for installation

- Vertical installation: display turned through $\pm 90^\circ$ compared with the standard position



For vertical installation, the following ambient temperatures are permitted:

Maximum ambient temperature at the device	Comment
45 °C (IFP1200 Basic, IFP1500 Basic, IFP1900 Basic) 40 °C (IFP2200 Basic)	The device must be installed in a fire protection enclosure (see "General safety instructions (Page 12)").

3.1.4 Preparing the mounting cutout

Note

Stability of the mounting cutout

The material in the area of the mounting cutout must provide sufficient strength to guarantee the enduring and safe mounting of the device.

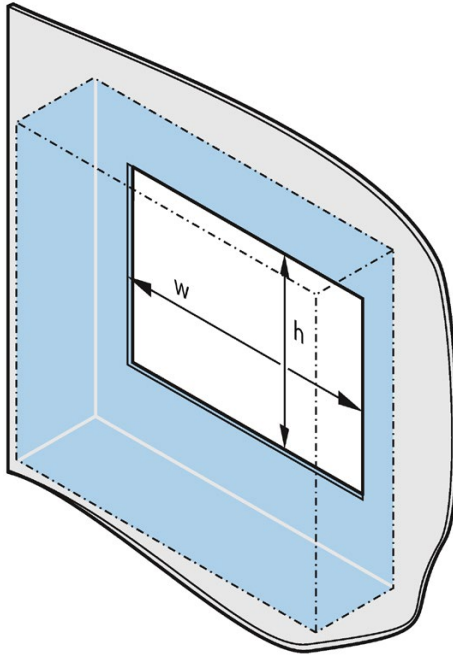
To achieve the degrees of protection described below, it must be ensured that deformation of the material cannot occur due to the force of the mounting clips or operation of the device.

Degrees of protection

The degrees of protection of the device can only be guaranteed if the following requirements are met:

- In order to achieve IP65 protection degree, the material thickness for the mounting cutout should be: 2 mm to 6 mm
- Permissible deviation from plane at the mounting cutout: ≤ 0.5 mm
This condition must be fulfilled for the mounted device.
- Permissible surface roughness in the area of the seal: $\leq 120 \mu\text{m}$ ($R_z 120$)

Dimensions of the mounting cutout



The following table shows the dimensions of the required mounting cutout:

Mounting cutout	Device			
	12 Inch	15 Inch	19 Inch	22 Inch
Width w *	302 ⁺¹ mm	388.4 ⁺¹ mm	455 ⁺¹ mm	522.2 ⁺¹ mm
Height h *	208 ⁺¹ mm	240.5 ⁺¹ mm	279.2 ⁺¹ mm	316.8 ⁺¹ mm

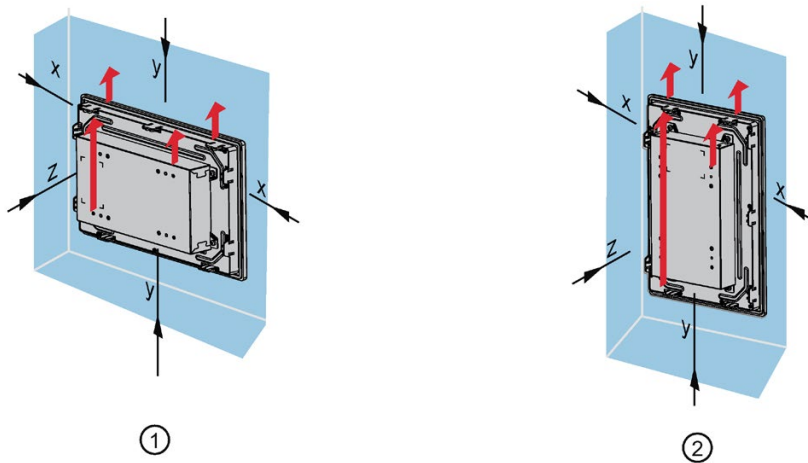
* Width and height should be reversed accordingly when mounting in vertical format.

3.1.5 Checking clearances

The following clearances are required around the device to ensure adequate self-ventilation:

- At least 50 mm to the right and left of the mounting cutout (in x direction) to allow for insertion of the mounting clips during installation
- At least 50 mm above and below the mounting cutout (in y direction) for ventilation
- At least 10 mm behind the rear panel of the device (in z direction)

The figure below shows the clearances required with horizontal and vertical installation of the device:



- ① Clearance for horizontal installation (all devices)
- ② Clearance for vertical installation (monitor and touch versions only)
- x At least 50 mm distance
- y At least 50 mm distance
- z At least 10 mm distance

Note

Ensure that the maximum ambient temperature is not exceeded when mounting the device in a cabinet and especially in a closed enclosure.

3.2 Installing the IFP Basic

3.2.1 Notes on installation

Before installing the device, please ensure that the installation location complies with the following:

 WARNING
--

Risk of fire

The device is classified as "OPEN EQUIPMENT" for use in the area of industrial control equipment in accordance with UL61010-2-201. In the event of overheating, the device may discharge burning materials that can cause a fire.

Keep in mind:

- | |
|--|
| <ul style="list-style-type: none">• The installation of the device in an enclosure conforming to UL61010-2-201 is a mandatory requirement for approval and operation in accordance with UL61010-2-201. |
|--|

Note

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment might be impaired.

- Ensure that the protective contact socket of the building installation is easily accessible and that there is a mains disconnect switch in switchgear cabinet installations.
- Position the device so that it is not exposed to direct sunlight.
- Position the device so that it is easily accessible for the operator.
- Choose a suitable installation height.
- Ensure that the air vents of the device are not covered as a result of installation. Note the permitted mounting positions.


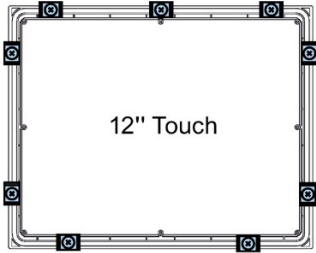
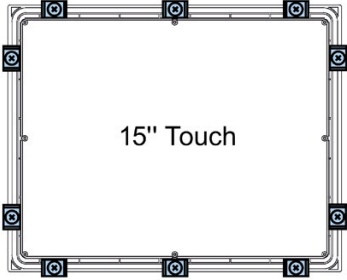
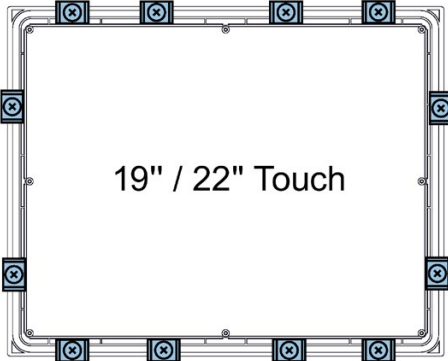
3.2.2 Secure with mounting clips

Positions of the mounting clips

To achieve the degree of protection for the device, the positions for the mounting clips shown below must be adhered to.

The positions of the mounting clips are marked by stamps on the cutouts. Fit the mounting clips in all the stamped cutouts.

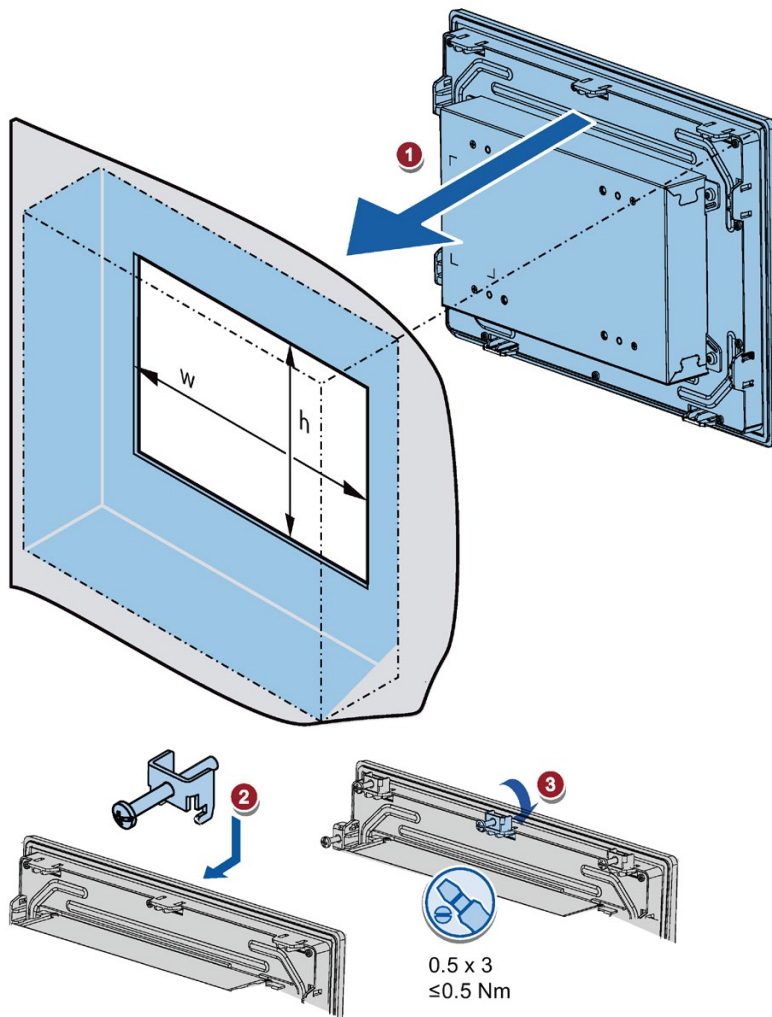
The following table shows the type, number, and position of the mounting clips needed for the respective devices.

Device	Mounting clips		
	Type	Quantity	Position on the device
12" display		9	 <p>12" Touch</p>
15" display		10	 <p>15" Touch</p>
19" display 22" display		12	 <p>19" / 22" Touch</p>

Requirement

- All packaging components and protective films should be removed from the device.
- To install the panel, you need the mounting clips from the accessories kit.

Procedure



- 1** Insert the panel device into the mounting cutout from the front.
- 2** Insert a mounting clip into the cutout provided on the device.
- 3** Tighten the threaded pin to secure the mounting clip. The threaded pins have a maximum tightening torque of 0.5 Nm.
- 4** Repeat steps 2 and 3 for all mounting clips.
- 5** Check the fit of the mounting seal.

Result

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

3.2.3 Fastening a device using a VESA adapter

You can also fasten the SIMATIC IFP Basic using a VESA (Video Electronics Standards Association) adapter.

Different models of VESA adapters are offered by third-party manufacturers.

Note

To meet UL requirements, the type of VESA adapter must be an UL1678 listed device.

When fastening the VESA adapter, shock or vibration is not permitted.

NOTICE

Degree of protection for overall device
--

If you are fastening the device via a VESA adapter, degree of protection of the device will be lost. Spray and water jets as well as penetrating substances can then damage the device.

NOTICE

Dimensioning of the VESA adapter

When selecting the VESA adapter, make sure that it is designed for at least four times the weight of the device.
--



WARNING

The device must be mounted securely
--

Inadequately dimensioned fastening material may cause the device to fall down. Serious bodily injury may result.
--

Make sure that fasteners are adequately dimensioned during installation of the device. Make sure to consider the weight of the device and the forces acting on the device when dimensioning the fasteners. This applies in particular to dynamic load of the device. All fasteners including mounting surfaces, support arm systems, and fastening elements such as screws must be able to carry at least four times the weight of the device.
--

Observe any further statutory specifications applying at the location of use of the device and further applicable regulations with regard to the fastening of the device.

SIMATIC IFP Basic is VESA compliant and can be mounted on all kinds of applications utilizing the standard VESA100 mounting interfaces.

Fasten the VESA adapter with the designated screws (M4).

Requirements

- All packaging components and protective films have been removed.
- VESA support application (for example, an arm or a stand) from a third party



Procedure

Note

Make sure your support application is VESA100 compliant. Otherwise, you cannot use it to support the IFP Basic.

Note

Observe the torques

If you use **too much** torque to tighten the screws of the screws for fastening the device to a support arm or stand, the support arm may be damaged. If you tighten the screws with a torque that is **too low**, the device is not sealed.

Tighten the screws with the following torques, which may not be exceeded.

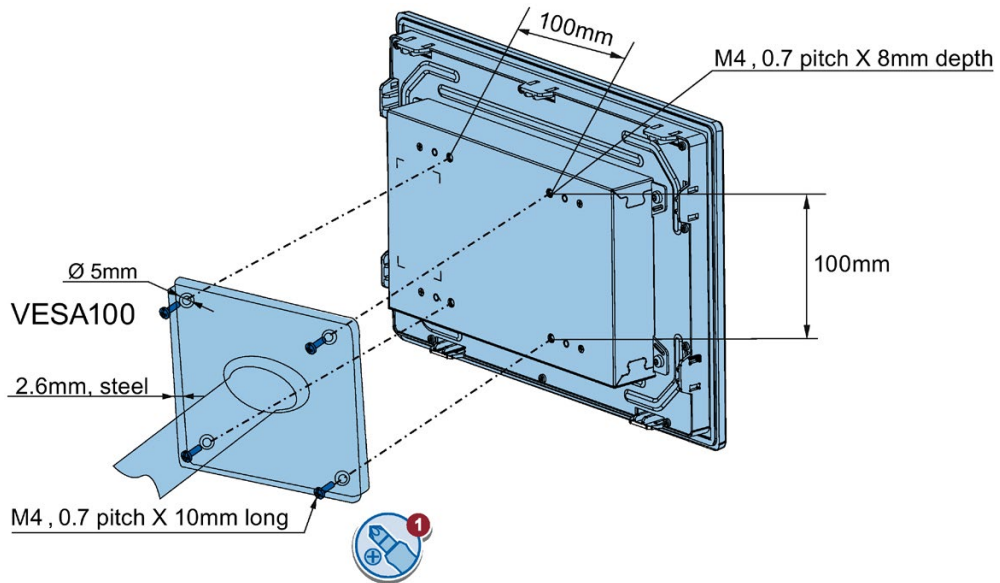
Adhere to the torque specifications of the third-party vendors:

Siemens recommends you use 1.5 Nm tightening torque to connect the device and the VESA mounting interface

VESA adapter does not influent heat dissipation.

3.3 Connecting the device

Secure the device to the mounting interface with four M4 x 10 screws.



3.3 Connecting the device

3.3.1 Notes on connection

Requirement

- The device has been installed according to the information provided in these operating instructions.


Connecting cables

⚠ CAUTION
Use copper cables at connectors with terminal connections
Use copper (Cu) cables for all supply lines that are connected to the device with terminals, e.g. 24 VDC power supply cables to the 24 VDC power supply connectors.
Utiliser des câbles en cuivre sur les connexions à bornes
Utilisez des câbles en cuivre (Cu) pour tous les câbles d'alimentation qui sont raccordés à l'appareil par des bornes, par exemple les câbles d'alimentation 24 V CC sur le connecteur d'alimentation 24 V CC.

Connection sequence

Connect the device in the following sequence:

1. Earth connection (Page 32)

 WARNING
<p>Life-threatening voltages are present if the device not correctly isolated.</p> <p>If you touch the device, you may be killed by electric shock.</p> <p>Do connect the PE conductor before you power on the device.</p>

2. Power supply (Page 33)

Perform a power-up test to ensure the power supply is connected with the correct polarity.

3. Connecting IFP Basic to a PC (Page 35)
4. I/O devices (Page 36), if needed

Note

Damage to the device

Failure to adhere to the connection sequence can damage the device.

Make sure you connect the device according to sequence listed above.

You disconnect the device in the reverse order.

Connecting the cables

NOTICE
<p>Observe local installation regulations</p> <p>Observe the local installation guidelines and the local installation conditions, such as protective wiring for power supply cables, when connecting the cables.</p> <p>Short-circuit and overload protection</p> <p>Different measures for short-circuit and overload protection are required when setting up an entire plant. The type of components and the level of obligation for the protective measures depends on the regulation that applies to your plant configuration.</p>

- When connecting the cables, make sure that you do not bend the contact pins.
- Secure each cable connector with a cable tie.
- Provide adequate strain relief for all cables.
- The pin assignment of the ports is described in the technical specifications.

3.3.2 Earthing the device

The relevant symbol on the device identifies the terminal for the earth connection.



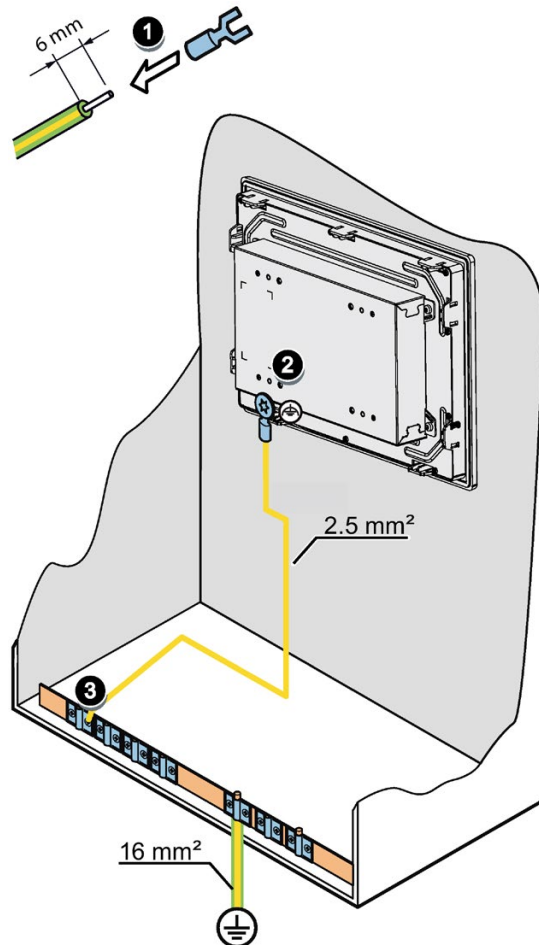
Requirement

- T20 screwdriver
- Cable lug for M4
- Protective conductor or equipotential-bonding cable with minimum cross-section 2.5 mm²

Procedure

The figure below shows the connection of a function earth.

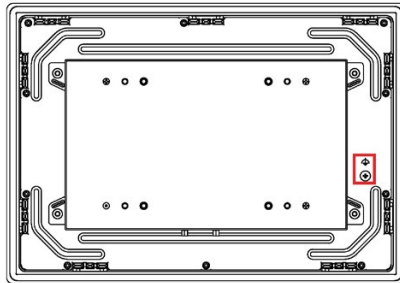
1. Clamp the cable lug onto the ground cable:
 - PE conductor: yellow-green, as depicted.
 - Equipotential bonding: black
2. Using the M4 screw, firmly attach the cable lug to the earth connection on the device with a torque of 0.8 Nm.
3. Connect the function earth to the earth connection of the cabinet or plant in which the device is installed.



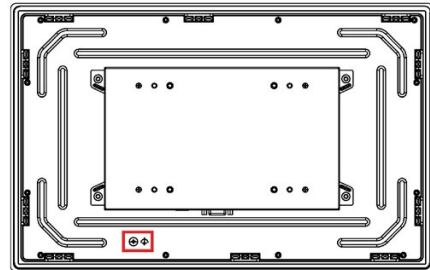
Location of function earth

The location of function earth for SIMATIC IFP1200 Basic is different from other IFP Basic.

SIMATIC IFP1200 Basic



SIMATIC IFP1500/1900/2200 Basic



3.3.3 Connecting devices with 24 VDC 2-pin

You can operate the IFP Basic with the voltage 24 VDC 2-pin.

Note before connecting the device

NOTICE

Safe electrical isolation

The device may only be connected to a 24 VDC power supply that meets the requirements of a safe extra-low voltage (SELV) according to IEC/EN/DIN EN/UL 61010-1 or the requirements of a secure extra-low voltage (SELV/PELV) according to IEC 61010-1.

NOTICE

Damage to device due to inadequate cable cross-section

Using power supply cables with cross-sections that are too small can damage the device in the event of a short circuit. The power supply connector is designed for cables with a cross-section between 0.75 mm² and 2.5 mm².

Note

Siemens recommends you use 5 lb-in (0.56Nm) to fasten the power supply cable.

Note

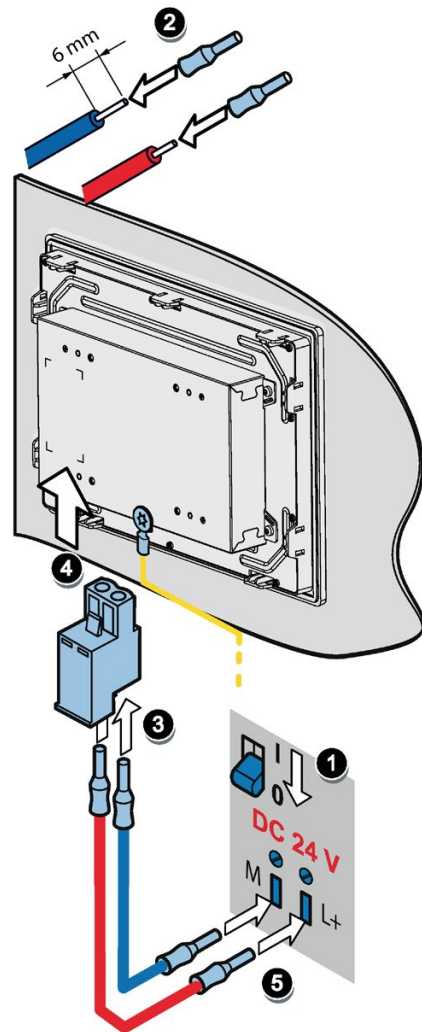
The 24 VDC power supply must be adapted to the input data of the device, see section "Technical specifications (Page 58)".

Note

To turn off the device completely, switch off the external power supply. The device does not have an on/off switch.

Procedure

1. Switch off the 24 VDC power supply.
2. Ensure that the cable ends of the power supply lines are fitted with end sleeves.
3. Fasten the end of a connecting cable L+ and a connecting cable M with the supplied power supply connector.
4. Connect the power supply connector to the relevant terminal on the device.
5. Connect the remaining L+ and M ends with the respective terminals on the 24 VDC power supply.

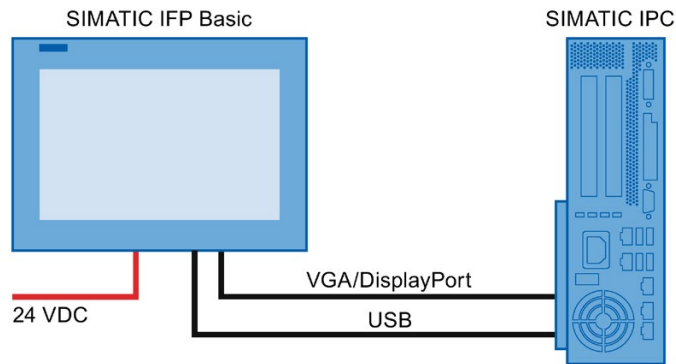


See also

Designing interference-free controllers Designing interference-free controllers
(<https://support.industry.siemens.com/cs/ww/en/view/59193566>)

3.3.4 Connecting IFP Basic to a PC

Connection diagram



Requirement

Ensure you have the following articles before connecting the IFP Basic.

Note

When VGA port and DP port are connected to two hosts, IFP displays the signals from DP port.

- VGA/DisplayPort cable
- USB cable (type B to type A)
- Power cable
- PC

Procedure

1. Connect the Flat Panel and the PC using a VGA or DisplayPort line.



2. Connect the device and the PC with a USB line (type A to type B).



3.3.5 Connecting a USB device

You can connect the following industry-standard devices to the USB ports of the device:

- External mouse
- External keyboard
- USB flash drive

Note when connecting

Note

Use of USB devices

- Wait at least ten seconds between removal and reconnection of USB devices.
 - When using standard USB peripherals, bear in mind that their EMC immunity level is frequently designed for office applications only. These devices may be used for commissioning and servicing. However, only industry-standard devices are allowed for industrial operation.
 - Peripherals are developed and marketed by individual vendors. The respective supplier offers support for the I/O devices. Moreover, the terms of liability of the individual vendors or suppliers apply here.
-

Note

Functional problem with USB port

If you connect an external device with a 230 VAC power supply to the USB port without using a non-insulated installation, you may experience functional problems.

Excessive rated load on port

A USB device with too high a power load may possibly cause functional problems.

Observe the values for the maximum load of the USB interface. You will find the values in the section "Technical specifications" (Page 58)".

3.4 Installing the tool and driver

Requirements

- Windows 7/Windows Embedded Standard 7, Windows 10 Operating System is installed in your IPC.
- You need to connect your IFP to a PC with Windows 7/Windows Embedded Standard 7, Windows 10 Operating System installed.
- Embedded or external DVD drive.

Tool and driver list

The tool and driver need to be installed on the PC:

- Brightness Adjustment Tool
- Touch Driver

To open the list

1. Put the *Documentation and Drivers* DVD into the DVD drive.
2. Double-click **My Computer** → **Documentation and Drivers** to open the DVD.
3. Double-click **index.htm**.
4. Click **Driver and Tool** to open the driver list.


The available driver list opened.

Alternative way to access the drivers

You can also find the drivers in the DRIVER folder of the *Documentation and Drivers* DVD. Below is an example path.

E:\DRIVER

Step 1: install Brightness Adjustment Tool

1. Click **Brightness Adjustment Tool**.
2. Click  to install the Tool.
3. Click **Next** to continue.
4. Click **Install** to allow the computer to start the installation.

The installation starts.

5. Click **Finish**.


The Brightness Adjustment Tool installation is completed.

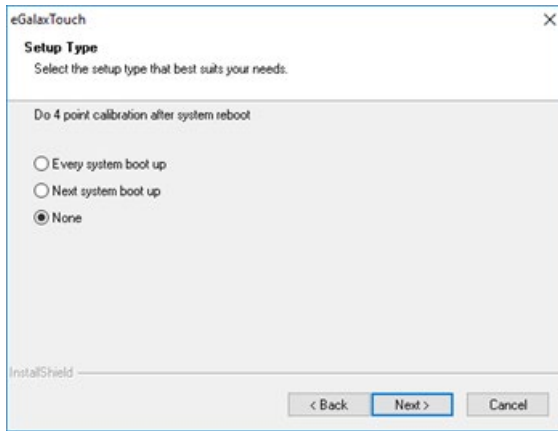
Prerequisites for installing the touch driver

- Make sure you connect the IFP basic to the computer with touch cable before your installing the driver.
- If you use Windows Embedded standard 7 or Windows 7, make sure you have the Windows patch KB3033929 installed first.

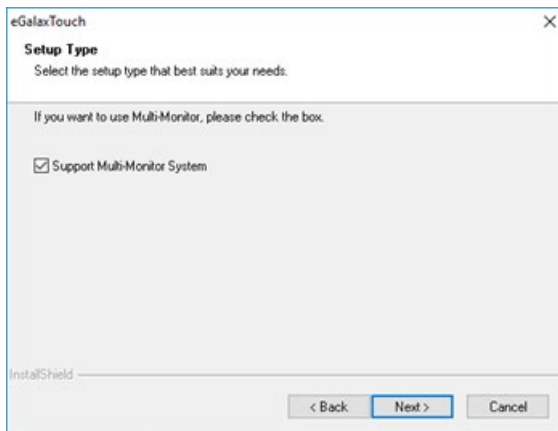
You can find the drivers in the path "\\DRIVER\KB3033929" of the *Documentation and Drivers* DVD.

Step 2: install the touch driver

1. Click **eGalax Touch Driver**.
2. Click  to install the touch driver.
3. Click **Yes** to confirm the user account control question.
4. Click **Next** to continue.
5. Select the radio button next to "I accept the terms of the license agreement" to accept license agreement and Click **Next**.
6. Click **Next** to continue.
7. Select the setup type that suits you needs and click **Next**.



8. If you need to support Multi-monitor, select the radio button next to "Support Multi-monitor System" and click **Next**.
9. Select the folder where you want install the touch driver and click **Next**.
10. Click **Next** to move on.



The installation starts.

11. Click **Finish**.

Commissioning the device

If you operate the device exclusively as monitor and do not change the brightness, you do not need to commission the device. To use advanced functions of the device, perform the following commissioning.

Requirement

- The Industrial Flat Panel is mounted according to the Quick Install Guide.
- The Industrial Flat Panel is connected according to the Quick Install Guide and connected to a PC for commissioning.

Note

The supplied connecting cables are only intended for commissioning and not for continuous operation.

- DVD "Documentation and Drivers"

Procedure

1. Switch on the PC.
2. Switch on the power supply of the IFP Basic.
3. Insert the "Documentation and Drivers" DVD into the CD/DVD drive of the PC.
Alternative: Insert the USB stick with the copy of the DVD into a USB port on the PC.
4. Follow the instructions for installation.

Operating the device

5.1 Operator input options

Depending on your device and the connected I/O devices, the following operator input options are available:

- Touch screen for touch device

! CAUTION
Unintentional actions with touch screen operation
If you touch the touch screen while system-internal processes are running, unintended reactions of the device may be triggered.
Do not touch the screen in the following situations:
<ul style="list-style-type: none">• During the boot process• When plugging or unplugging USB components• While Scandisk is running• During a BIOS update

NOTICE
Damage to the touch screen
Hitting the touch screen with hard objects may damage it and can result in a total failure of the touch screen.
Only touch the touch screen with your fingers or a suitable touch stylus.

- External keyboard, connected via USB
- External mouse, connected via USB

5.2 Operating a device with resistive single touch screen

When you touch an object on the single touch screen, the corresponding function is performed.

WARNING

Personal injury or property damage due to incorrect operation

Incorrect operation of devices with a touch screen can occur. This can result in personal injury or property damage.

Take the following precautions:

- Configure the plant so that safety-related functions are not operated with the touch screen.
- Always touch only a single point on the touch screen.
- Calibrate the touch screen, at the latest when the touch screen becomes inaccurate or does not respond despite repeated touches.
- Switch off the device for cleaning and maintenance.
- Make sure that the touch screen is kept free of dirt.

NOTICE

Damage to the touch screen

Touching the touch screen with pointed or sharp objects can damage it and lead to a significant reduction in service life or even total failure of the touch screen.

Do not touch the touch screen with pointed or hard objects. Only touch the touch screen with your fingers, a touch stylus or an approved touch glove.

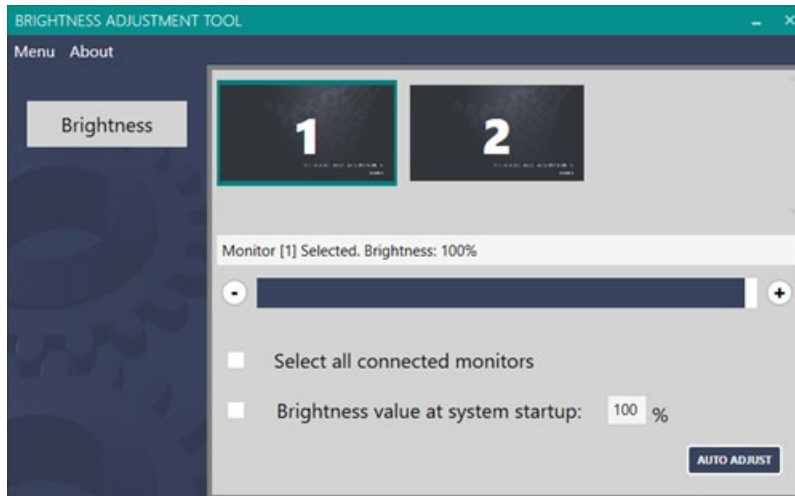
Note

Appearance of blisters under extreme ambient conditions

Under extreme environmental conditions such as high atmospheric humidity and temperature, bubbles can form on the touch surface in rare cases. This only affects the appearance and does not represent any functional restriction.

5.3 Using the Brightness Adjustment Tool

Ensure you have installed the Brightness Adjustment Tool.



Adjust the brightness

1. Click the monitor to select the monitor you want to adjust the brightness.
 - To select multiple monitors, click the connected monitors one by one. You can select all connected monitors by ticking "Select all connected monitors".
 - To unselect the monitor, click the selected monitor again.
2. Adjust the brightness in either of the following ways:
 - click "+" or "-"
 - Drag and drop the brightness slider.

Set the brightness at system startup to 100%

Tick "set the brightness value at system start up".

Adjust the VGA display

AUTO ADJUST

When the VGA display is abnormal (for example, incomplete display), you can adjust the display as the following steps:

1. Click the monitor to select the monitor you want to adjust the display.
2. Click "AUTO ADJUST".

For more information on the VGA display, refer to Troubleshooting (Page 69).

AUTO Color

When the VGA color display is abnormal, you can adjust the color as the following steps:

1. Click the monitor to select the monitor you want to adjust the color.
2. Open a picture which only contains black and white color as the background.
3. Select "Menu" --> "AUTO Color".

Note

The current color setting cannot be restored after you select "AUTO Color".

5.4 Using the touch driver

This chapter provides some tips on using the touch driver. For more information on using the touch driver, refer to the driver help in the "Documentation and Drivers" DVD.

Open the On-Screen touch Keyboard

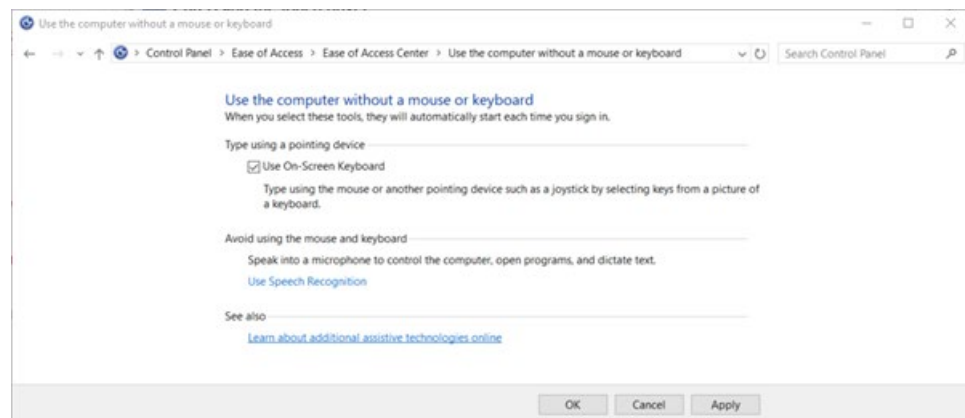
Siemens recommends you to turn on the On-Screen Keyboard for entering characters.

Go to **Start**, then select **Settings --> Ease of Access --> Keyboard**, and turn on the toggle under Use the **On-screen Keyboard**.

A keyboard that can be used to move around the screen and enter text will appear on the screen. The keyboard will remain on the screen until you close it.

Enable start On-Screen Keyboard each time you sign in

Go to **Control Panel-->Ease of Access Center --> Use the computer without a mouse or keyboard**, Select the radio button next to "Use On-Screen Keyboard".

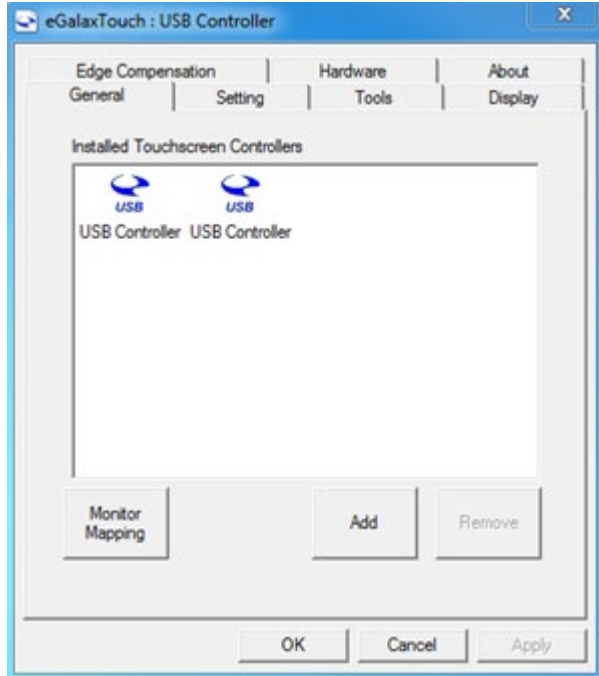


Assign name to the monitors

eGalaxTouch uses the same name for all the monitors it detects, Siemens recommend you change the touch's name after you connect it.

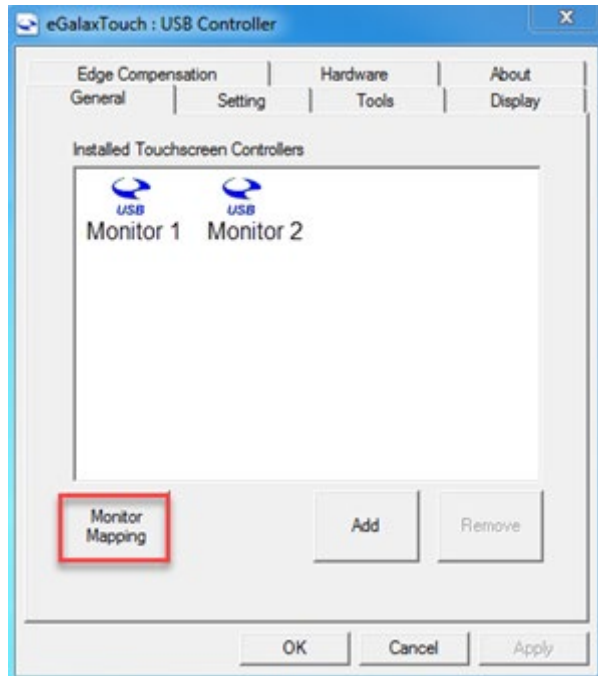
Note

To distinguish the monitor, you can connect one monitor and change its name and then connect the second monitor.



Map the monitor

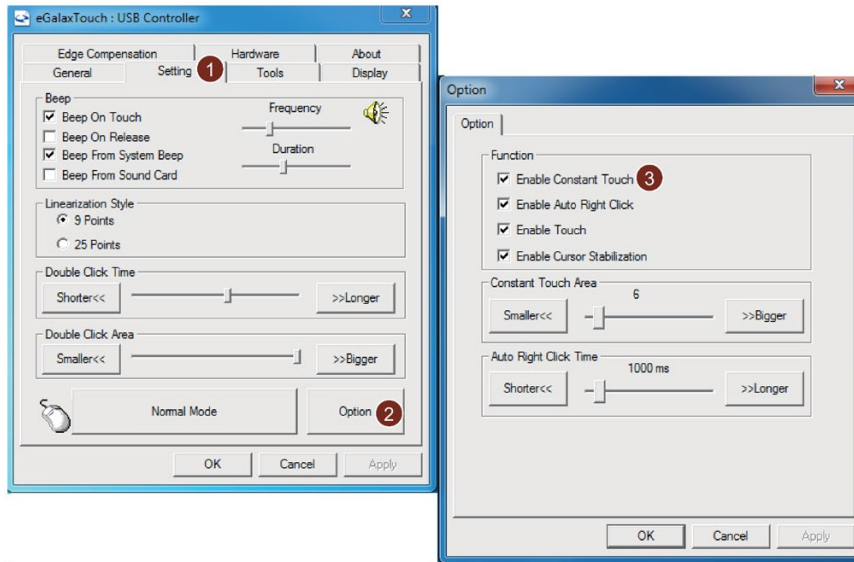
If you use multiple monitors, do map the monitor after you connected them.



Adjust constant touch area

To adjust the constant touch area, follow the below steps:

1. Click **Setting**-->**option**.
2. Select **Normal Mode**.
3. Select the radio button next to "Enable constant touch", and adjust the constant touch area by clicking "Bigger" and "Smaller" or slide the slider.



Enable constant touch

To enable constant touch, set the mode as **Normal mode** in the setting page.

Maintaining and servicing your device

6.1 General information on maintenance and servicing

Observe the following when servicing and repairing protective features such as ground circuits, overvoltage protection components or batteries:

- Observe the maintenance and replacement intervals specified by the respective manufacturer for all system components.
- Replace system components, including cables, fuses and batteries only with equivalent components approved by the respective manufacturer.

6.2 Cleaning the screen

Scope of maintenance

Note

When dust has collected on the device, the dust deposits must be removed at appropriate time intervals.

Cleaning agents

Use dish soap or foaming screen cleaner only as cleaning agents.

NOTICE
<p>Damage to the device caused by impermissible cleaning agents</p> <p>Impermissible and unsuitable cleaning agents may cause damage to the device.</p> <p>Use dish soap or foaming screen cleaner only as cleaning agents. Do not use the following cleaning agents:</p> <ul style="list-style-type: none"> • Aggressive solvents or scouring powder • Steam jets • Compressed air

Procedure

1. Switch off the device. This prevents the accidental triggering of functions when the screen is touched.
2. Dampen the cleaning cloth.

6.3 Spare parts and repairs

3. Spray the cleaning agent on the cloth and not directly on the device.
4. Clean the device with the cleaning cloth.

6.3 Spare parts and repairs

 **WARNING**

Risk of bodily injury or equipment damage due to unauthorized opening or repairing

Bodily injury or considerable equipment damage may result from the unauthorized opening or repairing of the device. Do not carry out any repairs on your own. Repairs may only be carried out by authorized qualified personnel at the manufacturer's site.

In case of repair, the device must be shipped to the Return Center in Erlangen. Only repair by the Return Center in Erlangen is permitted.

Depending on the work necessary to repair the device, the Center may decide to give you a credit. In this case, it is your responsibility to order a new device.

The address is:

Siemens AG
Industry Sector

Postfach 48 48
900260 Nuremberg Germany

6.4 Recycling and disposal

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

Technical information

7.1 Certificates and approvals

Note

Approvals on the rating plate

The following overview provides information on possible approvals. Only the approvals on the rating plate of the specific device apply.

CE marking



The devices meet the general and safety-related requirements of the following EU directives and conform to the harmonized European standards (EN) for these devices published in the official gazettes of the European Community and in the EU Declarations of Conformity:

- 2014/35/EU "Electrical equipment for use within certain voltage limits" (Low-Voltage Directive)
- 2014/30/EU "Electromagnetic Compatibility Directive" (EMC Directive)
- 2011/65/EU "Directive of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment" (RoHS Directive)

When the device has Ex approval (see nameplate below), the following also applies:

- 2014/34/EU "Equipment and protective systems intended for use in potentially explosive atmospheres" (Directive for Explosion Protection)

EU Declarations of Conformity

The EU Declarations of Conformity are available to the relevant authorities at the following address: IFP Basic certifications

<https://support.industry.siemens.com/cs/ww/en/ps/16788/cert>

Siemens AG
Digital Factory
Factory Automation
DF FA AS SYS
P.O. Box 1963
D-92209 Amberg, Germany

Software license agreements

If the device is supplied with preinstalled software, you must observe the corresponding license agreements.

UL approval

See the following notes:

- The device shall be supplied from an isolating source, rated 24 VDC.

The following approvals are available for the device:

- Underwriters Laboratories (UL) in accordance with Standard UL61010-1 and UL61010-2-201 (IND.CONT.EQ), File E472609
- Canadian National Standard CAN/CSA No.61010-1-12 and CAN/CSA C22.2 No.61010-2-201



FCC and Canada

USA	
Federal Communications Commission Radio Frequency Interference Statement	This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
Shielded Cables	Shielded cables must be used with this equipment to maintain compliance with FCC regulations.
Modifications	Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.
Conditions of Operations	This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
CANADA	
Canadian Notice	This Class A digital apparatus complies with Canadian ICES-003 (A).
Avis Canadien	Cet appareil numérique de la classe A est conforme à la norme NMB-003 (A) du Canada.

Responsible party for Supplier's Declaration of Conformity

Siemens Industry, Inc.
 Digital Factory - Factory Automation
 5300 Triangle Parkway, Suite 100
 Norcross, GA 30092
 USA
 Mail to: (amps.automation@siemens.com)

KOREA



This product meets the requirements of Korean certification.

This product satisfies the requirement of the Korean Certification (KC Mark).

이 기기는 업무용(A 급) 전자파 적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며 가정 외의 지역에서 사용하는 것을 목적으로 합니다.

Note that this device conforms to Limit Class A for emission of radio interference. This device can be used in all areas except the residential area.

Identification for Eurasian Customs Union



- EAC (Eurasian Conformity)
- Customs union of Russia, Belarus and Kazakhstan
- Declaration of conformity according to Technical Regulations of the Customs Union (TR CU)

WEEE label (European Union)



Disposal instructions, observe the local regulations and the section "Recycling and disposal (Page 48)".

7.2 Directives and declarations

7.2.1 ESD guideline

What does ESD mean?

An electronic module is equipped with highly integrated components. Due to their design, electronic components are highly sensitive to overvoltage and thus to the discharge of static electricity. Such electronic components or modules are labeled as electrostatic sensitive devices.

The following abbreviations are commonly used for electrostatic sensitive devices:

- ESD – Electrostatic sensitive device
- ESD – Electrostatic Sensitive Device as a common international designation

Electrostatic sensitive devices can be labeled with an appropriate symbol.



NOTICE

Damage to ESD from touch

Electrostatic sensitive devices, ESD, can be destroyed by voltages which are far below the human perception limit. If you touch a component or electrical connections of a module without discharging any electrostatic energy, these voltages may arise.

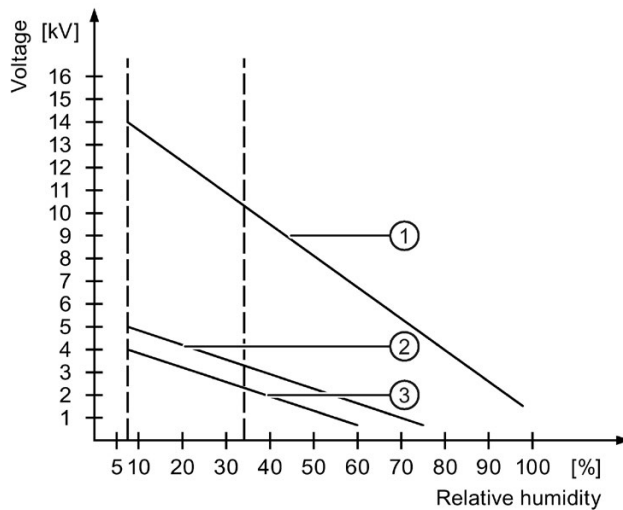
The damage to a module by an overvoltage can often not be immediately detected and only becomes evident after an extended period of operation. The consequences are incalculable and range from unforeseeable malfunctions to a total failure of the machine or system.

Avoid touching components directly. Make sure that persons, the workstation and the packaging are properly grounded.

Charge

Every person without a conductive connection to the electrical potential of his/her surroundings can be electrostatically charged.

The material with which this person comes into contact is of particular significance. The figure shows the maximum electrostatic voltages with which a person is charged, depending on humidity and material. These values conform to the specifications of IEC 61000-4-2.



- ① Synthetic materials
- ② Wool
- ③ Antistatic materials such as wood or concrete

NOTICE

Grounding measures

There is no equipotential bonding without grounding. An electrostatic charge is not discharged and may damage the ESD.

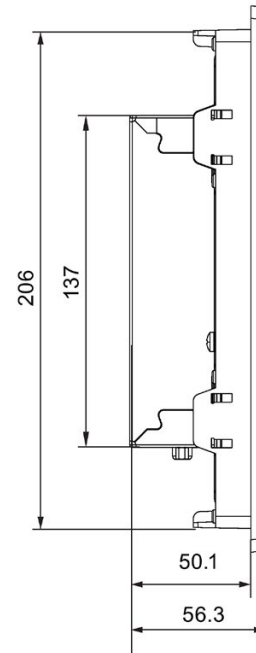
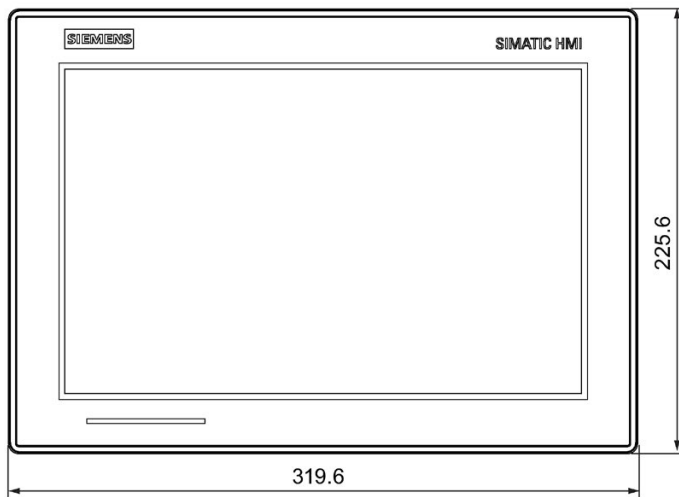
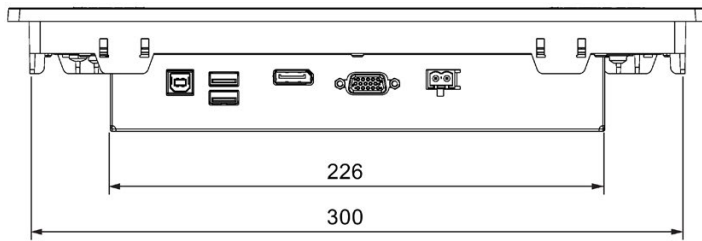
Protect yourself against discharge of static electricity. When working with electrostatic sensitive devices, make sure that the person and the workplace are properly grounded.

Protective measures against discharge of static electricity

- Disconnect the power supply before you install or remove modules which are sensitive to ESD.
- Pay attention to good grounding:
 - 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 discharge.
- 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.
 - Discharge your body electrostatically before you take a measurement at a module. Do so by touching grounded metallic parts. Always use grounded measuring instruments.

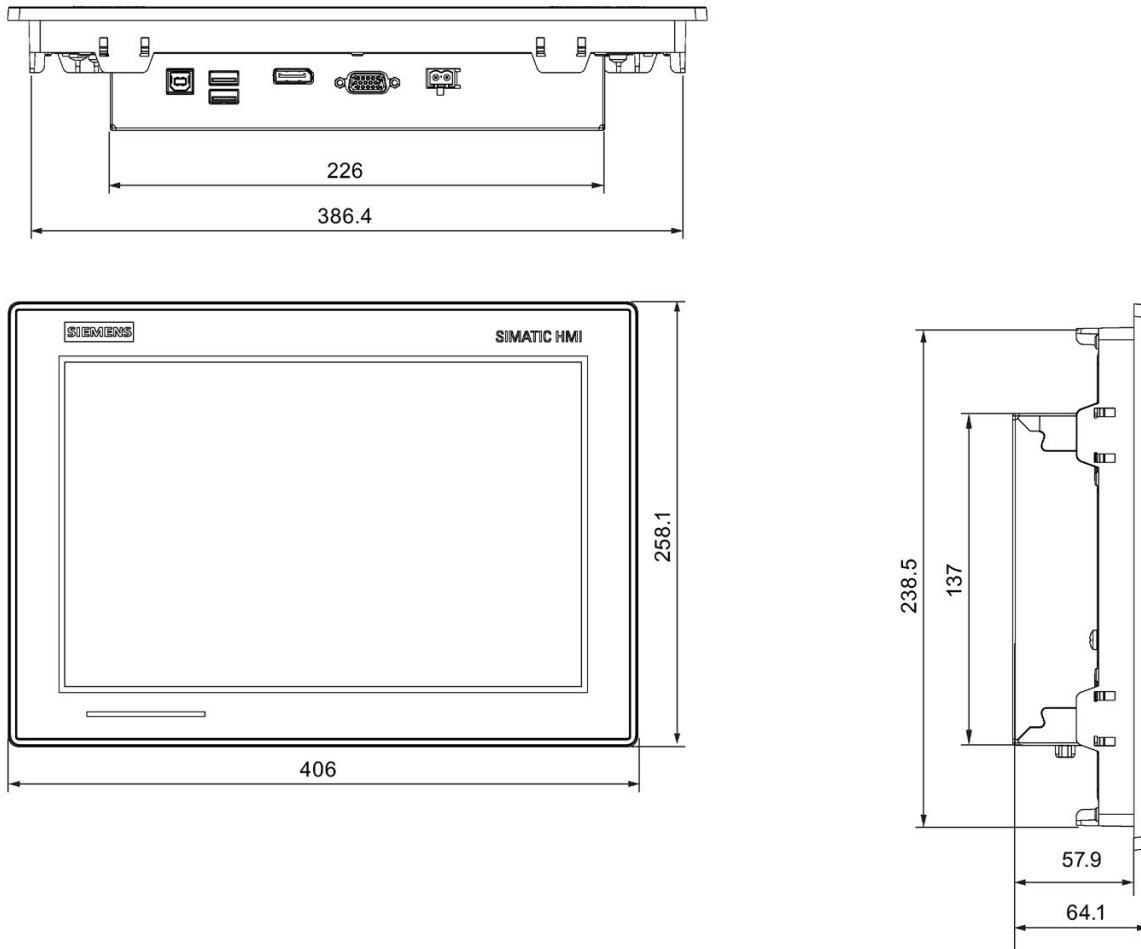
7.3 Dimension drawings

7.3.1 Dimension drawing of the IFP1200 Basic



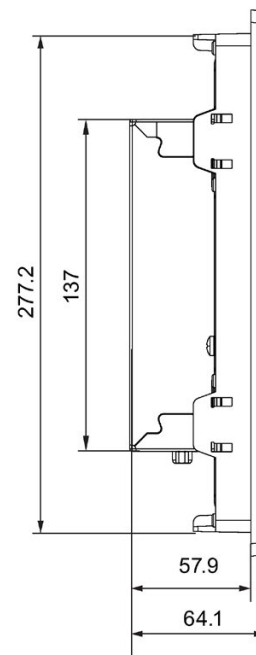
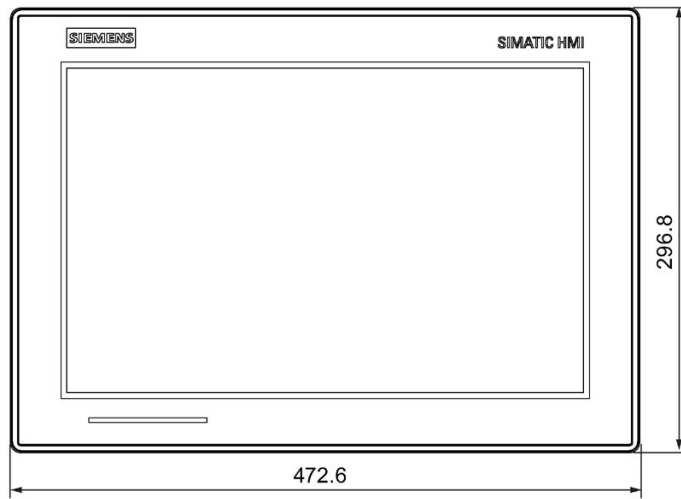
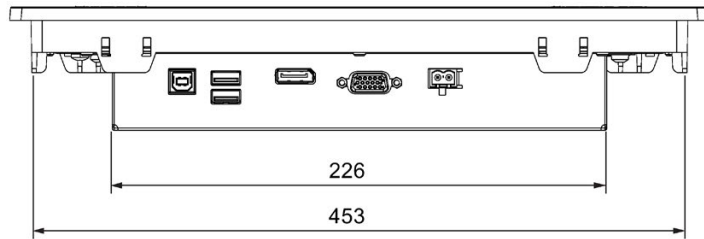
All dimensions in mm

7.3.2 Dimension drawing of the IFP1500 Basic



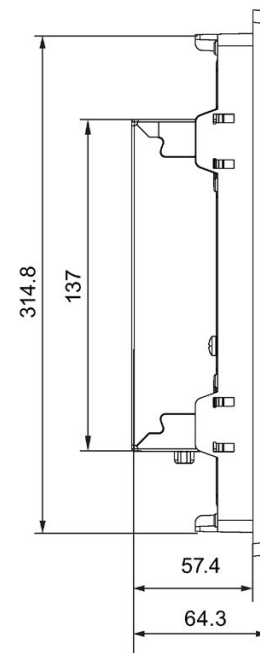
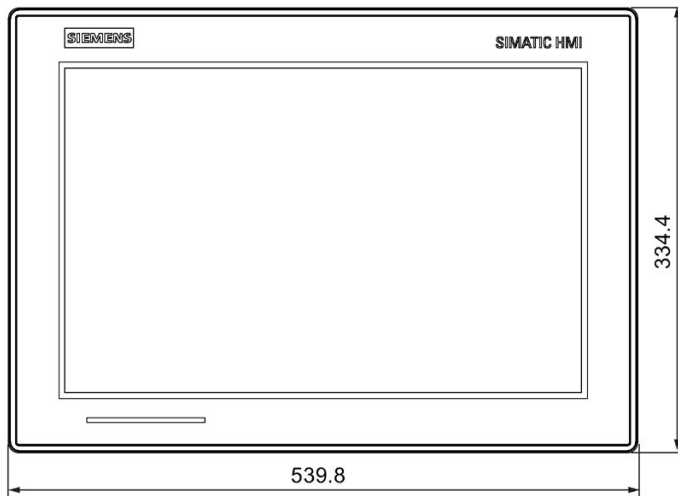
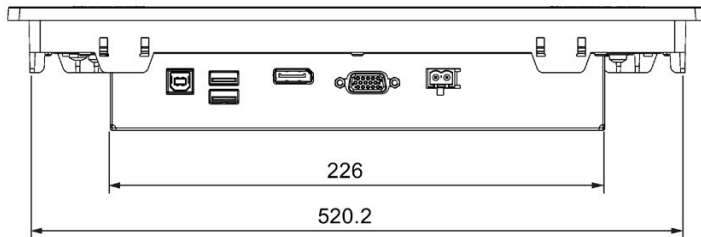
All dimensions in mm

7.3.3 Dimension drawing of the IFP1900 Basic



All dimensions in mm

7.3.4 Dimension drawing of the IFP2200 Basic

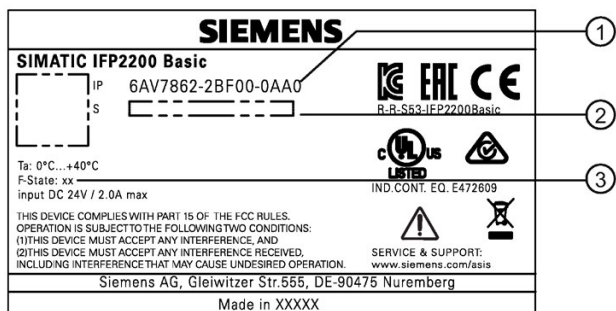


All dimensions in mm

7.4 Rating plate

The rating plate includes information that clearly identifies your device. You need this information when you contact Customer Support.

The figure below shows an example of a rating plate.



- ① Order number
- ② Serial number
- ③ Production version

7.5 Technical specifications

7.5.1 General technical specifications

Weight of IFP Basic

	SIMATIC IFP1200 Basic	SIMATIC IFP1500 Basic	SIMATIC IFP1900 Basic	SIMATIC IFP2200 Basic
Weight without packaging, approx.	2.7 kg	4.1 kg	5.1 kg	6.5 kg

Display

	SIMATIC IFP1200 Basic	SIMATIC IFP1500 Basic	SIMATIC IFP1900 Basic	SIMATIC IFP2200 Basic
Type	LCD widescreen TFT			
Active display area	12.1" 307 × 191 mm	15.6" 331.2 × 207 mm	18.5" 409.8 × 230.4 mm	21.5" 475.2 × 267.3 mm
Resolution	1280 x 800 pixels	1366 x 768 pixels	1366 x 768 pixels	1920 x 1080 pixels
Possible colors	Up to 16 million			
Brightness control	By means of Brightness Adjustment Tool, value range 0 to 100%			

	SIMATIC IFP1200 Basic	SIMATIC IFP1500 Basic	SIMATIC IFP1900 Basic	SIMATIC IFP2200 Basic
Backlighting Half Brightness Life Time (MTBF ¹)	LED 50000 h			LED 30000 h
Pixel error class in accordance with ISO 9241-307	II			

¹ MTBF: Operating hours after which the maximum screen brightness is reduced by half compared to the original value. MTBF is increased by using the integrated dimming function, for example time-controlled via screen saver or centrally via PROFlenergy.

Input device

	SIMATIC IFP1200 / IFP1500 / IFP1900 / IFP2200 Basic
Keyboard	Externally via USB
Touch screen	Analog resistive single touch screen

Interfaces

	USB Type A, rear	USB Type B, rear	DisplayPort	VGA
IFP1200 / IFP1500 / IFP1900 / IPF2200 Basic	2	1	1	1

¹ USB type A, maximum load 500 mA, equivalent to USB standard 2.0

DC power supply

	SIMATIC IFP1200 Basic	SIMATIC IFP1500 Basic	SIMATIC IFP1900 Basic	SIMATIC IFP2200 Basic
Rated voltage	24 V DC			
Permitted voltage range	+20.4 V to + 28.8 V			
Inrush current I _{2t}	Maximum 2.5 A, 15 ms			
Power consumption ¹	13 W	17 W	19 W	24 W
Maximum permitted transients	35 V (500 ms)			
Minimum time between two transients	50 s			
Internal protection	Electronic			

¹ The power loss generally corresponds to the specified value for power consumption.

7.5.2 Ambient conditions

7.5.2.1 Transport and storage conditions

Proper transport and storage, installation and assembly as well as careful operation and maintenance are prerequisites for trouble-free and safe operation of the device.

Non-compliance with these regulations shall render the device warranty void.

Mechanical transport and storage conditions

The following information is for a device that is transported and stored in its original packaging.

The device meets the requirements according to IEC 60721-3-2 Class 2M2 with the following amendments and limitations:

Type of condition	Permitted range
Free fall	≤ 1 m
Vibration according to IEC 60068-2-6	5 to 8.4 Hz, deflection 3.5 mm 8.4 to 500 Hz, acceleration 1 g
Shock according to IEC 60068-2-27	250 m/s ² , 6 ms, 1000 shocks

Climatic transport and storage conditions

The following information applies to a device that is transported in the original packaging and weather-proof packaging, and stored from some time.

The device meets the requirements according to IEC 60721-3-2 Class 2K4 with the following amendments and limitations:

Type of condition	Permitted range
Temperature	-20 to 60 °C
Atmospheric pressure, altitude	1080 to 660 hPa, corresponds to an elevation of -1000 to 3500 m
Relative humidity	5% to 95% at 25/55 °C, no condensation

Note

If dewing has developed, wait until the HMI device has dried completely before switching it on.

Do not expose the HMI device to direct radiation from a heater.

7.5.2.2 Operating conditions

Mechanical and climatic conditions of use

The device is designed for use in locations protected from the effects of the weather. The conditions of use meet the requirements for DIN IEC 60721-3-3:

- Class 3M3 (mechanical requirements)
- Class 3K3 (climatic requirements)

Mechanical ambient conditions

The mechanical ambient conditions for the device are specified in the table below in terms of sinusoidal vibration.

Frequency range f in Hz	Constant	Occasional
5 to 8.4 Hz	Amplitude 0.0375 mm	Amplitude 3.5 mm
8.4 to 200 Hz	Constant acceleration 0.5 g	Constant acceleration 1 g

Testing mechanical ambient conditions

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

Tested for	Test standard	Comments
Vibrations	Vibration test in accordance with IEC 60068, part 2-6 (sinusoidal)	Type of vibration: Frequency cycles at a rate of change of 1 octave/minute. 5 to 8.4 Hz, constant amplitude 0.0375 mm 8.4 to 200 Hz, constant acceleration 0.5 g
		Vibration duration: 10 frequency cycles per axis in each of the three mutually vertical axes
Shock	Shock test in accordance with IEC 60068, Part 2-27	Type of shock: Half-sine
		Severity of shock: Peak value 15 g, duration 11 ms
		Direction of shock: 3 shocks in \pm direction of axis in each of the three axes vertical to each other

Shock pulses within the specified range can be transferred to the display but do not impact the functionality of the device.

Climatic ambient conditions

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

Ambient conditions	Permitted range	Comments
Temperature for IFP1200 / IFP1500 / IFP 1900 Basic:	<ul style="list-style-type: none"> horizontal mounting 0 to 45 °C Vertical mounting 0 to 45 °C 	Tilt angle max. 45°
Temperature for IFP2200 Basic:	<ul style="list-style-type: none"> horizontal mounting 0 to 40 °C Vertical mounting 0 to 40 °C 	Tilt angle max. 45°
Relative humidity	10 to 85% at 30 °C, no condensation	
Atmospheric pressure, operation elevation	1080 to 689 hPa	Corresponds to an elevation of -1000 to 3000 m

Note the information in section "Notes about usage (Page 14)".

7.5.2.3 Electromagnetic compatibility

Pulse-shaped interference

The following table shows the electromagnetic compatibility of modules with regard to pulse-shaped interference. This requires the device to meet the specifications and directives for electrical installation.

Pulse-shaped interference	Test voltage	Degree of severity
Electrostatic discharge in accordance with IEC 61000-4-2	Air discharge: ± 8 kV	3
	Contact discharge: ± 4 kV	2
Bursts (high-speed transient interference) in accordance with IEC 61000-4-4	± 2 kV power supply cable ± 1 kV signal cable, < 30 m	3
Surge in accordance with IEC 61000-4-5	1 kV line-to-line of DC port 2 kV line-to-earth of DC port	
Asymmetrical coupling	± 2 kV power supply cable DC voltage with protective elements	3
Symmetrical coupling	1 kV power supply cable DC voltage with protective elements	3

Sinusoidal interference

The following table shows the EMC behavior 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	Degree of severity
HF radiation (electromagnetic fields) according to IEC 61000-4-3	80% amplitude modulation at 1 kHz with 10 V/m in the range of 80 MHz to 1 GHz with 3 V/m in the range 1.4 GHz to 2 GHz with 3 V/m in the range 2 GHz to 6 GHz	3
HF power applied to lines and line shields according IEC 61000-4-6	Test voltage 10 V, with 80% amplitude modulation of 1 kHz in the 150 kHz to 80 MHz range	3

Emission of radio interference

The following table shows the emitted interference from electromagnetic fields according to EN 61000-6-4, measured at a distance of 10 m.

Radiated emission (emitted interference)

1 GHz to 3 GHz	< 76 dB peak and < 56 dB average
3 GHz to 6 GHz	< 80 dB peak and < 60 dB average
30 MHz to 230 MHz	< 40 dB ($\mu\text{V}/\text{m}$) quasi-peak
230 MHz to 1000 MHz	< 47 dB ($\mu\text{V}/\text{m}$) quasi-peak

Emission of radio interference voltages

0.150 MHz to 0.5 MHz	< 79 dB quasi-peak and < 66 dB average
0.5 MHz to 30 MHz	< 73 dB quasi-peak and < 60 dB average

See also

Notes about usage (Page 14)

Industrial support (<https://support.industry.siemens.com>)

7.5.2.4 Information on protection class and degree of protection

Protection class

Protection Class III in accordance with IEC 61010-1, for example. with protective conductor.

Protection against foreign objects and water

Degree of protection	Explanation
Front	When mounted: <ul style="list-style-type: none">• IP65 according to IEC 60529 ¹
Rear panel	<ul style="list-style-type: none">• IP40 for IFP1200 Basic, IFP1500 Basic, IFP1900 Basic ²• IP20 for IFP2200 Basic ²

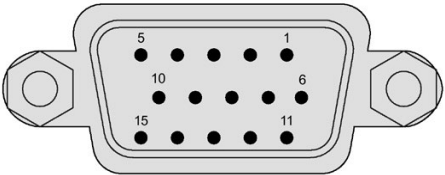
- ¹ The degree of protection of the front panel can only be guaranteed if the mounting seal is properly installed at the cabinet.
- ² The degree of protection of the rear panel can only be guaranteed when all the interface are plugged in.

Degree of pollution / overvoltage category according to IEC 61010


Degree of pollution 2

7.6 Interface description

7.6.1 VGA interface

VGA interface			
			
Pin no.	Abbreviation	Meaning	Input/output
1	R+	Red+	Input
2	G+	Green+	Input
3	B+	Blue+	Input
4	NC	No connection	-
5	Cable_DET	VGA cable detection	Input
6	R-	Red-	Input
7	G-	Green-	Input
8	B-	Blue-	Input
9	VCC	VGA cable power	power
10	Ground	Ground	Ground
11	NC	No Connection	-
12	SDA	DDC data	Bidirectional
13	HSYNC	Horizontal Synchronization	Input
14	VSYNC	Vertical Synchronization	Input
15	SCL	DDC clock	Bidirectional

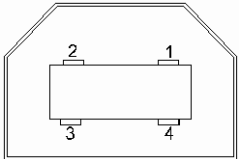
7.6.2 24 VDC Power Supply

Power supply 24 VDC 2-pin	
	
Pin no.	Meaning
1	+24 VDC
2	GND

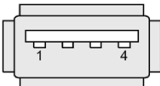
7.6.3 DisplayPort

DisplayPort interface			
Pin no.	Abbreviation	Meaning	Input/output
1	ML_Lane3-	DP data 3-	Input
2	GND	Ground	-
3	ML_Lane3+	DP data 3+	Input
4	ML_Lane2-	DP data 2-	Input
5	GND	Ground	-
6	ML_Lane2+	DP data 2+	Input
7	ML_Lane1-	DP data 1-	Input
8	GND	Ground	-
9	ML_Lane1+	DP data 1+	Input
10	ML_Lane0-	DP data 0-	Input
11	GND	Ground	-
12	ML_Lane0+	DP data 0+	Input
13	CONFIG1	CONFIG1	-
14	CONFIG2	CONFIG2	-
15	AUX_CH+	Auxiliary channel+	Bidirectional
16	GND	Ground	-
17	AUX_CH-	Auxiliary channel-	Bidirectional
18	HPD	Hot Plug Detect	output
19	GND	Ground	-
20	DP_PWR	+3.3 V (fused)	power out

7.6.4 USB interface, Type B

USB port, Type B		
		
Pin no.	Abbreviation	Signal
1	VCC	+ 5 V (fused)
2	- Data	Data channel
3	+ Data	Data channel
4	GND	Ground

7.6.5 USB interface, Type A

USB port		
		
Pin No.	Abbreviation	Signal
1	VCC	+ 5 V (fused)
2	- Data	Data channel
3	+ Data	Data channel
4	GND	Ground

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
(<https://support.industry.siemens.com/cs/start?lc=en-WW>)
- Support request form
(<https://support.industry.siemens.com/My/ww/en/requests#createRequest>)
- 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://w3.siemens.com/aspa_app/)
- 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

Current documentation

Always use the current documentation available for your product. You can find the latest edition of this manual and other important documents by entering the article number of your device on the Internet (<http://www.siemens.com/simatic-tech-doku-portal>). If necessary, filter the comments for the entry type "Manual".

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>)

A.2 Troubleshooting











Ethernet Monitors





Error pattern	Possible cause	Possible remedy
The host cannot provide the correct name and resolution list of IFP Basic when you only use VGA port.	Make sure that you insert the VGA port correctly.	<p>Unplug the VGA port and wait until "Power saving" is displayed on the monitor. Then plug the VGA port again.</p> <p>When you plug the VGA port, pay attention to the following tips.</p> <ol style="list-style-type: none"> 1. Insert the VGA port to the end. 2. Make sure you insert the VGA port vertically. 3. Tighten the screw to lock the VGA port into place.
The host cannot display correctly.	Make sure that you select IFP Basic supported resolution.	<p>Select the IFP Basic supported resolution:</p> <p>12.1"</p> <ul style="list-style-type: none"> • 1280 x 800, @60Hz • 1280 x 720, @60Hz • 1024 x 768, @60Hz • 800 x 600, @60Hz <p>15.6" and 18.5"</p> <ul style="list-style-type: none"> • 1366 x 768, @60Hz • 1280 x 720, @60Hz • 1024 x 768, @60Hz • 800 x 600, @60Hz <p>21.5"</p> <ul style="list-style-type: none"> • 1920 x 1080, @60Hz • 1600 x 900, @60Hz • 1400 x 1050, @60Hz • 1280 x 1024, @75Hz • 1280 x 960, @75Hz • 1280 x 800, @60Hz • 1280 x 720, @60Hz • 1152 x 864, @75Hz • 1024 x 768, @60Hz • 800 x 600, @60Hz

Markings and symbols

B.1 Safety-relevant symbols

The following table describes symbols that can be added to your SIMATIC device, to its packaging or to an enclosed document in addition to the symbols described in the manuals.

Symbol	Meaning	Reference
	General danger sign Caution / Attention You must following the operating instructions. The operating instructions contain information on the type of the potential hazard and enable you to identify risks and implement countermeasures.	ISO 7000 No. 0434B, DIN ISO 7000 No. 0434B
	Attention, only relevant for modules with Ex approval	
	Follow the instructions	ISO 7010 M002
	May be installed by qualified electricians only	IEC 60417 No. 6182
	Mechanical load for HMI devices	
	Connection cables must be designed for the ambient temperature	
	EMC-compliant installation	
	No mounting or pulling & plugging under voltage	
	Dangerous electrical voltage for 230V modules	ANSI Z535.2
	Protection class III, supply only with protective low voltage (SELV/PELV)	IEC 60417-1-5180 "Class III equipment"

Symbol	Meaning	Reference
 INDOOR USE ONLY INDUSTRIAL USE ONLY	Only for industrial applications and indoor areas (control cabinet)	
	Install in control cabinet only	
 ZONE 2 INSIDE CABINET IP54 EN60079-15	Devices approved for Ex Zone 2 in a control cabinet with min. IP54	
 ZONE 22 INSIDE CABINET IP6x EN60079-31	Devices approved for Ex Zone 22 in a control cabinet with min. IP6x	

List of abbreviations

ANSI	American National Standards Institute
ASCII	American Standard Code for Information Interchange
B	Width
BLI	Backlight Inverter
BIOS	Basic Input Output System
CD-ROM	Compact Disc – Read Only Memory
CPU	Central Processing Unit
DC	Direct Current
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Service
DP	Distributed I/O
DSN	Data Source Name
DVD-ROM	Digital Versatile Disc – Read Only Memory
ESD	Electrostatic Sensitive Devices
EMC	ElectroMagnetic Compatibility
H	Height
HF	High Frequency
HMI	Human Machine Interface
IF	Interface: Interface
LCD	Liquid Crystal Display: Liquid crystal display
LED	Light Emitting Diode: Light emitting diode
LPS	Limited Power Source
Mbps	Megabits per second
NBR	Nitrile butadiene rubber
OSD	OnScreenDisplay
OSK	OnScreenKeyboard
PC	Personal Computer
PG	Programming device
PPI	Point to Point Interface SIMATIC S7
PS/2	Personal System 2
RoHS	Restriction of the use of certain hazardous substances in electrical and electronic equipment
PLC	Programmable logic controller
T	Device depth
TCP/IP	Transmission Control Protocol/Internet Protocol
USB	Universal Serial Bus
VGA	Video Graphics Array

Glossary

Application

An application is a program which is put directly on the operating system MS-DOS or windows. An application on the PC/PG, for example, is STEP 7.

Controller

Installed hardware and software which control the functions of specific internal or external devices, e.g. the keyboard controller.

Documentation and Drivers CD/DVD

The "Documentation and Drivers" CD/DVD is included. The CD/DVD contains specific drivers and applications for the supported operating system.

Drivers

Program parts of the operating system. They adapt user program data to the specific formats required by peripheral devices, such as hard disk, monitors, and printers.

Drop-down menu

Menu bar on the upper edge of the screen. The menu items are pre-set or can be set as drop down menus or pull down menus. Drop down menus roll down as soon as the cursor is moved over the menu title. Pull down menus roll down after clicking on the title.

Hub

A term from network technology. A device which joins communication lines at a central location and provides a common connection to all devices on the network.

Interface

The connection of individual hardware elements, e.g. programmable controller, PCs, programming device, printer, or screen, by means of physical plug connectors.

Connection between different programs in order to exchange data.

Module

Modules are plug-in units for PLCs, programming devices or PCs. Modules exist, for example, as central modules, power-ons, or as mass storage.

Plug and play

Through plug and play, the computer configures itself automatically to be able to communicate with peripheral devices, e.g. screens, modems and printers. User connects a peripheral device: plug. Afterwards, the peripheral device can be used immediately. play, without having to configure the operating system manually. The plug and play PC requires both a BIOS that supports plug and play and a corresponding expansion card.

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