

## SIMATIC HMI

### Customized Automation IWP software

#### Operating Manual

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## Legal information

### Warning notice system

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

 <b>DANGER</b>
indicates that death or severe personal injury <b>will</b> result if proper precautions are not taken.
 <b>WARNING</b>
indicates that death or severe personal injury <b>may</b> result if proper precautions are not taken.
 <b>CAUTION</b>
indicates that minor personal injury can result if proper precautions are not taken.
<b>NOTICE</b>
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:

 <b>WARNING</b>
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

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### 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

## Scope

This operating manual is valid for the Industrial Web Panel software referred to as "IWP software" hereafter. The IWP software is a permanent part of SIMATIC HMI devices of the IWP product family. Some of the functions described in this operating manual are only available with certain devices.

## Basic knowledge required

Knowledge of automation technology and process communication is required to understand this operating manual.

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



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# Overview

The IWP software provides an interface with which you can conveniently maintain and assign parameters to SIMATIC Industrial Web Panels (IWP). The term "Webpanel" or the general term "device" is used for "Industrial Web Panel".

An Industrial Web Panel is an HMI device with industrial approval for display and touch or key operation of HTML5 pages in "Kiosk" mode.

Main features are:

- Ethernet port
- Touch operation
- HTML5-capable browser
- Online help on the device

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## Note

### Unsupported functions

The hardware of the Webpanels may not support all functions of the IWP software.

- The corresponding pages are grayed out on the "Maintenance" overview page in the operating manual.
- A device-specific product information document advises on relevant deviations compared to the operator manual.

### TIA Portal

The Webpanel is a pure **Web client** on which no TIA Runtime software is running.

- This means configuring in the TIA Portal is not supported.
  - However, you can access a runtime project using the integrated **Web browser** if this is supported by the corresponding **Web server**.
-





# Safety instructions

## 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. firewalls and/or 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.

## See also

"Login" page (Page 20)

## 2.1 Notes on communication

### Notes on communication

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#### **Note**

##### **Communication errors caused by address conflict**

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

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

##### **Missing certificate verification**

When accessing the web server using the "https" protocol, the SSL certificate is not verified. You have to check for yourself whether the accessed website is trustworthy and secure.

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## Assigning device parameters

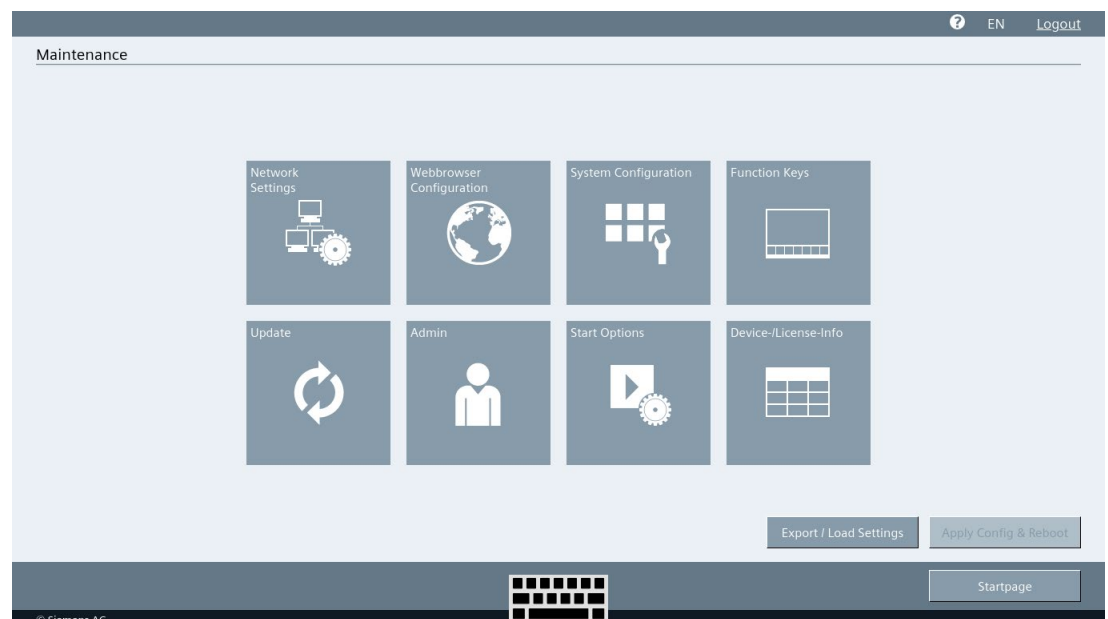
### 3.1 "Maintenance" overview page

A "Maintenance" overview page is available on the device for maintenance purposes. You can assign parameters to the device on the individual pages.

You can reach the "Maintenance" overview page under the following conditions:

- When the device is initially started with the factory settings.
- When "Static URL" is selected under Start Options and nothing is entered in the URL input box when the device starts up, see section ""Start Options" page (Page 23)".
- When the error occurs with diverse Start Options.
- When the following fixed address of the "Maintenance" website is called by a customer-specific web page: "http://127.0.0.1:8080".

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



You reach the individual pages using the square buttons, see section "Maintenance pages (Page 14)".

#### Note

##### Unsupported functions

The hardware of the Webpanel may not support all functions of the IWP software. Individual, unavailable pages may therefore be grayed out.

## Changing the settings

For unrestricted access to all pages, you must first log on as administrator, see ""Login" page (Page 20)".

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

## Functions in the header

- "?": Calls the online help for the page.
- "EN": switches the user interface language to English.
- "DE": switches the user interface language to German.
- Logout: logs out the user as administrator.

## 3.2 Opening a customer-specific website

On the "Start Options" page, you can save a customer-specific web page URL.

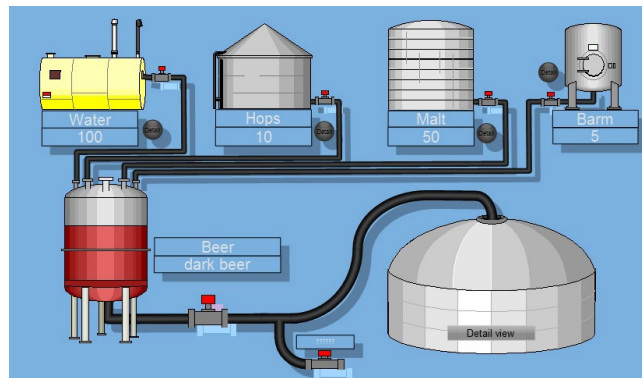
If there is a connection to the web server, the customer-specific web page is displayed automatically on startup. If you want to open the "Maintenance" overview page from the customer-specific web page, a hyperlink must be configured there, for example via a button. See section "Maintenance" overview page (Page 11). The web page URL must generally begin with "http://". Connection via "https://" is also possible.

### 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.



### 3.3 Maintenance pages

The table below contains the square buttons of the "Maintenance" overview page with links to the relevant function description:

Button	Functional description
	"Network Settings" page (Page 15)
	"Webbrowser Configuration" page (Page 16)
	"System Configuration" page (Page 17)
	"Function Keys" page (Page 18)
	"Update" page (Page 19)
	"Login" page (Page 20)
	"Start Options" page (Page 23)
	"Device-/License-Info" page (Page 25)
Export / Load Settings	"Export / Load Settings" page (Page 27)

## 3.4 "Network Settings" page

On the "Network Settings" page, you 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.

### Type of address assignment

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

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

### 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.

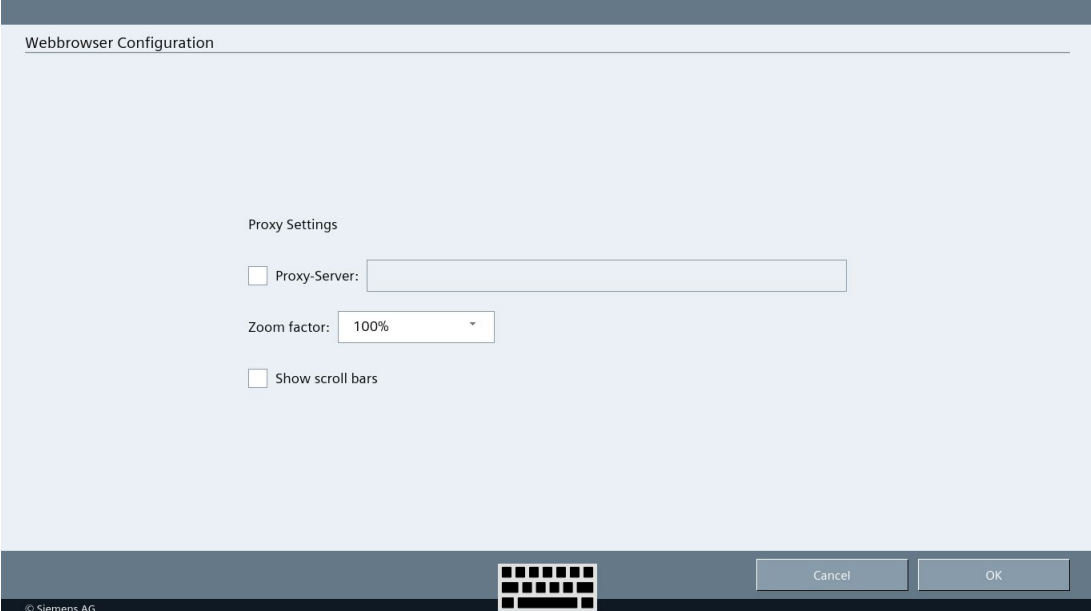
**"DNS-Server"**: The IP address is managed on a name server "Domain Name System" DNS. Enter the address of the name server.

**"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.

## 3.5 "Webbrowser Configuration" page

On the "Webbrowser Configuration" page, you specify the display in the Web browser:



Enable **"Proxy-Server"** if you access the Internet via a proxy. Enter the address of the proxy server, which should start with "http://". Connection via "https://" is also possible.

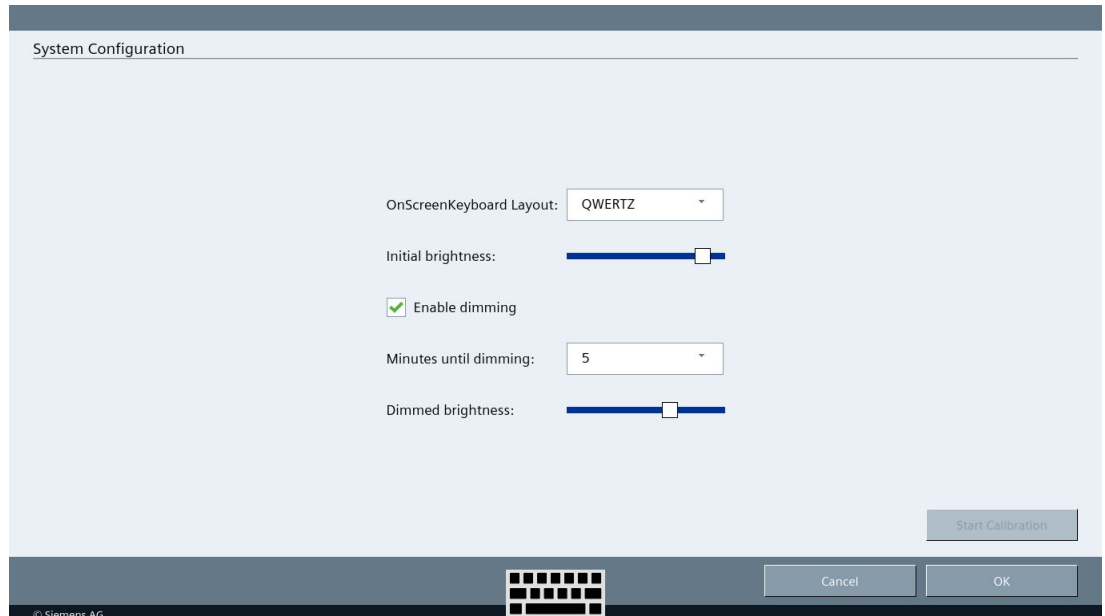
With "Zoom factor", the entire screen contents are scaled with the zoom factor 75-150%.

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



## 3.6 "System Configuration" page

On the "System Configuration" page, you specify the keyboard display and the brightness control in the Web browser:



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

- "QWERTY" for English keyboard



Use the red arrow symbols to place the keyboard anywhere on the screen or dock it at the borders and corners.

- "QWERTZ" for German keyboard



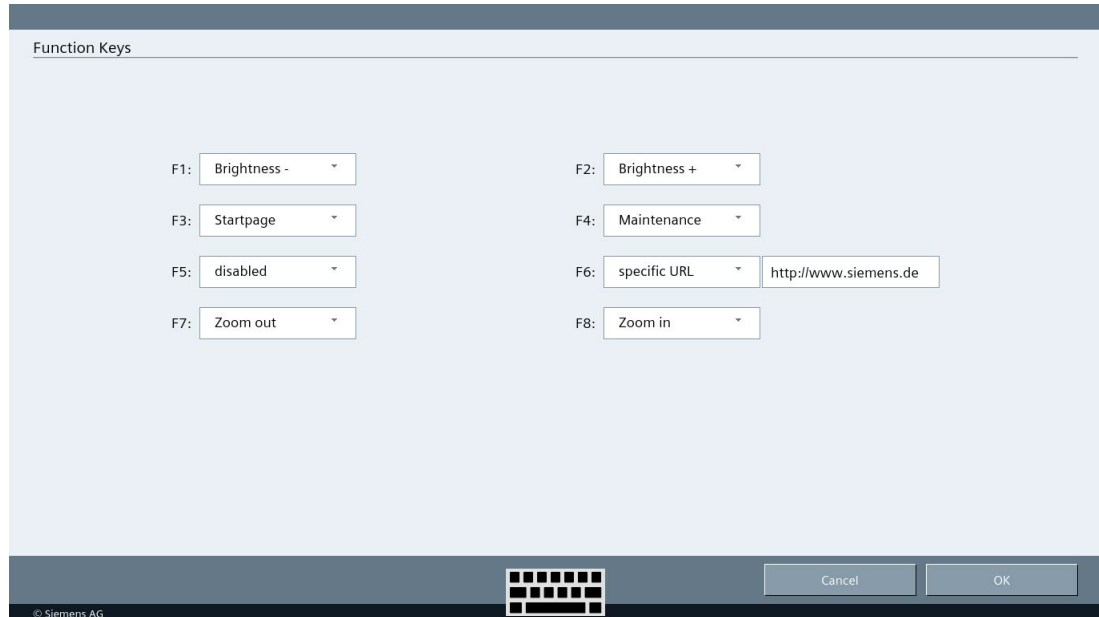
- "Off": **None** of the on-screen keyboards shown above are displayed when you make an input.

You use "Initial brightness" to specify the brightness of the screen immediately after starting the device.

Select "Enable dimming" to protect the screen and preserve energy: Specify the "Minutes until dimming" that have to expire after the touch screen was last touched before the background lighting is dimmed. You use "Dimmed brightness" to specify the degree to which the background lighting is dimmed.

## 3.7 "Function Keys" page

On the "Function 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 23)
- **"Maintenance"**: downloads the "Maintenance" overview page
- **"specific URL"**: downloads the specified website
- **"Zoom out"**: minimizes the entire screen content, see "Webbrowser Configuration" page (Page 16)
- **"Zoom in"**: enlarges the entire screen content, see "Webbrowser Configuration" page (Page 16)
- **"Refresh"**: refreshes the web page displayed in the Web browser.
- **"Previous page"**: navigates back one page in the sequence of web pages that were displayed.
- **"Next page"**: Navigates forward one page in the sequence of web pages that were displayed.
- **"disabled"**: The function key is not assigned.

### 3.8 "Update" page

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

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

**"Update from URL"**: The update is performed via an Internet address (URL) over HTTP with the syntax "http(s)://149.202.10.10/\*.tar". The name of the update file "\*" and the suffix ".tar" must be specified in the input field.

**"Check for updates"**: When you click the button, the program searches for the "\*.tar" update file in the root directory of the USB stick 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 and the device is restarted. You cannot explicitly stop the ongoing update process or undo it. The update process is canceled when you pull the USB cable or interrupt the power supply. The existing image will still start up without any problems.

**"Cancel", "Ok"**: Leave the page using the "Cancel" button. The update settings are saved with "Ok".

## 3.9 "Login" page

On the "Login" page, you log in as administrator and change the password. Either someone is logged in or not:

### Not logged in

A user that is **not** logged in as administrator cannot access all pages with settings and functions. Only the following pages are generally accessible for all users, see "Maintenance" overview page (Page 11):

- Device data, see "Device-/License-Info" page (Page 25)
- Login, this section

When is a user **not** logged in as administrator?

- The users logs **out** as an administrator (see following paragraph).
- The device restarts and a password is assigned.

### Logged in

A user logged in as administrator can access all pages and has unlimited access to all functions.

When is a user logged in as administrator?

- The users logs **in** as an administrator (see following paragraph).
- The device is in the delivery state.
- The device restarts and **no** password is assigned.

### NOTICE

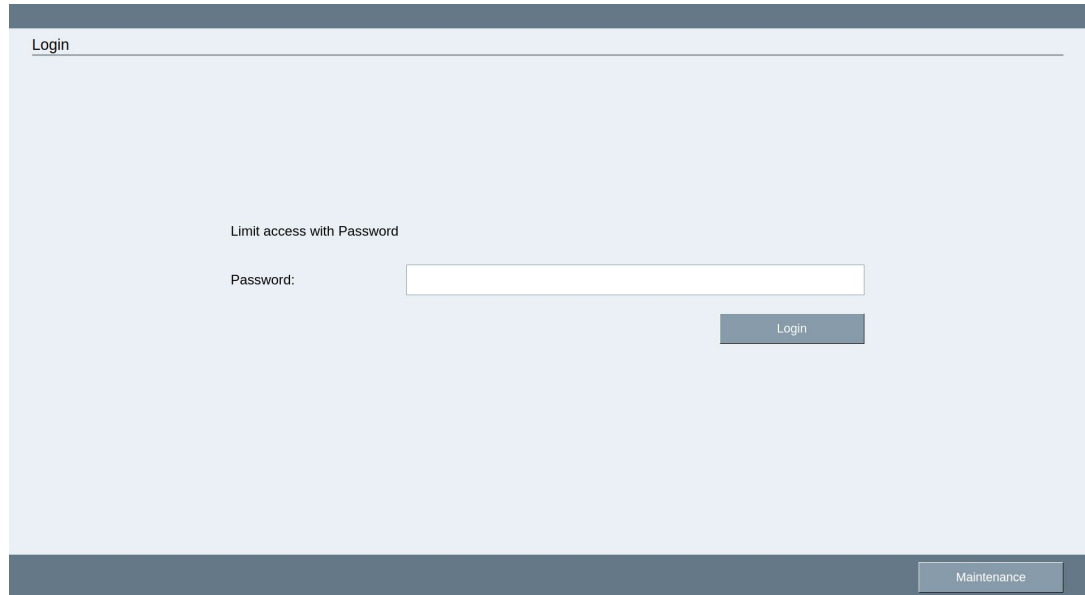
#### Data misuse due to unauthorized access

In the delivery state and after password reset and reboot, every user is logged in as administrator and has unlimited access. An unauthorized user can manipulate data. This can result in damage to the machine or system.

- Protect the device from unauthorized access.
- Assign a password after delivery (see under "Change password").
- Assign a new password without delay after the password has been reset.

## Log in and out as administrator

1. To log in as administrator, open the "Login" page. The **login dialog** is displayed if no administrator is logged in:



Login

Limit access with Password

Password:

Login

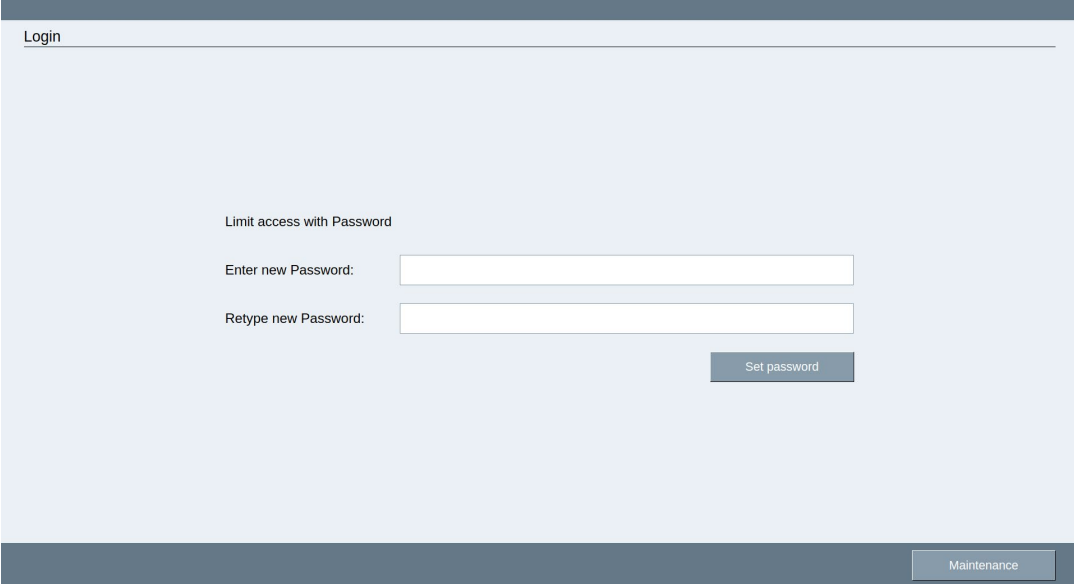
Maintenance

2. Enter the password and press "Login".  
If the password is correct, the "Maintenance" overview page opens:
  - The user is logged on as administrator.
  - All pages are available.
  - "Logout" is displayed at the top right.
3. Press "Logout" to log out.  
The user is no longer logged on as administrator.

## Change password

With a password, you protect your device from unauthorized access; see also section "Safety instructions (Page 9)". You have to log in as administrator before you can change the password; see preceding paragraph.

1. Open the "Login" page. The **password dialog** is displayed if an administrator is logged in:



The screenshot shows a web interface titled "Login" in the top left corner. The main content area has a light blue background. In the center, there is a section titled "Limit access with Password". Below this title, there are two input fields: "Enter new Password:" and "Retype new Password:". To the right of the "Retype new Password:" field is a button labeled "Set password". At the bottom right of the page, there is a button labeled "Maintenance".

2. Enter a password under "Enter new Password".
3. Repeat the password in the password field.
4. Press "Set password".

The "Maintenance" overview page opens. The "Apply Config & Reboot" button flashes.

5. Press "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 restriction after a restart using the "Apply Config & Reboot" button: The device is not protected from unauthorized access.

## See also

"Update" page (Page 19)

"Function Keys" page (Page 18)

### 3.10 "Start Options" page

On the "Start Options" page, you specify what is displayed after the device is started:

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

**"Static URL":** Address of the website that is called during start.

- The URL is not checked for availability.
- If the web page or the web server is not reached on startup, attempts are made at regular intervals to load the page.
- The "Maintenance" web page is displayed if no value is entered.

**"Startupscreen with address field for URL":** A page with a URL input field is displayed when the device is started.

- The operator enters a URL.
- The URL is not checked for availability.
- If the web page or the web server is not reached on startup, attempts are made at regular intervals to load the page.

**"Customer specific page":** The "custom.html" file is searched for in the root directory of the USB stick, imported and processed by the browser.

- You need to create the file manually in valid HTML code. Specific syntax is not necessary.

Save the file to a USB stick and connect it to the HMI device.

- Press "Load from USB". The "custom.html" file is copied to the HMI device.

On the next restart, the file copied to the HMI device is imported and processed.

- The file must not be larger than 1 MB. Otherwise, an error is displayed.
- The "Maintenance" website is displayed if an error occurs.

**"Server station list":** The "stations.conf" file is searched for as station list in the root directory of a USB stick.

- You need to create the file manually; refer to the following paragraph. Specific syntax in JSON format is required.

Save the file to a USB stick and connect it to the HMI device.

- Press "Load from USB".

One or more html pages are generated from the "stations.conf" station list during the next restart.

- 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 or if the file is too large.
- 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 "Encoding".

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>) on 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; see example above.

When using **special characters**, observe the JSON standard.

### See also

Opening a customer-specific website (Page 13)



## 3.11 "Device-/License-Info" page

The "Device-/License-Info" page displays device data and security-relevant system messages, lists the OpenSource source code and shows the associated license information:

The screenshot displays the 'Device-/License-Info' page. It features a table with two columns: 'Device Info (1)' and 'Device Info (2)'. The first column lists device details such as Device, Device Serial Number, OS-Type, Image Version, Bootloader Version, BIOS Version, and Browser Version. The second column lists system information including SMM Bootloader, SMM Firmware, MAC Address, and IP Address. Below the table is a large text area for system messages. At the bottom, there are three buttons: 'Export OSS Code to USB', 'License Info', and 'Export data to USB'. A 'Maintenance' button is also visible in the bottom right corner. The page footer includes the Siemens AG logo and a keyboard icon.

Device Info (1)	Device Info (2)
Device: IWP1500MT / 6AV6 646-1BA15-0AA0	SMM Bootloader: <n/a>
Device Serial Number: No serial available	SMM Firmware: <n/a>
OS-Type: Linux 4.9.212-yocto-standard-casw i686	MAC Address: 00:0E:8C:03:15:01
Image Version: IWP1500MT T01.01.00.00 b001	IP Address: 192.168.178.84
Bootloader Version: <n/a>	
BIOS Version: coreboot V01.00.02.12_00.02.00.00 03/21/2018	
Browser Version: 80.0.3987.122	

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

### Export data to USB

Saves the displayed device data and system messages (see figure) to a USB stick.

#### Requirement

- A USB stick is connected.
- There is enough free memory space on the USB stick.

#### Procedure

1. Insert the USB stick into the USB service port on the device.
2. Click the "Export data to USB" button.
3. After the export, the message "Export completed" appears.

All device data and system messages are saved.

## **Obtaining the source code**

The source code of the OpenSource software used must be open and freely accessible. You can transfer the source code to a USB stick.

### **Requirement**

- A USB stick is connected.
- There is enough free memory space on the USB stick.

### **Procedure**

1. Insert the USB stick into the USB service port on the device.
2. Click the "Export OSS Code to USB" button.
3. After the export, the message "Export completed" appears.

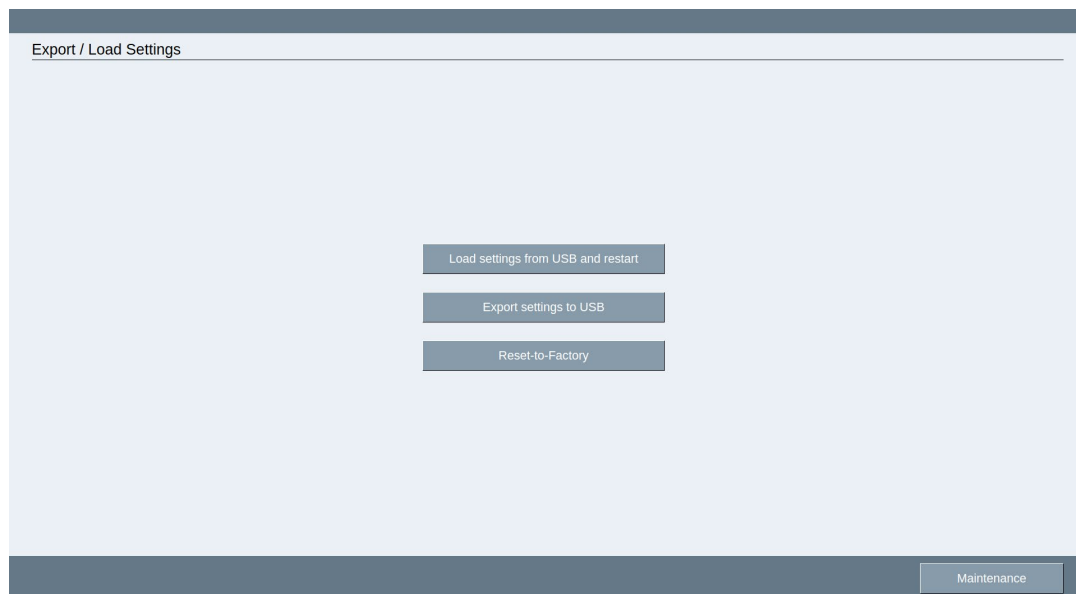
The source code of the OpenSource software used is saved.

## **License information**

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

## 3.12 "Export / Load Settings" page

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



### NOTICE

#### Data loss

When you "Load settings from USB-Device and restart", existing maintenance settings on the device are overwritten.

Back up the settings on the HMI device beforehand using "Export settings to USB".

**"Load settings from USB-Device and restart":** The "syssettings.conf" file is searched for in the root directory of the USB stick. 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 maintenance settings are activated.

You must be logged in as administrator to load the settings.

**"Export settings to USB":** The current maintenance settings are stored in the root directory in the "syssettings.conf" file, which is overwritten. If necessary, back up this file first.

### NOTICE

#### Data loss

When you "Reset-to-Factory", existing maintenance settings on the device are overwritten and all user files, e.g. "stations.conf" and "custom.html", are deleted.

- Back up the settings on the HMI device beforehand using "Export settings to USB".
- Back up a copy of the user files "stations.conf" and "custom.html".

**"Reset-to-Factory"**: Restore default factory maintenance 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.

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