SIEMENS

SIMATIC HMI

Customized automation SIMATIC HMI IWP700/900/1200

Operating Instructions

09/2018

A5E45118487-AB

Legal information

Warning notice system

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

⚠ DANGER

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

⚠ WARNING

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

⚠ CAUTION

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

NOTICE

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

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

Qualified Personnel

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

Proper use of Siemens products

Note the following:

⚠ WARNING

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

Trademarks

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

Disclaimer of Liability

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

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Preface

Purpose of the operating instructions

These operating instructions provide information based on the requirements defined by IEC 62079 for documentation. This information relates to the HMI device, its storage, transportation, place of use, installation, use and maintenance.

These operating instructions are intended for a variety of target groups. The following table shows the chapters of these operating instructions that are of particular importance for the respective target group.

Target group	Chapter
All	"Safety instructions"
Operators The operator operates and monitors the system during the process control phase.	"Overview" "Operating the device"
Commissioning engineers The commissioning engineer integrates the HMI device into the system and ensures the operating capability of the HMI device for the process control phase.	All chapters. Depending on the use of the HMI device, certain chapters may not be of relevance to the commissioning engineer, e.g. the section "Maintenance and servicing."
Service technicians Service technicians rectify faults that occur during the process control phase.	All chapters. Depending on the use of the HMI device, certain chapters may not be of relevance to the service technicians, e.g. the section "Maintenance and servicing."
Maintenance technicians Maintenance technicians carry out servicing and maintenance work during the process control phase.	Maintenance and care

Scope

The operating instructions applies to the following SIMATIC HMI Industrial Web Panels IWP with the following naming conventions:

Device name SIMATIC HMI	Short designation	Article number	Interface type
SIMATIC HMI IWP700	IWP700	6AV2143-8GB50-0AA0	Ethernet
SIMATIC HMI IWP900	IWP900	6AV2143-8JB50-0AA0	Ethernet
SIMATIC HMI IWP1200	IWP1200	6AV2143-8MB50-0AA0	Ethernet

The HMI devices were developed on the basis of the Basic Panels 2nd Generation. The name "Basic Panel" is also used for a "Basic Panel 2nd Generation" in these operating instructions.

The SIMATIC HMI Industrial Web Panels are based on HTML5. For IWP700, IWP900 and IWP1200 the name "Industrial Webpanel" or "HMI device" in general is used.

Basic knowledge required

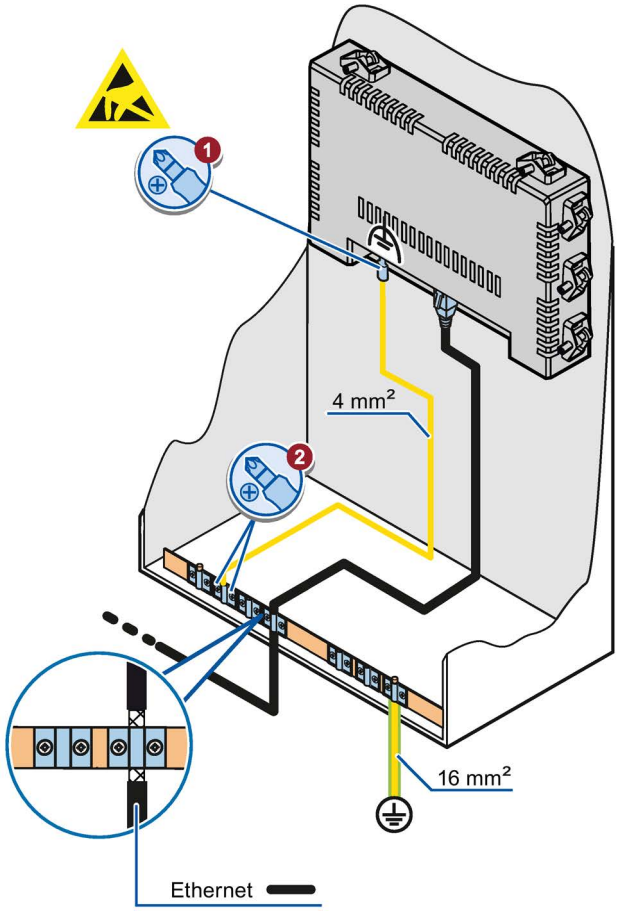
Knowledge of automation technology and process communication is necessary to understand the operating instructions.

An understanding of the use of computers and operating systems is also required.

Illustrations and text highlighting

This manual contains figures of the described devices. The figures may deviate from the supplied device in certain details.

The following graphical highlighting facilitates reading these operating instructions:

Graphical highlighting	Description
	If the instructions involve several tasks, the individual tasks are highlighted by a red number circle. A light blue highlight indicates components and tools that are required in the course of a task. Within the illustrations, the HMI device is shows as a symbol in some instances.

The following text highlighting facilitates reading these operating instructions:

Text highlighting	Scope of validity
"Add screen"	• Terminology that appears in the user interface, for example, dialog names, tabs, buttons, menu commands • Input values, for example, limits, tag values. • Path information
"File > Edit"	Operational sequences, for example, menu commands, shortcut menu commands.
<F1>	Keyboard operation

Note information highlighted as follows:

Note

A note contains important information on described products and their handling or on a section of this documentation.

Trademarks

The designations marked with the symbol ® are registered trademarks of Siemens AG. Other names used in this documentation may be trademarks, the use of which by third parties for their own purposes could violate the rights of the owner.

- HMI®
- SIMATIC®
- SIMATIC HMI®

Table of contents

Overview

1

1.1 Product overview

The Industrial Webpanel is an operator control and display device in rugged design based on the 2nd generation of SIMATIC HMI Basic Panels.

A high-performance processor and Ethernet capability mean the HMI device is excellently suited to a range of uses.

Main features are:

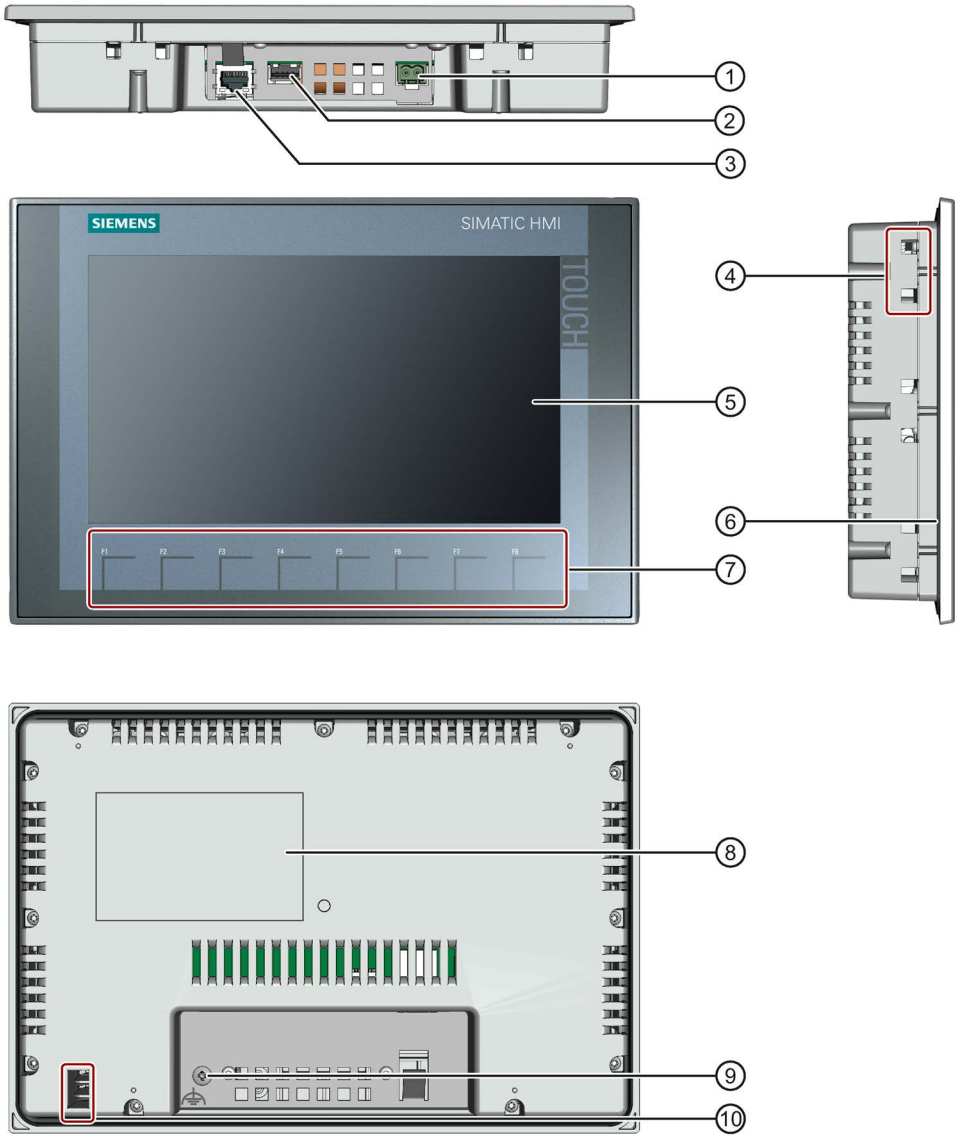
- Ethernet port
- TFT screen with 65k colors
- Touch function
- Freely configurable function keys
- HTML5-capable browser

Note

The Industrial Webpanel can be parameterized locally. A configuration in the TIA Portal is not necessary and is therefore not supported.

1.2 Design of the device

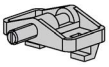
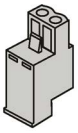
The figure below shows the structure of the devices using the IWP900 as an example:



① Power supply connection
② USB port
③ Ethernet port
④ Recesses for a mounting clip
⑤ Display/touch screen
⑥ Mounting seal
⑦ Function keys
⑧ Rating plate
⑨ Connection for functional ground
⑩ Guide for labeling strips, not required

1.3 Scope of delivery

The scope of delivery of the HMI device includes the following components:

Name	Figure	Quantity
HMI device		1
Mounting clips with grub screw		According to the quantity required for mounting, in accessory kit
Power supply connector		1, in accessory kit

1.4 Accessories

Accessories are not included in the HMI device scope of delivery, but can be ordered on the Internet under Industry Mall (https://mall.industry.siemens.com).

This section contains the number of accessories available at the time of publication of the operating instructions.

Storage media and I/O devices

Name	Article number
SIMATIC PC USB flash drive	6ES7648-0DC50-0AA0
Industrial USB Hub 4	6AV6671-3AH00-0AX0

Converters, adapters and connectors

Name	Purpose	Article number
RS 422 to RS 232 converter	Connection of third-party controllers to Basic Panels DP	6AV6671-8XE00-0AX0
90 degree elbow adapter	For RS 422/RS 485 port, cable outlet to rear	6AV6671-8XD00-0AX0
PROFIBUS connector	Recommended PROFIBUS connector with straight cable outlet	6GK1500-0FC10
PROFINET RJ45 connector "IE FC RJ45 Plug 2x2"	Required for connection of Basic Panels with PROFINET interface to PROFINET	6GK1901-1BB10-2AA0

Protective films

Name	Purpose	Article number
Protective film 7"	Protective film set for KTP700 Basic and KTP700 Basic DP	6AV2124-6GJ00-0AX0
Protective film 9"	Protective film set for KTP900 Basic	6AV2181-3JJ20-0AX0
Protective film 12"	Protective film set for KTP1200 Basic and KTP1200 Basic DP	6AV2181-3MJ20-0AX0

Service packages

Name	Article number
Set of 20 mounting clips	6AV6671-8KX00-0AX2
Set of 10 power supply connectors	6AV6671-8XA00-0AX0

Other accessories

Additional USB accessories can be found on the Internet in the following entry:
FAQ 19188460 (https://support.industry.siemens.com/cs/ww/en/view/19188460)

Safety instructions 2

2.1 General safety instructions

The device is designed for operation in industrial areas for operator control and monitoring of plant processes.

Open equipment and the Machinery Directive

⚠ WARNING

The device constitutes open equipment on the back side

The device constitutes open equipment on the back side. This means that the device may only be integrated 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 considered.

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 qualified 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.

Touching these areas or components can cause electrocution.

De-energize the control cabinet before opening it.
Do **not** install or remove system components during operation.

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 instructions 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.

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 Notes about usage

NOTICE
The HMI device is approved for indoor use only.
The HMI device may be damaged if it is operated outdoors.
Operate the HMI device indoors only.

Industrial applications

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

- Requirements of the emission standard for industrial environments, EN 61000-6-4: 2007 + A1:2011
- ESD immunity requirements to DIN EN 61000-6-2:2005

Use in residential areas

Note

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

If the HMI device is used in a residential area, you must ensure compliance with the limits in technical standard EN 61000-6-3 regarding the emission of radio frequency interference.

Individual acceptance is required.

Use with additional measures

The HMI 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

Notes on communication

Note

Communication errors caused by address conflict

Communication errors can occur if several devices in a network share the same bus address or IP address.

Make sure that your HMI device is assigned a unique address in the network.

Note

Updating tag values following a communication error

If communication between an HMI device and controller is interrupted, all tag values displayed on the HMI device will be replaced by a hash mark ("#").

When the communication between the HMI device and controller is restored, all tag values will be updated immediately. The cycle time for updating the tag values begins again at "0".

Ethernet communication with Basic Panels with PROFINET interface

Basic Panels with PROFINET interface support the following types of communication:

- PROFINET basic function for commissioning and diagnostics
- Standard Ethernet communication

Mounting and connecting 3

3.1 Preparations

3.1.1 Checking the package contents

Check the package content for visible signs of transport damage and for completeness.

Note

Damaged parts

Do not install parts damaged during shipment. In the case of damaged parts, contact your Siemens representative.

The package content is described in section Scope of delivery (Page 11).

Keep the provided documentation in a safe place. The documentation is part of the HMI device and is required for subsequent commissioning.

3.1.2 Checking the operating conditions

Note the information in the following sections of these operating instructions before installing the HMI device:

- Certificates and approvals (Page 53)
- Electromagnetic compatibility (Page 54)
- Mechanical ambient conditions (Page 54)
- Climatic ambient conditions (Page 55)
- Information on insulation tests, protection class and degree of protection (Page 57)
- Technical specifications (Page 61)

3.1.3 Selecting a mounting position

The device is suitable for installation in:

- Mounting cabinets
- Control cabinets
- Switchboards
- Consoles

In the following, all of these mounting options are referred to by the general term "cabinet".

The device is self-ventilated and approved for inclined mounting at angles up to +/-35° from the vertical in stationary cabinets.

NOTICE
Damage due to overheating Inclined installation reduces the convection by the device and therefore the maximum permitted ambient temperature for operation. If there is sufficient forced ventilation, the device can also be operated in the inclined mounting position up to the maximum permitted ambient temperature for vertical installation. The device may otherwise be damaged and its certifications and warranty will be rendered null and void. The ambient temperature ranges listed in this section apply to the temperature inside the cabinet.

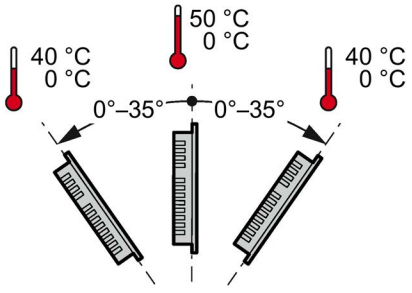
Mounting position

Select one of the approved mounting positions for your device. The approved mounting positions are described in the following sections.

Mounting in horizontal format

Ambient temperature in the cabinet with horizontal mounting:

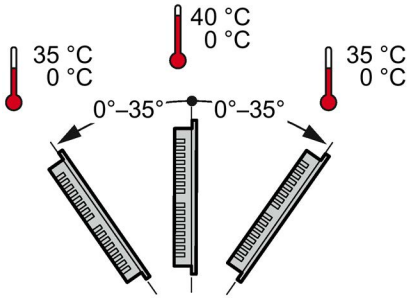
- Vertical mounting (0° inclined): Maximum +50 °C
- Inclined mounting (inclined up to 35°): Maximum +40 °C



Mounting in vertical format

Ambient temperature in the cabinet with vertical mounting:

- Vertical mounting (0° inclined): Maximum +40 °C
- Inclined mounting (inclined up to 35°): Maximum +35 °C



See also

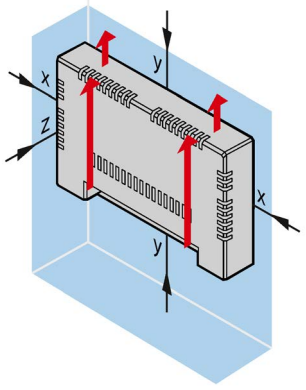
Operating Conditions (Page 56)

3.1.4 Checking clearances

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

x	y	z
15	50	10

All dimensions in mm



3.1.5 Making the mounting cutout

Note

Stability of the mounting cutout

The material in the area of the mounting cutout must provide sufficient strength to guarantee lasting and safe mounting of the HMI 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 HMI device can only be guaranteed if the following requirements are met:

- Material thickness at the mounting cutout for a protection rating of IP65 or Front face only Type 4X/Type 12 (indoor use only): 2 mm to 6 mm.
- Permitted deviation from plane at the mounting cutout: ≤ 0.5 mm

  This condition must be met for the mounted HMI device.
- Permitted surface roughness in the area of the mounting seal: ≤ 120 µm (R_z 120)

Mounting compatibility

The mounting cutouts of the Basic panels are compatible with the mounting cutouts of the following SIMATIC HMI devices:

Mounting cutout Basic Panel	Compatible with the mounting cutouts of the HMI device
IWP700	KTP600 Basic color PN; TP700 Comfort
IWP900	TP900 Comfort
IWP1200	TP1200 Comfort

Dimensions of the mounting cutout

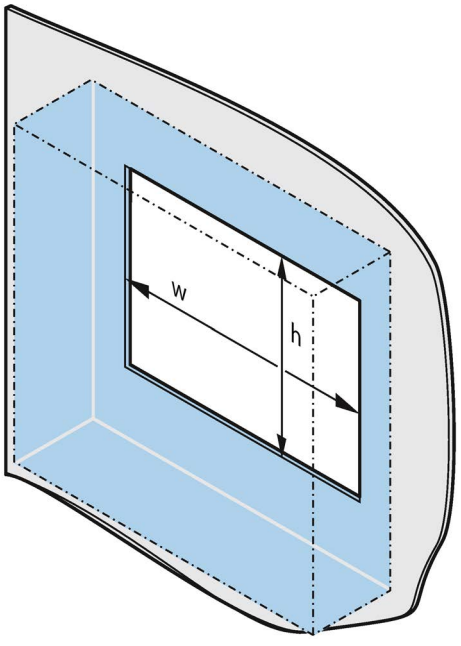
Dimensions of the mounting cutout for the Basic HMI devices in horizontal mounting position:

	w^{+1}_{0}	h^{+1}_{0}
IWP700	197	141
IWP900	251	166
IWP1200	310	221

Dimensions of the mounting cutout for the Basic HMI devices in vertical mounting position:

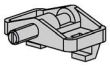
	w^{+1}_{0}	h^{+1}_{0}
IWP700	141	197
IWP900	166	251
IWP1200	221	310

All dimensions in mm



3.2 Mounting the HMI device

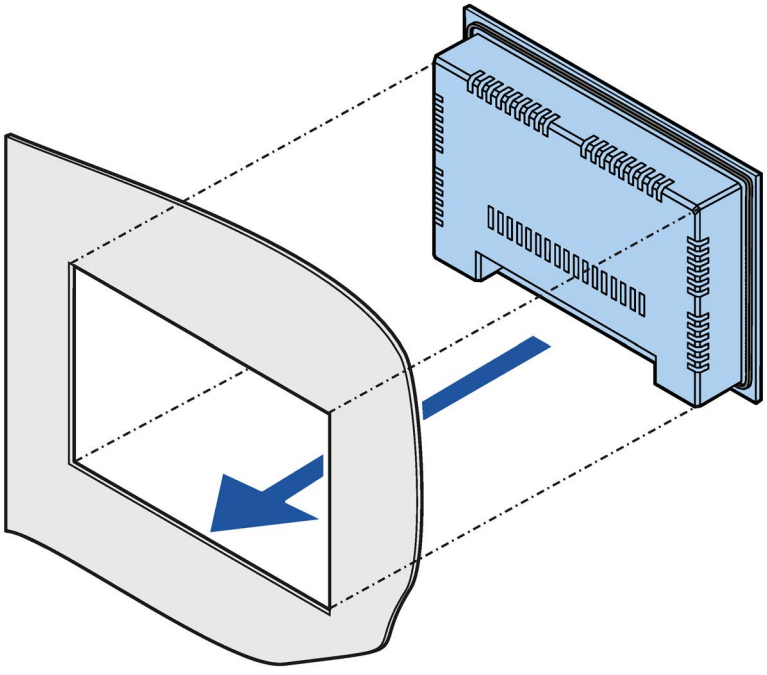
Required tools and accessories

	Slotted screwdriver, size 2		
	Mounting clips	for HMI device	Required quantity
		IWP700	7
		IWP900	10
		IWP1200	12

Inserting the HMI device

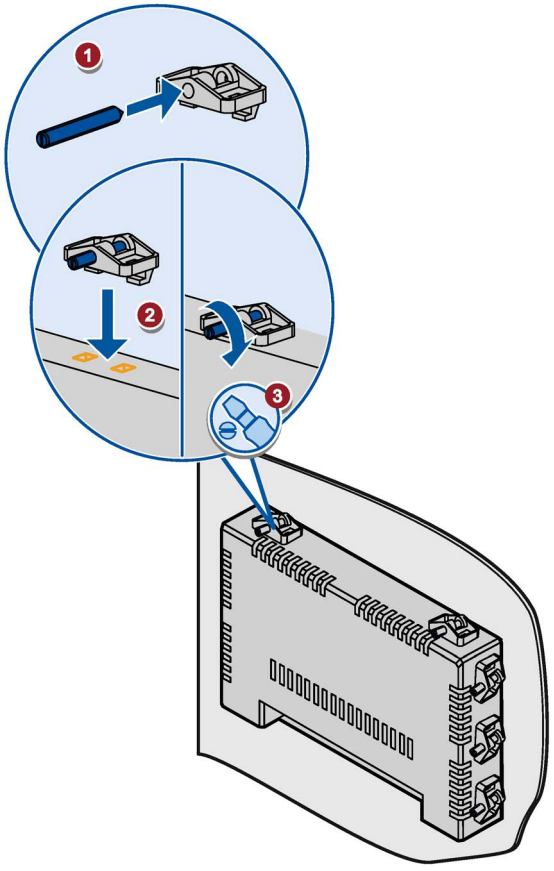
Insert the HMI device into the mounting cutout from the front.

Make sure that protruding labeling strips are not caught between the mounting cutout and HMI device.



Securing the HMI device with mounting clips

1. If mounting clips and grub screws are available separately in the accessory kit, insert a grub screw into the mounting clip bore hole and turn it several times.
2. Place the first mounting clip into the corresponding cutout.
3. Fasten the mounting clip with a size 2 screwdriver. The maximum permitted torque is 0.2 Nm.
4. Repeat steps 1 to 3 for all mounting clips required to secure your HMI device.

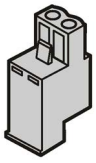
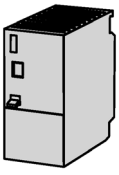


3.3 Connecting the HMI device

3.3.1 Connection sequence

Required tools and accessories

Before you start connecting the HMI device, have the following tools and accessories at hand:

	Slotted screwdriver, size 2
	Phillips screwdriver, size 3
	Crimp pliers
	Power supply connector
	24 V DC with sufficient amperage. See Technical specifications (Page 61)

Procedure

Keep to the following sequence of tasks when connecting the HMI device:

1. Connecting the equipotential bonding circuit (Page 24)
2. Connecting the power supply (Page 25)
3. Connecting the HMI device to the web server (Page 27)
4. Connecting a USB device (Page 27)

Note

Strain relief

Contacts can be broken or wires can be torn off if cables are not provided adequate strain relief.

Provide adequate strain relief for all cables.

3.3.2 Connecting the equipotential bonding circuit

Differences in electrical potential

Differences in electrical potential can develop between spatially separated system components. Such electrical potential differences can lead to high equalizing currents on the data cables and therefore to the destruction of their interfaces. Equalizing currents can develop if the cable shielding is terminated at both ends and grounded to different system parts.

Differences in potential may develop when a system is connected to different mains supplies.

General requirements for equipotential bonding

Differences in potential must be reduced by means of equipotential bonding conductors to ensure trouble-free operation of the relevant components of the electronic system. The following must therefore be observed when installing the equipotential bonding circuit:

- The effectiveness of equipotential bonding increases as the impedance of the equipotential bonding conductor decreases or as its cross-section increases.
- If two system parts are interconnected by means of shielded data cables and their shielding is bonded at both ends to the grounding/protective conductor, the impedance of the additionally installed equipotential bonding conductor must not exceed 10% of the shielding impedance.
- The cross-section of an equipotential bonding conductor must be capable of handling the maximum equalizing current. The best practical results for equipotential bonding between two cabinets have been achieved with a minimum conductor cross-section of 16 mm².
- Use equipotential bonding conductors made of copper or galvanized steel. Establish a large surface contact between the equipotential bonding conductors and the grounding/protective conductor and protect them from corrosion.
- Clamp the shielding of the data cable from the HMI device flush at the equipotential rail using suitable cable clamps. The equipotential rail should be very close to the HMI device.
- Route the equipotential bonding conductor and data cables in parallel and with minimum clearance between them.

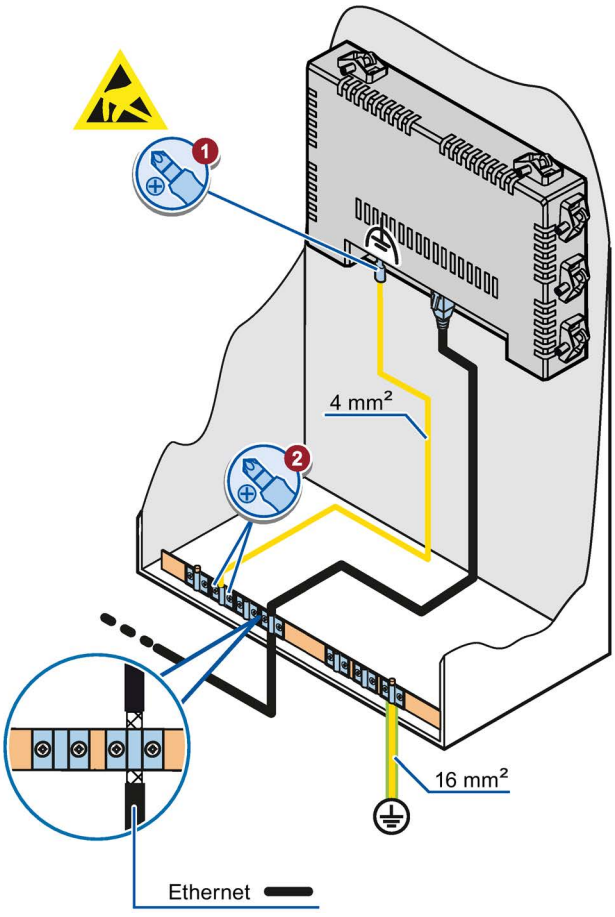
Note

Equipotential bonding conductor

Cable shielding is not suitable for equipotential bonding. Always use the prescribed equipotential bonding conductors. The cross-section of the equipotential bonding conductor must not be less than 16 mm².

Procedure

1. Interconnect the functional earth connection of the HMI device with an equipotential bonding conductor, cross-section 4 mm².
2. Connect the equipotential bonding conductor to the equipotential bonding rail.

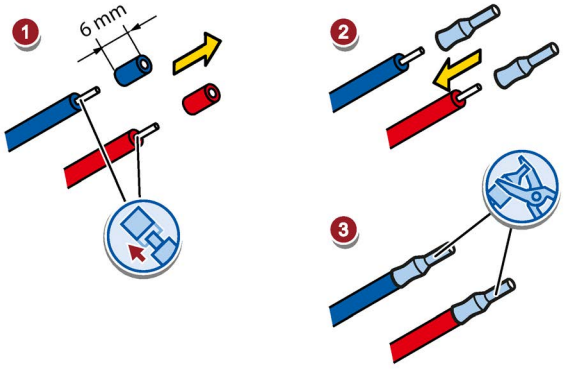


3.3.3 Connecting the power supply

Stripping the cable

Use power supply cables with a maximum cross-section of 1.5 mm².

1. Strip the ends of two power supply cables to a length of 6 mm.
2. Attach cable sleeves to the bare cable ends.
3. Install the end sleeves on the cable ends using the crimp pliers.



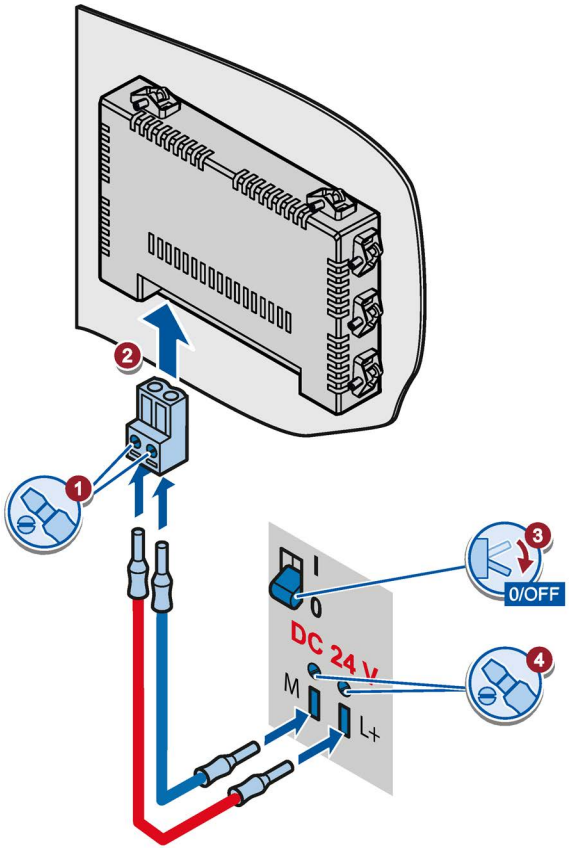
Procedure

NOTICE
24 V DC only An incorrectly dimensioned power supply can destroy the HMI device. Use a 24 V DC power supply with adequate amperage; see Technical specifications (Page 61).

NOTICE
Safe electrical isolation Use only 24 V DC 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, to PELV standard. The supply voltage must be within the specified voltage range. Otherwise, malfunctions at the HMI device cannot be ruled out. Applies to non-isolated system configurations: Connect the connection for GND 24 V from the 24 V power supply output to equipotential bonding for uniform reference potential. You should always select a central point of termination.

1. Insert the two power cables into the mains terminal and secure them with a slotted screwdriver.
2. Connect the mains terminal to the HMI device.
3. Switch off the power supply.
4. Insert the two remaining cable ends into the power supply terminals and secure them with the slotted screwdriver.

   Ensure correct polarity.



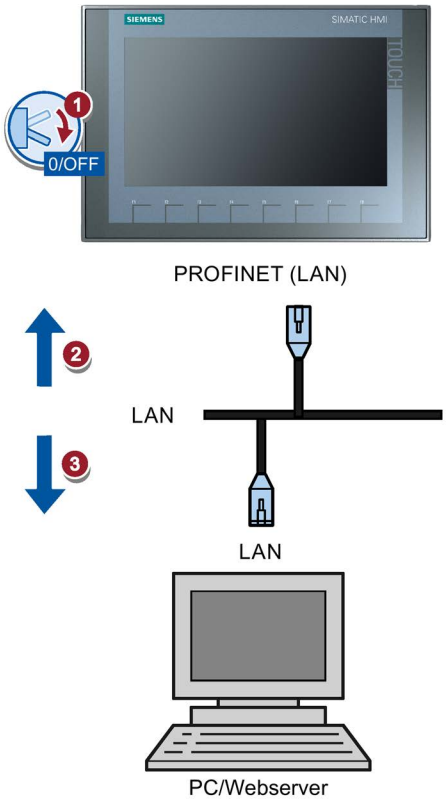
3.3.4 Connecting the HMI device to the web server

The following figure shows how to connect the HMI device via Ethernet to a PC on which the web server is installed.

NOTICE
Data network security for communication via Ethernet In Ethernet-based communication, the end user is responsible for the security of his data network. In case of targeted attacks, for example, that result in an overload of the device, proper functioning cannot be guaranteed.

Use a CAT5 Ethernet cable or higher to connect the PC.

1. Switch off the HMI device; see section "Switching the device on and off (Page 31)".
2. Connect one RJ45 connector of the LAN cable to the HMI device.
3. Connect the other RJ45 connector of the LAN cable to the web server.



3.3.5 Connecting a USB device

Below are examples of devices designed for industrial use you can connect to the USB type A interfaces of the HMI device:

- External mouse, activated after restarting the HMI device
- USB memory stick

Additional information is available in the section "Accessories (Page 11)".

NOTICE
Restricted file access For security reasons, general USB data access is blocked. You can only access the USB device using the functions of the individual "Maintenance" pages, for example, downloading an update file, a website or settings.

Note when connecting

Note
Connect a USB mouse or USB memory stick to the USB port only for the purposes of commissioning and servicing.

Note

USB 2.0 certified cable required
If you use a USB cable which is not USB 2.0 certified, errors may occur during data transfer.

Use only USB cables that are labeled "Certified HI-SPEED USB 2.0".

Note

USB cable length maximum 1.5 m
USB cables with lengths more than 1.5 m do not ensure secure data transfer.

The cable may not be longer than 1.5 m.

Note

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

Use a non-insulated system design.

Note

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 can find the values in the chapter "USB (Page 65)".

3.4 Securing the cables

NOTICE
Strain relief Contacts can be broken or wires can be torn off if cables are not provided adequate strain relief. Provide adequate strain relief for all cables.

A fastener for strain relief is available on the back of the HMI device:

After the power-on test, use a cable tie to secure the connected cables to the marked fixing element in order to provide strain relief.

Operating the device

4

4.1 Overview

All Basic Panels 2nd Generation come equipped with a touch screen and function keys. You use the touch screen to operate the Start Center or the project running on your HMI device. You use the function keys to trigger the associated configured functions within a project.

⚠ DANGER

Incorrect operation

A project can contain certain operations that require in-depth knowledge about the specific system on the part of the operator.

Ensure that only trained professional personnel operate the system.

Operating the touch screen

NOTICE

Damage to the touch screen

Pointed or sharp objects, touching with excessive pressure and continuous gesture operation can significantly reduce the service life of the touch screen or result in a total failure of the touch screen.

- Do not touch the touch screen with pointed or sharp objects.
- Avoid applying excessive pressure to the touch screen with hard objects.
- Avoid continuous operation of the touch screen with gestures.

Triggering unintended actions

Touching several operating elements at the same time can trigger unintended actions.

Touch only one operating element on the screen at a time.

Operating elements are touch-sensitive symbols on the screen of the HMI device.

They are basically operated in the same way as mechanical keys. You activate operating elements by touching them with your finger.

Note

The HMI device returns a visual feedback as soon as it detects that an operating element has been touched.

The visual feedback is independent of any communication with the controller. The visual feedback signal therefore does not indicate whether or not the relevant action is actually executed.

Examples:

- I/O fields
  When you touch an I/O field, the screen keyboard is displayed, e.g. for entry of a password. The type of keyboard depends on the mounting position and the touched operating element.

  The screen keyboard is automatically hidden again when input is complete.

Operating function keys

The function keys can be assigned globally:

- Function keys with global function assignment
  A function key with global function assignment always triggers the same action on the HMI device or in the controller, regardless of the currently displayed screen. Examples of such actions:
  - Brightness control
  - Zoom In, Zoom Out
  - Home button, Maintenance button
  - Freely configurable URLs

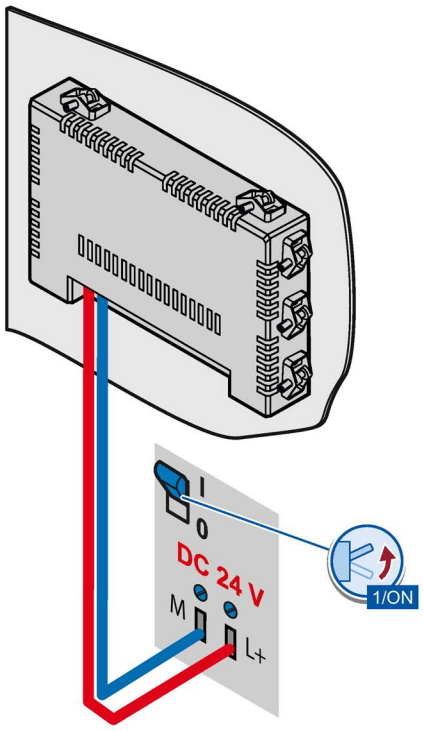
4.2 Switching the device on and off

Switching on the HMI device

Switch on the power supply.

The screen lights up shortly after power is switched on.

If the HMI device fails to start, the cables on the power supply terminal are crossed. Check the connected cables and change their connection, if necessary.



The customer-specific application is displayed once the operating system has started. An example of a customer-specific site is shown in the section "Opening a customer-specific website (Page 34)".

If the web server cannot be reached, the "Maintenance" website is displayed. You can find a description of the "Maintenance" website in the following section: ""Maintenance" overview page (Page 33)"

Shutting down the HMI Device

1. Close the application that is running on the HMI device.
2. Shut down the HMI device. You have the following shutdown options:
   - Switch off the power supply.
   - Remove the power supply terminal from the HMI device.

4.3 Using the on-screen keyboard

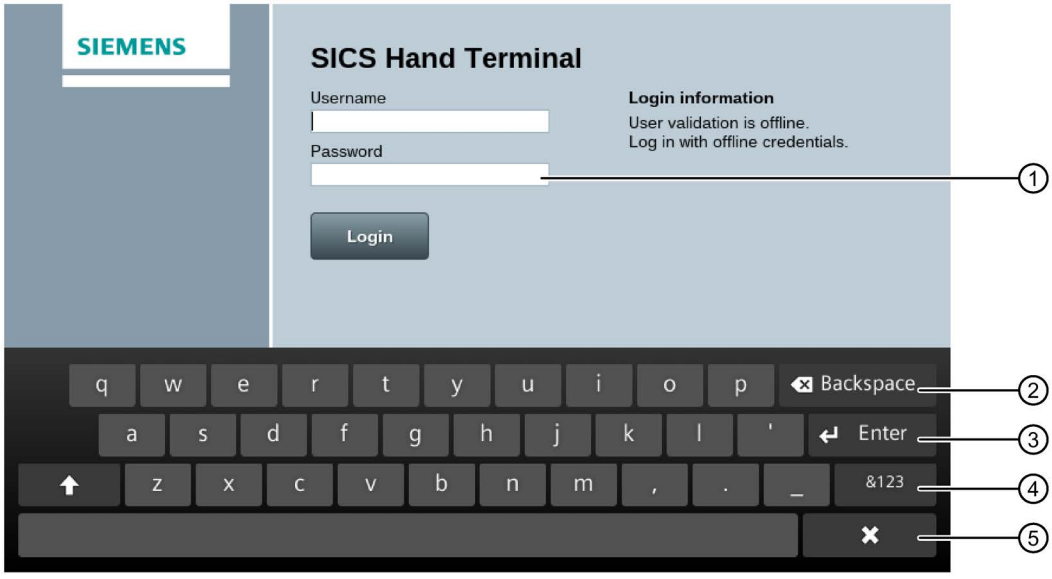
The on-screen keyboard is used in a customer-specific application as well as on the "Maintenance" website. It opens automatically as soon as you activate a text box with the cursor. The keyboard is closed when you confirm the entry or move the cursor away from the text box.

It is always the keyboard which matches the character set of the respective text box which opens.

The following three on-screen keyboards are available for text boxes:

- Alphanumeric on-screen keyboard

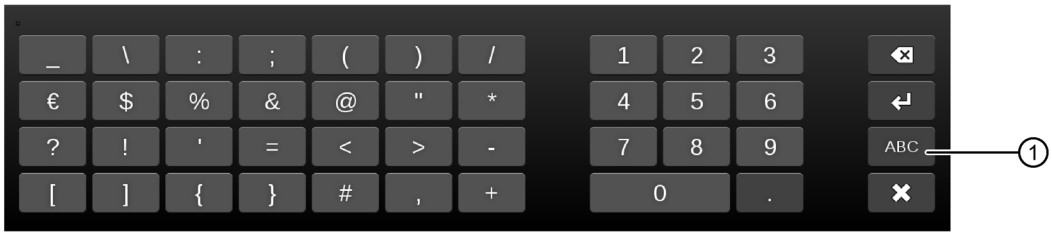
  The following on-screen keyboard is opened automatically when you click on an alphanumeric text box:



① Alphanumeric text box
② Delete line content in text box
③ Confirm input
④ Activate symbol and numerical keyboard
⑤ Close on-screen keyboard

- Numerical on-screen keyboard with symbol keys

  If you click on the "Symbol and numerical keyboard" button, the following on-screen keyboard opens:



① Activate alphanumeric keyboard

- Numerical screen keyboard

  The following on-screen keyboard is opened automatically when you click on a numerical text box:

① Switches to positive or negative values

Assigning device parameters

5

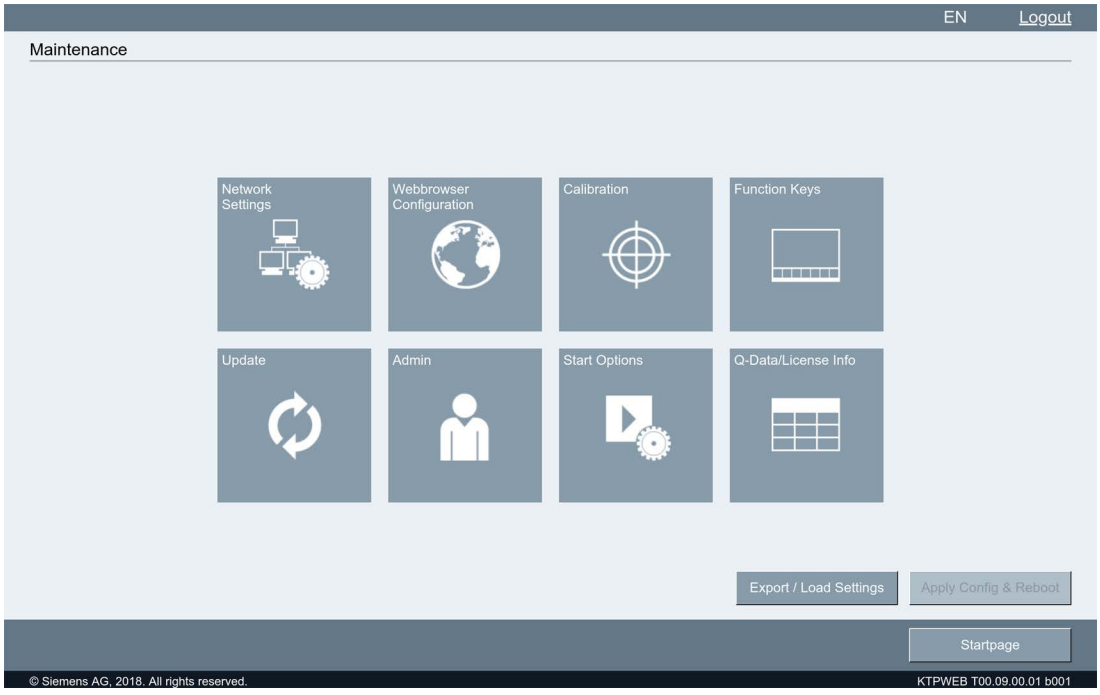
5.1 "Maintenance" overview page

A "Maintenance" overview page is available on the device for maintenance purposes. It includes an internal operating data recording system that runs during normal operation and permanently records data in case service is required.

The "Maintenance" overview page is displayed under the following conditions:

- When the device is initially started with the factory settings.
- When no start option is selected.
- When a start option is not possible or cannot be achieved.
- When the operator presses both buttons for brightness control simultaneously.
- When the following fixed address of the "Maintenance" website is called by a customer-specific website: "http://127.0.0.1:8080".

The figure below shows the overview page when you are logged in as administrator:



Changing the settings

For unrestricted access to all pages, you must first log on as administrator, see ""Admin" page (Page 43)".

1. Click a button. The corresponding (web) page is opened.
2. Change one or more settings and exit the page with "Maintenance" or "OK".
3. The "Maintenance" overview page opens again. The frame flashes when you press "Apply Config & Reboot".
4. Click "Apply Config & Reboot". The device restarts and activates the new settings.

Functions in the header

- "EN": switches the user interface language to English.
- "DE": switches the user interface language to German.
- "Logout": logs off the user (as administrator).

5.2 Opening a customer-specific website

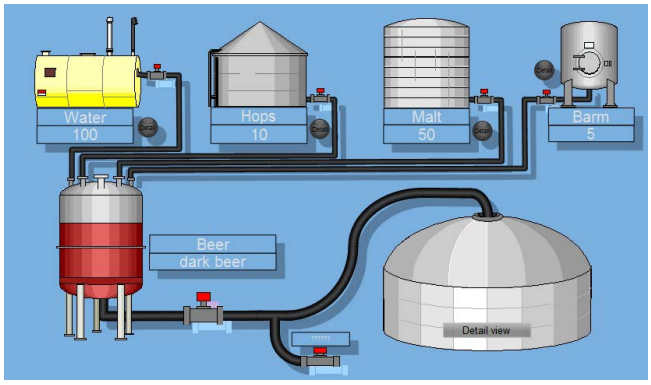
If there is a connection to the web server, the customer-specific website is displayed. If you want to open the "Maintenance" overview page from the customer-specific website, a hyperlink must be configured to the overview page, for example, a corresponding button.

Requirement

- The device is switched on.
- A connection to the web server exists.

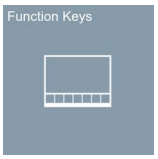
Procedure

The figure below is an example of a customer-specific website and how the collected data can be displayed.



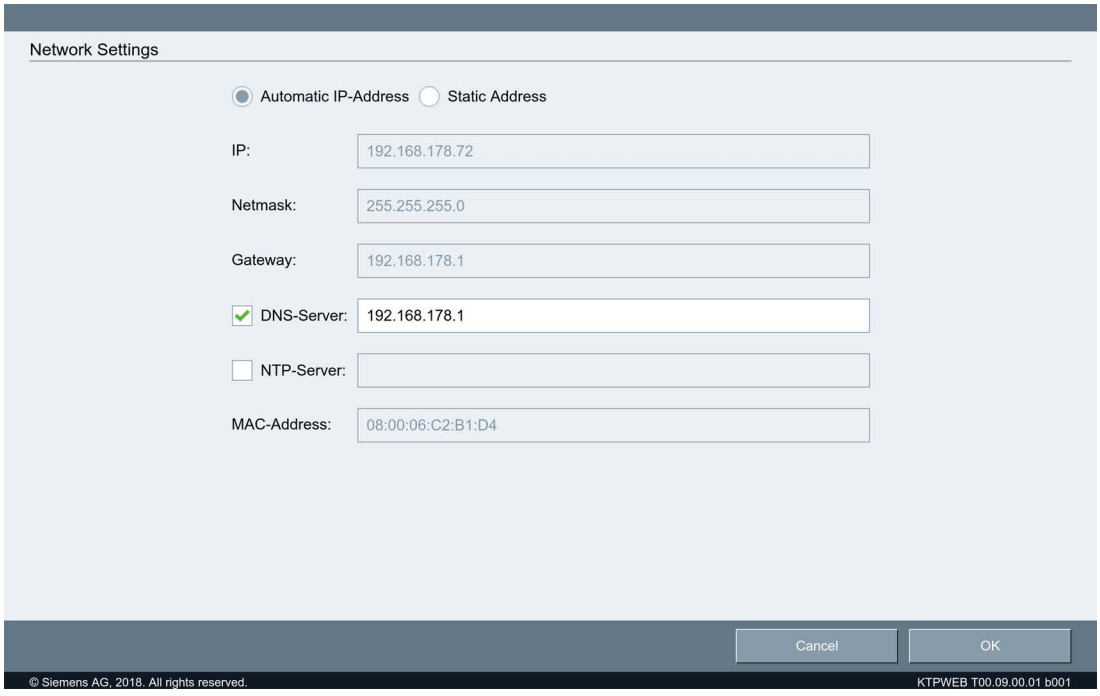
5.3 Maintenance pages

The table below includes the icons of the "Maintenance" overview page with links to the relevant sections.

Icon	Functional description
	"Network Settings" page (Page 36)
	"Webbrowser Configuration" page (Page 37)
	"Calibration" page (Page 39)
	"Function Keys" page (Page 41)
	"Update" page (Page 42)
	"Admin" page (Page 43)
	"Start Options" page (Page 46)
	"Q-Data" page (Page 48)
	"Export / Load Settings" page (Page 49)

5.4 "Network Settings" page

On the "Network Settings" page, you can specify the network settings for the device that you will use to assign the parameters of the device for data communication via the Ethernet port:



Note

The HMI device can only be used in **Ethernet networks**.

The HMI device has **client functionality** in the local network. This means that users can access files of a node with TCP/IP server functionality from the HMI device via the local network. However, you cannot, for example, access files of the HMI device from a PC via the local network.

By default, port 22 is available for maintenance purposes over **Secure Shell** (SSH, encrypted remote maintenance and file transfer).

Type of **address assignment**

- To obtain the addresses automatically via DHCP, select "Automatic IP-Address".
- To determine the addresses manually, select "Static Address".

If you have selected manual address assignment, enter the corresponding addresses under "IP", "Netmask" and under "Gateway", as required.

NOTICE
IP address must be unique An address conflict and malfunctions may occur if more than one device is assigned the same IP address in the local network. Assign a unique IP address to each HMI device in the local network.

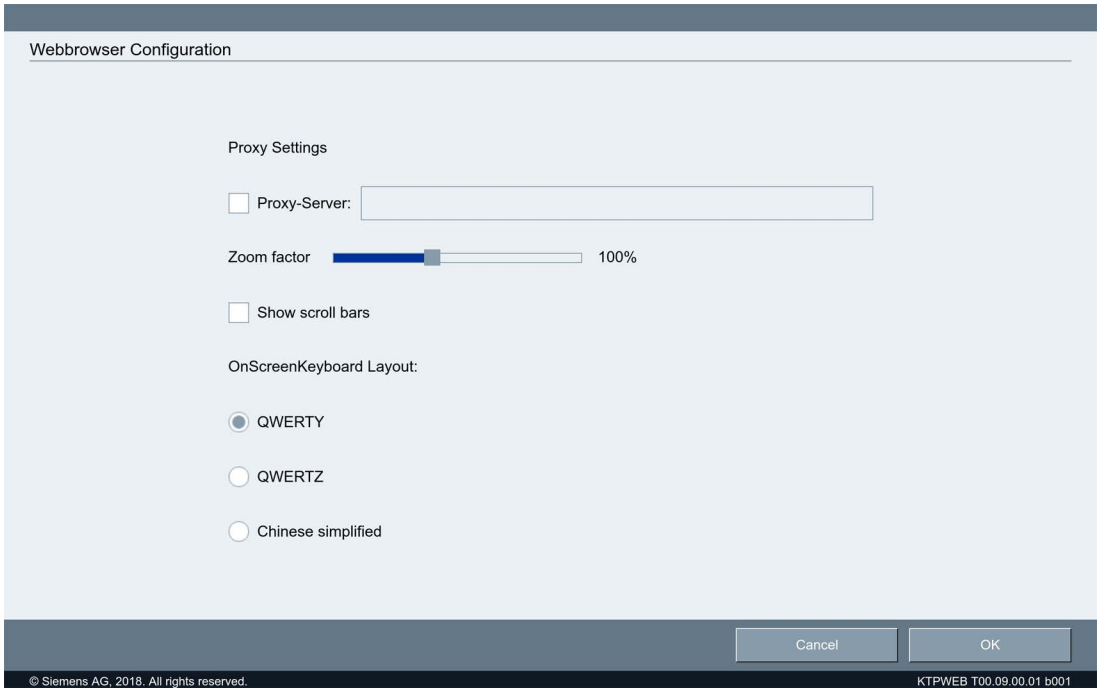
"**DNS-Server**": The IP address is managed on a name server "Domain Name System" DNS. Enter the address of the name server.

"**NTP-Server**": The time server synchronizes the time of day using the "Network Time Protocol" NTP. Enter the address of the time server.

"**MAC-Address**": for information only.

5.5 "Webbrowser Configuration" page

On the "Webbrowser Configuration" page, you can specify the screen and keyboard display in the Web browser:



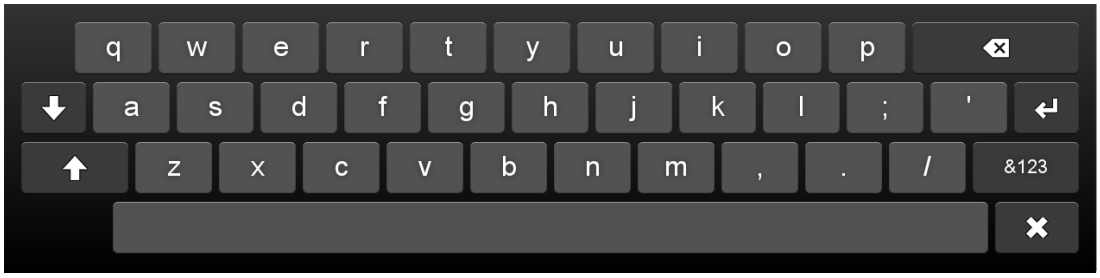
Enable "**Proxy-Server**" if you access the Internet via a proxy. Enter the address of the proxy server that should start with "http://".

Use "**Zoom factor**" to enlarge or reduce the entire screen content (zoom factor 75-150%).

Use "**Show scroll bars**" to activate and deactivate the scroll bars.

Use the "**OnScreenKeyboard Layout**" options to specify the layout of the on-screen keyboard:

- "QWERTY" for English keyboard



- "QWERTZ" for German keyboard

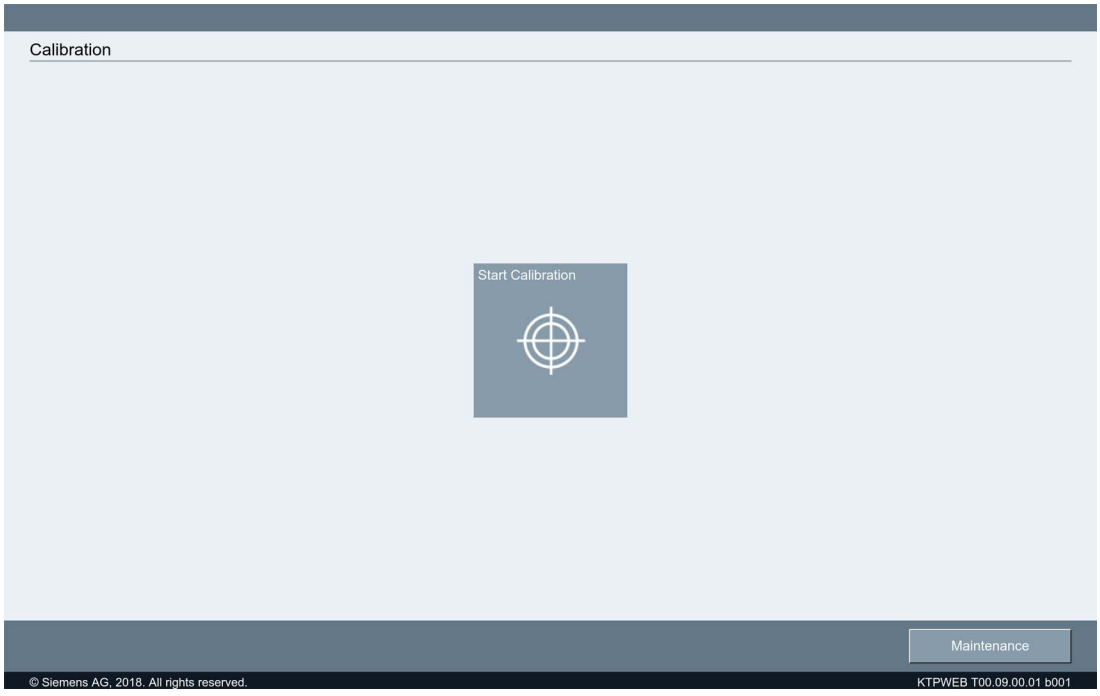
- "Chinese simplified" for Chinese keyboard You can enter Latin characters when you press the "X" key twice on the Chinese keyboard:

5.6 "Calibration" page

Parallax may occur on the touch screen depending on the mounting position and perspective. To prevent any resulting operating errors, you may need to calibrate the touch screen.

Requirement

- 1 Touch pen
- The "Calibration" page is open.



Procedure

1. Click "Start Calibration". The following dialog appears:

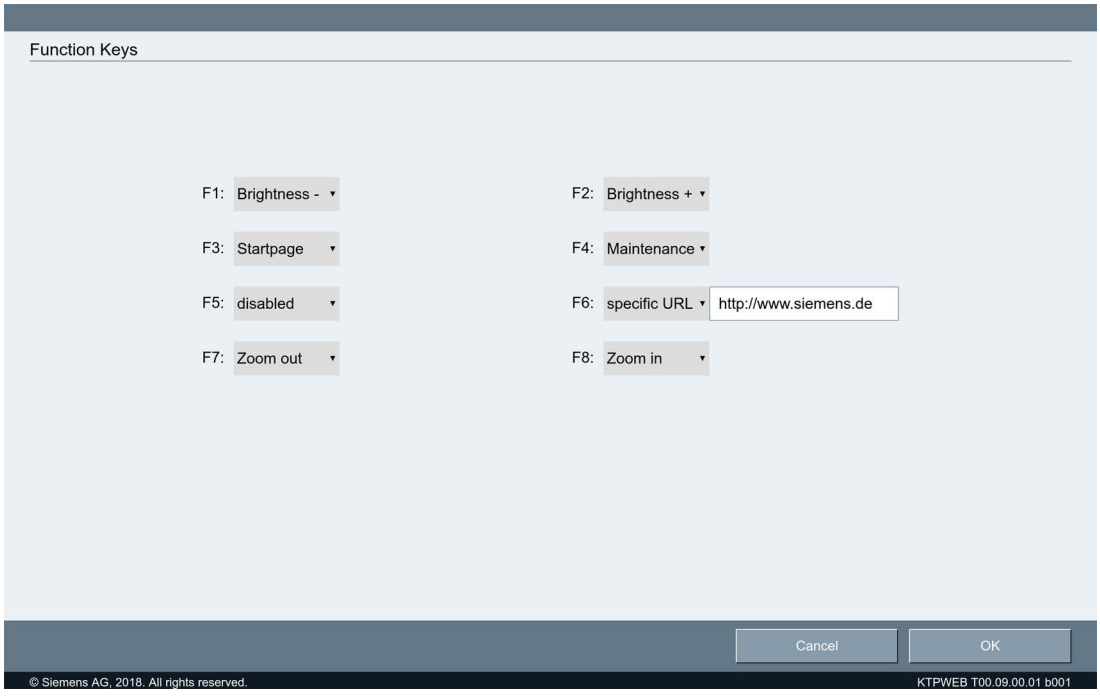
2. Briefly touch the center of the calibration crosshairs.

   The calibration crosshairs are then displayed at three more positions. Briefly touch the middle of the calibration crosshairs for each position.

Once you have touched the calibration crosshairs for all positions, the "Calibration successful" message appears. The touch screen is calibrated.

5.7 "Function Keys" page

On the "Functions Keys" page, you can assign functions to the function keys. The figure below shows a device with 8 function keys as an example:

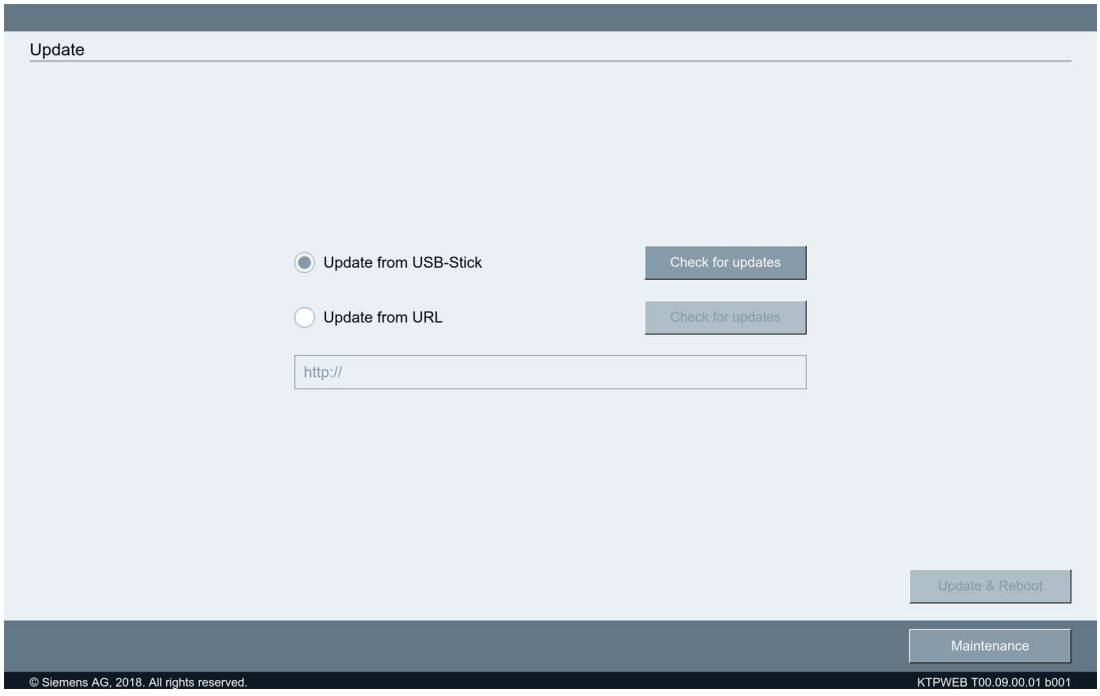


A drop-down list is available for each function key with the following functions:

- "**Brightness -**": reduces the screen brightness
- "**Brightness +**": increases the screen brightness
- "**Startpage**": downloads the website that is called during start, see "Start Options" page (Page 46)
- "**Maintenance**": downloads the "Maintenance" overview page
- "**specific URL**": downloads the specified website
- "**Zoom out**": minimizes the entire screen content, see "Webbrowser Configuration" page (Page 37)
- "**Zoom in**": enlarges the entire screen content, see "Webbrowser Configuration" page (Page 37)
- "**disabled**": The function key is not assigned.

5.8 "Update" page

On the "Update" page, you can update the operating system of the device when a security or service update is performed:



"**Update from USB-Stick**": The USB flash drive contains the update file. The USB flash drive must have a FAT or FAT32 partition.

"**Update from URL**": The update via URL is performed via HTTP with the syntax "http(s)://149.202.10.10/fw_ktpweb.tar". The URL is checked for validity. The update file *.tar must be specified as well.

"**Check for updates**": When you click the button, the program searches for the "*.tar" update file in the root directory of the USB flash drive or at the specified Internet address. If the file exists, a corresponding message appears and the "**Update & Reboot**" button is activated. If the file cannot be found or if its version is lower than or equal to the firmware version on the HMI device, the update process is canceled with the error message "no valid version available".

"**Update & Reboot**": When you click the button, the firmware is updated. You cannot explicitly stop the ongoing update process or undo it. The update process is canceled when pull the USB cable or interrupt the power supply. The existing image will still start up without any problems.

5.9 "Admin" page

On the "Admin" page, you can log on as administrator and change the password.

A user that is not logged in (as administrator), only has (limited) access to the following pages (see "Maintenance" overview page (Page 33)):

- Calibration, see "Calibration" page (Page 39)
- Update, see "Update" page (Page 42)
- Admin, this section
- Q-Data, see "Q-Data" page (Page 48)

The user is **not** logged in (as administrator) in the following cases:

- The device restarts (Reboot) and a password has been assigned.
- The user is logged off ("Logout" top right).

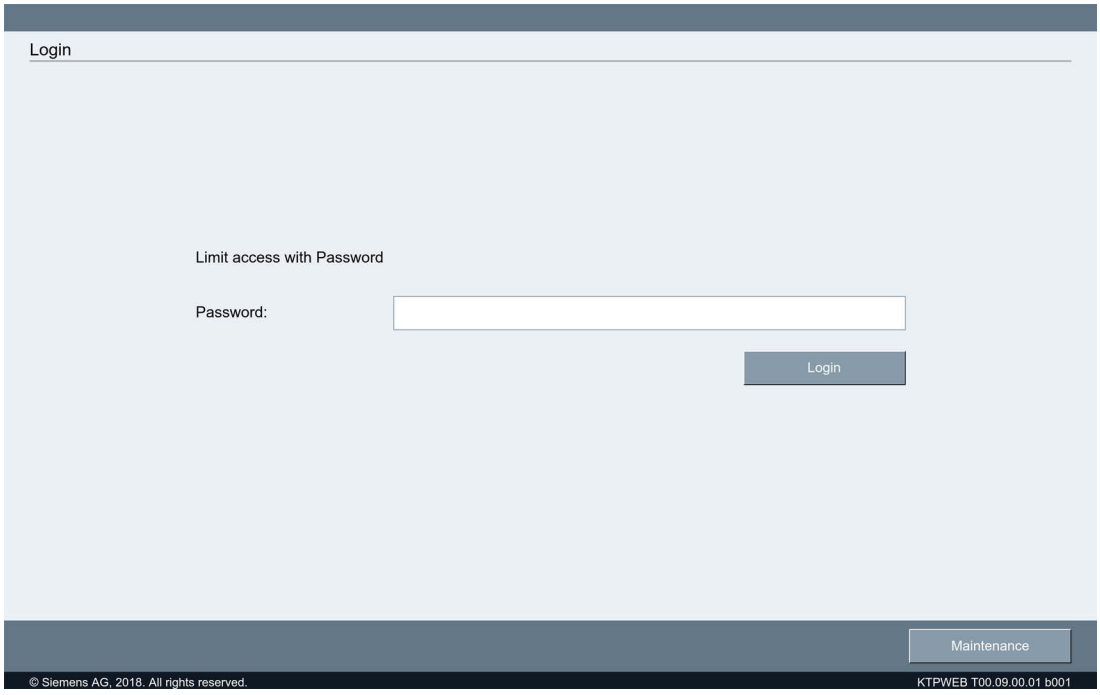
The user is logged in (as administrator) in the following cases:

- The device is in the delivery state.
- The device restarts (Reboot) and **no** password has been assigned.

NOTICE
Data misuse due to unauthorized access The device is not protected from unauthorized access in the delivery state and after the password has been reset: Every user is logged in as administrator after a restart and has unlimited access to all functions. An unauthorized user can manipulate data. This can result in damage to the machine or system. • Protect your device from unauthorized access. • Assign a password after delivery (see "Change password"). • Assign a new password after the password has been reset.

Log on and log off as administrator

1. To log on as administrator, open the "Admin" page. The log-on dialog box is displayed:



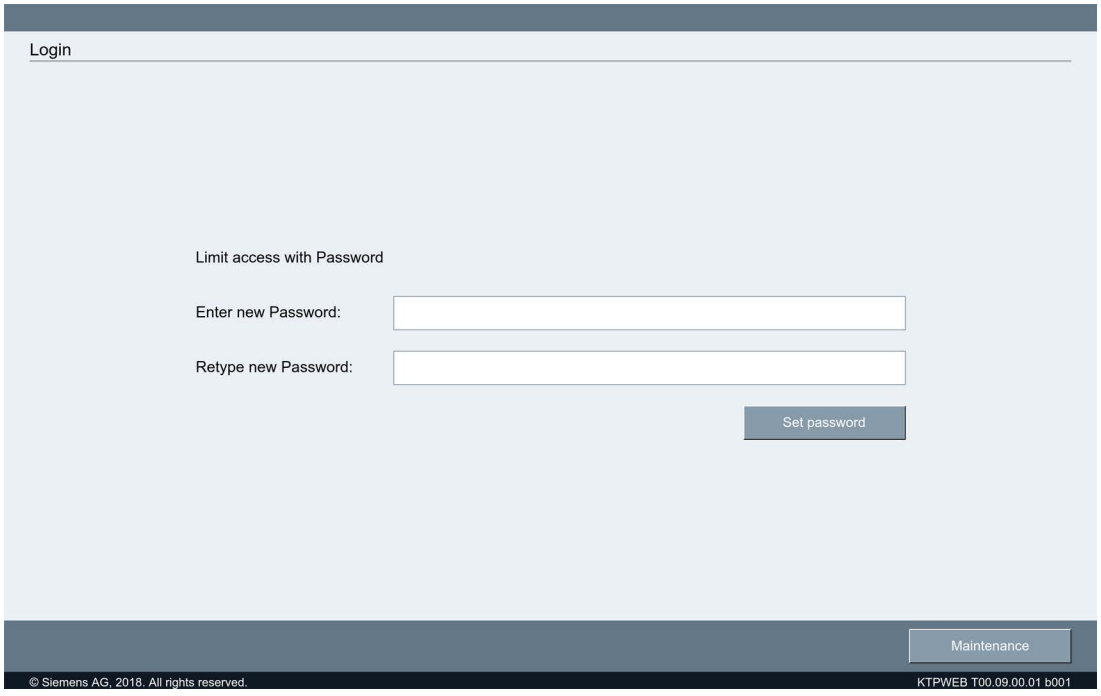
2. Enter the password. If the password is correct, the "Maintenance" overview page opens:
   - The user is logged on as administrator.
   - All pages are available.
   - "Logout" can be seen at the top right.
3. To log off, press "Logout".

   The user is no longer logged on as administrator.

Change your password

You use a password to protect your device from unauthorized access (see also section "Safety instructions (Page 13)").

1. You have to log on as administrator before you can change the password.
2. Open the "Admin" page. The password dialog box is displayed:



3. Enter a password under "Enter new Password".
4. Repeat the password in the password field.
5. Click "Set password".

   The "Maintenance" overview page opens. The "Apply Config & Reboot" button flashes.
6. Click "Apply Config & Reboot". The device restarts and activates the new password.

   You must log on as administrator with the new password for all functions to be available.

Reset password

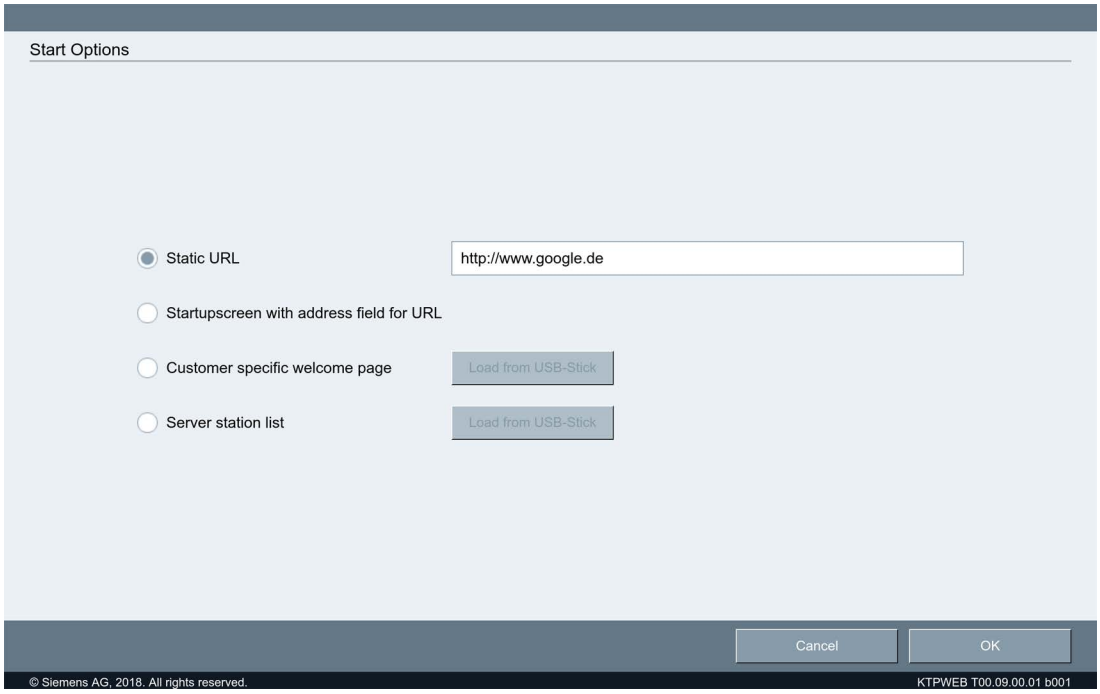
The password is reset if you leave both password fields blank when you change the password. All functions are available without logon after restart with "Apply Config & Reboot".

See also

"Function Keys" page (Page 41)

5.10 "Start Options" page

In the "Start Options" dialog, you can specify what is displayed after starting the device:



Entered values, for example, the "Static URL" are retained even after changing the start option.

"**Static URL**": Address of the website that is called during start. The URL is not checked for availability. If the website or the web server is unavailable during the start or if no value is entered, the "Maintenance" website is displayed.

"**Startupscreen with address field for URL**": A page with a URL input field is displayed when the device is started. The URL is not checked for availability. If the website or the web server is unavailable during the start, the "Maintenance" website is displayed.

"**Customer specific welcome page**": The "custom.html" file is looked up in the root directory of the USB stick, loaded and processed by the browser.

- The file must not be larger than 1 MB. An error is displayed if the file is too large.

The "Maintenance" website is displayed if an error occurs.

"**Server station list**": The "stations.conf" file is looked up in the root directory of the USB stick.

- The file must not be larger than 1 MB.
- A maximum of 120 stations is possible.

Syntax and content are checked: An error is displayed if there are too many stations. One or more html pages are generated from the "stations.conf" during the next restart. The "Maintenance" website is displayed if an error occurs.

Creating a station list "stations.conf" manually

You can create the "stations.conf" file with the Windows tool "Notepad". The file must be saved in "UTF-8" format. To do this, select "UTF-8" as coding.

The file must have the following structure in JSON format (see JSON standard ECMA-404 (http://www.ecma-international.org/publications/files/ECMA-ST/ECMA-404.pdf) in the Internet):

```
{
"stationlist":
 [
{"ipaddress": "1.2.3.4", "id": 1406896505961, "stationname": "aaa"},
{"ipaddress": "1.22.33.44", "id": 1406896515846, "stationname": "bbb"},
{"ipaddress": "111.32.3.4", "id": 1407155369801, "stationname": "ccc"}
 ]
}
```

"**ipaddress**": IP/URL to which this entry is to refer.

"**id**": optional; not required for manual creation of the file and not evaluated.

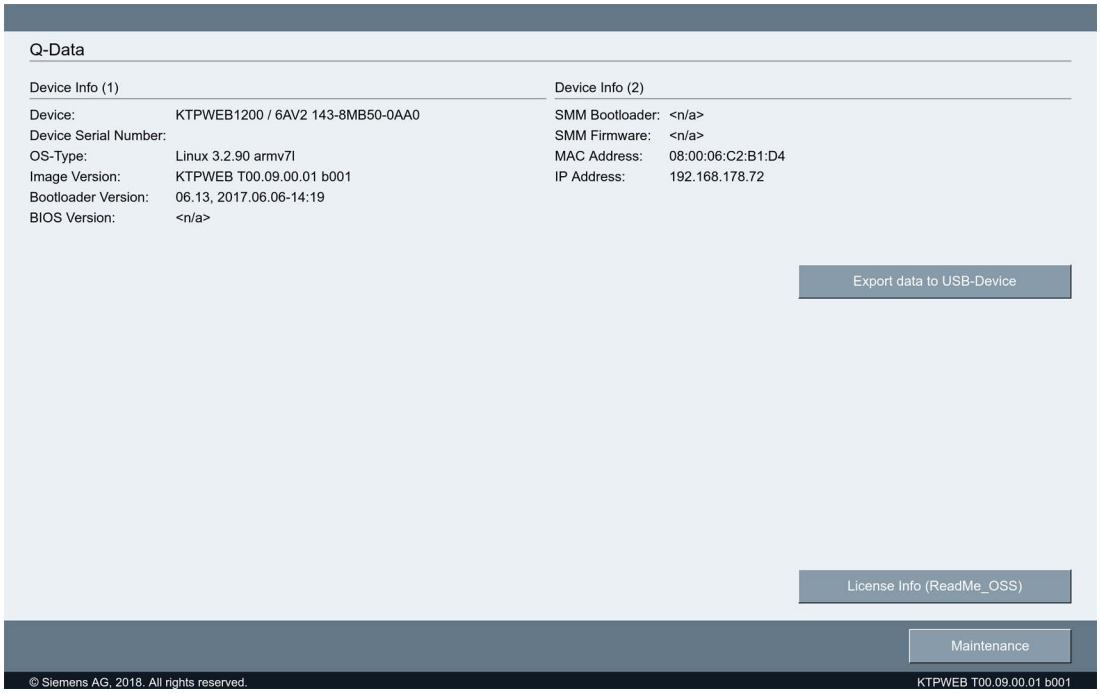
"**stationname**": The name of the station entry.

The last entry cannot have a comma at the end, as in the example above.

When using **special characters**, observe the JSON standard, especially page 10.

5.11 "Q-Data" page

The "Q-Data" page displays device data:



- Device name and article number (MLFB)
- Serial no. of the device
- Operating system version
- Device image and BIOS version
- Boot loader version
- Firmware version of the power supply board (SMM)
- MAC address and IP address

The device is also equipped with an internal operating data recording system which is active in all standard operating states. The following data is permanently stored for evaluating use for servicing purposes:

- Device operating time
- Number of power supply operations
- Number of switch-on operations

USB backup of data displayed

Requirement

- A SIMATIC IPC USB flash drive is connected.
- The SIMATIC IPC USB flash drive has sufficient free memory space.

The following procedure should only be followed for servicing:

1. Insert the SIMATIC IPC USB flash drive into the USB port in the device.
2. Click on the "Export data to USB-Device" button.
3. After the export, the message "Export completed" appears.

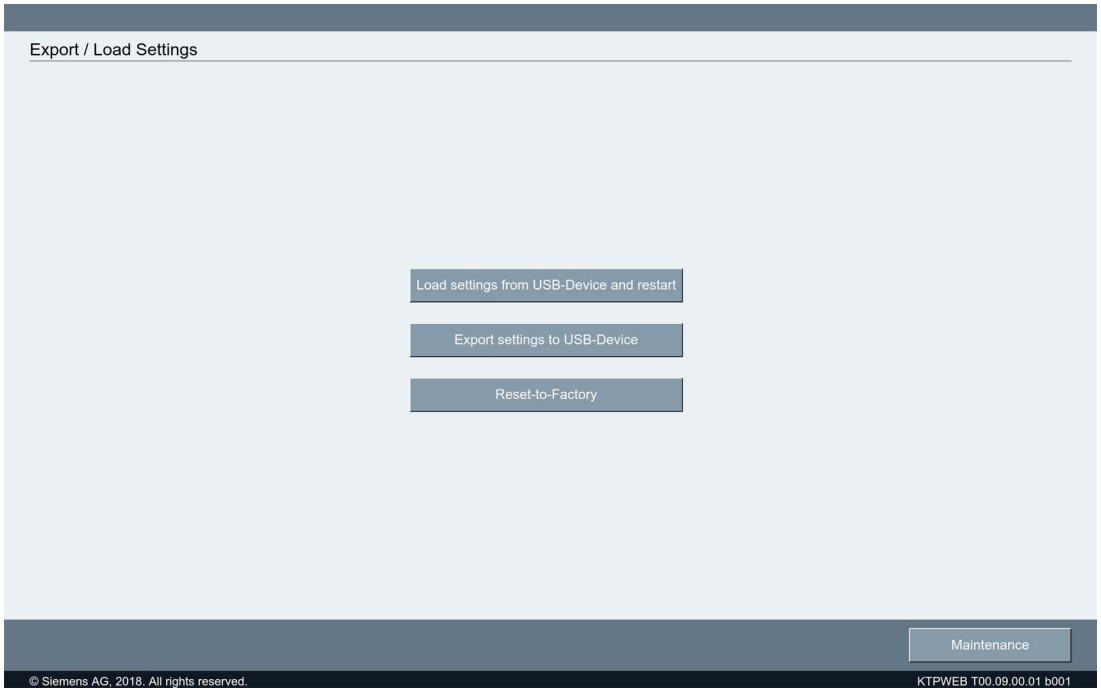
All device data and operating times are saved.

License information

The button "License Info (ReadMe_OSS)" shows the necessary license terms for all OpenSource software used.

5.12 "Export / Load Settings" page

On the "Export / Load Settings" page, you save the settings and restore them:



NOTICE
Data loss
All data on the HMI device is deleted during a restore operation.

"**Load settings from USB-Device and restart**": Looking for the "syssettings.conf" file in the root directory of the USB flash drive. A syntax check is performed prior to loading. If the Config protocol version is older or the same, the file is migrated. A message is output if an error occurs and the file is discarded. If there is no error, the device is restarted and the new settings are activated. You must be logged on as administrator for this function.

"**Export settings to USB-Device**": The latest maintenance settings are stored in the root directory in the "syssettings.conf" file.

"**Reset-to-Factory**": Restore the factory settings. A confirmation page with "NO" and "YES" buttons is displayed. If you confirm with "YES", the default settings are activated and the device restarts. All user files, for example, "stations.conf" and "custom.html" are deleted.

You must be logged on as administrator for this function. If you cannot log on as administrator because you forgot your password, only the Repair Center can reset the device to factory settings.

Maintenance and care

6

6.1 Maintenance and care

Introduction

The HMI device is designed for maintenance-free operation. Keep the touch screen and keyboard cover clean.

Requirement

Use a cleaning cloth dampened with a cleaning agent to clean the equipment. Only use water with a little liquid soap or a screen cleaning foam.

Note

Unintentional response

When cleaning the touch screen, an unintentional response in the controller can be triggered by touching keys.

Switch the HMI device off before cleaning to prevent unintentional responses.

Note

Damage caused by unauthorized cleaning products

The HMI device may be damaged if compressed air, steam jet blowers, aggressive solvents or scouring powders are used for cleaning purposes.

Do not clean the HMI device with compressed air or steam jet blowers. Do not use aggressive solvents or scouring powder.

Procedure

Proceed as follows:

1. Shut down the HMI device.
2. Spray the cleaning solution onto a cleaning cloth.

   Do not spray directly onto the HMI device.
3. Clean the HMI device.

   When cleaning the display wipe from the screen edge inwards.

6.2 Recycling

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.

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7.1 Certificates and approvals

Note

The only valid approvals for the HMI device and the connection box itself are those shown on the label on the rear panel.

CE approval

The device meets the requirements and safety specifications of the following EC directives. The device complies with the harmonized European standards published in the Official Journals of the European Community for programmable logic controllers:

- 2004/108/EC Electromagnetic Compatibility Directive (EMC Directive)

EC Declaration of Conformity

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

Siemens AG
Digital Factory, Factory Automation
DF FA SE R&D
Breslauer Str. 5
DE-90766 Fürth, Germany

UL approval

The device satisfies the requirements according to Underwriters Laboratories Inc.

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

Marking for Australia

The device meets the requirements of the standard AS/NZS 4665.1-2005 +A1:2009 (Class A).

IEC 61131

The device meets the requirements and criteria of standard IEC 61131-2:2007, programmable logic controllers, Part 2: Equipment requirements and tests.

KOREA

The device and the connection box satisfy the requirements according to the Korean certification.

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

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

7.2 Electromagnetic compatibility

The device is designed for industrial use.

7.2.1 Emitted interference

The device meets the requirements according to EN 61000-6-4. The device corresponds to limit class A.

Note

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

7.2.2 Immunity to interferences

The device meets the requirements according to EN 61000-6-2.

7.3 Mechanical ambient conditions

7.3.1 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 to IEC 60068-2-6	5 ... 8.4 Hz, deflection 3.5 mm 8.4 ... 500 Hz, acceleration 1 g
Shock to IEC 60068-2-27	250 m/s^2, 6 ms, 1000 shocks

7.3.2 Operating Conditions

The following information applies to a device installed according to the specifications in these operating instructions.

The HMI device is designed for stationary operation in a location protected from the effects of the weather.

The device meets the requirements according to IEC 60721, Class 3M3 with the following amendments and limitations:

Type of condition	Permitted range
Vibration to IEC 60068-2-6	5 ... 8.4 Hz, deflection 3.5 mm 8.4 ... 200 Hz, acceleration 1 g
Shock to IEC 60068-2-27	150 m/s^2, 11 ms, 3 shocks

7.4 Climatic ambient conditions

7.4.1 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 2K2 with the following amendments and limitations:

Type of condition	Permitted range
Temperature	–20 ... +60 °C
Atmospheric pressure	1080 ... 660 hPa, corresponds to an elevation of 1000 m to 3500 m
Relative humidity	10 ... 90%, without condensation
Pollutant concentration	SO2: < 0.5 ppm; Relative humidity < 60%, no condensation H_2S: < 0.1 ppm; Relative humidity < 60%, no condensation

Note

Ensure that no condensation (dewing) develops on or inside the HMI device after transporting it at low temperatures or after it has been exposed to extreme temperature fluctuations.

The HMI device must have acquired room 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 dewing has developed, wait approximately 4 hours until the HMI device has dried completely before switching it on.

7.4.2 Operating Conditions

The following information applies to a device installed according to the specifications in these operating instructions.

The HMI device is designed for stationary operation in a location protected from the effects of the weather.

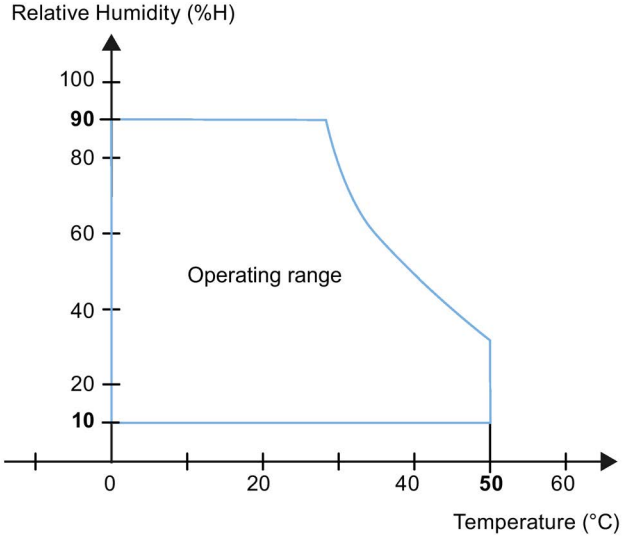
The device meets the requirements according to IEC 60721-3-3, Class 3K3 with the following amendments and limitations:

Type of condition	Permitted range
Temperature, device in landscape • Vertical mounting • Inclined installation, inclination up to 35°	 0 ... 50 °C 0 ... 40 °C
Temperature, device in portrait • Vertical mounting • Inclined installation, inclination up to 35°	 0 ... 40 °C 0 ... 35 °C
Atmospheric pressure	1080 ... 795 hPa, corresponds to an elevation of 1000 m to 2000 m
Relative humidity	From 10 to 90%, without condensation
Pollutant concentration	SO2: < 0.5 ppm; Relative humidity < 60%, no condensation H_2S: < 0.1 ppm; Relative humidity < 60%, no condensation

7.4.3 Climate diagram

The diagram below shows the extended range for temperature and humidity during operation based on IEC 60721-3-3 Class 3K3.

The information applies to a device installed in landscape without inclination.



7.5 Information on insulation tests, protection class and degree of protection

Insulation test

The insulation strength is demonstrated in the type test with the following test voltages in accordance with IEC 61131-2:

Circuits with rated voltage of U_i	Test voltage
Insulation tested with (type test)	707 V DC to other circuits/to ground For Ethernet socket: 1500 V AC

Degree of pollution and overvoltage category

The device meets the following requirements according to IEC 61131-2:2007:

Degree of pollution	2
Overvoltage category	II

Protection class

Protection class III according to IEC 61131-2

Protection against foreign objects and water

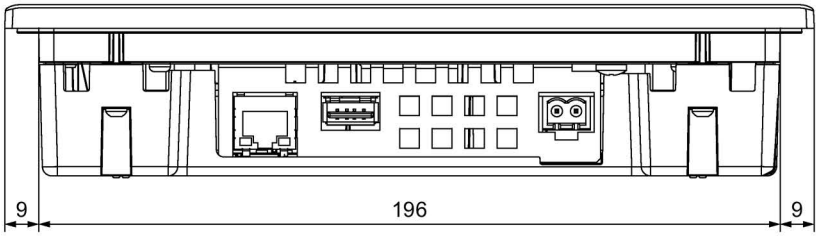
The device meets the requirements according to EN 60529.

Device side	Degree of protection
Front	When mounted: • IP65 • Type 4X/Type 12 (indoor use only)
Rear panel	IP20 Protection against contact with standard test probes. There is no protection against the ingress of water.

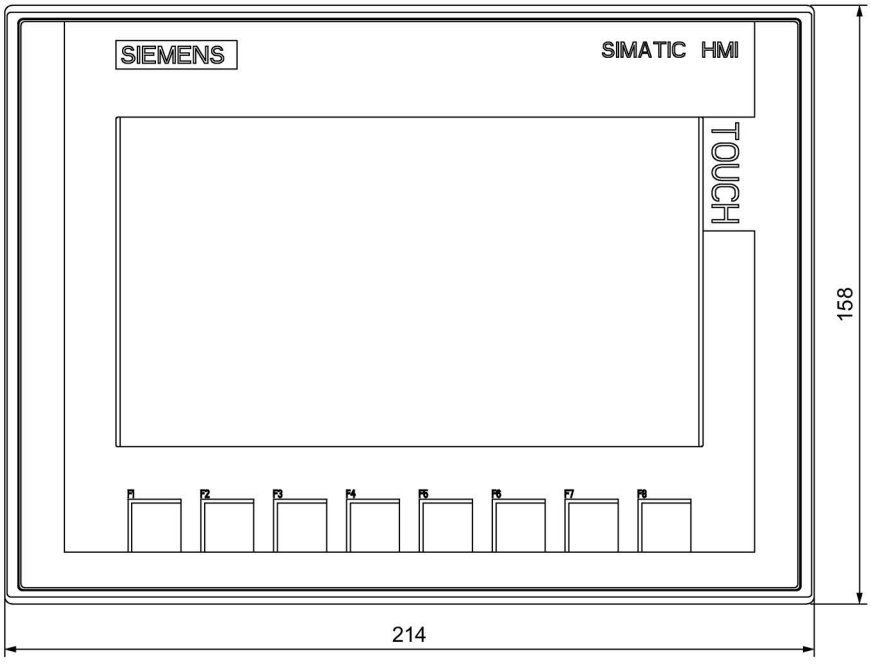
The front protection rating can only be guaranteed if the mounting seal lies flush against the mounting cutout. Read the corresponding information in section "Making the mounting cutout (Page 19)".

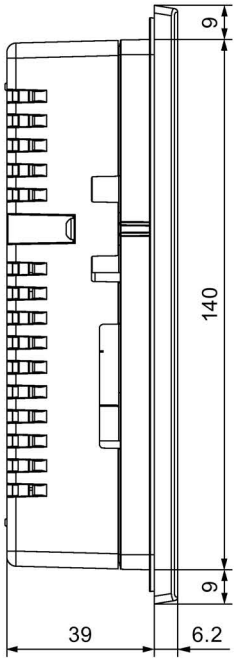
7.6 Dimension drawings

7.6.1 IWP700

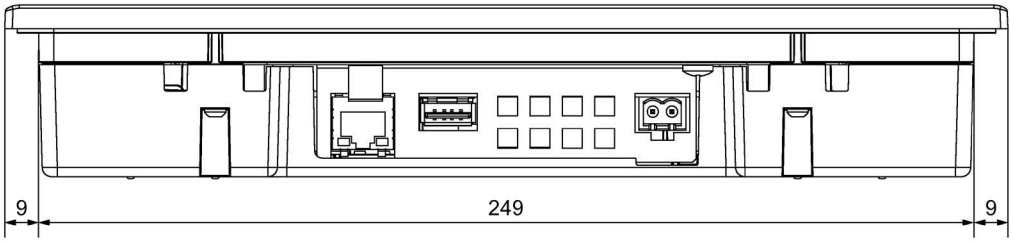


All dimensions in mm

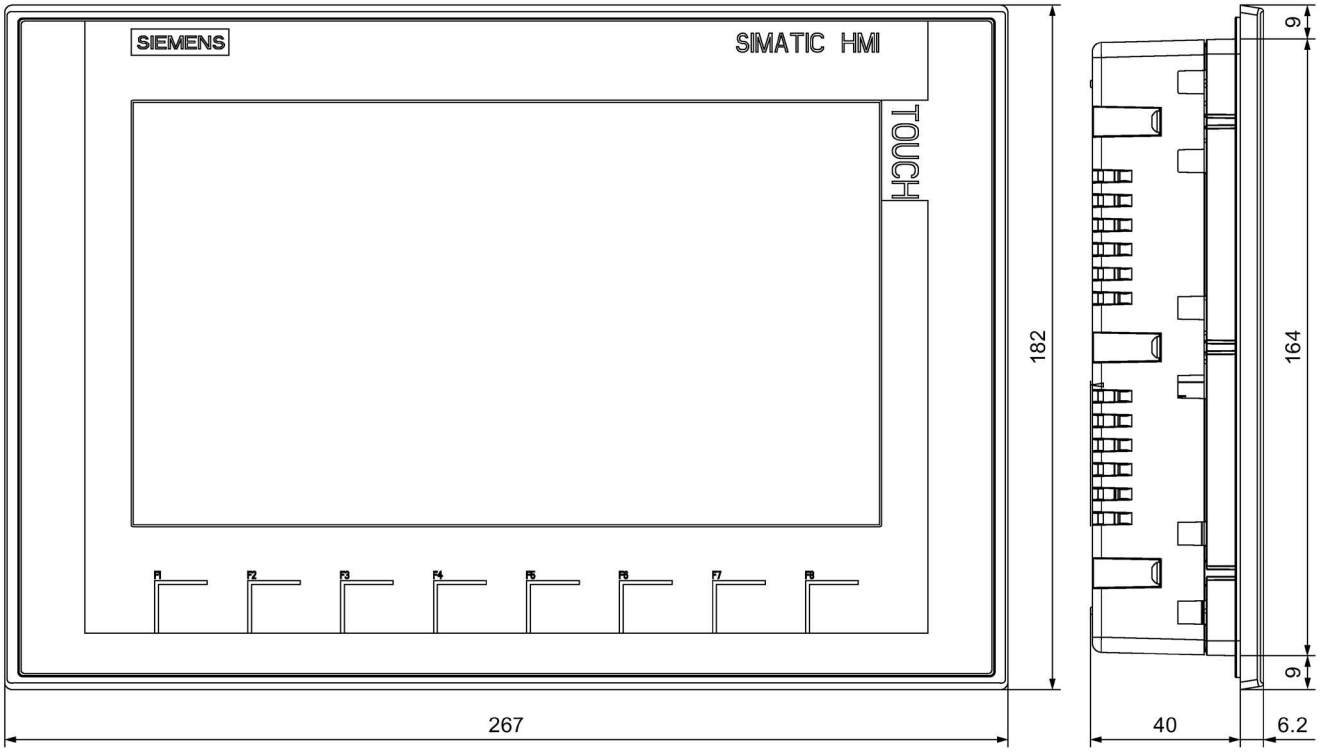




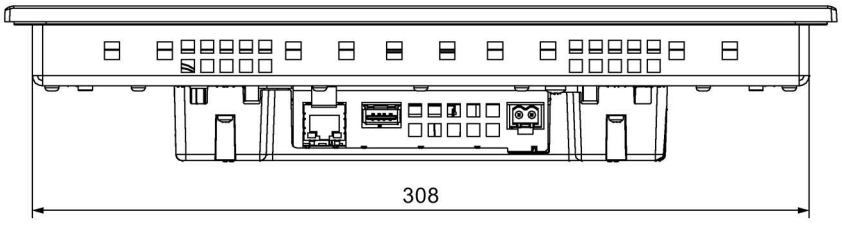
7.6.2 IWP900



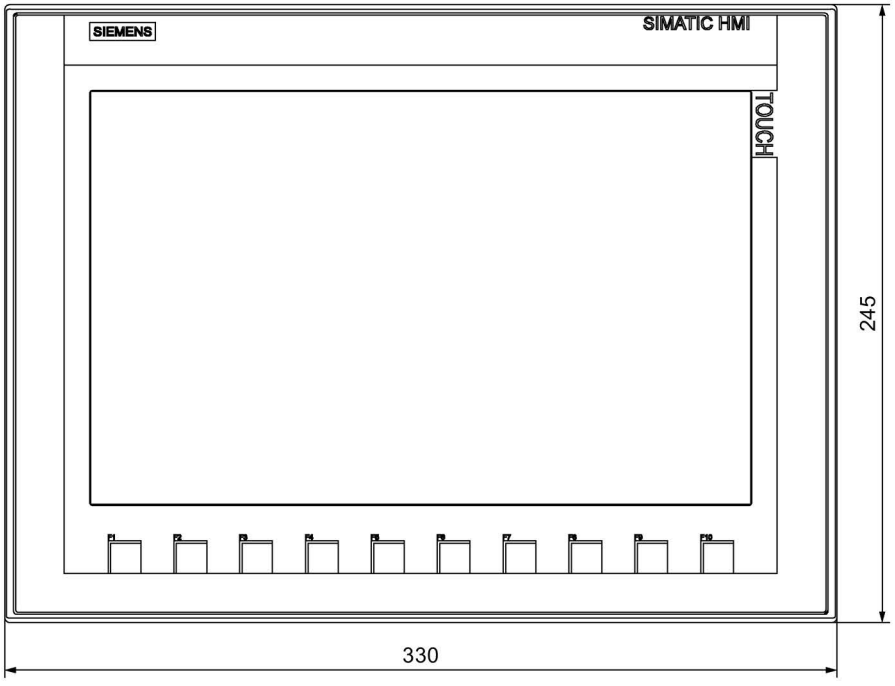
All dimensions in mm

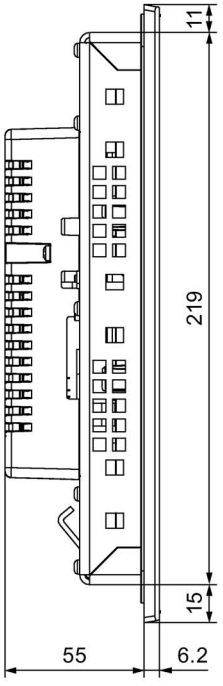


7.6.3 IWP1200



All dimensions in mm





7.7 Technical specifications

7.7.1 IWP700

Weight

	IWP700
Weight without packaging	Approx. 780 g

Display

	IWP700
Type	LCD TFT
Active display area	154.1 x 85.9 mm (7")
Resolution	800 x 480 pixels
Possible colors	16-bit (65536 colors)
Brightness control	Yes
Backlighting Half Brightness Life Time (MTBF [1])	LED 20,000 h
Pixel error class in accordance with EN ISO 9241-307	II

[1] MTBF: Operating hours after which the maximum brightness is reduced by half compared to the original value. MTBF is increased by using the integrated dimming function, for example time-driven dimming using the screen saver or central dimming by the controller.

Input device

	IWP700
Type	Touch screen, analog resistive
Function keys	8
Labeling strips	Not required

Memory

	IWP700
Data memory	512 MB
Program memory	512 MB

Interfaces

	IWP700
1 x Ethernet RJ45	10/100 Mbps
USB 2.0	Yes

Supply voltage

		IWP700
Rated voltage		+24 V DC
Permitted voltage range		19.2 to 28.8 V (–20%, +20%)
Transients, maximum permitted		35 V (500 ms)
Time between two transients, minimum		50 s
Current consumption	Typical	Approx. 230 mA
	Constant current, maximum	Approx. 440 mA
	Inrush current I^2t	Approx. 0.2 A^2s
Fuse, internal		Electronic

Miscellaneous

	IWP700
Buffered real-time clock [1], can be synchronized	Yes
Acoustic feedback	Yes

[1] Typical buffer time: 3 weeks

7.7.2 IWP900 and IWP1200

HMI device

	IWP900	IWP1200
Weight without packaging	Approx. 1130 g	Approx. 1710 g

Display

	IWP900	IWP1200
Type	LCD TFT	
Display area, active	198.0 mm x 111.7 mm (9")	261.1 mm x 163.2 mm (12")
Resolution, pixels	800 x 480	1280 x 800
Colors, displayable	16-bit (65536 colors)	
Brightness control	Yes	
Pixel error class in accordance with EN ISO 9241-307	II	
Backlighting	LED	
Half Brightness Life Time (MTBF [1])	20,000 h	

[1] MTBF: Operating hours after which the maximum brightness is reduced by half compared to the original value. MTBF is increased by using the integrated dimming function, for example time-driven dimming using the screen saver or central dimming by the controller.

Input device

	IWP900	IWP1200
Type	Touch screen, analog resistive	
Function keys	8	10
Labeling strips	Not required	

Memory

	IWP900	IWP1200
Data memory	512 MB	
Program memory	512 MB	

Interfaces

	IWP900	IWP1200
1 x Ethernet RJ45	10/100 Mbps	
USB 2.0	Yes	

Supply voltage

		IWP900	IWP1200
Rated voltage		+24 V DC	
Permitted voltage range		19.2 .. 28.8 V (–20%, +20%)	
Transients, maximum permitted		35 V (500 ms)	
Time between two transients, minimum		50 s	
Current consumption	Typical	Approx. 230 mA	Approx. 510 mA
	Constant current, maximum	Approx. 440 mA	Approx. 650 mA
	Inrush current I^2t	Approx. 0.2 A^2s	
Fuse, internal		Electronic	

Miscellaneous

	IWP900	IWP1200
Buffered real-time clock [1], can be synchronized	Yes	
Acoustic feedback	Yes	

[1] Typical buffer time: 3 weeks

7.8 Interface description

7.8.1 Power supply

Name of interface on HMI device: DC24V X80

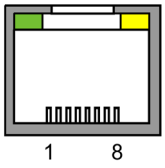
Plug connector, 2-pin

Pin number	Assignment
1	+24 V DC (L+)
2	GND 24 V (M)

7.8.2 Ethernet

Name of interface on HMI device: PROFINET (LAN) X1

RJ45 plug connector



Pin	Assignment
1	Tx+
2	Tx–
3	Rx+
4	n. c.
5	n. c.
6	Rx–
7	n. c.
8	n. c.

Meaning of LEDs

There is no connection if both LEDs are off.

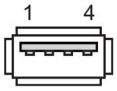
The green "Link" LED lights up as soon as there is a physical connection.

The yellow "Activity" LED lights up during the data transfer.

7.8.3 USB

Name of interface on HMI device: USB X60

USB socket



The following table shows the pin assignment of the USB port.

Pin	Assignment
1	+5 V DC, out, max. 500 mA
2	USB-DN
3	USB-DP
4	GND

Technical Support

A

A.1 Service and support

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

- Technical support (http://www.siemens.com/automation/service&support)
- Support request form (http://www.siemens.com/automation/support-request)
- After-sales information system for SIMATIC PC / PG (http://www.siemens.com/asis)
- SIMATIC Documentation Collection (http://www.siemens.com/simatic-tech-doku-portal)
- Your local representative (http://www.siemens.com/automation/partner)
- Training center (http://www.sitrain.com)
- Industry Mall (https://mall.industry.siemens.com)

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

- Article number of the device
- Boot loader version, image version

  These specifications are described in the section ""Maintenance" overview page (Page 33)".
- Installed additional hardware

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